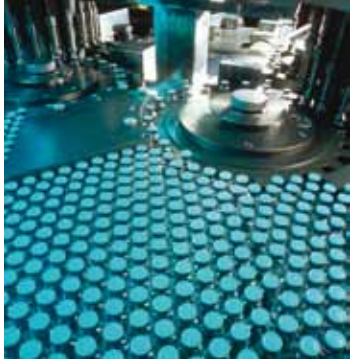

aerospace
climate control
electromechanical
filtration
fluid & gas handling
hydraulics
pneumatics
process control
sealing & shielding

Parker Pneumatic

A complete range of pneumatic system components

Catalogue PDE2600PNUK March 2014

Parker

ENGINEERING YOUR SUCCESS.

WARNING

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Parker Hannifin

Parker Hannifin is one of the world's leading suppliers of products and solutions in Motion and Control.
Using innovative product development and an acquisition strategy to increase our range of pneumatic products and solutions, we now have one of the broadest product offerings available in the market.

Our range now extends from the compressor to the point at which the air is used. This could be supplying power take off on a vehicle, moving a cylinder or gripper to milking cows. The design and manufacture of bespoke integrated solutions for air, gas and fluid control is one of our core specialisation.

The Parker network of distributors is the most comprehensive in the world, which means our products are available from specialist pneumatic distributors wherever you are located.

In the following pages are listed the core first choice products from across Parker which are aimed at the pneumatic market. From valves, actuators and air preparation to push in fittings quick connectors and tubing to customized systems.
In this catalogue you will find products form Pneumatic Division Europe, Legris,Rectus Tema, Fluidconnectors, KV and Fluid Controls, presenting an unrivalled choice of products and solutions to suit virtually any application.

aerospace
climate control
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hydraulics
pneumatics
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sealing & shielding

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Linear Actuators

ISO 15552 Cylinders - P1D-S

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

p30

ISO 15552 Cylinders - P1D-B

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

p43

ISO 15552 Cylinders - P1D-C

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Corrosion resistant design
- Lubricated with food grade grease

p54

ISO 15552 Cylinders - P1D-C

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Corrosion resistant design
- Lubricated with food grade grease
- Drop-in sensors

p57

ISO 15552 Cylinders - P1D-T

- Available in Ø160 - 320 mm bores
- Stroke lengths 10mm - 2000mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High temperature versions
- ATEX version
- Special version on request

p60

ISO 15552 Cylinders - P1D-X

- Available in Ø32 - 125 mm bores
- Double acting.
- Stainless steel piston rod.
- Robust and corrosion resistant.
- Adjustable air cushioning.
- Retained stainless steel cushioning screws.
- Wide range of mountings and drop-in sensors

p62

ISO Rod Lock Cylinders - P1D-L

- Available in Ø32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

p72

Mini ISO 6432 Cylinders - P1A

- Available in Ø10 to 25 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End stroke buffers for long service life

p81

Linear Actuators

All Round Cylinders R32-63

- Piston diameters: Ø32, Ø40, Ø50 and Ø63
- Double acting without cushioning
- Double acting with adjustable cushioning
- Pivot mounted on the front and rear cylinder covers
- Contactless position sensing

p89

ISO 6432 Stainless steel - P1S

- Available in Ø10 to 25 mm bores
- Magnetic piston as standard
- Double and single acting
- End stroke buffers for long service life
- Available with adjustable cushioning

p90

ISO 6431 Stainless steel - P1S

- Available in Ø32 to 125 mm bores
- Clean, smooth washdown design
- Magnetic piston as standard
- Adjustable cushioning for long service life
- Complete range of mountings and sensors

p95

ISO 21287 Compact Cylinders - P1P

- Available in Ø20 to 100 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard

p103

Compact Cylinders - P1Q

- Available in Ø12 to 100 mm bores
- Magnetic or non magnetic options
- Flush fit sensor range
- Buffer cushioning as standard
- Piston wear ring on Ø32 - Ø100mm
- Tapped both ends

p120

Short Stroke Cylinders - C05

- Short stroke cylinders providing high clamping forces
- Compact dimensions for confined spaces
- Single and double acting versions
- Simple installation and mounting

p126

Compact Guided Cylinders - P5T

- Available in Ø16 to 100 mm bores
- Stainless steel guide rods
- Wide range of standard strokes
- Flexible porting as standard
- End stop cushions as standard

p128

Twin Rod Cylinders - RDV / AZ

RDV Series

AZ Series

- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard

p133

Linear Actuators

Rodless Cylinders - OSP-P

- **Compact: guide rail integrated in the cylinder profile**
- **Long lifetime and high service intervals**
- **High loads and moments**
- **Easy to re-adjust through simple design => easy to maintain**
- **Integrated scraper system and grease nipples**

p141

Rodless Cylinders - OSP-L

- **Completely modular design**
- **Compatible with the comprehensive ORIGA OSP system component range**
- **High loads and moments**
- **Space saving**
- **For a wide range of loads, speeds and motion profiles**

p172

Rodless Magnetic Cylinders - P1Z

- **Double acting with guide**
- **Magnetically coupled without mechanical connection**
- **Mechanical protection in case of occasional overload due to magnetic uncoupling**
- **Piston chamber and Slide are pressure tight**
- **Pressure tight and leak free system**

p190

Shock Absorbers - SA

- **Integral stop collar**
- **Soft pad**
- **Rectangualr flange**
- **Foot mounting**
- **Adjustable without return spring, for use with external air-oil tank**

p200

Shock Absorbers - MC-SC

- **Compact and heavy duty versions**
- **High energy absorption**
- **Low return force**
- **Long service life**
- **Increases productivity**
- **Reduces maintenance**

p232

Handling Products

Grippers - P5G

- **Available with range of bore sizes Ø10 - 32 mm.**
- **Highly accurate air driven device for holding work-piece.**
- **Magnetic as standard**
- **Stainless steel jaw carriers.**
- **Reference points on gripping fingers are standard.**

p244

Rotary Actuators - P5RS

- **Bores Ø16, 20, 25 and 32 mm**
- **Twin rack and pinion**
- **Adjustable between 0° and 190°**
- **Magnetic piston standard**
- **Stroke adjusters standard**
- **Available with shock absorbers**
- **Easy mounting of work piece**

p253

Slide Tables - P5SS

- **High precision**
- **Bores Ø6, 8, 12, 16, 20 and 25mm**
- **Combination of dual bore cylinder and linear rail**
- **Magnetic piston standard**
- **Rubber bumper standard**
- **Stroke adjusters available**
- **Shock absorbers available**

p255

Rotary Actuators

Stainless Steel Air Motors - P1V-S

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- No-lube intermittent operation as standard
- 0,2 kW and 0,3 kW Brakemotors for higher safety

p266

Robust Air Motor - P1V-M

- Power 0,2 kW, 0,4 kW and 0,6 kW
- Patented way for simple change of vanes
- Free speeds from 28 up to 10000 rpm
- Torque from 0,38 Nm up to 380NM by max output power

p271

Large Air Motors - P1V-B

- Designed for use in the most arduous applications
- Considerable power, torque, robustness and reliability

p274

Radial Piston Air Motors - P1V-P

- Compact and versatile
- Magnetic or non magnetic options
- Flush fit sensor range
- Buffer cushioning as standard
- Piston wear ring on Ø32 - Ø100mm
- Tapped both ends as standard

p276

Rotary Actuators - PRO / PRN

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Vane type

p284

Rotary Actuators - PV

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.
- Vane type

p286

Rotary Actuators - RA

- 5 unit sizes
- Torque from 20 to 200 Nm
- Turning angles of 90° or 180°
- Keyway output shaft
- Direct Namur valve connection
- Rack and pinion

p287

Rotary Actuators - VRS / VRA

- VRA version (Ø32 to Ø80mm)
- VRA standard version (Ø32 to Ø125mm) for corrosive environments
- Rotation angles of 96°, 186° or 366°
- Optional magnetic version
- Several options are available; rotative angle adjustable stop, male shaft or female shaft (through)
- Rack and pinion

p289

Specialist Actuators

Stopper Cylinders - STV / STVR

- Available with hydraulic Industrial shock absorbers
- Vertical and horizontal versions
- Integrated shock absorber for heavy conveyed loads
- Roller for lower conveyed load weights
- Direct stopping piston rod for heavy conveyed loads

p294

Thrust Cylinders - C0D / C0P

- Thrust cylinders provide large forces
- Compact dimensions
- C0D, diaphragm type
- C0P, piston type
- Available in single and double acting versions

p302

Hydraulic Clamp Cylinders - VB

- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required

p305

Hydrochecks - B181

- Range of imperial sizes
- Gives smooth control feeds
- Strokes up to 450 mm.

p307

Air Bellows - 9109 / SP

- 13 variants, diameters 150 to 420 mm
- Strokes from 45 to 375 mm
- Single, double or triple convolutions
- High thrust and frictionless movement
- Maintenance free

p308

Electric Linear Actuators - OSP-E

- For particularly high requirements regarding loads and forces
- For high-speed applications and highly dynamic motion profiles
- BHD with toothed belt and integrated heavy duty guide: roller guide or re-circulating ball bearing guide

p313

Electric Linear Actuators - HMR

- Three alternative drive technologies in one profile
- Unique flexibility and reliability
- High speed and precision
- Two profile versions, four profile sizes
- Optional IP54 snap-in covers

p363

Valves

Metal Spool Valves - Viking Lite

- 3 sizes: G1/8, G1/4 and G3/8.
- Large flow capacity with short change-over times.
- Low change over pressure.
- Dynamic bi-directional spool seals.
- Do not require lubrication in operation but can also be installed in systems that are lubricated.

p377

Metal Spool Valves - Viking Xtreme

- 4 sizes: G1/8, G1/4, G3/8 and G1/2.
- Compact design with good corrosion resistance.
- Wide range of 5/2 and 5/3 versions.
- High and low temperature versions available for transport applications.

p387

Adex Directional Control Valves

- 2 sizes: M5 and 1/8”
- Compact body with large flow
- Quick response time, faster than 10ms
- Expected life time more than 50,000,000 cycles
- Low power consumption only 0.6W

p406

Midget & Intermediate Spool Valves

- G1/8, G1/4 body ported
- Rugged die cast body
- 3/2, 5/2 & 5/3 configurations
- Stainless steel spool
- Viton body seals as standard
- Integral mounting holes
- Manual, mechanical and automatic actuators.

p411

Directional Control Valves - VA

- Rugged valves for heavy duty applications
- Large and robust actuators for easy operation
- Excellent corrosion resistance
- Integral mounting holes
- Panel mounting versions

p423

Heavy Duty Poppet Valves

- G3/8 & G1/2 body ported
- 2/2 & 3/2 NC spring return as standard
- High flow poppet design
- Manual and mechanical and solenoid actuators
- Light actuation forces
- Integral mounting holes.

p427

DX ISO Valves

- ISO sizes 02, 01, 1, 2 & 3 sub base & manifold mounted valves
- ISO 5599-1 & ISO 15470-1
- Excellent reliability, in excess of 100 million cycles
- Ceramic slide technology operates on Lubricated or non-lube air

p435

Isys Valves

- ISO sizes 02, 01, 1, 2 & 3 sub base mounted valves
- ISO 5599-1, ISO 5599-2, ISO 15470-1 & ISO15470-2
- Stable long lasting performance
- Heavy duty metal bodies
- Wear compensating seal technology

p443

Valves

Isys Micro Valves

- Up to 8 pneumatic functions on a 42mm width metal sub base
- 4 valve modules back to back for compact dimensions
- High performance
- Optimized flow for 6mm tubes
- Side or bottom mounted manifolds available.

p467

Moduflex Valves - P2M

- High flow, compact size.
- Mixable valve sizes.
- Stand alone valves, modular islands with individual, multi connector or bus connections.
- Integrated selectable internal or external pilot supply and exhaust.

p487

Interface - PS1

- High speed poppet valve
- Push-in connection
- Built-in terminal block
- Pneumatic output indicator
- DIN rail mounting

p513

Compact Valves - PVL

- High flow, compact size
- Push-in or threaded connection
- DIN rail or block mounting
- Light weight construction

p516

Isysnet

- A complete field bus communication offering for valve islands
- Extremely fast I/O back plane uses change of state connections to maximise performance
- UL,C-UL and CE certifications

p520

Air Saver Unit

- Large reductions in plant air consumption.
- Savings in plant compressor power consumption.
- Reduction in plant CO_2 emissions.
- Big contribution to energy-saving activities.

p544

Logic Control

- Complete range of logic processing modules
- Stand alone or stackable and combinable units
- Ultra fast response times
- Visual indication
- DIN rail mounting.

p548

Control & Process Duty - PXB

- Facia mounted operators
- 3/2 NO or NC versions
- Pneumatic valves combinable with electrical switches
- Modular construction
- Wide choice of actuators.

p553

Valves

Limit Switches - PXC

- 3/2 Nc spring return as standard
- Ø4mm, M5 & G1/8 ported versions
- Miniature and Compact designs
- Wide choice of actuators include levers, rollers & ultra light whisker types.

p556

Two Hand Control Units - PXP

- Ergonomic design
- Robust polymer or metal enclosure
- Meets requirements for protection against accidental operation and tampering
- Conforms to EN574 and EN954-1 requirements

p558

Microfix Solenoids

- 12 mm solenoids sub-base mounting type
- Instant push-in fittings for inlet (Ø 8 mm) and outlets (Ø 4 mm)
- Brass silencer
- Quick response time
- Multi-functional manual override

p560

Flat Slide Valves - DRS

- Rotary lever
- Rotary switch

p597

Pedal Actuated Valves - F Series

- Pedal actuated
- Connections for 3/2 way version

p599

Stop Valves - ARKV

- Pneumatic 2 way valve
- Poppet valve normally closed
- Mounting - Direct piping

p601

3/2 Way Valves - K9

- Rotary lever, indexed
- Rotary lever, spring return
- Rotary lever, indexed, secured in two positons
- Pushbutton
- Cam operation
- Toggle cam operation
- Plunger operated
- Cam operated, free cam left or free cam right
- Pivoted lever

p603

Directional Control Valves - S9

- Hand lever
- Pneumatic
- Electrical pilot operated
- Electrical pilot operated with external pilot air
- Panel mounting actuators for mounting diameter to DIN 43696

p609

Vacuum Products

Vacuum Pads

- **Flat & Bellow Pads**
- **Male & Female Connections**
- **Different Materials**
- **Range of Diameters**

Vacuum Ejectors

- **Basic Ejectors**
- **Basic Ejectors with electro-mechanical Switch**
- **In-line Ejectors**
- **Integrated Ejectors small & large**

Vacuum Sensors

- **-1 to +10 bar**
- **Analog and/or Digital Outputs**
- **With display**

Vacuum Accessories

- **High performance silencers and vacuum filters**
- **Electronic cables with M8 connector 4 pin**

Air Preparation & Airline Accessories

Global Air Preparation System

- Space saving integral gauge (P31 size only)
- Manifold style regulators available
- OSHA compliant shut-off valves
- Soft-Start & Quick Dump valves
- Electronic Proportional Regulator

p644

Air Preparation System - P3L Lite

- Compact body ported units
- Port size G1/4
- Unique deflector plate ensuring maximum water and particulate removal
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.

p666

Lite Air Preparation Series - P3X

- Integral 1/2 or 3/4 ports
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 8 and 16 bar
- Rolling diaphragm for extended life
- Membrane dryers

p668

Modular Membrane Dryers - P3X

- Removes water vapour & lowers the PDP
- Compact design
- No electrical connections necessary
- Suitable for hazardous environments
- No moving parts
- Maintenance & wear free
- No change in air consumption
- Low pressure drop less than 0.1 bar

p674

Modular FRLs - P3Y Series

- Integral 3/4 or 1” ports (BSPP or NPT)
- High efficiency element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 12 and 16 bar

p676

Heavy Duty FRLs - P3Z Series

- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Port flanges G1 1/2” & 2” to a 2” body.
- Proportional oil delivery over a wide range of air flows.

p681

Global Proportional Technology

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65

p684

Precision Pressure Regulators

- High repeatability
- High relief capacity on R220 model
- High flow capacity on R230 model

p704

Air Preparation & Airline Accessories

Prep-Air II® Miniature FRLs

- Compact body ported units.
- Port sizes G1/8 and G1/4.
- Unique deflector plate ensuring maximum water and particulate removal.
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.

p706

Stainless Steel FRLs

- Suitable for Marine & Offshore applications
- Chemical / Petroleum and process industries
- Coalescing filters are designed for removing oil and water aerosols down to 0.01µ
- Suitable for food industry applications

p708

Compressed Air Filters - P3T

- Tested in accordance with ISO 8573.9
- High liquid removal efficiencies at all flow conditions
- Low pressure losses for low operational costs
- Multiple port sizes for a given flow rate provides increased flexibility during installation

p711

Dry Air System - P3TJ

- Designed in accordance with ASME VIII Div.1, approved to CSA/UL/CRN and fully CE Marked (PED, EMC, LVD) as standard.
- Flexible installation utilising the multiple in-line inlet & outlet connection ports.
- Can be Floor, Bench or Wall/ Canopy mounted.

p719

Pressure Switches

- Suited for intrinsically safe operation
- Especially compact design
- High switching frequency
- Attractive design
- Shock proof up to 30 g

p722

Moduflex AirGuard Protection

- Maintenance friendly, Repair possible while plant is still operating.
- Reliable and tamperproof, No adjustment necessary.
- Complies with EU current standard
- Complies with the 2009 ISO4414 (5.4.5.11.1)

p728

Cylinder Controls

- "Push-in" or threaded connection
- Multifunction options
- Fit directly to cylinder ports
- Swivelling pilot banjo
- Pneumatic, Electric or Electronic back pressure sensor

p730

Micrometer Flow Control Valves

- Micrometer type adjustment
- Fine control
- Non-return and needle valves

p735

Air Preparation & Airline Accessories

Heavy Duty Inline Control Valves

- Screw driver adjustment
- Rugged bodies
- High flow rate
- High flow by-pass
- Wide range of sizes

p735

Shuttle Valve & Quick Exhaust Valves

- Increases piston speeds, super sensitive diaphragm.
- May be used as differential shuttle valve.
- Allows two separate signals to be applied to the air pilot.
- 0,6 bar differential, Viton seals as standard.
- Aluminium or polymer bodies

p736

Exhaust Silencers

- All plastic ultra light weight versions
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation

p737

Restrictors - Silencers

- Metal, stainless steel or plastic versions
- Screwdriver adjustment
- Simple control of cylinder speeds
- High noise level reduction

p740

Reclassifier - Silencers

- Removes oil mist from exhaust airs
- Efficiently silences exhaust air
- Improves working conditions

p741

Parker PFS Division

The design and manufacture of bespoke integrated solutions for air, gas and fluid control are the specialisation of Parker PFS. In general, a high manufacturing ingenuity in circuitry design and system expertise are required for the relevant pneumatic and electro-pneumatic control system products.

Rapid Prototyping / Rapid Manufacturing

Cost and time saving

Parker PFS took its first steps into Advanced Manufacturing Technology in 1999 and since then has been applying the concept of Rapid Prototyping/Manufacturing. Many parts and products have been designed purely by these technologies.

Nowadays, customers are supplied with RP and RM parts for 1 to 1000 off, of the highest quality, using in-house facilities.

From CAD drawing to Rapid Prototyping / Rapid Manufacturing

With the advent of 3D CAD, the improvements in materials and new technologies such as SLS and SLA, the capability to simply translate CAD data into a physical 3D model are a reality.
To supply complex sintered or moulded parts, in metal or plastic, direct from the 3D model, Parker KVD uses the 'material on' rather than a 'material off' process.

Concept models / prototypes allow:

- Solid visualisation of a concept
- Fast & easy communication with clients
- Identification of problems with ergonomics
- Quick design agreement

The Clean Room

At Parker PFS, the Clean Room facilities have a total floor area of 380 square metres (4092 sq.ft.) The Clean Room operates to ISO 14644-1, ISO Class 6 Standard, (FED Standard 209E, Class 1000) over the working areas, andhas its own dedicated material handling area and store. It contains over 24 square metres of Laminar Flow Cabinets operating to ISO 14644-1, ISO Class 4 Standard (FED Standard 209E, Class 10). The industries serviced by this Clean Room are numerous and varied, ranging from the Semi-Conductor industry to Medical, to Precision Measurement and Instrumentation.

Dental - Air Abrasion Systems

A compact system for the control of gas, fluid and abrasive within this procedure was produced here.
With Parker PFS's own in-house rapid prototyping, innovational design can be brought into production within weeks, from foot controls to suction and air polishing systems etc.

Anaesthesia and Ventilation

Unique Parker PFS control elements have been used in the enhanced performance of many gas flow management systems for years, in:

- **Modern operating theatres**
- **Intensive or critical care units**
- **Neonatal ICU Emergency resuscitation is also a very important field in Life Sciences. There is a range of systems available for this application too.**

Life Science

Pneumatic, electro-pneumatic, fluid system controls and solutions are at the heart of many advanced technologies such as:

- **Pharmaceuticals**
- **Diagnostics**
- **Medical Devices**
- **Analytical Instrumentation**
- **Medical Research Products**
- **Semiconductor Handling**
- **Healthcare Systems**

PFS Systems

Transportation

Parker PFS has been designing and manufacturing systems and components for the transport industry for over 30 years. They include a range of rodded and rodless actuators providing complete solutions for all door types.
All components used are to industry standards relating to temperature range, voltage tolerances and sealing.

Rail - Control Door Systems

The control systems for both external and internal doors meet individual customer specifications. They also satisfy particular requirements regarding:

- Safety
- Operational needs
- Space availability
- Reliability

Rail - Vacuum Toilet System

Sanitary waste is stored within on-board retention tanks and then transferred via vacuum. Space and weight are optimised by integrating the control of air/vacuum and fluids into a single module:

- Modular control systems
- Liquid media control valves
- Air and vacuum control valves
- Waste valves
- Handling detergents as well as water
- Self priming and self cleaning
- Easy fitting and maintenance (incl. simple quick connectors and multi-core plugs)

Commercial - Axle Lift

Parker PFS Axle Lift Systems are designed to meet international legislations, and can provide significant savings through reduced tyre wear and improved operational costs.

Typically, these systems incorporate:

- On board load & position sensing
- Override facility for traction control assistance
- IP67 compliance
- Correct ride height self compensation
- Automatic axle load protection
- Wide temperature and voltage tolerances

Alternative Energy

Parker PFS Division sees the alternative energy market as a key strategic objective due to its global growth and environmental benefits.

New and exciting opportunities can be developed by working closely with customers from the earliest stages of development.

Hydrogen Generation Unit

In the commercial and private vehicle industry the adaption of hydrogen fuel cell technology for hybrid applications has resulted in Parker PFS developing a control system for all the fluid handling in the product.

Within the solution every component has been custom-designed to reduce size, weight and cost without compromising the performance or endurance of the system.

PFS Systems

Integrated Neonatal Ventilator Gas Supply and Mixing Module

This control module is designed to control, mix and blend air and oxygen as part of a Neonatal Ventilator System. Bespoke pneumatic control and solenoid valves and integrated standard components for 'turn-key' control systems were developed.

Material: aluminium filled polyurethane, designed specifically to integrate a large number of circuit components into a single control module. The finished module then becomes a part of a larger ventilator control system. Valves are both surface mounted and embedded as appropriate, using the Parker PFS patented AMT process to incorporate a complex pneumatic circuit, including volumes and a blending chamber.

Cryosurgery

Cryogenic procedures are often used in some of today's most advanced surgery and pain relief. Using the application of extreme cold, destruction of unwanted tissue has become a preferred method of treatment as it leaves minimal scarring and avoids hospitalisation or the need for anaesthesia.

The critical aspects of rapid-freeze and slow-thaw can be precisely monitored and controlled by the specialist modular control systems for liquid gas management within cryoanalgesic instruments that have been developed by Parker PFS.

Agriculture - Automated Cow Milking

Pneumatic systems can be utilized in several areas of agriculture.

This fully automated milking system works with an upper traversing, vertically mounted attachment robot equipped with a double-scanner system comprising a camera and ultrasound sensor. The special software supports the quick attachment to different teat types.

Successful attachment to the livestock is also checked and monitored. When combined with remote animal tagging technology it allows a truly autonomous production process.

Gas / Liquid Chromatography & Mass Spectrometry

Since the early development of analysers, applications such as sequencing of DNA and proteins have been providing worldwide benefits. Developers and providers of innovative life science solutions in the fields of analytical chemistry and medicine are some of Parker PFS's key partners. This means working with low power and precise leak rates on specially selected gases such as nitrogen.

PFS Systems

Tanker Control System

Components and systems, where safety levels are increased through the use of non-electrical air actuation and brake interlocking, are specially designed for use in the Freight Tanker sector by Parker PFS. It is much more economic to use pure pneumatic control solutions instead of explosion protected ones.

The most relevant cases to which this applies are:

- **Bottom loading control systems (BVLR)**
- **Bulk or hose reel delivery selection**
- **Engine & pump PTO speed control**
- **By-pass valve control**
- **Dip tube interlocks**
- **Guard bar interlocks**
- **Overfill protection systems**
- **Guard rail actuation**
- **Remote hatch loading actuation systems**

Power Generation Unit

In remote locations where there is a requirement for autonomous electrical power, the utilisation of fuel cell technology provides a low cost and environmentally friendly solution.

The power generation units utilise alternative fuels that are readily available and the only by-products are electricity and medically pure water. By utilising the extensive product range available in the Parker organization, a solution has been developed to manage all the gas controls within the power generation unit.

Complete Pneumatic Sub-System

This unit is designed to provide the pneumatic functionality required to control the movement of the reticle in a lithographic machine used in the process of manufacturing wafers in a semiconductor fabrication plant.

For further information see: www.parker.com

Fluid Controls

2/2 - Way Shut off Valve for Air

- 1/4” - 2” pipe mount
- Pressure range up to 40 bar
- Normally open and normally closed
- Direct or servo-acting
- Long life expectancy, highest reliability
- Manual override optional
- Excellent response time
- Can be mounted with Lucifer® coil families

p564

Proportional Pressure Regulator

- 1/4” - 2” pipe mount
- Lucifer® Programmable EPP4 all parameters fully adjustable through the PC software calys
- Low power consumption (2.2W), energy savings
- High responsiveness and low hysteresis (0.5%)
- Flexible remote display
- Compact design and light
- Easy to use software

p689

3/2 - Way Valves for Air

- 1/8” - 1/4” pipe mount and flange version
- Pressure range up to 30 bar
- Normally open and normally closed, universal
- Long life expectancy - highest reliability
- Excellent response time repeatability
- Can be mounted with Lucifer® coil families

p573

3/2 - 5/2 NAMUR Valves

- 1/4” - 1/2” NAMUR interface
- Patented NAMUR conversion plate
- Highflow Qn: 3000 L/min
- Solenoid or pneumatic version
- High resistance aluminium
- ATEX zone 22 certified products
- Fast switching application

p574

EExPress Bus Manifold for ATEX

- EExPress™ is a stackable system that includes Gateway, Input sensor modules and 5/2 way Solenoid valve modules
- EExPress™ uses the well known Profibus DP protocol
- IP65 - no cabinet needed
- Zone 1, 2, 21 and 22 protection
- It has been designed to approach a “plug and play” usage

p595

Standard, ATEX and IECEx Coils

- Modular concept for dedicated valves
- D / B Terminal Standard
- Various AC / DC voltages
- Various IP65-IP67, 100% ED
- Meet latest international & national codes
- ATEX zone 0, 1, 2, 20, 21, 22 protected ia, ib, dm, d, e, m, me, n

p587

Fluid Controls

Solenoid Valves for Fluid Control Applications

p564

Fluid control products have been designed to offer customers the ultimate in performance. Every valve is engineered for optimal operation, is constructed with modern machinery that use stringent processes, and provides standard features not necessarily offered in any competitive line. The Fluid Control Series portfolio offers a broad range of 2/2, 3/2 and 5/2 solenoid valves. Sizes range from 1/8" to 3", with Kv as high as 1385 L/min. Pressure capabilities range up to 200 bar; the whole range is available with various seal materials, such as NBR, FKM, EPDM, PTFE, PCTFE, PUR and Ruby. Brass, Aluminium, Stainless steel and Plastic Valves are available to control a wide variety of air, neutral gases and liquids, water, oils, process fluids and steam.

For further information see: www.parker.com/fcde

CONNECTIC Solutions for Compressed Air

Legris LF3000 Push-in Fittings

- Brass / polymer fittings for standard applications.
- Instant connection/disconnection.
- Full flow, automatic sealing.
- Vacuum capability.
- Compact & aesthetic, lightweight.
- Very extensive range.
- -20°C to 80°C, maximum 20 bar (depending on fitting type and OD).

p743

Legris Tubing

- Standard tubing made of PA, PU, FEP 140, and PE.
- PA and PU hoses in 7 colours.
- Multi, twin and spiral; anti-spark, anti-static.
- 25 or 100 m rolls in Tubepack® box.
- Large pack on drum.
- Hoses made of braided PVC.
- Self-fastening hoses.

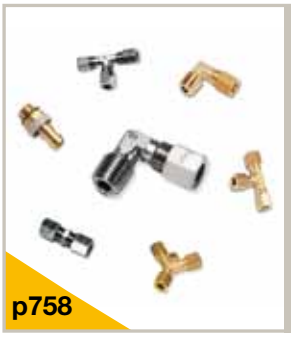
p768

Legris LF3600 Push-in Fittings

- Nickel-plated brass instant fittings for demanding applications.
- For air and fluid transportation.
- FDA, 1935/2004/CE.
- -20°C to 150°C at 30 bars.
- Wide range.
- Compact & robust design.

p759

Legris Universal Compression Fittings



- Brass or stainless steel (316L).
- Withstand high temperatures and pressures (max. 80 bars, 250°C).
- Resistant to aggressive and corrosive environments.
- A large range for many applications.
- Many accessories.

p758

Legris LF3900/3800 Push-in Fittings

- Stainless steel 316L fittings for severe conditions.
- Hygienic design.
- Extreme chemical and mechanical resistance.
- Fittings suitable for permanent food contact (FKM seals in accordance with FDA and 1935/2004/CE directives).
- Wide range: 21 shapes, diameters 4 to 12 mm.

p765

Legris Ball Valves / Axial Valves

- Nickel-plated brass.
- Optimum sealing & excellent resistance.
- -20°C to 80°C, 20 to 40 bar (depending on the model).

p782

Legris Function Fittings

- Flow control regulators, blocking fittings, mini-ball valves, non-return valves, silencers...
- Used on pneumatic devices in many industrial applications: factory automation, packaging, multi-purpose robots, material handling, textile, printing, auto process, machine tools.
- 0°C to 70°C, from 1 to 10 bars (depending on fitting type).

p751

Safety Couplers / Blowguns / Accessories

Couplers:
- Comply with ISO 4414 and EN983 safety standards 0 - 16 bar, -20°C to 60°C.

Blowguns:
- Two connection points. Comply with OSHA and EU regulation for safe use. Up to 10 bar, -15°C to +60°C.

Accessories:
- Full nickel-plated range.

p780

Quick connect couplings

Industrial Interchange couplings

- Single handed operation
- Nominal diameter 5 to 11 mm
- Conforms to various profiles (European standard, MIL, etc.)
- Working pressure up to 35 bar
- Low pressure drop
- Temp. range -40°C up to 200°C
- Choice of material: steel/brass/ stainless steel/thermoplastics
- Variety of different threads available on request

p790

Safety couplings

- Operated with two hands
- Conforms to ISO 4414
- Increased safety in the work place
- Working pressure up to 12 bar
- Low pressure drop
- Temp. range -40°C up to 80°C
- The design allows disconnection without rebound

p802

For further information see: www.rectus.de

Linear Actuators

P1D Pneumatic Cylinders

According to ISO 15552

*The innovative P1D, a **future-proof** generation of **ISO** cylinders.*

P1D ISO Cylinder family

The P1D series is a future-proof generation of ISO cylinders. P1D complies with the current ISO 15552 previous standard ISO 6431, VDMA 24562 installation dimension standards.
The cylinders are double-acting, magnetic as standard for use with sensors and feature a new design of air cushioning. Available in Ø32mm – Ø125mm bore size the full P1D range includes:-

P1D-S series. This series is the ultimate in ISO pneumatic cylinders and is suitable for virtually any application. Options include the tie rod design, smooth profile, ultra clean cylinders for use in the food industry and all the variants including through rod and piston rod locking versions.

P1D-B series. This series features a profile design and is the basic ISO cylinder for simple applications where no special options are required. This series is suitable for general industrial applications

All mounting and sensor options are common to all P1D cylinders.

Design Variants

P1D-S Standard Cylinders

The P1D-S series is the premier in ISO pneumatic cylinders. With various piston rod materials, seal options and supported by a full range of ISO mountings the P1D-S series is suitable for a wide range of applications.

P1D-B Basic Cylinders

The P1D-B series features a profile design and is the value line ISO cylinder for basic applications where no special options are required. This series is suitable for general industrial applications and is supported by a full range of ISO mountings.

P1D-C Ultra Clean Cylinders

This series offers an ultra clean external design of cylinders that are suitable for applications that require a clean profile. With particular design features for the food and packaging industries this product can also be used for applications on vehicles, in sawmills and bag-filling industries where a clean design is important.

P1D-C Pro Clean Cylinders

This series of clean design cylinders offers two T slots within one face of the tube allowing the possibility to add sensors. The position of the T slots can be specified on any single face using the order code key. These cylinders have a clean design but are intended for applications where sensors are required.

P1D-T Large Bore Cylinders

The P1D-T range of tie rod cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.

P1D-X High and Low Temperature Cylinders

For extreme conditions these cylinders for high and low temperatures have materials and sealing systems specially designed for their particular temperature ranges. End covers and pistons are made entirely from metal, to give optimum function at **high** or **low** temperature in combination with seals made from specially tested materials and special grease.

P1D-L Rod Locking Cylinders

P1D-L is a series of extremely compact rod lock cylinders for demanding applications. This version allows the piston rod to be locked in any position but can also be used as a brake (limits apply) thanks to the rigid design. With helical grooves on the precision clamping sleeves the locking function allows for applications where the piston rod is exposed to liquids and contamination.

Design Variants

P1D-T Tie Rod Cylinders

The P1D is available in a tie-rod version, based on the same high level technology. This future-proof cylinder is the perfect choice wherever a tie-rod cylinder is needed. The P1D Tie-Rod uses “drop-in” P1D sensors. An ingenious multi-jointed adapter fixes the sensors in any chosen position along the stroke.

Through Piston Rod Cylinders

All P1D cylinders in all bores, Ø32-125 mm, are available with a through rod. Cylinders with a through rod can take higher side forces thanks to the double support for the piston rod. In addition, this design makes it easier to install external position sensors.

P1D-T 3 and 4 Position Cylinders

By installing two cylinders with the same or different stroke, it is possible to build a working unit with three or four positions.
This type of unit is available as factory-fitted P1D tie-rod cylinders (P1D-T) in all bores, Ø32-125 mm. Other P1D cylinders can be flange mounted back-to-back with a standard mounting

P1D-T Tandem Cylinders

The P1D is also available as a tandem cylinder, i.e. two cylinders connected in series. This cylinder unit has almost twice the force, which is a great advantage in restricted spaces. Tandem cylinders are available as tie-rod cylinders, P1D-T, in all bores Ø32-125 mm.

P1D-V with valve built on

P1D Standard can be ordered with a factory-fitted valve and piping. The valve is the robust and compact Viking series, with product code P2L-A (for cylinder bores 32-63), P2L-B
(for cylinder bores 80-100) and P2L-D (for cylinder bore 125).

Alternative Piston Rod Materials

All P1D cylinders in all bores, Ø32-125 mm, can be ordered with the following piston rod materials:

- Steel, hard chromed
- Stainless steel, roller polished (standard)
- Acid-proof steel, roller polished
- Stainless steel, hard chromed

Operation with Dry Piston Rod

In many applications, primarily in the food industry, the cylinders are cleaned frequently. This means that the film of grease on the piston rod is washed off, which puts special demands on the materials and the design of the piston rod seal system (scraper ring and piston rod seal). A piston rod seal system specially designed for dry rod operation is available as an option for this type of application, for all bores of P1D cylinders. The system has a specially designed L-shaped seal and the material is self-lubricating, high molecular weight plastics (HDPE).

P1D-S Standard Cylinders

The P1D-S series is the premier in ISO pneumatic cylinders. With various piston rod materials, seal options and supported by a full range of ISO mountings the P1D-S series is suitable for a wide range of applications.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

Operating information

Working pressure:	Max 10 bar
Seals / Temperature options Standard:	-20°C to +80°C
Cylinders for low pressure hydraulic operation:	Ø32-125mm
ATEX approval:	CE Ex IIGD c T4 120°C

For more information see www.parker.com/euro_pneumatic

P1D Standard - Double acting

Ø32mm - (G1/8)

Stroke mm	Order code
25	P1D-S032MS-0025
40	P1D-S032MS-0040
50	P1D-S032MS-0050
80	P1D-S032MS-0080
100	P1D-S032MS-0100
125	P1D-S032MS-0125
160	P1D-S032MS-0160
200	P1D-S032MS-0200
250	P1D-S032MS-0250
320	P1D-S032MS-0320
400	P1D-S032MS-0400
500	P1D-S032MS-0500

Ø40mm - (G1/4)

Stroke mm	Order code
25	P1D-S040MS-0025
40	P1D-S040MS-0040
50	P1D-S040MS-0050
80	P1D-S040MS-0080
100	P1D-S040MS-0100
125	P1D-S040MS-0125
160	P1D-S040MS-0160
200	P1D-S040MS-0200
250	P1D-S040MS-0250
320	P1D-S040MS-0320
400	P1D-S040MS-0400
500	P1D-S040MS-0500

Ø50mm - (G1/4)

Stroke mm	Order code
25	P1D-S050MS-0025
40	P1D-S050MS-0040
50	P1D-S050MS-0050
80	P1D-S050MS-0080
100	P1D-S050MS-0100
125	P1D-S050MS-0125
160	P1D-S050MS-0160
200	P1D-S050MS-0200
250	P1D-S050MS-0250
320	P1D-S050MS-0320
400	P1D-S050MS-0400
500	P1D-S050MS-0500

Ø63mm - (G3/8)

Stroke mm	Order code
25	P1D-S063MS-0025
40	P1D-S063MS-0040
50	P1D-S063MS-0050
80	P1D-S063MS-0080
100	P1D-S063MS-0100
125	P1D-S063MS-0125
160	P1D-S063MS-0160
200	P1D-S063MS-0200
250	P1D-S063MS-0250
320	P1D-S063MS-0320
400	P1D-S063MS-0400
500	P1D-S063MS-0500

Ø80mm - (G3/8)

Stroke mm	Order code
25	P1D-S080MS-0025
40	P1D-S080MS-0040
50	P1D-S080MS-0050
80	P1D-S080MS-0080
100	P1D-S080MS-0100
125	P1D-S080MS-0125
160	P1D-S080MS-0160
200	P1D-S080MS-0200
250	P1D-S080MS-0250
320	P1D-S080MS-0320
400	P1D-S080MS-0400
500	P1D-S080MS-0500

Ø100mm - (G1/2)

Stroke mm	Order code
25	P1D-S100MS-0025
40	P1D-S100MS-0040
50	P1D-S100MS-0050
80	P1D-S100MS-0080
100	P1D-S100MS-0100
125	P1D-S100MS-0125
160	P1D-S100MS-0160
200	P1D-S100MS-0200
250	P1D-S100MS-0250
320	P1D-S100MS-0320
400	P1D-S100MS-0400
500	P1D-S100MS-0500

Ø125mm - (G1/2)

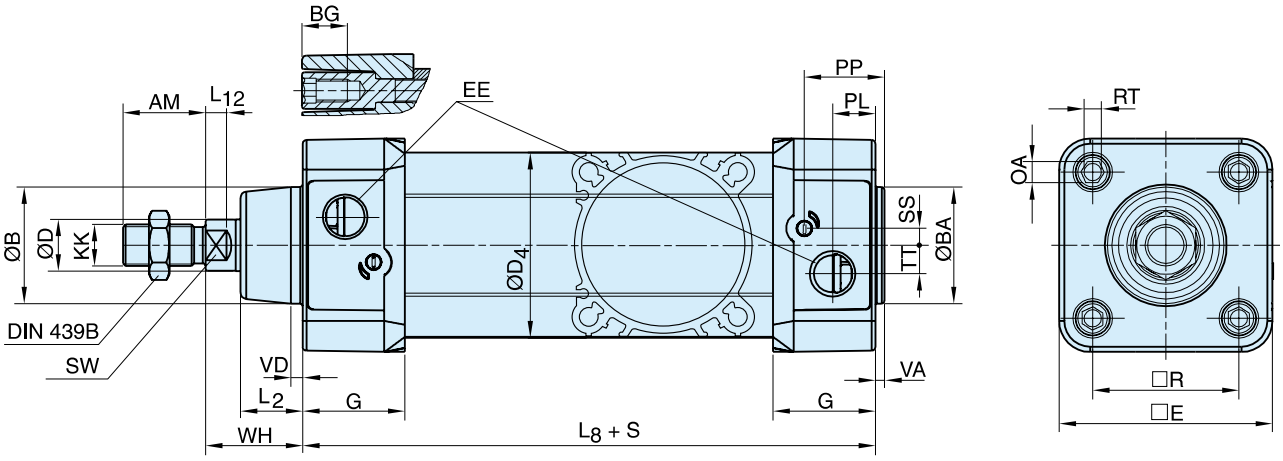
Stroke mm	Order code
25	P1D-S125MS-0025
40	P1D-S125MS-0040
50	P1D-S125MS-0050
80	P1D-S125MS-0080
100	P1D-S125MS-0100
125	P1D-S125MS-0125
160	P1D-S125MS-0160
200	P1D-S125MS-0200
250	P1D-S125MS-0250
320	P1D-S125MS-0320
400	P1D-S125MS-0400
500	P1D-S125MS-0500

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

P1D-S Series dimensions



Dimensions

Cylinder bore mm	AM mm	B mm	BA mm	BG mm	D mm	D4 mm	E mm	EE mm	G mm	KK	L2 mm	L8 mm	L12 mm
32	22	30	30	16	12	45,0	50,0	G1/8	28,5	M10x1,25	16,0	94	6,0
40	24	35	35	16	16	52,0	57,4	G1/4	33,0	M12x1,25	19,0	105	6,5
50	32	40	40	16	20	60,7	69,4	G1/4	33,5	M16x1,5	24,0	106	8,0
63	32	45	45	16	20	71,5	82,4	G3/8	39,5	M16x1,5	24,0	121	8,0
80	40	45	45	17	25	86,7	99,4	G3/8	39,5	M20x1,5	30,0	128	10,0
100	40	55	55	17	25	106,7	116,0	G1/2	44,5	M20x1,5	32,4	138	14,0
125	54	60	60	20	32	134,0	139,0	G1/2	51,0	M27x2	45,0	160	18,0

Cylinder bore mm	OA mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm
32	6,0	13,0	21,8	32,5	M6	4,0	10	4,5	3,5	4,5	26
40	6,0	14,0	21,9	38,0	M6	8,0	13	5,5	3,5	4,5	30
50	8,0	14,0	23,0	46,5	M8	4,0	17	7,5	3,5	5,0	37
63	8,0	16,4	27,4	56,5	M8	6,5	17	11,0	3,5	5,0	37
80	6,0	16,0	30,5	72,0	M10	0	22	15,0	3,5	4,0	46
100	6,0	18,0	35,8	89,0	M10	0	22	20,0	3,5	4,0	51
125	8,0	28,0	40,5	110,0	M12	0	27	17,5	5,5	6,0	65

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

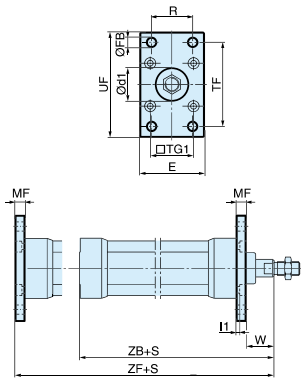
Cylinder mountings

Flange MF1/MF2

Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

Materials
Flange: Surface-treated steel
Mounting screws acc. to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MF1/MF2, VDMA 24 562, AFNOR

Cyl. bore mm	d1 H11 mm	FB H13 mm	TG1 mm	E mm	R JS14 mm	MF JS14 mm	TF JS14 mm	UF mm	l1 -0,5 mm	W* mm	ZF* mm	ZB* mm	Weight Kg	Order code
32	30	7	32,5	45	32	10	64	80	5,0	16	130	123,5	0,23	**P1C-4KMB**
40	35	9	38,0	52	36	10	72	90	5,0	20	145	138,5	0,28	**P1C-4LMB**
50	40	9	46,5	65	45	12	90	110	6,5	25	155	146,5	0,53	**P1C-4MMB**
63	45	9	56,5	75	50	12	100	120	6,5	25	170	161,5	0,71	**P1C-4NMB**
80	45	12	72,0	95	63	16	126	150	8,0	30	190	177,5	1,59	**P1C-4PMB**
100	55	14	89,0	115	75	16	150	170	8,0	35	205	192,5	2,19	**P1C-4QMB**
125	60	16	110,0	140	90	20	180	205	10,5	45	245	230,5	3,78	**P1C-4RMB**

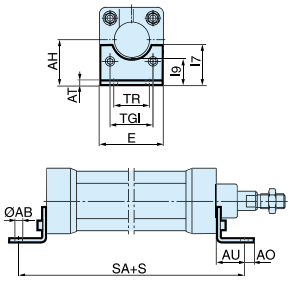
S = Stroke length

Foot brackets MS1

Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Material:
Foot bracket: Surface treated steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.



According to ISO MS1, VDMA 24 562, AFNOR

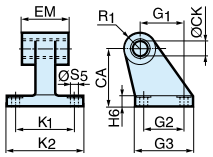
Cyl. bore mm	AB H14 mm	TG1 mm	E mm	TR JS14 mm	AO mm	AU mm	AH JS15 mm	l7 mm	AT mm	l9 JS14 mm	SA* mm	Weight Kg	Order code
32	7	32,5	45	32	10	24	32	30	4,5	17,0	142	0,06	**P1C-4KMF**
40	9	38,0	52	36	8	28	36	30	4,5	18,5	161	0,08	**P1C-4LMF**
50	9	46,5	65	45	13	32	45	36	5,5	25,0	170	0,16	**P1C-4MMF**
63	9	56,5	75	50	13	32	50	35	5,5	27,5	185	0,25	**P1C-4NMF**
80	12	72,0	95	63	14	41	63	49	6,5	40,5	210	0,50	**P1C-4PMF**
100	14	89,0	115	75	15	41	71	54	6,5	43,5	220	0,85	**P1C-4QMF**
125	16	110,0	140	90	22	45	90	71	8,0	60,0	250	1,48	**P1C-4RMF**

S = Stroke length

Pivot bracket with rigid bearing AB7

Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials
Pivot bracket: Surface-treated aluminium, black
Bearing: Sintered oil-bronze bushing



According to CETOP RP 107 P, VDMA 24 562, AFNOR

Cyl. bore mm	CK H9 mm	S5 H13 mm	K1 JS14 mm	K2 mm	G1 JS14 mm	G2 JS14 mm	EM mm	G3 mm	CA JS15 mm	H6 mm	R1 mm	Weight Kg	Order code
32	10	6,6	38	51	21	18	25,5	31	32	8	10,0	0,06	**P1C-4KMD**
40	12	6,6	41	54	24	22	27,0	35	36	10	11,0	0,08	**P1C-4LMD**
50	12	9,0	50	65	33	30	31,0	45	45	12	13,0	0,15	**P1C-4MMD**
63	16	9,0	52	67	37	35	39,0	50	50	12	15,0	0,20	**P1C-4NMD**
80	16	11,0	66	86	47	40	49,0	60	63	14	15,0	0,33	**P1C-4PMD**
100	20	11,0	76	96	55	50	59,0	70	71	15	19,0	0,49	**P1C-4QMD**
125	25	14,0	94	124	70	60	69,0	90	90	20	22,5	1,02	**P1C-4RMD**

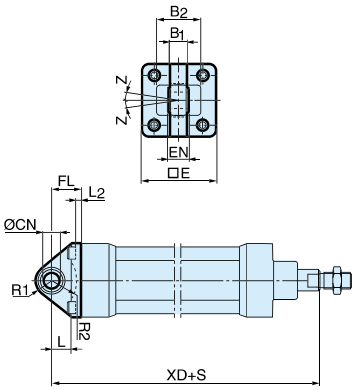
Cylinder mountings

Swivel eye bracket MP6

Intended for use together with clevis bracket GA

Material
Bracket: Surface-treated aluminium, black
Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.



According to VDMA 24 562, AFNOR

Cyl. bore mm	E mm	B1 mm	B2 mm	EN mm	R1 mm	R2 mm	FL mm	l2 mm	L mm	CN H7 mm	XD* mm	Z	Weight Kg	Order code
32	45	10,5	-	14	16	-	22	5,5	12	10	142	4°	0,08	**P1C-4KMSA**
40	52	12,0	-	16	18	-	25	5,5	15	12	160	4°	0,11	**P1C-4LMSA**
50	65	15,0	51	21	21	19	27	6,5	15	16	170	4°	0,20	**P1C-4MMSA**
63	75	15,0	-	21	23	-	32	6,5	20	16	190	4°	0,27	**P1C-4NMSA**
80	95	18,0	-	25	29	-	36	10,0	20	20	210	4°	0,52	**P1C-4PMSA**
100	115	18,0	-	25	31	-	41	10,0	25	20	230	4°	0,72	**P1C-4QMSA**
125	140	25,0	-	37	40	-	50	10,0	30	30	275	4°	1,53	**P1C-4RMSA**

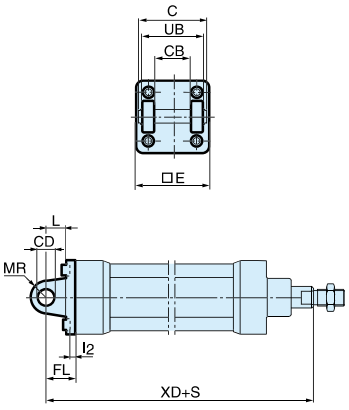
S = Stroke length * Does not apply to cylinders with lock unit.

Clevis bracket MP2

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Materials
Clevis bracket: Surface-treated aluminium, black
Pin: Surface hardened steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MP2, VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	UB h14 mm	CB H14 mm	FL ±0,2 mm	L mm	l2 mm	CD H9 mm	MR mm	XD* mm	Weight Kg	Order code
32	53	45	45	26	22	13	5,5	10	10	142	0,08	**P1C-4KMT**
40	60	52	52	28	25	16	5,5	12	12	160	0,11	**P1C-4LMT**
50	68	65	60	32	27	16	6,5	12	12	170	0,14	**P1C-4MMT**
63	78	75	70	40	32	21	6,5	16	16	190	0,29	**P1C-4NMT**
80	98	95	90	50	36	22	10,0	16	16	210	0,36	**P1C-4PMT**
100	118	115	110	60	41	27	10,0	20	20	230	0,64	**P1C-4QMT**
125	139	140	130	70	50	30	10,0	25	25	275	1,17	**P1C-4RMT**

S = Stroke length * Does not apply to cylinders with lock unit

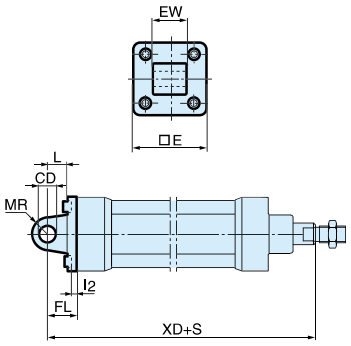
Cylinder mountings

Clevis bracket MP4

Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Materials
Clevis bracket: Surface-treated aluminium, black
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MP4, VDMA 24 562, AFNOR

Cyl. bore mm	E mm	EW mm	FL mm	L ±0,2 mm	l2 mm	CD mm	MR H9 mm	XD* mm	Weight Kg	Order code
32	45	26	22	13	5,5	10	10	142	0,09	**P1C-4KME**
40	52	28	25	16	5,5	12	12	160	0,13	**P1C-4LME**
50	65	32	27	16	6,5	12	12	170	0,17	**P1C-4MME**
63	75	40	32	21	6,5	16	16	190	0,36	**P1C-4NME**
80	95	50	36	22	10,0	16	16	210	0,46	**P1C-4PME**
100	115	60	41	27	10,0	20	20	230	0,83	**P1C-4QME**
125	140	70	50	30	10,0	25	25	275	1,53	**P1C-4RME**

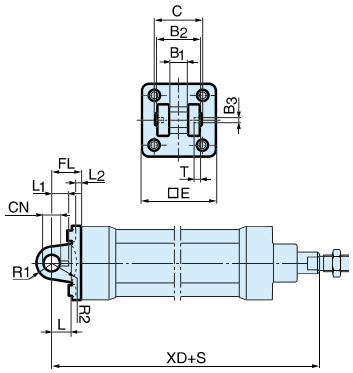
S = Stroke length * Does not apply to cylinders with lock unit.

Clevis bracket AB6

Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

Materials
Clevis bracket: Surface-treated aluminium
Pin: Surface hardened steel
Locking pin: Spring steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	B2 d12 mm	B1 H14 mm	T mm	B3 mm	R2 mm	L1 mm	FL ±0,2 mm	l2 mm	L mm	CN F7 mm	R1 mm	XD* mm	Weight Kg	Order code
32	41	45	34	14	3	3,3	17	11,5	22	5,5	12	10	11	142	0,09	**P1C-4KMCA**
40	48	52	40	16	4	4,3	20	12,0	25	5,5	15	12	13	160	0,13	**P1C-4LMCA**
50	54	65	45	21	4	4,3	22	14,0	27	6,5	17	16	18	170	0,17	**P1C-4MMCA**
63	60	75	51	21	4	4,3	25	14,0	32	6,5	20	16	18	190	0,36	**P1C-4NMCA**
80	75	95	65	25	4	4,3	30	16,0	36	10,0	20	20	22	210	0,58	**P1C-4PMCA**
100	85	115	75	25	4	4,3	32	16,0	41	10,0	25	20	22	230	0,89	**P1C-4QMCA**
125	110	140	97	37	6	6,3	42	24,0	50	10,0	30	30	30	275	1,75	**P1C-4RMCA**

S = Stroke length * Does not apply to cylinders with lock unit.

Stainless steel Pin Set AB6

Cyl. bore mm	Weight Kg	Order code
32	0,05	**9301054311**
40	0,06	**9301054312**
50	0,07	**9301054313**
63	0,07	**9301054314**
80	0,17	**9301054315**
100	0,31	**9301054316**
125	0,54	**9301054317**

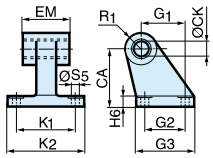
Materials
Pin: Stainless steel
Locking pin: Stainless steel
Circlips according to DIN 471: Stainless steel

Cylinder mountings

Pivot bracket with swivel bearing AB5

Intended for use together with clevis bracket GA.

Material
Pivot bracket: Surface-treated steel, black
Swivel bearing acc. to DIN 648K: Hardened steel



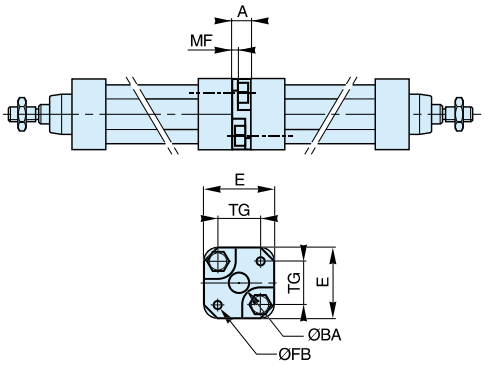
According to VDMA 24 562, AFNOR

Cyl. bore mm	CN H7 mm	S5 H13 mm	K1 JS14 mm	K2 mm	EU mm	G1 JS14 mm	G2 JS14 mm	EN mm	G3 mm	CH JS15 mm	H6 mm	ER mm	Z	Weight Kg	Order code
32	10	6,6	38	51	10,5	21	18	14	31	32	10	16	4°	0,18	**P1C-4KMA**
40	12	6,6	41	54	12,0	24	22	16	35	36	10	18	4°	0,25	**P1C-4LMA**
50	16	9,0	50	65	15,0	33	30	21	45	45	12	21	4°	0,47	**P1C-4MMA**
63	16	9,0	52	67	15,0	37	35	21	50	50	12	23	4°	0,57	**P1C-4NMA**
80	20	11,0	66	86	18,0	47	40	25	60	63	14	28	4°	1,05	**P1C-4PMA**
100	20	11,0	76	96	18,0	55	50	25	70	71	15	30	4°	1,42	**P1C-4QMA**
125	30	14,0	94	124	25,0	70	60	37	90	90	20	40	4°	3,10	**P1C-4RMA**

3 and 4 positions flange

Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:
Mounting: Aluminium
Mounting screws: Zinc-plated steel 8.8



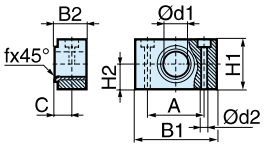
Cyl. bore mm	E mm	TG mm	ØFB mm	MF mm	A mm	ØBA mm	Weight Kg	Order code
32	50	32,5	6,5	5	16	30	0,060	**P1E-6KB0**
40	60	38,0	6,5	5	16	35	0,078	**P1E-6LB0**
50	66	46,5	8,5	6	20	40	0,162	**P1E-6MB0**
63	80	56,5	8,5	6	20	45	0,194	**P1E-6NB0**
80	100	72,0	10,5	8	25	45	0,450	**P1E-6PB0**
100	118	89,0	10,5	8	25	55	0,672	**P1E-6QB0**

Pivot brackets AT4 for MT4

Intended for use together with central trunnion MT4.

Material
Pivot bracket: Surface-treated aluminium
Bearing acc. to DIN 1850 C: Sintered oil-bronze bushing

Supplied in pairs.



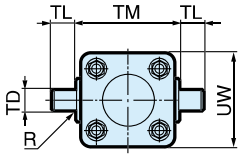
According to ISO, VDMA 24 562, AFNOR

Cyl. bore mm	B1 mm	B2 mm	A mm	C mm	d1 mm	d2 H13 mm	H1 mm	H2 mm	fx45° min mm	Weight Kg	Order code
32	46	18,0	32	10,5	12	6,6	30	15	1,0	0,04*	**9301054261**
40	55	21,0	36	12,0	16	9,0	36	18	1,6	0,07*	**9301054262**
50	55	21,0	36	12,0	16	9,0	36	18	1,6	0,07*	**9301054262**
63	65	23,0	42	13,0	20	11,0	40	20	1,6	0,12*	**9301054264**
80	65	23,0	42	13,0	20	11,0	40	20	1,6	0,12*	**9301054264**
100	75	28,5	50	16,0	25	14,0	50	25	2,0	0,21*	**9301054266**
125	75	28,5	50	16,0	25	14,0	50	25	2,0	0,21*	**9301054266**

Cylinder mountings

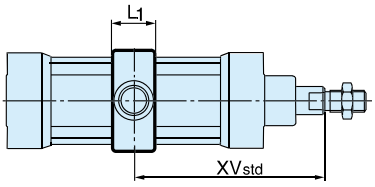
Centre trunnion MT4 for P1D-S

Intended for articulated mounting of cylinder. This mounting is available for P1D-S and P1D-T.
The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure – Combined with pivot bracket for MT4.
Material:
Trunnion: zinc plated steel



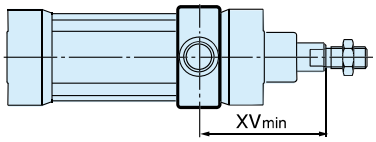
Centre trunnion MT4 for P1D-T

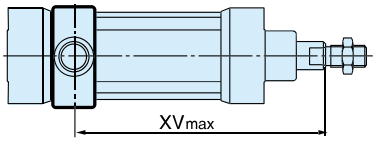
Trunnion centred
The central trunnion for the P1D-S and P1D-T is ordered with letter D in position 17 (no dimension specified in positions 18-20).



Trunnion with optional location
The central trunnion for the P1D-S and P1D-T is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20.

Trunnion loose
P1D-S can also be ordered with the centre trunnion loosely fitted to the cylinder (not fixed in position). This allows the position to be established at the time of installation.
Ordered with letter G in position 17 and 000 in positions 18-20.





According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore mm	TM h14 mm	TL h14 mm	TD e9 mm	R mm	UW P1D-S mm	UW P1D-T mm	L1 P1D-S mm	L1 P1D-T mm	X1* mm	XV^*_{min} P1D-S mm	$XV^*_{min.}$ P1D-T mm	X2* P1D-S mm	X2* P1D-T mm
32	50	12	12	1,0	52	46	18	15	73,0	89	62	57	84
40	63	16	16	1,6	59	59	20	20	82,5	95	73	70	92
50	75	16	16	1,6	71	69	20	20	90,0	113	81	67	99
63	90	20	20	1,6	84	84	26	25	97,5	118	90	78	106
80	110	20	20	1,6	105	102	26	25	110,0	132	98	88	122
100	132	25	25	2,0	129	125	32	30	120,0	140	111	100	129
125	160	25	25	2,0	159	155	33	32	145,0	168	132	122	158

XVstd = X1 + Stroke length/2, XVmax = X2 + Stroke length

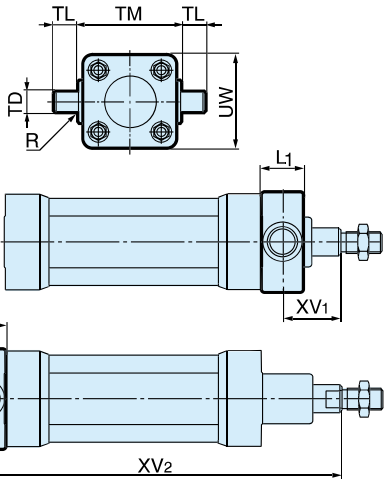
* Does not apply to cylinders with lock unit.

Flange mounted trunnion MT5/MT6

Intended for articulated mounting of cylinder. This trunnion can be flange mounted on the front or rear end cover of all P1D cylinders. At your choice, you can order a complete cylinder with factory-fitted flange mounted trunnion Individual trunnions have order code as shown below.

Material:
Trunnion: zinc plated steel
Screws: zinc plated steel, 8.8

Delivered complete with mounting screws for attachment to the cylinder



According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore mm	TM h14 mm	TL h14 mm	TD e9 mm	R mm	UW mm	L1 mm	XV_1* mm	X* mm	Y mm	Weight Kg	Order code
32	50	12	12	1,0	46	14	19,5	126,5	11	0,17	**P1D-4KMYF**
40	63	16	16	1,6	59	19	21,0	144,0	14	0,43	**P1D-4LMYF**
50	75	16	16	1,6	69	19	28,0	152,0	20	0,55	**P1D-4MMYF**
63	90	20	20	1,6	84	24	25,5	169,5	20	1,10	**P1D-4NMYF**
80	110	20	20	1,6	102	24	34,5	185,5	26	1,66	**P1D-4PMYF**
100	132	25	25	2,0	125	29	37,0	203,0	31	3,00	**P1D-4QMYF**

XV_2 = X +Stroke length * Does not apply to cylinders with lock unit.

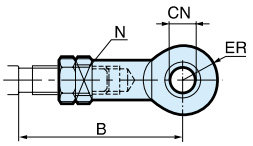
To fit a flange mounted trunnion at the front end cover of a P1D cylinder with lock unit, the piston rod must be extended. This is to provide the same WH dimensions as for the P1D base cylinder with dimension Y.

Piston rod mountings

Swivel rod eye AP6

Intended for articulated mounting of the cylinder.

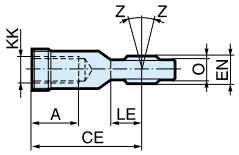
Material:
Swivel rod eye, nut: galvanized steel.
Swivel bearing according to DIN 648K: Hardened steel.



Stainless steel swivel rod eye AP6

Stainless-steel swivel rod eye for articulated mounting of eye cylinder.

Materials
Swivel rod eye: Stainless steel
Swivel bearing according to DIN 648K: Stainless steel
Use stainless steel nut with stainless steel swivel rod eye.



ISO 8139

Cyl.-dia. mm	A mm	B min mm	B max mm	CE mm	CN H9 mm	EN h12 mm	ER mm	KK	LE	N* min mm	O mm	Z mm	Weight kg	Order code Galvanised Steel	Order code Stainless Steel
32	20	48,0	55	43	10	14	14	M10x1,25	15	17	10,5	12°	0,08	**P1C-4KRS**	**P1S-4JRT**
40	22	56,0	62	50	12	16	16	M12x1,25	17	19	12,0	12°	0,12	**P1C-4LRS**	**P1S-4LRT**
50	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°	0,25	**P1C-4MRS**	**P1S-4MRT**
63	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°	0,25	**P1C-4MRS**	**P1S-4MRT**
80	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°	0,46	**P1C-4PRS**	**P1S-4PRT**
100	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°	0,46	**P1C-4PRS**	**P1S-4PRT**
125	51	123,5	137	110	30	37	35	M27x2	36	41	25,0	15°	1,28	**P1C-4RRS**	**P1S-4RRT**

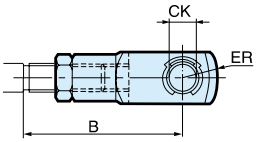
*key grip

Clevis AP2

Intended for articulated mounting of the cylinder.

Material:
Clevis and clip galvanized steel.
Pin: Hardened steel

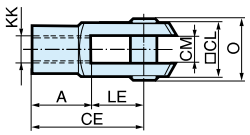
Supplied complete with axle.



Stainless steel Clevis AP2

Stainless-steel clevis for articulated mounting of cylinder.

Material
Clevis: Stainless steel
Pin: Stainless steel
Circlips according to DIN 471: Stainless steel
Use stainless steel nut with stainless steel swivel rod eye.



ISO 8140

Cyl.-dia. mm	A mm	B min mm	B max mm	CE mm	CK h11/E9 mm	CL mm	CM mm	ER mm	KK	LE mm	O mm	Weight kg	Order code Galvanised Steel	Order code Stainless Steel
32	20	45,0	52	40	10	20	10	16	M10x1,25	20	28,0	0,09	**P1C-4KRC**	**P1S-4JRD**
40	24	54,0	60	48	12	24	12	19	M12x1,25	24	32,0	0,15	**P1C-4LRC**	**P1S-4LRD**
50	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5	0,35	**P1C-4MRC**	**P1S-4MRD**
63	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5	0,35	**P1C-4MRC**	**P1S-4MRD**
80	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0	0,75	**P1C-4PRC**	**P1S-4PRD**
100	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0	0,75	**P1C-4PRC**	**P1S-4PRD**
125	56	123,5	137	110	30	55	30	45	M27x2,0	54,0	72,0	2,10	**P1C-4RRC**	**P1S-4RRD**

Piston rod mountings

Flexo coupling PM5

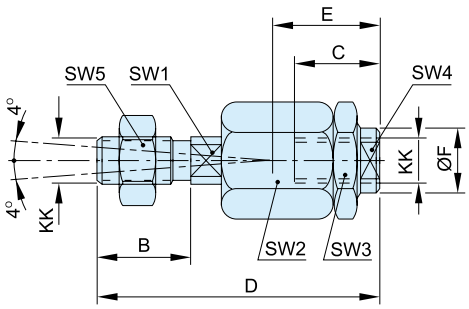
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

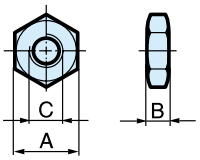
Material
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

Cyl. bore Ø mm	Weight kg	Order code
32	0,23	**P1C-4KRF**
40	0,23	**P1C-4LRF**
50	0,65	**P1C-4MRF**
63	0,65	**P1C-4MRF**
80	0,71	**P1C-4PRF**
100	0,71	**P1C-4PRF**
125	1,60	**P1C-4RRF**

Cyl. bore mm	KK mm	B mm	C mm	D mm	E mm	ØF mm	SW1 mm	SW2 mm	SW3 mm	SW4 mm	SW5 mm
32	M10x1.25	20	23	73	31	21	12	30	30	19	17
40	M12x1.25	24	23	77	31	21	12	30	30	19	19
50	M16x1.5	32	32	108	45	33.5	19	41	41	30	24
63	M16x1.5	32	32	108	45	33.5	19	41	41	30	24
80	M20x1.5	40	42	122	56	33.5	19	41	41	30	30
100	M20x1.5	40	42	122	56	33.5	19	41	41	30	30
125	M27x2	54	48	147	51	39	24	55	55	32	41





According to DIN 439 B

Nut MR9

Intended for fixed mounting of accessories to the piston rod.
Material: Zinc-plated steel

All P1D cylinders are delivred with a zinc-plated steel piston
rod nut, except P1D Ultra Clean, which is delivered with a stainless steel piston rod nut instead.

Cyl. bore mm	A mm	B mm	C	Weight Kg	Order code
32	17	5,0	M10x1,25	0,007	**P14-4KRPZ**
40	19	6,0	M12x1,25	0,010	**P14-4LRPZ**
50	24	8,0	M16x1,5	0,021	**P14-4MRPZ**
63	24	8,0	M16x1,5	0,021	**P14-4MRPZ**
80	30	10,0	M20x1,5	0,040	**P14-4PRPZ**
100	30	10,0	M20x1,5	0,040	**P14-4PRPZ**
125	30	10,0	M27x2	0,100	**P14-4RRPZ**

Stainless steel nut

Intended for fixed mounting of accessories to the piston rod.

Material: Stainless steel A2

All P1D cylinders are delivred with a zinc-plated steel piston rod nut, except P1D Ultra Clean, which is delivered with a stainless steel piston rod nut instead.

32	17	5,0	M10x1,25	0,007	**P14-4KRPS**
40	19	6,0	M12x1,25	0,010	**P14-4LRPS**
50	24	8,0	M16x1,5	0,021	**P14-4MRPS**
63	24	8,0	M16x1,5	0,021	**P14-4MRPS**
80	30	10,0	M20x1,5	0,040	**P14-4PRPS**
100	30	10,0	M20x1,5	0,040	**P14-4PRPS**
125	30	10,0	M27x2	0,100	**P14-4RRPS**

Acid-proof nut

Intended for fixed mounting of accessories to the piston rod.

Material: Acid-proof steel A4

Cylinders with acid-proof piston rod are supplied with nut of acid-proof steel

32	17	5,0	M10x1,25	0,007	**P14-4KRPX**
40	19	6,0	M12x1,25	0,010	**P14-4LRPX**
50	24	8,0	M16x1,5	0,021	**P14-4MRPX**
63	24	8,0	M16x1,5	0,021	**P14-4MRPX**
80	30	10,0	M20x1,5	0,040	**P14-4PRPX**
100	30	10,0	M20x1,5	0,040	**P14-4PRPX**
125	30	10,0	M27x2	0,100	**P14-4RRPX**

Supplied as pack of 10 off, Weight per item

Sealing plugs

Set of 4 threaded plugs to be fitted in unused end cover screws.
A rubber gasket is supplied with every plug. The seal off function is equal to IP67. The plugs can be used for all P1D cylinders to avoid collecting dirt and fluids in the end cover screw recesses.

Material:
Plug Polyamid PA
Gasket Nitrile rubber

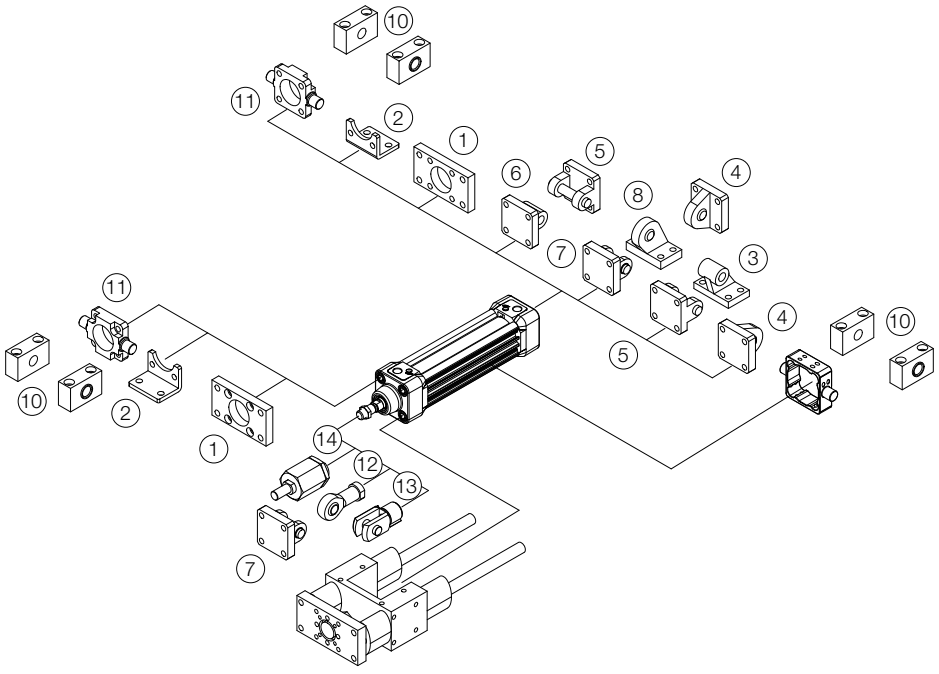
4 pcs per pack

Cyl.	Weight Kg	Order code
32	0,01	**460104801**
40	0.01	**460104801**
50	0.02	**460104802**
63	0,02	**460104802**
80	0,02	**460104803**
100	0,02	**460104803**
125	0,03	**460104804**

	Flange MF1/MF2 [1]	Foot brackets MS1 [2]	Pivot bracket with rigid bearing AB7 [3]	Swivel eye bracket MP6 [4]	Clevis bracket MP2 [5]
Ø 32	**P1C-4KMB**	**P1C-4KMF**	**P1C-4KMD**	**P1C-4KMSA**	**P1C-4KMT**
Ø 40	**P1C-4LMB**	**P1C-4LMF**	**P1C-4LMD**	**P1C-4LMSA**	**P1C-4LMT**
Ø 50	**P1C-4MMB**	**P1C-4MMF**	**P1C-4MMD**	**P1C-4MMSA**	**P1C-4MMT**
Ø 63	**P1C-4NMB**	**P1C-4NMF**	**P1C-4NMD**	**P1C-4NMSA**	**P1C-4NMT**
Ø 80	**P1C-4PMB**	**P1C-4PMF**	**P1C-4PMD**	**P1C-4PMSA**	**P1C-4PMT**
Ø 100	**P1C-4QMB**	**P1C-4QMF**	**P1C-4QMD**	**P1C-4QMSA**	**P1C-4QMT**
Ø 125	**P1C-4RMB**	**P1C-4RMF**	**P1C-4RMD**	**P1C-4RMSA**	**P1C-4RMT**

	Clevis bracket MP4 [6]	Clevis bracket AB6 [7]	Pivot bracket with swivel bearing AB5 [8]	3 and 4 positions flange	Pivot brackets AT4 [10] for MT4
Ø 32	**P1C-4KME**	**P1C-4KMCA**	**P1C-4KMA**	**P1E-6KB0**	**9301054261**
Ø 40	**P1C-4LME**	**P1C-4LMCA**	**P1C-4LMA**	**P1E-6LB0**	**9301054262**
Ø 50	**P1C-4MME**	**P1C-4MMCA**	**P1C-4MMA**	**P1E-6MB0**	**9301054262**
Ø 63	**P1C-4NME**	**P1C-4NMCA**	**P1C-4NMA**	**P1E-6NB0**	**9301054264**
Ø 80	**P1C-4PME**	**P1C-4PMCA**	**P1C-4PMA**	**P1E-6PB0**	**9301054264**
Ø 100	**P1C-4QME**	**P1C-4QMCA**	**P1C-4QMA**	**P1E-6QB0**	**9301054266**
Ø 125	**P1C-4RME**	**P1C-4RMCA**	**P1C-4RMA**		**9301054266**

	Flange mounting trunnion MT5/MT6 [11]	Swivel rod eye AP6 [12]	Clevis AP2 [13]	Flexo coupling PM5 [14]	Nut MR9
Ø 32	**P1D-4KMYF**	**P1C-4KRS**	**P1C-4KRC**	**P1C-4KRF**	**9128985601**
Ø 40	**P1D-4LMYF**	**P1C-4LRS**	**P1C-4LRC**	**P1C-4LRF**	**0261109910**
Ø 50	**P1D-4MMYF**	**P1C-4MRS**	**P1C-4MRC**	**P1C-4MRF**	**9128985603**
Ø 63	**P1D-4NMYF**	**P1C-4MRS**	**P1C-4MRC**	**P1C-4MRF**	**9128985603**
Ø 80	**P1D-4PMYF**	**P1C-4PRS**	**P1C-4PRC**	**P1C-4PRF**	**0261109911**
Ø 100	**P1D-4QMYF**	**P1C-4PRS**	**P1C-4PRC**	**P1C-4PRF**	**0261109911**
Ø 125		**P1C-4RRS**	**P1C-4RRC**	**P1C-4RRF**	**0261109912**



P1D-B Pneumatic Cylinders

According to ISO 15552

P1D-B series. This series features a profile design and is the basic ISO cylinder for simple applications where no special options are required. This series is suitable for general industrial applications

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

P1D-B Basic Cylinders

The P1D-B series features a profile design and is the value line ISO cylinder for basic applications where no special options are required. This series is suitable for general industrial applications and is supported by a full range of ISO mountings.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Lubricated with food grade grease

Operating information

Working pressure:	Max 10 bar
Standard Temperature	-20°C to +80°C

For more information see www.parker.com/euro_pneumatic

P1D-B Basic - Double acting

Ø32mm - (G1/8)

Stroke mm	Order code
25	P1D-B032MS-0025
40	P1D-B032MS-0040
50	P1D-B032MS-0050
80	P1D-B032MS-0080
100	P1D-B032MS-0100
125	P1D-B032MS-0125
160	P1D-B032MS-0160
200	P1D-B032MS-0200
250	P1D-B032MS-0250
320	P1D-B032MS-0320
400	P1D-B032MS-0400
500	P1D-B032MS-0500

Ø40mm - (G1/4)

Stroke mm	Order code
25	P1D-B040MS-0025
40	P1D-B040MS-0040
50	P1D-B040MS-0050
80	P1D-B040MS-0080
100	P1D-B040MS-0100
125	P1D-B040MS-0125
160	P1D-B040MS-0160
200	P1D-B040MS-0200
250	P1D-B040MS-0250
320	P1D-B040MS-0320
400	P1D-B040MS-0400
500	P1D-B040MS-0500

Ø50mm - (G1/4)

Stroke mm	Order code
25	P1D-B050MS-0025
40	P1D-B050MS-0040
50	P1D-B050MS-0050
80	P1D-B050MS-0080
100	P1D-B050MS-0100
125	P1D-B050MS-0125
160	P1D-B050MS-0160
200	P1D-B050MS-0200
250	P1D-B050MS-0250
320	P1D-B050MS-0320
400	P1D-B050MS-0400
500	P1D-B050MS-0500

Ø63mm - (G3/8)

Stroke mm	Order code
25	P1D-B063MS-0025
40	P1D-B063MS-0040
50	P1D-B063MS-0050
80	P1D-B063MS-0080
100	P1D-B063MS-0100
125	P1D-B063MS-0125
160	P1D-B063MS-0160
200	P1D-B063MS-0200
250	P1D-B063MS-0250
320	P1D-B063MS-0320
400	P1D-B063MS-0400
500	P1D-B063MS-0500

Ø80mm - (G3/8)

Stroke mm	Order code
25	P1D-B080MS-0025
40	P1D-B080MS-0040
50	P1D-B080MS-0050
80	P1D-B080MS-0080
100	P1D-B080MS-0100
125	P1D-B080MS-0125
160	P1D-B080MS-0160
200	P1D-B080MS-0200
250	P1D-B080MS-0250
320	P1D-B080MS-0320
400	P1D-B080MS-0400
500	P1D-B080MS-0500

Ø100mm - (G1/2)

Stroke mm	Order code
25	P1D-B100MS-0025
40	P1D-B100MS-0040
50	P1D-B100MS-0050
80	P1D-B100MS-0080
100	P1D-B100MS-0100
125	P1D-B100MS-0125
160	P1D-B100MS-0160
200	P1D-B100MS-0200
250	P1D-B100MS-0250
320	P1D-B100MS-0320
400	P1D-B100MS-0400
500	P1D-B100MS-0500

Ø125mm - (G1/2)

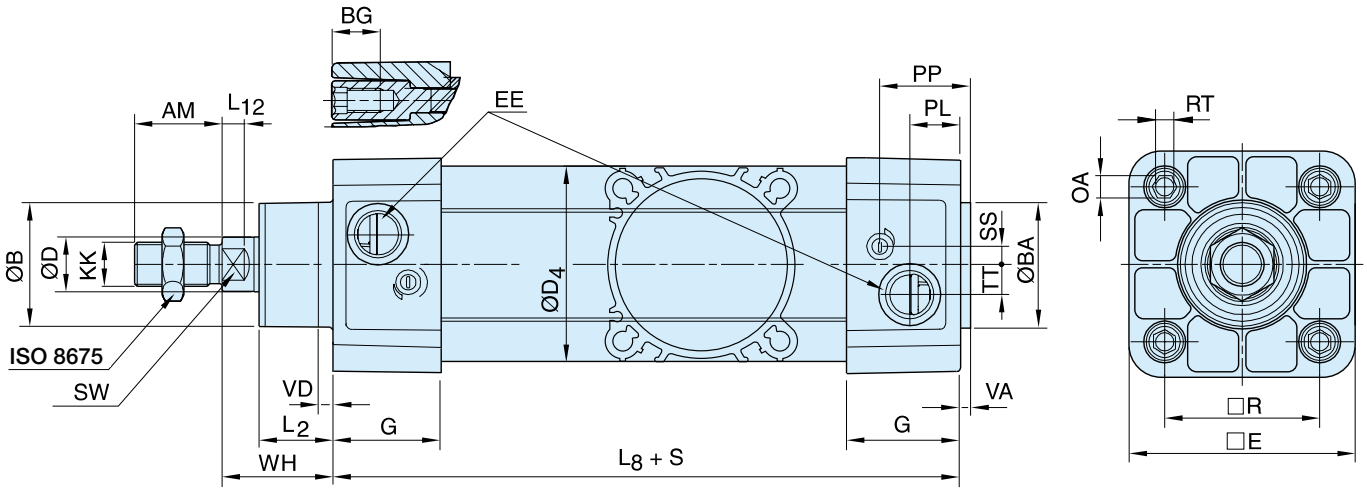
Stroke mm	Order code
25	P1D-B125MS-0025
40	P1D-B125MS-0040
50	P1D-B125MS-0050
80	P1D-B125MS-0080
100	P1D-B125MS-0100
125	P1D-B125MS-0125
160	P1D-B125MS-0160
200	P1D-B125MS-0200
250	P1D-B125MS-0250
320	P1D-B125MS-0320
400	P1D-B125MS-0400
500	P1D-B125MS-0500

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

P1D-B Series dimensions



Dimensions

Cylinder bore mm	AM mm	B mm	BA mm	BG mm	D mm	D4 mm	E mm	EE mm	G mm	KK	L2 mm	L8 mm	L12 mm
32	22	30	30	16	12	45,0	48,0	G1/8	28,5	M10x1,25	16,8	94	6,0
40	24	35	35	16	16	52,0	53,5	G1/4	33,0	M12x1,25	19,0	105	6,5
50	32	40	40	16	20	60,7	65,2	G1/4	33,5	M16x1,5	24,0	106	8,0
63	32	45	45	16	20	71,5	75,5	G3/8	39,5	M16x1,5	24,3	121	8,0
80	40	45	45	17	25	86,7	95,0	G3/8	39,5	M20x1,5	30,0	128	10,0
100	40	55	55	17	25	106,7	114,0	G1/2	44,5	M20x1,5	34,0	138	14,0
125	54	60	60	20	32	134,0	139,0	G1/2	51,0	M27x2	45,0	160	18,0

Cylinder bore mm	OA mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm
32	6,0	14,0	24,2	32,5	M6	5,5	10	4,2	3,5	4,5	26
40	6,0	16,0	27,5	38,0	M6	8,0	13	5,5	3,5	4,5	30
50	8,0	14,0	29,3	46,5	M8	9,0	17	7,5	3,5	4,5	37
63	8,0	16,6	30,8	56,5	M8	6,5	17	10,0	3,5	4,5	37
80	6,0	16,8	33,5	72,0	M10	0	22	11,5	3,5	4,5	46
100	6,0	20,5	37,5	89,0	M10	0	22	14,5	3,5	4,5	51
125	8,0	23,3	45,8	110,0	M12	0	27	15,0	5,5	6,5	65

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

Cylinder mountings

Flange MF1/MF2

Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

Materials
Flange: Surface-treated steel
Mounting screws acc. to DIN 6912: Zinc-plated steel 8.8

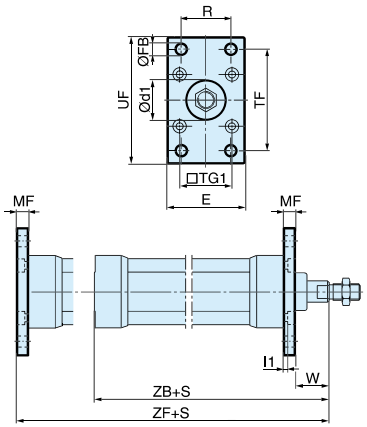
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,23	**P1C-4KMB**
40	0,28	**P1C-4LMB**
50	0,53	**P1C-4MMB**
63	0,71	**P1C-4NMB**
80	1,59	**P1C-4PMB**
100	2,19	**P1C-4QMB**
125	3,78	**P1C-4RMB**

According to ISO MF1/MF2, VDMA 24 562, AFNOR

Cyl. bore mm	d1 H11 mm	FB H13 mm	TG1 mm	E mm	R JS14 mm	MF JS14 mm	TF JS14 mm	UF mm	l1 -0,5 mm	W mm	ZF mm	ZB mm
32	30	7	32,5	45	32	10	64	80	5,0	16	130	123,5
40	35	9	38,0	52	36	10	72	90	5,0	20	145	138,5
50	40	9	46,5	65	45	12	90	110	6,5	25	155	146,5
63	45	9	56,5	75	50	12	100	120	6,5	25	170	161,5
80	45	12	72,0	95	63	16	126	150	8,0	30	190	177,5
100	55	14	89,0	115	75	16	150	170	8,0	35	205	192,5
125	60	16	110,0	140	90	20	180	205	10,5	45	245	230,5

S = Stroke length



Foot brackets MS1

Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Material:
Foot bracket: Surface treated steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.

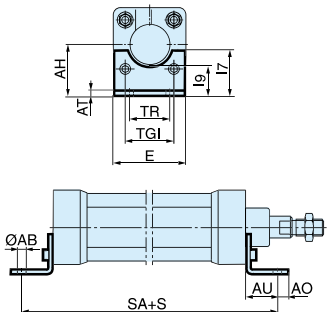
Cyl. bore Ø mm	Weight kg	Order code
32	0,06**	**P1C-4KMF**
40	0,08**	**P1C-4LMF**
50	0,16**	**P1C-4MMF**
63	0,25**	**P1C-4NMF**
80	0,50**	**P1C-4PMF**
100	0,85**	**P1C-4QMF**
125	1,48**	**P1C-4RMF**

** Weight per item

According to ISO MS1, VDMA 24 562, AFNOR

Cyl. bore mm	AB H14 mm	TG1 mm	E mm	TR JS14 mm	AO mm	AU mm	AH JS15 mm	l7 mm	AT mm	l9 JS14 mm	SA mm
32	7	32,5	47	32	8	24	32	30	4,5	17,0	142
40	9	38,0	53	36	10	28	36	30	4,5	18,5	161
50	9	46,5	65	45	10	32	45	36	5,5	25,0	170
63	9	56,5	75	50	10	32	50	35	5,5	27,5	185
80	12	72,0	95	63	14	41	63	49	6,5	40,5	210
100	14	89,0	115	75	15	41	71	54	6,5	43,5	220
125	16	110,0	140	90	20	45	90	71	8,0	60,0	250

S = Stroke length



Pivot bracket with rigid bearing AB6

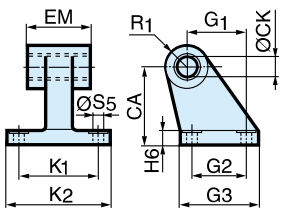
Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Material:
Pivot bracket: Aluminium
Bearing: Sintered oil-bronze bushing

Cyl. bore Ø mm	Weight kg	Order code
32	0,06	**P1C-4KMDB**
40	0,08	**P1C-4LMDB**
50	0,15	**P1C-4MMDB**
63	0,20	**P1C-4NMDB**
80	0,33	**P1C-4PMDB**
100	0,49	**P1C-4QMDB**
125	1,02	**P1C-4RMDB**

According to CETOP RP 107 P, VDMA 24 562, AFNOR

Cyl. bore mm	CK H9 mm	S5 H13 mm	K1 JS14 mm	K2 mm	G1 JS14 mm	G2 JS14 mm	EM mm	G3 mm	CA JS15 mm	H6 mm	R1 mm
32	10	6,6	38	51	21	18	25,5	31	32	8	10,0
40	12	6,6	41	54	24	22	27,0	35	36	10	11,0
50	12	9,0	50	65	33	30	31,0	45	45	12	13,0
63	16	9,0	52	67	37	35	39,0	50	50	12	15,0
80	16	11,0	66	86	47	40	49,0	60	63	14	15,0
100	20	11,0	76	96	55	50	59,0	70	71	15	19,0
125	25	14,0	94	124	70	60	69,0	90	90	20	22,5



Cylinder mountings

Swivel eye bracket MP6

Intended for use together with clevis bracket GA

Material:
Bracket: Aluminium
Swivel bearing acc. to DIN 648K: Hardened steel

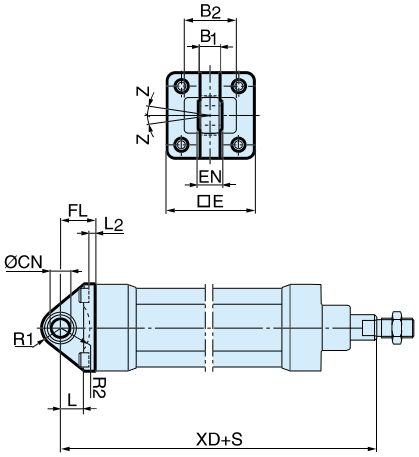
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,08	**PD23843**
40	0,11	**PD23844**
50	0,20	**PD23845**
63	0,27	**PD23846**
80	0,52	**PD23847**
100	0,72	**PD23848**
125	1,53	**PD23849**

According to VDMA 24 562, AFNOR

Cyl. bore mm	E mm	B1 mm	B2 mm	EN mm	R1 mm	R2 mm	FL mm	l2 mm	L mm	CN H7 mm	XD mm	Z
32	47	10,5	-	14	16	12	22	6.0	12	10	142	4°
40	55	12,0	-	16	21	14	25	6.0	15	12	160	4°
50	65	12,0	51	16	23	16	27	7.0	15	12	170	4°
63	78	15,0	-	21	27	19	32	7.0	20	16	190	4°
80	95	15,0	-	21	29	21	36	10.0	20	16	210	4°
100	115	18,0	-	25	34	24	41	10.0	25	20	230	4°
125	140	22,0	-	31	40	30	50	10.5	30	25	275	4°

S = Stroke length



Clevis bracket MP2

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Material:
Clevis bracket: Aluminium
Pin: Surface hardened steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

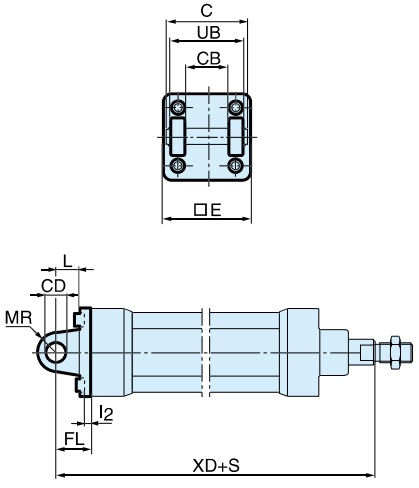
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,08	**P1C-4KMTB**
40	0,11	**P1C-4LMTB**
50	0,14	**P1C-4MMTB**
63	0,29	**P1C-4NMTB**
80	0,36	**P1C-4PMTB**
100	0,64	**P1C-4QMTB**
125	1,17	**P1C-4RMTB**

According to ISO MP2, VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	UB h14 mm	CB H14 mm	FL ±0,2 mm	L mm	l2 mm	CD H9 mm	MR mm	XD mm
32	53	47	45	26	22	13	6,0	10	10	142
40	60	55	52	28	25	16	6,0	12	12	160
50	68	65	60	32	27	16	7,0	12	12	170
63	78	78	70	40	32	21	7,0	16	16	190
80	98	95	90	50	36	22	10,0	16	16	210
100	118	115	110	60	41	27	10,5	20	20	230
125	139	140	130	70	50	30	10,5	25	25	275

S = Stroke length



Cylinder mountings

Clevis bracket MP4

Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Material:
Clevis bracket: Aluminium
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

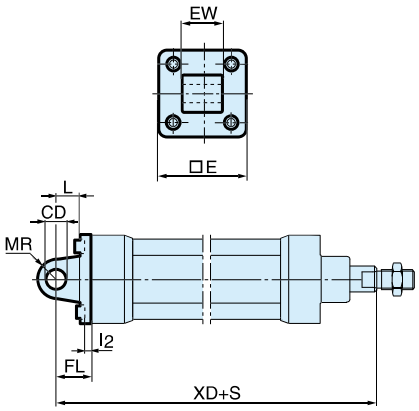
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,09	**PD23412**
40	0,13	**PD23413**
50	0,17	**PD23414**
63	0,36	**PD23415**
80	0,46	**PD23416**
100	0,83	**PD23417**
125	1,53	**PD23418**

According to ISO MP4, VDMA 24 562, AFNOR

Cyl. bore mm	E mm	EW mm	FL mm	L ±0,2 mm	l2 mm	CD mm	MR H9 mm	XD mm
32	47	26	22	13	6,0	10	10	142
40	55	28	25	16	6,0	12	12	160
50	65	32	27	16	7,0	12	12	170
63	78	40	32	21	7,0	16	16	190
80	95	50	36	22	10,0	16	16	210
100	115	60	41	27	10,5	20	20	230
125	140	70	50	30	10,5	25	25	275

S = Stroke length



Clevis bracket AB6

Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

Material:
Clevis bracket: Surface-treated aluminium
Pin: Surface hardened steel
Locking pin: Spring steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

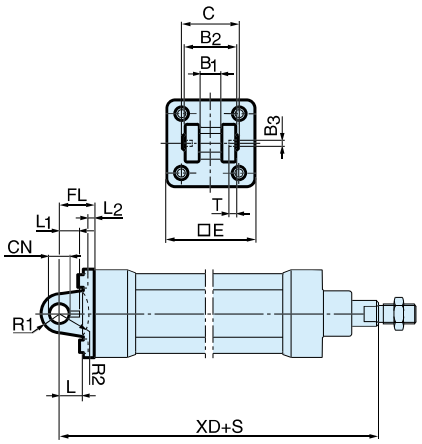
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,09	**P1C-4KMCB**
40	0,13	**P1C-4LMCB**
50	0,17	**P1C-4MMCB**
63	0,36	**P1C-4NMCB**
80	0,58	**P1C-4PMCB**
100	0,89	**P1C-4QMCB**
125	1,75	**P1C-4RMCB**

According to VDMA 24 562, AFNOR

Cyl. bore mm	C mm	E mm	B2 d12 mm	B1 H14 mm	T mm	B3 mm	R2 mm	L1 mm	FL ±0,2 mm	l2 mm	L mm	CN F7 mm	R1 mm	XD mm
32	41	45	34	14	3	3,3	17	11,5	22	5,5	12	10	11	142
40	48	55	40	16	4	4,3	20	12,0	25	5,5	15	12	13	160
50	54	65	45	21	4	4,3	22	14,0	27	6,5	17	16	18	170
63	60	75	51	21	4	4,3	25	14,0	32	6,5	20	16	18	190
80	75	95	65	25	4	4,3	30	16,0	36	10,0	20	20	22	210
100	85	115	75	25	4	4,3	32	16,0	41	10,0	25	20	22	230
125	110	140	97	37	6	6,3	42	24,0	50	10,0	30	30	30	275

S = Stroke length



Cylinder mountings

Pivot bracket with swivel bearing AB5

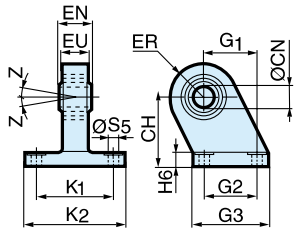
Intended for use together with clevis bracket GA.

Material:
Pivot bracket: Surface-treated steel
Swivel bearing acc. to DIN 648K: Hardened steel

According to VDMA 24 562, AFNOR

Cyl. bore Ø mm	Weight kg	Order code
32	0,18	**KC5130**
40	0,25	**KC5131**
50	0,47	**KC5132**
63	0,57	**KC5133**
80	1,05	**KC5134**
100	1,42	**KC5135**
125	3,10	**KC5136**

Cyl. bore mm	CN H7 mm	S5 H13 mm	K1 JS14 mm	K2 mm	EU mm	G1 JS14 mm	G2 JS14 mm	EN mm	G3 mm	CH JS15 mm	H6 mm	ER mm	Z
32	10	6,6	38	51	10,5	21	18	14	31	32	10	16	4°
40	12	6,6	41	54	12,0	24	22	16	35	36	10	18	4°
50	16	9,0	50	65	15,0	33	30	21	45	45	12	21	4°
63	16	9,0	52	67	15,0	37	35	21	50	50	12	23	4°
80	20	11,0	66	86	18,0	47	40	25	60	63	14	28	4°
100	20	11,0	76	96	18,0	55	50	25	70	71	15	30	4°
125	30	14,0	94	124	25,0	70	60	37	90	90	20	40	4°



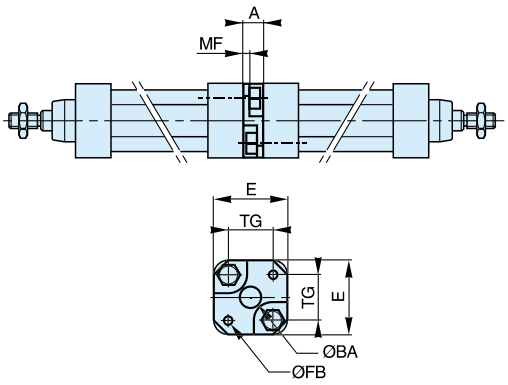
3 and 4 positions flange

Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:
Mounting: Aluminium
Mounting screws: Zinc-plated steel 8.8

Cyl. bore Ø mm	Weight kg	Order code
32	0,09	**P1E-6KB0**
40	0,13	**P1E-6LB0**
50	0,17	**P1E-6MB0**
63	0,36	**P1E-6NB0**
80	0,46	**P1E-6PB0**
100	0,83	**P1E-6QB0**

Cyl. bore mm	E mm	TG mm	ØFB mm	MF mm	A mm	ØBA mm
32	50	32,5	6,5	5	16	30
40	60	38,0	6,5	5	16	35
50	66	46,5	8,5	6	20	40
63	80	56,5	8,5	6	20	45
80	100	72,0	10,5	8	25	45
100	118	89,0	10,5	8	25	55



Pivot brackets AT4 for MT4

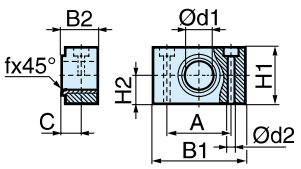
Intended for use together with centre trunnion MT4.

Material:
Pivot bracket: Aluminium
Bearing: Composite

Supplied in pairs.

Cyl. bore Ø mm	Weight kg	Order code
32	0,06	**PD23381**
40	0,06	**PD23382**
50	0,06	**PD23382**
63	0,10	**PD23383**
80	0,10	**PD23383**
100	0,175	**PD23384**
125	0,175	**PD23384**

Cyl. bore mm	B1 mm	B2 mm	A mm	C mm	d1 mm	d2 H13 mm	H1 mm	H2 mm	fx45° min mm
32	55	20	36	10,5	12	8,4	26	13	1,0
40	55	20	36	12,0	16	8,4	26	13	1,6
50	55	20	36	12,0	16	8,4	26	13	1,6
63	65	25	42	13,0	20	10,5	30	15	1,6
80	65	25	42	13,0	20	10,5	30	15	1,6
100	75	28	50	16,0	25	13,0	40	20	2,0
125	75	28	50	16,0	25	13,0	40	20	2,0



Cylinder mountings

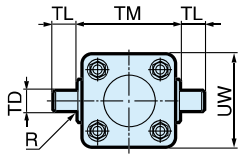
Centre trunnion MT4

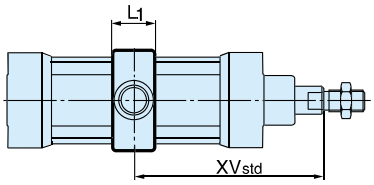
Intended for articulated mounting of cylinder. The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure - Combined with pivot bracket for MT4.
Material:
Trunnion: Zinc plated steel

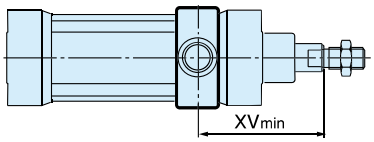
Trunnion centred
The central trunnion for the P1D-B is ordered with letter D in position 17 (no dimension specified in positions 18-20). e.g. P1D-B100MS-0500NDNNN

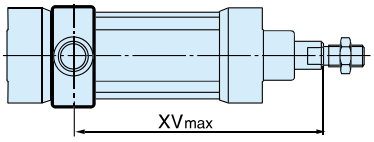
Trunnion with optional location
The central trunnion for the P1D-B is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20. e.g. P1D-B100MS-0500NG300
Material: nodular graphite cast iron, passivated steel

Cyl. bore Ø mm	Weight kg	Order code
32	0,13	
40	0,31	
50	0,37	
63	0,69	**See CD**
80	0,89	
100	1,58	
125	2,60	









According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore mm	TM h14 mm	TL h14 mm	TD e9 mm	R mm	UW mm	L1 mm	X1* mm	XV_{min} mm	X2 mm
32	50	12	12	1,0	52	18	73,0	89	57
40	63	16	16	1,6	59	20	82,5	95	70
50	75	16	16	1,6	71	20	90,0	113	67
63	90	20	20	1,6	84	26	97,5	118	78
80	110	20	20	1,6	105	26	110,0	132	88
100	132	25	25	2,0	129	32	120,0	140	100
125	160	25	25	2,0	159	33	145,0	168	122

XVstd = X1 + Stroke length/2, XVmax = X2 + Stroke length

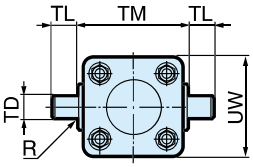
Flange mounted trunnion MT5/MT6

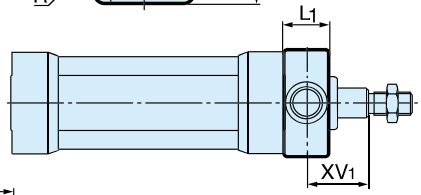
Intended for articulated mounting of cylinder. This trunnion can be flange mounted on the front or rear end cover of all P1D cylinders.
Individual trunnions have order code as shown to the right.

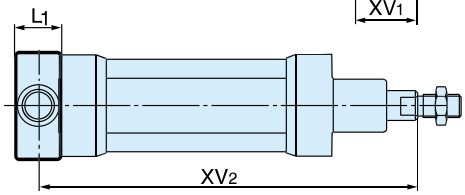
Material:
Trunnion: zinc plated steel
Screws: zinc plated steel, 8.8

Delivered complete with mounting screws for attachment to the cylinder

Cyl. bore Ø mm	Weight kg	Order code
32	0,17	**P1D-4KMYF**
40	0,43	**P1D-4LMYF**
50	0,55	**P1D-4MMYF**
63	1,10	**P1D-4NMYF**
80	1,66	**P1D-4PMYF**
100	3,00	**P1D-4QMYF**







According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore mm	TM h14 mm	TL h14 mm	TD e9 mm	R mm	UW mm	L1 mm	XV_1 mm	X mm	Y mm
32	50	12	12	1,0	46	14	19,5	126,5	11
40	63	16	16	1,6	59	19	21,0	144,0	14
50	75	16	16	1,6	69	19	28,0	152,0	20
63	90	20	20	1,6	84	24	25,5	169,5	20
80	110	20	20	1,6	102	24	34,5	185,5	26
100	132	25	25	2,0	125	29	37,0	203,0	31

Piston rod mountings

Swivel rod eye AP6

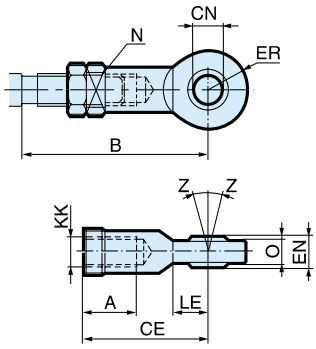
Swivel rod eye for articulated mounting of cylinder. Swivel rod eye can be combined with clevis bracket GA. Maintenance-free.

Material:
Swivel rod eye: Zinc-plated steel
Swivel bearing according to DIN 648K: Hardened steel

Cyl. bore Ø mm	Weight kg	Order code
32	0,08	**P1C-4KRS**
40	0,12	**P1C-4LRS**
50	0,25	**P1C-4MRS**
63	0,25	**P1C-4MRS**
80	0,46	**P1C-4PRS**
100	0,46	**P1C-4PRS**
125	1,28	**P1C-4RRS**

According to ISO 8139

Cyl. bore mm	A mm	B min mm	B max mm	CE mm	CN H9 mm	EN h12 mm	ER mm	KK	LE min mm	N mm	O mm	Z
32	20	48,0	55	43	10	14	14	M10x1,25	15	17	10,5	12°
40	22	56,0	62	50	12	16	16	M12x1,25	17	19	12,0	12°
50	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°
63	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°
80	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°
100	33	87,0	97	77	20	25	25	M20x1,5	26	32	18,0	15°
125	51	123,5	137	110	30	37	35	M27x2	36	41	25,0	15°



Clevis AP2

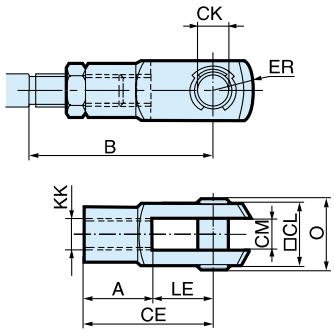
Clevis for articulated mounting of cylinder.

Material:
Clevis, clip: Galvanized steel
Pin: Hardened steel

Cyl. bore Ø mm	Weight kg	Order code
32	0,09	**P1C-4KRC**
40	0,15	**P1C-4LRC**
50	0,35	**P1C-4MRC**
63	0,35	**P1C-4MRC**
80	0,75	**P1C-4PRC**
100	0,75	**P1C-4PRC**
125	2,10	**P1C-4RRC**

According to ISO 8140

Cyl. bore mm	A mm	B min mm	B max mm	CE mm	CK h11/E9 mm	CL mm	CM mm	ER mm	KK	LE mm	O mm
32	20	45,0	52	40	10	20	10	16	M10x1,25	20	28,0
40	24	54,0	60	48	12	24	12	19	M12x1,25	24	32,0
50	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5
63	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5
80	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0
100	40	90,0	100	80	20	40	20	32	M20x1,5	40	50,0
125	56	123,5	137	110	30	55	30	45	M27x2	54	72,0



Piston rod mountings

Flexo coupling PM5

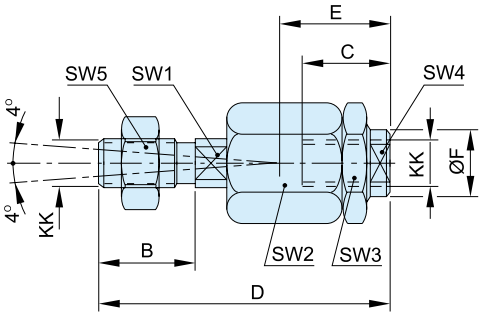
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

Cyl. bore Ø mm	Weight kg	Order code
32	0,23	**P1C-4KRF**
40	0,23	**P1C-4LRF**
50	0,65	**P1C-4MRF**
63	0,65	**P1C-4MRF**
80	0,71	**P1C-4PRF**
100	0,71	**P1C-4PRF**
125	1,60	**P1C-4RRF**

Cyl. bore mm	KK mm	B mm	C mm	D mm	E mm	ØF mm	SW1 mm	SW2 mm	SW3 mm	SW4 mm	SW5 mm
32	M10x1.25	20	23	73	31	21	12	30	30	19	17
40	M12x1.25	24	23	77	31	21	12	30	30	19	19
50	M16x1.5	32	32	108	45	33.5	19	41	41	30	24
63	M16x1.5	32	32	108	45	33.5	19	41	41	30	24
80	M20x1.5	40	42	122	56	33.5	19	41	41	30	30
100	M20x1.5	40	42	122	56	33.5	19	41	41	30	30
125	M27x2	54	48	147	51	39	24	55	55	32	41



Nut MR9 *

Intended for fixed mounting of accessories to the piston rod.
Material: Zinc-plated steel
Supplied as pack of 10 off

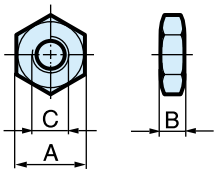
All P1D cylinders are delivred with a zinc-plated steel piston rod nut.

Cyl. bore Ø mm	Weight** kg	Order code
32	0,007	**P14-4KRPZ**
40	0,010	**P14-4LRPZ**
50	0,021	**P14-4MRPZ**
63	0,021	**P14-4MRPZ**
80	0,040	**P14-4PRPZ**
100	0,040	**P14-4PRPZ**
125	0,100	**P14-4RRPZ**

* Supplied as pack of 10 off
** Weight per item

According toDIN 439 B

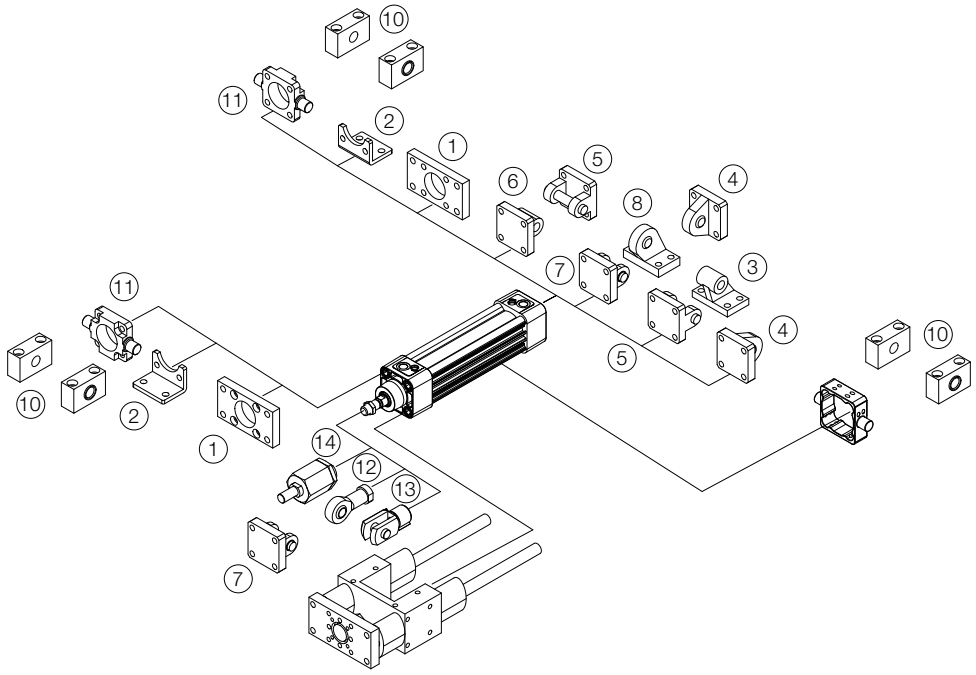
Cyl. bore mm	A mm	B mm	C
32	17	5,0	M10x1,25
40	19	6,0	M12x1,25
50	24	8,0	M16x1,5
63	24	8,0	M16x1,5
80	30	10,0	M20x1,5
100	30	10,0	M20x1,5
125	41	13,5	M27x2



	Flange MF1/MF2 [1]	Foot brackets MS1 [2]	Pivot bracket with rigid bearing AB7 [3]	Swivel eye bracket MP6 [4]	Clevis bracket MP2 [5]
Ø 32	P1C-4KMB	P1C-4KMF	P1C-4KMDB	PD23843	P1C-4KMTB
Ø 40	P1C-4LMB	P1C-4LMF	P1C-4LMDB	PD23844	P1C-4LMTB
Ø 50	P1C-4MMB	P1C-4MMF	P1C-4MMDB	PD23845	P1C-4MMTB
Ø 63	P1C-4NMB	P1C-4NMF	P1C-4NMDB	PD23846	P1C-4NMTB
Ø 80	P1C-4PMB	P1C-4PMF	P1C-4PMDB	PD23847	P1C-4PMTB
Ø 100	P1C-4QMB	P1C-4QMF	P1C-4QMDB	PD23848	P1C-4QMTB
Ø 125	P1C-4RMB	P1C-4RMF	P1C-4RMDB	PD23849	P1C-4RMTB

	Clevis bracket MP4 [6]	Clevis bracket AB6 [7]	Pivot bracket with swivel bearing AB5 [8]	3 and 4 positions flange	Pivot brackets AT4 [10] for MT4
Ø 32	PD23412	P1C-4KMCB	KC5130	P1E-6KB0	PD23381
Ø 40	PD23413	P1C-4LMCB	KC5131	P1E-6LB0	PD23382
Ø 50	PD23414	P1C-4MMCB	KC5132	P1E-6MB0	PD23382
Ø 63	PD23415	P1C-4NMCB	KC5133	P1E-6NB0	PD23383
Ø 80	PD23416	P1C-4PMCB	KC5134	P1E-6PB0	PD23383
Ø 100	PD23417	P1C-4QMCB	KC5135	P1E-6QB0	PD23384
Ø 125	PD23418	P1C-4RMCB	KC5136		PD23384

	Flange mounting trunnion MT5/MT6 [11]	Swivel rod eye AP6 [12]	Clevis AP2 [13]	Flexo coupling PM5 [14]	Nut MR9
Ø 32	P1D-4KMYF	P1C-4KRS	P1C-4KRC	P1C-4KRF	P14-4KRPZ
Ø 40	P1D-4LMYF	P1C-4LRS	P1C-4LRC	P1C-4LRF	P14-4LRPZ
Ø 50	P1D-4MMYF	P1C-4MRS	P1C-4MRC	P1C-4MRF	P14-4MRPZ
Ø 63	P1D-4NMYF	P1C-4MRS	P1C-4MRC	P1C-4MRF	P14-4MRPZ
Ø 80	P1D-4PMYF	P1C-4PRS	P1C-4PRC	P1C-4PRF	P14-4PRPZ
Ø 100	P1D-4QMYF	P1C-4PRS	P1C-4PRC	P1C-4PRF	P14-4PRPZ
Ø 125		P1C-4RRS	P1C-4RRC	P1C-4RRF	P14-4RRPZ



P1D-C Ultra Clean Cylinders

This series offers an ultra clean external design of cylinders that are suitable for applications that require a clean profile. With particular design features for the food and packaging industries this product can also be used for applications on vehicles, in sawmills and bag-filling industries where a clean design is important.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Corrosion resistant design
- Lubricated with food grade grease
- Available as non sensor version

Operating information

Working pressure:	Max 10 bar
Working temperature:	-20°C to +80°C

For more information see www.parker.com/euro_pneumatic

P1D-C - Double acting

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1D-C032MSN0025**
40	**P1D-C032MSN0040**
50	**P1D-C032MSN0050**
80	**P1D-C032MSN0080**
100	**P1D-C032MSN0100**
125	**P1D-C032MSN0125**
160	**P1D-C032MSN0160**
200	**P1D-C032MSN0200**
250	**P1D-C032MSN0250**
320	**P1D-C032MSN0320**
400	**P1D-C032MSN0400**
500	**P1D-C032MSN0500**

Ø40mm - (G1/4)

Stroke mm	Order code
25	**P1D-C040MSN0025**
40	**P1D-C040MSN0040**
50	**P1D-C040MSN0050**
80	**P1D-C040MSN0080**
100	**P1D-C040MSN0100**
125	**P1D-C040MSN0125**
160	**P1D-C040MSN0160**
200	**P1D-C040MSN0200**
250	**P1D-C040MSN0250**
320	**P1D-C040MSN0320**
400	**P1D-C040MSN0400**
500	**P1D-C040MSN0500**

Ø50mm - (G1/4)

Stroke mm	Order code
25	**P1D-C050MSN0025**
40	**P1D-C050MSN0040**
50	**P1D-C050MSN0050**
80	**P1D-C050MSN0080**
100	**P1D-C050MSN0100**
125	**P1D-C050MSN0125**
160	**P1D-C050MSN0160**
200	**P1D-C050MSN0200**
250	**P1D-C050MSN0250**
320	**P1D-C050MSN0320**
400	**P1D-C050MSN0400**
500	**P1D-C050MSN0500**

Ø63mm - (G3/8)

Stroke mm	Order code
25	**P1D-C063MSN0025**
40	**P1D-C063MSN0040**
50	**P1D-C063MSN0050**
80	**P1D-C063MSN0080**
100	**P1D-C063MSN0100**
125	**P1D-C063MSN0125**
160	**P1D-C063MSN0160**
200	**P1D-C063MSN0200**
250	**P1D-C063MSN0250**
320	**P1D-C063MSN0320**
400	**P1D-C063MSN0400**
500	**P1D-C063MSN0500**

Ø80mm - (G3/8)

Stroke mm	Order code
25	**P1D-C080MSN0025**
40	**P1D-C080MSN0040**
50	**P1D-C080MSN0050**
80	**P1D-C080MSN0080**
100	**P1D-C080MSN0100**
125	**P1D-C080MSN0125**
160	**P1D-C080MSN0160**
200	**P1D-C080MSN0200**
250	**P1D-C080MSN0250**
320	**P1D-C080MSN0320**
400	**P1D-C080MSN0400**
500	**P1D-C080MSN0500**

Ø100mm - (G1/2)

Stroke mm	Order code
25	**P1D-C100MSN0025**
40	**P1D-C100MSN0040**
50	**P1D-C100MSN0050**
80	**P1D-C100MSN0080**
100	**P1D-C100MSN0100**
125	**P1D-C100MSN0125**
160	**P1D-C100MSN0160**
200	**P1D-C100MSN0200**
250	**P1D-C100MSN0250**
320	**P1D-C100MSN0320**
400	**P1D-C100MSN0400**
500	**P1D-C100MSN0500**

Ø125mm - (G1/2)

Stroke mm	Order code
25	**P1D-C125MSN0025**
40	**P1D-C125MSN0040**
50	**P1D-C125MSN0050**
80	**P1D-C125MSN0080**
100	**P1D-C125MSN0100**
125	**P1D-C125MSN0125**
160	**P1D-C125MSN0160**
200	**P1D-C125MSN0200**
250	**P1D-C125MSN0250**
320	**P1D-C125MSN0320**
400	**P1D-C125MSN0400**
500	**P1D-C125MSN0500**

The cylinders are supplied complete with a zinc plated steel piston rod nut.

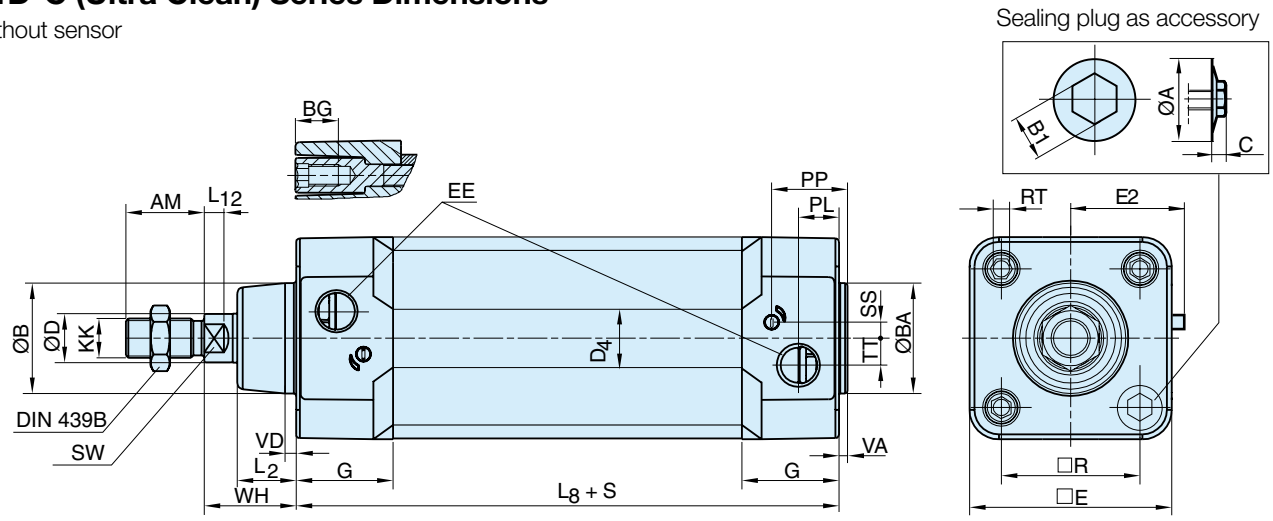
Sensors

For sensors see page 78.

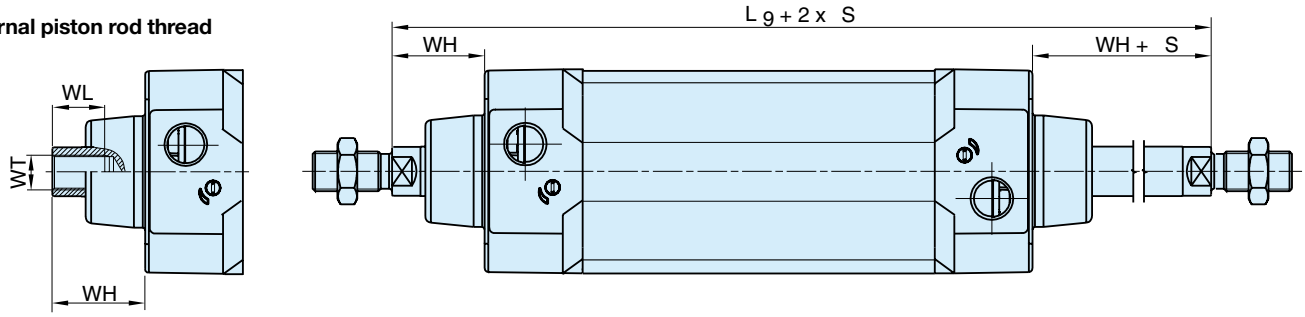
P1D-C (Ultra Clean) Series Dimensions

Without sensor

Sealing plug as accessory



Internal piston rod thread



Dimensions

Cylinder bore mm	A mm	AM mm	B mm	B1 mm	BA mm	BG mm	C mm	D mm	D4 mm	E mm	EE mm	G mm	KK	L2 mm
32	15	22	30	8	30	16	5,2	12	45,0	50,0	G1/8	28,5	M10x1,25	16,0
40	15	24	35	8	35	16	5,2	16	52,0	57,4	G1/4	33,0	M12x1,25	19,0
50	18,5	32	40	10	40	16	6,7	20	60,7	69,4	G1/4	33,5	M16x1,5	24,0
63	18,5	32	45	10	45	16	6,7	20	71,5	82,4	G3/8	39,5	M16x1,5	24,0
80	21,5	40	45	11	45	17	7,8	25	86,7	99,4	G3/8	39,5	M20x1,5	30,0
100	21,5	40	55	11	55	17	7,8	25	106,7	116,0	G1/2	44,5	M20x1,5	32,4
125	24	54	60	13	60	20	9,3	32	134,0	139,0	G1/2	51,0	M27x2	45,0

Cylinder bore mm	L8 mm	L9 mm	L12 mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm	WL mm	WT
32	94	146	6,0	13,0	21,8	32,5	M6	4,0	10	4,5	3,5	4,5	26	21	M8x1
40	105	165	6,5	14,0	21,9	38,0	M6	8,0	13	5,5	3,5	4,5	30	23	M10x1,25
50	106	180	8,0	14,0	23,0	46,5	M8	4,0	17	7,5	3,5	5,0	37	31	M14x1,5
63	121	195	8,0	16,4	27,4	56,5	M8	6,5	17	11,0	3,5	5,0	37	31	M14x1,5
80	128	220	10,0	16,0	30,5	72,0	M10	0	22	15,0	3,5	4,0	46	39	M18x1,5
100	138	240	14,0	18,0	35,8	89,0	M10	0	22	20,0	3,5	4,0	51	39	M18x1,5
125	160	290	18,0	28,0	40,5	110,0	M12	0	27	17,5	5,5	6,0	65	53	M24x2

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

Cylinder mountings

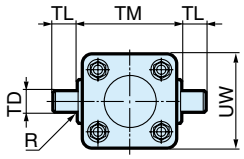
Clean design centre trunnion MT4 for P1D-C

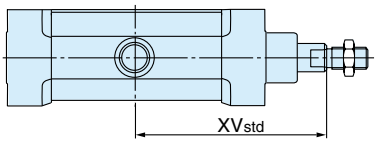
Intended for articulated mounting of P1D-C cylinders.
The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure – see the order code key. Combined with pivot bracket for MT4.
Max stroke length 700 mm. Longer stroke length on request.

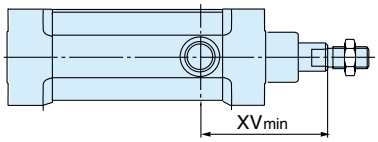
Material:
Trunnion: stainless steel

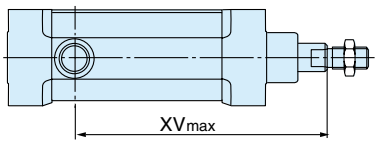
Trunnion centred
The centre trunnion for P1D-C is ordered with letter D in position 17 (no dimension specified in positions 18-20).

Trunnion with optional location
The centre trunnion for P1D-C is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20.









According to ISO MT4, VDMA 24 562, AFNOR

Cyl. bore mm	TM h14 mm	TL h14 mm	TD e9 mm	R mm	UW mm	X1* mm	XVmin mm	X2 mm	Stroke min mm
32	50	12	12	1,0	52	73,0	69,5	76,0	0
40	63	16	16	1,6	59	82,5	78,0	86,5	0
50	75	16	16	1,6	71	90,0	85,5	94,5	0
63	90	20	20	1,6	84	97,5	103,5	91,0	15
80	110	20	20	1,6	105	110,0	112,5	107,0	10

XVstd = X1 + Stroke length/2, XVmax = X2 + Stroke length

For mountings refer to page 42.

P1D-C Pro Clean Cylinders

This series of clean design cylinders offers two T slots within one face of the tube allowing the possibility to add sensors. The position of the T slots can be specified on any single face using the order code key. These cylinders have a clean design but are intended for applications where sensors are required.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Corrosion resistant design
- Lubricated with food grade grease
- Available as a sensor version

Operating information

Working pressure:	Max 10 bar
Working temperature:	-20°C to +80°C

For more information see www.parker.com/euro_pneumatic

P1D-C - Double acting

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1D-C032MST0025**
40	**P1D-C032MST0040**
50	**P1D-C032MST0050**
80	**P1D-C032MST0080**
100	**P1D-C032MST0100**
125	**P1D-C032MST0125**
160	**P1D-C032MST0160**
200	**P1D-C032MST0200**
250	**P1D-C032MST0250**
320	**P1D-C032MST0320**
400	**P1D-C032MST0400**
500	**P1D-C032MST0500**

Ø40mm - (G1/4)

Stroke mm	Order code
25	**P1D-C040MST0025**
40	**P1D-C040MST0040**
50	**P1D-C040MST0050**
80	**P1D-C040MST0080**
100	**P1D-C040MST0100**
125	**P1D-C040MST0125**
160	**P1D-C040MST0160**
200	**P1D-C040MST0200**
250	**P1D-C040MST0250**
320	**P1D-C040MST0320**
400	**P1D-C040MST0400**
500	**P1D-C040MST0500**

Ø50mm - (G1/4)

Stroke mm	Order code
25	**P1D-C050MST0025**
40	**P1D-C050MST0040**
50	**P1D-C050MST0050**
80	**P1D-C050MST0080**
100	**P1D-C050MST0100**
125	**P1D-C050MST0125**
160	**P1D-C050MST0160**
200	**P1D-C050MST0200**
250	**P1D-C050MST0250**
320	**P1D-C050MST0320**
400	**P1D-C050MST0400**
500	**P1D-C050MST0500**

Ø63mm - (G3/8)

Stroke mm	Order code
25	**P1D-C063MST0025**
40	**P1D-C063MST0040**
50	**P1D-C063MST0050**
80	**P1D-C063MST0080**
100	**P1D-C063MST0100**
125	**P1D-C063MST0125**
160	**P1D-C063MST0160**
200	**P1D-C063MST0200**
250	**P1D-C063MST0250**
320	**P1D-C063MST0320**
400	**P1D-C063MST0400**
500	**P1D-C063MST0500**

Ø80mm - (G3/8)

Stroke mm	Order code
25	**P1D-C080MST0025**
40	**P1D-C080MST0040**
50	**P1D-C080MST0050**
80	**P1D-C080MST0080**
100	**P1D-C080MST0100**
125	**P1D-C080MST0125**
160	**P1D-C080MST0160**
200	**P1D-C080MST0200**
250	**P1D-C080MST0250**
320	**P1D-C080MST0320**
400	**P1D-C080MST0400**
500	**P1D-C080MST0500**

Ø100mm - (G1/2)

Stroke mm	Order code
25	**P1D-C100MST0025**
40	**P1D-C100MST0040**
50	**P1D-C100MST0050**
80	**P1D-C100MST0080**
100	**P1D-C100MST0100**
125	**P1D-C100MST0125**
160	**P1D-C100MST0160**
200	**P1D-C100MST0200**
250	**P1D-C100MST0250**
320	**P1D-C100MST0320**
400	**P1D-C100MST0400**
500	**P1D-C100MST0500**

Ø125mm - (G1/2)

Stroke mm	Order code
25	**P1D-C125MST0025**
40	**P1D-C125MST0040**
50	**P1D-C125MST0050**
80	**P1D-C125MST0080**
100	**P1D-C125MST0100**
125	**P1D-C125MST0125**
160	**P1D-C125MST0160**
200	**P1D-C125MST0200**
250	**P1D-C125MST0250**
320	**P1D-C125MST0320**
400	**P1D-C125MST0400**
500	**P1D-C125MST0500**

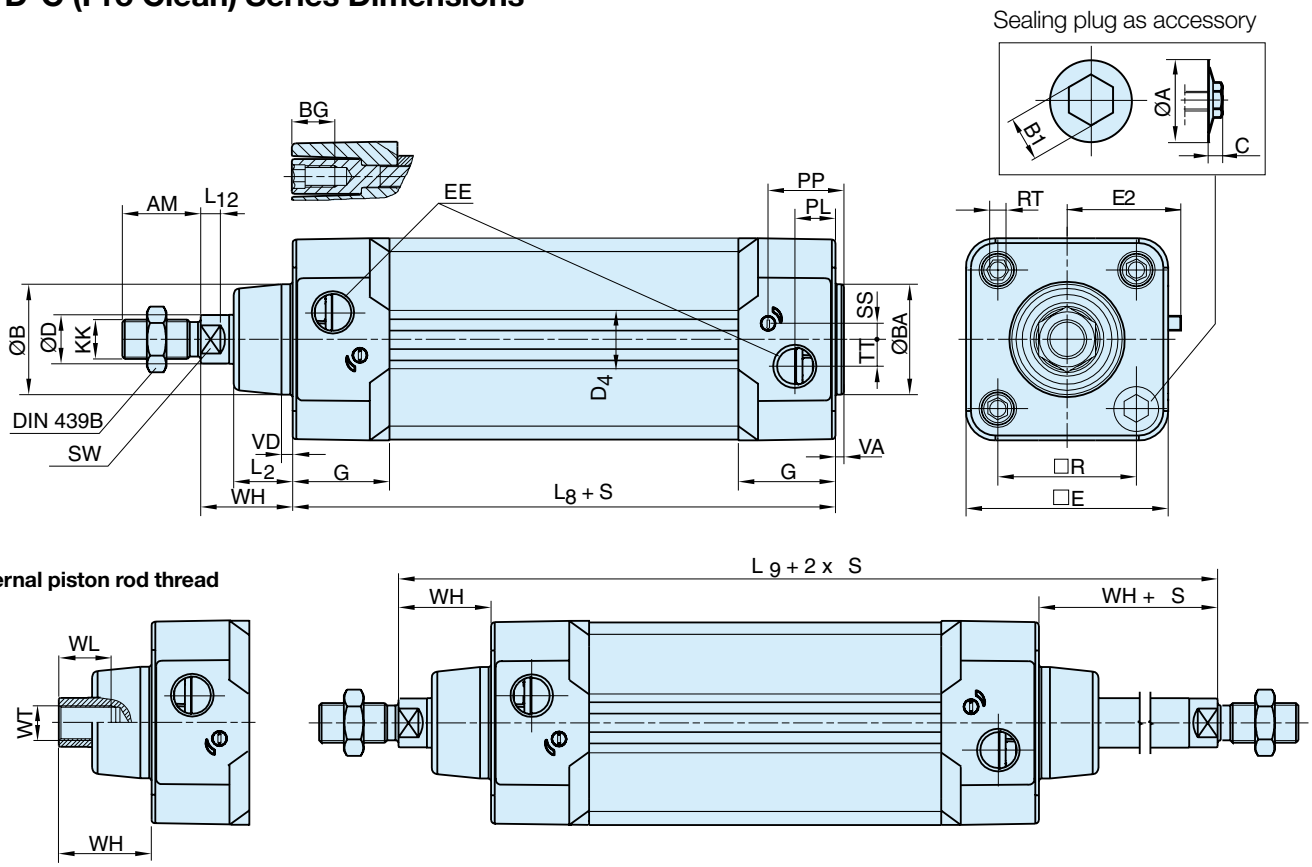
For other T slots position, please contact Sales Office.

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

P1D-C (Pro Clean) Series Dimensions



Dimensions

Cylinder bore mm	A mm	AM mm	B mm	B1 mm	BA mm	BG mm	C mm	D mm	D4 mm	E mm	EE mm	G mm	KK	L2 mm
32	15	22	30	8	30	16	5,2	12	45,0	50,0	G1/8	28,5	M10x1,25	16,0
40	15	24	35	8	35	16	5,2	16	52,0	57,4	G1/4	33,0	M12x1,25	19,0
50	18,5	32	40	10	40	16	6,7	20	60,7	69,4	G1/4	33,5	M16x1,5	24,0
63	18,5	32	45	10	45	16	6,7	20	71,5	82,4	G3/8	39,5	M16x1,5	24,0
80	21,5	40	45	11	45	17	7,8	25	86,7	99,4	G3/8	39,5	M20x1,5	30,0
100	21,5	40	55	11	55	17	7,8	25	106,7	116,0	G1/2	44,5	M20x1,5	32,4
125	24	54	60	13	60	20	9,3	32	134,0	139,0	G1/2	51,0	M27x2	45,0

Cylinder bore mm	L8 mm	L9 mm	L12 mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm	WL mm	WT
32	94	146	6,0	13,0	21,8	32,5	M6	4,0	10	4,5	3,5	4,5	26	21	M8x1
40	105	165	6,5	14,0	21,9	38,0	M6	8,0	13	5,5	3,5	4,5	30	23	M10x1,25
50	106	180	8,0	14,0	23,0	46,5	M8	4,0	17	7,5	3,5	5,0	37	31	M14x1,5
63	121	195	8,0	16,4	27,4	56,5	M8	6,5	17	11,0	3,5	5,0	37	31	M14x1,5
80	128	220	10,0	16,0	30,5	72,0	M10	0	22	15,0	3,5	4,0	46	39	M18x1,5
100	138	240	14,0	18,0	35,8	89,0	M10	0	22	20,0	3,5	4,0	51	39	M18x1,5
125	160	290	18,0	28,0	40,5	110,0	M12	0	27	17,5	5,5	6,0	65	53	M24x2

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

Design Variants for P1D-C

Alternative piston rod materials

All P1D cylinders in all bores, Ø32-125 mm, can be ordered with the following piston rod materials:
– Steel, chromed-plated
– Stainless steel, roller polished (standard)
– Acid-proof steel, roller polished
– Stainless steel, chromed-plated

Through piston rod

All P1D cylinders in all bores, Ø32-125 mm, are available with a through rod. Cylinders with a through rod can take higher side forces thanks to the double support for the piston rod.

Operation with dry piston rod

In many applications, primarily in the foodstuffs industry, the cylinders are cleaned frequently. This means that the film of grease on the piston rod is washed off, which puts special demands on the materials and the design of the piston rod seal system (scraper ring and piston rod seal). Parker Hannifin has developed a piston rod seal system specially designed for dry rod operation. This is available as options for this type of applications, for all bores of P1D cylinders. The system has a specially designed L-shaped seal and the material is self-lubricating, high molecular weight plastics (HDPE) – the same system as in our P1S stainless steel cylinders.

Alternative scraper materials

For use in applications where chemicals may affect the scraper in the front end cover, an option with a scraper in FPM rubber for better chemical resistance is available.

On request there is also a scraper in food approved polyurethane material.

P1D-T Pneumatic Cylinders

According to ISO 15552

The P1D-T range of cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.

- Bore sizes Ø160 - Ø320mm
- Stroke lengths 10mm - 2000mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High temperature versions
- ATEX version
- Special version on request

P1D-T Large Bore Cylinders

The P1D-T range of tie rod cylinders is intended for use in a wide range of applications. Careful design and high quality manufacture throughout ensure long service life and optimum economy. Mounting dimensions fully in accordance with ISO 15552 (ISO 6431 and CETOP RP52P) greatly simplifies installation and world-wide interchangeability.

- Bore sizes Ø160 - Ø320mm
- Stroke lengths 10mm - 2000mm
- Magnetic piston as standard
- Adjustable cushioning as standard
- High temperature versions
- Special version on request

For ATEX specific products contact Sales Office

Operating information

Working pressure:	Max 10 bar
Seals / Temperature options	
Standard:	-20°C to +80°C
High temperature:	-10°C to +140°C
ATEX approval:	CE Ex IIGD c T4 120°C

For more information see www.parker.com/euro_pneumatic

P1D-T - Double acting

Ø160mm

Stroke mm	Order code
50	**P1D-T160MS-0050**
80	**P1D-T160MS-0080**
100	**P1D-T160MS-0100**
125	**P1D-T160MS-0125**
160	**P1D-T160MS-0160**
200	**P1D-T160MS-0200**
250	**P1D-T160MS-0250**
320	**P1D-T160MS-0320**
400	**P1D-T160MS-0400**
500	**P1D-T160MS-0500**
800	**P1D-T160MS-0800**
1000	**P1D-T160MS-1000**

Ø200mm

Stroke mm	Order code
50	**P1D-T200MS-0050**
80	**P1D-T200MS-0080**
100	**P1D-T200MS-0100**
125	**P1D-T200MS-0125**
160	**P1D-T200MS-0160**
200	**P1D-T200MS-0200**
250	**P1D-T200MS-0250**
320	**P1D-T200MS-0320**
400	**P1D-T200MS-0400**
500	**P1D-T200MS-0500**
800	**P1D-T200MS-0800**
1000	**P1D-T200MS-1000**

Ø250mm

Stroke mm	Order code
50	**P1D-T250MS-0050**
80	**P1D-T250MS-0080**
100	**P1D-T250MS-0100**
125	**P1D-T250MS-0125**
160	**P1D-T250MS-0160**
200	**P1D-T250MS-0200**
250	**P1D-T250MS-0250**
320	**P1D-T250MS-0320**
400	**P1D-T250MS-0400**
500	**P1D-T250MS-0500**
800	**P1D-T250MS-0800**
1000	**P1D-T250MS-1000**

Ø320mm

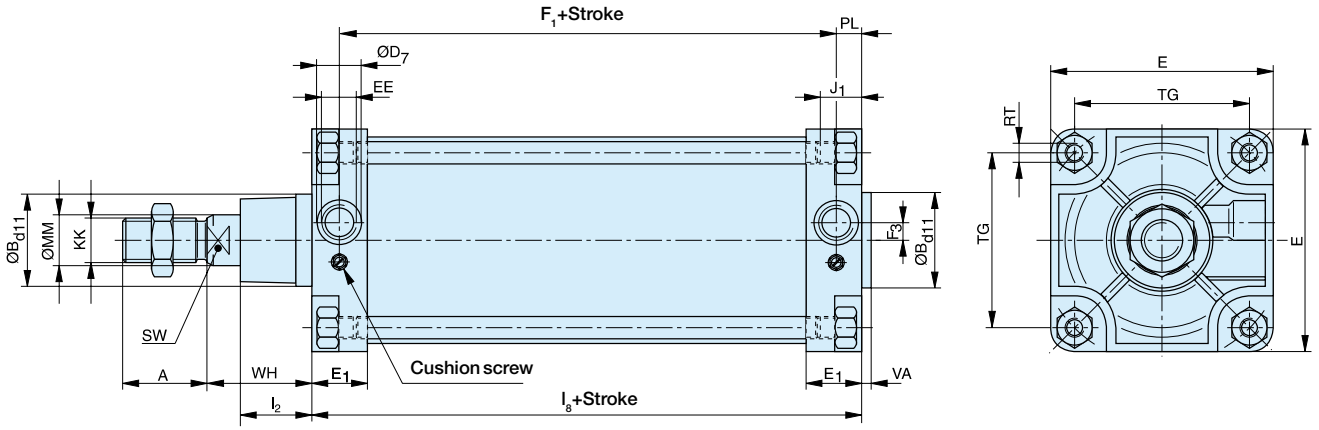
Stroke mm	Order code
50	**P1D-T320MS-0050**
80	**P1D-T320MS-0080**
100	**P1D-T320MS-0100**
125	**P1D-T320MS-0125**
160	**P1D-T320MS-0160**
200	**P1D-T320MS-0200**
250	**P1D-T320MS-0250**
320	**P1D-T320MS-0320**
400	**P1D-T320MS-0400**
500	**P1D-T320MS-0500**
800	**P1D-T320MS-0800**
1000	**P1D-T320MS-1000**

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

P1D-T Series Dimensions



Note: for bore size 320mm, front air port in on the bottom of the axis of the cylinder and the cushioning screw on the top

Dimension Table (mm)

Cyl. Ø	A	ØB$_{d11}$	ØD$_7$	E	E$_1$	F$_1$ + Stroke	F$_3$	J$_1$ max.	l$_2$	l$_8$ + Stroke	EE	KK	MM	PL	RT	SW	TG	VA	WH
160	72	65	33	180	45	130	11	23	50	180	G3/4	M36x2	40	25	M16	36	140	6	80
200	72	75	33	220	45	130	15	23	60	180	G3/4	M36x2	40	25	M16	36	175	6	95
250	84	90	40	280	64	136	21	27	70	200	G1	M42x2	50	32	M20	46	220	10	105
320	96	110	-	340	56	164	–20*/20	28	89,5	220	G1	M48x2	63	28	M24	55	270	10	120

Weight (mass) kg

Cylinder version	Cylinder Diameter							
	Ø160		Ø200		Ø250		Ø320	
	1*	2*	1*	2*	1*	2*	1*	2*
Standard Type P1D-T	12.500	2.050	20.000	2.200	35.000	4.000	66.000	6.000

* 1 = Weight for cylinder with 100 mm stroke
2 = Weight for further 100 mm stroke length

Tolerances

Cylinder bore mm	L$_8$ mm	TG mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
160	±1,1	±1,1	+0,3/+2,0	+0,3/+3,0
200	±1,6	±1,1	+0,3/+2,0	+0,3/+3,0
250	±1,6	±1,5	+0,3/+2,0	+0,3/+3,0
320	±2,2	±1,5	+0,3/+2,0	+0,3/+3,0

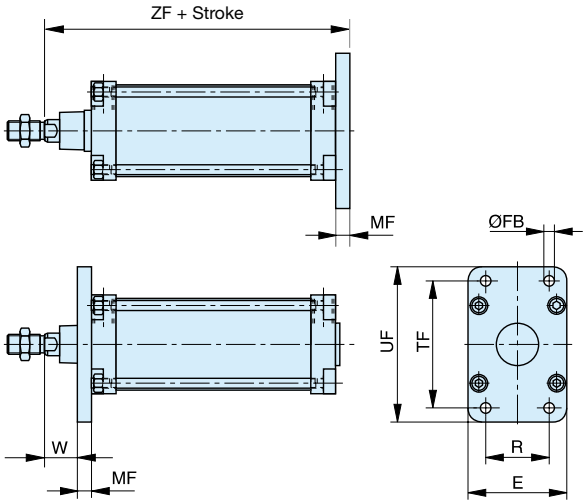
Cylinder mountings

Flange MF1/MF2

Intended for fixed mounting of cylinder. Flange can be fitted to front or rear end cover of cylinder.

Materials
Flange: Passivated steel
Mounting screws acc. to DIN 6912:
Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MF1/MF2, VDMA 24 562, AFNOR

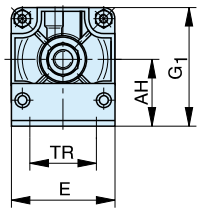
Cyl. Ø mm	E mm	R mm	W mm	ØFB mm	MF mm	TF mm	UF mm	ZF mm	Weight kg	Order code
160	180	115	60	18	20	230	275	280	7.2	**PD23410**
200	220	135	70	22	25	270	315	300	12.2	**PD24924**
250	280	165	80	26	25	330	380	330	19.2	**PD25761**
320	340	200	90	33	30	400	470	370	38.0	**KL9140**

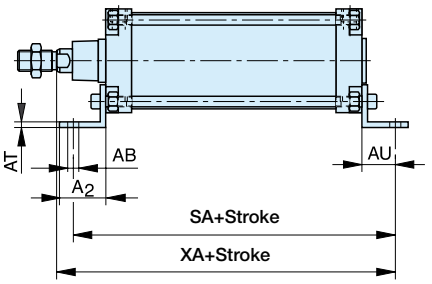
Foot brackets MS1

Intended for fixed mounting of cylinder. Foot bracket can be fitted to front and rear end covers of cylinder.

Materials
Foot bracket: Passivated steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.





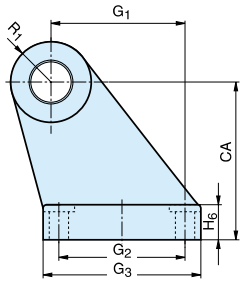
According to ISO MS1, VDMA 24 562, AFNOR

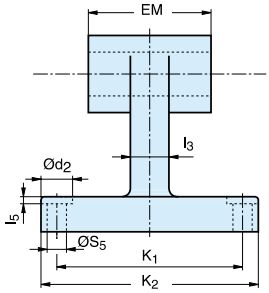
Cyl. Ø mm	A_2 mm	E mm	G_1 mm	AB mm	AH mm	AT mm	AU mm	SA + stroke	TR	XA + stroke	Weight kg	Order code
160	80	180	205	18	115	8	60	300	115	320	3.8	**PD22027**
200	100	220	245	22	135	9	70	320	135	345	5.0	**PD24792**
250	110	280	305	26	165	10	75	350	165	380	9.7	**PD25758**
320	125	340	370	33	200	23	85	390	200	470	17.0	**KL9139**

Pivot bracket with rigid bearing AB7

Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials
Pivot bracket: Ø 160-200: cast aluminium
Ø 250-320: cast steel





According to CETOP RP 107 P, VDMA 24 562, AFNOR

Cyl. Ø mm	$Ød_2$ mm	l_3 mm	l_5 mm	G_1 mm	G_2 mm	G_3 mm	H_6 mm	K_1 mm	K_2 mm	R_1 mm	$ØS_5$ mm	CA mm	EM mm	Weight kg	Order code
160	20	36	4.0	97	88	126	25	118	156	31.5	14.0	115	90	6.5	**P1C-4SMDB**
200	26	40	4.0	105	90	130	30	122	162	31.5	18.0	135	90	8.0	**P1C-4TMDB**
250	33	45	4.5	128	110	160	35	150	200	40	22.0	165	110	13.5	**P1C-4UMDC**
320	-	55	-	150	122	186	40	170	234	45	26.0	200	120	21.9	**P1C-4VMDC**

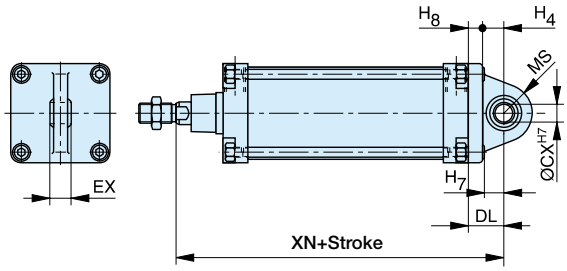
Cylinder mountings

Swivel eye bracket MP6

Intended for use together with clevis bracket GA

Material
Bracket: Cast aluminium
Swivel bearing acc. to DIN 648K: Hardened steel

Supplied complete with mounting screws for attachment to cylinder.



According to VDMA 24 562, AFNOR

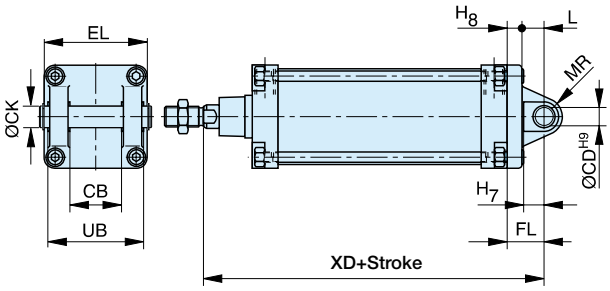
Cyl. Ø mm	H_4 mm	H_7 mm	H_8 mm	Ø CX^{H7} mm	DL mm	EX mm	MS mm	XN + stroke	Weight kg	**Order code**
160	35	28.5	20	30	55	37	48	315	2.6	**PD23850**
200	36	33	24	35	60	43	47	335	11.3	**PD25766**
250	42	39	28	40	70	49	53	375	19.0	**PD25760**
320	50	26	30	50	80	60	63	420	30.3	**KL9136**

Clevis bracket MP2

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Materials
Clevis bracket: Cast aluminium
Pin: Hardened steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912:
Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder



According to ISO MP2, VDMA 24 562, AFNOR

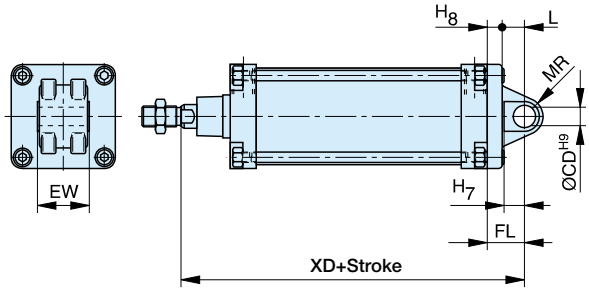
Cyl. Ø mm	H_7 mm	H_8 mm	L mm	EL mm	CD^{H9} mm	CB mm	FL mm	MR mm	UB mm	XD + stroke	CK^{H9} mm	Weight kg	**Order code**
160	28.5	20	35	172	30	90	55	30	170	315	30	2.6	**P1C-4SMTB**
200	28.5	25	35	172	30	90	60	31	170	335	30	4.1	**P1C-4TMTB**
250	25.0	25	45	202	40	110	70	41	200	375	40	7.1	**P1C-4UMTB**
320	26.0	30	50	222	45	120	80	54	220	420	45	31.0	**P1C-4VMTB**

Clevis bracket MP4

Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Materials
Clevis bracket: Cast aluminium
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.



According to ISO MP4, VDMA 24 562, AFNOR

Cyl. Ø mm	H_7 mm	H_8 mm	L mm	CD^{H9} mm	EW mm	FL mm	MR mm	XD + stroke	Weight kg	**Order code**
160	28.5	20	35	30	90	55	30	315	2.7	**PD22628**
200	28.5	25	35	30	90	60	31	335	4.2	**PD24999**
250	25.0	25	45	40	110	70	41	375	15.7	**PD25759**
320	26.0	30	50	45	120	80	46	420	33.0	**KL9135**

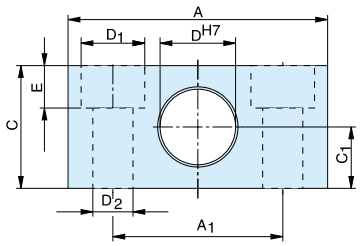
Cylinder mountings

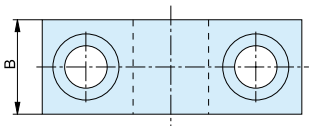
Pivot brackets AT4 for MT4

Intended for use together with central trunnion MT4.

Material
Pivot bracket: Ø160-250 mm – Anodized aluminium
Ø 320 mm – steel
Bearing acc. to DIN 1850 C

Supplied in pairs.





According to ISO, VDMA 24 562, AFNOR

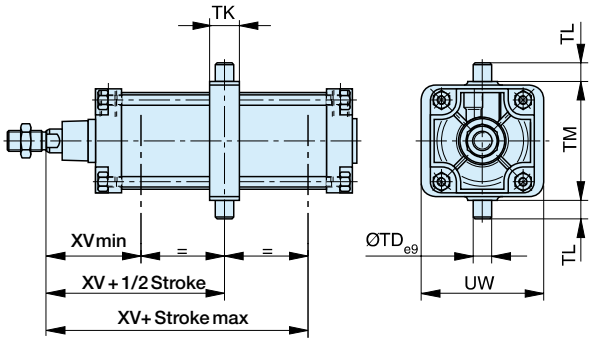
Cyl. Ø mm	A mm	A_1 mm	B mm	C mm	C1 mm	ØD^{H7} mm	ØD_1 mm	ØD_2 mm	E	Weight kg	**Order code**
160	92	60	35	60	30	32	26	18	17.0	0.35	**PD24425**
200	92	60	35	60	30	32	26	18	17.0	0.35	**PD24425**
250	140	90	40	70	35	40	33	22	21.5	0.50	**PD25763**
320	150	100	60	80	40	50	40	26	21.5	6.70	**KL9130**

Centre trunnion MT4 for P1D-T

Intended for articulated mounting of cylinder. The trunnion is factory-fitted in the centre of the cylinder or at an optional location specified by the XV-measure - Combined with pivot bracket for MT4.
Material:
Trunnion: Zinc plated steel

Trunnion centred
The central trunnion for the P1D-T is ordered with letter D in position 17 (no dimension specified in positions 18-20).
e.g. P1D-T160MS-0500NDNNN

Trunnion with optional location
The central trunnion for the P1D-T is ordered with letter G in position 17 and desired XV-measure (3-digit measure in mm) in positions 18-20. e.g. P1D-T160MS-0500NG300
Material: nodular graphite cast iron, passivated steel



According to ISO MT4, VDMA 24 562, AFNOR

Cyl. Ø mm	TD_{e9} mm	TK mm	TL mm	TM mm	UW mm	XV min	XV +1/2 stroke	XV_{max} + stroke	Weight kg	**Order code**
160	32	45	32	200	210	150	170	190	6.1	*
200	32	50	32	250	245	165	185	205	8.1	*
250	40	55	40	320	320	195	205	210	14.8	*
320	50	65	50	400	350	210	230	250	16.0	*

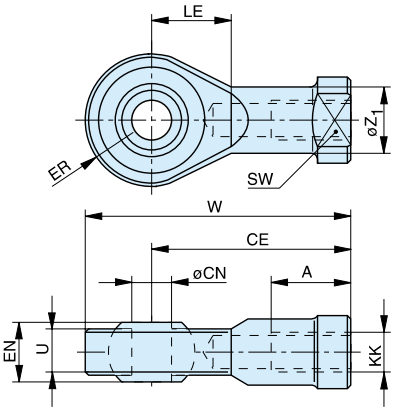
* Please consult Sales Office.

Piston rod mountings

Swivel rod eye AP6

Intended for articulated mounting of the cylinder.
Maintenance-free PTFE.

Material:
Swivel rod eye, nut: galvanized steel.
Swivel bearing according to DIN 648K: Hardened steel.



ISO 8139

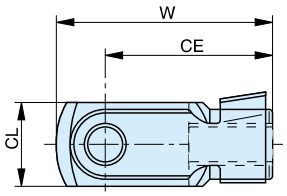
Cyl. Ø mm	CN^{H7} mm	LE mm	U mm	EN mm	ER mm	W mm max.	A mm max.	CE mm min.	KK mm	ØZ$_1$ mm	SW mm	Weight kg	**Order code**
160	35	41	28	43	40	165	56	125	M36x2	46	50	1.6	**KY6863**
200	35	41	28	43	40	165	56	125	M36x2	46	50	1.6	**KY6863**
250	40	46	33	49	45	187	60	142	M42x2	53	55	3.5	**KY6864**
320	50	59	45	60	58	218	65	160	M48x2	65	65	5.2	**KL9132**

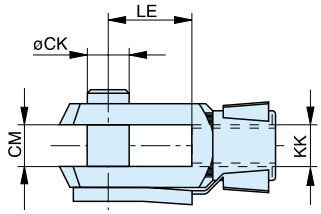
Clevis AP2

Intended for articulated mounting of the cylinder.

Material:
Clevis and clip galvanized steel.
Pin: Hardened steel

Supplied complete with axle.





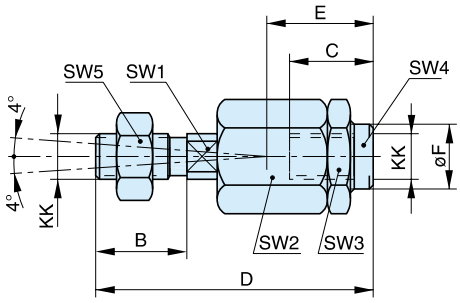
Cyl. Ø mm	ØCK mm	LE mm	CM mm	CL mm	W mm	CE mm max.	KK mm	Weight kg	**Order code**
160	35	72	36	70	188	144	M36x2	2.9	**KY6867**
200	35	72	36	70	188	144	M36x2	2.9	**KY6867**
250	40	84	40	85	245	168	M42x2	6.0	**KY6868**
320	50	96	50	90	250	192	M48x2	7.9	**KL9131**

Flexo coupling PM5

Flexo coupling for articulated mounting of piston rod.
Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material
Flexo coupling, nut: Zinc-plated steel
Socket: Hardened steel

Supplied complete with galvanized adjustment nut.



Cyl. Ø mm	KK mm	B mm	C mm	D mm	E mm	Ø F mm	SW1 mm	SW2 mm	SW3 mm	SW4 mm	SW5 mm	Weight kg	**Order code**
160	M36x2	72	50	241	110	56	36	75	75	50	55	5.1	**KY1139**
200	M36x2	72	50	241	110	56	36	75	75	50	55	5.1	**KY1139**
250	M42x2	82	88	271	120	-	36	80	80	60	65	7.9	**KY1140**
320	M48x2	82	88	271	120	-	42	80	80	60	75	7.9	**KL9133**

	Flange MF1/MF2	Foot brackets MS1	Pivot bracket with rigid bearing AB7	Swivel eye bracket MP6	Clevis bracket MP2
Ø 160	**PD23410**	**PD22027**	**P1C-4SMDB**	**PD23850**	**P1C-4SMTB**
Ø 200	**PD24924**	**PD24792**	**P1C-4TMDB**	**PD25766**	**P1C-4TMTB**
Ø 250	**PD25761**	**PD25758**	**P1C-4UMDC**	**PD25760**	**P1C-4UMTB**
Ø 320	**KL9140**	**KL9139**	**P1C-4VMDC**	**KL9136**	**P1C-4VMTB**

	Clevis bracket MP4	Pivot brackets AT4 for MT4	Swivel rod eye AP6	Clevis AP2	Flexo coupling PM5
Ø 160	**PD22628**	**PD24425**	**KY6863**	**KY6867**	**KY1139**
Ø 200	**PD24999**	**PD24425**	**KY6863**	**KY6867**	**KY1139**
Ø 250	**PD25759**	**PD25763**	**KY6864**	**KY6868**	**KY1140**
Ø 320	**KL9135**	**KL9130**	**KL9132**	**KL9131**	**KL9133**

P1D-X Pneumatic Cylinders

According to ISO 15552

High and Low Temperature Cylinders

P1D-X series contains cylinder versions for high and low temperature. These versions have material and sealing systems specially designed for their particular temperature ranges.
End covers and pistons are made entirely from metal, to give optimum function at **high** or **low** temperature in combination with seals made from specially tested materials and special grease.

- Conforms to ISO 15552.
- Bore 32-125 mm.
- Double acting.
- Stainless steel piston rod.
- Robust and corrosion resistant.
- Adjustable air cushioning.
- Retained stainless steel cushioning screws.
- Wide range of mountings and drop-in sensors

P1D-X High and Low Temperature Cylinders

For extreme conditions these cylinders for high and low temperatures have materials and sealing systems specially designed for their particular temperature ranges. End covers and pistons are made entirely from metal, to give optimum function at **high** or **low** temperature in combination with seals made from specially tested materials and special grease.

- Conforms to ISO 15552.
- Bore 32-125 mm.
- Double acting.
- Stainless steel piston rod.
- Robust and corrosion resistant.
- Adjustable air cushioning.
- Retained stainless steel cushioning screws.
- Wide range of mountings and drop-in sensors

Operating information

Working pressure:	Max 10 bar
Working temperature:	
High temp. version	**-10°C to +150°C**
Low temp. version	**-40°C to +80°C**

For more information see www.parker.com/euro_pneumatic

P1D-X - Double acting - High temperature

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1D-X032MF-0025**
40	**P1D-X032MF-0040**
50	**P1D-X032MF-0050**
80	**P1D-X032MF-0080**
100	**P1D-X032MF-0100**
125	**P1D-X032MF-0125**
160	**P1D-X032MF-0160**
200	**P1D-X032MF-0200**
250	**P1D-X032MF-0250**
320	**P1D-X032MF-0320**
400	**P1D-X032MF-0400**
500	**P1D-X032MF-0500**

Ø40mm - (G1/4)

Stroke mm	Order code
25	**P1D-X040MF-0025**
40	**P1D-X040MF-0040**
50	**P1D-X040MF-0050**
80	**P1D-X040MF-0080**
100	**P1D-X040MF-0100**
125	**P1D-X040MF-0125**
160	**P1D-X040MF-0160**
200	**P1D-X040MF-0200**
250	**P1D-X040MF-0250**
320	**P1D-X040MF-0320**
400	**P1D-X040MF-0400**
500	**P1D-X040MF-0500**

Ø50mm - (G1/4)

Stroke mm	Order code
25	**P1D-X050MF-0025**
40	**P1D-X050MF-0040**
50	**P1D-X050MF-0050**
80	**P1D-X050MF-0080**
100	**P1D-X050MF-0100**
125	**P1D-X050MF-0125**
160	**P1D-X050MF-0160**
200	**P1D-X050MF-0200**
250	**P1D-X050MF-0250**
320	**P1D-X050MF-0320**
400	**P1D-X050MF-0400**
500	**P1D-X050MF-0500**

Ø63mm - (G3/8)

Stroke mm	Order code
25	**P1D-X063MF-0025**
40	**P1D-X063MF-0040**
50	**P1D-X063MF-0050**
80	**P1D-X063MF-0080**
100	**P1D-X063MF-0100**
125	**P1D-X063MF-0125**
160	**P1D-X063MF-0160**
200	**P1D-X063MF-0200**
250	**P1D-X063MF-0250**
320	**P1D-X063MF-0320**
400	**P1D-X063MF-0400**
500	**P1D-X063MF-0500**

Ø80mm - (G3/8)

Stroke mm	Order code
25	**P1D-X080MF-0025**
40	**P1D-X080MF-0040**
50	**P1D-X080MF-0050**
80	**P1D-X080MF-0080**
100	**P1D-X080MF-0100**
125	**P1D-X080MF-0125**
160	**P1D-X080MF-0160**
200	**P1D-X080MF-0200**
250	**P1D-X080MF-0250**
320	**P1D-X080MF-0320**
400	**P1D-X080MF-0400**
500	**P1D-X080MF-0500**

Ø100mm - (G1/2)

Stroke mm	Order code
25	**P1D-X100MF-0025**
40	**P1D-X100MF-0040**
50	**P1D-X100MF-0050**
80	**P1D-X100MF-0080**
100	**P1D-X100MF-0100**
125	**P1D-X100MF-0125**
160	**P1D-X100MF-0160**
200	**P1D-X100MF-0200**
250	**P1D-X100MF-0250**
320	**P1D-X100MF-0320**
400	**P1D-X100MF-0400**
500	**P1D-X100MF-0500**

Ø125mm - (G1/2)

Stroke mm	Order code
25	**P1D-X125MF-0025**
40	**P1D-X125MF-0040**
50	**P1D-X125MF-0050**
80	**P1D-X125MF-0080**
100	**P1D-X125MF-0100**
125	**P1D-X125MF-0125**
160	**P1D-X125MF-0160**
200	**P1D-X125MF-0200**
250	**P1D-X125MF-0250**
320	**P1D-X125MF-0320**
400	**P1D-X125MF-0400**
500	**P1D-X125MF-0500**

The cylinders are supplied complete with a zinc plated steel piston rod nut.

P1D-X High Temperature

Certain restrictions apply when choosing sensors due to the temperature range.

High temperature cylinders cannot be fitted with sensors. (the magnetic field strength in high temperatures is too low to ensure correct reliable sensor function).

P1D-X - Double acting - Low temperature

Ø32mm - (G1/8)

Stroke mm	Order code
25	P1D-X032ML-0025
40	P1D-X032ML-0040
50	P1D-X032ML-0050
80	P1D-X032ML-0080
100	P1D-X032ML-0100
125	P1D-X032ML-0125
160	P1D-X032ML-0160
200	P1D-X032ML-0200
250	P1D-X032ML-0250
320	P1D-X032ML-0320
400	P1D-X032ML-0400
500	P1D-X032ML-0500

Ø40mm - (G1/4)

Stroke mm	Order code
25	P1D-X040ML-0025
40	P1D-X040ML-0040
50	P1D-X040ML-0050
80	P1D-X040ML-0080
100	P1D-X040ML-0100
125	P1D-X040ML-0125
160	P1D-X040ML-0160
200	P1D-X040ML-0200
250	P1D-X040ML-0250
320	P1D-X040ML-0320
400	P1D-X040ML-0400
500	P1D-X040ML-0500

Ø50mm - (G1/4)

Stroke mm	Order code
25	P1D-X050ML-0025
40	P1D-X050ML-0040
50	P1D-X050ML-0050
80	P1D-X050ML-0080
100	P1D-X050ML-0100
125	P1D-X050ML-0125
160	P1D-X050ML-0160
200	P1D-X050ML-0200
250	P1D-X050ML-0250
320	P1D-X050ML-0320
400	P1D-X050ML-0400
500	P1D-X050ML-0500

Ø63mm - (G3/8)

Stroke mm	Order code
25	P1D-X063ML-0025
40	P1D-X063ML-0040
50	P1D-X063ML-0050
80	P1D-X063ML-0080
100	P1D-X063ML-0100
125	P1D-X063ML-0125
160	P1D-X063ML-0160
200	P1D-X063ML-0200
250	P1D-X063ML-0250
320	P1D-X063ML-0320
400	P1D-X063ML-0400
500	P1D-X063ML-0500

Ø80mm - (G3/8)

Stroke mm	Order code
25	P1D-X080ML-0025
40	P1D-X080ML-0040
50	P1D-X080ML-0050
80	P1D-X080ML-0080
100	P1D-X080ML-0100
125	P1D-X080ML-0125
160	P1D-X080ML-0160
200	P1D-X080ML-0200
250	P1D-X080ML-0250
320	P1D-X080ML-0320
400	P1D-X080ML-0400
500	P1D-X080ML-0500

Ø100mm - (G1/2)

Stroke mm	Order code
25	P1D-X100ML-0025
40	P1D-X100ML-0040
50	P1D-X100ML-0050
80	P1D-X100ML-0080
100	P1D-X100ML-0100
125	P1D-X100ML-0125
160	P1D-X100ML-0160
200	P1D-X100ML-0200
250	P1D-X100ML-0250
320	P1D-X100ML-0320
400	P1D-X100ML-0400
500	P1D-X100ML-0500

Ø125mm - (G1/2)

Stroke mm	Order code
25	P1D-X125ML-0025
40	P1D-X125ML-0040
50	P1D-X125ML-0050
80	P1D-X125ML-0080
100	P1D-X125ML-0100
125	P1D-X125ML-0125
160	P1D-X125ML-0160
200	P1D-X125ML-0200
250	P1D-X125ML-0250
320	P1D-X125ML-0320
400	P1D-X125ML-0400
500	P1D-X125ML-0500

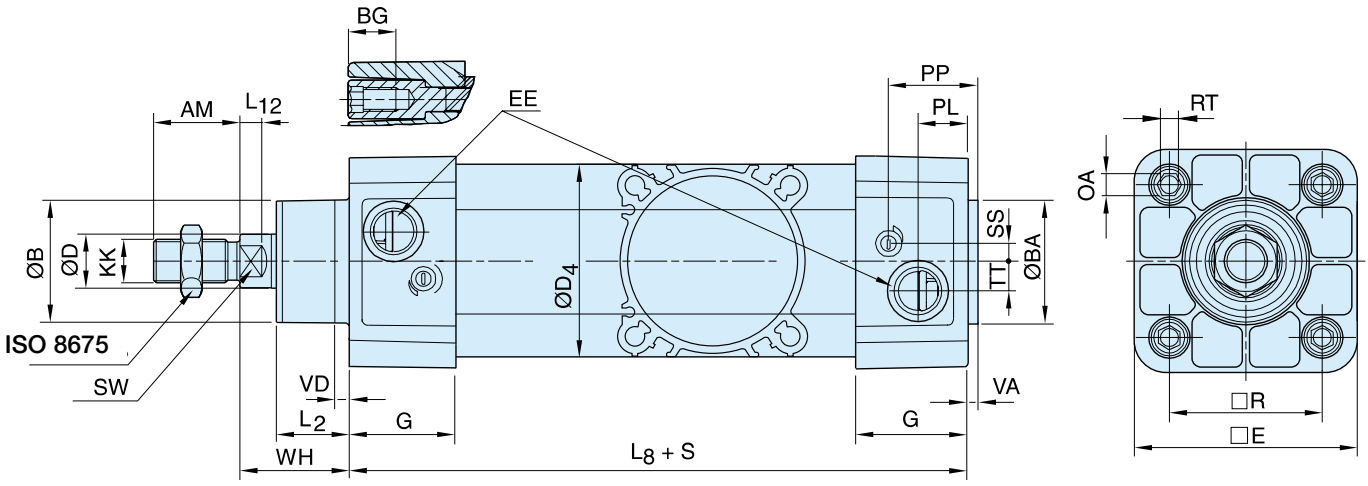
The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

The standard low temperature P1D-X version has a magnetic ring in the piston for proximity sensing but please note that these sensors are normally specified for full performance down to -25°C only.

P1D-X Series Dimensions



Dimensions

Cylinder bore mm	AM mm	B mm	BA mm	BG mm	D mm	D4 mm	E mm	EE mm	G mm	KK	L2 mm	L8 mm	L12 mm
32	22	30	30	16	12	45,0	48,0	G1/8	28,5	M10x1,25	16,8	94	6,0
40	24	35	35	16	16	52,0	53,5	G1/4	33,0	M12x1,25	19,0	105	6,5
50	32	40	40	16	20	60,7	65,2	G1/4	33,5	M16x1,5	24,0	106	8,0
63	32	45	45	16	20	71,5	75,5	G3/8	39,5	M16x1,5	24,3	121	8,0
80	40	45	45	17	25	86,7	95,0	G3/8	39,5	M20x1,5	30,0	128	10,0
100	40	55	55	17	25	106,7	114,0	G1/2	44,5	M20x1,5	34,0	138	14,0
125	54	60	60	20	32	134,0	139,0	G1/2	51,0	M27x2	45,0	160	18,0

Cylinder bore mm	OA mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	TT mm	VA mm	VD mm	WH mm
32	6,0	14,0	24,2	32,5	M6	5,5	10	4,2	3,5	4,5	26
40	6,0	16,0	27,5	38,0	M6	8,0	13	5,5	3,5	4,5	30
50	8,0	14,0	29,3	46,5	M8	9,0	17	7,5	3,5	4,5	37
63	8,0	16,6	30,8	56,5	M8	6,5	17	10,0	3,5	4,5	37
80	6,0	16,8	33,5	72,0	M10	0	22	11,5	3,5	4,5	46
100	6,0	20,5	37,5	89,0	M10	0	22	14,5	3,5	4,5	51
125	8,0	23,3	45,8	110,0	M12	0	27	15,0	5,5	6,5	65

S=Stroke

Tolerances

Cylinder bore mm	B	BA	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

For mountings refer to page 42.

P1D-L Rod Locking Cylinders

P1D-L is a series of extremely compact rod lock cylinders for demanding applications. This version allows the piston rod to be locked in any position but can also be used as a brake (limits apply) thanks to the rigid design. With helical grooves on the precision clamping sleeves the locking function allows for applications where the piston rod is exposed to liquids and contamination.

- Available in 32 to 125 mm bores
- PUR seals for long service life
- Drop-in sensors
- Corrosion resistant design
- Magnetic piston as standard
- Full range of ISO mountings
- Lubricated with food grade grease

Operating information

Working pressure:	Max 10 bar
Working temperature:	-20°C to +80°C
Release pressure[1)]	Min 4 bar
ATEX approval:	CE Ex IIGD c T4 120°C

[1)] Signal pressure to inlet port of lock unit

For more information see www.parker.com/euro_pneumatic

P1D-L Standard - Double acting

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1D-L032MC-0025**
40	**P1D-L032MC-0040**
50	**P1D-L032MC-0050**
80	**P1D-L032MC-0080**
100	**P1D-L032MC-0100**
125	**P1D-L032MC-0125**
160	**P1D-L032MC-0160**
200	**P1D-L032MC-0200**
250	**P1D-L032MC-0250**
320	**P1D-L032MC-0320**
400	**P1D-L032MC-0400**
500	**P1D-L032MC-0500**

Ø40mm - (G1/4)

Stroke mm	Order code
25	**P1D-L040MC-0025**
40	**P1D-L040MC-0040**
50	**P1D-L040MC-0050**
80	**P1D-L040MC-0080**
100	**P1D-L040MC-0100**
125	**P1D-L040MC-0125**
160	**P1D-L040MC-0160**
200	**P1D-L040MC-0200**
250	**P1D-L040MC-0250**
320	**P1D-L040MC-0320**
400	**P1D-L040MC-0400**
500	**P1D-L040MC-0500**

Ø50mm - (G1/4)

Stroke mm	Order code
25	**P1D-L050MC-0025**
40	**P1D-L050MC-0040**
50	**P1D-L050MC-0050**
80	**P1D-L050MC-0080**
100	**P1D-L050MC-0100**
125	**P1D-L050MC-0125**
160	**P1D-L050MC-0160**
200	**P1D-L050MC-0200**
250	**P1D-L050MC-0250**
320	**P1D-L050MC-0320**
400	**P1D-L050MC-0400**
500	**P1D-L050MC-0500**

Ø63mm - (G3/8)

Stroke mm	Order code
25	**P1D-L063MC-0025**
40	**P1D-L063MC-0040**
50	**P1D-L063MC-0050**
80	**P1D-L063MC-0080**
100	**P1D-L063MC-0100**
125	**P1D-L063MC-0125**
160	**P1D-L063MC-0160**
200	**P1D-L063MC-0200**
250	**P1D-L063MC-0250**
320	**P1D-L063MC-0320**
400	**P1D-L063MC-0400**
500	**P1D-L063MC-0500**

Ø80mm - (G3/8)

Stroke mm	Order code
25	**P1D-L080MS-0025**
40	**P1D-L080MC-0040**
50	**P1D-L080MC-0050**
80	**P1D-L080MC-0080**
100	**P1D-L080MC-0100**
125	**P1D-L080MC-0125**
160	**P1D-L080MC-0160**
200	**P1D-L080MC-0200**
250	**P1D-L080MC-0250**
320	**P1D-L080MC-0320**
400	**P1D-L080MC-0400**
500	**P1D-L080MC-0500**

Ø100mm - (G1/2)

Stroke mm	Order code
25	**P1D-L100MC-0025**
40	**P1D-L100MC-0040**
50	**P1D-L100MC-0050**
80	**P1D-L100MC-0080**
100	**P1D-L100MC-0100**
125	**P1D-L100MC-0125**
160	**P1D-L100MC-0160**
200	**P1D-L100MC-0200**
250	**P1D-L100MC-0250**
320	**P1D-L100MC-0320**
400	**P1D-L100MC-0400**
500	**P1D-L100MC-0500**

Ø125mm - (G1/2)

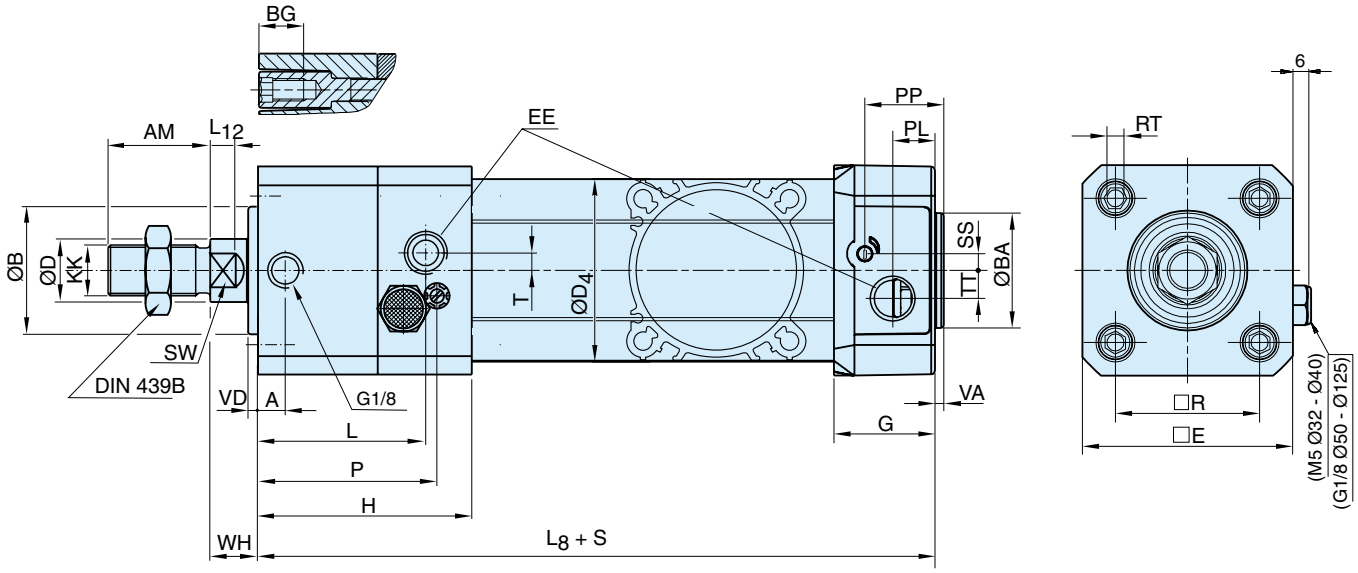
Stroke mm	Order code
25	**P1D-L125MC-0025**
40	**P1D-L125MC-0040**
50	**P1D-L125MC-0050**
80	**P1D-L125MC-0080**
100	**P1D-L125MC-0100**
125	**P1D-L125MC-0125**
160	**P1D-L125MC-0160**
200	**P1D-L125MC-0200**
250	**P1D-L125MC-0250**
320	**P1D-L125MC-0320**
400	**P1D-L125MC-0400**
500	**P1D-L125MC-0500**

The cylinders are supplied complete with a zinc plated steel piston rod nut.

Sensors

For sensors see page 78.

P1D-L Series dimensions



Dimensions

Cylinder bore mm	A mm	AM mm	B mm	BA mm	BG mm	D mm	D4 mm	E mm	EE mm	G mm	H mm	KK mm	L mm
32	18,5	22	30	30	16	12	45,0	50,0	G1/8	28,5	71,0	M10x1,25	53,0
40	20,0	24	35	35	16	16	52,0	57,4	G1/4	33,0	76,5	M12x1,25	56,0
50	21,0	32	40	40	16	20	60,7	69,4	G1/4	33,5	80,0	M16x1,5	65,0
63	30,0	32	45	45	16	20	71,5	82,4	G3/8	39,5	96,0	M16x1,5	76,5
80	35,0	40	45	45	17	25	86,7	99,4	G3/8	39,5	110,0	M20x1,5	89,0
100	54,0	40	55	55	17	25	106,7	116,0	G1/2	44,5	132,0	M20x1,5	112,0
125	65,5	54	60	60	20	32	134,0	139,0	G1/2	51,0	144,5	M27x2	124,5

Cylinder bore mm	L8 mm	L12 mm	P mm	PL mm	PP mm	R mm	RT	SS mm	SW mm	T mm	TT mm	VA mm	VD mm	WH mm
32	137	6,0	63,0	13,0	21,8	32,5	M6	4,0	10	4,5	4,5	3,5	4,5	15
40	149	6,5	67,5	14,0	21,9	38,0	M6	8,0	13	3,0	5,5	3,5	4,5	16
50	153	8,0	71,0	14,0	23,0	46,5	M8	4,0	17	5,5	7,5	3,5	5,0	17
63	178	8,0	87,0	16,4	27,4	56,5	M8	6,5	17	3,0	11,0	3,5	5,0	17
80	199	10,0	101,0	16,0	30,5	72,0	M10	0	22	6,0	15,0	3,5	4,0	20
100	226	14,0	122,0	18,0	35,8	89,0	M10	0	22	6,0	20,0	3,5	4,0	20
125	254	18,0	134,5	28,0	40,5	110,0	M12	0	27	6,0	17,5	5,5	6,0	27

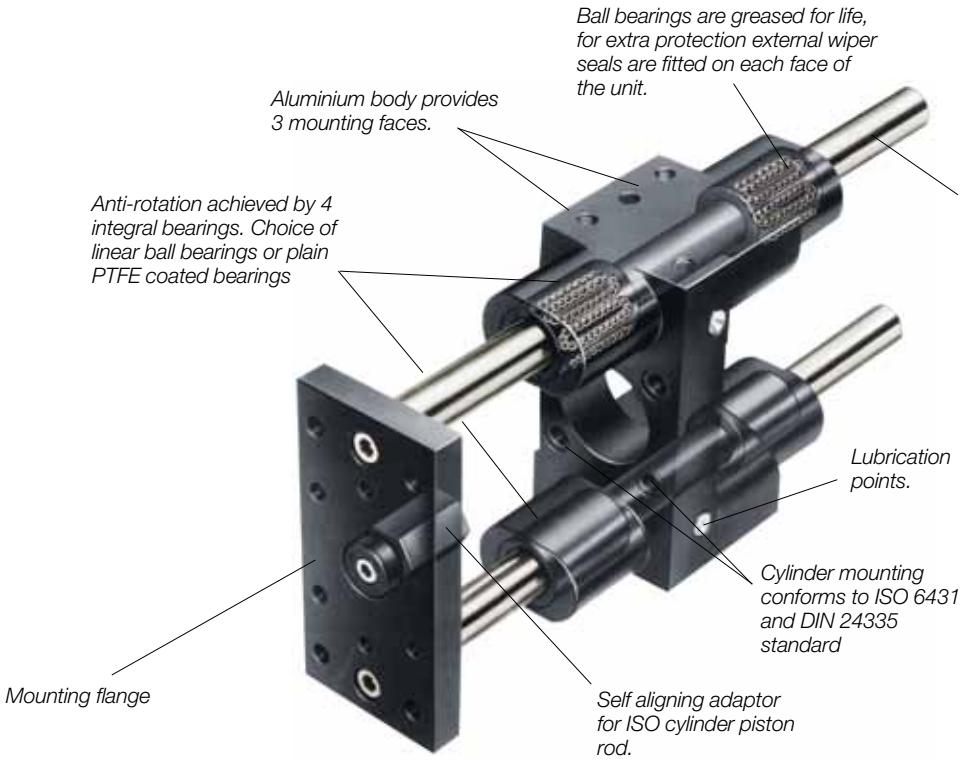
S=Stroke

Tolerances

Cylinder bore mm	B	BA mm	L_8 mm	L_9 mm	R mm	Stroke tolerance up to stroke 500 mm	Stroke tolerance for stroke over 500 mm
32	d11	d11	±0,4	±2	±0,5	+0,3/+2,0	+0,3/+3,0
40	d11	d11	±0,7	±2	±0,5	+0,3/+2,0	+0,3/+3,0
50	d11	d11	±0,7	±2	±0,6	+0,3/+2,0	+0,3/+3,0
63	d11	d11	±0,8	±2	±0,7	+0,3/+2,0	+0,3/+3,0
80	d11	d11	±0,8	±3	±0,7	+0,3/+2,0	+0,3/+3,0
100	d11	d11	±1,0	±3	±0,7	+0,3/+2,0	+0,3/+3,0
125	d11	d11	±1,0	±3	±1,1	+0,3/+2,0	+0,3/+3,0

For mountings refer to page 42.

P1E Rod Guidance Module



Installation on P1D with lock unit
If rotary control is to be retrofitted to a P1D with lock unit, the piston rod must be extended to provide the same WH dimensions as for the P1D base cylinder, as shown in the table below.

Cyl. dim mm	Piston rod extension on P1D with lock unit mm
32	11
40	14
50	20
63	20
80	26
100	31

P1E with rod guidance modules

The P1D series cylinders can be equipped with an external guiding device to prevent the piston rod from turning. The factory fitted guide gives a guided piston movement and enables the cylinder to take up turning moments on the piston rod, as well as greater transverse forces. The rod guidance is available with plain bearings or linear ball bearings and with H or U style. The bracket, which has pre-drilled mounting holes, is connected to the piston rod by means of a flexo coupling, which prevents the build-up of stresses in the cylinder. P1D cylinders with guiding devices are available with bores from 32 to 100 mm, and standard stroke lengths from 25 to 250 mm. Special stroke lengths up to 500 mm can also be obtained. Separate guiding device kits can be supplied on request according to the order key below.

Technical data

Working medium	Dry, filtered compressed air
Working temperature	–20 °C to +80 °C

Material specifications, guidance modules

Body	Anodised aluminium
Guide bars, H style	Stainless steel for ball bearing chrome plated for plain bearing
Front plate	Anodised aluminium
Guide bars, U style	Stainless steel
Front plate	Zinc-plated steel
Bearings	Plain bearings Linear ball bearings

Other data as standard cylinder.

Order key for separate guidance module

P1E - 4KRH - 0100

	Bore size mm
K	32
L	40
M	50
N	63
P	80
Q	100

	Guide module type
H	H style, ball bearings
J	H style, plain bearings
K	U style, plain bearings

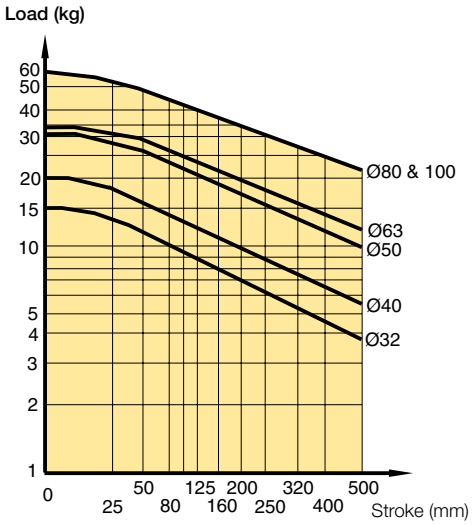
Stroke length (mm)

Same as for the cylinder
e.g. **0100** = 100 mm.

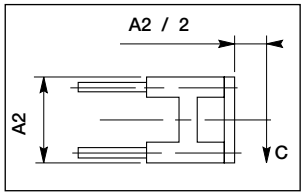
Technical information 'H style'

Rod guide with ball bearings

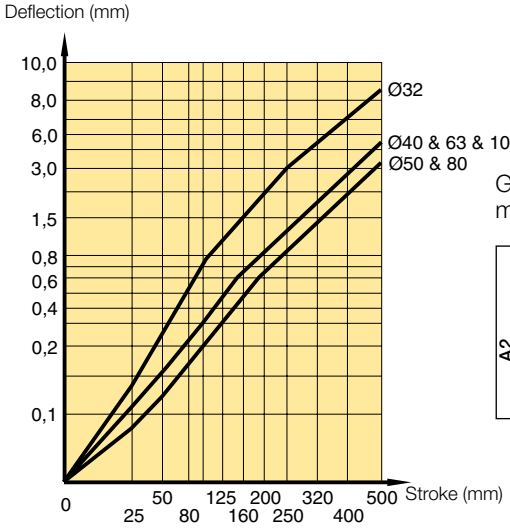
Maximum load carried



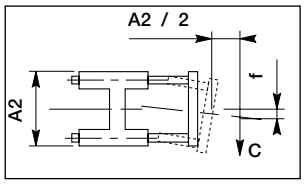
Graphs established at mid point of stroke



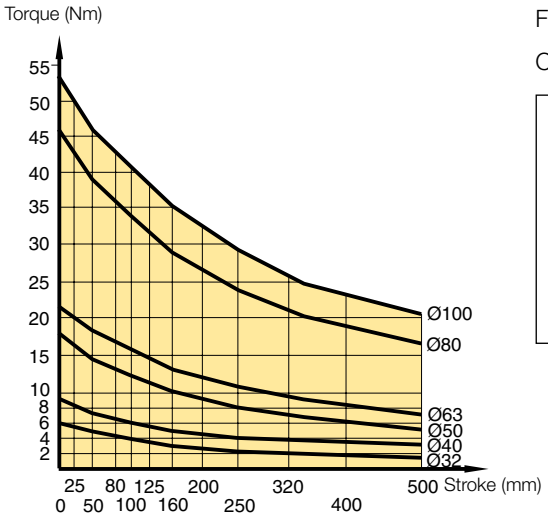
Maximum deflection/max load



Graphs established at mid point of stroke

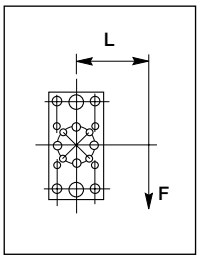


Maximum permissible torque (Nm)



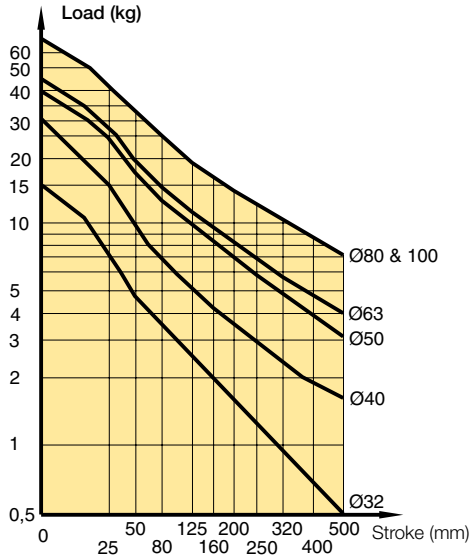
Formula:

C(Nm) = F(N) x L(m)

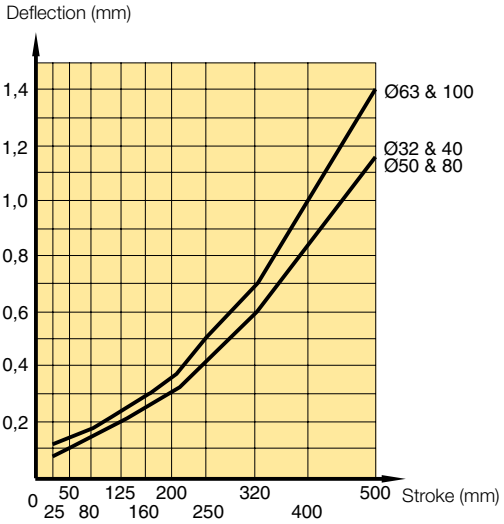


Rod guide with plain bearings

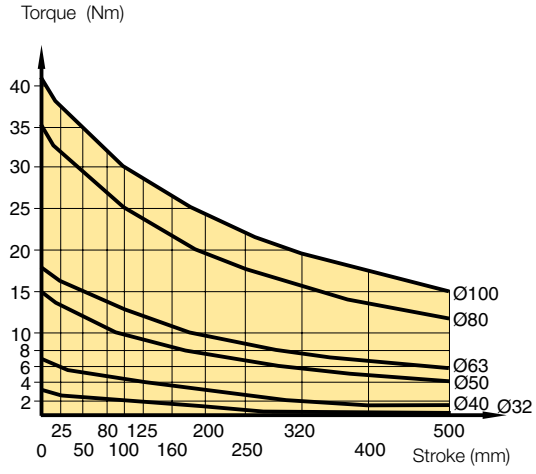
Maximum load carried

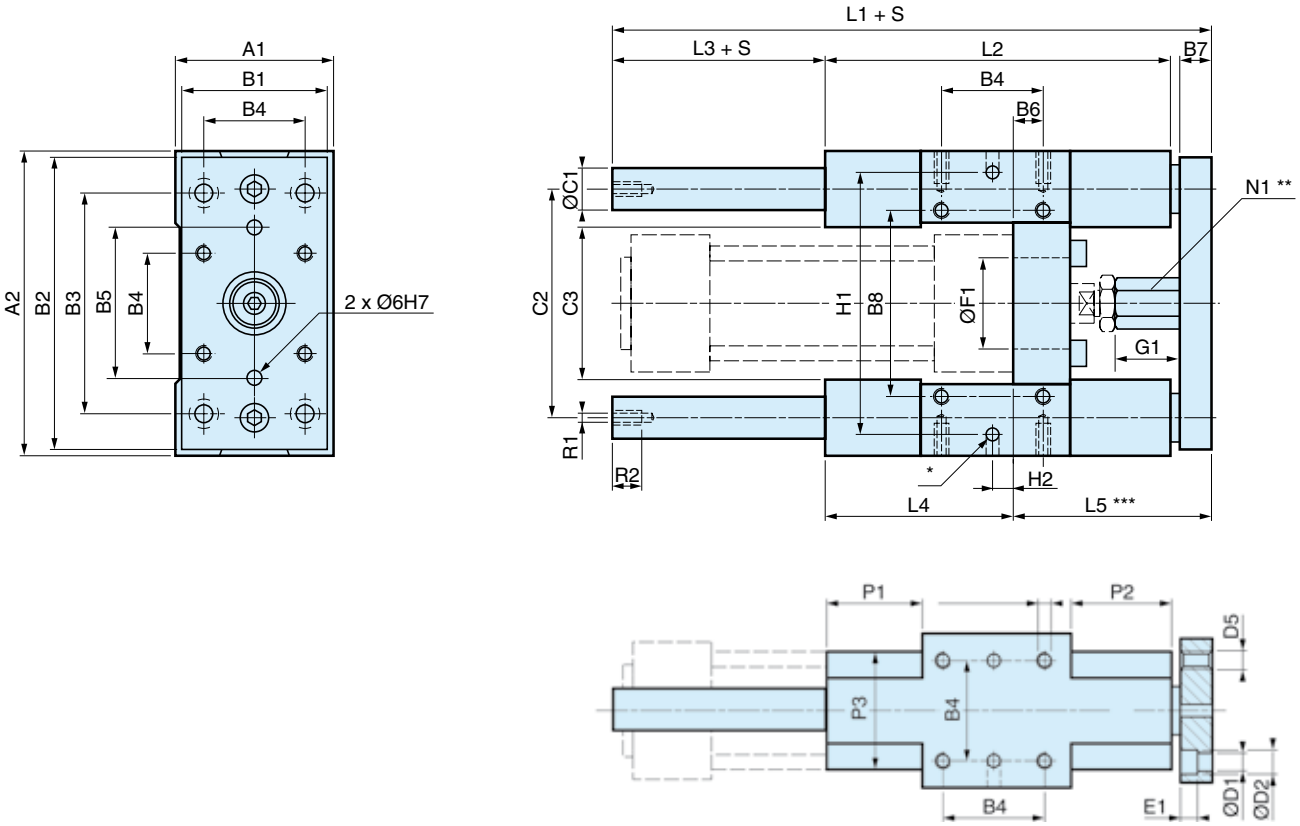


Maximum deflection/max load



Maximum permissible torque (Nm)





Dimensions, H style guidance modules

Cyl. bore mm	A_1 mm	A_2 mm	B_1 mm	B_2 mm	B_3 mm	B_4 mm	B_5 mm	B_6 mm	B_7 mm	B_8 mm	$ØC_1$ mm	C_2 mm	C_3 mm	$ØD_1$ mm	$ØD_2$ mm	D_5
32	50	97	45	90	78	32,5	50	4,2	12	61	12	73,5	50	6,6	11	M6
40	58	115	54	110	84	38,0	54	11,0	12	69	16	86,5	58	6,6	11	M6
50	70	137	63	130	100	46,5	72	18,8	15	85	20	103,5	70	8,4	15	M8
63	85	152	80	145	105	56,5	82	15,0	15	100	20	118,5	83	8,4	15	M8
80	105	189	100	180	130	72,0	106	21,0	20	130	25	147,0	102	10,5	18	M10
100	130	213	120	200	150	89,0	131	24,5	20	150	25	171,5	125	10,5	18	M10

Cyl. bore mm	E_1 mm	Ø $F_1^{+0,1/0}$ G_1 mm	L_1 mm	L_2 mm	L_3 mm	L_4 mm	L_5 mm	N_1 mm	$P_1^{\pm1}$ mm	$P_2^{\pm1}$ mm	P_3 mm	R_1 mm	R_2 mm	W mm	mm
32	7	30	17	150	120	15	71	64	17	36	31	40	M6	11	5
40	7	35	24	170	130	25	71	74	17	36	36	44	M6	11	6
50	9	40	27	197	150	24	79	89	24	42	44	50	M8	16	8
63	9	45	27	222	180	24	109	89	24	58	44	60	M8	16	8
80	11	45	32	247	200	24	113	110	30	50	52	70	M10	16	10
100	11	55	32	267	220	24	128	115	30	49	51	70	M10	16	10

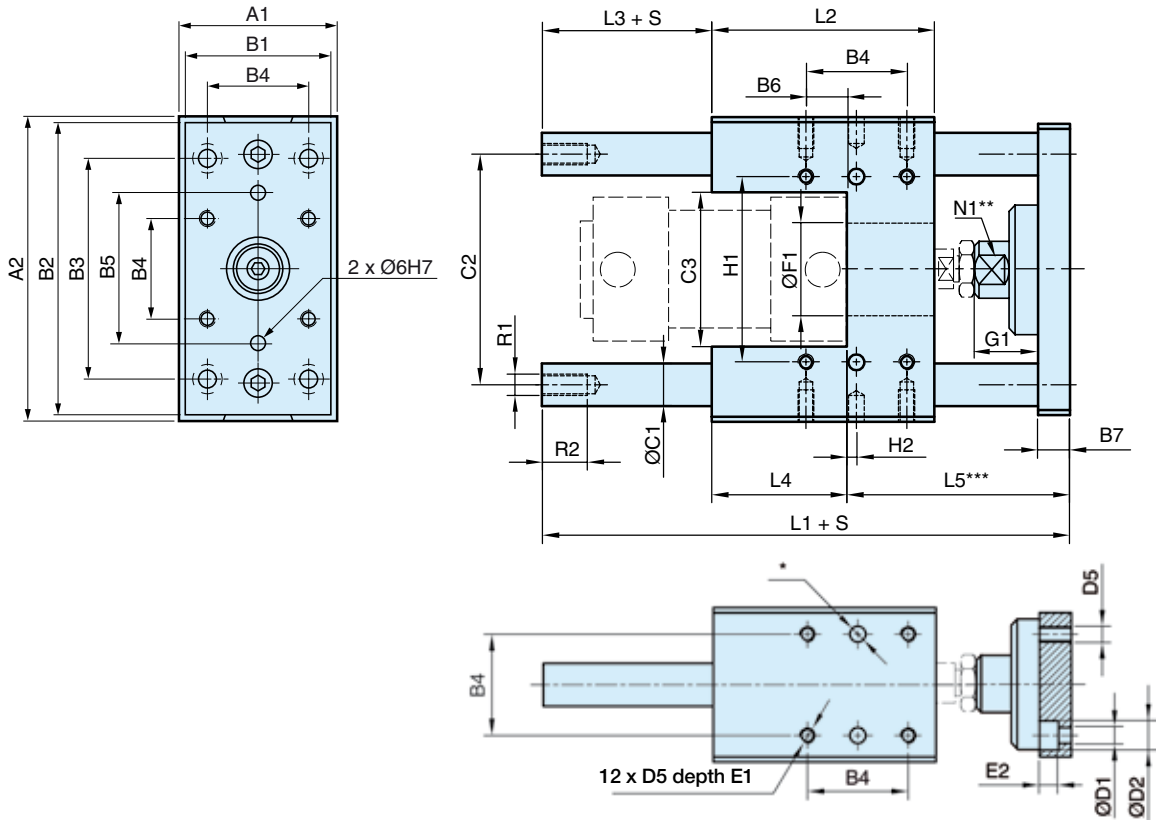
Cyl. bore mm	$H_1^{\pm0,05}$ mm	H_2 mm	T mm	Weight at 0 mm stroke kg	Supplement weight per 10 mm stroke kg
32	81	11,7	12	0,970	0,018
40	99	8,0	12	1,550	0,032
50	119	4,2	16	2,560	0,050
63	132	13,0	16	3,570	0,050
80	166	15,0	20	6,530	0,078
100	190	20,5	20	8,760	0,078

S = Stroke length

* 6 hole Ø6 ^{H7}, depth $10^{+1/0}$

** Hexagon profile

*** Min adjustment=0, max.=W



Dimensions, U style guidance modules

Cyl. bore. mm	A_1 mm	A_2 mm	B_1 mm	B_2 mm	B_3 mm	B_4 mm	B_5 mm	B_6 mm	B_7 mm	C_1 mm	C_2 mm	C_3 mm	D_1 mm	D_2 mm	D_5
32	50	97	45	90	78	32,5	50	18,0	12	12	74	50	6,6	11	M6
40	58	115	54	110	84	38,0	54	15,5	12	16	87	58	6,6	11	M6
50	70	137	63	130	100	46,5	72	19,5	15	20	104	70	9,0	15	M8
63	85	152	80	145	105	56,5	82	29,5	15	20	119	85	9,0	15	M8
80	105	189	100	180	130	72,0	106	39,0	20	25	148	105	11,0	18	M10
100	130	213	120	200	150	89,0	131	53,5	20	25	172	130	11,0	18	M10

Cyl. bore. mm	E_1 mm	E_2 mm	Ø $F_1^{+0,1/0}$ mm	G_1	L_1 mm	L_2 mm	L_3 mm	L_4 mm	L_5 mm	N_1 mm	R_1 mm	R_2	$H_1^{\pm0,05}$ mm	H_2 mm	W*** mm
32	10	6,5	30	30	133	72	14	44	75	13	M6	11	61	1,75	5
40	10	6,5	35	36	149	84	12	51	86	15	M8	12	69	3,50	5
50	13	9,0	40	42	175	100	12	60	103	22	M8	12	85	3,75	5
63	13	9,0	45	42	190	115	12	75	103	22	M8	12	100	1,25	5
80	16	11,0	45	49	238	162	0	112	126	27	M10	16	130	3,00	6
100	16	11,0	55	49	249	167	6	112	131	27	M10	16	150	8,50	6

Cyl. bore mm	Weight at 0 mm stroke kg	Supplement weight per 10 mm stroke kg
32	0,970	0,018
40	1,550	0,315
50	2,560	0,493
63	3,570	0,493
80	6,530	0,770
100	8,760	0,770

S = Stroke length

* 6 hole Ø6 ^{H7}, depth $10^{+1/0}$
** Width of jaw
*** Min adjustment=0, max.=W

P8S-G sensors

The P1D sensors can easily be installed from the side in the sensor groove, at any position along the piston stroke. The sensors are completely recessed and thus mechanically protected. Choose between electronic or reed sensors and several cable lengths and 8 mm and M12 connectors. The same standard sensors are used for all P1D versions.

Electronic sensors

The electronic sensors are "Solid State", i.e. they have no moving parts at all. They are provided with short-circuit protection and transient protection as standard. The built-in electronics make the sensors suitable for applications with high on and off switching frequency, and where very long service life is required.

Reed sensors

The sensors are based on proven reed switches, which offer reliable function in many applications. Simple installation, a protected position on the cylinder and clear LED indication are important advantages of this range of sensors.

Technical data

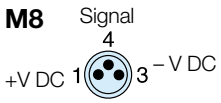
Design	GMR (Giant Magnetic Resistance) magneto-resistive function
Installation	From side, down into the sensor groove, so-called drop-in
Outputs	PNP, normally open (also available in NPN design, normally closed, on request)
Voltage range	10-30 VDC 10-18 V DC, ATEX sensor
Ripple	max 10%
Voltage drop	max 2,5 V
Load current	max 100 mA
Internal consumption	max 10 mA
Actuating distance	min 9 mm
Hysteresis	max 1,5 mm
Repeatability accuracy	max 0,2 mm
On/off switching frequency	max 5 kHz
On switching time	max 2 ms
Off switching time	max 2 ms
Encapsulation	IP 67 (EN 60529)
Temperature range	–25 °C to +75 °C –20 °C to +45 °C, ATEX sensor
Indication	LED, yellow
Material housing	PA 12
Material screw	Stainless steel
Cable	PVC or PUR 3x0.25 mm^2 see order code respectively

Technical data

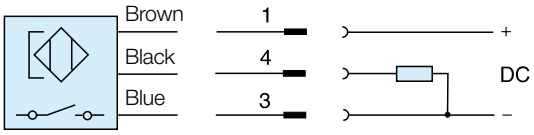
Design	Reed element
Mounting	From side, down into the sensor groove, so-called drop-in
Output	Normally open , or normally closed
Voltage range	10-30 V AC/DC or 10-120 V AC/DC 24-230 V AC/DC
Load current	max 500 mA for 10-30 V or max 100 mA for 10-120 V max 30 mA for 24-230 V
Breaking power (resistive)	max 6 W/VA
Actuating distance	min 9 mm
Hysteresis	max 1,5 mm
Repeatability accuracy	0,2 mm
On/off switching frequency	max 400 Hz
On switching time	max 1,5 ms
Off switching time	max 0,5 ms
Encapsulation	IP 67 (EN 60529)
Temperature range	–25 °C to +75 °C
Indication	LED, yellow
Material housing	PA12
Material screw	Stainless steel
Cable	PVC or PUR 3x0.14 mm^2 see order code respectively

Electronic sensors

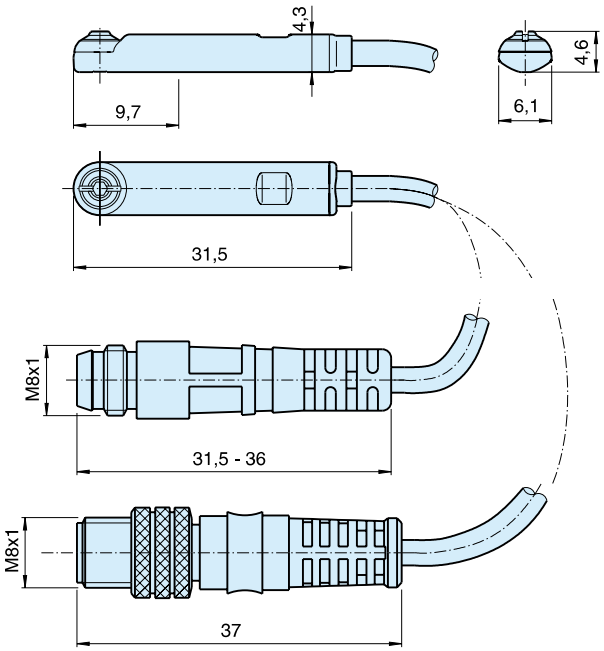
M8



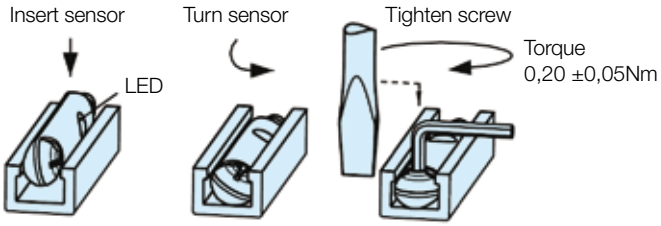
M12



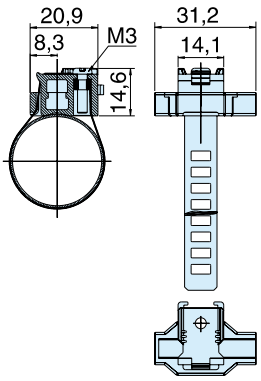
Sensor Dimensions



Sensor Installation - P1D-S / B / C / X P1Q / P1P

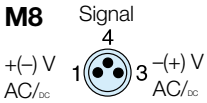


Sensor mounting for P1A - P8S-TMC01

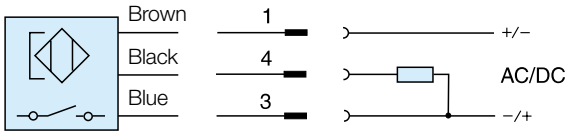


Reed sensors

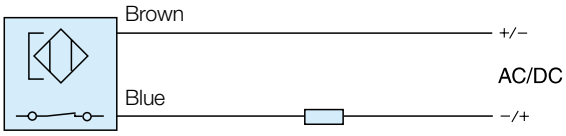
M8



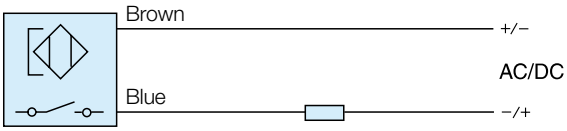
M12



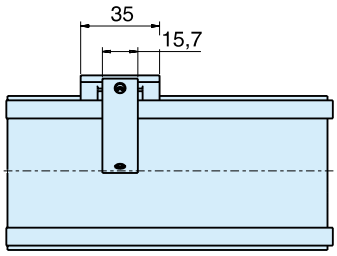
P8S-GCFPX

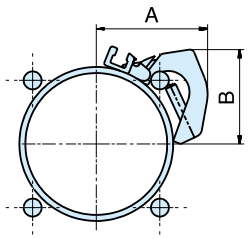


P8S-GRFLX / P8S-GRFLX2



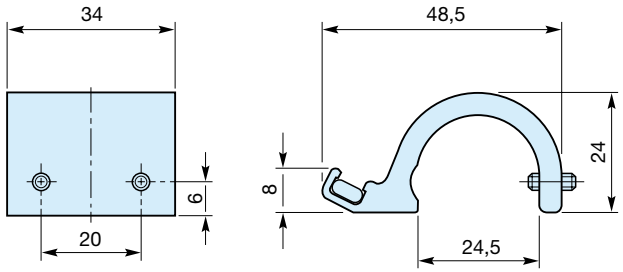
Sensor mounting - P1D-T 32 - 125mm P8S-TMA0X





Cyl. bore mm	A mm	B mm
32	35	26
40	39	30
50	44	30
63	50	42
80	54	52
100	62	60
125	74	69

Sensor mounting - P1D-T 160 - 320mm PD48956



Order code
PD48956

Ordering data

Output/function	Cable/connector	Weight kg	Order code
Electronic sensors , 10-30 V DC			
PNP type, normally open	0,27 m PUR-cable and 8 mm snap-in male connector	0,007	**P8S-GPSHX**
PNP type, normally open	0,27 m PUR-cable and M12 screw male connector	0,015	**P8S-GPMHX**
PNP type, normally open	3 m PVC-cable without connector	0,030	**P8S-GPFLX**
PNP type, normally open	10 m PVC-cable without connector	0,110	**P8S-GPFTX**
Reed sensors , 10-30 V AC/DC			
Normally open	0,27 m PUR-cable and 8 mm snap-in male connector	0,007	**P8S-GSSHX**
Normally open	0,27 m PUR-cable and M12 screw male connector	0,015	**P8S-GSMHX**
Normally open	3 m PVC-cable without connector	0,030	**P8S-GSFLX**
Normally open	10 m PVC-cable without connector	0,110	**P8S-GSFTX**
Normally closed	5m PVC-cable without connector [1]	0,050	**P8S-GCFPX**
Reed sensors, 10-120 V AC/DC			
Normally open	3 m PVC-cable without connector	0,030	**P8S-GRFLX**
Reed sensorer, 24-230 V AC/DC			
Normally open	3 m PVC-cable without connector	0,030	**P8S-GRFLX2**

1) Without LED

Sensor mounting

Description	Weight kg	Order code
Sensor mounting for cylinder P1A cylinder bore Ø10 to Ø25 mm	0,07	**P8S-TMC01**
Double jointed adapter for cylinder P1D-T cylinder bore Ø32 to Ø125 mm	0,07	**P8S-TMA0X**
Sensor mounting for P1D-T 160 - 320mm	0,040	**PD48956**

Connecting cables with one connector

The cables have an integral snap-in female connector.

Type of cable	Cable/connector	Weight kg	Order code
Cables for sensors, complete with one female connector			
Cable, Flex PVC	3 m, 8 mm Snap-in connector	0,07	**9126344341**
Cable, Flex PVC	10 m, 8 mm Snap-in connector	0,21	**9126344342**
Cable, Polyurethane	3 m, 8 mm Snap-in connector	0,01	**9126344345**
Cable, Polyurethane	10 m, 8 mm Snap-in connector	0,20	**9126344346**
Cable, Polyurethane	5 m, M12 screw connector	0,07	**9126344348**
Cable, Polyurethane	10 m, M12 screw connector	0,20	**9126344349**

Male connectors for connecting cables

Cable connectors for producing your own connecting cables. The connectors can be quickly attached to the cable without special tools. Only the outer sheath of the cable is removed. The connectors are available for M8 and M12 screw connectors and meet protection class IP 65.

Connector	Weight kg	Order code
M8 screw connector	0,017	**P8CS0803J**
M12 screw connector	0,022	**P8CS1204J**

For ATEX specific products contact Sales Office

P1A Pneumatic Mini ISO Cylinders

According to ISO 6432

The P1A range of cylinders is intended for use in a wide range of applications. The cylinders are particularly suitable for lighter duties in the packaging, food and textile industries.
Hygienic design, the use of corrosion-resistant materials and initial lubrication with our food-grade grease makes the cylinders suitable for food industry applications.

- **Mini cylinder according to ISO 6432**
- **Available in 10 to 25 mm bores**
- **Corrosion resistant design and low weight construction**
- **Magnetic piston as standard**
- **End stroke buffers for long service life**

Careful design and high quality manufacture throughout ensure long service life and optimum economy.
Mounting dimensions fully in accordance with ISO 6432 and CETOP RP52P greatly simplifies installation and world-wide interchangeability.

- Mini cylinder according to ISO 6432
- Available in 10 to 25 mm bores
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- End stroke buffers for long service life

Operating information

Working pressure: Max 10 bar
Temperature range: -20°C to +80°C Ø10-25mm

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Double acting buffer cushioning

Ø10mm - (M5)

Stroke mm	Order code
10	**P1A-S010DS-0010**
15	**P1A-S010DS-0015**
25	**P1A-S010DS-0025**
30	**P1A-S010DS-0030**
40	**P1A-S010DS-0040**
50	**P1A-S010DS-0050**
80	**P1A-S010DS-0080**
100	**P1A-S010DS-0100**
125	**P1A-S010DS-0125**

Ø12mm - (M5)

Stroke mm	Order code
10	**P1A-S012DS-0010**
15	**P1A-S012DS-0015**
25	**P1A-S012DS-0025**
30	**P1A-S012DS-0030**
40	**P1A-S012DS-0040**
50	**P1A-S012DS-0050**
80	**P1A-S012DS-0080**
100	**P1A-S012DS-0100**
125	**P1A-S012DS-0125**
160	**P1A-S012DS-0160**
200	**P1A-S012DS-0200**

Ø16mm - (M5)

Stroke mm	Order code
10	**P1A-S016DS-0010**
15	**P1A-S016DS-0015**
25	**P1A-S016DS-0025**
30	**P1A-S016DS-0030**
40	**P1A-S016DS-0040**
50	**P1A-S016DS-0050**
80	**P1A-S016DS-0080**
100	**P1A-S016DS-0100**
125	**P1A-S016DS-0125**
160	**P1A-S016DS-0160**
200	**P1A-S016DS-0200**

Ø20mm - (G1/8)

Stroke mm	Order code
10	**P1A-S020DS-0010**
15	**P1A-S020DS-0015**
25	**P1A-S020DS-0025**
30	**P1A-S020DS-0030**
40	**P1A-S020DS-0040**
50	**P1A-S020DS-0050**
80	**P1A-S020DS-0080**
100	**P1A-S020DS-0100**
125	**P1A-S020DS-0125**
160	**P1A-S020DS-0160**
200	**P1A-S020DS-0200**
250	**P1A-S020DS-0250**
320	**P1A-S020DS-0320**

Ø25mm - (G1/8)

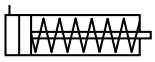
Stroke mm	Order code
10	**P1A-S025DS-0010**
15	**P1A-S025DS-0015**
25	**P1A-S025DS-0025**
30	**P1A-S025DS-0030**
40	**P1A-S025DS-0040**
50	**P1A-S025DS-0050**
80	**P1A-S025DS-0080**
100	**P1A-S025DS-0100**
125	**P1A-S025DS-0125**
160	**P1A-S025DS-0160**
200	**P1A-S025DS-0200**
250	**P1A-S025DS-0250**
320	**P1A-S025DS-0320**

Cylinders are supplied complete with neck mounting and piston rod nuts.
Cylinders with Through piston rods are supplied with two piston rod nuts and one neck mounting nut.

Sensors

For sensors see page 78.

Single acting push type (Spring return for retracted stroke)



Ø10mm - (M5)

Stroke mm	Order code
10	**P1A-S010SS-0010**
15	**P1A-S010SS-0015**
25	**P1A-S010SS-0025**
40	**P1A-S010SS-0040**
50	**P1A-S010SS-0050**
80	**P1A-S010SS-0080**

Ø12mm - (M5)

Stroke mm	Order code
10	**P1A-S012SS-0010**
15	**P1A-S012SS-0015**
25	**P1A-S012SS-0025**
40	**P1A-S012SS-0040**
50	**P1A-S012SS-0050**
80	**P1A-S012SS-0080**

Ø16mm - (M5)

Stroke mm	Order code
10	**P1A-S016SS-0010**
15	**P1A-S016SS-0015**
25	**P1A-S016SS-0025**
40	**P1A-S016SS-0040**
50	**P1A-S016SS-0050**
80	**P1A-S016SS-0080**

Ø20mm - (G1/8)

Stroke mm	Order code
10	**P1A-S020SS-0010**
15	**P1A-S020SS-0015**
25	**P1A-S020SS-0025**
50	**P1A-S020SS-0050**
80	**P1A-S020SS-0080**

Ø25mm - (G1/8)

Stroke mm	Order code
10	**P1A-S025SS-0010**
15	**P1A-S025SS-0015**
25	**P1A-S025SS-0025**
40	**P1A-S025SS-0040**
50	**P1A-S025SS-0050**
80	**P1A-S025SS-0080**

Single acting pull type (Spring extended for advanced stroke)

Ø16mm - (M5)

Stroke mm	Order code
10	**P1A-S016TS-0010**
15	**P1A-S016TS-0015**
25	**P1A-S016TS-0025**
40	**P1A-S016TS-0040**
50	**P1A-S016TS-0050**

Ø20mm - (G1/8)

Stroke mm	Order code
10	**P1A-S020TS-0010**
15	**P1A-S020TS-0015**
25	**P1A-S020TS-0025**
50	**P1A-S020TS-0050**
80	**P1A-S020TS-0080**

Ø25mm - (G1/8)

Stroke mm	Order code
10	**P1A-S025TS-0010**
15	**P1A-S025TS-0015**
25	**P1A-S025TS-0025**
40	**P1A-S025TS-0040**
50	**P1A-S025TS-0050**
80	**P1A-S025TS-0080**

Double acting adjustable cushioning

Effective cushioning

The Mini ISO range is available with fixed end cushioning or with adjustable pneumatic cushioning, controlled by simple bleed screws for fine adjustment. The adjustable cushioned cylinders can be operated with higher mass loads and at higher speeds than those with fixed end cushioning, reducing overall cycle times.

Ø16mm - (M5)

Stroke mm	Order code
20	**P1A-S016MS-0020**
25	**P1A-S016MS-0025**
30	**P1A-S016MS-0030**
40	**P1A-S016MS-0040**
50	**P1A-S016MS-0050**
80	**P1A-S016MS-0080**
100	**P1A-S016MS-0100**
125	**P1A-S016MS-0125**
160	**P1A-S016MS-0160**
200	**P1A-S016MS-0200**

Ø20mm - (G1/8)

Stroke mm	Order code
20	**P1A-S020MS-0020**
25	**P1A-S020MS-0025**
30	**P1A-S020MS-0030**
50	**P1A-S020MS-0050**
80	**P1A-S020MS-0080**
100	**P1A-S020MS-0100**
125	**P1A-S020MS-0125**
160	**P1A-S020MS-0160**
200	**P1A-S020MS-0200**
250	**P1A-S020MS-0250**
320	**P1A-S020MS-0320**

Ø25mm - (G1/8)

Stroke mm	Order code
20	**P1A-S025MS-0020**
25	**P1A-S025MS-0025**
30	**P1A-S025MS-0030**
40	**P1A-S025MS-0040**
50	**P1A-S025MS-0050**
80	**P1A-S025MS-0080**
100	**P1A-S025MS-0100**
125	**P1A-S025MS-0125**
160	**P1A-S025MS-0160**
200	**P1A-S025MS-0200**
250	**P1A-S025MS-0250**
320	**P1A-S025MS-0320**

Design Variants

Working temperatures

High temperature

Ø12 and 16mm	-10°C to +120°C Non-magnetic piston
Ø20 and 25mm	-10°C to +150°C Non-magnetic piston

External seals

flourinated rubber	-20°C to +80°C Magnetic piston

Double acting options

Double-acting adjustable cushioning	Ø16 - Ø25 (not for seal material type F)
Double-acting non-adjustable cushioning	Ø10 - Ø25

Double-acting, adjustable cushioning through rod	Ø16 - Ø25 (not for seal material type F)
Double-acting, non-adjustable cushioning through rod	Ø10 - Ø25

Single acting options

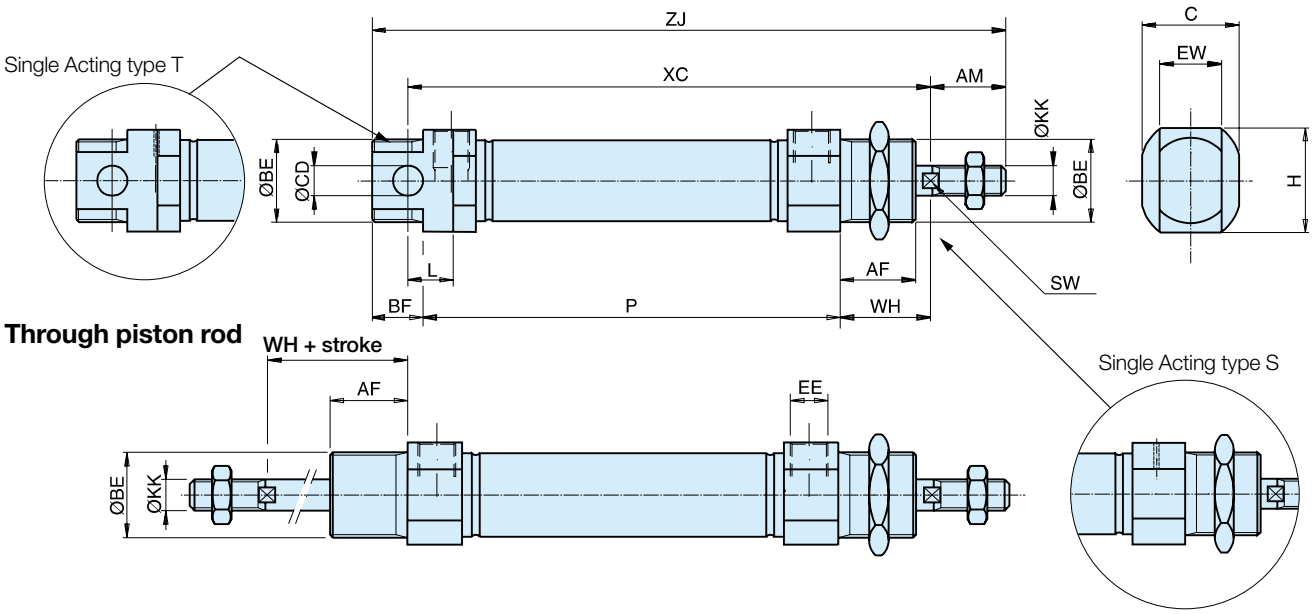
Single-acting, Spring return for retracted stroke. Non-adjustable cushioning	Ø10 - Ø25
Single-acting, Spring extended for advanced stroke. Non-adjustable cushioning	Ø16 - Ø25

"U" style rod guidance modules, plain bearings

The P1A series cylinders can be equipped with an external guiding device to prevent the piston rod from turning. When fitted the guide provides a guided piston movement enabling the cylinder to resist turning moments on the piston rod, as well as greater transverse forces.

Dimensions

Double and single acting cylinders



Through piston rod

Cylinder bore mm	AM 0/-2 mm	BE	AF mm	BF mm	C mm	CDH9 mm	EE	EW mm	H mm	KK	L mm	SW mm	WH±1,2 mm
10	12	M12x1,25	12	10	13,0	4	M5	8	13,0	M4	6	–	16
12	16	M16x1,5	18	13	17,8	6	M5	12	17,8	M6	9	5	22
16[1)]	16	M16x1,5	18	13	17,8	6	M5	12	17,8	M6	9	5	22
16[2)]	16	M16x1,5	18	13	23,8	6	M5	12	23,8	M6	9	5	22
20	20	M22x1,5	20	14	23,8	8	G1/8	16	23,8	M8	12	7	24
25	22	M22x1,5	22	14	26,8	8	G1/8	16	26,8	M10x1,25	12	9	28

1) P1A-S016DS/SS/TS
2) P1A-S016MS

Double acting cylinders

Cylinder bore mm	XC mm	ZJ mm	P mm
10	64 + stroke	84 + stroke	46 + stroke
12	75 + stroke	99 + stroke	48 + stroke
16	82 + stroke	104 + stroke	53 + stroke
20	95 + stroke	125 + stroke	67 + stroke
25	104 + stroke	132 + stroke	68 + stroke

Single-acting, spring return, type SS

Stroke/ Cylinder bore mm	10 XC mm	15 XC mm	25 XC mm	40 XC mm	50 XC mm	80 XC mm	10 ZJ mm	15 ZJ mm	25 ZJ mm	40 ZJ mm	50 ZJ mm	80 ZJ mm	10 P mm	15 P mm	25 P mm	40 P mm	50 P mm	80 P mm
10	74	79	89	126	136	174	94	99	109	146	156	194	56	61	71	108	118	156
12	85	90	100	132	142	185	109	114	124	156	166	209	58	63	73	105	115	158
16	92	97	107	122	132	184	114	119	129	144	154	206	63	68	78	93	103	155
20	105	110	120	135	145	191	135	140	150	165	175	221	77	82	92	107	117	163
25	114	119	129	144	154	201	142	147	157	172	182	229	78	83	93	108	118	165

Single-acting, spring-extended, type TS

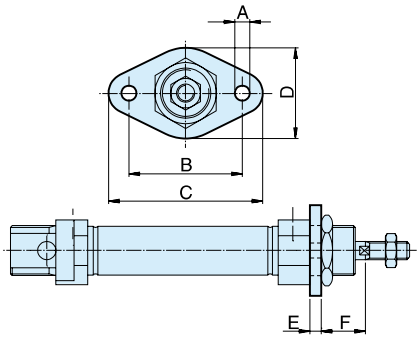
Stroke/ Cylinder bore mm	10 XC[3)] mm	15 XC[3)] mm	25 XC[3)] mm	40 XC[3)] mm	50 XC[3)] mm	80 XC[3)] mm	10 ZJ[3)] mm	15 ZJ[3)] mm	25 ZJ[3)] mm	40 ZJ[3)] mm	50 ZJ[3)] mm	80 ZJ[3)] mm	10 P mm	15 P mm	25 P mm	40 P mm	50 P mm	80 P mm
16	107	112	122	137	147	–	129	134	144	159	169	–	78	83	93	108	118	–
20	120	125	135	150	160	195	150	155	165	180	190	225	92	97	107	122	132	167
25	129	134	144	159	169	205	157	162	172	187	197	233	93	98	108	123	133	169

3) With piston rod retracted, as shown in the dimension drawing
Length tolerances ±1 mm
Stroke length tolerances +1,5/0 mm

Cylinder Mountings

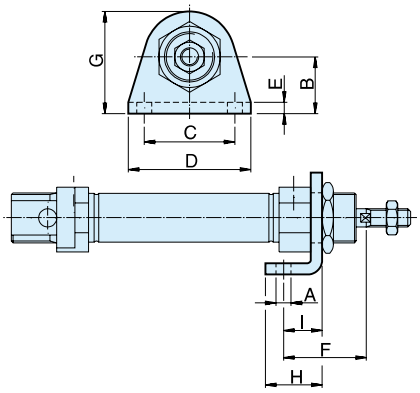
Flange-MF8

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	Order code
10	4,5	30	40	22	3	13	**P1A-4CMB**
12	5,5	40	52	30	4	18	**P1A-4DMB**
16	5,5	40	52	30	4	18	**P1A-4DMB**
20	6,6	50	66	40	5	19	**P1A-4HMB**
25	6,6	50	66	40	5	23	**P1A-4HMB**



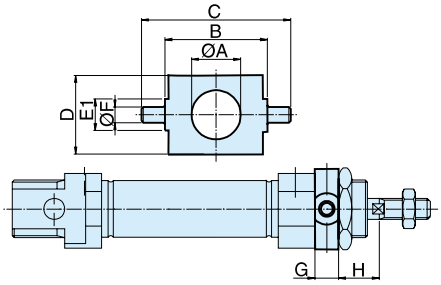
Foot-MS3

Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Order code
10	4,5	16	25	35	3	24	26,0	16	11	**P1A-4CMF**
12	5,5	20	32	42	4	32	32,5	20	14	**P1A-4DMF**
16	5,5	20	32	42	4	32	32,5	20	14	**P1A-4DMF**
20	6,5	25	40	54	5	36	45,0	25	17	**P1A-4HMF**
25	6,5	25	40	54	5	40	45,0	25	17	**P1A-4HMF**



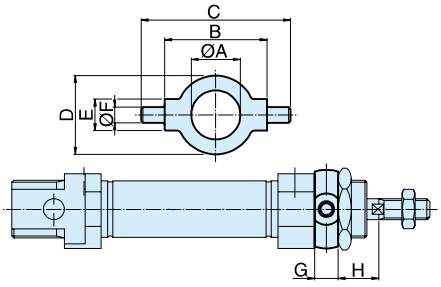
Cover trunnion

Cylinder Ø mm	A mm	B h14 mm	C mm	D mm	E1 mm	F e9 mm	G mm	H mm	Order code
10	12,5	26	38	20	9	4	6	10	**P1A-4CMJZ**
12	16,5	38	58	25	13	6	8	14	**P1A-4DMJZ**
16	16,5	38	58	25	13	6	8	14	**P1A-4DMJZ**
20	22,5	46	66	30	13	6	8	16	**P1A-4HMJZ**
25	22,5	46	66	30	13	6	8	20	**P1A-4HMJZ**



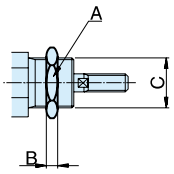
Cover trunnion Stainless steel

Cylinder Ø mm	A mm	B h14 mm	C mm	D mm	E mm	F e9 mm	G mm	H mm	Order code
10	12,5	26	38	20	8	4	6	10	**P1A-4CMJ**
12	16,5	38	58	25	10	6	8	14	**P1A-4DMJ**
16	16,5	38	58	25	10	6	8	14	**P1A-4DMJ**
20	22,5	46	66	30	10	6	8	16	**P1A-4HMJ**
25	22,5	46	66	30	10	6	8	20	**P1A-4HMJ**



Stainless Mounting nut

Cylinder Ø mm	A mm	B mm	C	Order code
10	17	5	M12x1,25	**9126725405**
12	24	8	M16x1,50	**9126725406**
16	24	8	M16x1,50	**9126725406**
20	27	5	M22x1,50	**9126725407**
25	27	5	M22x1,50	**9126725407**

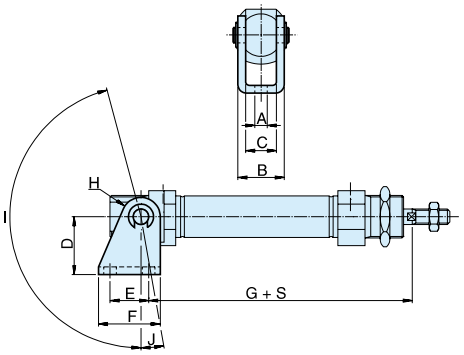


Cylinder Mountings

Clevis bracket

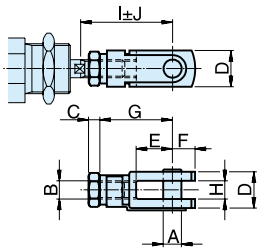
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I °	J °	Order code
10	4,5	13	8	24	12,5	20	65,3	5	160	17	**P1A-4CMT**
12	5,5	18	12	27	15,0	25	73,0	7	170	15	**P1A-4DMT**
16	5,5	18	12	27	15,0	25	80,0	7	170	15	**P1A-4DMT**
20	6,5	24	16	30	20,0	32	91,0	10	165	10	**P1A-4HMT**
25	6,5	24	16	30	20,0	32	100,0	10	165	10	**P1A-4HMT**

S=stroke



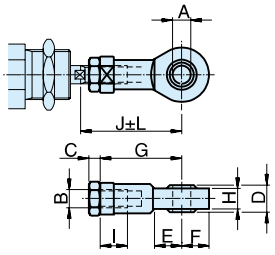
Clevis

Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	Order code
10	4	M4	2,2	8	8	5	16	4	22,0	2,0	**P1A-4CRC**
12	6	M6	3,2	12	12	7	24	6	31,0	3,0	**P1A-4DRC**
16	6	M6	3,2	12	12	7	24	6	31,0	3,0	**P1A-4DRC**
20	8	M8	4,0	16	16	10	32	8	40,5	3,5	**P1A-4HRC**
25	10	M10x1,25	5,0	20	20	12	40	10	49,0	3,0	**P1A-4JRC**



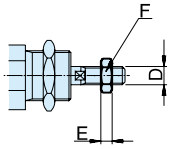
Swivel rod eye

Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Order code
10	5	M4	2,2	8	10	9	27	6,0	8	33,0	9	2,0	**P1A-4CRS**
12	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	**P1A-4DRS**
16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	**P1A-4DRS**
20	8	M8	4,0	12	12	12	36	9,0	12	46,0	14	2,0	**P1A-4HRS**
25	10	M10x1,25	5,0	14	14	14	43	10,5	15	52,5	17	2,5	**P1A-4JRS**



Stainless Rod nut

Cylinder Ø mm	D	F mm	E mm	Order code
10	M4	7	2,2	**9127385121**
12	M6	10	3,2	**9127385122**
16	M6	10	3,2	**9127385122**
20	M8	13	4,0	**9127385123**
25	M10x1,25	17	5,0	**9126725404**



	Flange MF8	Foot bracket MS3	Cover trunnion	Cover trunnion Stainless steel	Stainless steel mounting nut
Ø 10	**P1A-4CMB**	**P1A-4CMF**	**P1A-4CMJZ**	**P1A-4CMJ**	**9126725405**
Ø 12	**P1A-4DMB**	**P1A-4DMF**	**P1A-4DMJZ**	**P1A-4DMJ**	**9126725406**
Ø 16	**P1A-4DMB**	**P1A-4DMF**	**P1A-4DMJZ**	**P1A-4DMJ**	**9126725406**
Ø 20	**P1A-4HMB**	**P1A-4HMF**	**P1A-4HMJZ**	**P1A-4HMJ**	**9126725407**
Ø 25	**P1A-4HMB**	**P1A-4HMF**	**P1A-4HMJZ**	**P1A-4HMJ**	**9126725407**

	Clevis bracket	Clevis	Swivel rod eye	Stainless steel Rod nut
Ø 10	**P1A-4CMT**	**P1A-4CRC**	**P1A-4CRS**	**9127385121**
Ø 12	**P1A-4DMT**	**P1A-4DRC**	**P1A-4DRS**	**9127385122**
Ø 16	**P1A-4DMT**	**P1A-4DRC**	**P1A-4DRS**	**9127385122**
Ø 20	**P1A-4HMT**	**P1A-4HRC**	**P1A-4HRS**	**9127385123**
Ø 25	**P1A-4HMT**	**P1A-4JRC**	**P1A-4JRS**	**9126725404**

R32-63 Aluminium All Round Cylinders

With its aluminium body construction and integral pivot mounting points the R32 - 63mm round cylinder series offers a lightweight versatile cylinder for a variety of applications. Designed and manufactured for quality and long service life while giving an economical package of options to compete in the competitive market environment.

- **Available in bores Ø32, Ø40, Ø50 and Ø63**
- **Double acting**
- **Adjustable cushioning**
- **Magnetic piston as standard**
- **Range of mounting options**
- **Other options available**

This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of flourianted rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6432 simplify installation and make the cylinders physically interchangeable throughout the world.

- Mini - cylinders according to ISO 6432
- All stainless in 10 to 25 mm bores
- Magnetic piston as standard
- Double and single acting
- End stroke buffers for long service life
- Available with adjustable cushioning

Operating information

Working pressure: Max 10 bar
Temperature range: -20°C to +80°C Ø10-25mm

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Double acting fixed cushioning

Ø10mm - (M5)

Stroke mm	Order code
10	**P1S-S010DS-0010**
15	**P1S-S010DS-0015**
25	**P1S-S010DS-0025**
40	**P1S-S010DS-0040**
50	**P1S-S010DS-0050**
80	**P1S-S010DS-0080**
100	**P1S-S010DS-0100**
125	**P1S-S010DS-0125**

Ø12mm - (M5)

Stroke mm	Order code
10	**P1S-S012DS-0010**
15	**P1S-S012DS-0015**
25	**P1S-S012DS-0025**
40	**P1S-S012DS-0040**
50	**P1S-S012DS-0050**
80	**P1S-S012DS-0080**
100	**P1S-S012DS-0100**
125	**P1S-S012DS-0125**
160	**P1S-S012DS-0160**
200	**P1S-S012DS-0200**

Ø16mm - (M5)

Stroke mm	Order code
10	**P1S-S016DS-0010**
15	**P1S-S016DS-0015**
25	**P1S-S016DS-0025**
40	**P1S-S016DS-0040**
50	**P1S-S016DS-0050**
80	**P1S-S016DS-0080**
100	**P1S-S016DS-0100**
125	**P1S-S016DS-0125**
160	**P1S-S016DS-0160**
200	**P1S-S016DS-0200**

Ø20mm - (G1/8)

Stroke mm	Order code
10	**P1S-S020DS-0010**
15	**P1S-S020DS-0015**
25	**P1S-S020DS-0025**
40	**P1S-S020DS-0040**
50	**P1S-S020DS-0050**
80	**P1S-S020DS-0080**
100	**P1S-S020DS-0100**
125	**P1S-S020DS-0125**
160	**P1S-S020DS-0160**
200	**P1S-S020DS-0200**
250	**P1S-S020DS-0250**
320	**P1S-S020DS-0320**

Ø25mm - (G1/8)

Stroke mm	Order code
10	**P1S-S025DS-0010**
15	**P1S-S025DS-0015**
25	**P1S-S025DS-0025**
40	**P1S-S025DS-0040**
50	**P1S-S025DS-0050**
80	**P1S-S025DS-0080**
100	**P1S-S025DS-0100**
125	**P1S-S025DS-0125**
160	**P1S-S025DS-0160**
200	**P1S-S025DS-0200**
250	**P1S-S025DS-0250**
320	**P1S-S025DS-0320**

Double acting adjustable cushioning

Ø20mm - (G1/8)

Stroke mm	Order code
15	**P1S-S020MS-0015**
25	**P1S-S020MS-0025**
40	**P1S-S020MS-0040**
50	**P1S-S020MS-0050**
80	**P1S-S020MS-0080**
100	**P1S-S020MS-0100**
125	**P1S-S020MS-0125**
160	**P1S-S020MS-0160**
200	**P1S-S020MS-0200**
250	**P1S-S020MS-0250**
320	**P1S-S020MS-0320**

Ø25mm - (G1/8)

Stroke mm	Order code
15	**P1S-S025MS-0015**
25	**P1S-S025MS-0025**
40	**P1S-S025MS-0040**
50	**P1S-S025MS-0050**
80	**P1S-S025MS-0080**
100	**P1S-S025MS-0100**
125	**P1S-S025MS-0125**
160	**P1S-S025MS-0160**
200	**P1S-S025MS-0200**
250	**P1S-S025MS-0250**
320	**P1S-S025MS-0320**

Design Variants

Working temperatures

High temperature

Ø10 and Ø16mm	-10°C to +120°C Non-magnetic piston
Ø20 and Ø25mm	-10°C to +150°C Non-magnetic piston

Low temperature

Ø10, 12 and 16mm	-40°C to +60°C Non-magnetic piston

Double acting options

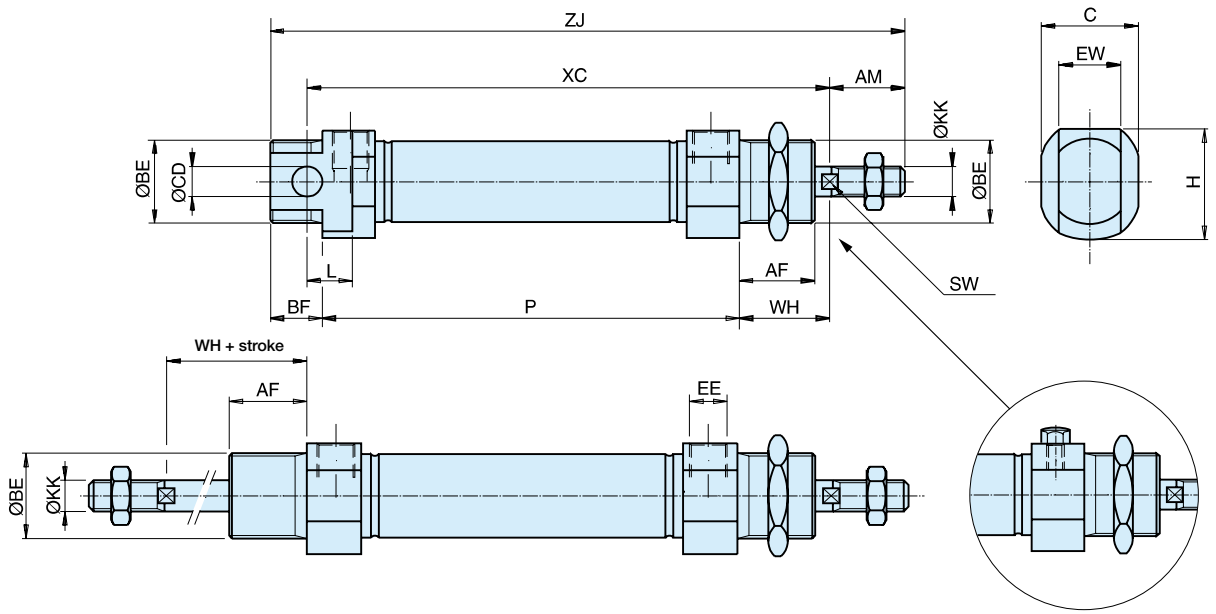
Effective end-cushioning
A version of ISO 6432 Ø10-Ø25 incorporates fixed end-cushioning, while the cylinders Ø20-Ø125 have pneumatic end-cushioning with adjusting screws for exact setting, permitting heavier loads and higher speeds for short cycle times.

Double-acting adjustable cushioning	Ø20 - Ø25 (not for seal material type F and L)
Double-acting non-adjustable cushioning	Ø10 - Ø25

Double-acting, adjustable cushioning through rod	Ø20 - Ø25 (not for seal material type F and L)
Double-acting, non-adjustable cushioning through rod	Ø10 - Ø25
Double-acting, adjustable cushioning through rod, hollow	Ø20 - Ø25 (not for seal material type F and L)
Double-acting, non-adjustable cushioning through rod, hollow	Ø20 - Ø25 max stroke 125mm

Single acting options

Single-acting, Spring return for retracted stroke. Non-adjustable cushioning	Ø10 - Ø25
Single-acting, Spring extended for advanced stroke. Non-adjustable cushioning	Ø20 - Ø25



Dimensions

Cyl. bore mm	AM 0/-2 mm	BE	AF mm	BF mm	C mm	CDH9 mm	EE	EW mm	H mm	KK	L mm	SW mm	WH±1,2 mm
10	12	M12x1,25	12	10	14	4	M5	8	19	M4	6	–	16
12	16	M16x1,5	18	13	18	6	M5	12	19	M6	9	5	22
16	16	M16x1,5	18	13	18	6	M5	12	19	M6	9	5	22
20	20	M22x1,5	20	14	24	8	G1/8	16	29	M8	12	7	24
25	22	M22x1,5	22	14	28	8	G1/8	16	32	M10x1,25	12	9	28

Double acting cylinders

Cyl. bore mm	XC mm	ZJ mm	P mm
10	64 + stroke	84 + stroke	46 + stroke
12	75 + stroke	99 + stroke	48 + stroke
16	82 + stroke	104 + stroke	53 + stroke
20	95 + stroke	125 + stroke	67 + stroke
25	104 + stroke	132 + stroke	68 + stroke

Single acting with spring return, type SS

Stroke/	10	15	25	40	50	80	10	15	25	40	50	80	10	15	25	40	50	80
Cyl. bore	XC	XC	XC	XC	XC	XC	ZJ	ZJ	ZJ	ZJ	ZJ	ZJ	P	P	P	P	P	P
mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm	mm
10	74	79	89	126	136	174	94	99	109	146	156	194	56	61	71	108	118	156
12	85	90	100	132	142	185	109	114	124	156	166	209	58	63	73	105	115	158
16	92	97	107	122	132	184	114	119	129	144	154	206	63	68	78	93	103	155
20	105	110	120	135	145	191	135	140	150	165	175	221	77	82	92	107	117	163
25	114	119	129	144	154	201	142	147	157	172	182	229	78	83	93	108	118	165

Length tolerances ±1 mm
Stroke length tolerances +1,5/0 mm

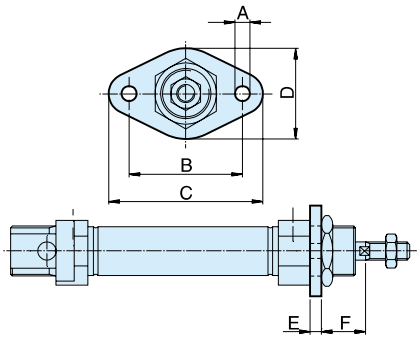
Cylinders are supplied complete with mounting and adjusting nuts.
Cylinders with through piston rod are supplied complete with two adjusting nuts and one mounting nut.

Cylinder mountings

Flange-MF8

Intended for fixed attachment of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

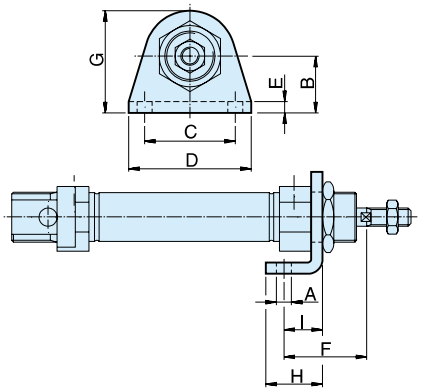


Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	Weight Kg	Order code
10	4,5	30	40	22	3	13	0,012	**P1S-4CMB**
12-16	5,5	40	52	30	4	18	0,025	**P1S-4DMB**
20	6,6	50	66	40	5	19	0,045	**P1S-4HMB**
25	6,6	50	66	40	5	23	0,045	**P1S-4HMB**

Foot-MS3

Intended for fixed attachement of the cylinder. The bracket is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

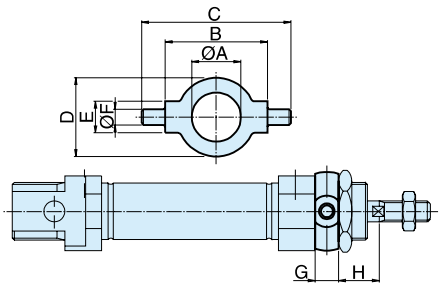


Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	Weight Kg	Order code
10	4,5	16	25	35	3	24	26	16	11	0,020	**P1S-4CMF**
12-16	5,5	20	32	42	4	32	32,5	20	14	0,040	**P1S-4DMF**
20	6,5	25	40	54	5	36	45	25	17	0,080	**P1S-4HMF**
25	6,5	25	40	54	5	40	45	25	17	0,080	**P1S-4HMF**

Cover trunnion

Intended for articulated mounting of the cylinder. The flange is designed for mounting on the front or rear end-covers.

Material:
Stainless steel, DIN X 10 CrNiS 18 9

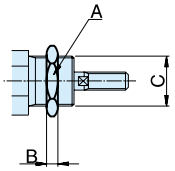


Cylinder Ø	A mm	B h14 mm	C mm	D mm	E e9 mm	F mm	G mm	H Kg	Weight	Order code
10	12,5	26	38	20	8	4	6	10	0,014	**P1A-4CMJ**
12-16	16,5	38	58	25	10	6	8	14	0,033	**P1A-4DMJ**
20	22,5	46	66	30	10	6	8	16	0,037	**P1A-4HMJ**
25	22,5	46	66	30	10	6	8	20	0,037	**P1A-4HMJ**

Mounting nut

Intended for fixed mounting of the cylinder.
Cylinders are supplied complete with one mounting nut.

Material:
Stainless steel, DIN X 5 CrNi 18 10



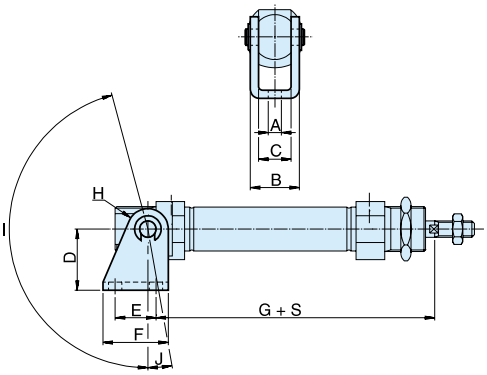
Cylinder Ø mm	A mm	B mm	C	Weight Kg	Order code
10	19	6	M12x1,25	0,009	**9126725405**
12-16	24	8	M16x1,50	0,018	**9126725406**
20-25	27	5	M22x1,50	0,042	**9126725407**

Cylinder mountings

Clevis bracket

Intended for articulated mounting of the cylinder. Supplied with shaft for mounting on the rear end cover.

Material:
Bracket: stainless steel, DIN X 5 CrNi 18 10
Pin: tempered stainless steel, DIN X 20 Cr 13
Locking rings: stainless steel, DIN X 5 CrNi 18 10



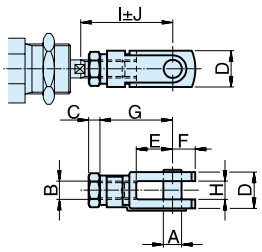
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I °	J °	Weight Kg	Order code
10	4,5	13	8	24	12,5	20	65,3	5	160	17	0,020	**P1S-4CMT**
12	5,5	18	12	27	15	25	73	7	170	15	0,040	**P1S-4DMT**
16	5,5	18	12	27	15	25	80	7	170	15	0,040	**P1S-4DMT**
20	6,5	24	16	30	20	32	91	10	165	10	0,080	**P1S-4HMT**
25	6,5	24	16	30	20	32	100	10	165	10	0,080	**P1S-4HMT**

S=stroke

Clevis

According to ISO 8140
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction. Supplied complete with pin.

Material:
Stainless steel, DIN X 5 CrNi 18 10

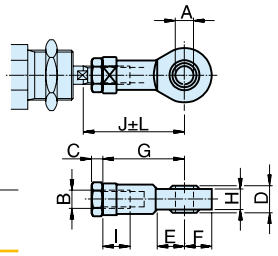


Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	Weight	Order code
10	4	M4	2,2	8	8	5	16	4	22	2	0,007	**P1S-4CRD**
12-16	6	M6	3,2	12	12	7	24	6	31	3	0,022	**P1S-4DRD**
20	8	M8	4	16	16	10	32	8	40,5	3,5	0,045	**P1S-4HRD**
25	10	M10x1,25	5	20	20	12	40	10	49	3	0,095	**P1S-4JRD**

Swivel rod eye

According to ISO 8139
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

Material:
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10
Ball: hardened stainless steel, DIN X 5 CrNi 18 10

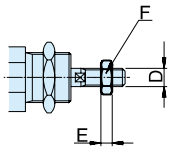


Cylinder Ø mm	A mm	B	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	Weight	Order code
10	5	M4	2,2	8	10	9	27	6	8	33	9	2	0,017	**P1S-4CRT**
12-16	6	M6	3,2	9	10	10	30	6,8	9	38,5	11	1,5	0,025	**P1S-4DRT**
20	8	M8	4	12	12	12	36	9	12	46	14	2	0,045	**P1S-4HRT**
25	10	M10x1,25	5	14	14	14	43	10,5	15	52,5	17	2,5	0,085	**P1S-4JRT**

Rod nut

Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rod are supplied with two rod nuts.)

Material:
Stainless steel, DIN X 5 CrNi 18 10



Cylinder Ø mm	D	F mm	E mm	Weight	Order code
10	M4	7	2,2	0,001	**9127385121**
12-16	M6	10	3,2	0,002	**9127385122**
20	M8	13	4	0,005	**9127385123**
25	M10x1,25	17	5	0,007	**9126725404**

This range of stainless steel cylinders has been specially designed for use in difficult environments. Hygienic design, external seals of flourianted rubber and prelubrication with our food-industry-approved grease according to USDA-H1 make the cylinders particularly suitable for food industry use. All cylinders have magnetic pistons for proximity position sensing. Fixing dimensions to ISO 6431 simplify installation and make the cylinders physically interchangeable throughout the world.

- Round cylinder to ISO 6431
- All stainless steel
- Clean, smooth washdown design
- Magnetic piston as standard
- Adjustable cushioning for long service life
- Complete range of mountings and sensors

For ATEX specific products contact Sales Office

Operating information

Working pressure:	Max 10 bar
Temperature range:	-20°C to +70°C
ATEX approval:	CE Ex IIGD c T4 120°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Standard stroke lengths

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1S-D032MS-0025**
50	**P1S-D032MS-0050**
80	**P1S-D032MS-0080**
100	**P1S-D032MS-0100**
125	**P1S-D032MS-0125**
160	**P1S-D032MS-0160**
200	**P1S-D032MS-0200**
250	**P1S-D032MS-0250**
320	**P1S-D032MS-0320**
400	**P1S-D032MS-0400**
500	**P1S-D032MS-0500**

Ø40mm - (G1/4)

Stroke mm	Order code
25	**P1S-D040MS-0025**
50	**P1S-D040MS-0050**
80	**P1S-D040MS-0080**
100	**P1S-D040MS-0100**
125	**P1S-D040MS-0125**
160	**P1S-D040MS-0160**
200	**P1S-D040MS-0200**
250	**P1S-D040MS-0250**
320	**P1S-D040MS-0320**
400	**P1S-D040MS-0400**
500	**P1S-D040MS-0500**

Ø50mm - (G1/4)

Stroke mm	Order code
25	**P1S-D050MS-0025**
50	**P1S-D050MS-0050**
80	**P1S-D050MS-0080**
100	**P1S-D050MS-0100**
125	**P1S-D050MS-0125**
160	**P1S-D050MS-0160**
200	**P1S-D050MS-0200**
250	**P1S-D050MS-0250**
320	**P1S-D050MS-0320**
400	**P1S-D050MS-0400**
500	**P1S-D050MS-0500**

Ø63mm - (G3/8)

Stroke mm	Order code
25	**P1S-D063MS-0025**
50	**P1S-D063MS-0050**
80	**P1S-D063MS-0080**
100	**P1S-D063MS-0100**
125	**P1S-D063MS-0125**
160	**P1S-D063MS-0160**
200	**P1S-D063MS-0200**
250	**P1S-D063MS-0250**
320	**P1S-D063MS-0320**
400	**P1S-D063MS-0400**
500	**P1S-D063MS-0500**

Ø80mm - (G3/8)

Stroke mm	Order code
25	**P1S-L080MS-0025**
50	**P1S-L080MS-0050**
80	**P1S-L080MS-0080**
100	**P1S-L080MS-0100**
125	**P1S-L080MS-0125**
160	**P1S-L080MS-0160**
200	**P1S-L080MS-0200**
250	**P1S-L080MS-0250**
320	**P1S-L080MS-0320**
400	**P1S-L080MS-0400**
500	**P1S-L080MS-0500**

Ø100mm - (G1/2)

Stroke mm	Order code
25	**P1S-L100MS-0025**
50	**P1S-L100MS-0050**
80	**P1S-L100MS-0080**
100	**P1S-L100MS-0100**
125	**P1S-L100MS-0125**
160	**P1S-L100MS-0160**
200	**P1S-L100MS-0200**
250	**P1S-L100MS-0250**
320	**P1S-L100MS-0320**
400	**P1S-L100MS-0400**
500	**P1S-L100MS-0500**

Ø125mm - (G1/2)

Stroke mm	Order code
25	**P1S-L125MS-0025**
50	**P1S-L125MS-0050**
80	**P1S-L125MS-0080**
100	**P1S-L125MS-0100**
125	**P1S-L125MS-0125**
160	**P1S-L125MS-0160**
200	**P1S-L125MS-0200**
250	**P1S-L125MS-0250**
320	**P1S-L125MS-0320**
400	**P1S-L125MS-0400**
500	**P1S-L125MS-0500**

Design Variants

Working temperatures

High temperature	-10°C to +150°C Non-magnetic piston
Low temperature	
Ø10 and Ø125mm	-40°C to +40°C Non-magnetic piston
Stainless steel scraper for piston rod	
	-20°C to +80°C Magnetic piston

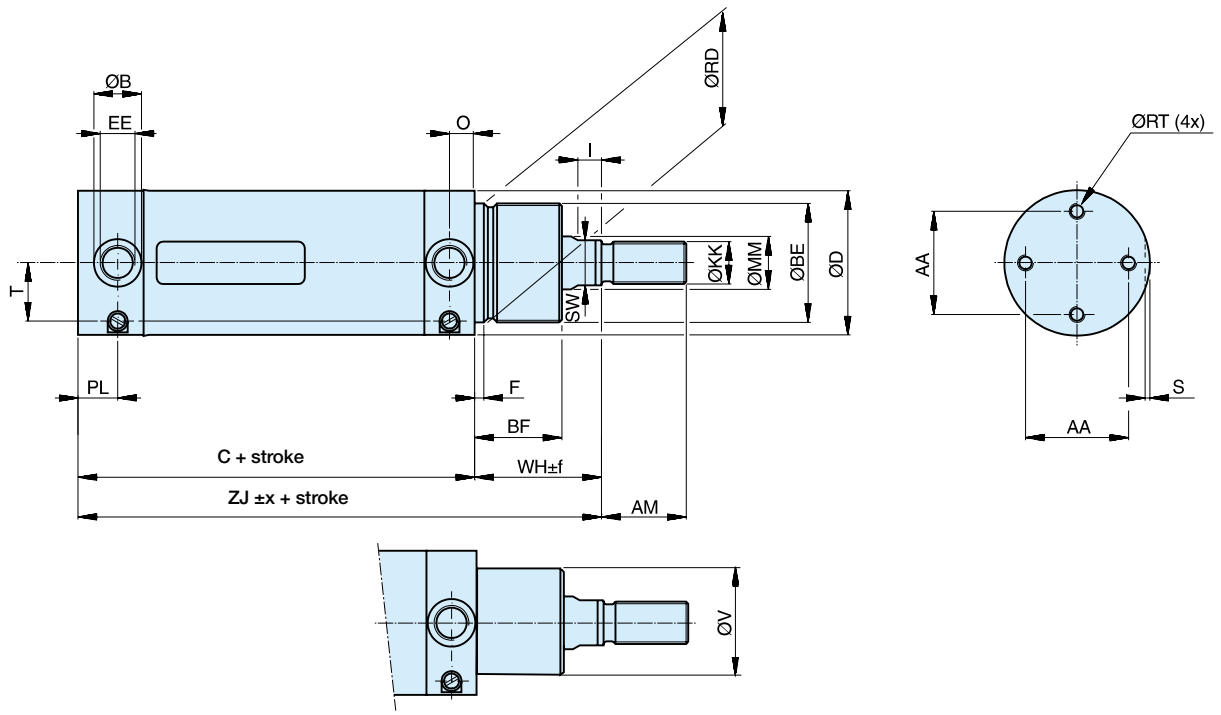
Double acting options

Double-acting adjustable cushioning — Ø80 - Ø125

Double-acting adjustable cushioning through rod only — Ø80 - Ø125

Mounting options

ISO 6431 Stainless Steel Cylinders are available with a variety of integral threaded mounting holes or trunnion pegs.



Not threaded front end

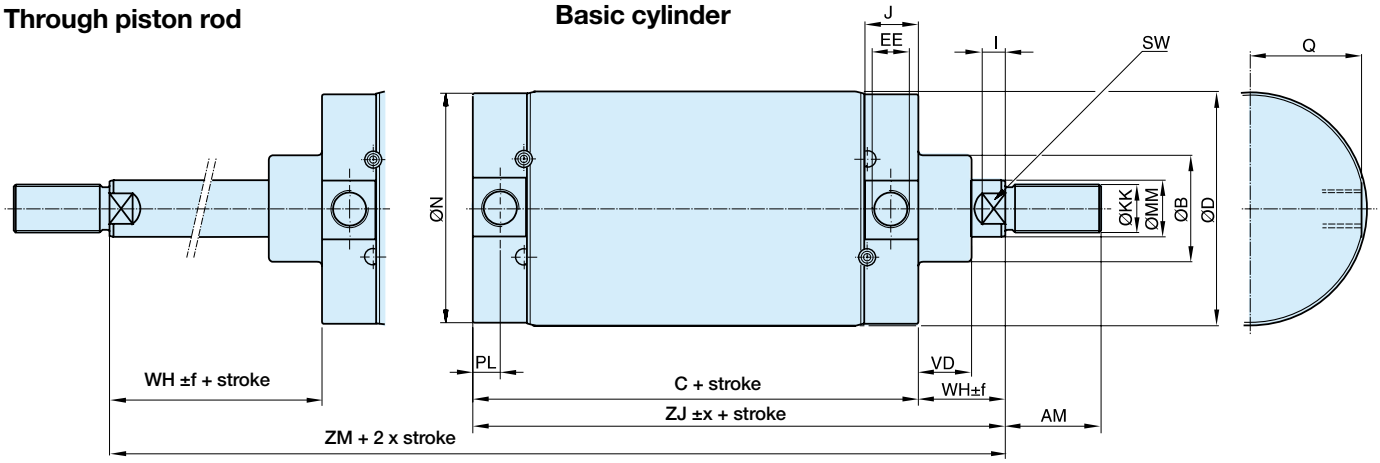
Dimensions Ø32-Ø63

Cylinder designation	AA mm	AM mm	B mm	BF mm	BE	C mm	D mm	EE	F mm	I mm	KK	MM mm	O mm	PL mm	RD mm	RT mm
P1S-D032M	24,5	22	15	25	M30x1,5	88	36	G1/8	4,2	6	M10x1,25	12	8	13	30	M5
P1S-D040M	30	24	18	30	M38x1,5	97	44	G1/4	4,5	9	M12x1,25	16	9,5	15	38	M6
P1S-D050M	39	32	18	33	M45x1,5	101	55	G1/4	4,5	9	M16x1,5	20	9,5	15	45	M6
P1S-D063M	49	32	25	33	M45x1,5	117	68	G3/8	4,5	9	M16x1,5	20	13,3	20,5	45	M8

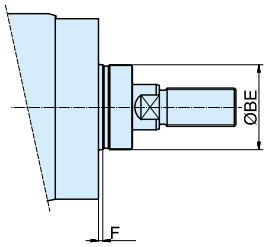
Cylinder designation	S mm	SW mm	T mm	V mm	WH mm	ZJ mm	Mounting tolerances x mm	f mm	Stroke length 0-500 mm mm
P1S-D032M	1,5	10	12,2	26	35,5	123,5	1,2	2,5	+2,0
P1S-D040M	1,5	14	16,5	35	44	141	1,0	2,2	+2,0
P1S-D050M	1,5	17	22	41	47	148	0,9	2,3	+2,0
P1S-D063M	1,5	17	26	41	47	164	1,4	2,3	+2,5

Through piston rod

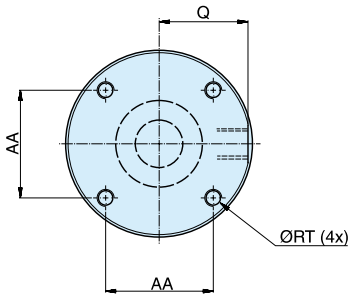
Basic cylinder



Threaded front end



Mounting holes in the end covers



Dimensions Ø80-Ø125

Cylinder designation	AA mm	AM mm	B mm	BE	C mm	D mm	EE	F mm	KK	I mm	J mm	MM mm	N mm	PL mm	Q mm
P1S-•080M	46	40	50	M50x1,5	141	86	G3/8	4	M20x1,5	10	24,5	25	84	12,5	40
P1S-•100M	60	40	50	M50x1,5	158	106	G1/2	4	M20x1,5	8	30	25	104	15,5	49,5
P1S-•125M	76	54	60	M60x2	183	133	G1/2	4	M27x2	13	30	32	129	15,5	62,5

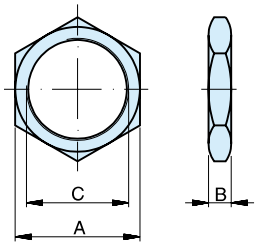
Cylinder designation	RT	SW	VD	WH	ZJ	ZM	Mounting tol. Stroke length x	f	0-500 mm
	mm	mm	mm	mm	mm	mm	mm	mm	
P1S-•080M	M8	21	19	37	178	215	1,5	2,5	+2,5
P1S-•100M	M10	21	19	35	193	228	1,5	2,5	+2,5
P1S-•125M	M12	27	24	47	230	277	2,0	2,5	+4,0

Cylinder mountings Ø32 - Ø63

Mounting nut

Intended for fixed mounting of the cylinder via the neck.

Material: stainless steel, DIN X 5 CrNi 18 10



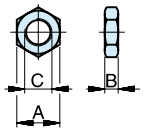
Cylinder Ø mm	A mm	B mm	C	Weight Kg	Order code
32	36	8	M30x1,5	0,03	**9127294401**
40	46	10	M38x1,5	0,06	**9127294402**
50	55	10	M45x1,5	0,08	**9127294403**
63	55	10	M45x1,5	0,08	**9127294403**

Cylinder mountings Ø32-Ø125

Rod nut

Intended for fixed mounting on the piston rod. Cylinders are supplied complete with one rod nut. (cylinders with through piston rods are supplied with two rod nuts.)

Material:
Stainless steel, DIN X 5 CrNi 18 10



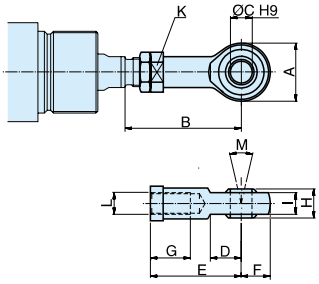
Cylinder Ø	A mm	B mm	C mm	Weight Kg	Order code
32	17	5	M10x1,25	0,01	**9126725404**
40	19	6	M12x1,25	0,01	**9126725405**
50	24	8	M16x1,5	0,02	**9126725406**
63	24	8	M16x1,5	0,02	**9126725406**
80	30	10	M20x1,5	0,04	**0261109921**
100	30	10	M20x1,5	0,04	**0261109921**
125	41	13,5	M27x2	0,10	**0261109922**

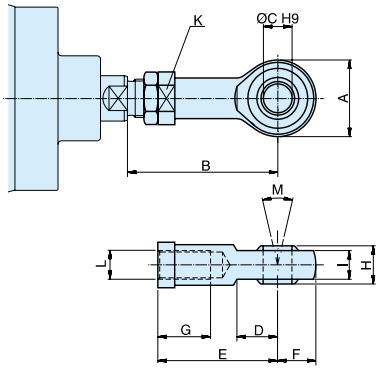
Cylinder mountings Ø32 - Ø125

Swivel rod eye

According to ISO 8139
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction.

Materal:
Swivel rod eye: stainless steel, DIN X 5 CrNi 18 10
Ball: hardened stainless steel, DIN X 5 CrNi 18 10



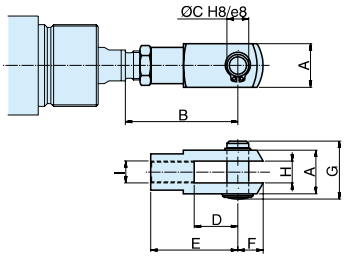


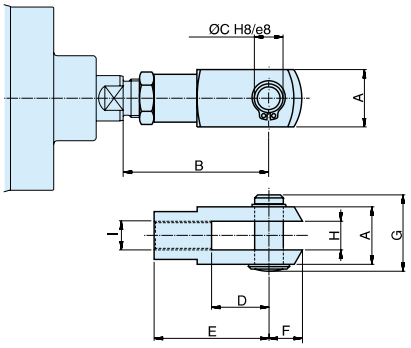
Cyl. Ø mm	A mm	B_{min} mm	B_{max} mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	K mm	L	M	Weight Kg	Order code
32	28	50	55	10	15	43	14	15	14	10,5	17	M10x1,25	24°	0,08	**P1S-4JRT**
40	32	56	62	12	17	50	16	22	16	12	19	M12x1,25	24°	0,12	**P1S-4LRT**
50	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°	0,25	**P1S-4MRT**
63	42	72	80	16	22	64	21	28	21	15	22	M16x1,5	30°	0,25	**P1S-4MRT**
80	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°	0,46	**P1S-4PRT**
100	50	87	97	20	26	77	25	33	25	18	32	M20x1,5	30°	0,46	**P1S-4PRT**
125	70	123,5	137	30	36	110	35	51	37	25	41	M27x2	30°	1,28	**P1S-4RRT**

Clevis

According to ISO 8140
Intended for articulated mounting of the cylinder. This mounting is adjustable in the axial direction. Supplied complete with pin.

Material:
Clevis: stainless steel, DIN X 10 CrNiS 18 9
Pin: stainless steel, DIN X 5 CrNi 18 10
Locking rings according to DIN 471





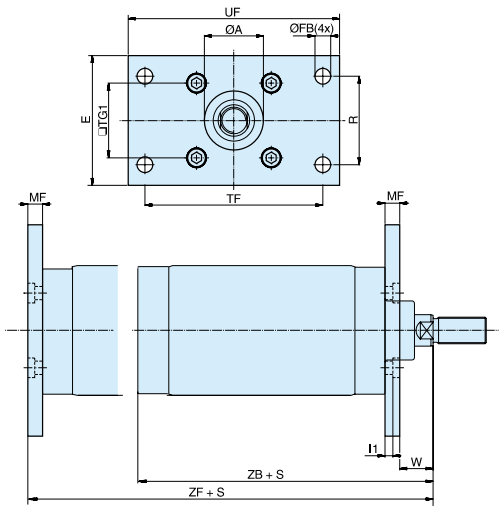
Cyl. Ø mm	A mm	B_{min} mm	B_{max} mm	C mm	D mm	E mm	F mm	G mm	H mm	I	Weight Kg	Order code
32	20	46	52	10	20	40	12	28	10	M10x1,25	0,09	**P1S-4JRD**
40	24	54	60	12	24	48	19	32	12	M12x1,25	0,15	**P1S-4LRD**
50	32	72	80	16	32	64	25	42	16	M16x1,5	0,35	**P1S-4MRD**
63	32	72	80	16	32	64	25	42	16	M16x1,5	0,35	**P1S-4MRD**
80	40	90	100	20	40	80	32	50	20	M20x1,5	0,75	**P1S-4PRD**
100	40	90	100	20	40	80	32	50	20	M20x1,5	0,75	**P1S-4PRD**
125	55	123,5	137	30	54	110	45	72	30	M27x2	2,10	**P1S-4RRD**

Cylinder mountings

Flange MF1/MF2

Intended for fixed attachment of cylinder version D, E, F or L. The flange is designed for mounting on the front or rear end covers.

Material:
Stainless steel, DIN X 5 CrNiMo 17 13 3



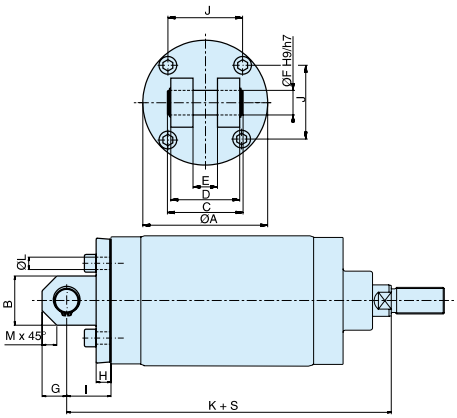
Cylinder Ø mm	A mm	FB mm	E mm	R mm	TF mm	TG1 mm	UF mm	MF mm	I1 mm	W mm	ZB mm	ZF mm	Weight Kg	Order code
80	50,2	12	86	63	126	46	150	12	6	25	178	190	0,97	**P1S-4PMB**
100	51	14	106	75	150	60	170	12	6	23	193	205	1,42	**P1S-4QMB**
125	61	16	132	90	180	76	205	15	8	32	230	245	1,55	**P1S-4RMB**

S = Stroke

Clevis bracket MP4

Intended for articulated mounting of cylinder versions D, F, or L. The bracket is mounted on the rear end cover and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket.

Material:
Bracket: stainless steel, DIN X 5 CrNi 18 10
Pin: stainless steel, DIN X 5 CrNiMo 17 13 3



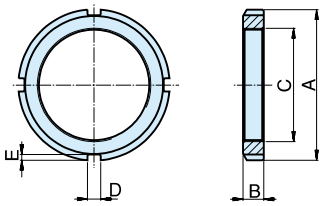
Cylinder Ø mm	A mm	B mm	C mm	D mm	E mm	F mm	G mm	H mm	I mm	J mm	K mm	L mm	M mm	Weight Kg	Order code
80	80	30	57	50	16	16	15	12	32	46	210	8,6	9	0,78	**P1S-4PME**
100	103	42	67	60	20	20	21	12	37	60	230	10,6	12	1,42	**P1S-4QME**
125	127	50	77	70	25	25	25	15	45	76	275	12,6	15	2,06	**P1S-4RME**

S = Stroke

Mounting nut

Intended for fixed mounting on the front end cover of cylinders according to cylinder version C or D.

Material:
Stainless steel, DIN X 5 CrNi 18 10

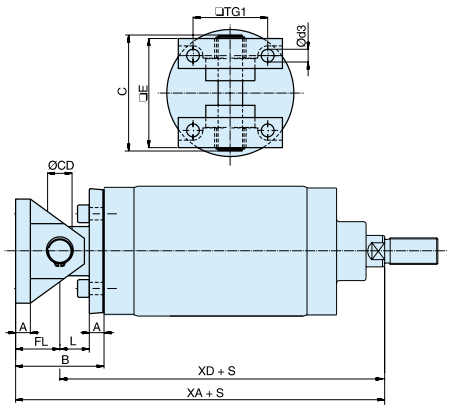


Cylinder Ø mm	A mm	B mm	C	D mm	E mm	Weight Kg	Order code
80	70	11	M50x1,5	6	2,5	0,16	**9126461304**
100	70	11	M50x1,5	6	2,5	0,16	**9126461304**
125	80	11	M60x2	7	3	0,19	**9126461305**

Cylinder mountings

Cylinder mountings

Type	Description	Cyl. bore Ø mm	Weight kg	Order code
Combinated mounting MP2/MP4	Intended for articulated mounting of cylinder versions D, F or L. The unit is mounted on the rear end cover and is combined with bearing brackets MP2 and is supplied complete with shaft, mounting screw and O-ring for a clean joint between end cover and bracket. Material: Bearing brackets: stainless steel, DIN X 5 CrNi 18 10 Journal bearing: stainless steel, Journal bearing: DIN X 5 CrNiMo 17 13 3/PTFE Bracket: stainless steel, DIN X 5 CrNi 18 10 Pin: stainless steel, DIN X 5 CrNiMo 17 13 3	80 100 125	1,29 2,33 3,30	**P1S-4PML** **P1S-4QML** **P1S-4RML**



Cylinder Ø mm	A mm	B mm	C mm	CD mm	d3 mm	E mm	FL mm	L mm	TG1 mm	XA mm	XD mm
80	12	64	82	16	9	74	32	20	46	242	210
100	12	74	98	20	11	90	37	25	60	267	230
125	15	90	118	25	13	110	45	30	76	320	275

S = Stroke

P1P Short Build Compact Cylinders

According to ISO 21287

The P1P Series is a complete range of ISO 21287 compact cylinders developed to meet the highest requirements for quality and performance. The careful design in every detail provides first class function and service life properties.

Reliability and long service life are key qualities of any pneumatic cylinder. Therefore we have given P1P highest possible quality in every detail based on our 40 years of experience and extensive testing. The design is based on the following important principles.

- **Proven seal design and materials throughout the cylinder. The expertise for seal technology within Parker Hannifin is the basis for leading and proven tribology solutions for all our pneumatic actuators.**
- **Body extrusion in anodised aluminium with extra fine and hard internal surface for optimum operational conditions.**
- **End covers and body extrusion with external anodisation for excellent corrosion resistance.**
- **Stainless steel piston rod for versatile use in corrosive environment.**

Double acting

The versatile high quality ISO compact cylinder range, P1P cylinders are up to 50% shorter than ISO15552 cylinders for the same stroke. Suitable for a wide range of applications.

- Bore 20 - 100 mm
- ISO 21287 conformity
- Corrosion resistant design and low weight construction
- Magnetic piston as standard
- Elastic cushioning
- Flexible direct mounting
- ISO 15552 mountings and global sensor range common with P1D

Operating information

Working pressure:	Max 10 bar
Permissible fluid:	Air, with or without lubrication
Seals / Temperature options	
Standard:	-20°C to +80°C
High temperature:	-10°C to +120°C
Low temperature:	-40°C to +80°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Double acting - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
5	**P1PS020DS7G0005**
10	**P1PS020DS7G0010**
15	**P1PS020DS7G0015**
20	**P1PS020DS7G0020**
25	**P1PS020DS7G0025**
30	**P1PS020DS7G0030**
40	**P1PS020DS7G0040**
50	**P1PS020DS7G0050**
60	**P1PS020DS7G0060**

Ø25mm - (M5)

Stroke mm	Order code
5	**P1PS025DS7G0005**
10	**P1PS025DS7G0010**
15	**P1PS025DS7G0015**
20	**P1PS025DS7G0020**
25	**P1PS025DS7G0025**
30	**P1PS025DS7G0030**
40	**P1PS025DS7G0040**
50	**P1PS025DS7G0050**
60	**P1PS025DS7G0060**

Ø32mm - (G1/8)

Stroke mm	Order code
5	**P1PS032DS7G0005**
10	**P1PS032DS7G0010**
15	**P1PS032DS7G0015**
20	**P1PS032DS7G0020**
25	**P1PS032DS7G0025**
30	**P1PS032DS7G0030**
40	**P1PS032DS7G0040**
50	**P1PS032DS7G0050**
60	**P1PS032DS7G0060**
80	**P1PS032DS7G0080**

Ø40mm - (G1/8)

Stroke mm	Order code
5	**P1PS040DS7G0005**
10	**P1PS040DS7G0010**
15	**P1PS040DS7G0015**
20	**P1PS040DS7G0020**
25	**P1PS040DS7G0025**
30	**P1PS040DS7G0030**
40	**P1PS040DS7G0040**
50	**P1PS040DS7G0050**
60	**P1PS040DS7G0060**
80	**P1PS040DS7G0080**

Ø50mm - (G1/8)

Stroke mm	Order code
5	**P1PS050DS7G0005**
10	**P1PS050DS7G0010**
15	**P1PS050DS7G0015**
20	**P1PS050DS7G0020**
25	**P1PS050DS7G0025**
30	**P1PS050DS7G0030**
40	**P1PS050DS7G0040**
50	**P1PS050DS7G0050**
60	**P1PS050DS7G0060**
80	**P1PS050DS7G0080**

Ø63mm - (G1/8)

Stroke mm	Order code
5	**P1PS063DS7G0005**
10	**P1PS063DS7G0010**
15	**P1PS063DS7G0015**
20	**P1PS063DS7G0020**
25	**P1PS063DS7G0025**
30	**P1PS063DS7G0030**
40	**P1PS063DS7G0040**
50	**P1PS063DS7G0050**
60	**P1PS063DS7G0060**
80	**P1PS063DS7G0080**

Ø80mm - (G1/8)

Stroke mm	Order code
5	**P1PS080DS7G0005**
10	**P1PS080DS7G0010**
15	**P1PS080DS7G0015**
20	**P1PS080DS7G0020**
25	**P1PS080DS7G0025**
30	**P1PS080DS7G0030**
40	**P1PS080DS7G0040**
50	**P1PS080DS7G0050**
60	**P1PS080DS7G0060**
80	**P1PS080DS7G0080**
100	**P1PS080DS7G0100**

Ø100mm - (G1/8)

Stroke mm	Order code
10	**P1PS100DS7G0010**
15	**P1PS100DS7G0015**
20	**P1PS100DS7G0020**
25	**P1PS100DS7G0025**
30	**P1PS100DS7G0030**
40	**P1PS100DS7G0040**
50	**P1PS100DS7G0050**
60	**P1PS100DS7G0060**
80	**P1PS100DS7G0080**
100	**P1PS100DS7G0100**

Sensors

For sensors see page 78.

Double acting - Guided

This cylinder version feature twin guide rods connected to the piston rod by a large flange plate. These cylinders are ideal for clamping an moving applications where turning of the piston rod must be avoided.

Double acting - Guided

Ø20mm - (M5)

Stroke mm	Order code
5	**P1PG020DS7G0005**
10	**P1PG020DS7G0010**
15	**P1PG020DS7G0015**
20	**P1PG020DS7G0020**
25	**P1PG020DS7G0025**
30	**P1PG020DS7G0030**
40	**P1PG020DS7G0040**
50	**P1PG020DS7G0050**
60	**P1PG020DS7G0060**

Ø25mm - (M5)

Stroke mm	Order code
5	**P1PG025DS7G0005**
10	**P1PG025DS7G0010**
15	**P1PG025DS7G0015**
20	**P1PG025DS7G0020**
25	**P1PG025DS7G0025**
30	**P1PG025DS7G0030**
40	**P1PG025DS7G0040**
50	**P1PG025DS7G0050**
60	**P1PG025DS7G0060**

Ø32mm - (G1/8)

Stroke mm	Order code
5	**P1PG032DS7G0005**
10	**P1PG032DS7G0010**
15	**P1PG032DS7G0015**
20	**P1PG032DS7G0020**
25	**P1PG032DS7G0025**
30	**P1PG032DS7G0030**
40	**P1PG032DS7G0040**
50	**P1PG032DS7G0050**
60	**P1PG032DS7G0060**
80	**P1PG032DS7G0080**

Ø40mm - (G1/8)

Stroke mm	Order code
5	**P1PG040DS7G0005**
10	**P1PG040DS7G0010**
15	**P1PG040DS7G0015**
20	**P1PG040DS7G0020**
25	**P1PG040DS7G0025**
30	**P1PG040DS7G0030**
40	**P1PG040DS7G0040**
50	**P1PG040DS7G0050**
60	**P1PG040DS7G0060**
80	**P1PG040DS7G0080**

Ø50mm - (G1/8)

Stroke mm	Order code
5	**P1PG050DS7G0005**
10	**P1PG050DS7G0010**
15	**P1PG050DS7G0015**
20	**P1PG050DS7G0020**
25	**P1PG050DS7G0025**
30	**P1PG050DS7G0030**
40	**P1PG050DS7G0040**
50	**P1PG050DS7G0050**
60	**P1PG050DS7G0060**
80	**P1PG050DS7G0080**

Ø63mm - (G1/8)

Stroke mm	Order code
5	**P1PG063DS7G0005**
10	**P1PG063DS7G0010**
15	**P1PG063DS7G0015**
20	**P1PG063DS7G0020**
25	**P1PG063DS7G0025**
30	**P1PG063DS7G0030**
40	**P1PG063DS7G0040**
50	**P1PG063DS7G0050**
60	**P1PG063DS7G0060**
80	**P1PG063DS7G0080**

Ø80mm - (G1/8)

Stroke mm	Order code
5	**P1PG080DS7G0005**
10	**P1PG080DS7G0010**
15	**P1PG080DS7G0015**
20	**P1PS080DS7G0020**
25	**P1PG080DS7G0025**
30	**P1PG080DS7G0030**
40	**P1PG080DS7G0040**
50	**P1PG080DS7G0050**
60	**P1PG080DS7G0060**
80	**P1PG080DS7G0080**
100	**P1PG080DS7G0100**

Ø100mm - (G1/8)

Stroke mm	Order code
10	**P1PG100DS7G0010**
15	**P1PG100DS7G0015**
20	**P1PG100DS7G0020**
25	**P1PG100DS7G0025**
30	**P1PG100DS7G0030**
40	**P1PG100DS7G0040**
50	**P1PG100DS7G0050**
60	**P1PG100DS7G0060**
80	**P1PG100DS7G0080**
100	**P1PG100DS7G0100**

Sensors

For sensors see page 78.

Single acting

Single acting P1P cylinders are available in bore sizes 20 - 63 mm and in two versions to suit a wide range of applications. Choose between the spring return (SS) and the spring extended (TS) versions.

Single acting - Spring return - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
25	**P1PS020SS7G0025**

Ø25mm - (M5)

Stroke mm	Order code
25	**P1PS025SS7G0025**

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1PS032SS7G0025**

Ø40mm - (G1/8)

Stroke mm	Order code
25	**P1PS040SS7G0025**

Ø50mm - (G1/8)

Stroke mm	Order code
25	**P1PS050SS7G0025**

Ø63mm - (G1/8)

Stroke mm	Order code
25	**P1PS063SS7G0025**

Single acting - Spring extended - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
25	**P1PS020TS7G0025**

Ø25mm - (M5)

Stroke mm	Order code
25	**P1PS025TS7G0025**

Ø32mm - (G1/8)

Stroke mm	Order code
25	**P1PS032TS7G0025**

Ø40mm - (G1/8)

Stroke mm	Order code
25	**P1PS040TS7G0025**

Ø50mm - (G1/8)

Stroke mm	Order code
25	**P1PS050TS7G0025**

Ø63mm - (G1/8)

Stroke mm	Order code
25	**P1PS063TS7G0025**

Note: Within limits other stroke lengths close to above standard stroke can be realised with corresponding change of the spring force.

Sensors

For sensors see page 78.

Double acting - Through piston rod

The P1P through rod cylinder version is available in bore sizes 20 - 100 mm. This cylinder type is used in many ways e.g. in applications with higher lateral forces or when performing a movement on both sides of the cylinder.

Double acting - Through piston rod - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
5	**P1PS020KS7G0005**
10	**P1PS020KS7G0010**
15	**P1PS020KS7G0015**
20	**P1PS020KS7G0020**
25	**P1PS020KS7G0025**
30	**P1PS020KS7G0030**
40	**P1PS020KS7G0040**
50	**P1PS020KS7G0050**
60	**P1PS020KS7G0060**

Ø25mm - (M5)

Stroke mm	Order code
5	**P1PS025KS7G0005**
10	**P1PS025KS7G0010**
15	**P1PS025KS7G0015**
20	**P1PS025KS7G0020**
25	**P1PS025KS7G0025**
30	**P1PS025KS7G0030**
40	**P1PS025KS7G0040**
50	**P1PS025KS7G0050**
60	**P1PS025KS7G0060**

Ø32mm - (G1/8)

Stroke mm	Order code
5	**P1PS032KS7G0005**
10	**P1PS032KS7G0010**
15	**P1PS032KS7G0015**
20	**P1PS032KS7G0020**
25	**P1PS032KS7G0025**
30	**P1PS032KS7G0030**
40	**P1PS032KS7G0040**
50	**P1PS032KS7G0050**
60	**P1PS032KS7G0060**
80	**P1PS032KS7G0080**

Ø40mm - (G1/8)

Stroke mm	Order code
5	**P1PS040KS7G0005**
10	**P1PS040KS7G0010**
15	**P1PS040KS7G0015**
20	**P1PS040KS7G0020**
25	**P1PS040KS7G0025**
30	**P1PS040KS7G0030**
40	**P1PS040KS7G0040**
50	**P1PS040KS7G0050**
60	**P1PS040KS7G0060**
80	**P1PS040KS7G0080**

Ø50mm - (G1/8)

Stroke mm	Order code
5	**P1PS050KS7G0005**
10	**P1PS050KS7G0010**
15	**P1PS050KS7G0015**
20	**P1PS050KS7G0020**
25	**P1PS050KS7G0025**
30	**P1PS050KS7G0030**
40	**P1PS050KS7G0040**
50	**P1PS050KS7G0050**
60	**P1PS050KS7G0060**
80	**P1PS050KS7G0080**

Ø63mm - (G1/8)

Stroke mm	Order code
5	**P1PS063KS7G0005**
10	**P1PS063KS7G0010**
15	**P1PS063KS7G0015**
20	**P1PS063KS7G0020**
25	**P1PS063KS7G0025**
30	**P1PS063KS7G0030**
40	**P1PS063KS7G0040**
50	**P1PS063KS7G0050**
60	**P1PS063KS7G0060**
80	**P1PS063KS7G0080**

Ø80mm - (G1/8)

Stroke mm	Order code
5	**P1PS080KS7G0005**
10	**P1PS080KS7G0010**
15	**P1PS080KS7G0015**
20	**P1PS080KS7G0020**
25	**P1PS080KS7G0025**
30	**P1PS080KS7G0030**
40	**P1PS080KS7G0040**
50	**P1PS080KS7G0050**
60	**P1PS080KS7G0060**
80	**P1PS080KS7G0080**
100	**P1PS080KS7G0100**

Ø100mm - (G1/8)

Stroke mm	Order code
10	**P1PS100KS7G0010**
15	**P1PS100KS7G0015**
20	**P1PS100KS7G0020**
25	**P1PS100KS7G0025**
30	**P1PS100KS7G0030**
40	**P1PS100KS7G0040**
50	**P1PS100KS7G0050**
60	**P1PS100KS7G0060**
80	**P1PS100KS7G0080**
100	**P1PS100KS7G0100**

Sensors

For sensors see page 78.

Double acting - Low temperature

This P1P cylinder version is developed for use in temperatures down to -40°C.
It is available in bore sizes 20 - 100 mm.
With the combination of compactness and corrosion resistance the P1P low temperature version can be used in many industries e.g. Bus, Truck and Rail applications.

Double acting - Low temperature - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
5	**P1PS020DL7G0005**
10	**P1PS020DL7G0010**
15	**P1PS020DL7G0015**
20	**P1PS020DL7G0020**
25	**P1PS020DL7G0025**
30	**P1PS020DL7G0030**
40	**P1PS020DL7G0040**
50	**P1PS020DL7G0050**
60	**P1PS020DL7G0060**

Ø25mm - (M5)

Stroke mm	Order code
5	**P1PS025DL7G0005**
10	**P1PS025DL7G0010**
15	**P1PS025DL7G0015**
20	**P1PS025DL7G0020**
25	**P1PS025DL7G0025**
30	**P1PS025DL7G0030**
40	**P1PS025DL7G0040**
50	**P1PS025DL7G0050**
60	**P1PS025DL7G0060**

Ø32mm - (G1/8)

Stroke mm	Order code
5	**P1PS032DL7G0005**
10	**P1PS032DL7G0010**
15	**P1PS032DL7G0015**
20	**P1PS032DL7G0020**
25	**P1PS032DL7G0025**
30	**P1PS032DL7G0030**
40	**P1PS032DL7G0040**
50	**P1PS032DL7G0050**
60	**P1PS032DL7G0060**
80	**P1PS032DL7G0080**

Ø40mm - (G1/8)

Stroke mm	Order code
5	**P1PS040DL7G0005**
10	**P1PS040DL7G0010**
15	**P1PS040DL7G0015**
20	**P1PS040DL7G0020**
25	**P1PS040DL7G0025**
30	**P1PS040DL7G0030**
40	**P1PS040DL7G0040**
50	**P1PS040DL7G0050**
60	**P1PS040DL7G0040**
80	**P1PS040DL7G0050**

Ø50mm - (G1/8)

Stroke mm	Order code
5	**P1PS050DL7G0005**
10	**P1PS050DL7G0010**
15	**P1PS050DL7G0015**
20	**P1PS050DL7G0020**
25	**P1PS050DL7G0025**
30	**P1PS050DL7G0030**
40	**P1PS050DL7G0040**
50	**P1PS050DL7G0050**
60	**P1PS050DL7G0060**
80	**P1PS050DL7G0080**

Ø63mm - (G1/8)

Stroke mm	Order code
5	**P1PS063DL7G0005**
10	**P1PS063DL7G0010**
15	**P1PS063DL7G0015**
20	**P1PS063DL7G0020**
25	**P1PS063DL7G0025**
30	**P1PS063DL7G0030**
40	**P1PS063DL7G0040**
50	**P1PS063DL7G0050**
60	**P1PS063DL7G0060**
80	**P1PS063DL7G0080**

Ø80mm - (G1/8)

Stroke mm	Order code
5	**P1PS080DL7G0005**
10	**P1PS080DL7G0010**
15	**P1PS080DL7G0015**
20	**P1PS080DL7G0020**
25	**P1PS080DL7G0025**
30	**P1PS080DL7G0030**
40	**P1PS080DL7G0040**
50	**P1PS080DL7G0050**
60	**P1PS080DL7G0060**
80	**P1PS080DL7G0080**
100	**P1PS080DL7G0100**

Ø100mm - (G1/8)

Stroke mm	Order code
10	**P1PS100DL7G0010**
15	**P1PS100DL7G0015**
20	**P1PS100DL7G0020**
25	**P1PS100DL7G0025**
30	**P1PS100DL7G0030**
40	**P1PS100DL7G0040**
50	**P1PS100DL7G0050**
60	**P1PS100DL7G0060**
80	**P1PS100DL7G0080**
100	**P1PS100DL7G0100**

Sensors

For sensors see page 78.

Double acting - High temperature

Use this P1P cylinder version, available in bore sizes 20 - 100 mm, for high temperature applications with temperatures up to +120°C. The chemical resistance thanks to the design in anodised aluminium is an advantage in many high temperature applications.

Double acting - High temperature - Female threaded piston rod

Ø20mm - (M5)

Stroke mm	Order code
5	**P1PS020DF7G0005**
10	**P1PS020DF7G0010**
15	**P1PS020DF7G0015**
20	**P1PS020DF7G0020**
25	**P1PS020DF7G0025**
30	**P1PS020DF7G0030**
40	**P1PS020DF7G0040**
50	**P1PS020DF7G0050**
60	**P1PS020DF7G0060**

Ø25mm - (M5)

Stroke mm	Order code
5	**P1PS025DF7G0005**
10	**P1PS025DF7G0010**
15	**P1PS025DF7G0015**
20	**P1PS025DF7G0020**
25	**P1PS025DF7G0025**
30	**P1PS025DF7G0030**
40	**P1PS025DF7G0040**
50	**P1PS025DF7G0050**
60	**P1PS025DF7G0060**

Ø32mm - (G1/8)

Stroke mm	Order code
5	**P1PS032DF7G0005**
10	**P1PS032DF7G0010**
15	**P1PS032DF7G0015**
20	**P1PS032DF7G0020**
25	**P1PS032DF7G0025**
30	**P1PS032DF7G0030**
40	**P1PS032DF7G0040**
50	**P1PS032DF7G0050**
60	**P1PS032DF7G0060**
80	**P1PS032DF7G0080**

Ø40mm - (G1/8)

Stroke mm	Order code
5	**P1PS040DF7G0005**
10	**P1PS040DF7G0010**
15	**P1PS040DF7G0015**
20	**P1PS040DF7G0020**
25	**P1PS040DF7G0025**
30	**P1PS040DF7G0030**
40	**P1PS040DF7G0040**
50	**P1PS040DF7G0050**
60	**P1PS040DF7G0040**
80	**P1PS040DF7G0050**

Ø50mm - (G1/8)

Stroke mm	Order code
5	**P1PS050DF7G0005**
10	**P1PS050DF7G0010**
15	**P1PS050DF7G0015**
20	**P1PS050DF7G0020**
25	**P1PS050DF7G0025**
30	**P1PS050DF7G0030**
40	**P1PS050DF7G0040**
50	**P1PS050DF7G0050**
60	**P1PS050DF7G0060**
80	**P1PS050DF7G0080**

Ø63mm - (G1/8)

Stroke mm	Order code
5	**P1PS063DF7G0005**
10	**P1PS063DF7G0010**
15	**P1PS063DF7G0015**
20	**P1PS063DF7G0020**
25	**P1PS063DF7G0025**
30	**P1PS063DF7G0030**
40	**P1PS063DF7G0040**
50	**P1PS063DF7G0050**
60	**P1PS063DF7G0060**
80	**P1PS063DF7G0080**

Ø80mm - (G1/8)

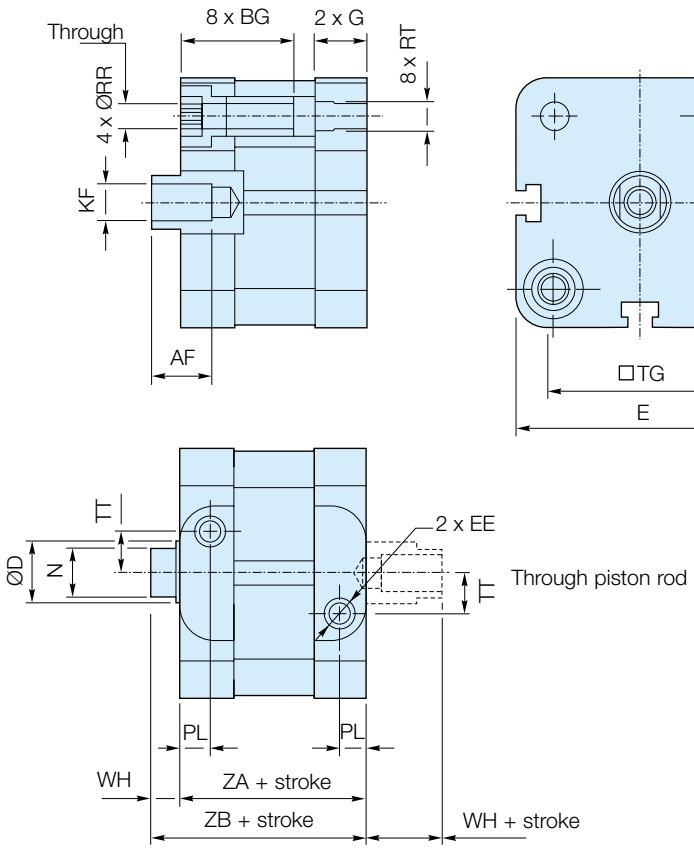
Stroke mm	Order code
5	**P1PS080DF7G0005**
10	**P1PS080DF7G0010**
15	**P1PS080DF7G0015**
20	**P1PS080DF7G0020**
25	**P1PS080DF7G0025**
30	**P1PS080DF7G0030**
40	**P1PS080DF7G0040**
50	**P1PS080DF7G0050**
60	**P1PS080DF7G0060**
80	**P1PS080DF7G0080**
100	**P1PS080DF7G0100**

Ø100mm - (G1/8)

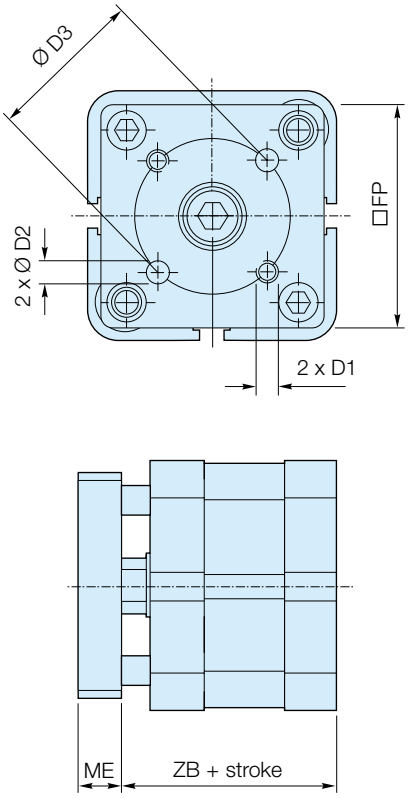
Stroke mm	Order code
10	**P1PS100DF7G0010**
15	**P1PS100DF7G0015**
20	**P1PS100DF7G0020**
25	**P1PS100DF7G0025**
30	**P1PS100DF7G0030**
40	**P1PS100DF7G0040**
50	**P1PS100DF7G0050**
60	**P1PS100DF7G0060**
80	**P1PS100DF7G0080**
100	**P1PS100DF7G0100**

Dimensions - Bore 20 - 63mm

P1PS...DS7G Double acting with female piston rod thread

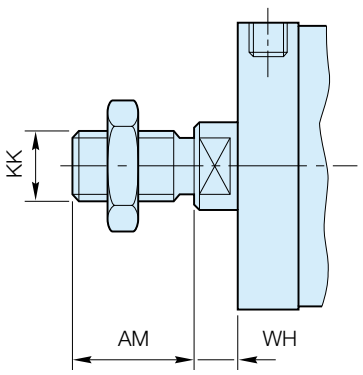


P1PG...DS Double acting with guided piston rod



Bore size	AF min	BG min	ØD	D1	ØD2 H8	ØD3	EE	E	E1	E2	FP	G	KF	ME	N h14	PL	ØRR min	RT	TG	TT	WH	ZA ± 0,3	ZB ± 0,6
Ø20	10	15	10	M4	4	17	M5	38,0	19,0	19,1	35	11,60	M6	8	8	7,6	4,1	M5	22,0	4,0	6	37	43
Ø25	10	15	10	M5	5	22	M5	41,0	20,5	20,6	38	11,90	M6	8	8	7,5	4,1	M5	26,0	5,5	6	39	45
Ø32	12	16	12	M5	5	28	G1/8	49,4	24,7	24,9	45	15,25	M8	10	10	7,8	5,1	M6	32,5	6,5	7	44	51
Ø40	12	16	12	M5	5	33	G1/8	56,0	28,0	28,5	50	15,25	M8	10	10	8,0	5,1	M6	38,0	8,0	7	45	52
Ø50	16	16	16	M6	6	42	G1/8	67,0	33,5	33,7	60	14,30	M10	12	13	7,7	6,4	M8	46,5	11,0	8	45	53
Ø63	16	16	16	M6	6	50	G1/8	79,0	39,5	39,8	70	16,30	M10	12	13	8,0	6,4	M8	56,5	16,0	8	49	57

P1PS...DS8G Double acting with male piston rod thread

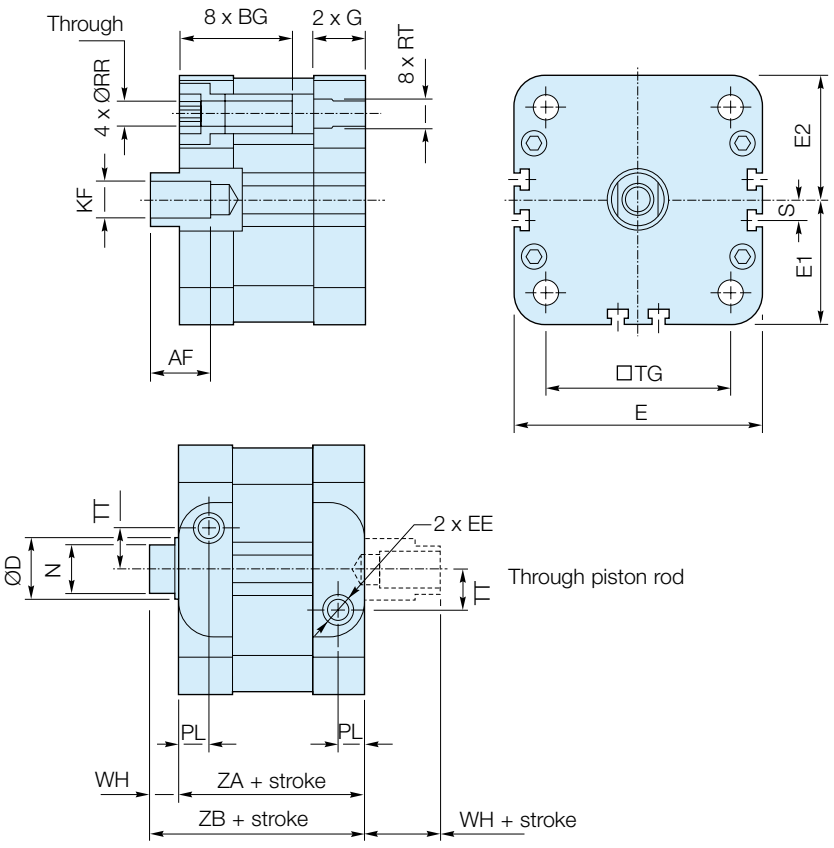


Bore size	AM +0 -0.5	WH nom.	WH tol.	KK
Ø20	16	6	± 1,6	M8 x 1,25
Ø25	16	6	± 1,6	M8 x 1,25
Ø32	19	7	± 1,6	M10 x 1,25
Ø40	19	7	± 1,6	M10 x 1,25
Ø50	22	8	± 1,6	M12 x 1,25
Ø63	22	8	± 1,6	M12 x 1,25

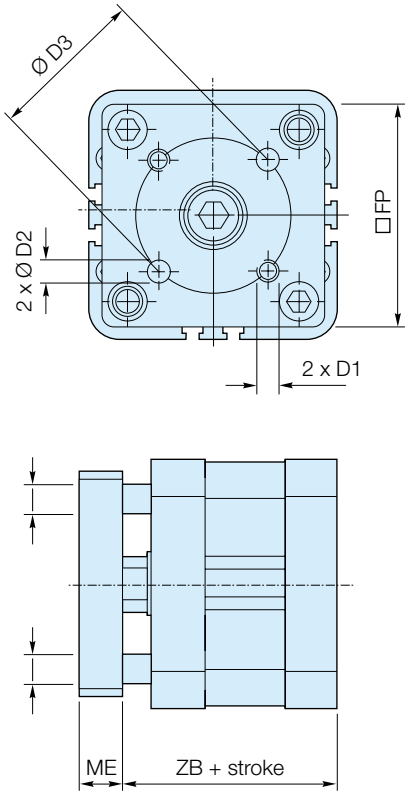
Note: Cylinders with male piston rod thread are delivered with one piston rod nut in zinc plated steel

Dimensions - Bore 80 - 100mm

P1PS...DS7G Double acting with female piston rod thread

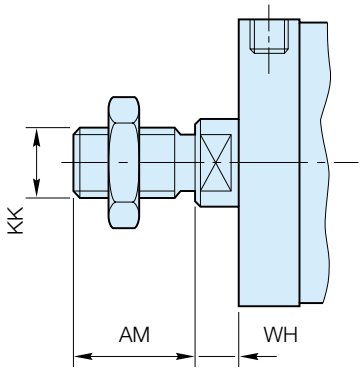


P1PG...DS Double acting with guided piston rod



Bore size	AF min	BG min	ØD	D1	ØD2 H8	ØD3	EE	E	E1	E2	FP	G	KF	ME	N h14	PL	ØRR min	RT	S	TG	TT	WH ± 0,3	ZA ± 0,6	ZB
Ø80	20	17	20	M8	8	65	G1/8	96	48,0	48,2	90	17,7	M12	14	17	10,5	8,4	M10	8	72	20	10	54	64
Ø100	20	17	25	M10	10	80	G1/8	115	57,5	57,7	110	23,0	M12	14	21	12,0	8,4	M10	18,5	89	24	10	67	77

P1PS...DS8G Double acting with male piston rod thread



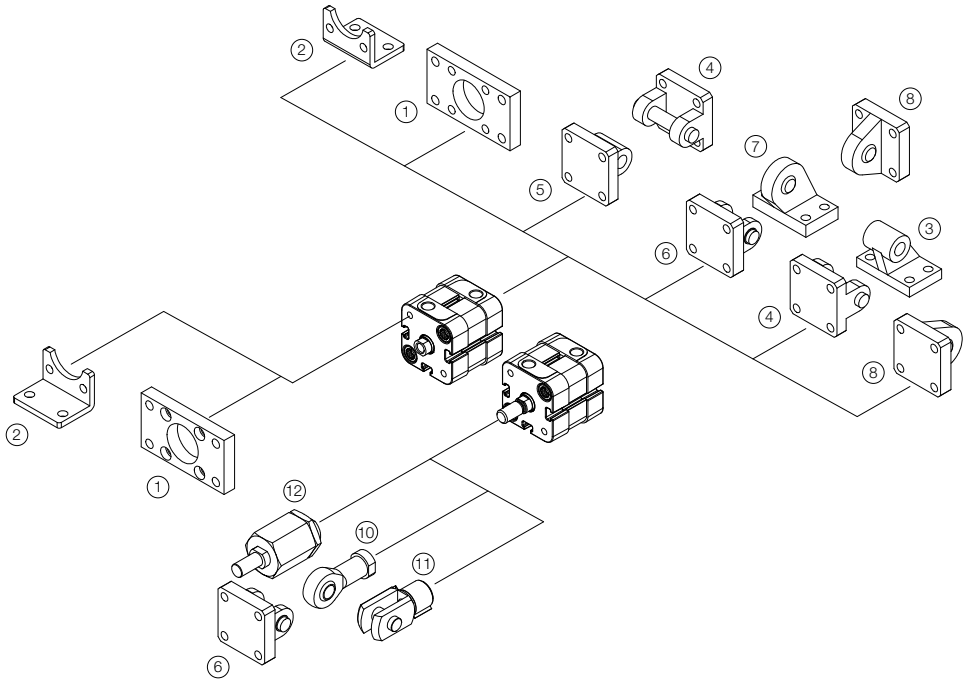
Bore size	AM +0 -0.5	WH nom.	WH tol.	KK
Ø80	28	10	± 1,6	M16 x 1,5
Ø100	28	10	± 1,6	M16 x 1,5

Note: Cylinders with male piston rod thread are delivered with one piston rod nut in zinc plated steel

	Flange MF1 / MF2 [1]	Foot brackets MS1 [2]	Pivot bracket with rigid bearing AB7 [3]	Clevis bracket MP2 [4]	Clevis bracket MP4 [5]
Ø 20	**P1P-4HMB**	**P1P-4HMF**			**P1P-4HME**
Ø 25	**P1P-4JMB**	**P1P-4JMF**			**P1P-4JME**
Ø 32	**P1C-4KMB**	**P1C-4KMF**	**P1C-4KMD**	**P1C-4KMT**	**P1C-4KME**
Ø 40	**P1C-4LMB**	**P1C-4LMF**	**P1C-4LMD**	**P1C-4LMT**	**P1C-4LME**
Ø 50	**P1C-4MMB**	**P1C-4MMF**	**P1C-4MMD**	**P1C-4MMT**	**P1C-4MME**
Ø 63	**P1C-4NMB**	**P1C-4NMF**	**P1C-4NMD**	**P1C-4NMT**	**P1C-4NME**
Ø 80	**P1C-4PMB**	**P1C-4PMF**	**P1C-4PMD**	**P1C-4PMT**	**P1C-4PME**
Ø 100	**P1C-4QMB**	**P1C-4QMF**	**P1C-4QMD**	**P1C-4QMT**	**P1C-4QME**

	Clevis bracket AB6 [6]	Pivot bracket with swivel bearing AB5 [7]	Swivel eye bracket MP6 [8]	3 and 4 positions flange	Swivel rod eye AP6 [10]
Ø 20					**P1A-4HRS**
Ø 25					**P1A-4HRS**
Ø 32	**P1C-4KMCA**	**P1C-4KMA**	**P1C-4KMSA**	**P1E-6KB0**	**P1C-4KRS**
Ø 40	**P1C-4LMCA**	**P1C-4LMA**	**P1C-4LMSA**	**P1E-6LB0**	**P1C-4KRS**
Ø 50	**P1C-4MMCA**	**P1C-4MMA**	**P1C-4MMSA**	**P1E-6MB0**	**P1C-4LRS**
Ø 63	**P1C-4NMCA**	**P1C-4NMA**	**P1C-4NMSA**	**P1E-6NB0**	**P1C-4LRS**
Ø 80	**P1C-4PMCA**	**P1C-4PMA**	**P1C-4PMSA**	**P1E-6PB0**	**P1C-4MRS**
Ø 100	**P1C-4QMCA**	**P1C-4QMA**	**P1C-4QMSA**	**P1E-6QB0**	**P1C-4MRS**

	Clevis AP2 [11]	Flexo coupling PM5 [12]	Zinc-plated nut MR9 (Pack of 10 off)
Ø 20	**P1A-4HRC**	**P1C-4HRF**	**P14-4HRPZ**
Ø 25	**P1A-4HRC**	**P1C-4HRF**	**P14-4HRPZ**
Ø 32	**P1C-4KRC**	**P1C-4KRF**	**P14-4KRPZ**
Ø 40	**P1C-4KRC**	**P1C-4KRF**	**P14-4KRPZ**
Ø 50	**P1C-4LRC**	**P1C-4LRF**	**P14-4LRPZ**
Ø 63	**P1C-4LRC**	**P1C-4LRF**	**P14-4LRPZ**
Ø 80	**P1C-4MRC**	**P1C-4MRF**	**P14-4MRPZ**
Ø 100	**P1C-4MRC**	**P1C-4MRF**	**P14-4MRPZ**



Cylinder mountings

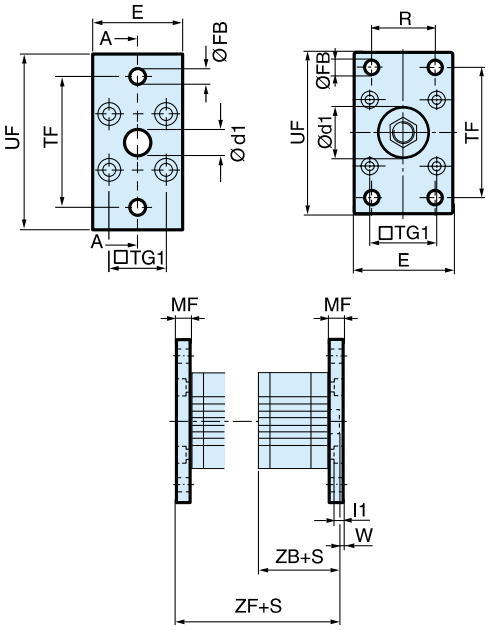
Flange MF1/MF2

Intended for fixed mounting of cylinder. Flange can be fitted to front- or rear end-plates of cylinder.

Materials
Flange: Surface-treated steel
Mounting screws according to DIN 6912: Zinc-plated steel 8.8

Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
20	0,17	**P1P-4HMB**
25	0,20	**P1P-4JMB**
32	0,23	**P1C-4KMB**
40	0,28	**P1C-4LMB**
50	0,53	**P1C-4MMB**
63	0,71	**P1C-4NMB**
80	1,59	**P1C-4PMB**
100	2,19	**P1C-4QMB**



Ø32-100 according to ISO MF1/MF2, VDMA, AFNOR

Cyl. bore mm	d1 H11 mm	FB H13 mm	TG1 mm	E mm	R JS14 mm	MF JS14 mm	TF JS14 mm	UF mm	l1 -0,5 mm	W mm	ZF* mm	ZB* mm
20	12,0	6,6	22,0	36	-	10,0	55,0	70	5,4	4,0	53,0	43,0
25	12,0	6,6	26,0	40	-	10,0	60,0	76	5,4	4,0	55,0	45,0
32	30,0	7,0	32,5	45	32	10,0	64,0	80	5,0	3,0	61,0	41,0
40	35,0	9,0	38,0	52	36	10,0	72,0	90	5,0	3,0	52,0	52,0
50	40,0	9,0	46,5	65	45	12,0	90,0	110	6,5	4,0	65,0	53,0
63	45,0	9,0	56,5	75	50	12,0	100,0	120	6,5	4,0	69,0	57,0
80	45,0	12,0	72,0	95	63	16,0	126,0	150	8,0	6,0	80,0	64,0
100	55,0	14,0	89,0	115	75	16,0	150,0	170	8,0	6,0	93,0	77,0

S = Stroke length

Foot brackets MS1

Intended for fixed mounting of cylinder. Angle bracket can be fitted to front- and rear end-plates of cylinder.

Materials
Foot bracket: Surface-treated steel, black
Mounting screws according to DIN 912: Zinc-plated steel 8.8

Supplied in pairs with mounting screws for attachment to cylinder.

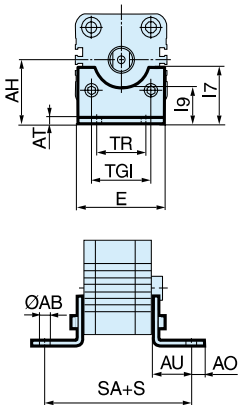
Cyl. bore Ø mm	Weight kg	Order code
20	0,04**	**P1P-4HMF**
25	0,05**	**P1P-4JMF**
32	0,06**	**P1C-4KMF**
40	0,08**	**P1C-4LMF**
50	0,16**	**P1C-4MMF**
63	0,25**	**P1C-4NMF***
80	0,50**	**P1C-4PMF**
100	0,85**	**P1C-4QMF***

** Weight per item

Ø32-63 according to ISO MS1, VDMA, AFNOR

Cyl. bore mm	AB H14 mm	TG1 mm	E mm	TR JS14 mm	AO mm	AU mm	AH JS15 mm	l7 mm	AT mm	l9 JS14 mm	SA** mm
20	6,6	22,0	36	26	6,0	16,0	27	22,0	4,0	17,0	69,0
25	6,6	26,0	40	26	6,0	16,0	30	23,0	4,0	19,0	71,0
32	7,0	32,5	45	32	10,0	24,0	32	30,0	4,5	17,5	92,0
40	9,0	38,0	52	36	8,0	28,0	36	30,0	4,5	18,5	101,0
50	9,0	46,5	65	45	13,0	32,0	45	36,0	5,5	25,0	109,0
63	9,0	56,5	75	50	13,0	32,0	50	35,0	5,5	27,5	113,0
80	12,0	72,0	95	63	14,0	41,0	63	49,0	6,5	40,5	136,0
100	14,0	89,0	115	75	15,0	41,0	71	54,0	6,5	43,5	149,0

S = Stroke length



Cylinder mountings

Pivot bracket with rigid bearing AB7

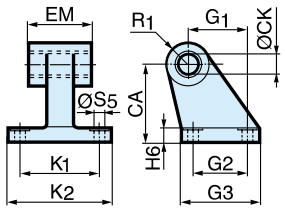
Intended for flexible mounting of cylinder. The pivot bracket can be combined with clevis bracket MP2.

Materials
Pivot bracket: Surface-treated aluminium, black
Bearing: Sintered oil-bronze bushing

Cyl. bore Ø mm	Weight kg	Order code
32	0,06	**P1C-4KMD**
40	0,08	**P1C-4LMD**
50	0,15	**P1C-4MMD**
63	0,20	**P1C-4NMD**
80	0,33	**P1C-4PMD**
100	0,49	**P1C-4QMD**

According to CETOP RP 107 P, VDMA, AFNOR

Cyl. bore mm	CK H9 mm	S5 H13 mm	K1 JS14 mm	K2 mm	G1 JS14 mm	G2 JS14 mm	EM mm	G3 mm	CA JS15 mm	H6 mm	R1 mm
32	10	6,6	38	51	21	18	25,5	31	32	8	10
40	12	6,6	41	54	24	22	27,0	35	36	10	11
50	12	9,0	50	65	33	30	31,0	45	45	12	13
63	16	9,0	52	67	37	35	39,0	50	50	12	15
80	16	11,0	66	86	47	40	49,0	60	63	14	15
100	20	11,0	76	96	55	50	59,0	70	71	15	19



Clevis bracket MP2

Intended for flexible mounting of cylinder. Clevis bracket MP2 can be combined with clevis bracket MP4.

Materials
Clevis bracket: Surface-treated aluminium, black
Mounting screws according to DIN 912:
Zinc-plated steel 8.8
Pin: surface treated steel

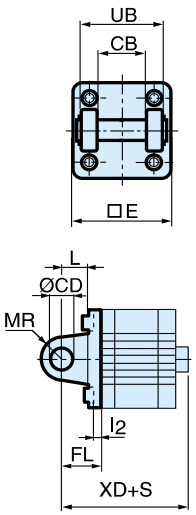
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,08	**P1C-4KMT**
40	0,11	**P1C-4LMT**
50	0,14	**P1C-4MMT**
63	0,29	**P1C-4NMT**
80	0,36	**P1C-4PMT**
100	0,64	**P1C-4QMT**

According to ISO MP2, VDMA, AFNOR

Cyl. bore mm	E mm	UB h14 mm	CB H14 mm	FL ±0,2 mm	L mm	l2 mm	CD H9 mm	MR mm	XD* mm
32	45,0	45	26,0	22	13	5,5	10	10	73,0
40	52,0	52	28,0	25	16	5,5	12	12	77,0
50	65,0	60	32,0	27	16	6,5	12	12	80,0
63	75,0	70	40,0	32	21	6,5	16	16	89,0
80	95,0	90	50,0	36	22	10,0	16	16	100,0
100	115,0	110	60,0	41	27	10,0	20	20	118,0

S = Stroke length



Cylinder mountings

Clevis bracket MP4

Intended for flexible mounting of cylinder. Clevis bracket MP4 can be combined with clevis bracket MP2.

Materials
Clevis bracket: Surface-treated aluminium, black
Mounting screws according to DIN 912: Zinc-plated steel 8.8

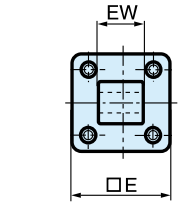
Supplied complete with mounting screws for attachment to cylinder.

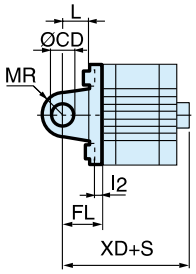
Cyl. bore Ø mm	Weight kg	Order code
20	0.04	**P1P-4HME**
25	0.05	**P1P-4JME**
32	0,09	**P1C-4KME**
40	0,13	**P1C-4LME**
50	0,17	**P1C-4MME**
63	0,36	**P1C-4NME**
80	0,46	**P1C-4PME**
100	0,83	**P1C-4QME**

Ø32-100 according to ISO MP4, VDMA, AFNOR

Cyl. bore mm	E mm	EW mm	FL ±0,2 mm	L mm	l2 mm	CD H9 mm	MR mm	XD* mm
20	34,0	16,0	20	14	2,6	8	8	63,0
25	38,0	16,0	20	14	2,6	8	8	65,0
32	45,0	26,0	22	13	5,5	10	10	73,0
40	52,0	28,0	25	16	5,5	12	12	77,0
50	65,0	32,0	27	16	6,5	12	12	80,0
63	75,0	40,0	32	21	6,5	16	16	89,0
80	95,0	50,0	36	22	10,0	16	16	100,0
100	115,0	60,0	41	27	10,0	20	20	118,0

S = Stroke length





Clevis bracket AB6

Intended for flexible mounting of cylinder. Clevis bracket GA can be combined with pivot bracket with swivel bearing, swivel eye bracket and swivel rod eye.

Materials
Clevis bracket: Surface-treated aluminium, black
Pin: Surface hardened steel
Locking pin: Spring steel
Circlips according to DIN 471: Spring steel
Mounting screws acc. to DIN 912: Zinc-plated steel 8.8

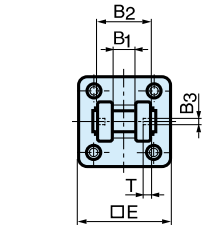
Supplied complete with mounting screws for attachment to cylinder.

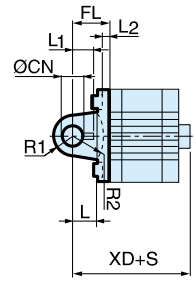
Cyl. bore Ø mm	Weight kg	Order code
32	0,09	**P1C-4KMCA**
40	0,13	**P1C-4LMCA**
50	0,17	**P1C-4MMCA**
63	0,36	**P1C-4NMCA**
80	0,58	**P1C-4PMCA**
100	0,89	**P1C-4QMCA**

According to VDMA, AFNOR

Cyl. bore mm	E mm	B2 d12 mm	B1 H14 mm	T mm	B3 mm	R2 mm	L1 mm	FL ±0,2 mm	l2 mm	L mm	CN F7 mm	R1 mm	XD* mm
32	45	34	14	3	3,3	17	11,5	22	5,5	12	10	11	73,0
40	52	40	16	4	4,3	20	12,0	25	5,5	15	12	13	77,0
50	65	45	21	4	4,3	22	14,0	27	6,5	17	16	18	80,0
63	75	51	21	4	4,3	25	14,0	32	6,5	20	16	18	89,0
80	95	65	25	4	4,3	30	16,0	36	10,0	20	20	22	100,0
100	115	75	25	4	4,3	32	16,0	41	10,0	25	20	22	118,0

S = Stroke length





Stainless steel Pin Set AB6
Materials
Pin: Stainless steel
Locking pin: Stainless steel
Circlips according to DIN 471: Stainless steel

Cyl. bore Ø mm	Weight kg	Order code
32	0,05	**9301054311**
40	0,06	**9301054312**
50	0,07	**9301054313**
63	0,07	**9301054314**
80	0,17	**9301054315**
100	0,31	**9301054316**

Cylinder mountings

Pivot bracket with swivel bearing AB5

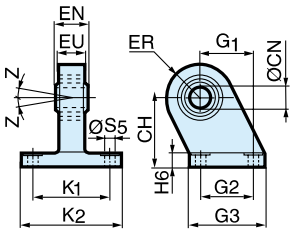
Intended for use together with clevis bracket GA.

Material
Pivot bracket: Surface-treated steel, black
Swivel bearing according to DIN 648K: Hardened steel

Cyl. bore Ø mm	Weight kg	Order code
32	0,18	**P1C-4KMA**
40	0,25	**P1C-4LMA**
50	0,47	**P1C-4MMA**
63	0,57	**P1C-4NMA**
80	1,05	**P1C-4PMA**
100	1,42	**P1C-4QMA**

According to VDMA, AFNOR

Cyl. bore mm	CN H7 mm	S5 H13 mm	K1 JS14 mm	K2 mm	EU mm	G1 JS14 mm	G2 JS14 mm	EN mm	G3 mm	CH JS15 mm	H6 mm	ER mm	Z
32	10	6,6	38	51	10,5	21	18	14	31	32	10	16	4°
40	12	6,6	41	54	12,0	24	22	16	35	36	10	18	4°
50	16	9,0	50	65	15,0	33	30	21	45	45	12	21	4°
63	16	9,0	52	67	15,0	37	35	21	50	50	12	23	4°
80	20	11,0	66	86	18,0	47	40	25	60	63	14	28	4°
100	20	11,0	76	96	18,0	55	50	25	70	71	15	30	4°



Swivel eye bracket MP6

Intended for use together with clevis bracket GA

Material
Bracket: Surface-treated aluminium, black
Swivel bearing acc. to DIN 648K: Hardened steel

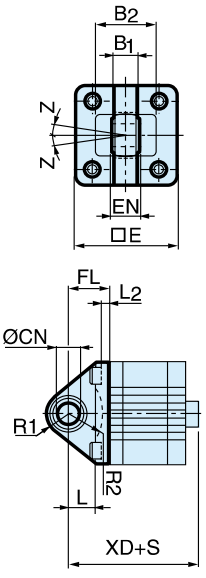
Supplied complete with mounting screws for attachment to cylinder.

Cyl. bore Ø mm	Weight kg	Order code
32	0,08	**P1C-4KMSA**
40	0,11	**P1C-4LMSA**
50	0,20	**P1C-4MMSA**
63	0,27	**P1C-4NMSA**
80	0,52	**P1C-4PMSA**
100	0,72	**P1C-4QMSA**

According to VDMA, AFNOR

Cyl. bore mm	E mm	B1 mm	B2 mm	EN mm	R1 mm	R2 mm	FL mm	l2 mm	L mm	CN H7 mm	XD* mm	XD2* mm	Z
32	45	10,5	38	14	16	14	22	5,5	12	10	70,5	79,0	4°
40	52	12,0	44	16	18	16	25	5,5	15	12	75,5	83,5	4°
50	65	15,0	51	21	21	19	27	6,5	15	16	79,5	86,0	4°
63	75	15,0	56	21	23	22	32	6,5	20	16	90,0	95,5	4°
80	95	18,0	-	25	29	-	36	10,0	20	20	210,0	-	4°
100	115	18,0	-	25	31	-	41	10,0	25	20	230,0	-	4°

S=Stroke length



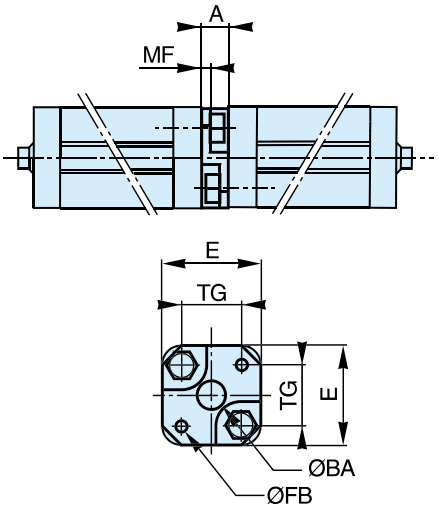
Cylinder mountings

3 and 4 positions flange

Mounting kit for back to back mounted cylinders, 3 and 4 position cylinders.

Material:
Mounting: Aluminium
Mounting screws: Zinc-plated steel 8.8

Cyl. bore Ø mm	Weight kg	Order code
32	0,060	**P1E-6KB0**
40	0,078	**P1E-6LB0**
50	0,162	**P1E-6MB0**
63	0,194	**P1E-6NB0**
80	0,450	**P1E-6PB0**
100	0,672	**P1E-6QB0**



Cyl. bore mm	E mm	TG mm	ØFB mm	MF mm	A mm	ØBA mm
32	50	32,5	6,5	5	16	30
40	60	38,0	6,5	5	16	35
50	66	46,5	8,5	6	20	40
63	80	56,5	8,5	6	20	45
80	100	72,0	10,5	8	25	45
100	118	89,0	10,5	8	25	55

Piston rod mountings

Swivel rod eye AP6

Swivel rod eye for articulated mounting of cylinder. Swivel rod eye can be combined with clevis bracket GA.
Maintenance-free.

Materials
Swivel rod eye: Zinc-plated steel
Swivel bearing according to DIN 648K: Hardened steel

Cyl. bore Ø mm	Weight kg	Order code
20 / 25	0,045	**P1A-4HRS**
32 / 40	0,08	**P1C-4KRS**
50 / 63	0,12	**P1C-4LRS**
80 / 100	0,25	**P1C-4MRS**

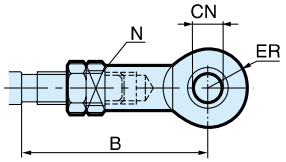
Stainless steel swivel rod eye AP6

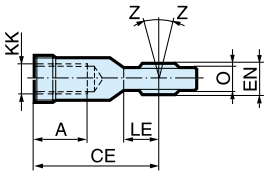
Stainless-steel swivel rod eye for articulated mounting of cylinder. Swivel rod eye can be combined with clevis bracket GA.
Maintenance-free.

Materials
Swivel rod eye: Stainless steel
Swivel bearing according to DIN 648K: Stainless steel

Use stainless steel nut with stainless steel swivel rod eye.

Cyl. bore Ø mm	Weight kg	Order code
20 / 25	0,045	**P1S-4HRT**
32 / 40	0,08	**P1S-4JRT**
50 / 63	0,12	**P1S-4LRT**
80 / 100	0,25	**P1S-4MRT**





According to ISO 8139

Cyl. bore mm	A mm	B min mm	B max mm	CE mm	CN H9 mm	EN h12 mm	ER mm	KK	LE mm	N min mm	O mm	Z
20 / 25	12	40,0	45	36	8	12	12	M8x1,25	12	13	9,0	12°
32 / 40	20	48,0	55	43	10	14	14	M10x1,25	15	17	10,5	12°
50 / 63	22	56,0	62	50	12	16	16	M12x1,25	17	19	12,0	12°
80 / 100	28	72,0	80	64	16	21	21	M16x1,5	22	22	15,0	15°

Clevis AP2

Clevis for articulated mounting of cylinder.

Material
Clevis, clip: Galvanized steel
Pin: Hardened steel

Cyl. bore Ø mm	Weight kg	Order code
20 / 25	0,045	**P1A-4HRC**
32 / 40	0,09	**P1C-4KRC**
50 / 63	0,15	**P1C-4LRC**
80 / 100	0,35	**P1C-4MRC**

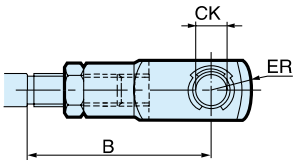
Stainless steel clevis AP2

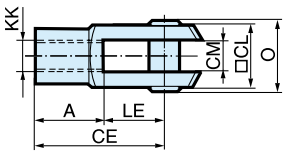
Stainless-steel clevis for articulated mounting of cylinder.

Material
Clevis: Stainless steel
Pin: Stainless steel
Circlips according to DIN 471: Stainless steel

Use stainless steel nut with stainless steel swivel rod eye.

Cyl. bore Ø mm	Weight kg	Order code
20 / 25	0,045	**P1S-4HRD**
32 / 40	0,09	**P1S-4JRD**
50 / 63	0,15	**P1S-4LRD**
80 / 100	0,35	**P1S-4MRD**





According to ISO 8140

Cyl. bore mm	A mm	B min mm	B max mm	CE mm	CK h11/E9 mm	CL mm	CM mm	ER mm	KK	LE mm	O mm
20 / 25	16	36,0	41	32	8	16	8	-	M8x1,25	16	24,0
32 / 40	20	45,0	52	40	10	20	10	16	M10x1,25	20	28,0
50 / 63	24	54,0	60	48	12	24	12	19	M12x1,25	24	32,0
80 / 100	32	72,0	80	64	16	32	16	25	M16x1,5	32	41,5

Piston rod mountings

Flexo coupling PM5

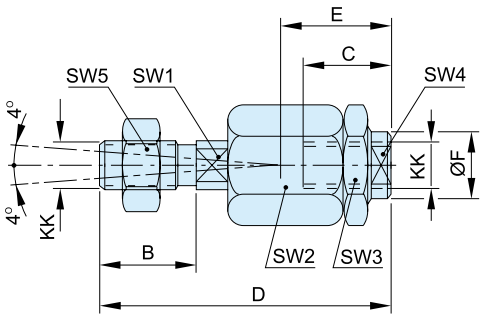
Flexo coupling for articulated mounting of piston rod. Flexo fitting is intended to take up axial angle errors within a range of ±4°.

Material
Flexo coupling, nut: Zinc-plated steel

Supplied complete with galvanized adjustment nut.

Cyl. bore Ø mm	Weight kg	Order code
20 / 25	0,06	**P1C-4JRF**
32 / 40	0,23	**P1C-4KRF**
50 / 63	0,23	**P1C-4LRF**
80 / 100	0,65	**P1C-4MRF**

Cyl. bore mm	KK mm	B mm	C mm	D mm	E mm	ØF mm	SW1 mm	SW2 mm	SW3 mm	SW4 mm	SW5 mm
20 / 25	M8x1.25	16	14	55	20	12.4	7	17	17	10	13
32 / 40	M10x1.25	20	23	73	31	21	12	30	30	19	17
50 / 63	M12x1.5	24	23	77	31	21	12	30	30	19	19
80 / 100	M16x1.5	32	32	108	45	33.5	19	41	41	30	24



Nut MR9

Intended for fixed mounting of accessories to the piston rod.
Material: Zinc-plated steel

All P1D cylinders are delivered with a zinc-plated steel piston rod nut.

Supplied as pack of 10 off

Cyl. bore Ø mm	Weight * kg	Order code
20 / 25	0,005	**P14-4HRPZ**
32 / 40	0,007	**P14-4KRPZ**
50 / 63	0,021	**P14-4LRPZ**
80 / 100	0,040	**P14-4MRPZ**

* Weight per item

Stainless steel nut

Intended for fixed mounting of accessories to the piston rod.

Material: Stainless steel A2

All P1D cylinders are delivered with a zinc-plated steel piston rod nut.

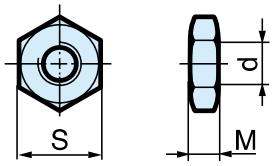
Supplied as pack of 10 off

Cyl. bore Ø mm	Weight * kg	Order code
20 / 25	0,005	**P14-4HRPS**
32 / 40	0,007	**P14-4KRPS**
50 / 63	0,021	**P14-4LRPS**
80 / 100	0,040	**P14-4MRPS**

* Weight per item

According to DIN 439 B

Cyl. bore mm	d	M mm	S mm
20 / 25	M8x1,25		
32 / 40	M10x1,25	5,0	17
50 / 63	M12x1,25	6,0	19
80 / 100	M16x1,5	10,0	30



P1Q Series Compact Cylinders

Ø12mm - 100mm bore size

Parker's P1Q series cylinders provide an economical, compact design suited for a variety of applications. With its modular flexibility, the P1Q will provide the ideal solution machine builders need today. The P1Q series is available in 10 bore sizes from 12 mm to 100 mm and standard strokes from 5 mm to 100 mm. The cylinder is supplied in a choice of magnetic or non-magnetic function, the non-magnetic version offers very short axial dimensions. For optimum compactness the P1Q range is supplied with female piston rod thread.

The P1Q provides quieter operation due to its built in buffer cushioning, which is standard on all bore sizes. Included in bore sizes 40 mm – 100 mm is a piston wear ring providing superior life.

The P1Q compact cylinder is ideal for applications where you need compact dimensions and high over-all performance. The versatile P1Q cylinder range provides a long trouble-free operation in a variety of applications.

- Compact and versatile
- Magnetic or non magnetic options
- Flush fit sensor range
- Buffer cushioning as standard
- Piston wear ring on Ø32 - Ø100mm
- Tapped both ends as standard

Operating information

Working pressure:	Max 10 bar
Permissible fluid:	Air, with or without lubrication
Standard working temperature:	-5°C to +60°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Double acting - Magnetic - Female threaded piston rod

Ø12mm

Stroke mm	Order code
5	**P1QS012DC7G0005**
10	**P1QS012DC7G0010**
15	**P1QS012DC7G0015**
20	**P1QS012DC7G0020**
25	**P1QS012DC7G0025**
30	**P1QS012DC7G0030**

Ø16mm

Stroke mm	Order code
5	**P1QS016DC7G0005**
10	**P1QS016DC7G0010**
15	**P1QS016DC7G0015**
20	**P1QS016DC7G0020**
25	**P1QS016DC7G0025**
30	**P1QS016DC7G0030**

Ø20mm

Stroke mm	Order code
10	**P1QS020DC7G0010**
15	**P1QS020DC7G0015**
20	**P1QS020DC7G0020**
25	**P1QS020DC7G0025**
30	**P1QS020DC7G0030**
40	**P1QS020DC7G0040**
50	**P1QS020DC7G0050**

Ø25mm

Stroke mm	Order code
10	**P1QS025DC7G0010**
15	**P1QS025DC7G0015**
20	**P1QS025DC7G0020**
25	**P1QS025DC7G0025**
30	**P1QS025DC7G0030**
40	**P1QS025DC7G0040**
50	**P1QS025DC7G0050**

Ø32mm

Stroke mm	Order code
10	**P1QS032DC7G0010**
15	**P1QS032DC7G0015**
20	**P1QS032DC7G0020**
25	**P1QS032DC7G0025**
30	**P1QS032DC7G0030**
40	**P1QS032DC7G0040**
50	**P1QS032DC7G0050**
75	**P1QS032DC7G0075**
100	**P1QS032DC7G0100**

Ø40mm

Stroke mm	Order code
15	**P1QS040DC7G0015**
20	**P1QS040DC7G0020**
25	**P1QS040DC7G0025**
30	**P1QS040DC7G0030**
40	**P1QS040DC7G0040**
50	**P1QS040DC7G0050**
75	**P1QS040DC7G0075**
100	**P1QS040DC7G0100**

Ø50mm

Stroke mm	Order code
15	**P1QS050DC7G0015**
20	**P1QS050DC7G0020**
25	**P1QS050DC7G0025**
30	**P1QS050DC7G0030**
40	**P1QS050DC7G0040**
50	**P1QS050DC7G0050**
75	**P1QS050DC7G0075**
100	**P1QS050DC7G0100**

Ø63mm

Stroke mm	Order code
15	**P1QS063DC7G0015**
20	**P1QS063DC7G0020**
25	**P1QS063DC7G0025**
30	**P1QS063DC7G0030**
40	**P1QS063DC7G0040**
50	**P1QS063DC7G0050**
75	**P1QS063DC7G0075**

Ø80mm

Stroke mm	Order code
15	**P1QS080DC7G0015**
20	**P1QS080DC7G0020**
25	**P1QS080DC7G0025**
30	**P1QS080DC7G0030**
40	**P1QS080DC7G0040**
50	**P1QS080DC7G0050**
75	**P1QS080DC7G0075**

Ø100mm

Stroke mm	Order code
15	**P1QS100DC7G0015**
20	**P1QS100DC7G0020**
25	**P1QS100DC7G0025**
30	**P1QS100DC7G0030**
40	**P1QS100DC7G0040**
50	**P1QS100DC7G0050**
75	**P1QS100DC7G0075**

Double acting - Non-magnetic - Female threaded piston rod

Ø 12 mm

Stroke mm	Order code
5	P1QS012DC7B0005
10	P1QS012DC7B0010
15	P1QS012DC7B0015
20	P1QS012DC7B0020
25	P1QS012DC7B0025
30	P1QS012DC7B0030

Ø 16 mm

Stroke mm	Order code
5	P1QS016DC7B0005
10	P1QS016DC7B0010
15	P1QS016DC7B0015
20	P1QS016DC7B0020
25	P1QS016DC7B0025
30	P1QS016DC7B0030

Ø 20 mm

Stroke mm	Order code
10	P1QS020DC7B0010
15	P1QS020DC7B0015
20	P1QS020DC7B0020
25	P1QS020DC7B0025
30	P1QS020DC7B0030
40	P1QS020DC7B0040
50	P1QS020DC7B0050

Ø 25 mm

Stroke mm	Order code
10	P1QS025DC7B0010
15	P1QS025DC7B0015
20	P1QS025DC7B0020
25	P1QS025DC7B0025
30	P1QS025DC7B0030
40	P1QS025DC7B0040
50	P1QS025DC7B0050

Ø 32 mm

Stroke mm	Order code
10	P1QS032DC7B0010
15	P1QS032DC7B0015
20	P1QS032DC7B0020
25	P1QS032DC7B0025
30	P1QS032DC7B0030
40	P1QS032DC7B0040
50	P1QS032DC7B0050
75	P1QS032DC7B0075
100	P1QS032DC7B0100

Ø 40 mm

Stroke mm	Order code
15	P1QS040DC7B0015
20	P1QS040DC7B0020
25	P1QS040DC7B0025
30	P1QS040DC7B0030
40	P1QS040DC7B0040
50	P1QS040DC7B0050
75	P1QS040DC7B0075
100	P1QS040DC7B0100

Ø 50 mm

Stroke mm	Order code
15	P1QS050DC7B0015
20	P1QS050DC7B0020
25	P1QS050DC7B0025
30	P1QS050DC7B0030
40	P1QS050DC7B0040
50	P1QS050DC7B0050
75	P1QS050DC7B0075
100	P1QS050DC7B0100

Ø 63 mm

Stroke mm	Order code
15	P1QS063DC7B0015
20	P1QS063DC7B0020
25	P1QS063DC7B0025
30	P1QS063DC7B0030
40	P1QS063DC7B0040
50	P1QS063DC7B0050
75	P1QS063DC7B0075

Ø 80 mm

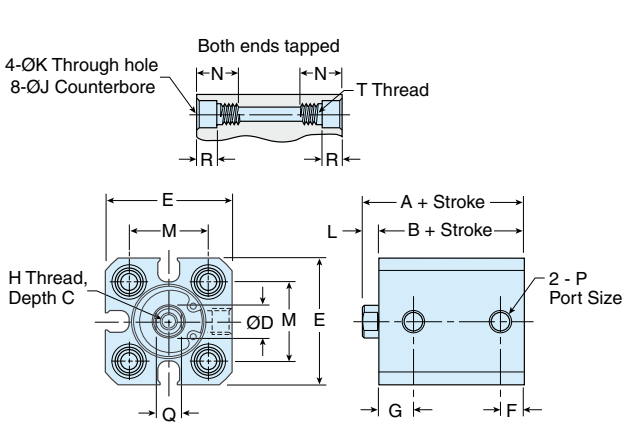
Stroke mm	Order code
15	P1QS080DC7B0015
20	P1QS080DC7B0020
25	P1QS080DC7B0025
30	P1QS080DC7B0030
40	P1QS080DC7B0040
50	P1QS080DC7B0050
75	P1QS080DC7B0075

Ø 100 mm

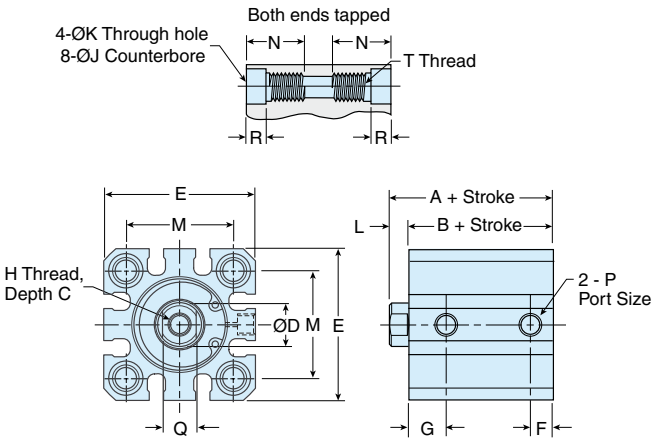
Stroke mm	Order code
15	P1QS100DC7B0015
20	P1QS100DC7B0020
25	P1QS100DC7B0025
30	P1QS100DC7B0030
40	P1QS100DC7B0040
50	P1QS100DC7B0050
75	P1QS100DC7B0075

Non-magnetic Dimensions

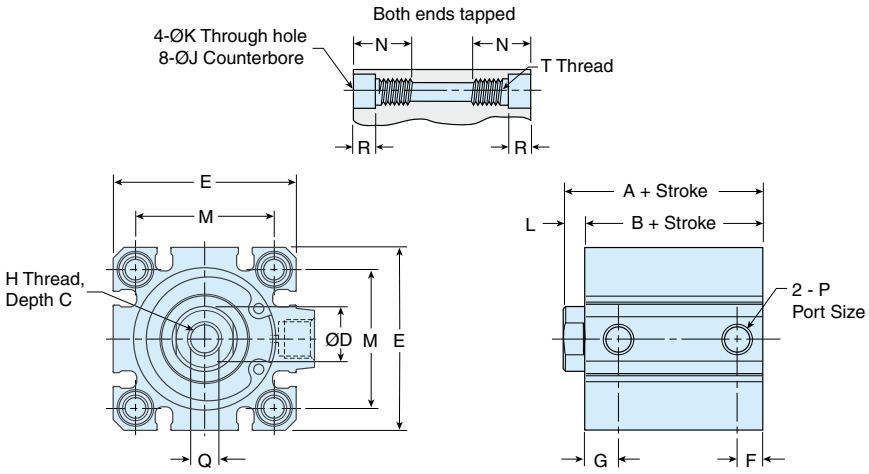
Ø12 - Ø16



Ø20 - Ø25



Ø 32 – 100 mm

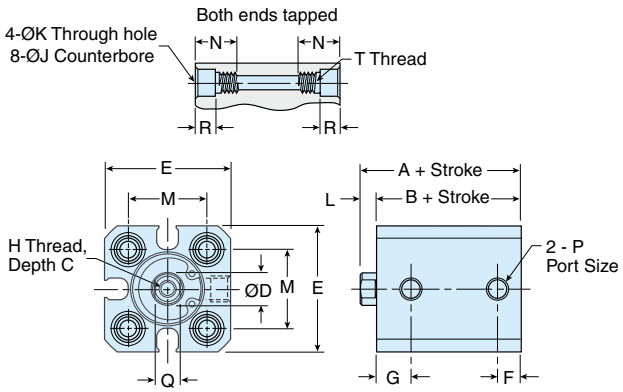


Dimensions

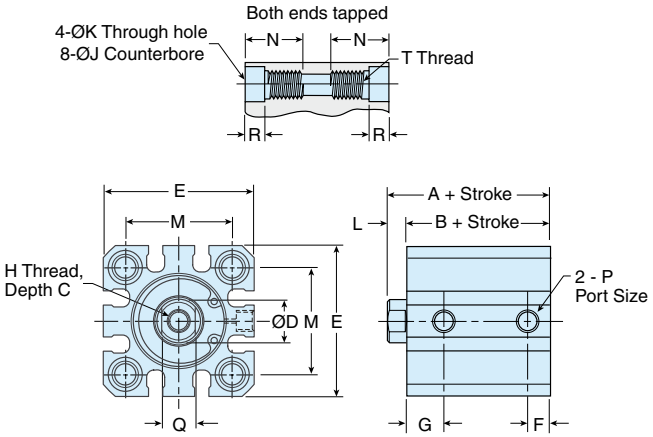
Bore size	A 5 to 50mm	A 75 to 100mm	B 5 to 50mm	B 75 to 100mm	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
12	20.5	–	17	–	6	6	25	5	7.5	M3x0.5	6.5	3.5	3.5	15.5	11	M5x0.8	5	4	M4x0.7
16	20.5	–	17	–	8	8	29	5	7.5	M4x0.7	6.5	3.5	3.5	20	11	M5x0.8	6	4	M4x0.7
20	24	–	19.5	–	7	10	36	5.5	9	M5x0.8	9	5.4	4.5	25.5	17	M5x0.8	8	7	M6x1.0
25	27.5	–	22.5	–	12	12	40	5.5	11	M6x1.0	9	5.4	5	28	17	M5x0.8	10	7	M6x1.0
32	30	40	23	33	13	16	45	7.5	10.5	M8x1.25	9	5.5	7	34	17	1/8”	14	7	M6x1.0
40	36.5	46.5	29.5	39.5	13	16	52	8	11	M8x1.25	9	5.5	7	40	17	1/8”	14	7	M6x1.0
50	38.5	48.5	30.5	40.5	15	20	64	10.5	10.5	M10x1.5	11	6.6	8	50	22	1/4”	17	8	M8x1.25
63	44	54	36	46	15	20	77	10.5	15	M10x1.5	14	9	8	60	28.5	1/4”	17	10.5	M10x1.5
80	53.5	63.5	43.5	53.5	21	25	98	12.5	16	M16x2.0	17.5	11	10	77	35.5	3/8”	22	13.5	M12x1.75
100	65	75	53	63	27	30	117	13	23	M20x2.5	17.5	11	12	94	35.5	3/8”	27	13.5	M12x1.75

Magnetic Dimensions

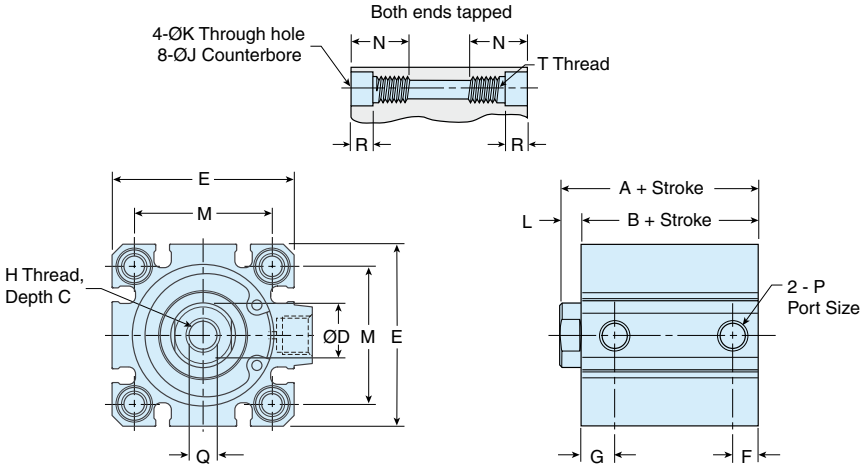
Ø12 - Ø16



Ø20 - Ø25



Ø 32 – 100 mm



Dimensions

Bore size	A	B	C	D	E	F	G	H	J	K	L	M	N	P	Q	R	T
12	25.5	22	6	6	25	5	7.5	M3x0.5	6.5	3.5	3.5	15.5	11	M5x0.8	5	4	M4x0.7
16	25.5	22	8	8	29	5	7.5	M4x0.7	6.5	3.5	3.5	20	11	M5x0.8	6	4	M4x0.7
20	34	29.5	7	10	36	5.5	9	M5x0.8	9	5.4	4.5	25.5	17	M5x0.8	8	7	M6x1.0
25	37.5	32.5	12	12	40	5.5	11	M6x1.0	9	5.4	5	28	17	M5x0.8	10	7	M6x1.0
32	40	33	13	16	45	7.5	10.5	M8x1.25	9	5.5	7	34	17	1/8”	14	7	M6x1.0
40	46.5	39.5	13	16	52	8	11	M8x1.25	9	5.5	7	40	17	1/8”	14	7	M6x1.0
50	48.5	40.5	15	20	64	10.5	10.5	M10x1.5	11	6.6	8	50	22	1/4”	17	8	M8x1.25
63	54	46	15	20	77	10.5	15	M10x1.5	14	9	8	60	28.5	1/4”	17	10.5	M10x1.5
80	63.5	53.5	21	25	98	12.5	16	M16x2.0	17.5	11	10	77	35.5	3/8”	22	13.5	M12x1.75
100	75	63	27	30	117	13	23	M20x2.5	17.5	11	12	94	35.5	3/8”	27	13.5	M12x1.75

Cylinder mountings

Flange MF1
Surface treated steel, black

Cyl. dia.	Order code
12	**P1Q-4DMB**
16	**P1Q-4FMB**
20	**P1Q-4HMB**
25	**P1Q-4JMB**
32	**P1Q-4KMB**
40	**P1Q-4LMB**
50	**P1Q-4MMB**
63	**P1Q-4NMB**
80	**P1Q-4PMB**
100	**P1Q-4QMB**

Foot brackets
Surface treated steel, black

Cyl. dia.	Order code
12	**P1Q-4DMF**
16	**P1Q-4FMF**
20	**P1Q-4HMF**
25	**P1Q-4JMF**
32	**P1Q-4KMF**
40	**P1Q-4LMF**
50	**P1Q-4MMF**
63	**P1Q-4NMF**
80	**P1Q-4PMF**
100	**P1Q-4QMF**

Clevis mounting
Surface treated steel, black

Cyl. dia.	Order code
12	**P1Q-4DMT**
16	**P1Q-4FMT**
20	**P1Q-4HMT**
25	**P1Q-4JMT**
32	**P1Q-4KMT**
40	**P1Q-4LMT**
50	**P1Q-4MMT**
63	**P1Q-4NMT**
80	**P1Q-4PMT**
100	**P1Q-4QMT**

Electronic and Reed Sensors

Size	Description	**Order code**
Flush mount style		
PNP Type, normally open	0.165 m cable and M8 screw male connector	**P8S-EPSUS**
PNP Type, normally open	2 m PUR cable without connector	**P8S-EPFSX**
NPN Type, normally open	0.165 m cable and M8 screw male connector	**P8S-ENSUS**
NPN Type, normally open	2 m PUR cable without connector	**P8S-ENFXS**
Reed Type, normally open	0.15 m cable and M8 screw male connector	**P8S-ERSUS**
Reed Type, normally open	2 m PUR cable without connector	**P8S-ERFXS**

Compact short stroke cylinders available in single as well as double acting versions. Ideally suited for clamping and locking operations. The compact design with mounting holes through the cylinder body makes the unit easy to install in confined spaces. The main body is machined from one piece thus providing an easy to clean unit. Fitted with stainless steel piston rod as standard for corrosion resistance.

- Short stroke cylinders providing high clamping forces
- Compact dimensions for confined spaces
- Single and double acting versions
- Simple installation and mounting

Operating information

Working pressure: Max 10 bar
Working temperature: -20°C to +70°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

C05 Double acting cylinders

Cyl. bore mm	Stroke mm	Port	Order code
12	10	M5	**C05-12-5-10**
20	10	M5	**C05-20-10-10**
32	10	G1/8	**C05-32-12-10**
32	25	G1/8	**C05-32-12-25**
50	25	G1/4	**C05-50-16-25**
63	25	G1/4	**C05-63-16-25**

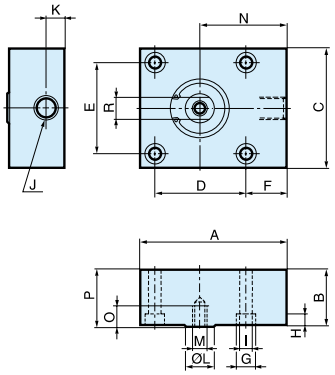
C05S Single acting cylinders

Cyl. bore mm	Stroke mm	Port	Order code
8	4	M5	**C05S-8-4-4**
12	4	M5	**C05S-12-5-4**
20	4	G1/8	**C05S-20-10-4**
32	5	G1/8	**C05S-32-12-5**
50	10	G1/4	**C05S-50-16-10**
63	10	G1/4	**C05S-63-16-10**

The spring forces in single acting cylinders are sufficient to return the piston without load.

Dimensions (mm), basic cylinder

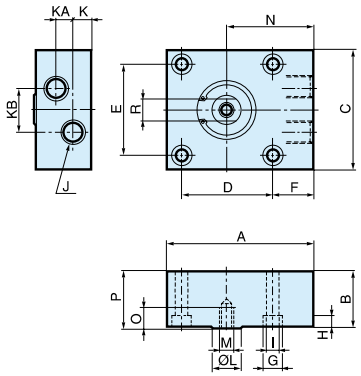
Single acting



Type	A	B	C	D	E	F	G	H	I	J	K	KA	KB	L
C05S-8-4-4	20	16	18	0*	11	5,5	6	3,4	3,4	M5	5,0	-	-	4
C05S-12-5-4	25	16	20	0*	13	7,0	6	3,4	3,4	M5	6,0	-	-	5
C05S-20-10-4	40	20	32	0*	20	9,0	10	5,0	5,5	G1/8	9,5	-	-	10
C05S-32-12-5	55	26	45	0*	32	14,0	10	5,0	5,5	G1/8	9,5	-	-	12
C05S-50-16-10	80	30	65	50	50	22,5	11	6,5	6,5	G1/4	11,0	-	-	16
C05S-63-16-10	90	35	80	62	62	19,0	15	9,0	9,0	G1/4	11,0	-	-	16

Type	M	N	O	P	R
C05S-8-4-4	-	13,5	-	17	-
C05S-12-5-4	-	15,0	-	17	-
C05S-20-10-4	M5	24,0	8	21	-
C05S-32-12-5	M6	32,0	12	27	9
C05S-50-16-10	M8	47,5	12	31	14
C05S-63-16-10	M8	50,0	14	36	14

Double acting



Type	A	B	C	D	E	F	G	H	I	J	K	KA	KB	L
C05-12-5-10	25	27	20	0*	13	7,0	6	3,4	3,4	M5	6,0	13,0	3	5
C05-20-10-10	40	30	32	0*	20	9,0	10	5,0	5,5	M5	6,0	16,0	6	10
C05-32-12-10	55	36	45	0*	32	14,0	10	5,0	5,5	G1/8	9,5	16,5	14	12
C05-32-12-25	55	51	45	0*	32	14,0	10	5,0	5,5	G1/8	9,5	31,5	0**	12
C05-50-16-25	80	50	65	50	50	22,5	11	6,5	6,5	G1/4	11,0	28,0	0**	16
C05-63-16-25	90	55	80	62	62	19,0	15	9,0	9,0	G1/4	11,0	33,0	0**	16

Type	M	N	O	p	R
C05-12-5-10	-	16,0	-	28	-
C05-20-10-10	M5	24,0	8	31	-
C05-32-12-10	M6	32,0	12	37	9
C05-32-12-25	M6	32,0	12	52	9
C05-50-16-25	M8	47,5	12	51	14
C05-63-16-25	M8	50,0	14	56	14

* Only two mounting holes (F).
** Connections in-line.

P5T cylinders are a modern and versatile range of cylinders with integral guides. The cylinders are double-acting, with end stop cushioning for quiet and vibration free operation. The strong guide shafts make it possible to adsorb considerable thrust forces and torque.

- Complete cylinder function with integral guidance
- Stainless steel guide rods
- Wide range of standard strokes, diameter 16-100 mm
- Flexible porting as standard
- Magnetic piston as standard with drop-in sensor technology
- End stop cushions as standard

Operating information

Working pressure	Max 10 bar
Working temperature	-20 °C to +80 °C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

Double acting - Plain bearing and top & rear connections

Ø16mm - (M5)

Stroke.mm	Order code
10	**P5T-C016DGSN010**
25	**P5T-C016DGSN025**
40	**P5T-C016DGSN040**
50	**P5T-C016DGSN050**
75	**P5T-C016DGSN075**
100	**P5T-C016DGSN100**

Ø20mm - (G1/8)

Stroke.mm	Order code
25	**P5T-C020DGSN025**
40	**P5T-C020DGSN040**
50	**P5T-C020DGSN050**
75	**P5T-C020DGSN075**
100	**P5T-C020DGSN100**
125	**P5T-C020DGSN125**
150	**P5T-C020DGSN150**

Ø25mm - (G1/8)

Stroke.mm	Order code
25	**P5T-C025DGSN025**
50	**P5T-C025DGSN050**
75	**P5T-C025DGSN075**
100	**P5T-C025DGSN100**
125	**P5T-C025DGSN125**
150	**P5T-C025DGSN150**

Ø32mm - (G1/8)

Stroke.mm	Order code
25	**P5T-C032DGSN025**
50	**P5T-C032DGSN050**
75	**P5T-C032DGSN075**
100	**P5T-C032DGSN100**
125	**P5T-C032DGSN125**
150	**P5T-C032DGSN150**
175	**P5T-C032DGSN175**
200	**P5T-C032DGSN200**

Ø40mm - (G1/8)

Stroke.mm	Order code
25	**P5T-C040DGSN025**
50	**P5T-C040DGSN050**
75	**P5T-C040DGSN075**
100	**P5T-C040DGSN100**
125	**P5T-C040DGSN125**
150	**P5T-C040DGSN150**
175	**P5T-C040DGSN175**
200	**P5T-C040DGSN200**

Ø50mm - (G1/4)

Stroke.mm	Order code
25	**P5T-C050DGSN025**
50	**P5T-C050DGSN050**
75	**P5T-C050DGSN075**
100	**P5T-C050DGSN100**
125	**P5T-C050DGSN125**
150	**P5T-C050DGSN150**
175	**P5T-C050DGSN175**
200	**P5T-C050DGSN200**

Ø63mm - (G1/4)

Stroke.mm	Order code
25	**P5T-C063DGSN025**
50	**P5T-C063DGSN050**
75	**P5T-C063DGSN075**
100	**P5T-C063DGSN100**
125	**P5T-C063DGSN125**
150	**P5T-C063DGSN150**
175	**P5T-C063DGSN175**
200	**P5T-C063DGSN200**

Ø80mm - (G3/8)

Stroke.mm	Order code
25	**P5T-C080DGSN025**
50	**P5T-C080DGSN050**
75	**P5T-C080DGSN075**
100	**P5T-C080DGSN100**
125	**P5T-C080DGSN125**
150	**P5T-C080DGSN150**
175	**P5T-C080DGSN175**
200	**P5T-C080DGSN200**

Ø100mm - (G3/8)

Stroke.mm	Order code
25	**P5T-C100DGSN025**
50	**P5T-C100DGSN050**
75	**P5T-C100DGSN075**
100	**P5T-C100DGSN100**
125	**P5T-C100DGSN125**
150	**P5T-C100DGSN150**
175	**P5T-C100DGSN175**
200	**P5T-C100DGSN200**

Design Variants

In addition to the standard designs, a number of variants of the P5T range are available to special order, to provide effective solutions in a large number of applications.

Cylinders with special strokes
Cylinders with two fixing plates
Cylinders with adjustable stops, with cushioning
High-temperature cylinders for the temperature range of -10°C to +150°C (not magnetic piston).

Special design for food industry applications

There is a special version of the P5T for food industry applications and other installation cases where high corrosion resistance and hygiene are required. This version has steel parts and other components in either stainless steel or special treated aluminium.
Please contact Customer Service for more information.

Plain bearing or recirculating ball bearings

The P5T is supplied with plain bearings as standard. This type of bearing has guide rods of greater diameter, providing excellent support for heavy loads, especially static loads. Plain bearings are highly tolerant of vibration and dirt, and are suitable for regular cleaning.
Recirculating ball bearings are used for applications which require high precision and low friction.

The choice should be based on the following factors:

Application requirements	Plain bearing	Recirculating ball bearings
Precision	Good	Excellent
Friction	Higher	Low
Coefficient of friction	Variable	Constant
Precision during service life	Variable	Constant
Static load capacity	Excellent	Good
Dynamic load capacity	Good, but with friction losses	Good
Vibration tolerance	Excellent	Average
Dirt tolerance	Excellent	Poor
Washing tolerance	Excellent	Poor

Double acting, connections on top.

Double acting with two fixing plates, side connections are recommended.

Double acting, connections at rear.

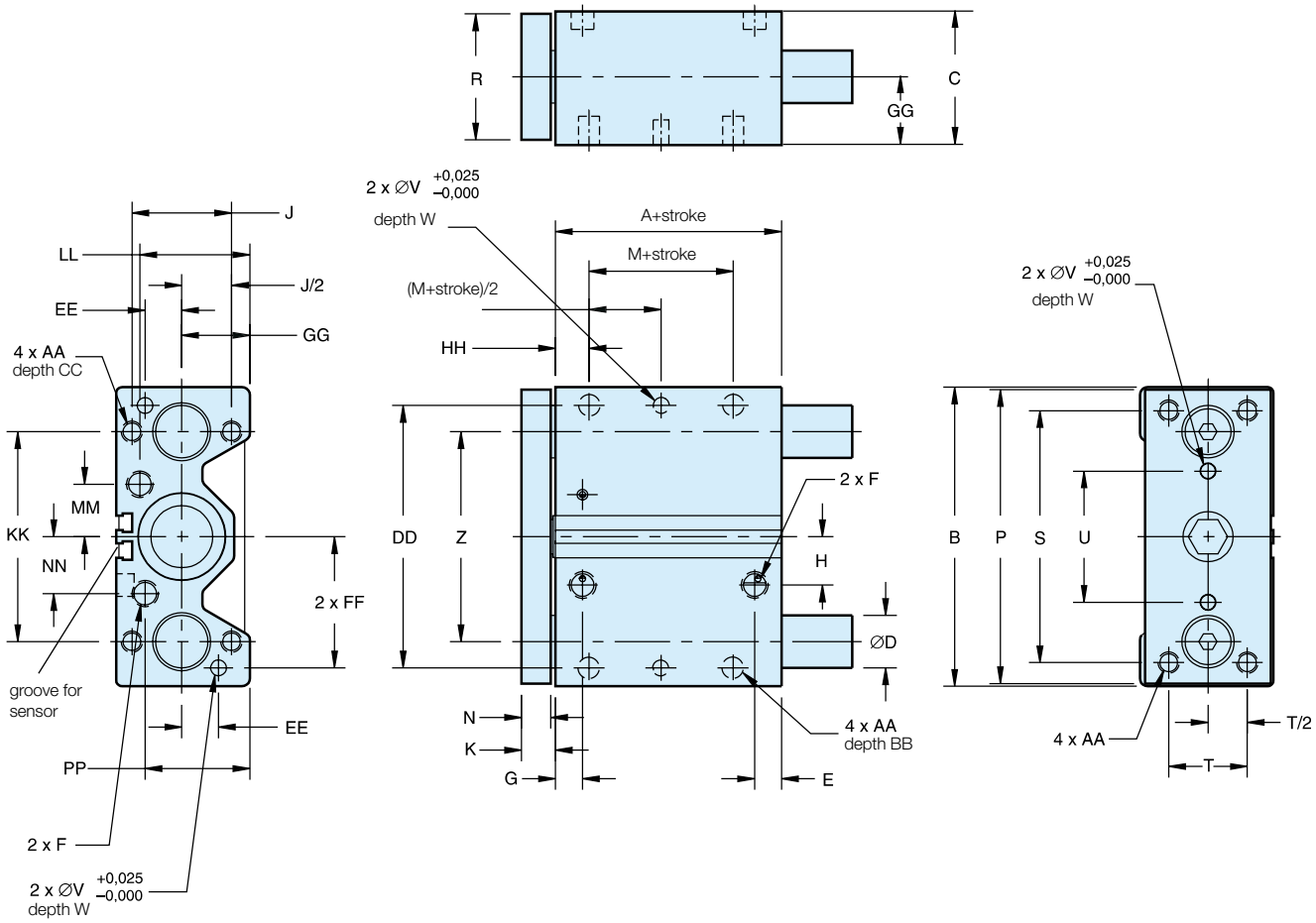
Double acting with two fixing plates and adjustable end stops with cushioning, side connections are recommended.

Double acting, connections on side.

Double acting with one fixing plate adjustable end stops with cushioning, connections on side, on top or at rear.

Dimensions, P5T basic cylinder

Connection option **D**
(connection from above or rear)



Cylinder diam. mm	A mm	B mm	C mm	D1*) mm	D2*) mm	E mm	F	G mm	H mm	J mm	K mm	M mm	N mm	P mm	R mm	S mm	T mm	U mm	V mm
16	37,8	64	31	8	10	10,1	M5	10,1	7	22	9,9	7	7,9	62	25,4	52	16	20	3
20	35	74	36	10	12	19	G1/8	10	15,8	26	9,9	10	7,9	72	31,8	60	18	30	4
25	38	88	42	12	16	21	G1/8	11,4	15,5	32	9,9	10	7,9	86	38	70	26	34	4
32	36	114	51	16	20	10,3	G1/8	10,4	18,4	38	13,1	5	11,1	112	44,5	96	30	50	6
40	44	124	51	16	20	12,1	G1/8	14,9	22,5	38	13,1	10	11,1	122	44	106	30	60	6
50	44,9	140	62	20	25	14,5	G1/4	16,1	27	44	14,7	10	12,7	138	57	120	40	60	8
63	50,1	150	75	20	25	16,4	G1/4	14,5	33	44	14,7	10	12,7	148	70	130	50	72	8
80	59,5	188	95	25	30	17,5	G3/8	19	37	56	18	15	16	185	88,9	160	60	92	10
100	66**)	224	115	30	35	21,9**)	G3/8	23	40	62	18	15	16	221	108	190	80	114	10

Cylinder diam. mm	W mm	Z mm	AA	BB mm	CC mm	DD mm	EE mm	FF mm	GG mm	HH mm	KK mm	LL mm	MM mm	NN mm	PP mm	Piston rod Ø mm
16	6	42	M5x0,8	7,5	10	54	8	27	15	13,1	42	22,5	11,3	9,7	23	8
20	6	52	M5x0,8	7,5	10	64	10	32	17	13,1	52	26	15,4	15,4	26	10
25	6	62	M6x1,0	10	12	76	11	38	21	14,1	62	33,4	17	17	33,4	10
32	6	80	M8x1,25	11	16	100	14	50	26	12,9	80	42	20	21,7	38	16
40	6	90	M8x1,25	11	16	110	14	55	26	13,9	90	41	24	26,4	37,9	16
50	8	100	M10x1,5	12	20	124	16	62	30	14,3	100	51	29	33	44	20
63	8	110	M10x1,5	15	20	132	18	66	36,5	16,3	110	62	36	37,8	57,8	20
80	10	140	M12x1,75	18	24	166	22	83	46,5	21	140	78	45	48	75,5	25
100	10	170	M14x2,0	21	28	200	24	100	56,5	25	170	91,5	53	51	95.5	25

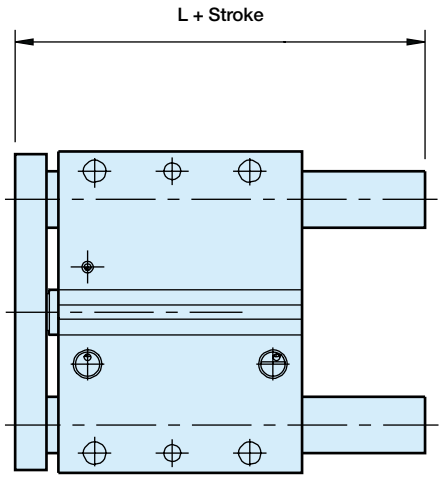
Length tolerance ± 1 mm
Stoke tolerance + 1.5/0 mm
**) Stroke 25 mm, A=75 mm, E=28 mm

*) D1 = bearing rod diameter for recirculating ball bearing
*) D2 = bearing rod diameter for plain bearing

Dimensions, P5T basic cylinder

Standard lengths

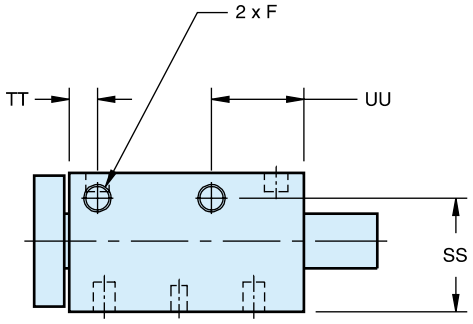
Cylinder diam mm	Stroke mm	L mm
16	10	36,2
	25, 40, 50, 75	60,2
	100	75,2
20	25, 40, 50, 75	66,9
	100, 125	91,9
25	25, 50, 75, 100	69,9
	125, 150	91,9
32	25, 50, 75, 100	77,9
	125, 150, 175, 200	116,0
40	25, 50, 75, 100	77,9
	125, 150, 175, 200	116,0
50	25, 50, 75, 100	84,0
	125, 150, 175, 200	124,1
63	25, 50, 75, 100	84,0
	125, 150, 175, 200	124,1
80	25, 50, 75, 100	101,8
	125, 150, 175, 200	140,0
100	25	122,8
	50, 75, 100	120,3
	125, 150, 175, 200	158,4



Dimensions, P5T basic cylinder

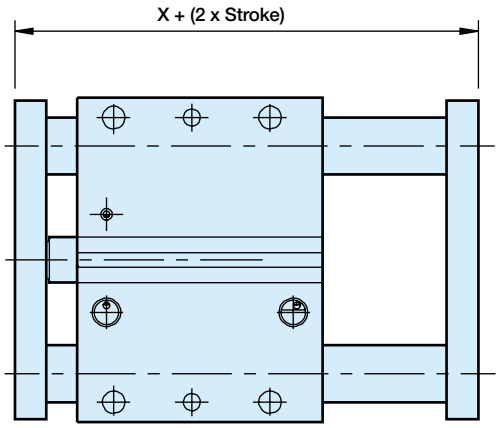
Connection option **S** (side connections)

Cylinder diam. mm	SS mm	TT mm	UU mm	F
16	24,1	10	20	M5
20	29,2	10	20	M5
25	35,2	11,4	25	M5
32	41,7	10,4	34	G1/8
40	41,7	14,9	34	G1/8
50	51,3	16,1	38	G1/4
63	60,7	15,6	41,8	G1/4
80	75,5	19	47	G3/8
100	83,7	23	53,3	G3/8



Dimensions, P5T basic cylinder

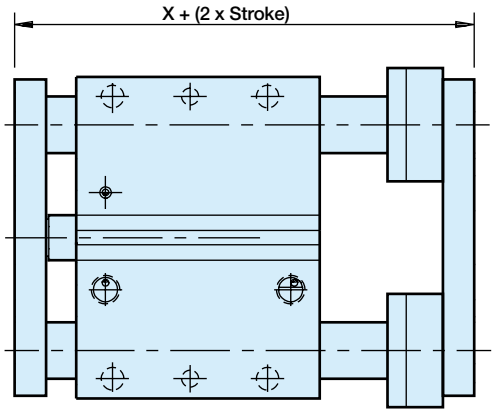
Option **D**



Please note that load capacity increases with two fixing plates, due to greater bearing distance.

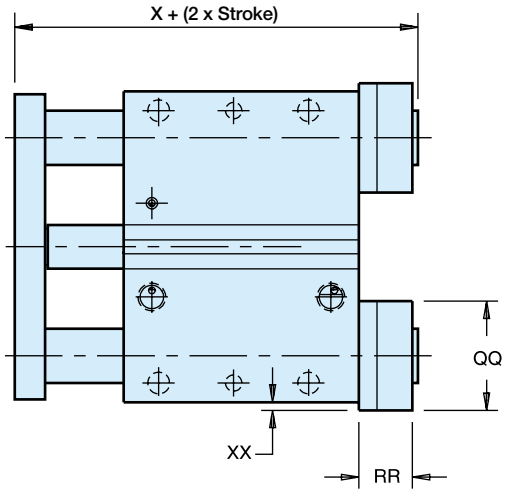
Dimensions, P5T with two fixing plates and adjustable end stop with cushioning

Option **A**



Dimensions, P5T with adjustable end stop with cushioning

Option **E**



Cylinder diam. mm	Guide rod dia, mm	X for option D mm	A mm	E mm	QQ mm	RR mm	XX mm
16	8	57,6	70,6	62,7	18,0	13,0	0
	10	57,6	70,6	62,7	24,0	13,0	1
20	10	54,9	67,9	59,9	24,0	13,0	1
	12	54,9	72,6	64,6	28,0	17,7	3
25	12	57,8	75,5	67,6	28,0	17,7	1
	16	57,8	77,5	69,6	34,0	19,7	4
32	16	62,2	81,9	70,8	34,0	19,7	0
	20	62,2	83,9	72,8	41,4	21,7	3,7
40	16	70,2	89,9	78,8	34,0	19,7	0
	20	70,2	91,9	80,8	41,4	21,7	3,7
50	20	74,3	96,0	83,3	41,4	21,7	0,7
	25	74,3	96,0	83,3	50,8	21,7	5,4
63	20	79,5	101,2	88,5	41,4	21,7	0,7
	25	79,5	101,2	88,5	50,8	21,7	5,4
80	25	95,5	117,2	101,2	50,8	21,7	1,4
	30	95,5	117,2	101,2	60,5	21,7	6,3
100	30	102,0	123,7	107,7	60,5	21,7	3,3
	35	102,0	123,7	107,7	65,0	21,7	5,5

Twin Rod Non Rotate Cylinders RDV and AZ

A range of twin rod cylinders designed for use in non rotate applications specifically suited to the handling and packaging environments. Offering a range of double acting cylinders with adjustable cushioning and magnetic variants.

RDV Series:

- Available as bore Ø 25mm
- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard

Operating information

Working pressure:	Max 10 bar
Working temperature:	-10°C to +70°C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

AZ Series:

- Available as bore Ø 32mm - Ø 100mm
- Non rotating
- Double acting
- Adjustable cushioning
- Magnetic piston as standard
- Drop in sensors

Operating information

Working pressure:	Max 10 bar
Working temperature:	-20°C to +80°C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it must be continued.

Order key - RDV

R D V | 5 | 0 2 5 | 0 1 0 0

Version	
RDV	Ø25mm bore only

Bore mm
025

Stroke (mm) e.g. 0100 = 100mm
Stroke lengths up to 500mm. Other sizes on request

Function	
5	Double acting with magnetic function, Adjustable cushioning

Note:

Standard option specified.Other options available

Maximum 500mm

Order key - AZV, AZ3, AZ4

A 5 5 K 0 1 0 0 / 0 0 0 A A A A 0 0 0 0 A 0 0 0 0

Version		
5	AZV	Single set twin rods
6	AZ4	Double set twin rods
7	AZ3	Single set twin rods with single rod

Function	
1	Double acting, No magnetic function, Adjustable cushioning
2	Double acting, No magnetic function, No adjustable cushioning
5	Double acting, With magnetic function, Adjustable cushioning
6	Double acting, With magnetic function, No adjustable cushioning

Bore mm	
K	032
L	040
M	050
N	063
P	080
Q	100

Stroke (mm) e.g. 0100 = 100mm
Stroke lengths up to 500mm. Other sizes on request

Note:

Standard option specified.
Other options available

Maximum 2000mm

Twin Rod Cylinder Cylinder Mounts

Body Mounts	RDV	AZV / AZ3 / AZ4 Bore Ø					
	25mm	32mm	40mm	50mm	63mm	80mm	100mm
Foot mounting - MS3 / MS1	**KK28.302**	**PD27917**	**PD27918**	**PD28072**	**PD28073**	**PD28074**	**PD28075**
Rear Double Clevis - AB3 / MP2	**KZ1420**	**PD22704**	**PD22705**	**PD22706**	**PD22707**	**PD22708**	**PD22709**
Rear Single Clevis - MP4	**-**	**PD23412**	**PD23413**	**PD23414**	**PD23415**	**PD23416**	**PD23417**
Front Flange - Type MF1 for AZV / AZ3 / AZ4	**-**	**PD57042**	**PD57043**	**PD57044**	**PD57045**	**PD57046**	**PD57047**
Rear Flange - MF2	**-**	**PD23403**	**PD23404**	**PD23405**	**PD23406**	**PD23407**	**PD23408**
Trunnion - MT4	**-**	**PD39195**	**PD39196**	**PD39197**	**PD39198**	**PD39199**	**PD39200**
Trunnion Blocks - MT4	**-**	**PD23381**	**PD23382**	**PD23382**	**PD23383**	**PD23383**	**PD23384**
Pivot Mount - (w / o Bolts)	**-**	**PD25621**	**PD25622**	**PD25623**	**PD25624**	**PD25625**	**PD25626**
Groove Nut - for RDV5	**ZP2125**						

Delivery information: All mounts are sold separately and are not mounted for shipment, except for the trunnion mount which requires factory installation.

Rod Accessories	AZ3 Bore Ø					
	32mm	40mm	50mm	63mm	80mm	100mm
Rod Nut	**ZP 1810**	**ZP 2189**	**ZP 0178**	**ZP 0178**	**ZP 0185**	**ZP 0185**
Rod Clevis AP2	**KY 6135**	**KY 6136**	**KY 6139**	**KY 6139**	**KY 6141**	**KY 6141**
Rod Eye AP6	**KY 6147**	**KY 6148**	**KY 6150**	**KY 6150**	**KY 6151**	**KY 6151**
Clevis Pin	**KY 6153**	**KY 6154**	**KY 6157**	**KY 6156**	**KY 6158**	**KY 6159**
Flexo coupling	**KY 1129**	**KY 1131**	**KY 1133**	**KY 1133**	**KY 1134**	**KY 1134**

Weights (kg)

	RDV		AZV Bore Ø											
	25mm		32mm		40mm		50mm		63mm		80mm		100mm	
	*1	*2	*1	*2	*1	*2	*1	*2	*1	*2	*1	*2	*1	*2
Basic Cylinder	0.46	0.11	0.80	0.25	1.00	0.35	1.70	0.5	2.60	0.6	4.20	0.9	6.20	1.0
Type MS3 / MS1	0.10		0.95		1.19		2.04		2.99		4.99		7.20	
Type AB3 / MP2	0.08		0.87		1.09		1.87		2.82		4.69		6.94	
Type MP4			0.90		1.13		1.91		2.90		4.77		7.11	
Type MP6			0.90		1.15		1.92		2.92		4.76		7.06	
Type MF1 / MF2			0.90		1.15		1.92		2.92		4.76		7.06	
Type MT4			0.91		1.18		1.93		3.25		5.03		7.76	

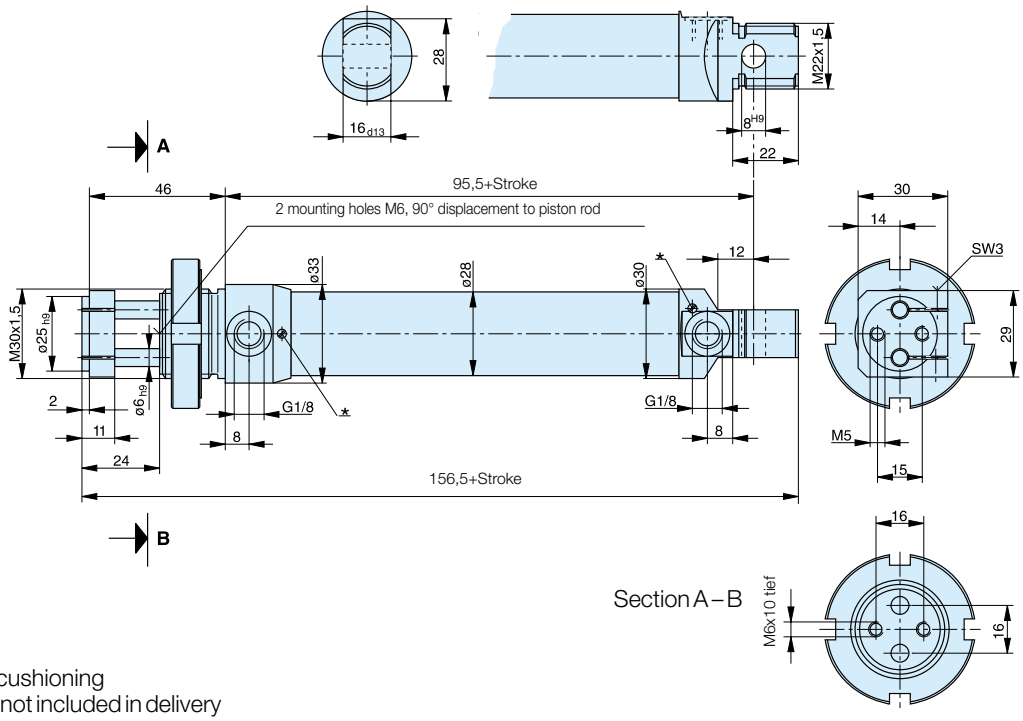
	AZ3											
Basic Cylinder	1.0	0.30	1.5	0.45	2.5	0.7	3.2	0.85	5.3	1.3	7.5	1.5
Type MS1	0.95		1.19		2.04		2.99		4.99		7.20	
Type MF1 / MF2	0.90		1.15		1.92		2.92		4.76		7.06	
Type MT4	0.91		1.18		1.93		3.25		5.03		7.76	

	AZ4											
Basic Cylinder	1.0	0.30	1.4	0.40	2.3	0.6	3.2	0.9	5.6	1.4	7.4	1.50
Type MS1	1.15		1.59		2.64		3.59		6.39		8.40	
Type MT4	1.11		1.58		2.53		3.59		6.13		8.16	

*1 = Weight for cylinder with 100mm stroke
*2 = Weight for every additional 100mm stroke length

Dimensions – Double acting, non-rotating, Ø 25 mm

Series RDV5...

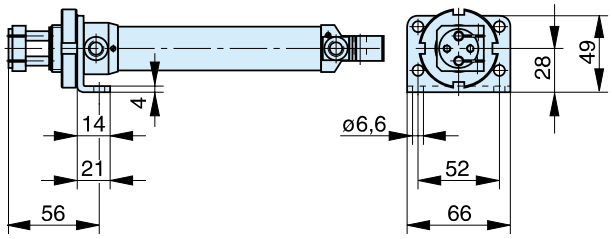


* adjustable end cushioning
Mounting nut is not included in delivery

Mounting instruction:
When mounting the front plate onto the piston rods tighten the screws with a torque M_a = 4 N.

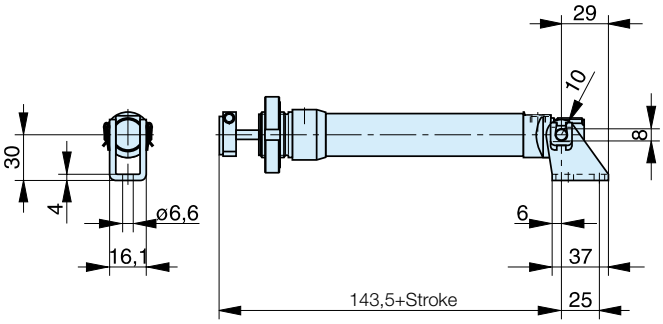
Mountings – Series RDV...., Ø 25 mm

Dimensions (mm) – Foot mounting type MS3



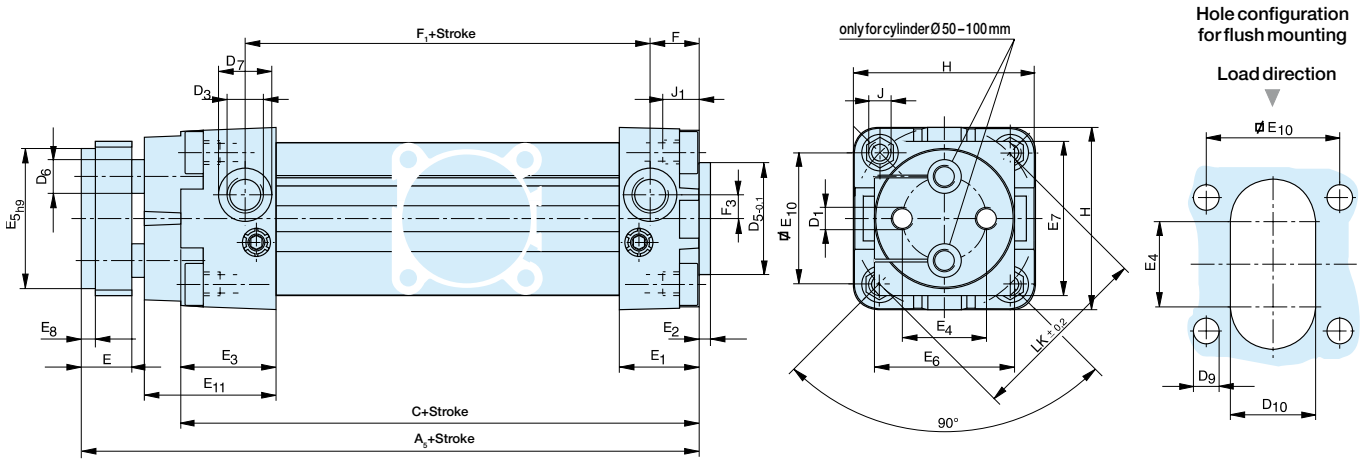
Material: steel, passivated

Dimensions (mm) – Clevis bracket type AB3



Material: steel, passivated

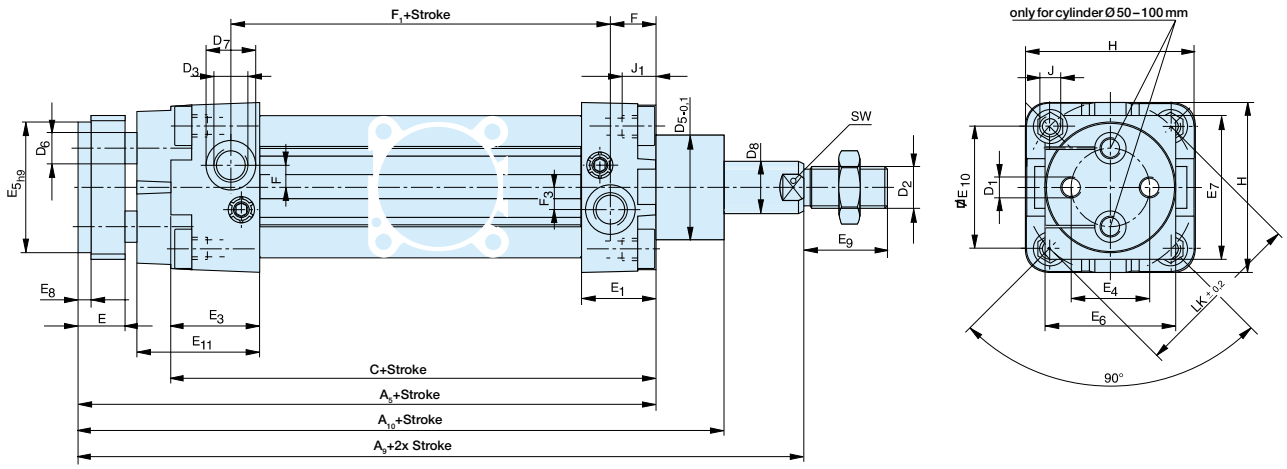
Dimensions – Basic Cylinder, non-rotating, Series AZV...., Ø 32 – 100 mm



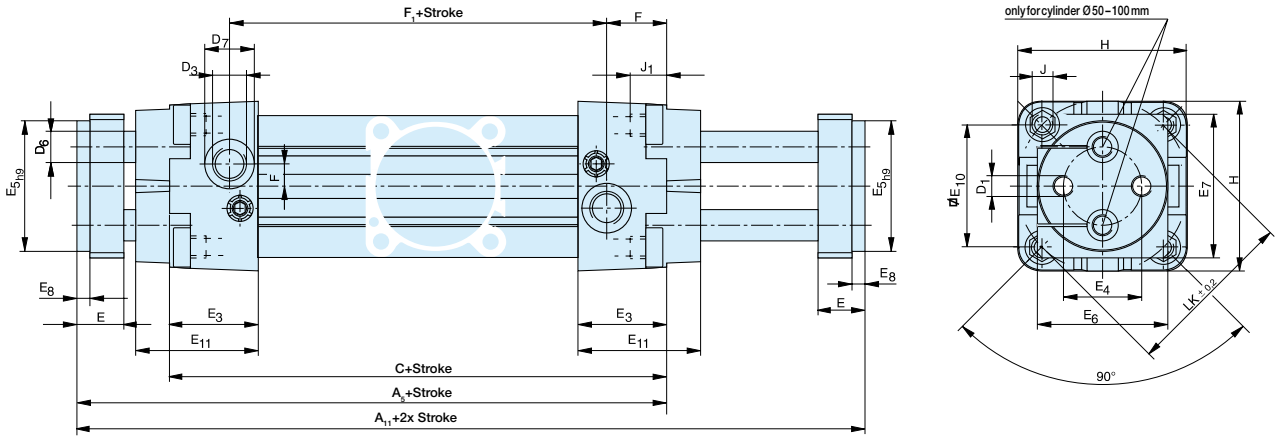
Dimension Table (mm) – Basic Cylinder AZV...., AZ3...., AZ4....

Cyl. Ø	A_5 + Stroke	A_9 + 2x Stroke	A_{10} + Stroke	A_{11} + 2x Stroke	C + Stroke	D_1	D2	D_3	$ØD_5$	$ØD_6$	$ØD_7$	$ØD_8$	$ØD_9$	D_{10}	E	E_1	E_2	E_3
32	128	154	146	154	102	M6	M10x1.25	G1/8	30	8	15	12	7	23	15	29	4	26
40	142	172	163	172	112	M8	M12x1.25	G1/4	35	10	19	16	7	25	15	27	4	30
50	151	188	177	185	117	M8	M16x1.5	G1/4	40	12	19	20	9	30	18	29	4	34
63	161	198	187	197	125	M10	M16x1.5	G3/8	45	16	23	20	9	34	22	30	4	34
80	174	220	206	212	136	M12	M20x1.5	G3/8	45	20	23	25	10	38	22	34	4	39
100	181	232	218	219	143	M12	M20x1.5	G1/2	55	20	28	25	10	38	22	35	4	40

Dimensions – Basic Cylinder, non-rotating, with through piston rod, series AZ3...., Ø 32 – 100 mm



Dimensions – Basic Cylinder, non-rotating, with through piston rods, series AZ4...., Ø 32 – 100 mm



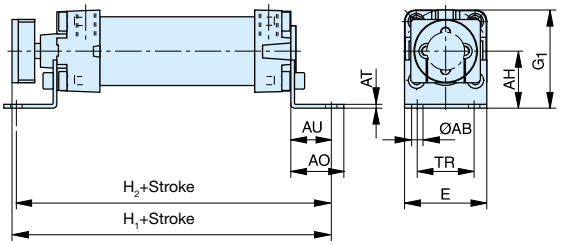
Dimension Table (mm) – Basic Cylinder AZV...., AZ3...., AZ4....

Cyl. Ø	A_5 + Stroke	A_9 + 2x Stroke	A_{10} + Stroke	A_{11} + 2x Stroke	C + Stroke	D_1	D2	D_3	$ØD_5$	$ØD_6$	$ØD_7$	$ØD_8$	$ØD_9$	D_{10}	E	E_1	E_2	E_3
32	128	154	146	154	102	M6	M10x1.25	G1/8	30	8	15	12	7	23	15	29	4	26
40	142	172	163	172	112	M8	M12x1.25	G1/4	35	10	19	16	7	25	15	27	4	30
50	151	188	177	185	117	M8	M16x1.5	G1/4	40	12	19	20	9	30	18	29	4	34
63	161	198	187	197	125	M10	M16x1.5	G3/8	45	16	23	20	9	34	22	30	4	34
80	174	220	206	212	136	M12	M20x1.5	G3/8	45	20	23	25	10	38	22	34	4	39
100	181	232	218	219	143	M12	M20x1.5	G1/2	55	20	28	25	10	38	22	35	4	40

Cyl. Ø	$ØE_4$	E_{5h9}	E_6	E_7	E_8	E_9	E_{10}	E_{11}	F AZV, AZ3	F AZ4	F_1+Stroke AZV, AZ3	F_1+Stroke AZ4	F_3 AZV, AZ4	F_3 AZ3	F_4	J	J_{1max}	H	ØLK	SW
32	19	32	32	40	4	20	32.5	34	14.5	17.5	74	75	6	6	6	M6	16	47	46	10
40	22.5	40	40	45	4	24	38	42	16	19	77.5	75	7	7	7	M6	16	53	54	14
50	30	50	50	55	5	32	46.5	47	17.5	23	77	72	9.5	9.5	9.5	M8	16	65	66	17
63	38	63	63	70	5	32	56.5	45	17.5	21.5	87	83	10	10	10	M8	16	75	80	17
80	50	80	80	95	5	40	72	52	20.5	26	90	85	9	9	9	M10	16	95	102	22
100	70	100	100	115	5	40	89	53	19	24.5	100	95	13	13	13	M10	16	115	126	22

Mountings – Series AZV...., AZ3...., AZ4...., Ø 32 – 100 mm

Dimensions for foot mounting MS1



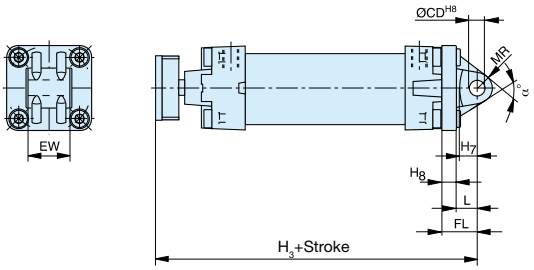
Material: steel, passivated

Dimension Table (mm)

Cyl. Ø	E	G_1	H_1 + Stroke	H_2 + Stroke	AH	ØAB	AO	AT	AU	TR
32	47	55.5	152	150	32	7	32	4	24	32
40	53	62.5	170	168	36	9	38	4	28	36
50	65	77.5	183	181	45	9	42	5	32	45
63	75	87.5	193	189	50	9	42	5	32	50
80	95	110.5	215	218	63	12	55	6	41	63
100	115	128.5	222	225	71	14	56	6	41	75

Included in delivery: 2 foot brackets, 4 screws

Dimensions for clevis bracket MP4



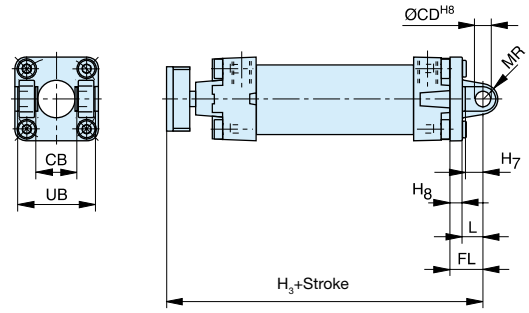
Material: cast aluminium

Dimension Table (mm)

Cyl. Ø	H_3 + Stroke	H_7	H_8	L	ØCD H8	FL	MR	EW	a°
32	150	10	10	12	10	22	10.5	26	60
40	167	13	10	15	12	25	13	28	60
50	178	12	11	16	12	27	13	32	70
63	193	17	11	21	16	32	17	40	60
80	210	16	15	21	16	36	17	50	70
100	222	20.5	16	25	20	41	21	60	70

Included in delivery: 1 clevis bracket, 4 screws

Dimensions for clevis bracket MP2



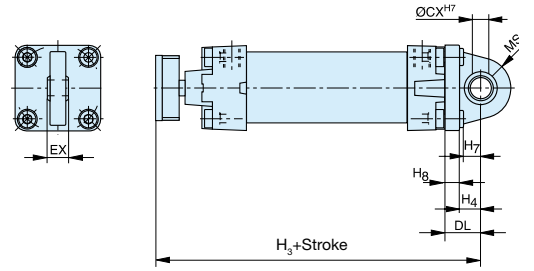
Material: cast aluminium

Dimension Table (mm)

Cyl. Ø	H_3 + Stroke	H_7	H_8	L	CB	ØCD H8	FL	MR	UB
32	150	10	10	12	26	10	22	9	45
40	167	13	10	15	28	12	25	11	52
50	178	12	11	16	32	12	27	12	60
63	193	17	11	21	40	16	32	15	70
80	210	16	15	22	50	16	36	16	90
100	222	20.5	16	25	60	20	41	20	110

Included in delivery: 1 rear trunnion mounting, 4 screws

Dimensions for Swivel eye bracket MP6
(Rear mounting with spherical bearing)



Material: cast aluminium

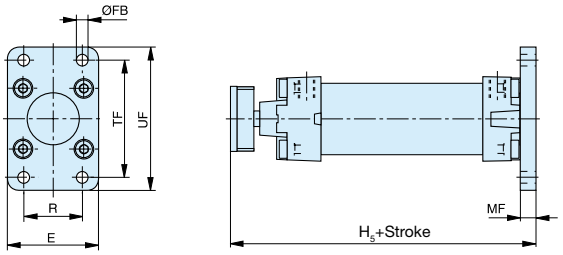
Dimension Table (mm)

Cyl. Ø	H_3 + Stroke	H_4	H_7	H_8	ØCX H7	DL	EX	MS
32	150	12	10	10	10	22	14	18
40	167	15	13	10	12	25	16	21
50	178	16	12	11	12	27	16	23
63	193	21	17	11	16	32	21	27
80	210	21	16	15	16	36	21	29
100	222	25	20.5	16	20	41	25	34

Included in delivery: 1 rear trunnion mounting with spherical bearing, 4 screws

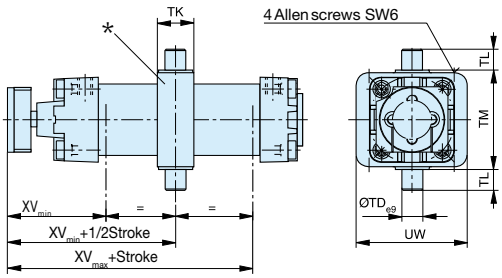
Mountings – Series AZV ...., AZ3...., AZ4...., Ø 32 – 100 mm

Dimensions for flange mouting MF2



Material: cast aluminium

Dimensions for trunnion mounting MT4
(profile cylinder barrel version)



Material: cast aluminium

* Position centre trunnion mounting
Standard position: Type EN1 – The taps of the EN attachment are horizontally aligned to the air supply
Option: Type EN2 – The taps of the EN attachment are vertically aligned to the air supply

Dimension Table (mm)

Cyl. Ø	E	H_5 + Stroke	R	ØFB	MF	TF	UF
32	50	138	32	7	10	64	79
40	56	152	36	9	10	72	90
50	70	163	45	9	12	90	110
63	77	173	50	9	12	100	120
80	100	190	63	12	16	126	153
100	120	197	75	14	16	150	178

Included in delivery: 1 flange, 4 screws

Dimension Table (mm)

Cyl. Ø	ØTD e9	TK	TL	TM	UW	XV_{min}	XV+ 1/ Stroke	XV_{max} + Stroke
32	12	25	12	50	65	64	76	87
40	16	28	16	63	75	75	87	99
50	16	28	16	75	85	84	95	106
63	20	36	20	90	100	89	101	112
80	20	36	20	110	120	96	109	121
100	25	48	25	132	135	99	112	125

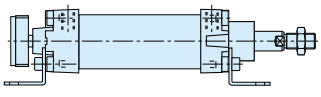
Included in delivery: 1 rear trunnion mounting

After loosening the locking screws, the trunnion mounting is infinitely variable between XV_{min} and XV_{max}.

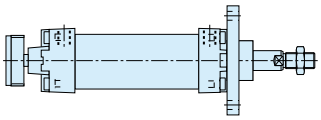
As standard, the position of the T-slots and dovetail slots is on the same side as the air connections. Exception: Ø 32 has only T-slots on the same side as the air connections, with a dovetail slot on the underside.

Mountings – Basic Cylinder, with through piston rod, series AZ3...., Ø 32 – 100 mm

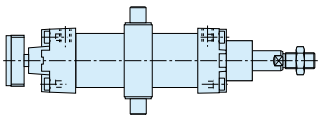
Foot mounting MS1



Rear flange mounting MF2

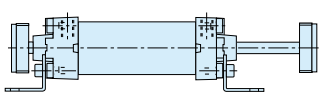


Trunnion mounting MT4

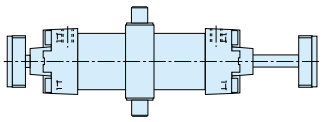


Mountings – Basic Cylinder, with through piston rods, series AZ4...., Ø 32 – 100 mm

Foot mounting MS1



Trunnion mounting MT4



ORIGA SYSTEM PLUS OSP-P

The "ORIGINAL" rodless pneumatic cylinders

A NEW Modular Linear Drive System

With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

- Compact: guide rail integrated in the cylinder profile
- Long lifetime and high service intervals
- High loads and moments
- Easy to re-adjust through simple design => easy to maintain
- Integrated scraper system and grease nipples
- High service life ≥ 8,000km
- Low friction forces ≥ high action forces
- Wide speed range (0,005 – 30m/s)
- Modular System – easy to mount guides, brakes and displacement measuring system

Parker Origa rodless pneumatic cylinders are the first rodless cylinders that have been approved for use in potentially explosive atmospheres in Equipment Group II, Category 2 GD.

The Cylinders are to the ATEX Certification 94/9/EG (ATEX 95) for Pneumatic Components.

For full details and information on OSP-P range of rodless cylinders please see catalogue no.: P-A4P011

Special Versions

for use in Ex-Areas

for Clean Room Applications certified to DIN EN ISO 14644-1

Stainless steel version for special applications

with special pneumatic cushioning system for cycle time optimization, for Ø 16 to 50 mm – on request

High Temperature Version for temperatures up to +120°C

Low Temperature Version for temperatures up to -40°C

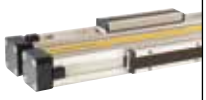
Slow Speed Version v = 0.005 – 0.2 m/s

High Speed Version $v_{max.}$ = 30 m/s

Cylinders with extreme long strokes
Stroke length up to 41 m

*** Information on electrical linear drives series OSP-E, please refer to catalogue P-A4P017E**

Basic Linear Drive Standard Version • Series OSP-P • Series OSP-E* Belt drive Belt drive with integrated Guides Vertical belt drive with recirculating ball bearing guide • Series OSP-E* Screw drive (Ball Screw, Trapezoidal Screw)	
Air Connection on the End-face or both at One End • Series OSP-P	
Long-Stroke Cylinders for strokes up to 41 m • Series OSP-P	
Clean Room Cylinder certified to DIN EN ISO 146644-1 • Series OSP-P • Series OSP-E..SB	
Products for ATEX Areas • Series OSP-P Rodless Cylinders	
Products for ATEX Areas • Series OSP-P Rodless Cylinders with Linear Guide SLIDELIN	
Bi-parting Version • Series OSP-P	
Integrated 3/2 Way Valves • Series OSP-P	
Clevis Mounting • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	
End Cap Mounting • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	
Mid-Section Support • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	
Inversion Mounting • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	

Basic Guide • Series OSPP-BG	
Duplex Connection • Series OSP-P	
Multiplex Connection • Series OSP-P	
Linear Guides – SLIDELINE • Series OSP-P • Series OSP-E Screw drive*	
Linear Guides – POWERSLIDE • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	
Linear Guides – PROLINE • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive*	
Linear Guides – STARLINE • Series OSP-P	
Linear Guides – KF • Series OSP-P	
Heavy Duty Linear Guides – HD • Series OSP-P • Series OSP-E Screw drive*	
Intermediate stop module – ZSM • Series OSP-P	
Brakes • Active Brakes • Passive Brakes	
Magnetic Switches • Series OSP-P • Series OSP-E Belt drive* • Series OSP-E Screw drive* • ATEX-Versions	
SENSOFLEX-Measuring system • Series SFI-plus	
Variable Stop VS • Series OSP-P with Linear Guide STL, KF, HD	

Origa System Plus - Innovation from a proven design

A completely new generation of linear drives which can be simply and neatly integrated into any machine layout.

A NEW MODULAR LINEAR DRIVE SYSTEM

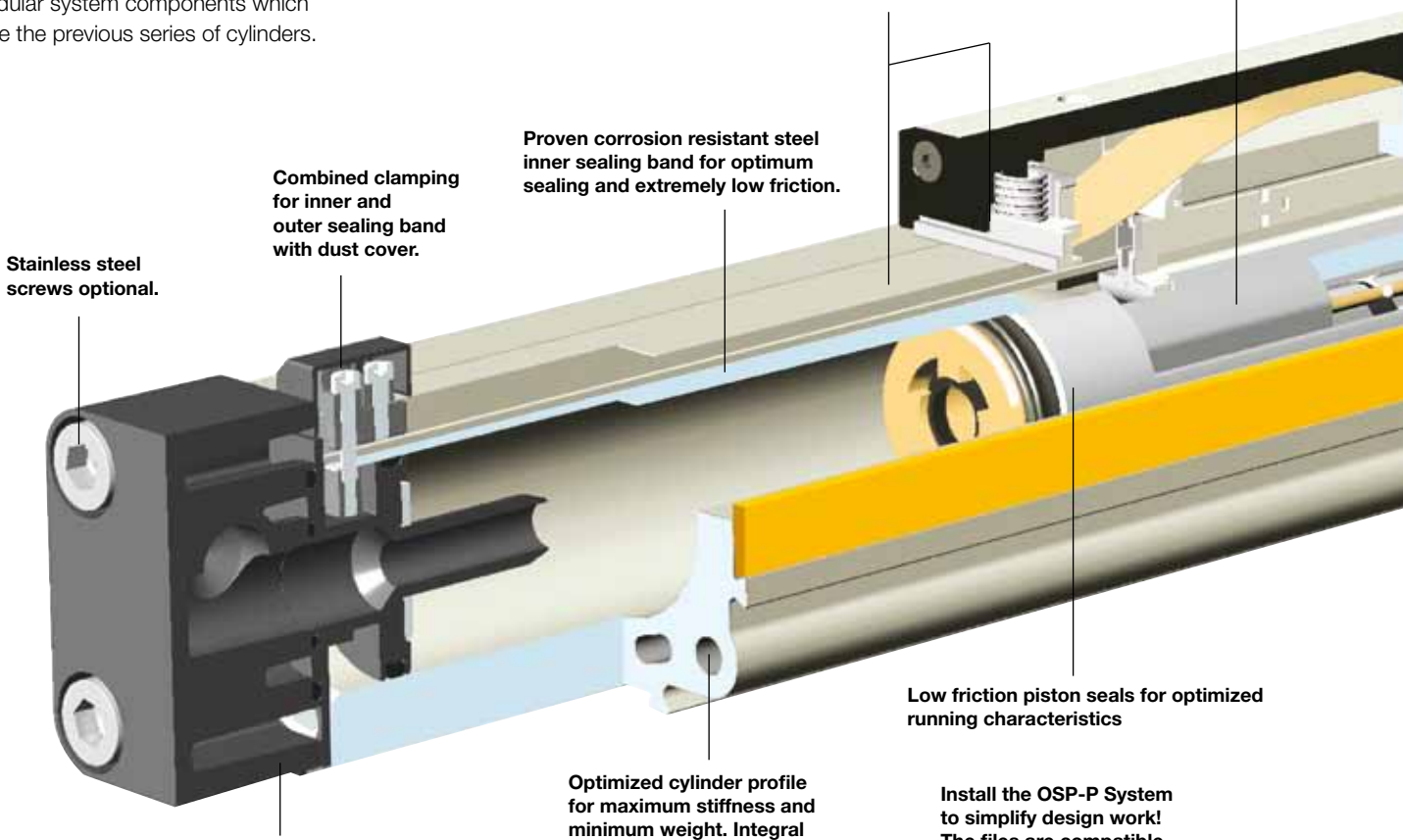
With this second generation linear drive Parker Origa offers design engineers complete flexibility.
The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed in-to modular system components which replace the previous series of cylinders.

MOUNTING RAILS ON 3 SIDES

Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, magnetic switches etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

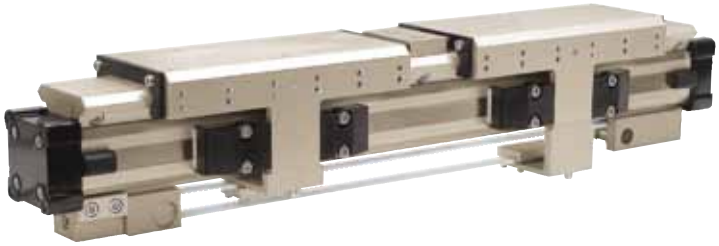
The modular system concept forms an ideal basis for additional customer-specific functions.



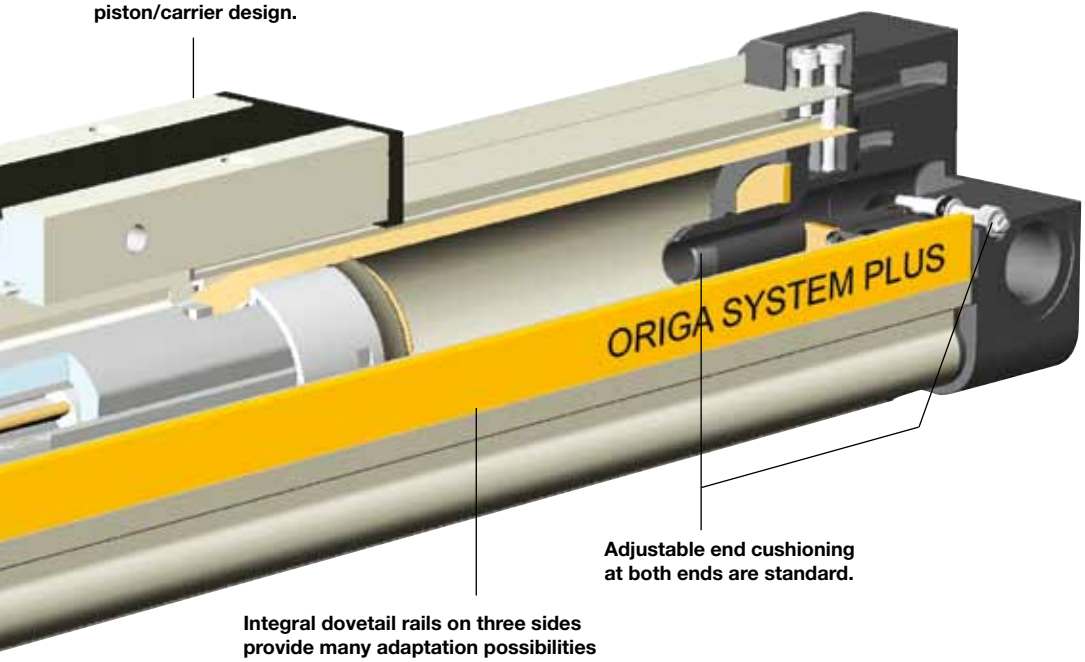
Install the OSP-P System to simplify design work! The files are compatible with all popular CAD systems and package hardware.

Clean Room Version
certified to DIN EN ISO 14644-1

Rodless Cylinder
for synchronized bi-parting movements



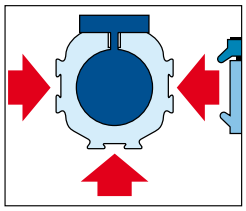
New low profile
piston/carrier design.



Adjustable end cushioning
at both ends are standard.

Integral dovetail rails on three sides provide many adaptation possibilities (linear guides, magnetic switches, etc.).

Modular system components are simply clamped on.



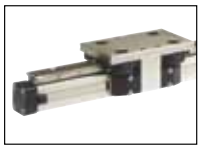
INTEGRATED VOE VALVES
The complete compact solution for optimal cylinder control.

SENSOFLEX
SFI-plus incremental measuring system with 0,1 (1,0) mm resolution.

BASIC GUIDE
Compact, robust plain bearing guide for medium loads.

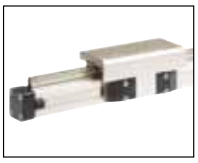
SLIDELINE
Guide system for moderate loads. Optional with Active- / Passive-Brake

POWERSLIDE
Roller guide for high loads and rough conditions



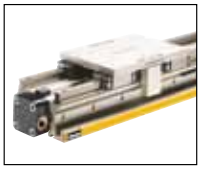
PROLINE
The compact aluminium roller guide for high loads and velocities. Optional with Active- / Passive-Brake.

STARLINE
Recirculating ball bearing guide for very high loads and precision.



KF GUIDE
Recirculating ball bearing guide – the mounting dimensions correspond to FESTO Type: DGPL-KF

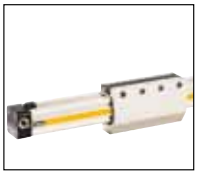
HEAVY DUTY GUIDE HD
for heavy duty applications.



VARIABLE STOP VS
The variable stop provides simple stroke limitation.

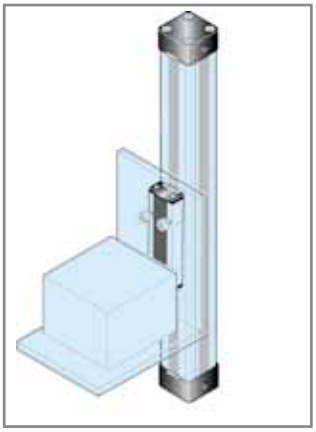
PASSIVE BRAKE
reacts automatically to pressure failure.

ACTIVE BRAKE
pneumatic brake for secure, positive stopping at any position.

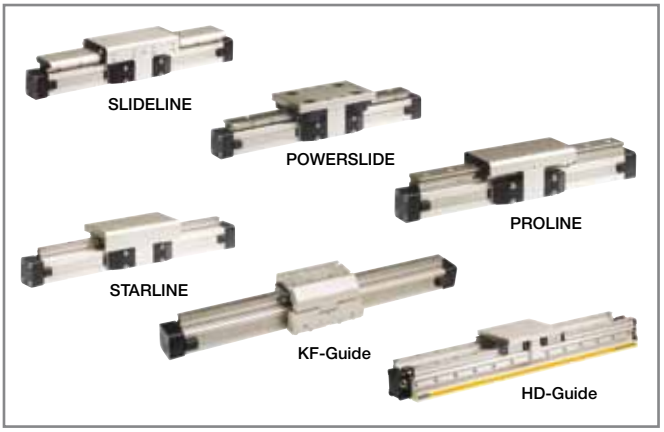


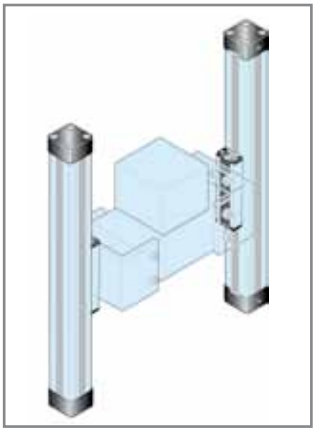
OSP-P Application examples

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



The high load capacity of the piston can cope with high bending moments without additional guides.



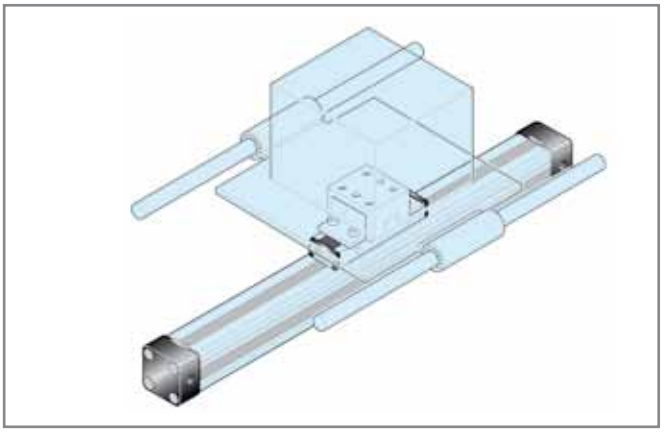


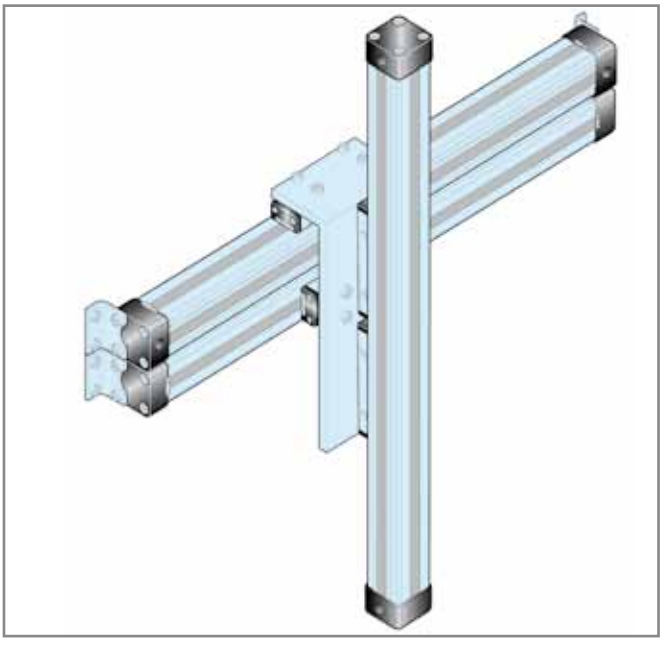
The mechanical design of the OSP-P allows synchronised movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.

When using external guides, the clevis mounting is used to compensate for deviations in parallelism.





For further information and assembly instructions, please contact your local Parker Origa dealer.

Options and Accessories for system versatility

Series OSP-P

STANDARD VERSIONS OSP-P10 to P80

Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.
Magnetic piston as standard.
Dovetail profile for mounting of accessories and the cylinder itself.

LONG-STROKE VERSION

For extremely long strokes up to max. 41m

BASIC CYLINDER OPTIONS

CLEAN ROOM CYLINDERS

For use in clean room applications, certified with the IPA-Certificate (to DIN EN ISO 14644-1).
The special design of the linear drive enables all emissions to be led away.

ATEX-Version

For use in Ex-Areas

STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)

SLOW SPEED OPTIONS

Specially formulated grease lubrication facilitates slow, smooth and uniform piston travel in the speed range from 0.005 to 0.2 m/s.
Minimum achievable speeds are dependent on several factors. Please consult our technical department.
Slow speed lubrication in combination with Viton® on demand.
Oil free operation preferred.

VITON® VERSION

For use in an environment with high temperatures or in chemically aggressive areas.
All seals are made of Viton®.
Sealing bands: Stainless steel.

END-FACE AIR CONNECTION

To solve special installation problems.

BOTH AIR CONNECTIONS AT ONE END

For simplified tubing connections and space saving.

INTEGRATED VOE VALVES

The complete compact solution for optimal cylinder control.

DUPLEX CONNECTION

The duplex connection combines two OSP-P cylinders of the same size into a compact unit with high performance.

MULTIPLEX CONNECTION

The multiplex connection combines two or more OSP-P cylinders of the same size into one unit.
The orientation of the carriers can be freely selected.

ACCESSORIES

MAGNETIC SWITCHES TYPE RS, ES, RST, EST

For electrical sensing of end and intermediate piston positions, also in EX-Areas.

MOUNTING FOR OSP-P10 UP TO P80

CLEVIS MOUNTING

Carrier with tolerance and parallelism compensation for driving loads supported by external linear guides.

MID-SECTION SUPPORT

For supporting long cylinders or mounting the cylinder by its dovetail rails.

END CAP MOUNTING

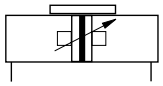
For end-mounting of the cylinder.

INVERSION MOUNTING

The inversion mounting transfers the driving force to the opposite side, e.g. for dirty environments.

Rodless Pneumatic Cylinder Ø 10-80 mm

OSP ORIGA SYSTEM PLUS



Standard Versions:

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

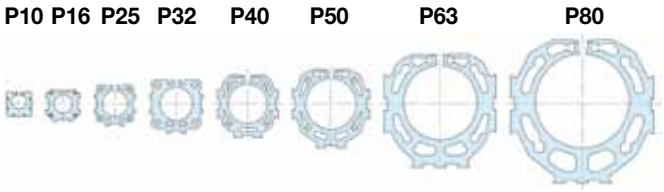
Long-Stroke Cylinders for stroke lenghts up to 41 m
See page 152

Special Versions:

- with special pneumatical cushioning system (on request)
- Clean room cylinders
- ATEX-Version
- Stainless steel screws
- Slow speed lubrication
- Viton® seals
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves

- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm, Long-Stroke version (Ø50-80mm) for stroke lengths up to 41 m

Size Comparison



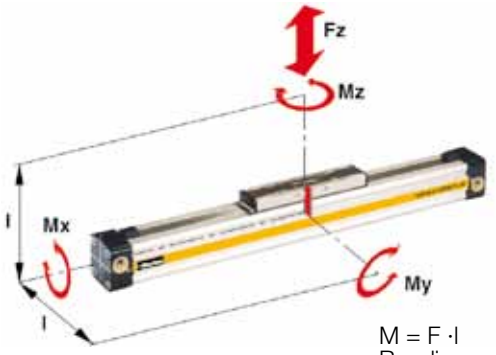
Characteristics		Description
General Features		
Type		Rodless cylinder
Series		OSP-P
System		Double-acting, with cushioning, position sensing capability
Mounting		See drawings
Air Connection		Threaded
Ambient temperature range	T_{min}	-10 °C Other temperature ranges
	T_{max}	+80 °C on request
Installation		In any position
Medium		Filtered, unlubricated compressed air (other media on request)
Lubrication		Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease
Material		
Cylinder Profile		Anodized aluminium
Carrier (piston)		Anodized aluminium
End caps		Aluminium, lacquered / Plastic (P10)
Sealing bands		Corrosion resistant steel
Seals		NBR (Option: Viton®)
Screws		Galvanized steel Option: stainless steel
Dust covers, wipers		Plastic
Max. operating pressure	p_{max}	8 bar

Loads, Forces and Moments

Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions.

The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).



M = F ·l
Bending moments are calculated from the centre of the linear actuator

The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. Load and moment data are based on speeds v ≤ 0.5 m/s.

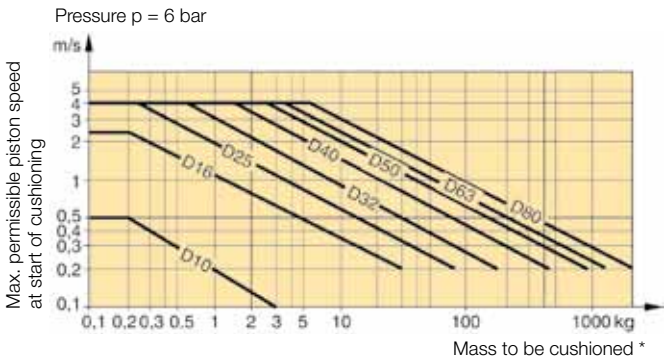
When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.

Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effektive Action Force F_A at 6 bar [N]	max. Moments Mx [Nm]	My [Nm]	Mz [Nm]	max. Load F [N]	Cushion Length [mm]
OSP-P10	47	32	0.2	1	0.3	20	2.5 *
OSP-P16	120	78	0.45	4	0.5	120	11
OSP-P25	295	250	1.5	15	3	300	17
OSP-P32	483	420	3	30	5	450	20
OSP-P40	754	640	6	60	8	750	27
OSP-P50	1178	1000	10	115	15	1200	30
OSP-P63	1870	1550	12	200	24	1650	32
OSP-P80	3016	2600	24	360	48	2400	39

* A rubber element (non-adjustable) is used for end cushioning.
To deform the rubber element enough to reach the absolute end position would require a Δp of 4 bar!

Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required.
Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder. If these maximum permissible values are exceeded, additional shock absorbers must be used.



Weight (mass) kg

Cylinder series (Basic cylinder)	Weight (Mass) kg At 0 mm stroke	per 100 mm stroke
OSP-P10	0.087	0.052
OSP-P16	0.22	0.1
OSP-P25	0.65	0.197
OSP-P32	1.44	0.354
OSP-P40	1.95	0.415
OSP-P50	3.53	0.566
OSP-P63	6.41	0.925
OSP-P80	12.46	1.262

* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

If the permitted limit values are exceeded, either additional shock absorbers should be fitted in the area of the centre of gravity or you can consult us about our special cushioning system – we shall be happy to advise you on your specific application.

Options - Basic Cylinder

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPP	25	0	0	0	0	0	01100	0	0	0	0	0	0	0	0	0

Piston-Ø

10
16
25
32
40
50
63
80

Version / Piston

0	standard
1	Tandem

Air Connection

0	standard
1	end face
2	both at one end
3	left stand. right end face
4	right stand. left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Seals

0	standard (NBR)
1	Viton® [1]

Lubrication

0	standard
1	slow speed [2][3]

Screws

0	standard
1	Stainless

Stroke Length

In mm (5 digits)

End cap position

0	l+r 0° = in front
1	l+r 90° = underneath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Cushioning

0	standard
1	max. length [3]

Piston Mounting

0	without
1	clevis mounting

Guides/ Brakes/ Inversion

0	without
A	Activebrake AB Ø 25-80
M	Inversion Ø 16-80
N	Duplex Ø 25,32,40,50

add. Guide Carriage

0	without

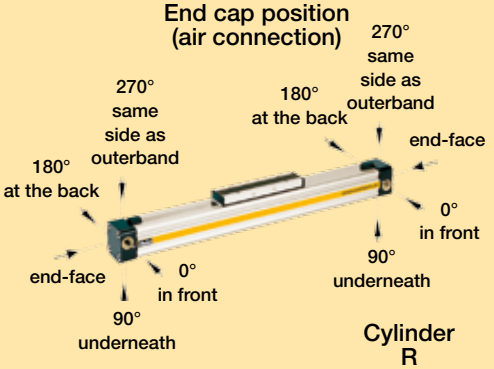
Cover / Cable Channel

0	standard
1	Cable channel
2	Cable channel two-sided
X	without cover rail

Measuring system

0	without
X	SFI 0,1 mm
Y	SFI 1 mm

End cap position (air connection)



Cylinder L (left end side)

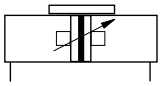
Cylinder R (right end side)

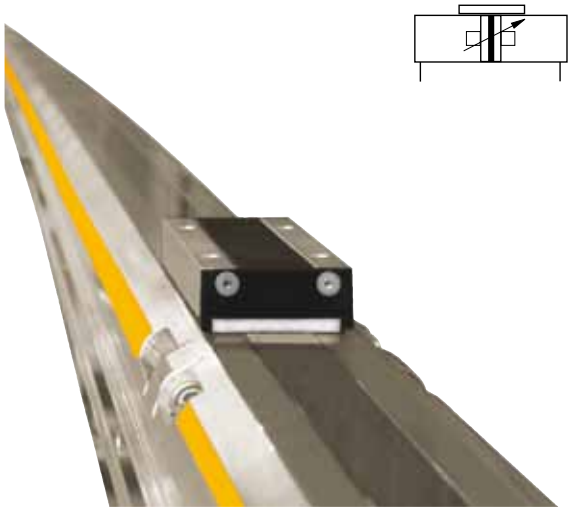
[1] Viton with VOE not available.

[2] Slow speed lubrication in combination with Viton® seals on demand

[3] „Lubrication slow speed“ in combination with „max. cushioning length“ not possible.

Long Stroke Cylinder Ø 50-80 mm for strokes up to 41 m





Standard Versions:
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

Special Versions:
- Stainless steel screws
- Slow speed lubrication
- Viton® seals

Options:
- Displacement measuring system SFI-plus
- Active brake AB..

Size Comparison

P50 P63 P80

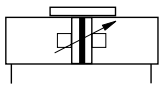
Weight (mass) kg

Cylinder series (Basic cylinder)	Weight (Mass) kg At 0 mm stroke	per 100 mm stroke
OSP-P50LS	3.53	0.566
OSP-P63LS	6.41	0.925
OSP-P80LS	12.46	1.262

Characteristics		Description
General Features		
Type		Rodless cylinder
Series		OSP-P
System		Double-acting, with cushioning, position sensing capability
Mounting		See drawings
Air Connection		Threaded
Ambient temperature range	T_{min}	10 °C Other temperature ranges
	T_{max}	+40 °C on request
Installation		Vertical, horizontal (piston at top or at bottom)
Medium		Filtered, unlubricated compressed air (other media on request)
Lubrication		Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease
Material		
Cylinder Profile		Anodized aluminium
Carrier (piston)		Anodized aluminium
End caps		Anodized aluminium
Sealing bands		Corrosion resistant steel
Seals		NBR (Option: Viton®)
Screws		Galvanized steel Option: stainless steel
Dust covers, wipers		Plastic
Max. operating pressure	p_{max}	8 bar
Max. speed	v	2 m/s

Clean Room Cylinder Ø 16-32 mm Certified to DIN EN ISO 14644-1

OSP ORIGA SYSTEM PLUS



Standard Versions:

- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing
- Stainless steel screws

Special Versions:

- Slow speed lubrication
- Viton® seals

Features:

- Clean room classification
  ISO Class 4 at v_m = 0.14 m/s
  ISO Class 5 at v_m = 0.5 m/s
- Suitable for smooth slow speed operation up to v_{min} = 0.005 m/s
- Optional stroke length up to 1200 mm (longer strokes on request)
- Low maintenance
- Compact design with equal force and velocity in both directions
- Aluminium piston with bearing rings to support high direct and cantilever loads

Size Comparison

P16 P25 P32

Weight (mass) kg

Cylinder series (Basic cylinder)	At 0 mm stroke	Weight (Mass) kg per 100 mm stroke
OSP-P16	0.22	0.1
OSP-P25	0.65	0.197
OSP-P32	1.44	0.354

Characteristics		Description
General Features		
Type		Rodless cylinder
Series		OSP-P
System		Double-acting, with cushioning, position sensing capability
Mounting		See drawings
Air Connection		Threaded
Ambient temperature range	T_{min}	-10 °C Other temperature ranges
	T_{max}	+80 °C on request
Installation		In any position
Medium		Filtered, unlubricated compressed air (other media on request)
Lubrication		Permanent grease lubrication (additional oil mist lubrication not required) Option: special slow speed grease
Material		
Cylinder Profile		Anodized aluminium
Carrier (piston)		Anodized aluminium
End caps		Aluminium, lacquered
Sealing bands		Corrosion resistant steel
Seals		NBR (Option: Viton®)
Screws		Stainless steel
Covers		Anodised aluminium
Guide plate		Plastic
Max. operating pressure	p_{max}	8 bar

Options - Clean Room Cylinders

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPP	25	4	7	0	0	1	01100	0	0	0	0	0	0	0	0	0

Piston-Ø
- 16
- 25
- 32

Version / Piston
- 4 Clean room

Air Connection
- 7 End cap Clean room

Seals
- 0 Standard (NBR)
- 1 Viton®

Lubrication
- 0 Standard
- 1 Slow speed [1]

Screws
- 1 Stainless

Stroke Length
in mm (5 digits) [2]

End cap position
- 0 L+R 0° = in front

Cushioning
- 0 Standard

Piston Mounting
- 0 without

Guides/ Brakes/ Inversion
- 0 without

add. Guide Carriage
- 0 without

Cover / Cable Channel
- 0 Standard
- 1 Cable channel
- 2 Cable channel two-sided
- X without Cover rail

Measuring system
- 0 without

[1] The combination „Slow speed lubrication“ and „Viton® sealings“ are available on request.
[2] max. stroke lengths 1200 mm, longer strokes on request.

Components for EX-Areas

Information for ATEX-Directives

The rodless pneumatic cylinders of Parker Origa are the first linear drive unit, for that Ex range in the group of equipment II, Category 2 GD are certified.

Detail informations for use pneumatic components in Ex-Areas see leaflet P-A5P060 „EU Directive 94/9/EG (ATEX 95) for Pneumatic Components“.

Rodless Cylinder Ø 10-80 mm

Basic Cylinder - Series: OSP-P ... ATEX

Plain Bearing Guide Ø 16-80 mm

SLIDELINE - Series: SL- ... ATEX

Technical Data (deviant to the Standard Cylinder)

Characteristics	Description
General Features	
Ambient temperature range T_{min}	-10 °C
T_{max}	+60 °C
Max. switching frequency	1 Hz (double stroke/s) Basic cylinder 0.5 Hz (1 stroke/s) Cylinder with guide
Operating pressure range p_{max}	Max. 8 bar
Max. speed v_{max}	3 m/s Basic cylinder, 2 m/s Cylinder with guide
Medium	Filtered, unlubricated compressed air – free from water and dirt to ISO 8573-1 Solids: Class 7 particle size < 40 µm for Gas Water content: pressure dew point +3 °C, class 4, but at least 5 °C below minimum operating temperature
Noise level	70 dB (A)
Information for materials	
Aluminium	See data sheet ”Material“
Lubrication	See security data sheet ”Grease for use in Cylinder with guides“
Sealing bands	Corrosion resistant steel

Equipment Group II Categorie 2GD

Rodless cylinder: ⟨Ex⟩ II 2GD c T4 T135°C -10°C≤Ta≤+60°C

Series	Size	Stroke range	Accessories
OSP-P	Ø 10 to 80 programme	1– 6000 mm	Mountings
SLIDELINE	Ø 16 to 80 programme	1– 5500 mm	Mountings

Synchronised Rodless Cylinder Ø 40 mm

For synchronised bi-parting movements

Type OSP-P40-SL-BP

Applications:

- Opening and closing operations
- Gripping of workpieces – outside
- Gripping of hollow workpieces – inside
- Gripping underneath larger objects
- Clamping force adjustable via pressure regulator

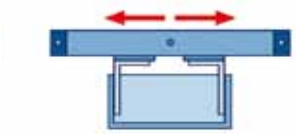
Features:

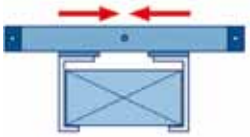
- Accurate bi-parting movement through toothed belt synchronization
- Optimum slow speed performance
- Increased action force
- Anodized aluminium guide rail with prism-form slideway arrangement
- Adjustable polymer slide units
- Combined sealing system with polymer and felt elements to remove dirt and lubricate the slideway
- Integrated grease nipples for guide lubrication

OSP
ORIGA SYSTEM PLUS

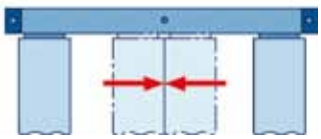
Applications:

Gripping – outside





Gripping – underneath



Door opening and closing

Characteristics		Description
General Features		
Type		Rodless cylinder for synchronised bi-parting movements
Series		OSP-P
System		Double-acting with end cushioning for contactless position sensing
Guide		Slideline SL40
Synchronisation		Toothed belt
Mounting		See drawings
Ambient temperture range		-10 °C to +60 °C
Installation		In any position
Medium		Filtered, unlubricated compressed air (other media on request)
Lubrication		Special slow speed grease - additional oil mist lubrication not required
Operating pressure	p_{max}	6 bar
Cushioning middle position		Elastic buffer
Max. speed	v_{max}	0.2 m/s
Max. stroke of each stroke		500 mm
Max . mass per guide carrier		25 kg
Max . moments on guide carrier		
Lateral moment	Mx_{max}	25 Nm
Axial moment	My_{max}	46 Nm
Rotating moment	Mz_{max}	46 Nm
Material		
Toothed belt		Steel-corded polyurethane
Belt wheel		Aluminium

For more technical information see catalogue P-A4P011GB

OSP
ORIGA
SYSTEM
PLUS

Adaptive modular system

The Origa system plus – OSP – provides a comprehensive range of linear guides for the pneumatic and electric linear drives.

Advantages:

- Takes high loads and forces
- High precision
- Smooth operation
- Can be retrofitted
- Can be installed in any position

Rodless Pneumatic Cylinder Series OSP - P

Piston diameters 10 – 80 mm

See page 149 (Standard)
See page 155 (ATEX-Version)

Plain Bearing Guide BASIC GUIDE

Series BG 25 to 40 for Linear Drive Compact, robust plain bearing guide for medium loads

Linear Guides

SLIDELINE
The cost-effective plain bearing guide for medium loads.
Active/ Passive Brake optional.

Piston diameters 16 – 80 mm

See page 159 (Standard)
See page 155 (ATEX-Version)

POWERSLIDE
The roller guide for heavy loads and hard application conditions

Piston diameters 16 – 50 mm

See page 160

PROLINE
The compact aluminium roller guide for high loads and velocities.
Active/ Passive Brake optional.
Piston diameters 16 – 50 mm

See page 161

STARLINE
Recirculating ball bearing guide for very high loads and precision

Piston diameters 16 – 50 mm

See page 162

KF GUIDE
Recirculating ball bearing guide.
Correspond to FESTO dimensions (Type DGPL-KF)

Piston diameters 16 – 50 mm

See page 163

HD HEAVY DUTY GUIDE
Recirculating ball bearing guide for highest loads and greatest accuracy.

Piston diameters 25 – 50 mm

See page 164

Plain Bearing Guide
BASIC GUIDE
Series BG 25 to 40 for Linear Drive
Compact, robust plain bearing guide for medium loads

OSP
ORIGA SYSTEM PLUS

Features:

- Compact: guide rail integrated in cylinder profile tube
- Robust: wiper system and grease nipples for long service life
- smooth operation
- simple to (re-) adjust
- Integrated grease nipples
- Any length of stroke up to 6000 mm (longer strokes on request)

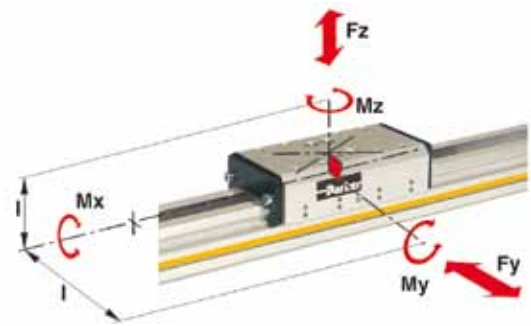
Options:

- Corrosion resistant version available on request
- VOE-Valves

Accessories:

- Mid-Section Support
- End Cap Mountings
- Magnetic Switches

Loads, Forces and Moments



Technical Data

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds v < 0.2 m/s.

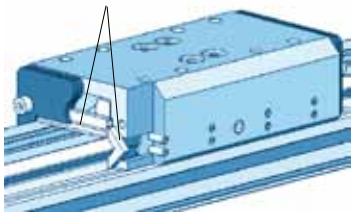
* **Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

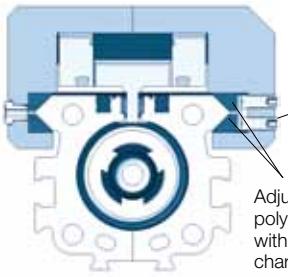
$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

The sum of the loads should not exceed >1.

Loads, Forces and Moments

Composite sealing system with high-tech polymer and felt wiper elements to remove dirt and lubricate the slideways.





Series	Max. moments [Nm] Mx	My	Mz	Max. load [Nm] Fy, Fz	Mass of Basic guide [kg] at stroke	per 100mm stroke	Mass * of guide carriage [kg]	Cushion stone (mm)
BG25	10	28	28	590	1.09	0.22	0.29	17
BG32	17	43	43	850	2.26	0.38	0.69	20
BG40	39	110	110	1600	3.52	0.41	1.37	27

Plain Bearing Guide
SLIDELINE
Series SL 16 to 80 for Linear Drive

OSP
ORIGA
SYSTEM
PLUS

Features:

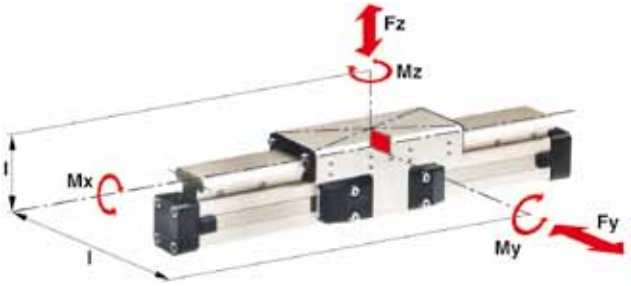
- ATEX-version (without brake) is also available
  See page 155
- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements – optional with integral brake
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways
- Corrosion resistant version available on request
- Any length of stroke up to 5500 mm (longer strokes on request)

Integrated Brake (optional) for series OSP-P25 to OSP-P50:

- Actuated by pressure
- Released by exhausting and spring return

For further technical data see also Linear Drives OSP-P catalogue P-A4P011GB

Loads, Forces and Moments



Technical Data

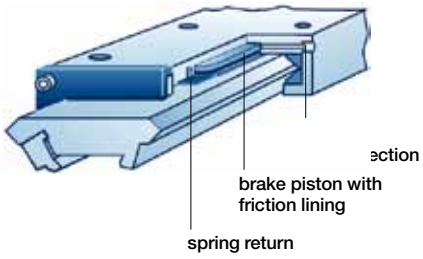
The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

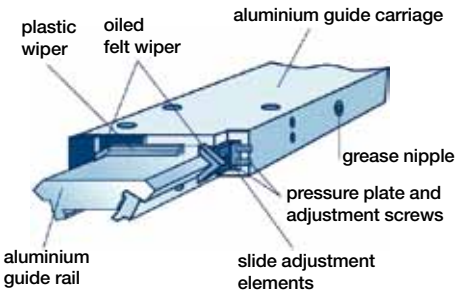
The load and moment figures apply to speeds v < 0.2 m/s.

* **Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

1) Only with integrated brake: Braking force on dry oil-free surface Values are decreased for lubricated slideways
2) Corrosion resistant fixtures available on request

Option - Integrated Brake





Series	For linear drive	Max. moments [Nm] Mx	My	Mz	Max. loads [N] Fy, Fz	Maximum braking force at 6 bar [N] 1) with 0 mm stroke	Mass of linear drive with guide [kg] increase per 100 mm stroke		Mass * of guide carriage [kg]	Order No. SLIDELINE 2) Guide without cylinder Without brake	With brake
SL16	OSP-P16	6	11	11	325	–	0.57	0.22	0.23	**20341FIL**	–
SL 25	OSP-P25	14	34	34	675	325	1.55	0.39	0.61	**20342FIL**	**20409FIL**
SL 32	OSP-P32	29	60	60	925	545	2.98	0.65	0.95	**20196FIL**	**20410FIL**
SL 40	OSP-P40	50	110	110	1500	835	4.05	0.78	1.22	**20343FIL**	**20411FIL**
SL50	OSP-P50	77	180	180	2000	1200	6.72	0.97	2.06	**20195FIL**	**20412FIL**
SL63	OSP-P63	120	260	260	2500	–	11.66	1.47	3.32	**20853FIL**	–
SL80	OSP-P80	120	260	260	2500	–	15.71	1.81	3.32	**21000FIL**	–

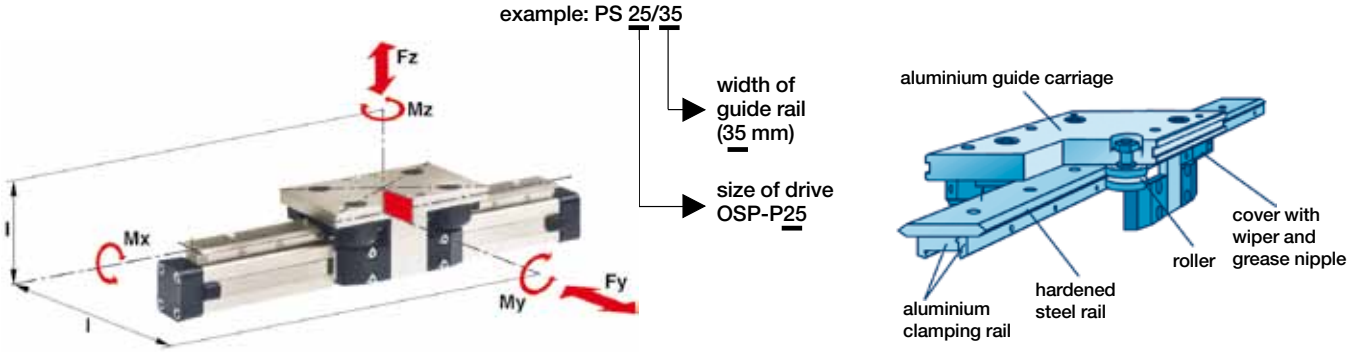
Roller Guide
POWERSLIDE
Series PS 16 to 50 for Linear Drive

OSP
ORIGA
SYSTEM
PLUS

Features:

- Anodised aluminium guide carriage with vee rollers having 2 rows of ball bearings
- Hardened steel guide rail
- Several guide sizes can be used on the same drive
- Corrosion resistance version available on request
- Max. speed v = 3 m/s,
- Tough roller cover with wiper and grease nipple
- Any length of stroke up to 3500 mm, (longer strokes on request)

Loads, Forces and Moments



Technical Data

The table shows the maximum per-missible values for smooth operation, which should not be exceeded even under dynamic conditions.
For further information and technical data see data sheets for linear drives OSP-P see catalogue P-A4P011GB.

*** Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

Series	For linear drive	Max. moments [Nm]			Max. load [N]	Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order-No. Powerslide Guide without cylinder[1]
		Mx	My	Mz	Fy, Fz	with 0 mm stroke	increase per 100 mm stroke		
PS 16/25	OSP-P16	14	45	45	1400	0.93	0.24	0.7	**20285FIL**
PS 25/25	OSP-P25	14	63	63	1400	1.5	0.4	0.7	**20015FIL**
PS 25/35	OSP-P25	20	70	70	1400	1.7	0.4	0.8	**20016FIL**
PS 25/44	OSP-P25	65	175	175	3000	2.6	0.5	1.5	**20017FIL**
PS 32/35	OSP-P32	20	70	70	1400	2.6	0.6	0.8	**20286FIL**
PS 32/44	OSP-P32	65	175	175	3000	3.4	0.7	1.5	**20287FIL**
PS 40/44	OSP-P40	65	175	175	3000	4.6	1.1	1.5	**20033FIL**
PS 40/60	OSP-P40	90	250	250	3000	6	1.3	2.2	**20034FIL**
PS 50/60	OSP-P50	90	250	250	3000	7.6	1.4	2.3	**20288FIL**
PS 50/76	OSP-P50	140	350	350	4000	11.5	1.8	4.9	**20289FIL**

[1] corrosion resistance version available on request (max. loads and moments are 25% lower)

Aluminium Roller Guide PROLINE

Series PL 16 to 50 for Linear Drive

Features:

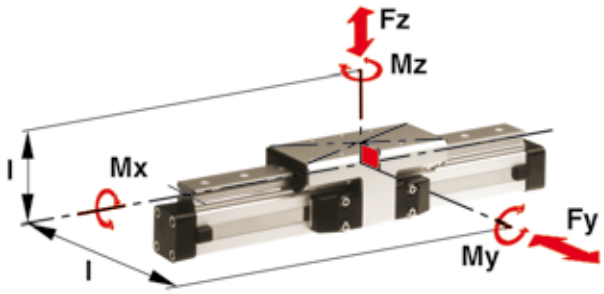
- High precision
- High velocities (10 m/s)
- Smooth operation - low noise
- Integated wiper system
- Long life lubrication
- Compact dimensions - compatible to Slideline plain bearing guide
- Any length of stroke up to 3750 mm

OSP
ORIGA SYSTEM PLUS

Integrated Brake (optional) for series OSP-P25 to OSP-P50:

- Actuated by pressurisation
- Released by depressurisation and spring actuation

Loads, Forces and Moments



Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

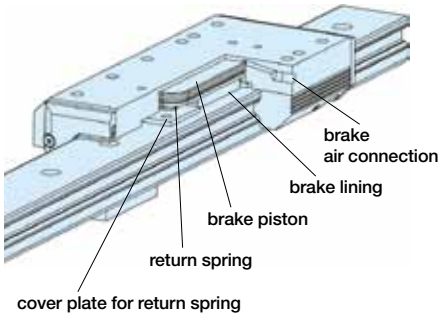
$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

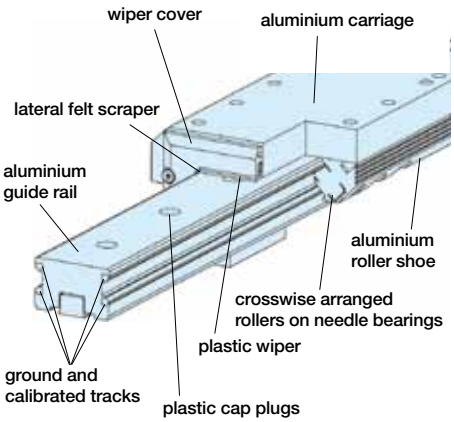
The sum of the loads should not exceed >1. With a load factor of less than 1, service life is 8000 km

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

* **Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

Option - Integrated Brake





Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Maximum braking force at 6 bar [N] [1]	Mass of linear drive with guide [kg]		Mass * guide carriage [kg]	Order No. PROLINE Guide without cylinder	
		Mx	My	Mz	Fy, Fz		with 0 mm stroke	increase per 100 mm stroke		without brake	with brake
PL 16	OSP-P16	8	12	12	542	–	0.55	0.19	0.24	20855FIL	-
PL 25	OSP-P25	16	39	39	857	on request	1.65	0.40	0.75	20856FIL	20860FIL
PL 32	OSP-P32	29	73	73	1171	on request	3.24	0.62	1.18	20857 FIL	20861FIL
PL 40	OSP-P40	57	158	158	2074	on request	4.35	0.70	1.70	20858FIL	20862FIL
PL 50	OSP-P50	111	249	249	3111	on request	7.03	0.95	2.50	20859FIL	20863FIL

[1] Only for version with brake:
Braking surface dry – oiled surface reduces the effective braking force.

Recirculating Ball Bearing Guide STARLINE

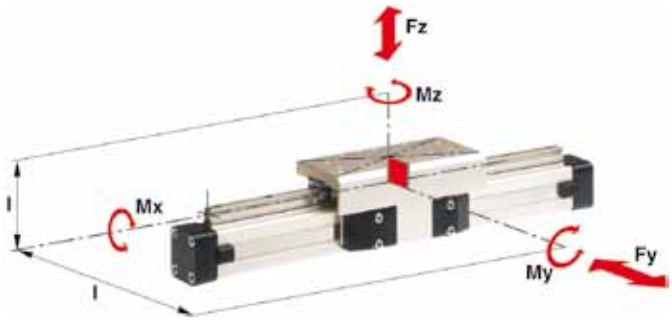
Series STL 16 to 50 for Linear Drive

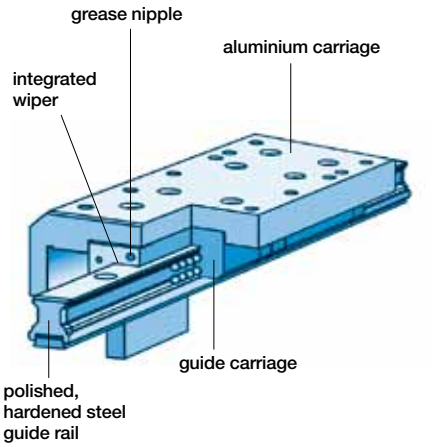
OSP
ORIGA
SYSTEM
PLUS

Features:

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage – dimensions compatible with OSP guides SLIDELINE and PROLINE
- Installation height (STL16 - 32) compatible with OSP guides SLIDELINE and PROLINE
- Maximum speed
  STL16: v = 3 m/s
  STL25 to 50: v = 5 m/s

Loads, Forces and Moments





Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

* **Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass ** guide carriage [kg]	Order No. STARLINE Guide without cylinder
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
STL16	OSP-P16	15	30	30	1000	1000	0.598	0.210	0.268	**21111FIL**
STL25	OSP-P25	50	110	110	3100	3100	1.733	0.369	0.835	**21112FIL**
STL32	OSP-P32	62	160	160	3100	3100	2.934	0.526	1.181	**21113FIL**
STL40	OSP-P40	150	400	400	4000	7500	4.452	0.701	1.901	**21114FIL**
STL50	OSP-P50	210	580	580	4000	7500	7.361	0.936	2.880	**21115FIL**

Recirculating Ball Bearing Guide

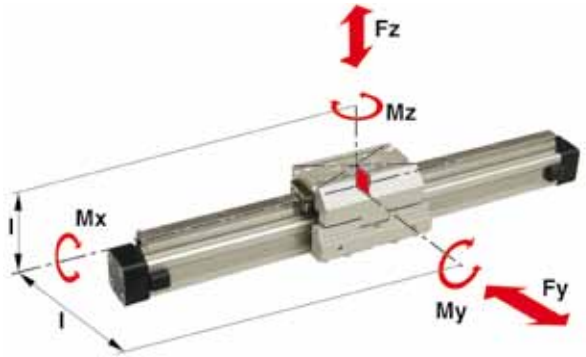
Series KF 16 to 50 for Linear Drive

OSP
ORIGA
SYSTEM
PLUS

Features:

- Anodized aluminium guide carriage, the mounting dimensions correspond to FESTO Type: DGPL-KF
- Polished and hardened steel guide rail
- For high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Maximum speed
  KF16, KF40: v = 3 m/s
  KF25, KF32, KF50: v = 5 m/s

Loads, Forces and Moments



Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

* **Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass* guide carriage [kg]	Groove stone	Order No.	
							with 0 mm stroke	increase per 100 mm	size	Thread	Groove stone cylinder	Guide without
	Mx	My	Mz	Fy	Fz	stroke						
KF 16	OSP-P16	12	25	25	1000	1000	0.558	0.21	0.228	-	-	**21101FIL**
KF 25	OSP-P25	35	90	90	3100	3100	1.522	0.369	0.607	M5	13508FIL	**21102FIL**
KF 32	OSP-P32	44	133	133	3100	3100	2.673	0.526	0.896	M5	13508FIL	**21103FIL**
KF 40	OSP-P40	119	346	346	4000	7100	4.167	0.701	1.531	M6	13509FIL	**21104FIL**
KF 50	OSP-P50	170	480	480	4000	7500	7.328	0.936	2.760	M8	13510FIL	**21105FIL**

Heavy Duty Guide
HD
Series HD 25 to 50 for Linear Drive

OSP
ORIGA SYSTEM PLUS

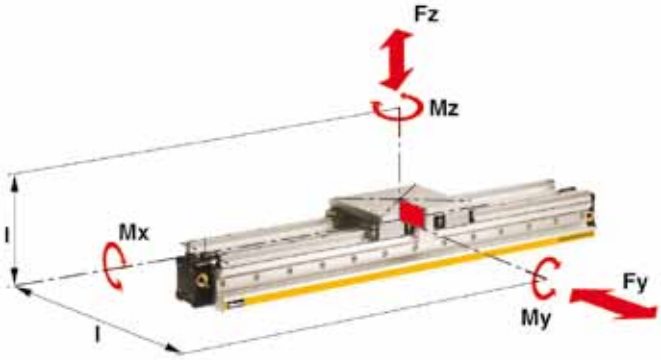
Features:

- Guide system: 4-row recirculating ball bearing guide
- Polished and hardened steel guide rail
- For highest loads in all directions
- Highest precision
- Integrated wiper system
- Integrated grease nipples
- Any lengths of stroke up to 3700 mm (longer strokes on request)
- Anodized aluminium guide carriage - dimensions compatible with OSP guide GUIDELINE
- Maximum speed v = 5 m/s

Options:

- With variable stop
- With intermediate stop module

Loads, Forces and Moments



Technical Data

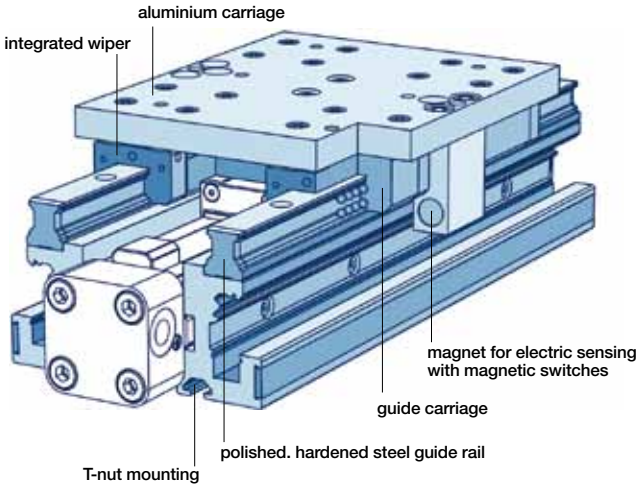
The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

The sum of the loads should not exceed >1.

The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Version with pneumatic linear drive series OSP-P



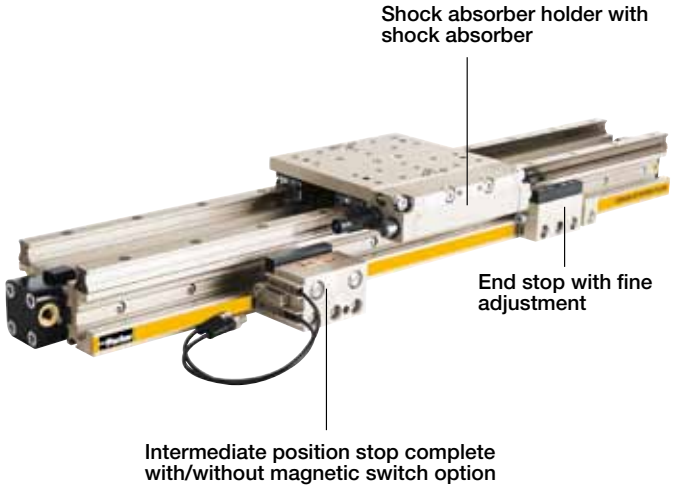
* **Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

Series linear	For	Max. moments [Nm]			Max. loads [N]		Mass of the linear drive guide [kg] without carriage		Mass* HD guide [kg]	Order No. drive cylinder
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
HD 25	OSP-P25	260	320	320	6000	6000	3.065	0.924	1.289	**21246FIL**
HD 32	OSP-P32	285	475	475	6000	6000	4.308	1.112	1.367	**21247FIL**
HD 40	OSP-P40	800	1100	1100	15000	15000	7.901	1.748	2.712	**21248FIL**
HD 50	OSP-P50	1100	1400	1400	18000	18000	11.648	2.180	3.551	**21249FIL**

Intermediate Stop Module

Type ZSM .. HD

The intermediate stop module ZSM allows the guide carriage to stop at any desired intermediate positions with high accuracy. It can be retrofitted. Depending on the application, i.e. the number of intermediate stops, one or more intermediate position stops can be used. The intermediate position stops can be retracted and extended without the need for the guide carriage to be moved back out of position.
Therefore the guide carriage can be made to stop at the defined intermediate positions in any order.



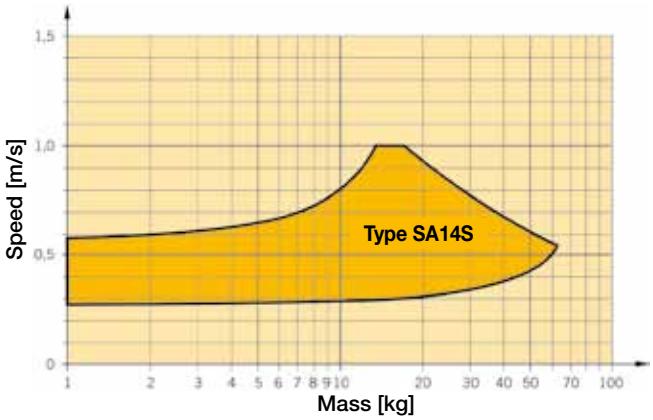
ORIGA intermediate stop module ZSM:

- Allows stopping at any intermediate positions
- Intermediate position stops can be located steplessly anywhere along the whole stroke length
- Movement to the next position without reverse stroke
- Compact unit
- Cost-effective positioning module without electrical or electronic components
- Option: end stop with fine adjustment

Operating information

Operating pressure range:	4 - 8 bar
Temperature range:	-10°C to +70°C
Intermediate position grid	85 mm

Shock Adsorbers Type SA14S



The values relate to an effective driving force of 250 N (6 bar)

OSP
ORIGA SYSTEM PLUS

Active Brakes and Passive Brakes

Versions:

- ACTIVE Brake
- Plain bearing guide with integrated ACTIVE Brake
- Aluminium roller guide with integrated ACTIVE Brake
- Plain bearing guide with PASSIVE Brake
- Aluminium roller guide with PASSIVE Brake

Active Brake
for pneumatic linear drive
Series OSP-P
Piston diameters 25 - 80 mm.

See page 167

Slideline with Active Brake
Plain bearing guide SLIDELINE - SL
with integrated ACTIVE Brake
Piston diameters 25 - 50 mm.

See page 159

Proline with Active Brake
Aluminium roller guide
PROLINE - PL with
integrated ACTIVE Brake
Piston diameters 25 - 50 mm.

See page 161

Multibrake with Slideline
MULTI BRAKE – PASSIVE Brake
with plainbearing guide
SLIDELINE - SL
Piston diameter 25 - 80 mm.

See page 168

Multibrake with Proline
MULTI BRAKE – PASSIVE Brake
with aluminium roller guide
PROLINE - PL
Piston diameters 25 - 50 mm.

See page 169

Active Brake

Series AB 25 to 80 for Linear Drive

OSP
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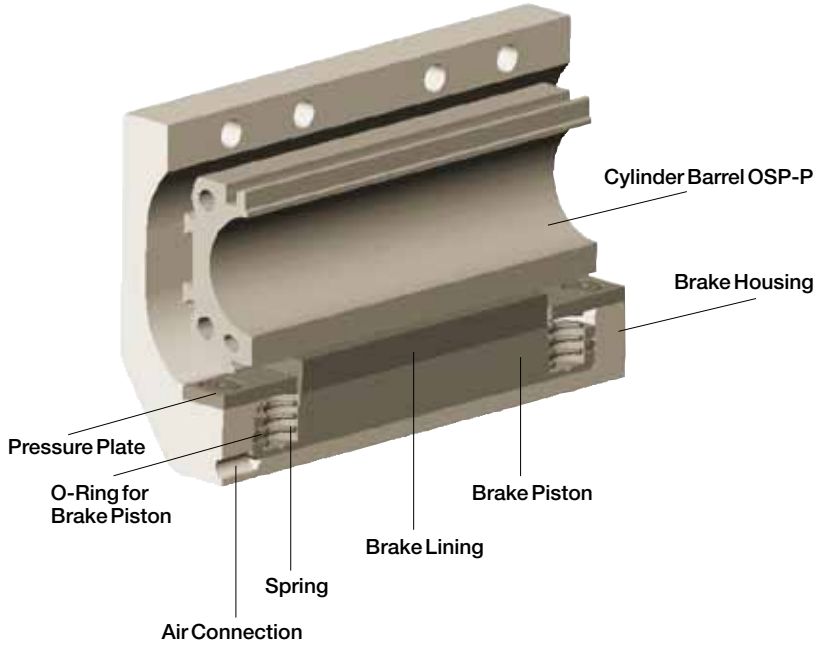
PLUS

Features:

- Actuated by pressurisation
- Released by spring actuation
- Completely stainless version
- Holds position, even under changing load conditions

Function



Forces and Weights

Series	For linear drive	Max. braking force [N] (1	Brake pad way [mm]	Mass [kg] Linear drive with brake 0 mm stroke	increase per 100mm stroke	brake*
AB 25	OSP-P25	350	2.5	1.0	0.197	0.35
AB 32	OSP-P32	590	2.5	2.02	0.354	0.58
AB 40	OSP-P40	900	2.5	2.83	0.415	0.88
AB 50	OSP-P50	1400	2.5	5.03	0.566	1.50
AB 63	OSP-P63	2170	3.0	9.45	0.925	3.04
AB 80	OSP-P80	4000	3.0	18.28	1.262	5.82

(1 – at 6 bar
both chambers pressurised with 6 bar
Braking surface dry
– oil on the braking surface will reduce the braking force

*** Please Note:**
The mass of the brake has to be added to the total moving mass when using the cushioning diagram.

For further technical data, please refer to the data sheets for linear drives OSP-P see catalogue P-A4P011GB.

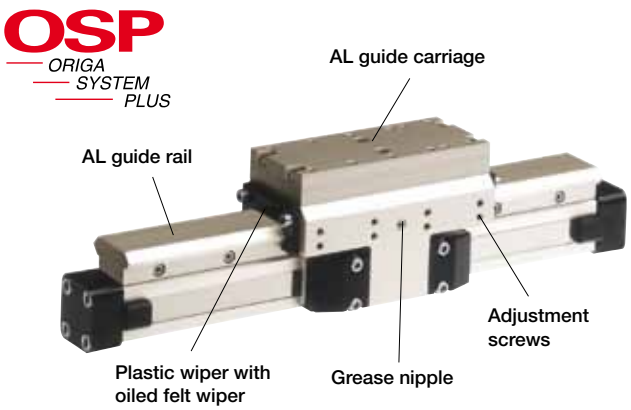
Note:
For combinations Active Brake AB + SFI-plus + Magnetic Switch contact our technical department please.

Multi-Brake
Passive Brake

with plain bearing guide Slideline SL
Series MB-SL 25 to 80 for Linear Drive

Features:

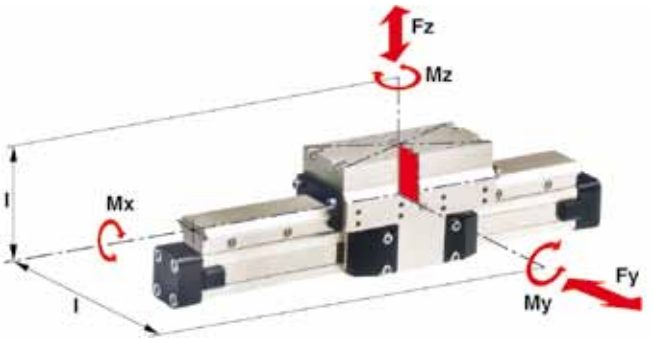
- Brake operated by spring actuation
- Brake release by pressurisation
- Anodised aluminium rail, with prism shaped slide elements
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Replenishable guide lubrication by integrated grease nipples
- Blocking function in case of pressure loss
- Intermediate stops possible



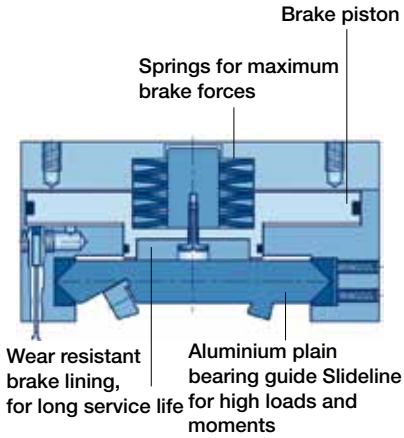
Function:

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

Loads, Forces and Moments



Function



Technical Data

The table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation.

Load and moment data are based on speeds v < 0.2 m/s.
Operating pressure 4.5 - 8 bar
A pressure of 4.5 bar is required to release the brake.

For further technical information, please refer to the data sheets for linear drives OSP-P see catalogue P-A4P011GB.

* **Please note:**
in the cushioning diagram, the mass of the guide carriage has to be added to the total moving mass.

[1] Braking surface dry – oil on the braking surface will reduce the braking force

Series	For linear drive	Max. moments [Nm] Mx	My	Mz	Max. loads [N] Fy, Fz	Max. brake force [N] [1]	Mass of linear drive with guide [kg] with 0 mm stroke	increase per 100 mm stroke	Mass* guide carriage [kg]	Order No. – MB-SL Guide with passive brake without cylinder*
MB-SL 25	OSP-P25	14	34	34	675	470	2.04	0.39	1.10	**20796FIL**
MB-SL 32	OSP-P32	29	60	60	925	790	3.82	0.65	1.79	**20797FIL**
MB-SL 40	OSP-P40	50	110	110	1500	1200	5.16	0.78	2.34	**20798FIL**
MB-SL 50	OSP-P50	77	180	180	2000	1870	8.29	0.97	3.63	**20799FIL**
MB-SL 63	OSP-P63	120	260	260	2500	2900	13.31	1.47	4.97	**20800FIL**
MB-SL 80	OSP-P80	120	260	260	2500	2900	17.36	1.81	4.97	**20846FIL**

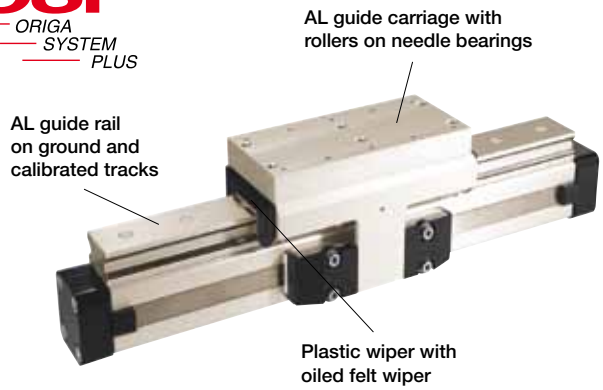
Multi-Brake
Passive Brake

with Aluminium Roller Guide Proline PL
Series MB-PL 25 to 50 for Linear Drive

Features:

- Brake operated by spring actuation
- Brake release by pressurisation
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideway
- Blocking function in case of pressure loss
- Intermediate stops possible

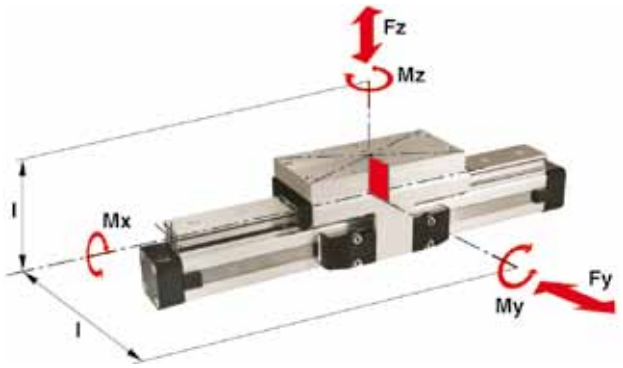
OSP ORIGA SYSTEM PLUS



Function:

The Multi-Brake is a passive device. When the air pressure is removed the brake is actuated and movement of the cylinder is blocked. The brake is released by pressurisation. The high friction, wear resistant brake linings allow the Multi-Brake to be used as a dynamic brake to stop cylinder movement in the shortest possible time. The powerful springs also allow the Multi-Brake to be used effectively in positioning applications.

Loads, Forces and Moments



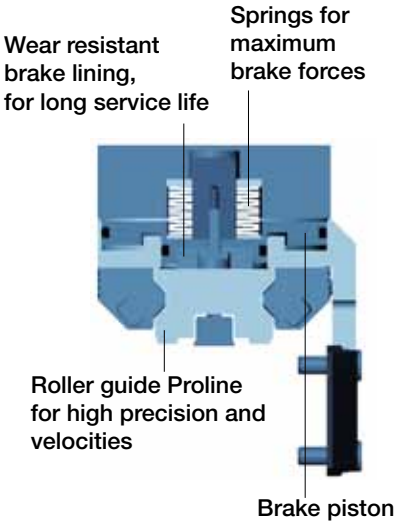
Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equasion applies:

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Ly}{Ly_{max}} + \frac{Lz}{Lz_{max}} \leq 1$$

The sum of the loads should not exceed >1.
With a load factor of less than 1, service life is 8000 km

Function



The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

Operating Pressure 4.5 - 8 bar. A pressure of min. 4.5 bar release the brake.

Series	For linear drive	Max. moments [Nm] Mx	My	Mz	Max. loads [N] Fy, Fz	Max. brake force [N] [1]	Mass of linear drive with guide [kg] with 0 mm stroke	increase per 100 mm stroke	Mass* guide carriage [kg]	Order No. – MB-PL Guide with passive brake without cylinder*
MB-PL25	OSP-P25	16	39	39	857	315	2.14	0.40	1.24	**20864FIL**
MB-PL32	OSP-P32	29	73	73	1171	490	4.08	0.62	2.02	**20865FIL**
MB-PL40	OSP-P40	57	158	158	2074	715	5.46	0.70	2.82	**20866FIL**
MB-PL50	OSP-P50	111	249	249	3111	1100	8.60	0.95	4.07	**20867FIL**

[1] Braking surface dry – oil on the braking surface will reduce the braking force

Linear Drive Accessories

(Mountings and Magnetic Switches)

Series OSP-P

Description	
Overview	
Clevis Mounting	
End Cap Mountings	
End Cap Mountings (for Linear Drives with guides)	
Mid-Section Support	
Mid-Section Support (for Linear Drives with guides)	
Inversion Mounting	See
Adaptor Profile	Catalogue
T-Slot Profile	P-A4P011GB
Connection Profile	
Duplex Connection	
Multiplex Connection	
Magnetic Switch, standard version	
Magnetic Switch for T-Nut mounting	
Magnetic Switch ATEX-version Ex	
Cable Cover	

Origa - Sensoflex

Displacement measuring system for automated movement

Series SFI-plus (Incremental measuring system)

Characteristics:

- Contactless magnetic displacement measurement system
- Displacement length up to 32 m
- Resolution 0.1 mm (option: 1 mm)
- Displacement speed up to 7 m/s
- For linear and non-linear rotary motion
- Suitable for almost any control or display unit with a counter input

The SFI-plus magnetic displacement measuring system consists of 2 main components.

- Measuring Scale
  Self-adhesive magnetic measuring scale
- Sensing Head
  Converts the magnetic poles into electrical signals which are then processed by counter inputs down stream

  (e.g. PLC, PC, digital counter)

ORIGA Pneumatic Linear Drives OSP-L

Very long lifetime and lowest leakage

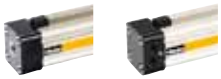
A NEW Modular Linear Drive System

With this second generation linear drive Parker Origa offers design engineers complete flexibility. The well known ORIGA cylinder has been further developed into a combined linear actuator, guidance and control package. It forms the basis for the new, versatile ORIGA SYSTEM PLUS linear drive system.

All additional functions are designed into modular system components which replace the previous series of cylinders.

- Completely modular design
- Compatible with the comprehensive ORIGA OSP system component range
- High loads and moments
- Space saving
- For a wide range of loads, speeds and motion profiles

Introduction – OSP Concept

Basic Linear Drive Standard Version • Series OSP-L	
Air Connection on the End-face or both at One End • Series OSP-L	
Integrated 3/2 Way Valves • Series OSP-L	
Clevis Mounting • Series OSP-L	
End Cap Mounting • Series OSP-L	
Mid-Section Support • Series OSP-L	
Inversion Mounting • Series OSP-L	

Duplex Connection • Series OSP-L	
Multiplex Connection • Series OSP-L	
Linear Guides – SLIDELINE • Series OSP-L	
Linear Guides – STARLINE • Series OSP-L	
Magnetic Switches • Series OSP-L	
Variable Stop VS • Series OSP-L with Linear Guide STL	

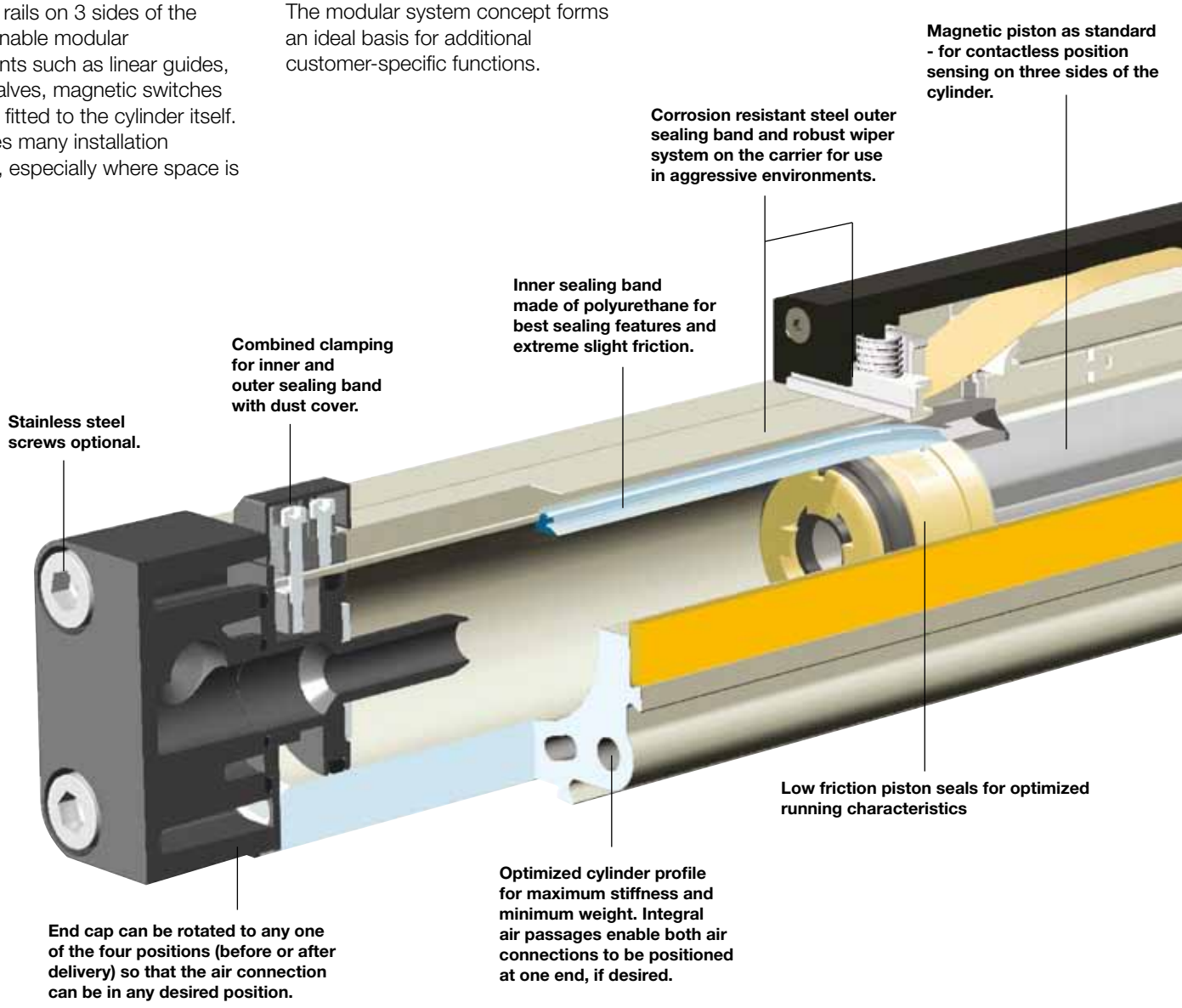
Origa System Plus
- Innovation from a proven design

The newly developed product line OSP-L can be simply and neatly integrated into any machine layout.

MOUNTING RAILS ON 3 SIDES

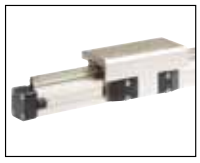
Mounting rails on 3 sides of the cylinder enable modular components such as linear guides, brakes, valves, magnetic switches etc. to be fitted to the cylinder itself. This solves many installation problems, especially where space is limited.

The modular system concept forms an ideal basis for additional customer-specific functions.

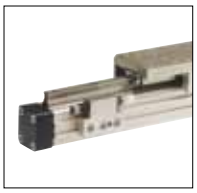


SLIDELINE
Cost-effective plain bearing guide for medium loads.

STARLINE
Recirculating ball bearing guide for very high loads and precision.

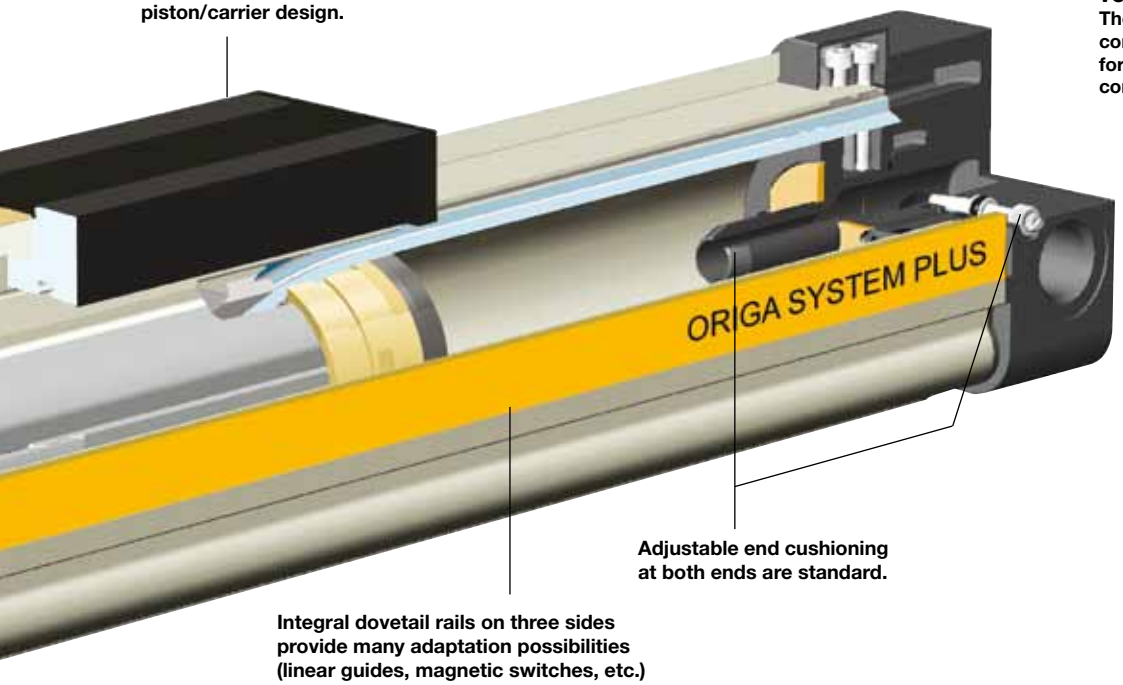


VARIABLE STOP VS
The variable stop provides simple stroke limitation.



INTEGRATED VOE VALVES
The complete compact solution for optimal cylinder control.

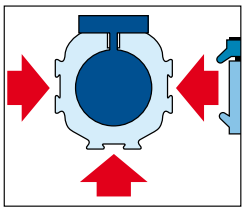
New low profile piston/carrier design.



Adjustable end cushioning at both ends are standard.

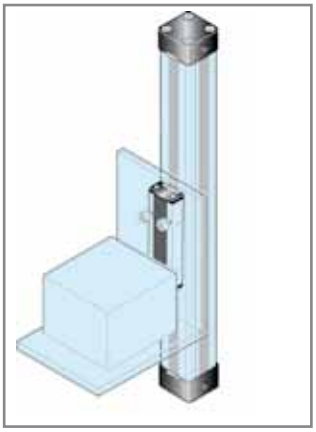
Integral dovetail rails on three sides provide many adaptation possibilities (linear guides, magnetic switches, etc.)

Modular system components are simply clamped on.

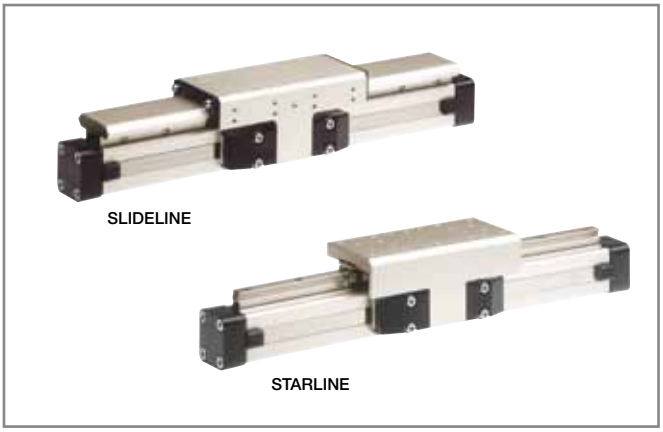


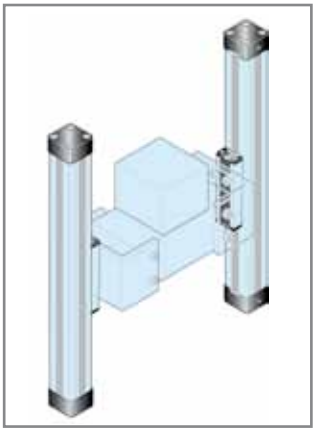
OSP-L Application examples

ORIGA SYSTEM PLUS – rodless linear drives offer maximum flexibility for any application.



The high load capacity of the piston can cope with high bending moments without additional guides.



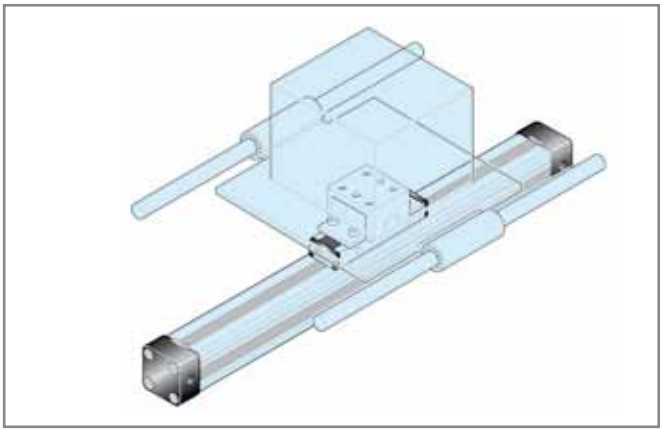


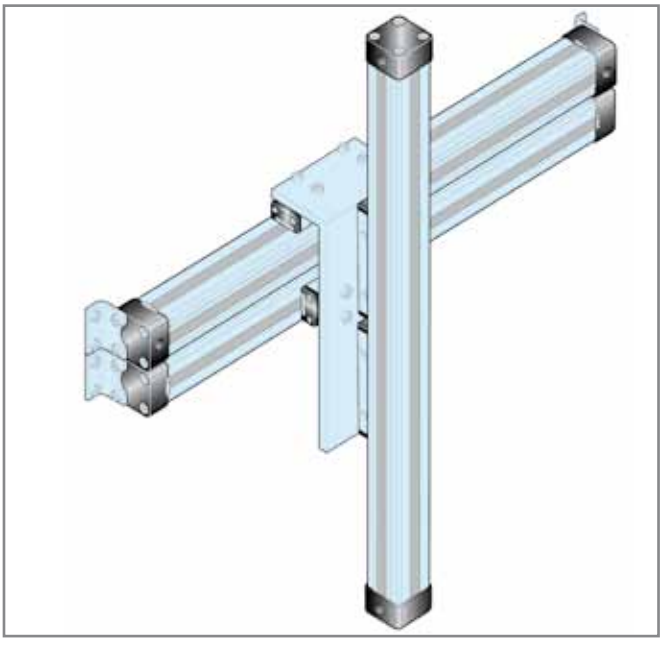
The mechanical design of the OSP-L allows synchronised movement of two cylinders.

Integrated guides offer optimal guidance for applications requiring high performance, easy assembly and maintenance free operation.

Optimal system performance by combining multi-axis cylinder combinations.

When using external guides, the clevis mounting is used to compensate for deviations in parallelism.





For further information and assembly instructions, please contact your local Parker Origa dealer.

Options and Accessories for system versatility

Series OSP-L

STANDARD VERSIONS OSP-L25 to L63

Standard carrier with integral guidance. End cap can be rotated 4 x 90° to position air connection on any side.
Magnetic piston as standard.
Dovetail profile for mounting of accessories and the cylinder itself.

BASIC CYLINDER OPTIONS

The special design of the linear drive enables all emissions to be led away.

STAINLESS VERSION

For use in constantly damp or wet environments. All screws are A2 quality stainless steel (material no.1.4301 / 1.4303)

END-FACE AIR CONNECTION

To solve special installation problems.

BOTH AIR CONNECTIONS AT ONE END

For simplified tubing connections and space saving.

INTEGRATED VOE VALVES

The complete compact solution for optimal cylinder control.

DUPLEX CONNECTION

The duplex connection combines two OSP-L cylinders of the same size into a compact unit with high performance.

MULTIPLEX CONNECTION

The multiplex connection combines two or more OSP-L cylinders of the same size into one unit.
The orientation of the carriers can be freely selected.

ACCESSORIES

MAGNETIC SWITCHES TYPE RS, ES, RST, EST

For electrical sensing of end and intermediate piston positions.

MOUNTINGS FOR OSP-L25 TO L63

CLEVIS MOUNTING

Carrier with tolerance and parallelism compensation for driving loads supported by external linear guides.

END CAP MOUNTING

For end-mounting of the cylinder.

MID-SECTION SUPPORT

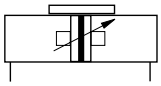
For supporting long cylinders or mounting the cylinder by its dovetail rails.

INVERSION MOUNTING

The inversion mounting transfers the driving force to the opposite side, e. g. for dirty environments.

Rodless Pneumatic Cylinder Ø 25-63 mm

OSP ORIGA SYSTEM PLUS



Standard Versions:

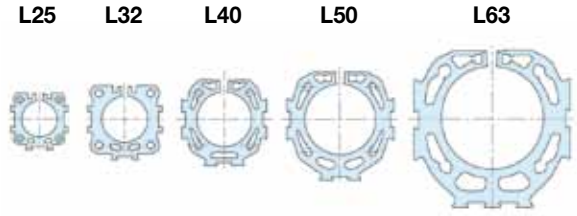
- Double-acting with adjustable end cushioning
- With magnetic piston for position sensing

Special Versions:

- Stainless steel screws
- Both air connections on one end
- Air connection on the end-face
- Integrated Valves VOE

- End cap can be rotated 4 x 90° to position air connection as desired
- Free choice of stroke length up to 6000 mm

Size Comparison



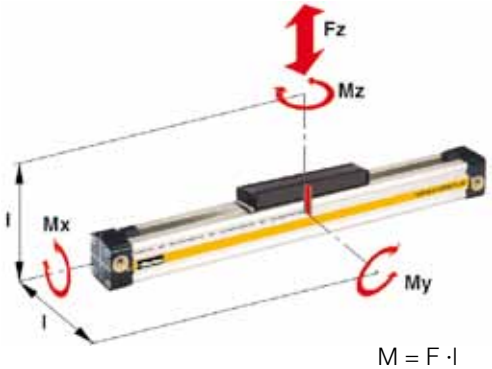
Characteristics		Description
General Features		
Type		Rodless cylinder
Series		OSP-L
System		Double-acting, with cushioning, position sensing capability
Mounting		See drawings
Air Connection		Threaded
Ambient	T_{min}	-20 °C Other temperature ranges
temperature range	T_{max}	+80 °C on request
Installation		In any position
Medium		Filtered, unlubricated compressed air (other media on request)
Lubrication		Permanent grease lubrication (additional oil mist lubrication not required)
Material		
Cylinder Profile		Anodized aluminium
Carrier (piston)		Anodized aluminium
End caps		Aluminium, lacquered
Sealing bands		Corrosion resistant steel (outer band)
Polyurethane (inner band)		
Seals		Polyurethane, NBR
Screws		Galvanized steel Option: stainless steel
Dust covers, wipers		Plastic
Max. operating pressure p_{max}		8 bar

Loads, Forces and Moments

Choice of cylinder is decided by:

- Permissible loads, forces and moments
- Performance of the pneumatic end cushions.

The main factors here are the mass to be cushioned and the piston speed at start of cushioning (unless external cushioning is used, e. g. hydraulic shock absorbers).



M = F ·l
Bending moments are calculated from the centre of the linear actuator

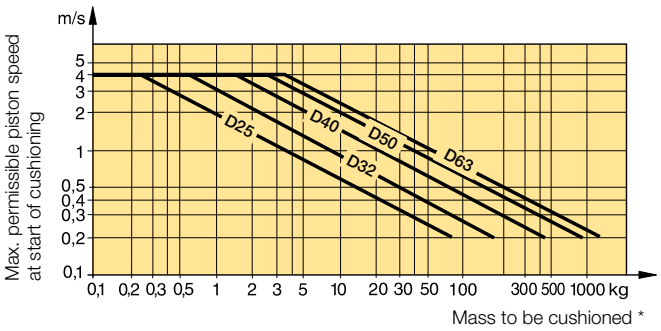
The adjacent table shows the maximum values for light, shock-free operation, which must not be exceeded even in dynamic operation. Load and moment data are based on speeds v ≤ 0.5 m/s.

When working out the action force required, it is essential to take into account the friction forces generated by the specific application or load.

Cylinder-Series [mm Ø]	Theoretical Action Force at 6 bar [N]	effektive Action Force F_A at 6 bar [N]	max. Moments Mx [Nm]	My [Nm]	Mz [Nm]	max. Load F [N]	Cushion Length [mm]
OSP-L25	295	250	1.5	15	3	300	17
OSP-L32	483	420	3	30	5	450	20
OSP-L40	754	640	6	60	8	750	27
OSP-L50			in progress				
OSP-L63							

Cushioning Diagram

Work out your expected moving mass and read off the maximum permissible speed at start of cushioning. Alternatively, take your desired speed and expected mass and find the cylinder size required.
Please note that piston speed at start of cushioning is typically ca. 50 % higher than the average speed, and that it is this higher speed which determines the choice of cylinder. If these maximum permissible values are exceeded, additional shock absorbers must be used.



* For cylinders with linear guides or brakes, please be sure to take the mass of the carriage or the brake housing into account.

Weight (mass) kg

Cylinder series (Basic cylinder)	Weight (Mass) kg At 0 mm stroke	per 100 mm stroke
OSP-L25	0.65	0.197
OSP-L32	1.44	0.354
OSP-L40	1.95	0.415
OSP-L50	in progress	
OSP-L63		

Integrated 3/2 Way Valves VOE

Series OSP-L25, L32, L40 and L50

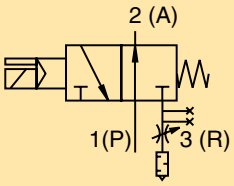
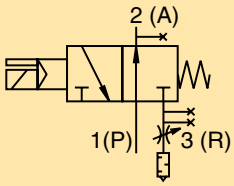
OSP ORIGA SYSTEM PLUS

For optimal control of the OSP-L cylinder, 3/2 way valves integrated into the cylinder's end caps can be used as a compact and complete solution. They allow for easy positioning of the cylinder, smooth operation at the lowest speeds and fast response, making them ideally suited for the direct control of production and automation processes.

Features:

- Complete compact solution
- Various connection possibilities:
  Free choice of air connection with rotating end caps with VOE valves, Air connection can be rotated 4 x 90°
- Solenoid can be rotated 4 x 90°,
- Pilot valve can be rotated 180°
- High piston velocities can be achieved with max. 3 exhaust ports
- Minimal installation requirements
- Requires just one air connection per valve
- Optimal control of the OSP-L cylinder
- Excellent positioning characteristics
- Integrated operation indicator
- Integrated exhaust throttle valve
- Manual override - indexed
- Adjustable end cushioning
- Easily retrofitted – please note the increase in the overall length of the cylinder!

Characteristics 3/2 Way Valves VOE

Characteristics	3/2 Way Valves with spring return			
Pneumatic diagram				
Type	VOE-25	VOE-32	VOE-40	VOE-50
Actuation	electrical			
Basic position	P → A open, R closed			
Type	Poppet valve, non overlapping			
Mounting	integrated in end cap			
Installation	in any position			
Port size	G 1/8	G 1/4	G 3/8	G 3/8
Temperature	-10°C to +50°C *			
Operating pressure	2-8 bar			
Nominal voltage	24 V DC / 230 V AC, 50 Hz			
Power consumption	2,5 W / 6 VA			
Duty cycle	100%			
Electrical Protection	IP 65 DIN 40050			

* other temperature ranges on request

Options

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	0	0	0

Piston-Ø

25
32
40
in progress
in progress

Version / Piston

0	standard
1	Tandem

Air Connection

0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Seals

0	standard

Lubrication

0	standard

Screws

0	standard
1	Stainless

Stroke

in mm (5 digits)

End cap position

0	l+r 0° = in front
1	l+r 90° = under-neath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Cushioning

0	standard
1	max. length

Piston Mounting

0	without
1	clevis mounting

Guides/ Brakes/ Inversion

0	without
M	Inversion Ø 16-80
N	Duplex Ø 25,32,40,50

add. Guide Carriage

0	without

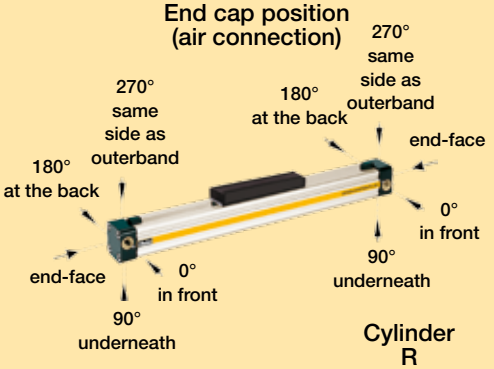
Cover / Cable Channel

0	standard
1	Cable channel
2	Cable channel two-sided

Measuring system

0	without

End cap position (air connection)



Cylinder L (left end side)

Cylinder R (right end side)

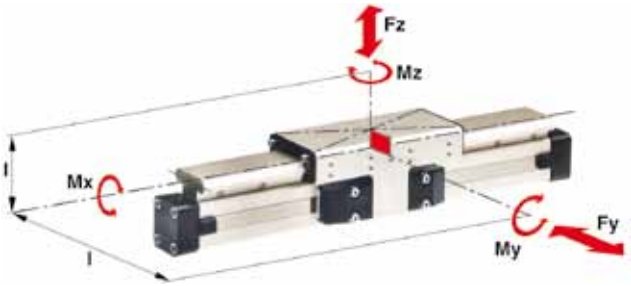
Plain Bearing Guide
SLIDELINE
Series SL 25 to 63 for Linear Drive

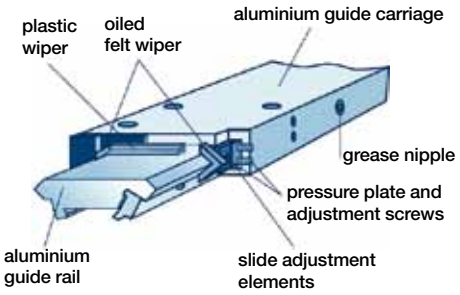
OSP
ORIGA
SYSTEM
PLUS

Features:

- Anodised aluminium guide rail with prism-shaped slideway arrangement
- Adjustable plastic slide elements
- Composite sealing system with plastic and felt wiper elements to remove dirt and lubricate the slideways
- Corrosion resistant version available on request
- Any length of stroke up to 5500 mm (longer strokes on request)

Loads, Forces and Moments





Technical Data

The table shows the maximum permissible values for smooth operation, which should not be exceeded even under dynamic conditions.

The load and moment figures apply to speeds v < 0.2 m/s.

* **Please note:**
In the cushioning diagram, add the mass of the guide carriage to the mass to be cushioned.

Series	For linear drive	Max. moments [Nm]			Max. loads [N]	Maximum braking force at 6 bar [N] [1] with	Mass of linear drive with guide [kg]		Mass * of guide carriage [kg]	Order No. SLIDELINE [2] Guide without cylinder
Mx	My	Mz	Fy, Fz		0 mm stroke		increase per 100 mm stroke			
SL 25	OSP-L25	14	34	34	675	325	1.55	0.39	0.61	**20342FIL**
SL 32	OSP-L32	29	60	60	925	545	2.98	0.65	0.95	**20196FIL**
SL 40	OSP-L40	50	110	110	1500	835	4.05	0.78	1.22	**20343FIL**
SL50	OSP-L50	in progress								
SL63	OSP-L63									

[1] Only with integrated brake: Braking force on dry oil-free surface Values are decreased for lubricated slideways
[2] Corrosion resistant fixtures available on request

Options

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	0	0	0

Piston-Ø

25
32
40
in progress
in progress

Version / Piston

0	standard
1	Tandem

Air Connection

0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Lubrication

0	standard

Seals

0	standard

Screws

0	standard
1	Stainless

Stroke

in mm (5 digits)

Cushioning

0	standard

Piston Mounting

0	without

End cap position

0	l+r 0° = in front
1	l+r 90° = under-neath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Guides/ Brakes/ Inversion

0	without
2	Slideline SL Ø 25-63

add. Guide Carriage

0	without
2	Guide Carriage Slideline SL Ø 25-63

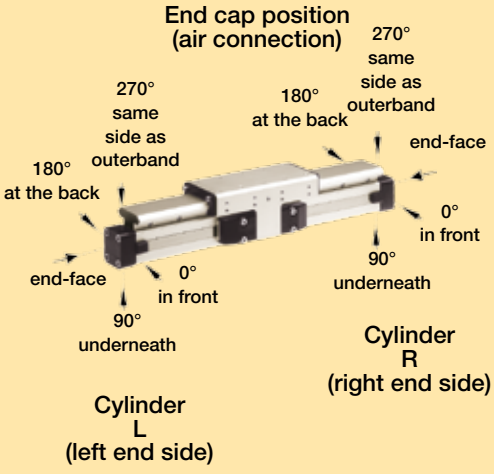
Cover / Cable Channel

0	standard
1	Cable channel
2	Cable channel two-sided

Measuring system

0	without

End cap position (air connection)



Cylinder L (left end side)

Cylinder R (right end side)

Recirculating Ball Bearing Guide STARLINE

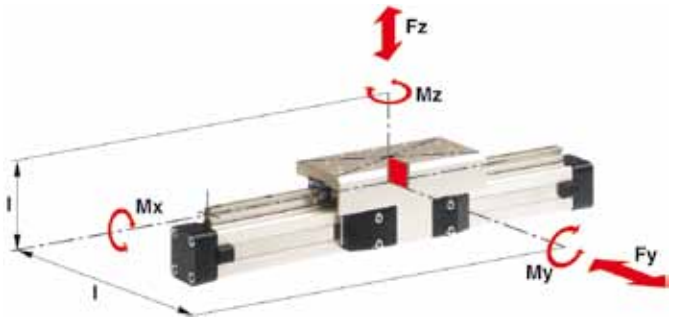
Series STL 16 to 50 for Linear Drive

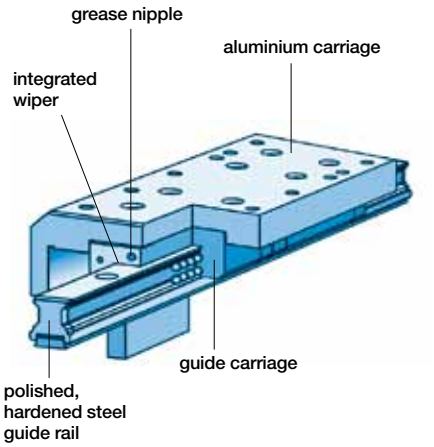
OSP
ORIGA
SYSTEM
PLUS

Features:

- Polished and hardened steel guide rail
- For very high loads in all directions
- High precision
- Integrated wiper system
- Integrated grease nipples
- Any length of stroke up to 3700 mm
- Anodized aluminium guide carriage
  – dimensions compatible with OSP guides SLIDELINE
- Installation height (STL25 - 32) compatible with OSP-L guides SLIDELINE
- Maximum speed
  STL25 to 50: v = 5 m/s

Loads, Forces and Moments





Technical Data

The table shows the maximal permissible loads. If multiple moments and forces act upon the cylinder simultaneously, the following equation applies:

$$\frac{Mx}{Mx_{max}} + \frac{My}{My_{max}} + \frac{Mz}{Mz_{max}} + \frac{Fy}{Fy_{max}} + \frac{Fz}{Fz_{max}} \leq 1$$

The sum of the loads should not exceed >1.

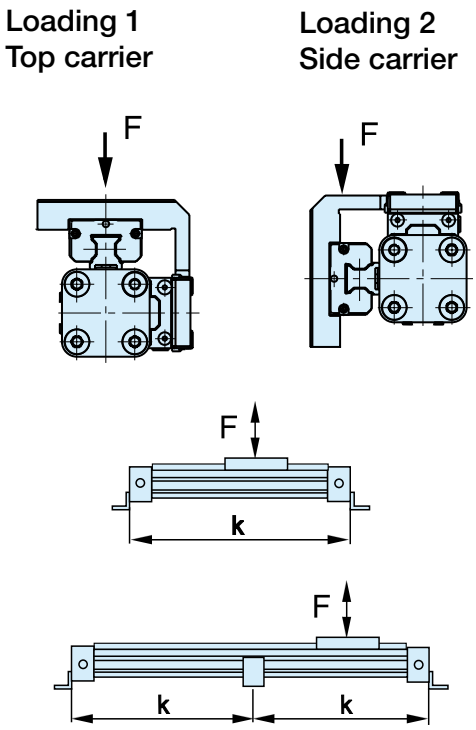
The table shows the maximum permissible values for light, shock-free operation, which must not be exceeded even under dynamic conditions.

* **Please note:**
The mass of the carriage has to be added to the total moving mass when using the cushioning diagram

Series	For linear drive	Max. moments [Nm]			Max. loads [N]		Mass of linear drive with guide [kg]		Mass ** guide carriage [kg]	Order No. STARLINE Guide without cylinder
		Mx	My	Mz	Fy	Fz	with 0 mm stroke	increase per 100 mm stroke		
STL25	OSP-L25	50	110	110	3100	3100	1.733	0.369	0.835	**21112FIL**
STL32	OSP-L32	62	160	160	3100	3100	2.934	0.526	1.181	**21113FIL**
STL40	OSP-L40	150	400	400	4000	7500	4.452	0.701	1.901	**21114FIL**
STL50	OSP-L50	in progress								

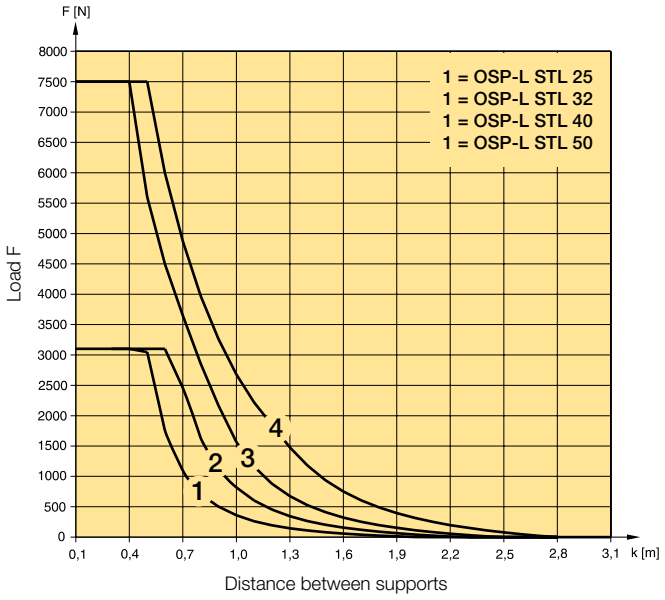
Mid-Section Support

Mid-section supports are required from a certain stroke length to prevent excessive deflection and vibration of the linear drive. The diagrams show the maximum permissible unsupported length in relation to loading. A distinction must be drawn between loading 1 and loading 2. Deflection of 0.5 mm max. between supports is permissible.



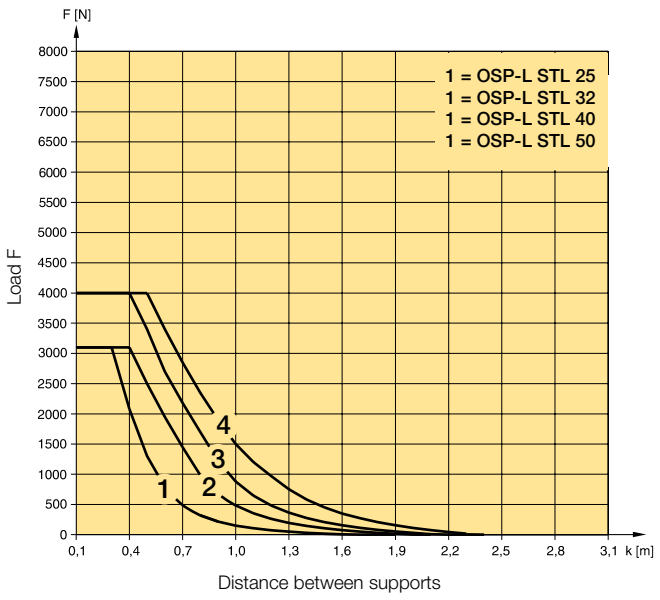
Permissible Unsupported Length STL25 to STL50

Loading 1 – Top carrier



Permissible Unsupported Length STL25 to STL50

Loading 2 – Side carrier

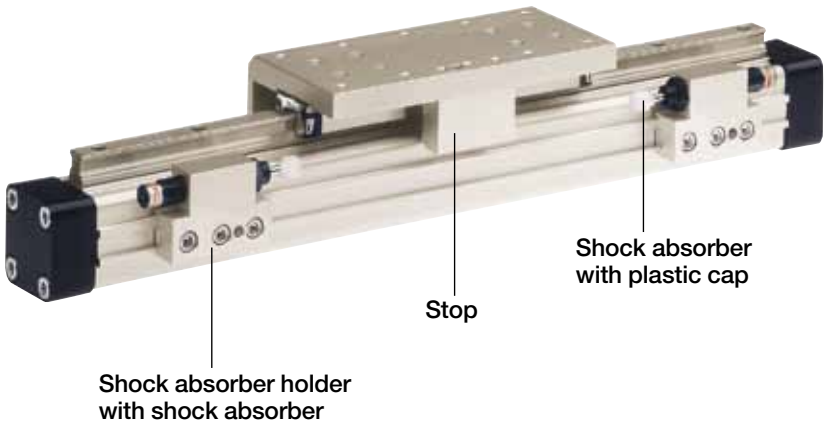


Note:
For speeds v > 0.5 m/s the distance between supports should not exceed 1 m.

Variable Stop

Type VS25 to VS50

Arrangement with two variable stops



The variable stop Type VS provides simple stroke limitation.
It can be retrofitted and positioned anywhere along the stroke length.
For every cylinder diameter two types of shock absorber are available – see „Shock Absorber Selection“ below.

Mid-section supports and magnetic switches can still be fitted on the same side as the variable stop.

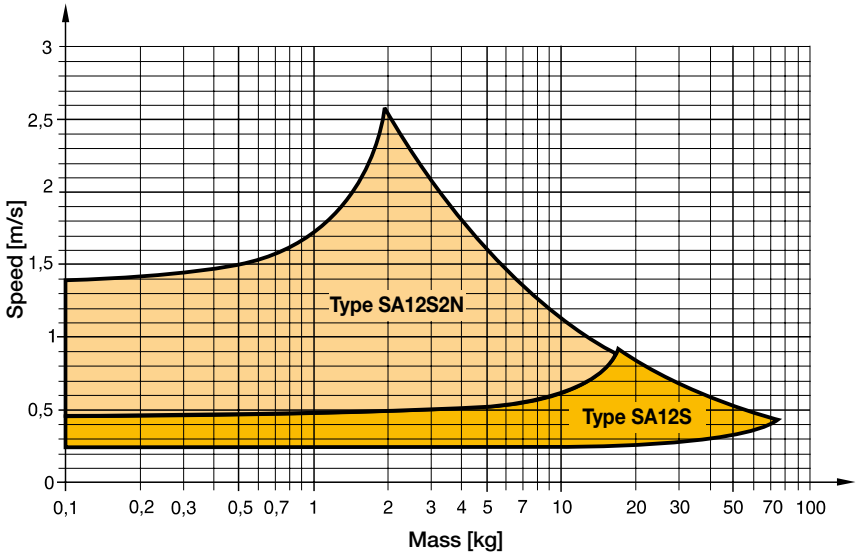
Depending on the application, two variable stops can be fitted if required.

Shock Absorber Selection

The shock absorber is selected in dependence on the mass and speed.

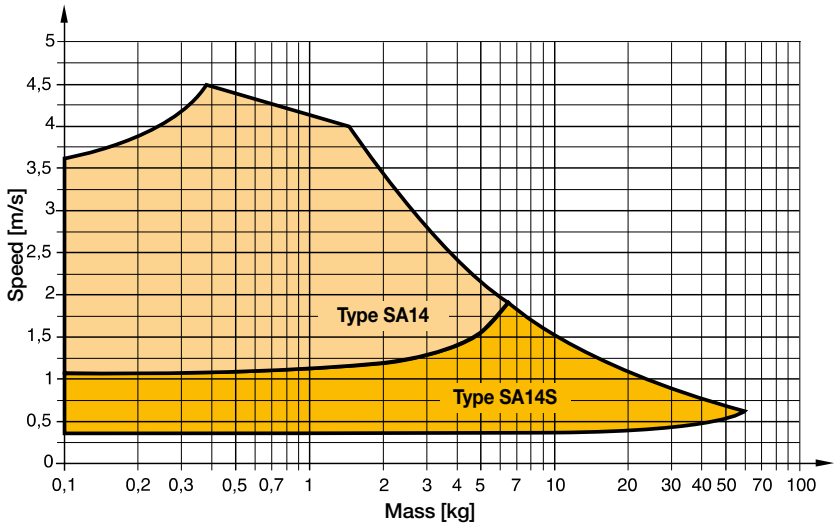
The mass of the carrier itself must be taken into account.

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL25



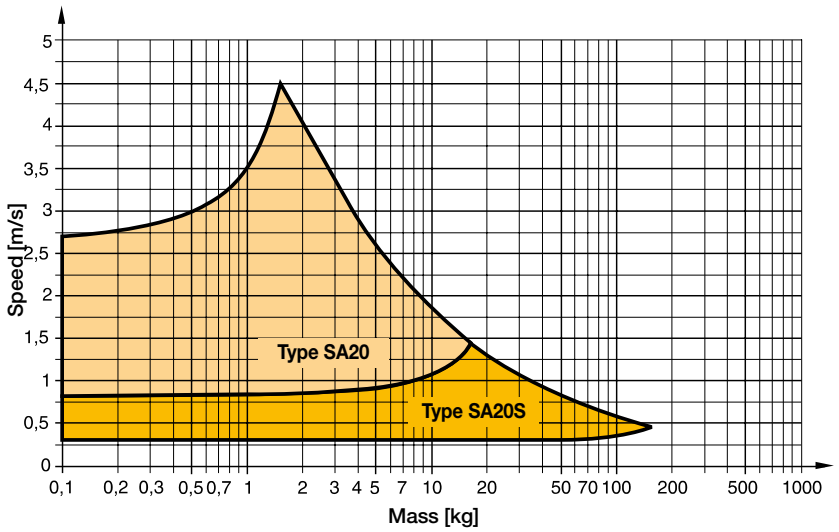
The values relate to an effective driving force of 250 N (6 bar)

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL32



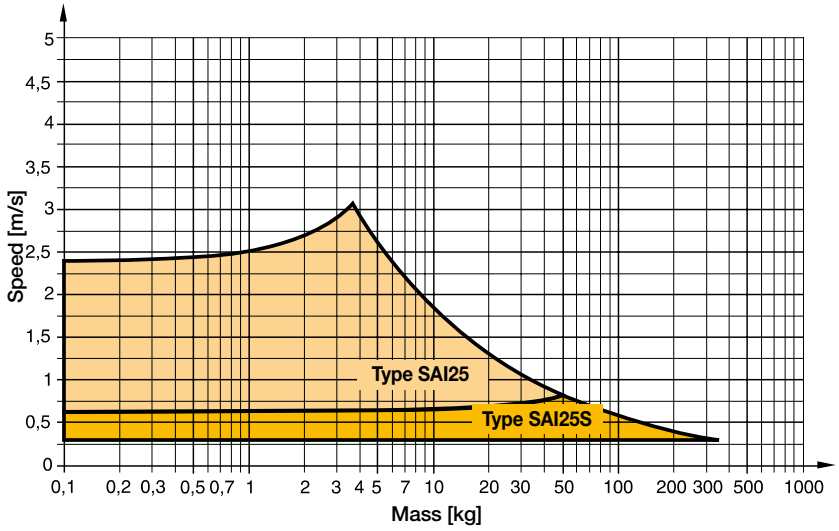
The values relate to an effective driving force of 420 N (6 bar)

Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL40



The values relate to an effective driving force of 640 N (6 bar)

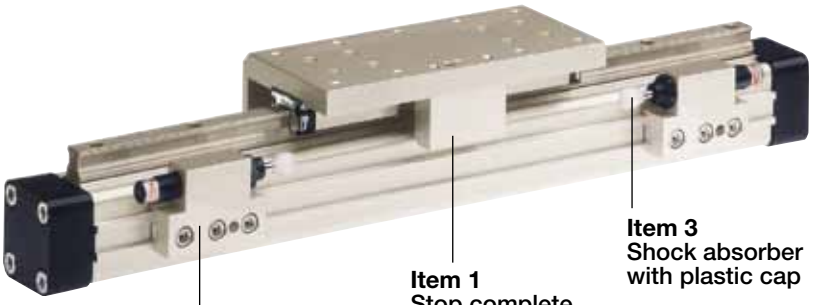
Shock Absorber Selection in Dependence on Mass and Speed for Series OSP-L-STL50



The values relate to an effective driving force of 1000 N (6 bar)

Variable Stop

Type VS25 to VS50



Order Instructions – Variable Stop Type VS25 to VS50

without cylinder and without guide

Item	Description	Size							
		VS25		VS32		VS40		VS50	
		Type	Order-No.	Type	Order-No.	Type	Order-No.	Type	Order-No.
1	Stop, complete	–	21197FIL	–	21198FIL	–	21199FIL	in progress	
2	Shock absorber holder complete	–	21202FIL	–	21203FIL	–	21204FIL		
3 *	Shock absorber, soft	SA12S2N	7723FIL	SA14	7708FIL	SA20	7710FIL		
	Shock absorber, hard	SA12S	7707FIL	SA14S	7709FIL	SA20S	7711FIL		

* Shock absorber with plastic cap

Options - STARLINE

1-4	5+6	7	8	9	10	11	12-16	17	18	19	20	21	22	23	24	25
OSPL	25	0	0	0	0	0	01100	0	0	0	0	0	0	0	0	0

Piston-Ø
- 25
- 32
- 40
- in progress

Version / Piston

0	standard
1	Tandem

Air Connection

0	standard
1	end face
2	both at one end
3	left standard right end face
4	right standard left end face
A	3/2 Way valve VOE 24 V = Ø 25,32,40,50
B	3/2 Way valve VOE 230 V~ / 110 V= Ø 25,32,40,50
C	3/2 Way valve VOE 48 V = Ø 25,32,40,50
E	3/2 Way valve VOE 110 V~ Ø 25,32,40,50

Lubrication

0	standard

Seals

0	standard

Screws

0	standard

Stroke
in mm (5 digits)

End cap position

0	l+r 0° = in front
1	l+r 90° = underneath
2	l+r 180° = at the back
3	l+r 270° = same side as outerband
4	l 90° = underneath; r 0° = in front
5	l 180° = at the back; r 0° = in front
6	l 270° = same side as outerband; r 0° = in front
7	l 0° = in front; r 90° = underneath
8	l 180° = at the back; r 90° = underneath
9	l 270° = same side as outerband; r 90° = underneath
A	l 0° = in front; r 180° = at the back
B	l 90° = underneath; r 180° = at the back
C	l 270° = same side as outerband; r 180° = at the back
D	l 0° = in front; r 270° = same side as outerband
E	l 90° = underneath; r 270° = same side as outerband
F	l 180° = at the back; r 270° = same side as outerband

Piston Mounting

0	without

Cushioning

0	standard
1	max. length
2	variable stop complete VS soft left for Starline
3	variable stop complete VS hard left for Starline,
4	variable stop complete VS soft right for Starline
5	variable stop complete VS hard right for Starline
6	variable stop complete VS soft both sides for Starline
7	variable stop complete VS hard both sides for Starline

Guides/ Brakes/ Inversion

0	without
B	Starline STL

add. Guide Carriage

0	without
B	Guide Carriage Starline STL

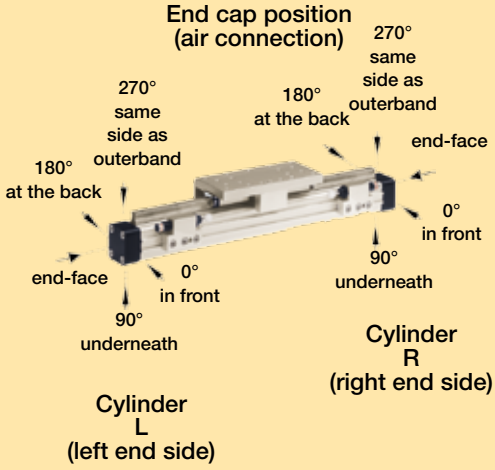
Measuring system

0	without

Cover / Cable Channel

0	standard
1	Cable channel
2	Cable channel two-sided

End cap position (air connection)



Magnetically coupled pneumatic cylinder P1Z ...

No leakage, with high magnetic coupling force

The P1Z is a rodless pneumatic cylinder with piston and carriage equipped with ring magnets.

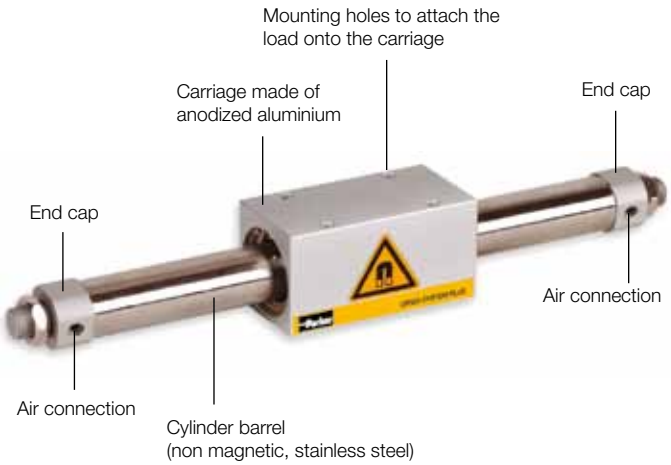
Motion is transmitted via the magnetic force locking between the piston and the carriage.

The guided version consists of a carriage fitted with 4 plain bearings, guided on 2 guide rods the design provides high rigidity, accurate guidance and a non rotating movement.

- Double acting with guide
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and Slide are pressure tight
- Pressure tight and leak free system
- With adjustable pneumatic end cushioning on both sides
- Carriage is free to rotate 360° around the cylinder axis
- Air connection at one end (option)
- Position sensing:
  Al-profile rail for magnetic switches (option).
  Magnetic switches available as reed switches or as electronic sensors (option).
- Various mounting arrangements

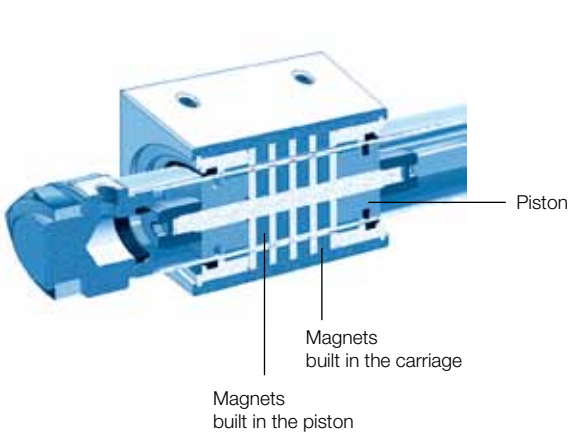
P1Z Series - Basic Version
Ø 16-40 mm

The P1Z is a rodless pneumatic cylinder. The piston and the carriage are equipped with ring magnets. The motion is transmitted via the magnetic force locking between the piston and the carriage.



Features:

- Double acting
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and carriage are pressure tight
- Pressure tight and leak free system
- Dirt and dust cannot enter
- With adjustable pneumatic end cushioning on both sides
- Carriage is free to rotate 360° around the cylinder axis
- Various mounting arrangements



Mounting and Technical Data
Basic Version

- The loads can be fitted onto the carriage by 4 tapped holes.
- The cylinder is mounted at the end caps with hexagonal nuts, flange or foot mountings.

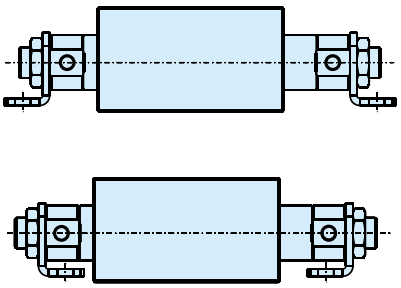
Materials

Cylinder barrel	Stainless steel
Carriage	Al, anodised
End cap	Al, anodised
Seals	NBR

With 2 hexagonal nuts to fix the cylinder (included in scope of delivery)

Flange mounting (pair) option

Foot mounting (pair) option



Technical Data

Piston diameter Ø [mm]	**16**	**20**	**25**	**32**	**40**
Max. stroke length [mm]	1000	1500	2000	2000	2000
Stroke tolerance [mm] up to 1000 mm	0/+1.5				
Stroke tolerance [mm] > 1000 mm	0/+2				
Temperature range [°C]	0 to 60				
Operating medium	Filtered compressed air, dry, lubricated or unlubricated * (other media on request)				
Air supply port size	M5	G1/8	G1/8	G1/8	G1/4
Max. magnetic coupling force [N]	157	236	383	703	942
Velocity range [m/s]	0.1 to 1.3				
Min. operating pressure [bar]	1.8				
Max. operating pressure [bar]	6.5	7			
Cushion length [mm]	9	15	15	12	19
Weight [kg]					
at 0 mm stroke	0.28	0.46	0.83	1.35	2.01
per 100 mm stroke	0.043	0.082	0.088	0.14	0.16

* if external lubrication is added, this must always be continued.

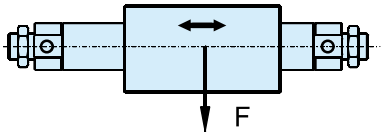
Loads, forces and moments Basic Version

If the operating conditions are outside of the permissible values, either the P1Z guided version or the P1Z in combination with an external guide should be used !

Forces [N]

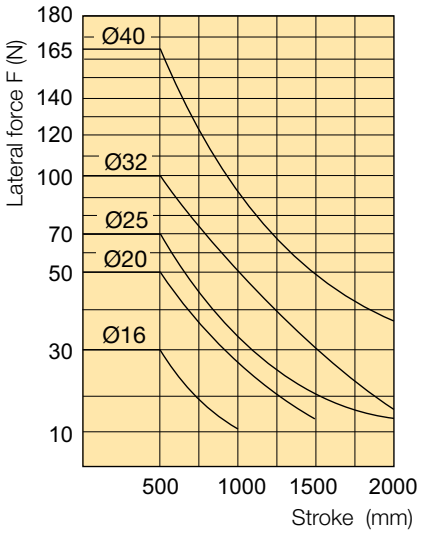
Piston (mm)	16	20	25	32	40
Theoretical force at 6 bar [N]	120	188	295	483	754
Max. magnetic coupling force [N]	157	236	383	703	942

Permissible lateral force, depending on the stroke length

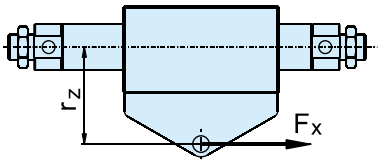


Ø (mm)	Permissible lateral force F [N]
16	30.0
20	50.0
25	70.0
32	100.0
40	165.0

The values are based on velocities v<= 0.4m/s



Permissible axial load, horizontal mounting

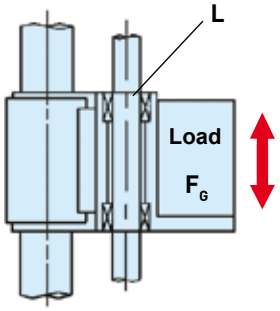


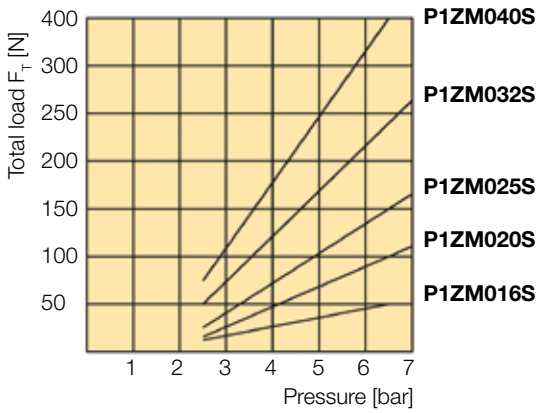
$M_y = F_x \times r_z$

Ø (mm)	Max. Moment My [Nm]
16	1.2
20	2.5
25	3.8
32	8.5
40	13.0

Dynamic forces must not exceed the maximum magnetic coupling force!

Permissible axial load, vertical mounting

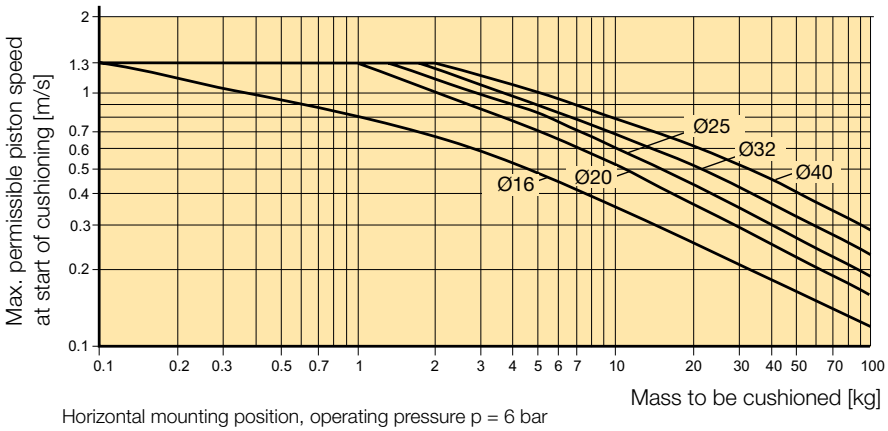




L = Weight of the external carriage
F_G = Load
F_T = Total load = Load F_G + Weight of the external carriage L + Force due to friction

Cushioning diagram

If the permitted limit values are exceeded, additional shock absorbers should be fitted in the area of the centre of gravity.



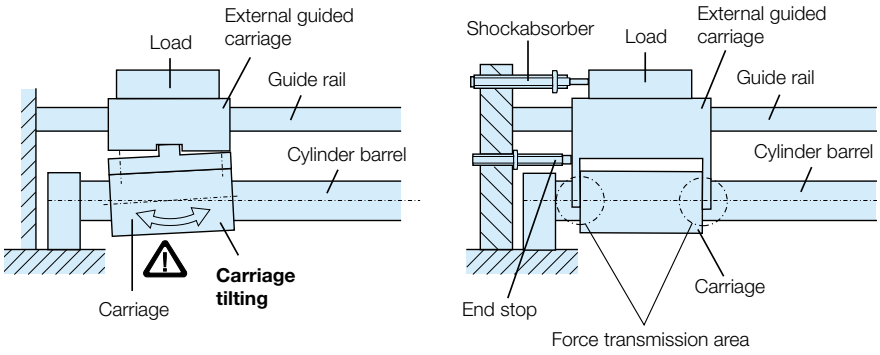
Horizontal mounting position, operating pressure p = 6 bar

Installation tips for use with external guides

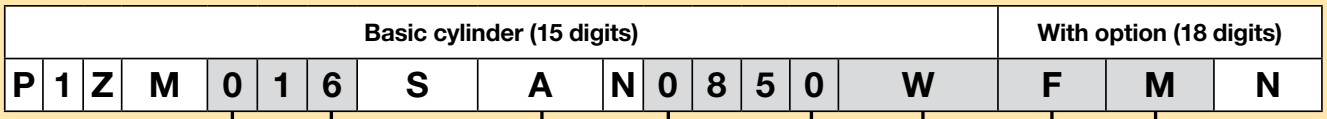
When stopping a load having a large inertia force at the stroke end, tilting of the carriage and damage to the bearings and cylinder barrel may occur (fig. left).

To prevent this, the force transmission should be realized at the middle axis of the cylinder.

The combination of the shock absorber with an end stop, can help to prevent the tilting of the carriage (fig. right).



Order Instructions - Basic Cylinder - Series P1Z



Piston diameter	
016	Ø 16 mm
020	Ø 20 mm
025	Ø 25 mm
032	Ø 32 mm
040	Ø 40 mm

Options	
B	without
W	with

End of stroke cushioning	
A	Pneumatically adjustable (Ø 16, 20, 25, 32 and 40 mm)

Mountings	
N	without
F	Foot mounting
L	Flange mounting

Stroke length	
max. stroke [mm]	**Piston Ø [mm]**
1000	Ø 16
1500	Ø 20
2000	Ø 25
2000	Ø 32
2000	Ø 40

Air supply port type	
M	Metric thread (Ø 16 mm)
B	G-thread (Ø 20 - 40 mm)
(Other types on request)	

Order code examples:

- **P1ZM016SAN0100B** Ø 16 mm, stroke 100 mm, supplied with hexagonal nuts on each end cap.
- **P1ZM020SAN1000WFBN** Ø 20 mm, stroke 1000 mm, with foot mounting at both end caps.

P1Z Series - Guided Version
Ø 16-40 mm

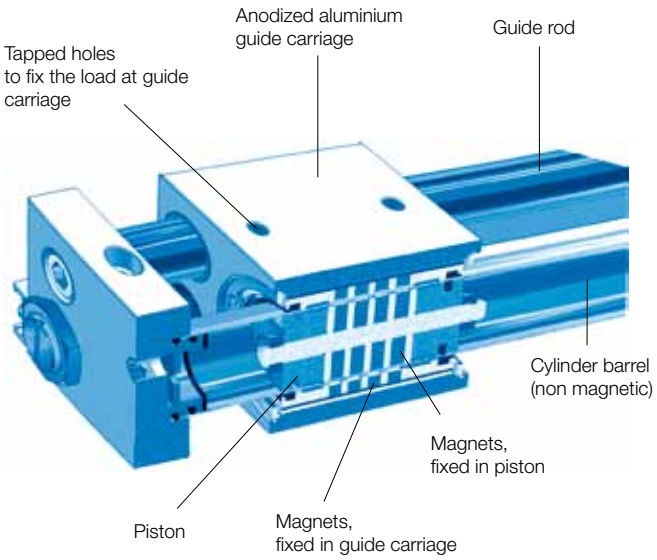
The P1Z is a rodless pneumatic cylinder with guide. The piston and the guide carriage are equipped with ring magnets.

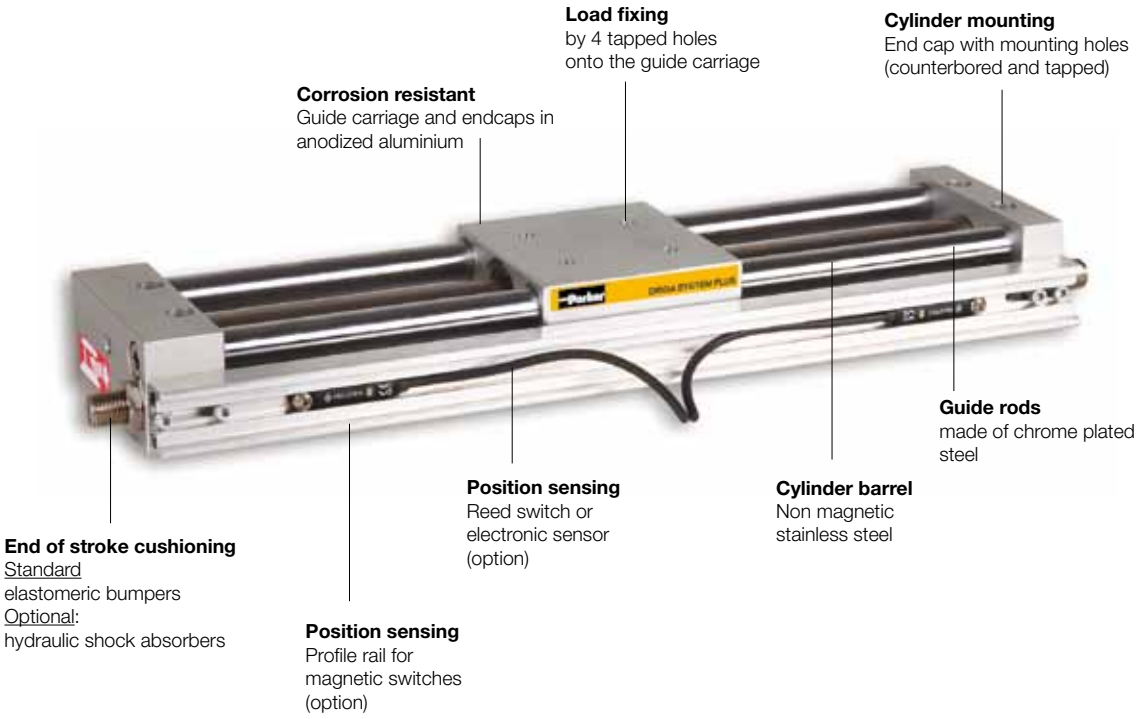
The motion is transmitted via the magnetic force between the piston and the guide carriage.

The guided version consists of a carriage fitted with 4 plain bearings, guided on 2 guide rods. The design provides high rigidity, accurate guidance and a non rotating movement.

Features:

- Double acting with guide
- Magnetically coupled without mechanical connection
- Mechanical protection in case of occasional overload due to magnetic uncoupling
- Piston chamber and Slide are pressure tight
- Pressure tight and leak free system
- Air connection at one end (option)
- End of stroke cushioning:
  with elastomeric bumpers (standard),
  with hydraulic shock absorbers (option)
- Position sensing:
  Al-profile rail for magnetic switches (option).
  Magnetic switches available as reed switches or as electronic sensors (option).





Mounting and Technical Data
Guided Version

The loads can be fixed onto the guide carriage by 4 tapped holes.

Cylinder mounting provided with 4 tapped and counterbored holes. Additional mountings are not required.

Materials

Cylinder barrel	Stainless steel
Carriage	Al, anodised
End cap	Al, anodised
Seals	NBR
Guide rods	Steel, chrome plated

Technical Data

Piston diameter Ø [mm]	**16**	**20**	**25**	**32**	**40**
Max. stroke length [mm]	750	1000	1500	1500	1500
Stroke tolerance [mm] up to 1000 mm	0/+1.5				
Stroke tolerance [mm] > 1000 mm	0/+2				
Temperature range [°C]	0 to 60				
Operating medium	Filtered compressed air, dry, lubricated or unlubricated * (other media on request)				
Air supply port size	M5	G1/8	G1/8	G1/8	G1/4
Max. magnetic coupling force [N]	157	236	383	703	942
Velocity range [m/s]	0.5 to 0.4				
Min. operating pressure [bar]	2.3	2			
Max. operating pressure [bar]	6.5	7			
Weight [kg]					
at 0 mm stroke	0.9	1.52	1.70	3.63	5.44
per 100 mm stroke	0.2	0.33	0.42	0.53	0.86

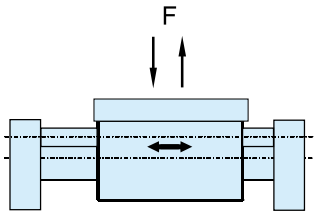
* if external lubrication is added, this must always be continued.

Loads, forces and moments Guided Version

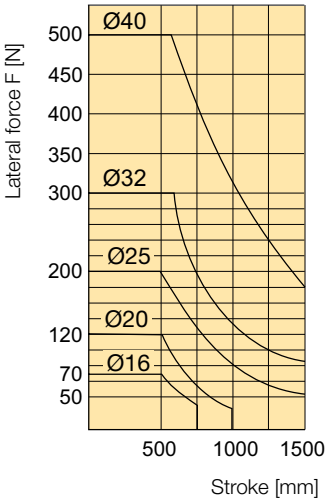
Forces [N]

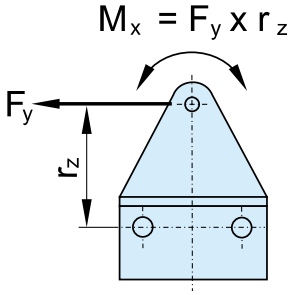
Piston (mm)	16	20	25	32	40
Theoretical force at 6 bar [N]	120	188	295	483	754
Max. magnetic coupling force [N]	157	236	383	703	942

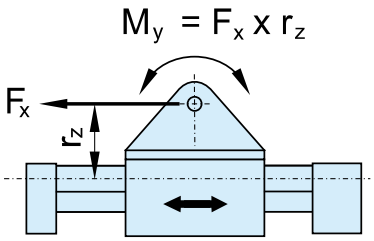
Permissible lateral force, depending on the stroke length

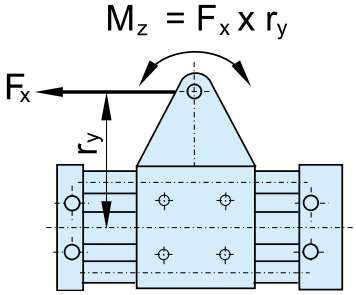


Ø (mm)	Max. Moment M_x [Nm]	Max. Moment M_y [Nm]	Max. Moment M_z [Nm]
16	0.5	2.4	2.4
20	1.0	5.0	5.0
25	1.8	9.5	9.5
32	3.0	15.0	15.0
40	4.5	24.0	24.0

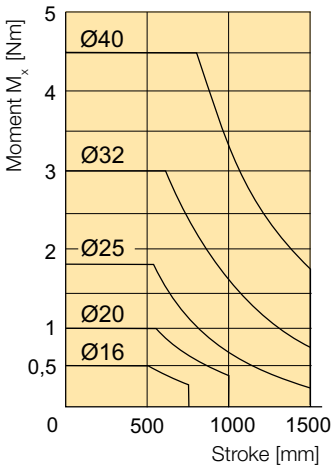








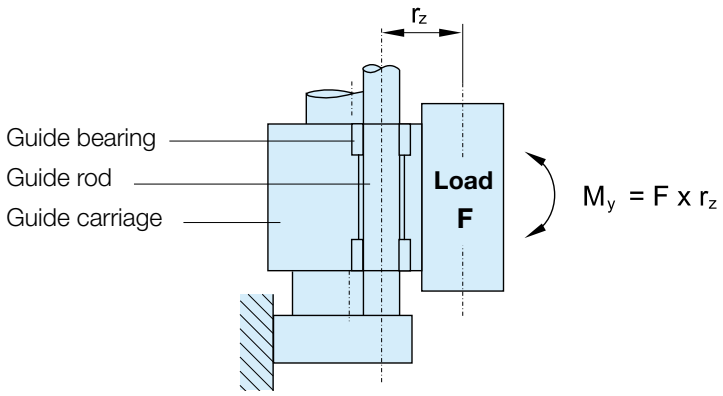
Permissible moment M_x depending on the stroke length



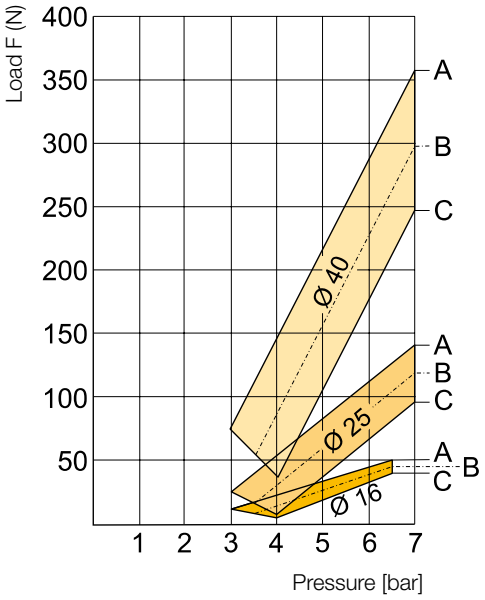
Dynamic forces must not exceed the maximum magnetic coupling force!

Permissible axial load, vertical mounting

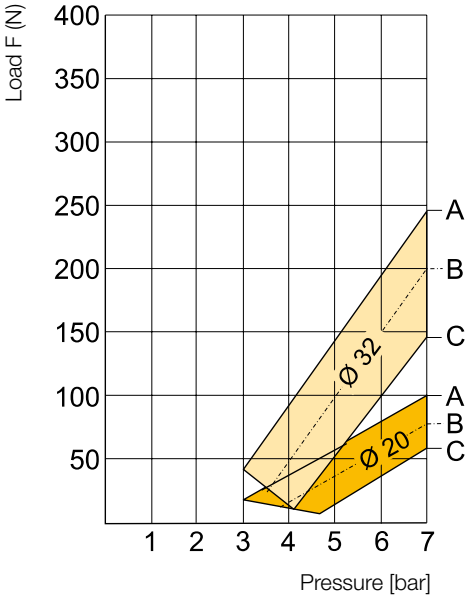
For vertical applications please refer to the values in the diagrams !



Cylinder Ø 16, 25, 40



Cylinder Ø 20, 32



Ø (mm)	Max. Load F [N]	B Max. Moment M_y / 2 [Nm]	C Max. Moment M_y [Nm]
16	50.0	1.2	2.4
20	100.0	2.5	5.0
25	140.0	4.75	9.5
32	240.0	7.5	15.0
40	360.0	12.0	24.0

A = curve at moment $\mathbf{M_y = 0}$

B = curve at moment $\mathbf{M_y/2}$ = see **column B**

C = curve at moment $\mathbf{M_{y\,max.}}$ = see **column C**

Series SA

SA 10N - for smaller effecitve masses
SA 10 SN - for intermediate effective masses
SA 10 S2N - for larger effective masses

Basic Version with:
- Integral stop collar
- 1 mounting nut
- Soft pad

Type: Non-adjustable

Accessories:
- Universal flange

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 10N	6.5	0.7	2.2	2.8	22500
SA 10SN	6.5	1.8	5.4	2.8	22500
SA 10S2N	6.5	4.6	13.6	2.8	22500

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.15 - 2.2
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	3 - 6
Max. deviation of impacting force from centre axis of shock absorber		±2°
Weight (mass)	kg	0.020
Min. mounting strength required	N	1080[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

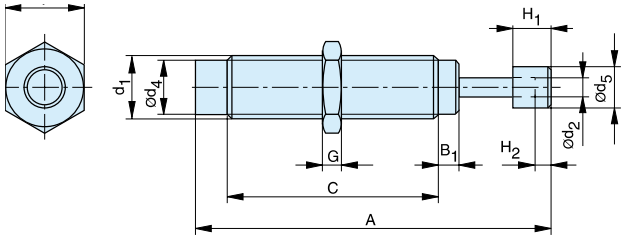
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

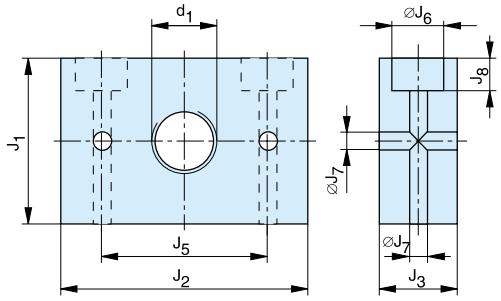
Product	Order Instructions Type	Order No.
Shock absorber for smaller effective masses	SA 10N	**7717FIL**
Shock absorber for intermediate effective masses	SA 10 SN	**7718FIL**
Shock absorber for larger effective masses	SA 10 S2N	**7721FIL**
Additional mounting nut	LN 10	**7909FIL**
Universal flange	UM 10	**7902FIL**

Dimensions (mm) – Shock Absorbers

Type: SA 10N, SA 10 SN, SA 10 S2N



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B_1	C	d_1	ød_2	ød_4	ød_5	F	G	H_1	H_2	J_1	J_2	J_3	J_5	øJ_6	øJ_7	J_8
57.6	5.0	33.0	M10x1	3.2	8.4	7.6	12.0	4	8.0	3.0	25.4	38	12	25.4	8	4.5	5

Series SA

SA 12N - for smaller effecitve masses
SA 12 SN - for intermediate effective masses
SA 12 S2N - for larger effective masses

Basic Version with:
- Integral stop collar
- 1 mounting nut
- Soft pad

Type: Non-adjustable

Accessories:
- Universal flange

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 12N	10	0.3	1.1	9.0	28200
SA 12SN	10	0.9	4.8	9.0	28200
SA 12S2N	10	2.7	36.2	9.0	28200

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.15 - 5
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	4 - 9
Max. deviation of impacting force from centre axis of shock absorber		±2°
Weight (mass)	kg	0.030
Min. mounting strength required	N	2250[1)]
Materials		
Body	Steel, black oxide finish	
Piston Rod	Steel, hardened, ground, hard-chrome plated	
Accessories	Steel, black oxide finish or aluminium, anodized	

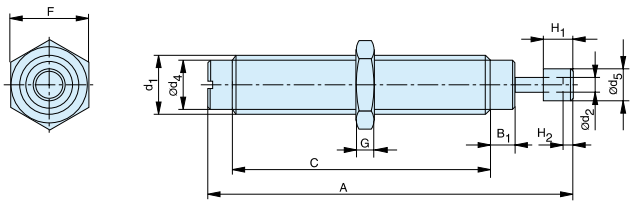
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

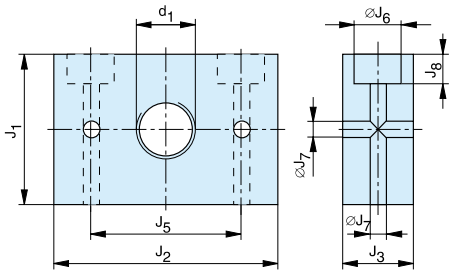
Product	Order Instructions Type	Order Code
Shock absorber for smaller effective masses	SA 12N	**7719FIL**
Shock absorber for intermediate effective masses	SA 12 SN	**7722FIL**
Shock absorber for larger effective masses	SA 12 S2N	**7723FIL**
Additional mounting nut	LN 12	**7919FIL**
Universal flange	UM 12	**7912FIL**

Dimensions (mm) – Shock Absorbers

Type: SA 12N, SA 12 SN, SA 12 S2N



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B	B_1	C	d_1	$ød_2$	$ød_4$	$ød_5$	F	G	H_1	H_2	J_1	J_2	J_3	J_5	$øJ_6$	$øJ_7$	J_8
67	10	3.0	44	M12x1	3.2	10.4	7.6	14.0	5	8.0	3	25.4	38	12	25.4	8	4.5	5

Series SA

SA 14 - for smaller effecitve masses
SA 14 S - for intermediate effective masses
SA 14 S2 - for larger effective masses

Basic Version with:
- Integral stop collar
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Universal flange
- Soft pad

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 14N	12.5	0.9	10	17	34000
SA 14S	12.5	8.6	86	17	34000
SA 14S2	12.5	68	205	17	34000

Technical Data

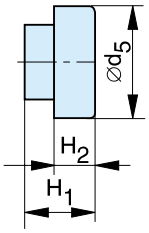
Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	4 - 7
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	0.125
Min. mounting strength required	N	3400[1)]
Materials		
Body	Steel, black oxide finish	
Piston Rod	Steel, hardened, ground, hard-chrome plated	
Accessories	Steel, black oxide finish or aluminium, anodized	

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

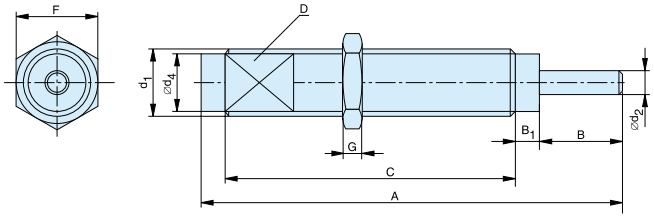
Product	Order Instructions Type	Order No.
Shock absorber for smaller effective masses	SA 14	**7920FIL**
Shock absorber for intermediate effective masses	SA 14 S	**7927FIL**
Shock absorber for larger effective masses	SA 14 S2	**7928FIL**
Soft pad	SP 14	**7924FIL**
Additional mounting nut	LN 14	**7929FIL**
Universal flange	UM 14	**7922FIL**

Dimensions (mm) – Soft Pad

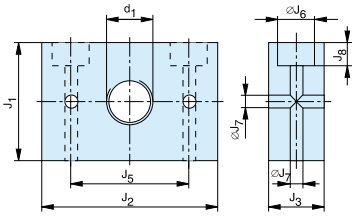


Dimensions (mm) – Shock Absorbers

Type: SA 14, SA 14 S, SA 14 S2



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B	B_1	C	D	d_1	ød_2	ød_4	ød_5	F	G	H_1	H_2	J_1	J_2	J_3	J_5	øJ_6	øJ_7	J_8
87	12	4	61	12	M14x1,5[1)]	4.8	12	11.9	17	5	10.9	6.9	29	45	16	35	8	4.5	5

[1)] Option: M14x1 thread (d_1)

Series SA

SA 20 - for smaller effecitve masses
SA 20 S - for intermediate effective masses
SA 20 S2- for larger effective masses

Basic Version with:
- Integral stop collar
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Universal flange
- Soft pad

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 20	12.5	2.3	25	25	45000
SA 20S	12.5	23	230	25	45000
SA 20S2	12.5	182	910	25	45000

Technical Data

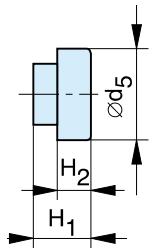
Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	6 - 10
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	0.176 (Type SA20)
	kg	0.207 (Type SA20x25)
Min. mounting strength required	N	5000[1)]
Materials		
Body	Steel, black oxide finish	
Piston Rod	Steel, hardened, ground, hard-chrome plated	
Accessories	Steel, black oxide finish or aluminium, anodized	

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

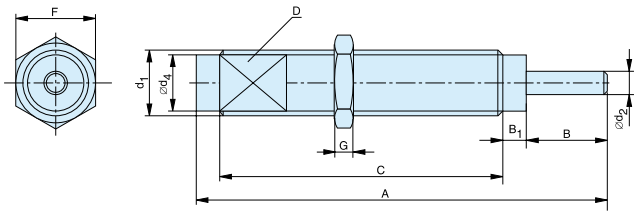
Product		Order Instructions Type	Order Code
Shock absorber for smaller effective masses	- stroke 12.5 mm	SA 20	**7930FIL**
Shock absorber for intermediate effective masses	- stroke 12.5 mm	SA 20 S	**7937FIL**
Shock absorber for larger effective masses	- stroke 12.5 mm	SA 20 S2	**7938FIL**
Soft pad		SP 20	**7934FIL**
Additional mounting nut		LN 20	**7939FIL**
Universal flange		UM 20	**7932FIL**

Dimensions (mm) – Soft Pad

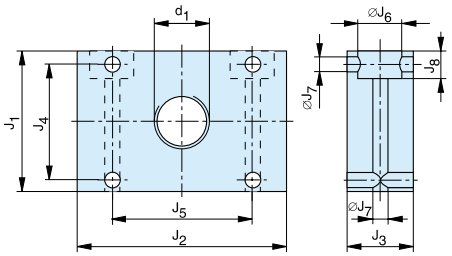


Dimensions (mm) – Shock Absorbers

Type: SA 20, SA 20 S, SA 20 S2



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

Type	A	B	B_1	C	D	d_1	ød_2	ød_4	ød_5	F	G	H_1	H_2	J_1	J_2	J_3	J_4	J_5	øJ_6	øJ_7	J_8
SA 20	89	12	5.6	61.7	17	M20x1.5	6.4	17	17	23.9	6	10.7	4.7	35	46	16	25.4	35	10.4	5.5	10.4
SA 20x25	140.5	24.6	5.6	100.3	17	M20x1.5	6.4	17	17	25.4	6	10.7	4.7	35	46	16	25.4	35	10.4	5.5	10.4

Series SA

SAI 25 - for smaller effecitve masses
SAI 25 S - for intermediate effective masses
SAI 25 S2 - for larger effective masses

Basic Version with:
- Integral stop collar
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Universal flange
- Soft pad

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SAI 25	25.4	9	136	68	68000
SAI 25S	25.4	113	1130	68	68000
SAI 25S2	25.4	400	2273	68	68000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	19 - 37
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	0.327
Min. mounting strength required	N	6700[1)]

Materials

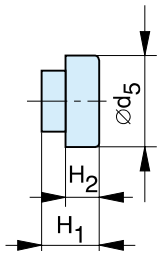
Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

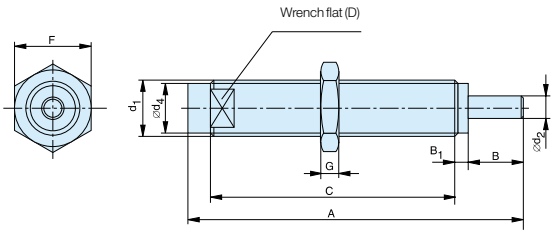
Product	Order Instructions Type	Order No.
Shock absorber for smaller effective masses	SAI 25	**7834FIL**
Shock absorber for intermediate effective masses	SAI 25 S	**7835FIL**
Shock absorber for larger effective masses	SAI 25 S2	**7836FIL**
Soft pad	SP-25	**7837FIL**
Additional mounting nut	LN-25	**7959FIL**
Universal flange	UM-25	**7952FIL**

Dimensions (mm) – Soft Pad

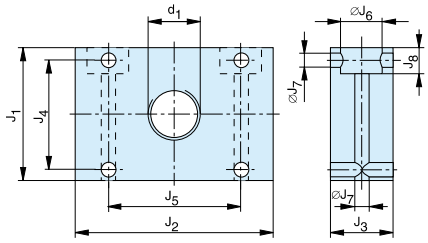


Dimensions (mm) – Shock Absorbers

Type: SAI 25, SAI 25 S, SAI 25 S2



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B	B_1	C	D	d_1	$ød_2$	$ød_4$	$ød_5$	F	G	H_1	H_2	J_1	J_2	J_3	J_4	J_5	$øJ_6$	$øJ_7$	J_8
149.1	24.6	4.6	107.2	22	M25x1.5[1)]	7.9	22.4	22.3	30	8	11	4.7	35	47	16	25.5	35	10.4	5.5	10.4

[1)] Option: M27x3 on request

Series SA

SA 33x25
SA 33x50 - for smaller effecitve masses

SA 33Sx25 - for intermediate effective masses

SA 33 S2 x25
SA 33 S2 x50 - for larger effecitve masses

SA 33 S3 x25
SA 33 S3 x50 - for high effecitve masses

Basic Version with:
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Soft pad
- Rectangular flange
- Foot mounting
- Stop collar

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 33x25	25.4	9	40	153	75000
SA 33Sx25	25.4	30	120	153	75000
SA 33S2x25	25.4	100	420	153	75000
SA 33S3x25	25.4	350	1420	153	75000
SA 33x50	50.8	18	70	305	85000
SA 33S2x50	50.8	210	840	305	85000
SA 33S3x50	50.8	710	2830	305	85000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.15 - 5
Operating temperature range	°C	-12 to +70
Installation		In any position
Force of internal return spring	N	on request [1]
Max. deviation of impacting force from centre axis of shock absorber		Type SA33...-25 - 4° Type SA33...-50 - 3°
Weight (mass)	kg	Type SA33...-25 - 0.45
	kg	Type SA33...-50 - 0.54
Min. mounting strength required	N	on request [1]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

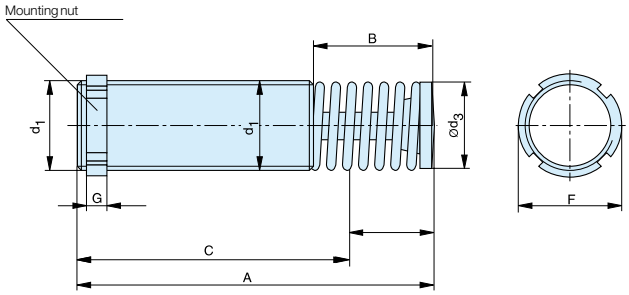
[1] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

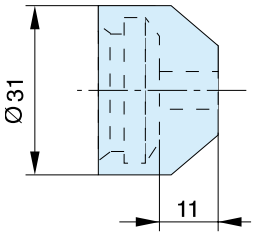
Product		Order Instructions Type	Order Code
Shock absorber for smaller effective masses	- stroke 25.4 mm	SA 33x25	**8041FIL**
	- stroke 50.8 mm	SA 33x50	**8045FIL**
Shock absorber for intermediate effective masses	- stroke 25.4 mm	SA 33Sx25	**8042FIL**
	- stroke 50.8 mm	SA 33Sx50	**8046FIL**
Shock absorber for larger effective masses	- stroke 25.4 mm	SA 33S2x25	**8043FIL**
	- stroke 50.8 mm	SA 33S2x50	**8047FIL**
Shock absorber for high masses	- stroke 25.4 mm	SA 33S3x25	**8044FIL**
	- stroke 50.8 mm	SA 33S3x50	**8048FIL**
Stop collar option “a”	for rear mounting	SC1/2A	**7971FIL**
Stop collar option “b”	for front mounting	SC1/2B	**7977FIL**
Soft pad		SP1/2 20	**7974FIL**
Additional mounting nut		LN 1/2	**7979FIL**
Rectangular flange		RF1/2	**7972FIL**
Foot mounting		FM1/2	**7973FIL**

Dimensions (mm) – Shock Absorbers

Type: SA 33..x25, SA 33..x50

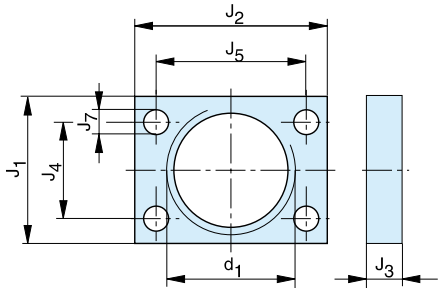


Dimensions (mm) Soft Pad

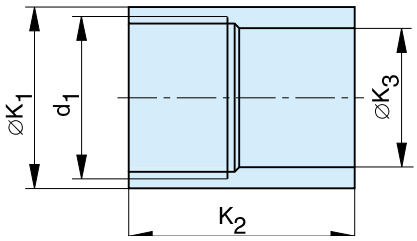


Note: Cannot be used with stop collar.

Dimensions (mm) – Rectangular Flange



Dimensions (mm) – Stop Collar

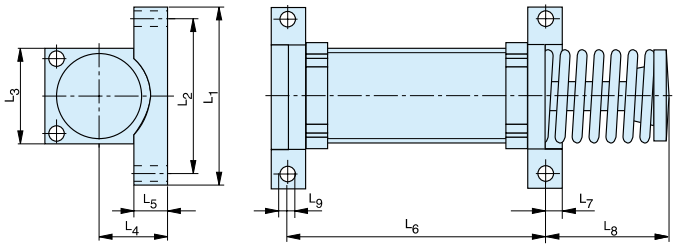


Option "a" and "b"

Option “a” - for rear mounting

Option “b” - for front mounting

Dimensions (mm) – Foot Mounting



Dimensions Table (mm)

Type	Stroke	A	B	C	d_1	$\varnothing d_3$	øF	G	$\varnothing d_5$	H_1	H_2	J_1	J_2	J_3	J_4	J_5
SA 33..x25	25.4	138	55	83	M33x1.5	25	39.6	6.5	31.8	19.1	11.2	38.1	50.8	9.7	28.7	41.4
SA 33..x50	50.8	189	81	108	M33x1.5	25	39.6	6.5	31.8	19.1	11.2	38.1	50.8	9.7	28.7	41.4

Type	$\varnothing K_1$	K_2a	K_2b	$\varnothing K_3$	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 33..x25	38.1	47.6	41.3	28.6	69.9	60.3	50.8	22.2	12.7	95.3	6.4	49.2	5.6
SA 33..x50	38.1	47.6	41.3	28.6	69.9	60.3	50.8	22.2	12.7	121	6.4	74.6	5.6

Series SA

SA 45x25
SA 45x50 - for smaller effecitve masses
SA 45x75

SA 45Sx25
SA 45Sx50 - for intermediate effective masses
SA 45Sx75

SA 45 S2 x25
SA 45 S2 x50 - for larger effecitve masses
SA 45 S2 x75

SA 45 S3 x25
SA 45 S3 x50 - for high effecitve masses
SA 45 S3 x75

Basic Version with:
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Soft pad
- Rectangular flange
- Foot mounting
- Stop collar

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 45x25	25.4	20	90	339	107000
SA 45Sx25	25.4	80	310	339	107000
SA 45S2x25	25.4	260	1050	339	107000
SA 45S3x25	25.4	890	3540	339	107000
SA 45x50	50.8	45	180	678	112000
SA 45Sx50	50.8	150	620	678	112000
SA 45S2x50	50.8	520	2090	678	112000
SA 45S3x50	50.8	1800	7100	678	112000
SA 45x75	76.2	70	270	1017	146000
SA 45Sx75	76.2	230	930	1017	146000
SA 45S2x75	76.2	790	3140	1017	146000
SA 45S3x75	76.2	2650	10600	1017	146000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.15 - 5
Operating temperature range	°C	-12 to +70
Installation		In any position
Force of internal return spring	N	on request [1]
Max. deviation of impacting force from centre axis of shock absorber		Type SA45...-25-4° Type SA45...-50-3° Type SA45...-75-2°
Weight (mass)	kg	Type SA45...-25-1.13 Type SA45...-50-1.36 Type SA45...-75-1.59
Min. mounting strength required	N	on request [1]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

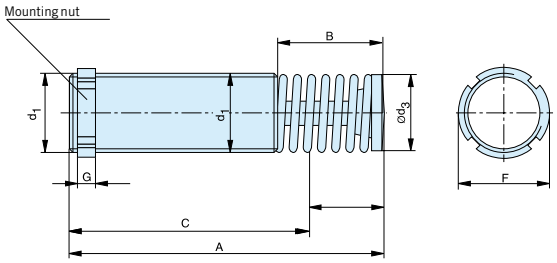
[1] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

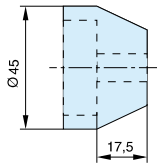
Product		Order Instructions Type **Code**	**Order**
Shock absorber for smaller effective masses	- stroke 25.4 mm	SA 45x25	**8049FIL**
	- stroke 50.8 mm	SA 45x50	**8053FIL**
	- stroke 76.2 mm	SA 45x75	**8057FIL**
Shock absorber for intermediate effective masses	- stroke 25.4 mm	SA 45Sx25	**8050FIL**
	- stroke 50.8 mm	SA 45Sx50	**8054FIL**
	- stroke 76.2 mm	SA 45Sx75	**8058FIL**
Shock absorber for larger effective masses	- stroke 25.4 mm	SA 45S2x25	**8051FIL**
	- stroke 50.8 mm	SA 45S2x50	**8055FIL**
	- stroke 76.2 mm	SA 45S2x75	**8059FIL**
Shock absorber for high masses	- stroke 25.4 mm	SA 45S3x25	**8052FIL**
	- stroke 50.8 mm	SA 45S3x50	**8056FIL**
	- stroke 76.2 mm	SA 45S3x75	**8060FIL**
Stop collar		SC ...	**on request**
Soft pad		SP..	**on request**
Additional mounting nut		LN..	**on request**
Rectangular flange		RF..	**on request**
Foot mounting		FM..	**on request**

Dimensions (mm) – Shock Absorbers

Type: SA 45..x25, SA 45..x50, SA45..x75

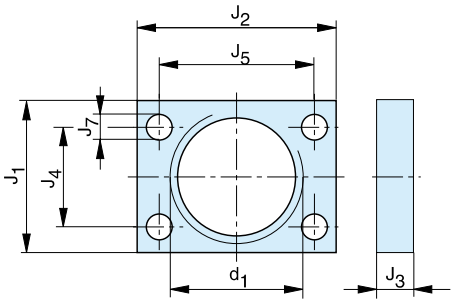


Dimensions (mm) Soft Pad

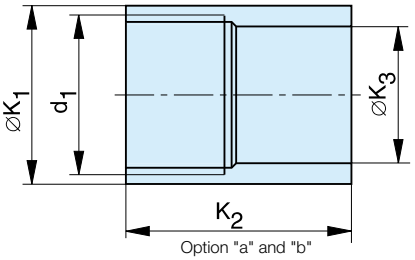


Note: Cannot be used with stop collar.

Dimensions (mm) – Rectangular Flange



Dimensions (mm) – Stop Collar

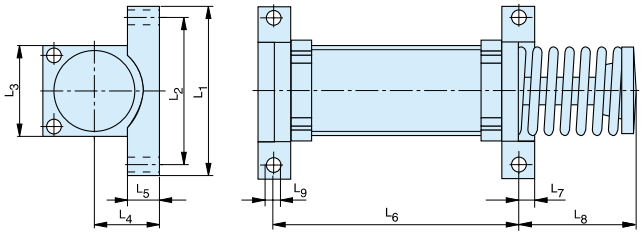


Option "a" and "b"

Option “a” - for rear mounting

Option “b” - for front mounting

Dimensions (mm) – Foot Mounting



Dimensions Table (mm)

Type	Stroke	A	B	C	d_1	$ød_3$	øF	G	$ød_5$	H_1	H_2	J_1	J_2	J_3	J_4	J_5
SA 45..x25	25.4	145	50	95	M45x1.5	35	55.6	9.5	44.5	25.4	17.5	57.2	76.2	12.7	41.4	60.5
SA 45..x50	50.8	195	75	120	M45x1.5	35	55.6	9.5	44.5	25.4	17.5	57.2	76.2	12.7	41.4	60.5
SA 45..x75	76.2	246	101	145	M45x1.5	35	55.6	9.5	44.5	25.4	17.5	57.2	76.2	12.7	41.4	60.5

Type	$øK_1$	K_2a	K_2b	$øK_3$	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 45..x25		on request			95.3	72.2	57.2	29.4	14.2	85.5	9.5	52.3	8.7
SA 45..x50		on request			95.3	72.2	57.2	29.4	14.2	111	9.5	77.7	8.7
SA 45..x75		on request			95.3	72.2	57.2	29.4	14.2	111	9.5	103	8.7

Series SA

SA 64x50
SA 64x100 - for smaller effecitve masses
SA 64x150

SA 64Sx50
SA 64Sx100 - for intermediate effective masses
SA 64Sx150

SA 64 S2 x50
SA 64 S2 x100 - for larger effecitve masses
SA 64 S2 x150

SA 64 S3 x50
SA 64 S3 x100 - for high effecitve masses
SA 64 S3 x150

Basic Version with:
- 1 mounting nut

Type: Non-adjustable

Accessories:
- Soft pad
- Rectangular flange
- Foot mounting
- Stop collar

Energy Capacity

Type	Stroke (mm)	Effective (kg)	Mass	Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 64x50	50.8	140	540	1695	146000
SA 64Sx50	50.8	460	1850	1695	146000
SA 64S2x50	50.8	1600	6300	1695	146000
SA 64S3x50	50.8	5300	21200	1695	146000
SA 64x100	101.6	270	1100	3390	192000
SA 64Sx100	101.6	930	3700	3390	192000
SA 64S2x100	101.6	3150	12600	3390	192000
SA 64S3x100	101.6	10600	42500	3390	192000
SA 64x150	150.1	410	1640	5084	248000
SA 64Sx150	150.1	1390	5600	5084	248000
SA 64S2x150	150.1	4700	18800	5084	248000
SA 64S3x150	150.1	16000	63700	5084	248000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.15 - 5
Operating temperature range	°C	-12 to +70
Installation		In any position
Force of internal return spring	N	on request
Max. deviation of impacting force from centre axis of shock absorber		Type SA64...-50 - 4° Type SA64...-100 - 3° Type SA64...-150 - 2°
Weight (mass)	kg	Type SA64...-50 - 2.90 Type SA64...-100 - 3.70 Type SA64...-150 - 5.10
Min. mounting strength required	N	on request[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

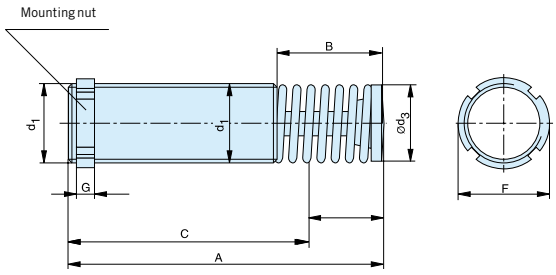
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

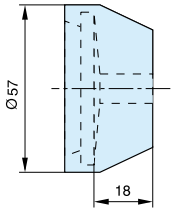
Product		Order Instructions Type	Order Code
Shock absorber for smaller effective masses	- stroke 50.8 mm	SA 64x50	8061FIL
	- stroke 101.6 mm	SA 64x100	8065FIL
	- stroke 152.4 mm	SA 64x150	8069FIL
Shock absorber for intermediate effective masses	- stroke 50.8 mm	SA 64Sx50	8062FIL
	- stroke 101.6 mm	SA 64Sx100	8066FIL
	- stroke 152.4 mm	SA 64Sx150	8070FIL
Shock absorber for larger effective masses	- stroke 50.8 mm	SA 64S2x50	8063FIL
	- stroke 101.6 mm	SA 64S2x100	8067FIL
	- stroke 152.4 mm	SA 64S2x150	8071FIL
Shock absorber for high masses	- stroke 50.8 mm	SA 64S3x50	8064FIL
	- stroke 101.6 mm	SA 64S3x100	8068FIL
	- stroke 152.4 mm	SA 64S3x150	8072FIL
Stop collar Option “a”	for rear mounting	SC 1-1/8A	7991FIL
for Type SA 64..x50 and SA 64..x100			
Stop collar Option “a”	for rear mounting	SC 1-1/8A	7891FIL
for Type SA 64..x150			
Stop collar Option “b”	for rear mounting	SC 1-1/8B	7997FIL
for Type SA 64..x50 and SA 64..x100			
Stop collar Option “b”	for rear mounting	SC 1-1/8B	7897FIL
for Type SA 64..x150			
Soft pad		SP 1-1/8	7994FIL
Additional mounting nut		LN 1-1/8	7999FIL
Square flange		SF 1-1/8	7998FIL
Foot mounting		FM 1-1/8	7993FIL

Dimensions (mm) – Shock Absorbers

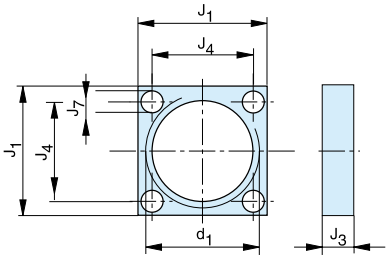
Type: SA 64..x50, SA 64..x100, SA 64..x150



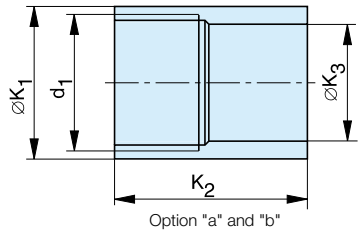
Dimensions (mm) – Soft Pad



Dimensions (mm) – Square Flange

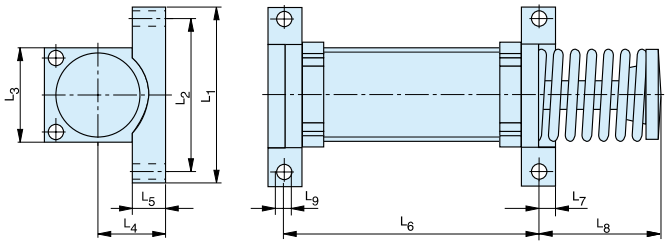


Dimensions (mm) – Stop Collar



Option “a” - for rear mounting
Option “b” - for front mounting

Dimensions (mm) – Foot Mounting



Dimensions Table (mm)

Type	Stroke	A	B	C	d_1	$ød_3$	øF	G	$ød_5$	H_1	H_2	J_1	J_2	J_3	J_4
SA 64..x50	50.8	225	85	140	M64x2	48	76	9.5	57.2	25.4	17.5	88.9	76.2	16	69.9
SA 64..x100	101.6	326	135	191	M64x2	48	76	9.5	57.2	25.4	17.5	88.9	76.2	16	69.9
SA 64..x150	150.1	450	209	241	M64x2	48	76	9.5	57.2	25.4	17.5	88.9	76.2	16	69.9

Type	$øK_1$	K_2a	K_2b	$øK_3$	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 64..x50	76.2	62.7	50	60.3	143	124	88.9	44.5	19.1	127	14.2	90	10.3
SA 64..x100	76.2	62.7	50	60.3	143	124	88.9	44.5	19.1	178	14.2	141	10.3
SA 64..x150	76.2	62.7	50	60.3	143	124	88.9	44.5	19.1	229	14.2	214	10.3

Series SA

SA 1/4 x 1/2N

Basic Version with:
- Integral stop collar
- 1 mounting nut

Type: Adjustable

Accessories:
- Universal flange
- Soft pad

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 1/4 x 1/2N	12.7	1	190	20	35000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 3.6
Operating temperature range	°C	0 to 65
Installation		In any position
Force of internal return spring	N	3 - 5
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	0.176
Min. mounting strength required	N	3900[1)]

Materials

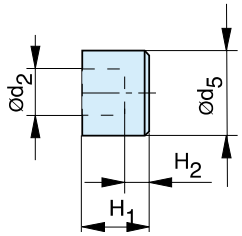
Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

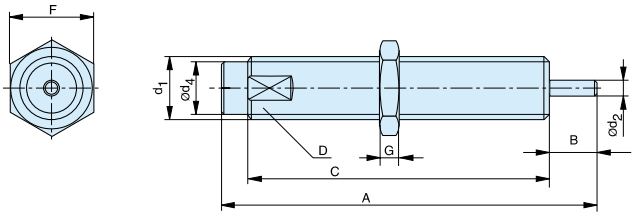
Product	Order Instructions Type	Order No.
Shock absorber	SA 1/4 x 1/2N	**7720FIL**
Additional mounting nut	LN20	**7939FIL**
Universal flange	UM20	**7932FIL**
Soft pad	SP-1/4 x 1/2N	**7724FIL**

Dimensions (mm) – Soft Pad

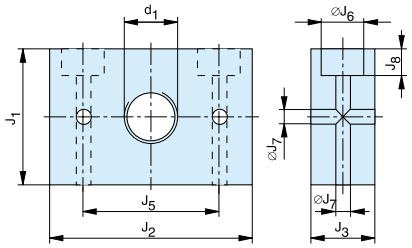


Dimensions (mm) – Shock Absorbers

Type: SA 1/4 x 1/2



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B	C	D	d_1	ød_2	ød_4	ød_5	F	G	H_1	H_2	J_1	J_2	J_3	J_4	J_5	øJ_6	øJ_7	J_8
86.7	17.7	62	17	M20x1,5	4.8	16.2	12	23	8	9.4	6	35	47	16	25.5	35	10	5.5	10.4

Series SA

SA 3/8 x 1D

Basic Version with:
- Front and rear adjustment
- 1 mounting nut

Type: Adjustable

Accessories:
- Stop collar
- Universal flange
- Soft pad

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 3/8 x 1D	25.4	4.5	546	70	68000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 65
Installation		In any position
Force of internal return spring	N	19 - 37
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	0.243
Min. mounting strength required	N	6900[1)]

Materials

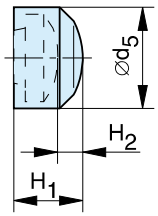
Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

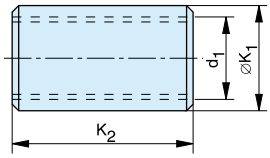
Order Instructions

Product	Order Instructions Type	Order No.
Shock absorber	SA 3/8 x 1D	**7840FIL**
Stop collar	SC 25 B	**7951FIL**
Soft pad	SP 25	**7954FIL**
Additional mounting nut	LN 25	**7959FIL**
Universal flange	UM 25	**7952FIL**

Dimensions (mm) - Soft pad

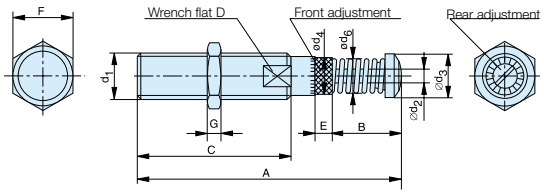


Dimensions (mm) - Stop collar

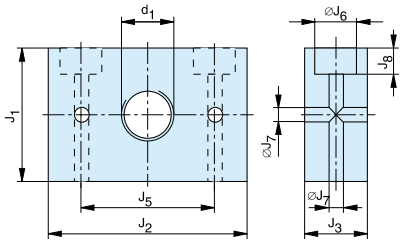


Dimensions (mm) – Shock Absorbers

Type: SA 3/8 x 1D



Dimensions (mm) – Universal Flange



Dimensions Table (mm)

A	B	C	D	d_1	$ød_2$	$ød_3$	$ød_4$	$ød_5$	$ød_6$	E	F	G	H_1	H_2	J_1	J_2	J_3
121.2	35.5	61.5	22	M25x1,5[2)]	7.9	19.9	22.7	22.1	18.5	12.7	30	8	12.2	6.4	35	47	16

J_4	J_5	$øJ_6$	$øJ_7$	J_8	$øK_1$	K_2
25.5	35	10	5.5	10	31.8	55.6

[2)] Option: M27x3 thread (d_1)

Series SALD

SALD 1/2 x 1M
SALD 1/2 x 2M

Basic Version with:
- Integral stop collar
- 1 mounting nut

Type: Adjustable

Accessories:
- Rectangular flange

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SALD 1/2 x 1 M	25.4	4.5	1360	170	85000
SALD 1/2 x 2 M	50.8	9.5	2720	340	98000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Force of internal return spring	N	SALD 1/2 x 1 M:36 - 82
		SALD 1/2 x 2 M:36 - 128
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	SALD 1/2 x 1 M: 0.751
		SALD 1/2 x 2 M: 0.922
Min. mounting strength required	N	13400[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

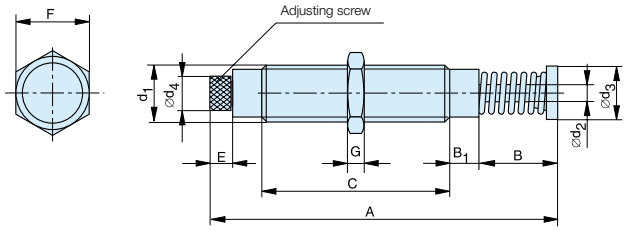
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

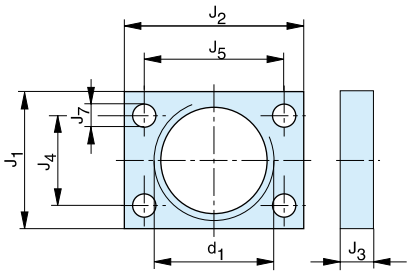
Product	Order Instructions Type	Order No.
Shock absorber, stroke 25.4 mm	SALD 1/2 x 1 M	**7841FIL**
Shock absorber, stroke 50.8 mm	SALD 1/2 x 2 M	**7842FIL**
Rectangular flange	RF 1/2-M	**7843FIL**
Additional mounting nut	LN 1/2-M	**7838FIL**

Dimensions (mm) – Shock Absorbers

Type: SALD 1/2 x 1M, SALD 1/2 x 2M



Dimensions (mm) – Rectangular Flange



Dimensions Table (mm)

Type	A	B	B_1	C	d_1	$\varnothing d_2$	$\varnothing d_3$	$\varnothing d_4$	E	F	G	J_1	J_2	J_3	J_5	$\varnothing J_6$	$\varnothing J_7$
SALD 1/2 x 1 M	165.1	23.8	6	100	M36x1,5	9.5	25.4	22.5	14.7	41.3	6.7	41	54	9.5	28	42	7
SALD 1/2 x 2 M	215.9	49.2	6	134	M36x1,5	9.5	25.4	22.5	14.7	41.3	6.7	41	54	9.5	28	42	7

Series SA

SA 1/2 x 1
SA 1/2 x 2

Basic Version with:
- 1 mounting nut

Type: Adjustable

Accessories:
- Stop collar
- Rectangular flange
- Soft pad
- Foot mounting

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 1/2 x 1	25.4	4.5	1225	153	84700
SA 1/2 x 2	50.8	9.5	2450	305	98300

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Force of internal return spring	N	SA 1/2 x 1: 36 - 82 SA 1/2 x 2: 36 - 128
Max. deviation of impacting force from centre axis of shock absorber		±5°
Weight (mass)	kg	SA 1/2 x 1: 0.627 SA 1/2 x 2: 0.8
Min. mounting strength required	N	13300[1)]

Materials

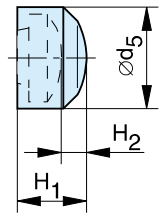
Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

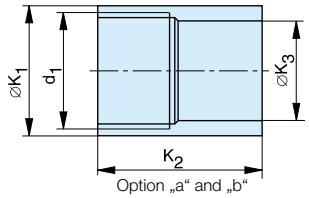
Product	Order Instructions Type	Order No.
Shock absorber; stroke 25.4 mm	SA 1/2 x 1	**7970FIL**
Shock absorber; stroke 50.8 mm	SA 1/2 x 2	**7975FIL**
Soft pad	SP 1/2	**7974FIL**
Stop collar option a – for rear mounting	SC 1/2A	**7971FIL**
Stop collar option b – for front mounting	SC 1/2B	**7977FIL**
Rectangular flange	RF 1/2	**7972FIL**
Foot mounting	FM 1/2	**7973FIL**
Additional mounting nut	LN 1/2	**7979FIL**

Dimensions (mm)- Soft pad



Note:
Cannot be used with stop collar.

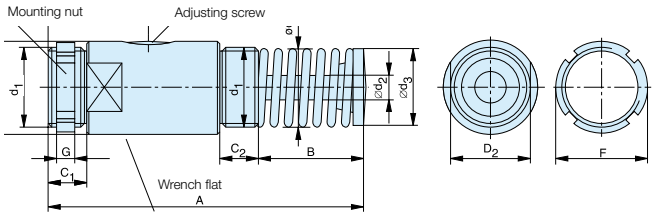
Dimensions (mm) - Stop collar



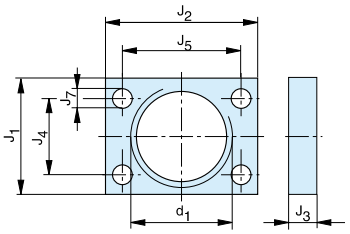
Option “a” - for rear mounting
Option “b” - for front mounting

Dimensions (mm) – Shock Absorbers

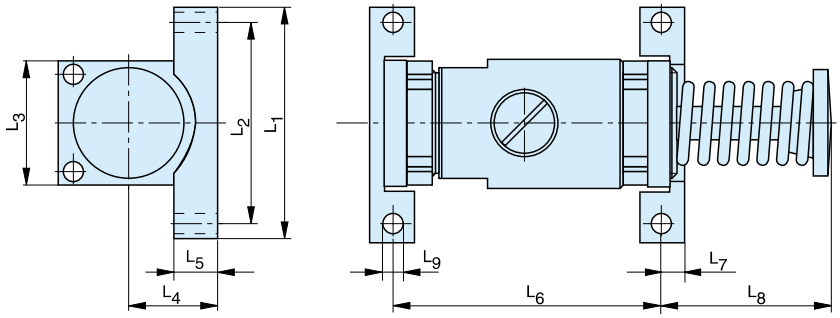
Type: SA 1/2 x 1, SA 1/2 x 2



Dimensions (mm) – Rectangular Flange



Dimensions (mm) – Foot Mounting



Dimensions Table (mm)

Type	A	B	C_1	C_2	$øD_1$	D_2	d_1	$ød_2$	$ød_3$	$ød_5$	$ød_6$	E	F	G	H_1	H_2	J_1	J_2
SA 1/2 x 1	138.1	55.5	16	16	38	35	M33x1.5	9.5	25.4	31.8	25.4	41.3	38	6.4	19.1	11.2	41	54
SA 1/2 x 2	189	81	16	16	38	35	M33x1.5	9.5	25.4	31.8	25.4	41.3	38	6.4	19.1	11.2	41	54

Type	J_3	J_4	J_5	J_7	$øK_1$	K_2a	K_2b	$øK_3$	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 1/2 x 1	9.5	28	42	7	38.1	47.6	41.3	28.6	69.9	60.3	54	27	12.7	95.3	6.4	49.2	6
SA 1/2 x 2	9.5	28	42	7	38.1	47.6	41.3	28.6	69.9	60.3	54	27	12.7	120.7	6.4	74.6	6

Series SALD

SA 3/4 x 1
SA 3/4 x 2
SA 3/4 x 3

Basic Version with:
- 1 mounting nut

Type: Adjustable

Accessories:
- Stop collar
- Rectangular flange
- Square flange
- Soft pad
- Foot mounting

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 3/4 x 1	25.4	9	8163	339	124300
SA 3/4 x 2	50.8	16	14500	678	146800
SA 3/4 x 3	76	23	20866	1017	180776

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Force of internal return spring	N	Type: SA 3/4 x 1: 68 - 92
		Type: SA 3/4 x 2: 44 - 92
		Type: SA 3/4 x 3: 33 -105
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	Type: SA 3/4 x 1: 1.44
		Type: SA 3/4 x 2: 1.8
		Type: SA 3/4 x 3: 2.24
Min. mounting strength required	N	29600[1)]
Materials		
Body	Steel, black oxide finish	
Piston Rod	Steel, hardened, ground, hard-chrome plated	
Accessories	Steel, black oxide finish or aluminium, anodized	

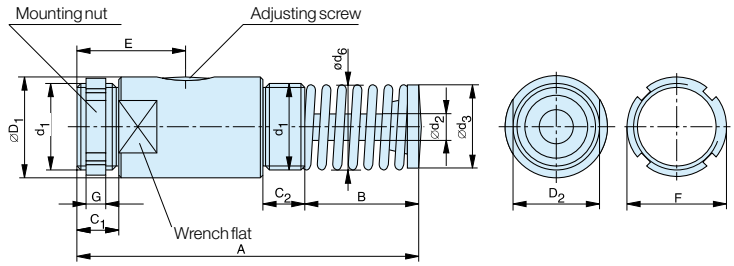
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

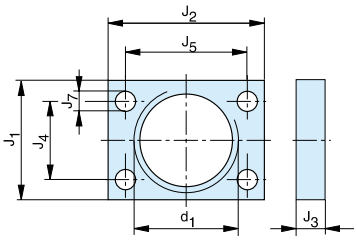
Product	Order Instructions Type	Order No.
Shock absorber; stroke 25.4 mm	SA 3/4 x 1	**7980FIL**
Shock absorber; stroke 50.8 mm	SA 3/4 x 2	**7985FIL**
Shock absorber; stroke 76 mm	SA 3/4 x 3	**7986FIL**
Soft pad	SP 3/4	**7984FIL**
Stop collar option a – for rear mounting	SC 3/4 A	**7981FIL**
Stop collar option b – for front mounting	SA 3/4 B	**7987FIL**
Rectangular flange	RF 3/4	**7982FIL**
Square flange	SF 3/4	**7988FIL**
Foot mounting	FM 3/4	**7983FIL**
Additional mounting nut	LN 3/4	**7989FIL**

Dimensions (mm) – Shock Absorbers

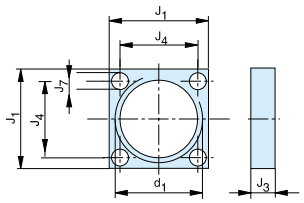
Type: SA 3/4 x 1, SA 3/4 x 2, SA 3/4 x 3



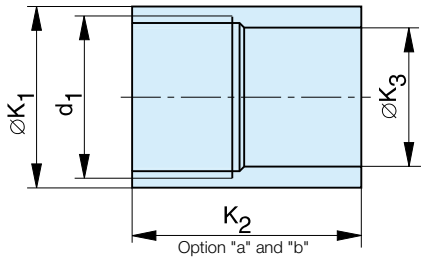
Dimensions (mm) – Rectangular Flange



Dimensions (mm) – Square Flange



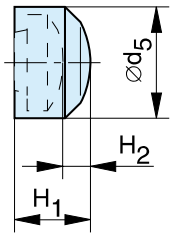
Dimensions (mm) - Stop Collar



Option „a“ - for rear mounting

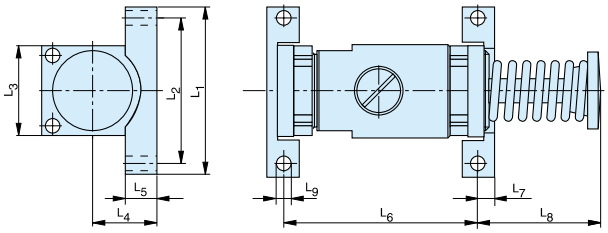
Option „b“ - for front mounting

Dimensions (mm) - Soft Pad



Note: Cannot be used by stop collar

Dimensions (mm) - Foot mounting



Dimensions Table (mm)

Type	A	B	C_1	C_2	øD_1	D_2	d_1	ød_2	ød_3	ød_5	ød_6	E	F	G	H_1	H_2	J_1	J_2
SA 3/4 x 1	144.4	50	22.9	23	57.2	50	M42x1.5	12.8	38	44.5	34.7	47.2	57.2	9.5	25.4	17.5	57.2	76.2
SA 3/4 x 2	195.2	75.4	22.9	23	57.2	50	M42x1.5	12.8	38	44.5	34.7	59.5	57.2	9.5	25.4	17.5	57.2	76.2
SA 3/4 x 3	246	100.8	22.9	23	57.2	50	M42x1.5	12.8	38	44.5	38.1	72.6	57.2	9.5	25.4	17.5	57.2	76.2

Type	J_3	J_4	J_5	J_7	øK_1	K_2a	K_2b	øK_3	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 3/4 x 1	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	85.7	9.5	52.3	8.7
SA 3/4 x 2	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	111.1	9.5	77.6	8.7
SA 3/4 x 3	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	136.5	9.5	103.2	8.7

Series SA

SA 1-1/8 x 2
SA 1-1/8 x 4
SA 1-1/8 x 6

Basic Version with:
- 1 mounting nut

Type: Adjustable

Accessories:
- Stop collar
- Square flange
- Soft pad
- Foot mounting

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA 1-1/8 x 2	50.8	54	22680	1808	169478
SA 1-1/8 x 4	102	73	45360	3616	225970
SA 1-1/8 x 6	152	91	68040	5423	282463

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Force of internal return spring	N	Type: SA 1-1/8 x 2: 80 - 151
		Type: SA 1-1/8 x 4: 80 - 200
		Type:SA 1-1/8 x 6: 80 - 187
Max. deviation of impacting force from centre axis of shock absorber		±3°
Weight (mass)	kg	Type: SA 1-1/8 x 2: 3.719
		Type: SA 1-1/8 x 4: 5.035
		Type: SA 1-1/8 x 6: 6.622
Min. mounting strength required	N	68000[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

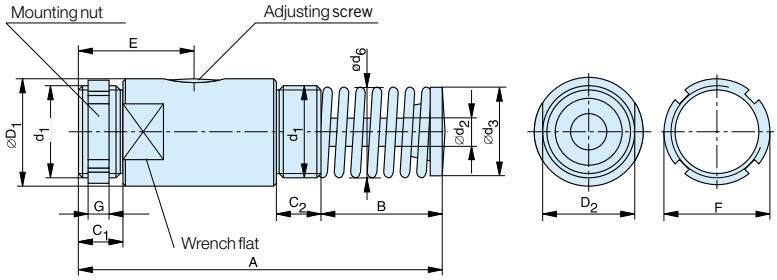
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

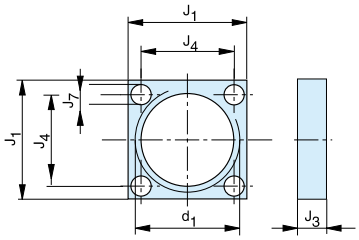
Product	Order Instructions Type	Order No.
Shock absorber; stroke 50.8 mm	SA 1-1/8 x 2	**7990FIL**
Shock absorber; stroke 102 mm	SA 1-1/8 x 4	**7995FIL**
Shock absorber; stroke 152 mm	SA 1-1/8 x 6	**7996FIL**
Soft pad	SP 1-1/8	**7994FIL**
Square flange	SF 1-1/8	**7998FIL**
Foot mounting	FM 1-1/8	**7993FIL**
Additional mounting nut	LN 1-1/8	**7999FIL**
Stop collar option a – for SA 1-1/8 x 2, SA 1-1/8 x 4	SC 1-1/8 A	**7991FIL**
Stop collar option b – for SA 1-1/8 x 2, SA 1-1/8 x 4	SC 1-1/8 B	**7997FIL**
Stop collar option a – for SA 1-1/8 x 6	SC 1-1/8 A	**7891FIL**
Stop collar option b – for SA 1-1/8 x 6	SC 1-1/8 B	**7897FIL**

Dimension (mm) - Shock Absorbers

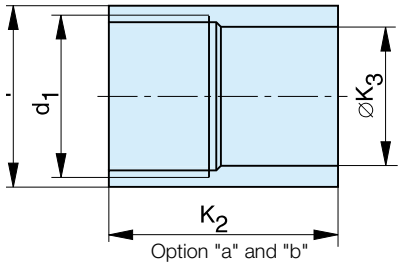
Type: SA 1-1/8 x 2, SA 1-1/8 x 4, SA 1-1/8 x 6



Dimensions (mm) - Square Flange

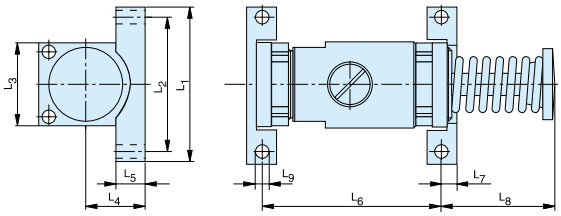


Dimensions (mm) - Stop Collar

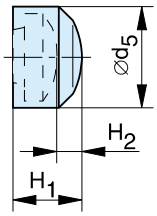


Option “a” - for rear mounting
Option “b” - for front mounting

Dimensions (mm) - Foot mounting



Dimensions (mm) – Soft Pad



Note: Cannot be used with stop collar.

Dimensions Table (mm)

Type	A	B	C_1	C_2	øD_1	D_2	d_1	ød_2	ød_3	ød_5	ød_6	E	F	G	H_1	H_2	J_1
SA 1-1/8 x 2	225.6	85.9	26.2	26.2	76.2	69.9	M64x2	19.1	50.8	57.2	47.9	69.9	76.2	9.5	25.4	17.5	88.9
SA 1-1/8 x 4	327.2	136.7	26.2	26.2	76.2	69.9	M64x2	19.1	50.8	57.2	50.8	95.3	76.2	9.5	25.4	17.5	88.9
SA 1-1/8 x 6	450.9	209.6	26.2	26.2	76.2	69.9	M64x2	19.1	50.8	57.2	48.3	120.7	76.2	9.5	25.4	17.5	88.9

Type	J_3	J_4	J_7	øK_1	K_2a	K_2b	øK_3	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA 1-1/8 x 2	15.9	69.9	10.3	76.2	62.7	50	60.3	142.9	123.8	88.9	44.5	19	127	14.3	90.5	10.3
SA 1-1/8 x 4	15.9	69.9	10.3	76.2	62.7	50	60.3	142.9	123.8	88.9	44.5	19	177.8	14.3	141.3	10.3
SA 1-1/8 x 6	15.9	69.9	10.3	76.2	84.9	72.2	60.3	142.9	123.8	88.9	44.5	19	228.5	14.3	214.3	10.3

Series SA-A

SA-A 3/4 x 1
SA-A 3/4 x 2
SA-A 3/4 x 3

Basic Version with:
- 1 mounting nut

Type: Adjustable, without return spring, for use with external air-oil tank

Accessories:
- Air-oil tank, Type AOT-1
- Stop collar
- Rectangualr flange
- Square flange
- Soft pad
- Foot mounting

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA-A 3/4 x 1	25.4	27	3600	290	184000
SA-A 3/4 x 2	50.8	43	6350	600	230000
SA-A 3/4 x 3	76	55	9500	890	276000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Max. deviation of impacting force from centre axis of shock absorber		±5°
Weight (mass)	kg	Type: SA-A 3/4 x 1: 1.43 Type: SA-A 3/4 x 2: 1.79 Type: SA-A 3/4 x 3: 2.23
Min. mounting strength required	N	29600[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

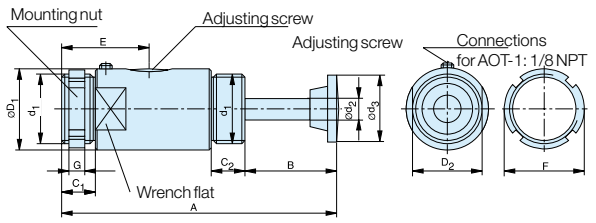
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

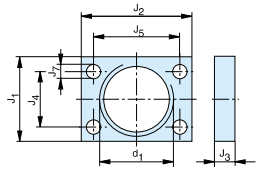
Product	Order Instructions No. Type	Order
Shock absorber; stroke 25.4 mm	SA-A 3/4 x 1	**7887FIL**
Shock absorber; stroke 50.8 mm	SA-A 3/4 x 2	**7888FIL**
Shock absorber; stroke 76 mm	SA-A 3/4 x 3	**7889FIL**
Soft pad	SP-3/4	**7984FIL**
Square flange	SF-3/4	**7988FIL**
Rectangular flange	RF-3/4	**7982FIL**
Foot mounting	FM-3/4	**7983FIL**
Additional mounting nut	LN-3/4	**7989FIL**
Stop collar option a – for SA-A 3/4 x 1, SA-A 3/4 x 2, SA-A 3/4 x 3	SC-A 3/4	**7981FIL**
Stop collar option b – for SA-A 3/4 x 1, SA-A 3/4 x 2, SA-A 3/4 x 3	SC-B 3/4	**7987FIL**
Air-oil tank	AOT-1	**7898FIL**

Dimensions (mm) – Shock Absorbers for Connection to Air-Oil-Tank

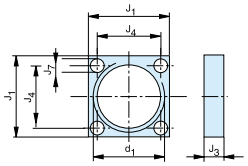
Type: SA-A 3/4 x 1, SA-A 3/4 x 2, SA-A 3/4 x 3



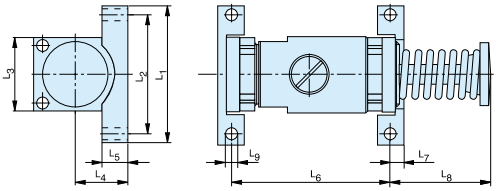
Dimensions (mm) – Rectangular Flange



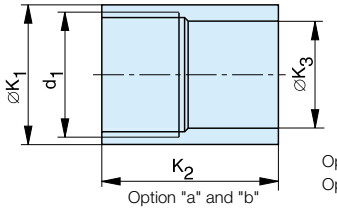
Dimensions (mm) – Square Flange



Dimensions (mm) – Foot mounting

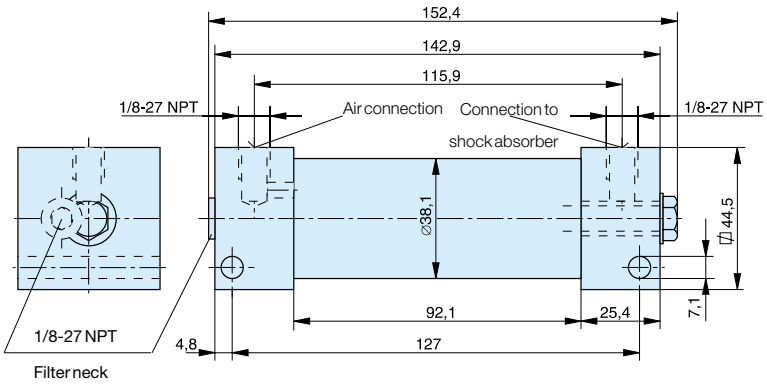


Dimensions (mm) - Stop Collar

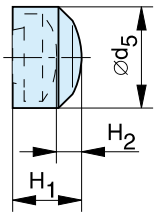


Option “a” - for rear mounting
Option “b” - for front mounting

Dimensions (mm) – Air-Oil-Tank Type AOT-1



Dimensions (mm) - Soft Pad



Note:
Cannot be used with stop collar.

Dimensions Table (mm)

Type	A	B	C_1	C_2	$øD_1$	D_2	$ød_1$	$ød_2$	$ød_3$	$ød_5$	E	F	G	H_1	H_2	J_1	J_2
SA-A 3/4 x 1	144.4	50	22.9	23	57.2	50	M42x1.5	14.3	38	44.5	47.2	57.2	9.5	25.4	17.5	57.2	76.2
SA-A 3/4 x 2	195.2	75.4	22.9	23	57.2	50	M42x1.5	14.3	38	44.5	59.5	57.2	9.5	25.4	17.5	57.2	76.2
SA-A 3/4 x 3	246	100.8	22.9	23	57.2	50	M42x1.5	14.3	38	44.5	72.6	57.2	9.5	25.4	17.5	57.2	76.2

Type	J_3	J_4	J_5	J_7	$øK_1$	K_2a	K_2b	$øK_3$	L_1	L_2	L_3	L_4	L_5	L_6	L_7	L_8	L_9
SA-A 3/4 x 1	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	85.7	9.5	52.3	8.7
SA-A 3/4 x 2	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	111.1	9.5	77.6	8.7
SA-A 3/4 x 3	12.7	41.3	60.3	8.7	57.2	49.2	39.7	41.2	95.3	76.2	57.2	28.6	14.3	136.5	9.5	103.2	8.7

Series SA-A

SA-A 1-1/8x2
SA-A 1-1/8x4
SA-A 1-1/8x6

Basic Version with:
- 1 mounting nut

Type: Adjustable, without return spring, for use with external air-oil tank

Accessories:
- Air-oil tank, Type AOT-3
- Stop collar
- Square flange
- Soft pad
- Foot mounting

Energy Capacity

Type	Stroke (mm)	Effective Mass (kg)		Max. Energy Capacity (Nm)	
		Min.	Max.	per stroke W_3	per hour W_4
SA-A 1-1/8 x 2	50.8	72	13000	1380	345000
SA-A 1-1/8 x 4	102	118	18200	2700	460000
SA-A 1-1/8 x 6	152	200	32000	4150	575000

Technical Data

Characteristics	Unit	Comments
Impact Velocity	m/s	0.3 - 4.5
Operating temperature range	°C	-12 to 80
Installation		In any position
Max. deviation of impacting force from centre axis of shock absorber		±5°
Weight (mass)	kg	Type: SA-A 1-1/8 x 2: 3.709 Type: SA-A 1-1/8 x 4: 5.025 Type: SA-A 1-1/8 x 6: 6.612
Min. mounting strength required	N	68000[1)]

Materials

Body	Steel, black oxide finish
Piston Rod	Steel, hardened, ground, hard-chrome plated
Accessories	Steel, black oxide finish or aluminium, anodized

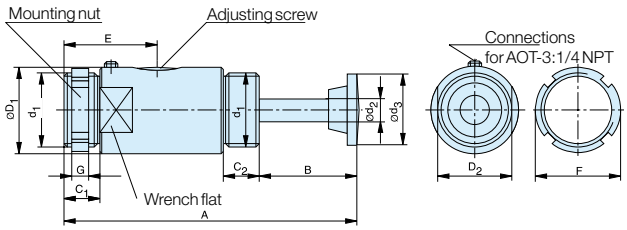
[1)] based on $\frac{2.5 \cdot W_3}{\text{stroke}}$

Order Instructions

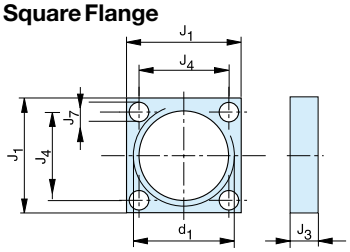
Product	Order Instructions Type	Order No.
Shock absorber; stroke 50.8 mm	SA-A 1-1/8 x 2	**7880FIL**
Shock absorber; stroke 102 mm	SA-A 1-1/8 x 4	**7885FIL**
Shock absorber; stroke 152 mm	SA-A 1-1/8 x 6	**7886FIL**
Soft pad	SP 1-1/8	**7994FIL**
Square flange	SF 1-1/8	**7998FIL**
Foot mounting	FM 1-1/8	**7993FIL**
Additional mounting nut	LN 1-1/8	**7999FIL**
Stop collar option a – SA-A 1-1/8 x 2, SA-A 1-1/8 x 4	SC 1-1/8 A	**7991FIL**
Stop collar option b – SA-A 1-1/8 x 2, SA-A 1-1/8 x 4	SC 1-1/8 B	**7997FIL**
Stop collar option a – SA-A 1-1/8 x 6	SC 1-1/8 A	**7891FIL**
Stop collar option b – SA-A 1-1/8 x 6	SC 1-1/8 B	**7897FIL**
Air-oil tank	AOT-3	**7899FIL**

Dimensions (mm) – Shock Absorber

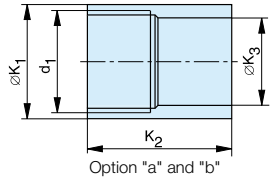
Type: SA-A 1-1/8 x 2, SA-A 1-1/8 x 4, SA-A 1-1/8 x 6



Dimensions (mm) Square Flange



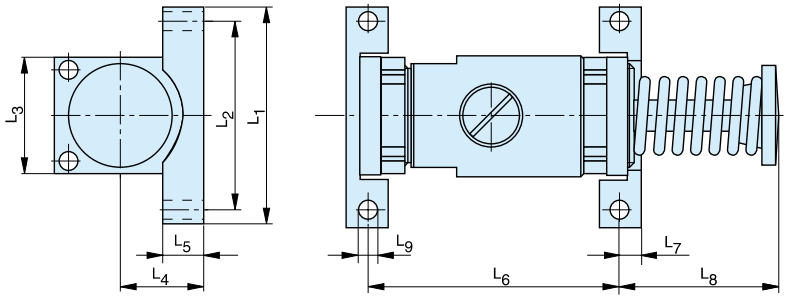
Dimensions (mm) Stop Collar



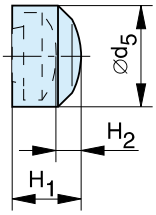
Option "a" and "b"

Option “a” - for rear mounting
Option “b” - for front mounting

Dimensions (mm) – Foot mounting

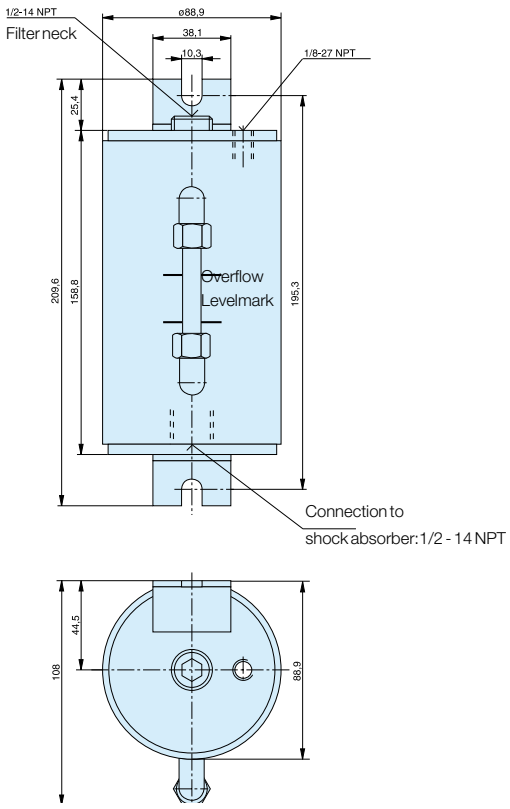


Dimensions (mm) - Soft Pad



Note:
Cannot be used with stop collar.

Dimensions (mm) - Air-Oil-Tank AOT3



Dimensions Table (mm)

Type	A	B	C_1	C_2	øD_1	D_2	ød_1	ød_2	ød_3
SA-A 1-1/8 x 2	225.6	85.9	26.2	26.2	76.2	69.9	M64x2	19.1	50.8
SA-A 1-1/8 x 4	327.2	136.7	26.2	26.2	76.2	69.9	M64x2	19.1	50.8
SA-A 1-1/8 x 6	450.9	209.6	26.2	26.2	76.2	69.9	M64x2	19.1	50.8

Type	ød_5	E	F	G	H_1	H_2	J_1	J_3	J_4
SA-A 1-1/8 x 2	57.2	69.9	76.2	9.5	25.4	17.5	88.9	15.9	69.9
SA-A 1-1/8 x 4	57.2	95.3	76.2	9.5	25.4	17.5	88.9	15.9	69.9
SA-A 1-1/8 x 6	57.2	120.7	76.2	9.5	25.4	17.5	88.9	15.9	69.9

Type	J_7	øK_1	K_2a	K_2b	øK_3	L_1	L_2	L_3	L_4
SA-A 1-1/8 x 2	10.3	76.2	62.7	50	60.3	142.9	123.8	88.9	44.5
SA-A 1-1/8 x 4	10.3	76.2	62.7	50	60.3	142.9	123.8	88.9	44.5
SA-A 1-1/8 x 6	10.3	76.2	84.9	72.2	60.3	142.9	123.8	88.9	44.5

Type	L_5	L_6	L_7	L_8	L_9
SA-A 1-1/8 x 2	14.3	127	14.3	90.5	10.3
SA-A 1-1/8 x 4	14.3	177.8	14.3	141.3	10.3
SA-A 1-1/8 x 6	14.3	228.5	14.3	214.3	10.3

Shock absorbers are hydraulic units that assist in bringing a moving load to rest, quickly and safely, without rebound or backward movement.

They provide a constant linear deceleration with the lowest possible reaction force in the shortest possible stopping time.

- Compact and heavy duty versions
- High energy absorption
- Low return force
- Long service life
- Increases productivity
- Reduces maintenance

Operation information

Type	Self-compensating
Working temperature	
MC9 to MC 600	0 °C to +65 °C
SC925	-12 °C to +90 °C
MC33 to MC64	-12 °C to +70 °C

Sizing software available on separate CD : PDE2524TCUK-CD

For more information see www.parker.com/euro_pneumatic

MC 9 to MC 600 series

Stroke (mm)	Ø	Order code
5	M6 x 0,5	**MC9M1B**
5	M6 x 0,5	**MC9M2B**
5	M8 x 1	**MC10MLB**
5	M8 x 1	**MC10MHB**
6,6	M10 x 1	**MC25ML**
6,6	M10 x 1	**MC25M**
6,6	M10 x 1	**MC25MH**
10	M12 x 1	**MC75M1**
10	M12 x 1	**MC75M2**
10	M12 x 1	**MC75M3**
12,5	M14 x 1,5	**MC150M**

12,5	M14 x 1,5	**MC150MH**
12,5	M14 x 1,5	**MC150MH2**
12,5	M20 x 1,5	**MC225M**
12,5	M20 x 1,5	**MC225MH**
12,5	M20 x 1,5	**MC225MH2**
25,4	M25 x 1,5	**MC600M**
25,4	M25 x 1,5	**MC600MH**
25,4	M25 x 1,5	**MC600MH2**

SC 925 series

Stroke (mm)	Ø	Order code
40	M25 x 1,5	**SC925M1**
40	M25 x 1,5	**SC925M2**
40	M25 x 1,5	**SC925M3**

Accessories

Stop collar

Series	Order code
MC9M	**AH6**
MC10M	**AH8**
MC25M	**AH10**
MC75M	**AH12**
MC150M	**AH14**
MC225M	**AH20**
MC600M	**AH25**
SC925M	

Clamp

Series	Order code
MC9M	**MB6**
MC10M	**MB8**
MC25M	**MB10**
MC75M	**MB12**
MC150M	**MB14**
MC225M	**MB20**
MC600M SC925M	**MB25**

Side load adaptor

Series	Order code
MC10M	**BV8**
MC25M	**BV10**
MC75M	**BV12**
MC150M	**BV14**
MC225M	**BV20**
MC600M SC925M	**BV25**

Accessories

Rectangular flange

Series	Order code
MC9M	**RF6**
MC10M	**RF8**
MC25M	**RF10**
MC75M	**RF12**
MC150M	**RF14**
MC225M	**RF20**
MC600M SC925M	**RF25**

Lock nut

Series	Order code
MC9M	**KM6**
MC10M	**KM8**
MC25M	**KM10**
MC75M	**KM12**
MC150M	**KM14**
MC225M	**KM20**
MC600M	**KM25**

MC33 to MC64

Stroke (mm)	Ø	Order code
25	M33 x 1,5	**MC3325M1**
50	M33 x 1,5	**MC3350M1**
25	M45 x 1,5	**MC4525M1**
50	M45 x 1,5	**MC4550M1**
75	M45 x 1,5	**MC4575M1**
50	M64 x 2	**MC6450M1**
100	M64 x 2	**MC64100M1**
150	M64 x 2	**MC64150M1**

Accessories

Locking ring

Series	Order code
MC33	**NM33**
MC45	**NM45**
MC64	**NM64**

Nylon button

Series	Order code
MC33	**PP33**
MC45	**PP45**
MC64	**PP64**

Square flange

Series	Order code
MC33	**QF33**
MC45	**QF45**
MC64	**QF64**

Side foot mounting kit

Series	Order code
S33	
MC4525M, MC4550M & MC4575M	**S45**
MC6450M, MC64100M & MC64150M	**S64**

Clevis mounting kit

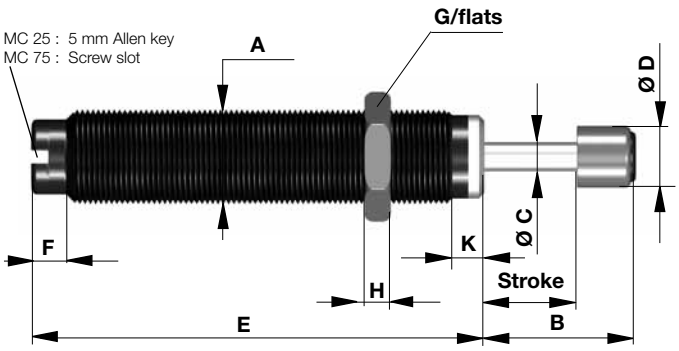
Series	Order code
C33	
MC45	**C45**
MC64	**C64**

Female fitting

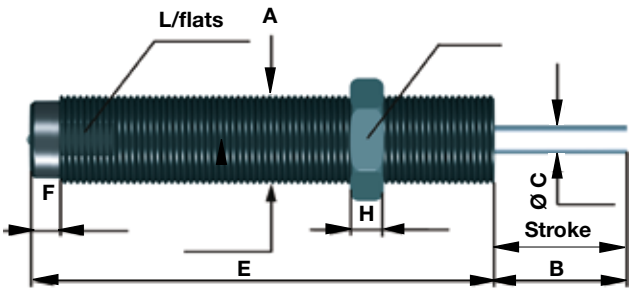
Series	Order code
MC33	**P1C-4KMC**
MC45	**P1C-4MMC**
MC64	**P1C-4PMC**

Dimensions (mm)

Series MC9M to MC75M

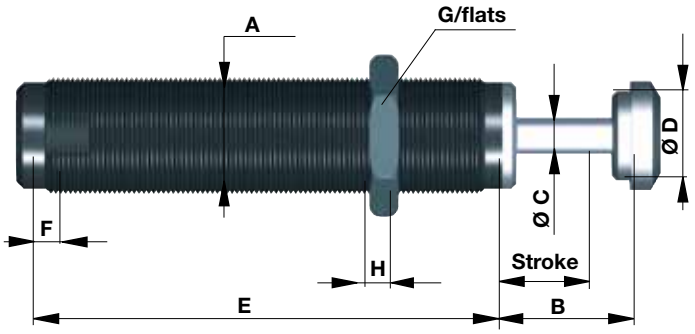


Series MC150M to MC600M



Part No	Stroke (mm)	A	B	C	D	E	F	G	H	K	L
MC9M1B	5	M6 x 0,5	10	2	4,8	26	2,5	8	2,5	1	-
MC9M2B	5	M6 x 0,5	10	2	4,8	26	2,5	8	2,5	1	-
MC10MLB	5	M8 x 1	10	2	6,4	28,5	5	11	3	2	-
MC10MHB	5	M8 x 1	10	2	6,4	28,5	5	11	3	2	-
MC25ML	6,6	M10 x 1	14,6	3,2	7,6	43,4	5	13	3	5	-
MC25M	6,6	M10 x 1	14,6	3,2	7,6	43,4	5	13	3	5	-
MC25MH	6,6	M10 x 1	14,6	3,2	7,6	43,4	5	13	3	5	-
MC75M1	10	M12 x 1	18	3,2	7,6	52	5	14	4	3	-
MC75M2	10	M12 x 1	18	3,2	7,6	52	5	14	4	3	-
MC75M3	10	M12 x 1	18	3,2	7,6	52	5	14	4	3	-
MC150M	12,5	M14 x 1,5	17,5	4,8	-	70	8,5	17	5	-	12
MC150MH	12,5	M14 x 1,5	17,5	4,8	-	70	8,5	17	5	-	12
MC150MH2	12,5	M14 x 1,5	17,5	4,8	-	70	8,5	17	5	-	12
MC225M	12,5	M20 x 1,5	17,5	6,3	-	80	8,5	24	6	-	18
MC225MH	12,5	M20 x 1,5	17,5	6,3	-	80	8,5	24	6	-	18
MC225MH2	12,5	M20 x 1,5	17,5	6,3	-	80	8,5	24	6	-	18
MC600M	25,4	M25 x 1,5	32	8	-	111	9	30	8	-	23
MC600MH	25,4	M25 x 1,5	32	8	-	111	9	30	8	-	23
MC600MH2	25,4	M25 x 1,5	32	8	-	111	9	30	8	-	23

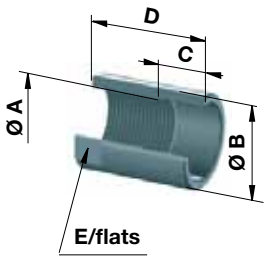
Series SC925



Part No	Stroke (mm)	A	B	C	D	E	F	G	H
SC925M1	40	M25 x 1,5	51	6,3	23	138	7	30	8
SC925M2	40	M25 x 1,5	51	6,3	23	138	7	30	8
SC925M3	40	M25 x 1,5	51	6,3	23	138	7	30	8

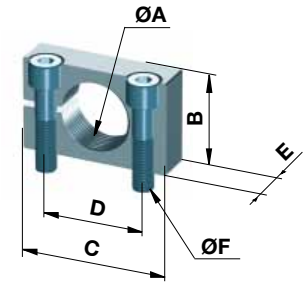
Dimensions (mm)

Stop collar



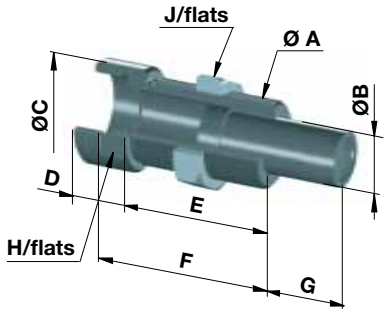
Part No	Used with series	ØA	ØB	C	D	E
AH6	MC9M	M 6 x 0,5	8	6	12	-
AH8	MC10M	M 8 x 1	11	6	12	-
AH10	MC25M	M 10 x 1	14	10	20	-
AH12	MC75M	M 12 x 1	16	10	20	-
AH14	MC150M	M 14 x 1,5	18	12	20	15
AH20	MC225M	M 20 x 1,5	25	12	25	22
AH25	MC600M	M 25 x 1,5	32	16	32	27
	SC925M	M 25 x 1,5	32	16	32	27

Clamp



Part No	Used with series	ØA	B	C	D	E	ØF
MB6	MC9M	M 6 x 0,5	10	20	12	8	M3
MB8	MC10M	M 8 x 1	12	25	16	10	M4
MB10	MC25M	M 10 x 1	14	25	16	10	M4
MB12	MC75M	M 12 x 1	16	32	20	12	M5
MB14	MC150M	M 14 x 1,5	20	32	20	12	M5
MB20	MC225M	M 20 x 1,5	25	40	28	20	M6
MB25	MC600M	M 25 x 1,5	32	46	34	25	M6
	SC925M	M 25 x 1,5	32	46	34	25	M6

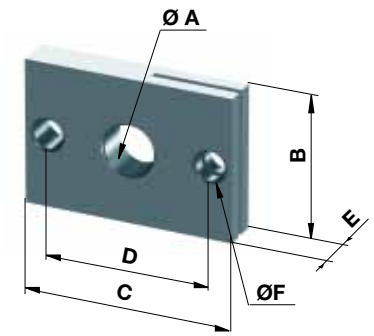
Side load adaptor



Part No	Used with series	ØA	ØB	ØC	D	E	ØF	G	H	J
BV8	MC10M	M 8 x 1	4	11	10	10	12	5	9	11
BV10	MC25M	M 10 x 1	6	13	11	12	15	6,5	11	13
BV12	MC75M	M 12 x 1	7	15	12	18	22	10	14	14
BV14	MC150M	M 14 x 1,5	9	18	12	20	24	12,5	16	17
BV20	MC225M	M 20 x 1,5	12	24	14	20	24	12,5	22	24
BV25	MC600M	M 25 x 1,5	16	30	16	38	44	25	27	30
	SC925M	M 25 x 1,5	16	30	16	38	44	25	27	30

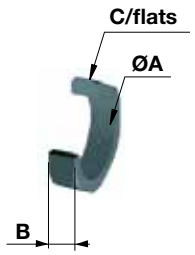
Dimensions (mm)

Rectangular flange



Part No	Used with series	ØA	B	C	D	E	ØF
RF6	MC9M	M 6 x 0,5	10	20	14	5	3,4
RF8	MC10M	M 8 x 1	14	25	18	6	4,5
RF10	MC25M	M 10 x 1	14	28	20	6	4,5
RF12	MC75M	M 12 x 1	20	32	24	6	5,5
RF14	MC150M	M 14 x 1,5	20	34	26	6	5,5
RF20	MC225M	M 20 x 1,5	32	46	36	8	6,5
RF25	MC600M	M 25 x 1,5	32	52	42	8	6,5
	SC925M	M 25 x 1,5	32	52	42	8	6,5

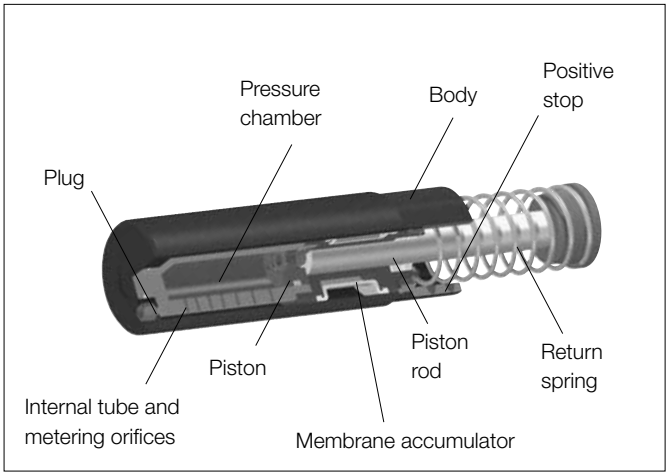
Lock nut



Part No	Used with series	A	B	C
KM6	MC9M	M6 x 0,5	2,5	8
KM8	MC10M	M 8 x 1	3	11
KM10	MC25M	M 10 x 1	3	13
KM12	MC75M	M 12 x 1	4	14
KM14	MC150M	M 14 x 1,5	5	17
KM20	MC225M	M 20 x 1,5	6	24
KM25	MC600M	M 25 x 1,5	8	30
	SC925M	M 25 x 1,5	8	30

Dimensions (mm)

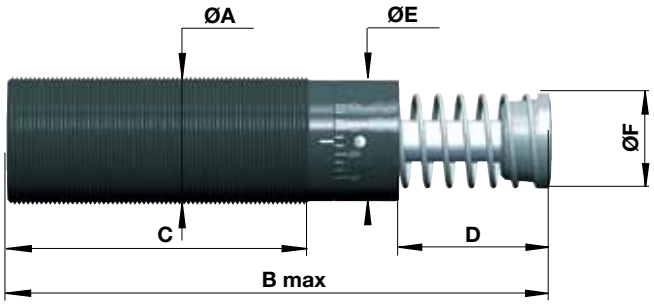
Series MC33 to MC64



Series	MC3325M	MC3350M	MC4525M	MC4550M	MC4575M	MC6450M	MC64100M	MC64150M
Thread (mm)	M33 x 1,5	M33 x 1,5	M45 x 1,5	M45 x 1,5	M45 x 1,5	M64 x 2	M64 x 2	M64 x 2
Type	Self-compensating							
Mechanical stop	Built-in end of stroke							
Impact velocity (m/s)	0,15 to 5							
Stroke (mm)	25	50	25	20	75	50	100	150
Max. capacity per cycle (Nm)	155	310	340	680	1020	1700	3400	5100
Temperature (°C)	- 12 to 70							

Dimensions (mm)

Series MC33 to MC64

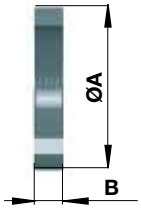


For the 3 ranges of effective weight

Part No	Stroke (mm)	A	B	C	D	E	F
MC3325M	25	M33 x 1,5	138	83	23	30	25
MC3350M	50	M33 x 1,5	189	108	48,5	30	25
MC4525M	25	M45 x 1,5	145	95	23	42	35
MC4550M	50	M45 x 1,5	195	120	48,5	42	35
MC4575M	75	M45 x 1,5	246	145	74	42	35
MC6450M	50	M64 x 2	225	140	48,5	60	48
MC64100M	100	M64 x 2	326	191	99,5	60	48
MC64150M	150	M64 x 2	450	241	150	60	48

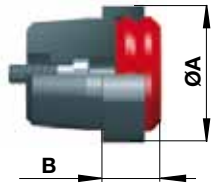
Dimensions (mm)

Locking Ring



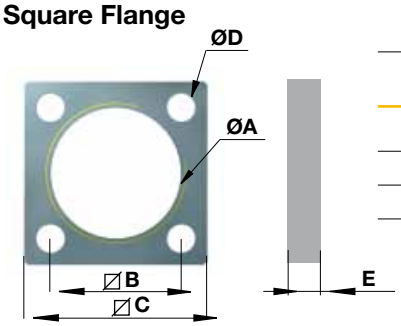
Part No	Used with series	ØA	B
NM33	MC3325M & MC3350M	40	6
NM45	MC4525M & MC4550M & MC4575M	57	10
NM64	MC6450M & MC64100M & MC64150M	76	10

Nylon Button



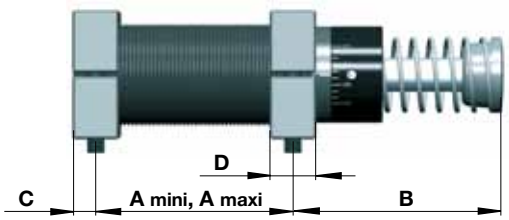
Part No	Used with series	ØA	B
PP33	MC3325M & MC3350M	29	12
PP45	MC4525M & MC4550M & MC4575M	42	18
PP64	MC6450M & MC64100M & MC64150M	60	18

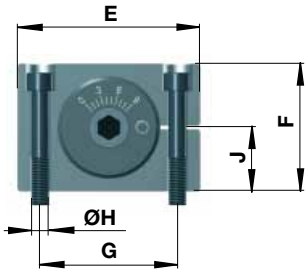
Square Flange



Part No	Used with series	ØA	ØD	⍁B	⍁C	E
QF33	MC3325M & MC3350M	M33 x 1,5	6,6	32	44	12
QF45	MC4525M & MC4550M & MC4575M	M45 x 1,5	9	42	56	15
QF64	MC6450M & MC64100M & MC64150M	M64 x 2	11	58	80	20

Side foot Mounting Kit





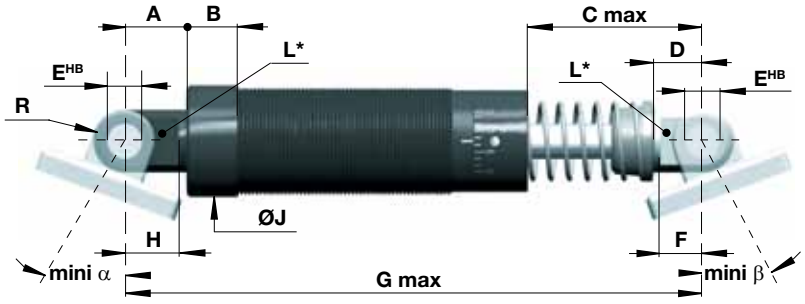
S33 = 2 flanges + 4 screws M6 x40
S45 = 2 flanges + 4 screws M8 x50
S64 = 2 flanges + 4 screws M10 x80

Tightening torque
S33 =11 Nm **S45** = 27 Nm **S64** = 50 Nm

Removing torque
S33 > 90 Nm **S45** > 350 Nm **S64** >350Nm

Part No	Used with series	A mini	A maxi	B	C	D	E	F	G	ØH	J
S33	MC3325M	25	60	68	10	20	56	40	42	6,6	20
S33	MC3350M	32	86	93	10	20	56	40	42	6,6	20
S45	MC4525M	32	66	66	12,5	25	80	56	60	9	28
S45	MC4550M	40	92	91	12,5	25	80	56	60	9	28
S45	MC4575M	50	118	116	12,5	25	80	56	60	9	28
S64	MC6450M	50	112	100	12,5[2]	25	100	80	78	11	40
S64	MC64100M	64	162	152	12,5	25	100	80	78	11	40
S64	MC64150M	80	212	226	12,5	25	100	80	78	11	40

Dimensions (mm)



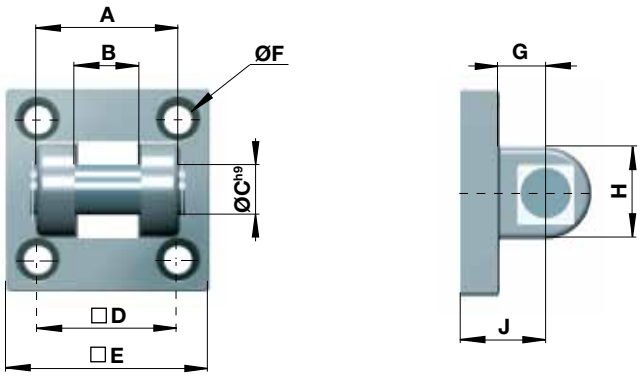
S33 =
S45 =
S64 =

2 clevis shipped fitted onto shock absorber

Part No	Used with series	A	B	Cmax	D	E^{HB}	F	G max	H	ØJ	L*	R	mini α	mini β
C33	MC3325M	14	14	39	14	10	13	168	13	38	13	10	20°	0°
C33	MC3350M	14	14	64	14	10	13	218	13	38	13	10	20°	0°
C45	MC4525M	28	20	43	18	16	17	200	20	53	20	14	15°	15°
C45	MC4550M	28	20	68	18	13	17	250	20	53	20	14	15°	15°
C45	MC4575M	28	20	93	18	13	17	300	20	53	20	14	15°	15°
C64	MC6450M	35	25	85	35	20	30	310	30	74	24	20	20°	10°
C64	MC64100M	35	25	136	35	20	30	410	30	74	24	20	20°	10°
C64	MC64150M	35	25	187	35	20	30	530	30	74	24	20	20°	10°

L* indicates the width of front and rear clevis

Female Fitting



Supplied with 4 mounting screws

Part No	Used with series	A	B	ØC h9	□ D	□ E	Ø F	G	H	J
P1C-4KMC	MC3325M , MC3350M	34	14	10	32	48	7	13	23	22
P1C-4MMC	MC4525M, MC4550M, MC4575M	45	21	16	46	65	9	15	29	27
P1C-4PMC	MC6450M, MC64100M, MC64150M	65	25	20	72	95	11	22	45	36

Cylinder bore mm	Series		Stroke	Bore mm	Piston rod mm	Area cm²	Max theoretical force in N 1.0 bar	2.0 bar	3.0 bar	4.0 bar	5.0 bar	6.0 bar	7.0 bar	8.0 bar	9.0 bar	10.0 bar
10/4	**P1A**	Double acting	+	10	4	0.8	8	15	23	31	39	**46**	54	62	69	77
	P1S		-	10	4	0.7	6	13	19	26	32	**39**	45	52	58	65
12/5	**C05**	Double acting	+	12	5	1.1	11	22	33	44	55	**67**	78	89	100	111
			-	12	5	0.9	9	18	28	37	46	**55**	64	73	83	92
12/6	**P1A**	Double acting	+	12	6	1.1	11	22	33	44	55	**67**	78	89	100	111
	P1Q		-	12	6	0.8	8	17	25	33	42	**50**	58	67	75	83
	P1S															
16/6	**P1A**	Double acting	+	16	6	2.0	20	39	59	79	99	**118**	138	158	178	197
	P1S		-	16	6	1.7	17	34	51	68	85	**102**	119	136	153	170
16/8	**P1Q**	Double acting	+	16	8	2.0	20	39	59	79	99	**118**	138	158	178	197
			-	16	8	1.5	15	30	44	59	74	**89**	104	118	133	148
20/8	**P1A**	Double acting	+	20	8	3.1	31	62	92	123	154	**185**	216	247	277	308
	P1S		-	20	8	2.6	26	52	78	104	129	**155**	181	207	233	259
20/10	**C05**	Double acting	+	20	10	3.1	31	62	92	123	154	**185**	216	247	277	308
	P1Q		-	20	10	2.4	23	46	69	92	116	**139**	162	185	208	231
	P5T															
25/10	**P1A**	Double acting	+	25	10	4.9	48	96	144	193	241	**289**	337	385	433	482
	P1Q		-	25	10	4.1	40	81	121	162	202	**243**	283	324	364	405
	P1S															
	P5T															
32/12	**C05**	Double acting	+	32	12	8.0	79	158	237	316	394	**473**	552	631	710	789
	P1D		-	32	12	6.9	68	136	203	271	339	**407**	475	542	610	678
	P1P															
	P1Q															
	P1S															
	P1D-B		+	32	12	8.0	80	161	241	322	402	**483**	563	643	724	804
	P1D-C		-	32	12	6.9	69	138	207	276	346	**415**	484	553	622	691
	P1D-X															
32/16	**P5T**	Double acting	+	32	16	8.0	79	158	237	316	394	**473**	552	631	710	789
			-	32	16	6.0	59	118	178	237	296	**355**	414	473	533	592
40/16	**P1D**	Double acting	+	40	16	12,6	126	251	377	503	628	**754**	880	1005	1131	1257
	P1D-C		-	40	16	10,6	106	212	318	424	530	**636**	742	848	954	1060
40/12	**P1P**	Double acting	+	40	12	12.6	123	247	370	493	616	**740**	863	986	1109	1233
			-	40	12	11.4	112	224	337	449	561	**673**	785	897	1010	1122
40/16	**P1Q**	Double acting	+	40	16	12.6	123	247	370	493	616	**740**	863	986	1109	1233
			-	40	16	10.6	104	207	311	414	518	**621**	725	828	932	1036
	P1D-B		+	40	16	12,6	126	251	377	503	628	**754**	880	1005	1131	1257
	P1D-C		-	40	16	10,6	106	212	318	424	530	**636**	742	848	954	1060
	P1D-X															
50/16	**C05**	Double acting	+	50	16	19.6	193	385	578	770	963	**1156**	1348	1541	1734	1926
	P1P		-	50	16	17.6	173	346	519	692	865	**1037**	1210	1383	1556	1729
50/20	**P1D**	Double acting	+	50	20	19.6	193	385	578	770	963	**1156**	1348	1541	1734	1926
	P1Q		-	50	20	16.5	162	324	485	647	809	**971**	1133	1295	1456	1618
	P1S															
	P5T															
	P1D-B		+	50	20	19,6	196	393	589	785	982	**1178**	1374	1571	1767	1963
	P1D-C		-	50	20	16,5	165	330	495	660	825	**990**	1155	1319	1484	1649
	P1D-X															

Cylinder bore mm	Series	Stroke	Bore mm	Piston rod mm	Area cm²	Max theoretical force in N 1.0 bar	2.0 bar	3.0 bar	4.0 bar	5.0 bar	6.0 bar	7.0 bar	8.0 bar	9.0 bar	10.0 bar
63/16	**C05** Double acting	+	63	16	31.2	306	612	917	1223	1529	**1835**	2141	2446	2752	3058
	P1P	-	63	16	29.2	286	572	858	1144	1430	**1717**	2003	2289	2575	2861
63/20	**P1D** Double acting	+	63	20	31.2	306	612	917	1223	1529	**1835**	2141	2446	2752	3058
	P1Q	-	63	20	28.0	275	550	825	1100	1375	**1650**	1925	2200	2475	2750
	P1S														
	P5T														
	P1D-B	+	63	20	31,2	312	623	935	1247	1559	**1870**	2182	2494	2806	3117
	P1D-C	-	63	20	28,0	280	561	841	1121	1402	**1682**	1962	2242	2523	2803
	P1D-X														
80/25	**P1D** Double acting	+	80	25	50.3	493	986	1479	1972	2466	**2959**	3452	3945	4438	4931
	P1Q	-	80	25	45.4	445	890	1335	1780	2225	**2670**	3115	3560	4005	4450
	P1S														
	P5T														
	P1D-B	+	80	25	50,3	503	1005	1508	2011	2513	**3016**	3519	4021	4524	5027
	P1D-C	-	80	25	45,4	454	907	1361	1814	2268	**2721**	3175	3629	4082	4536
	P1D-X														
84/20	**C0D300** Double acting	+	84	20	55.4	544	1087	1631	2175	2718	**3262**	3806	4349	4893	5436
		-	84	20	52.3	513	1026	1539	2051	2564	**3077**	3590	4103	4616	5128
100/25	**P1D** Double acting	+	100	25	78.5	770	1541	2311	3082	3852	**4623**	5393	6164	6934	7705
	P1Q	-	100	25	73.6	722	1445	2167	2889	3612	**4334**	5056	5779	6501	7223
	P1S														
	P5T														
	P1D-B	+	100	25	78,5	785	1571	2356	3142	3927	**4712**	5498	6283	7069	7854
	P1D-C	-	100	25	73,6	736	1473	2209	2945	3682	**4418**	5154	5890	6627	7363
	P1D-X														
114/20	**C0D600** Double acting	+	114	20	101.9	1000	2000	3000	4000	5000	**6000**	7001	8001	9001	10001
		-	114	20	98.8	969	1939	2908	3877	4846	**5816**	6785	7754	8724	9693
125/32	**P1D** Double acting	+	125	32	122.7	1204	2408	3612	4815	6019	**7223**	8427	9631	10835	12039
	P1S	-	125	32	114.7	1125	2250	3375	4500	5625	**6750**	7875	9000	10125	11250
	P1D-B	+	125	32	122,7	1227	2454	3682	4909	6136	**7363**	8590	9817	11045	12272
	P1D-C	-	125	32	114,7	1147	2294	3440	4587	5734	**6881**	8027	9174	10321	11468
	P1D-X														
161/25	**C0D1200** Double acting	+	161	25	203.9	2000	4000	6000	8000	10000	**12000**	14000	16000	18000	20000
		-	161	25	199.0	1952	3904	5856	7808	9759	**11711**	13663	15615	17567	19519
160/40	**P1E** Double acting	+	160	40	201.1	1972	3945	5917	7890	9862	**11835**	13807	15779	17752	19724
	P1D-T	+	160	40	201,0	2010	4019	6029	8038	10048	**12058**	14067	16077	18086	20096
		-	160	40	188,4	1884	3768	5652	7536	9420	**11304**	13188	15072	16956	18840
200/40	**P1E** Double acting	+	200	40	314.2	3082	6164	9246	12328	15410	**18491**	21573	24655	27737	30819
200/50	**P1D-T**	+	200	50	314,2	3142	6283	9425	12566	15708	**18850**	21991	25133	28274	31416
		-	200	50	294,5	2945	5891	8836	11781	14727	**17672**	20617	23562	26508	29453
250/28	**C0P2500** Double acting	+	250	28	490.9	4815	9631	14446	19262	24077	**28893**	33708	38524	43339	48155
		-	250	28	484.7	4755	9510	14265	19020	23776	**28531**	33286	38041	42796	47551
250/50	**P1D-T**	+	250	50	490,9	4909	9818	14726	19635	24544	**29453**	34362	39270	44179	49088
		-	250	50	471,3	4713	9425	14138	18850	23563	**28275**	32988	37700	42413	47125
320/63	**P1D-T**	+	320	63	804,25	8043	16085	24128	32170	40213	**48255**	56298	64340	72383	80425
		-	320	63	773,1	7731	15462	23192	30923	38654	**46385**	54116	61846	69577	77308

+ = Outward stroke
- = Return stroke

Note!
Select a theoretical force 50-100% larger than the force required

The Force Guide is only for double acting cylinders, please look into the technical catalogue for every individual sigle acting cylinder to see the forces.

Note! For all single acting cylinders you have to reduce the force in the table with the spring force to get the theoretical force.
The spring force is not calculted to create any work, it is only to take the piston rod into the cylinder.

Handling Products

Handling Products

Comprising an innovative range of Universal Grippers, Rotary Actuators and Precision Slide Tables

Parker is about motion control engineering, manufacturing, application expertise and unparalleled customer service.

Parker automation products are found just about everywhere — from laboratories, cleanrooms and factory floors, to mines, foundries and satellites in space – our products are used anywhere machines, processes and people depend on reliable high-performance motion control.

Today's industrial automation applications demand the best in quality and productivity. Likewise, high-technology automation applications demand performance in quality throughput and precision.

P5GA - Angular double acting, square jaw carriers

The P5GA is a compact angular gripper with a closed angle of -10° and an open angle of +30°. With double acting mechanism the gripper is suitable for internal or external gripping applications. For flexible installation mounting is available on three sides and the anodised body has recessed sensor grooves.

- Bore sizes Ø12, 16, 20, 25 and 32mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

Technical Information

Acting type		Double acting				
Bore (mm)		12	16	20	25	32
Port size		M3 x 0.5		M5 x 0.8		
Medium		Air				
Operating pressure range		1.5 - 7 bar				
Temperature range		-5 to +60°C (no freezing)				
Max frequency		180 Cycles/min				
Lubrication	Cylinder	Not required				
Lever	Grease					
Max. arm length mm (L)		30	40	60	70	85
Theoretical holding force kgf-cm						
	Closed side	0.4xP	0.9xP	1.7xP	3.4xP	6.1xP
	Opened side	0.5xP	1.2xP	2.3xP	4.4xP	8.1xP
Clamp / Release angle		-10 to +30°				
Clamping force (F)		F = M / L x 0.85				
Weight (g)		53	103	193	327	525

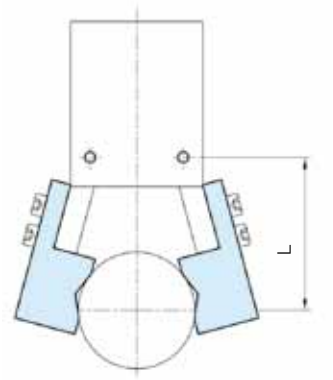
L : Arm length (mm), M : Theoretical moment (kgf-cm)
F : Clamping force (kgf), P : Operating pressure (kgf/cm³)

For more information see www.parker.com/euro_pneumatic

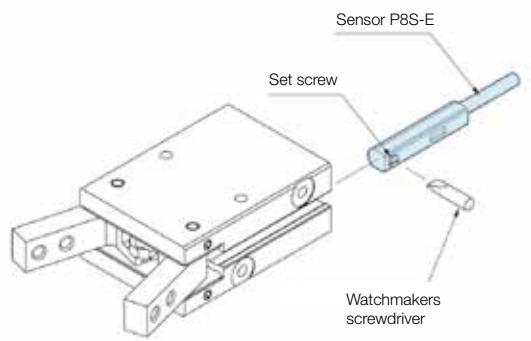
P5GA - Angular Grippers

Bore mm	Order code
12	**P5GA-012MSG030B**
16	**P5GA-016MSG030B**
20	**P5GA-020MSG030B**
25	**P5GA-025MSG030B**
32	**P5GA-032MSG030B**

Length of gripping point



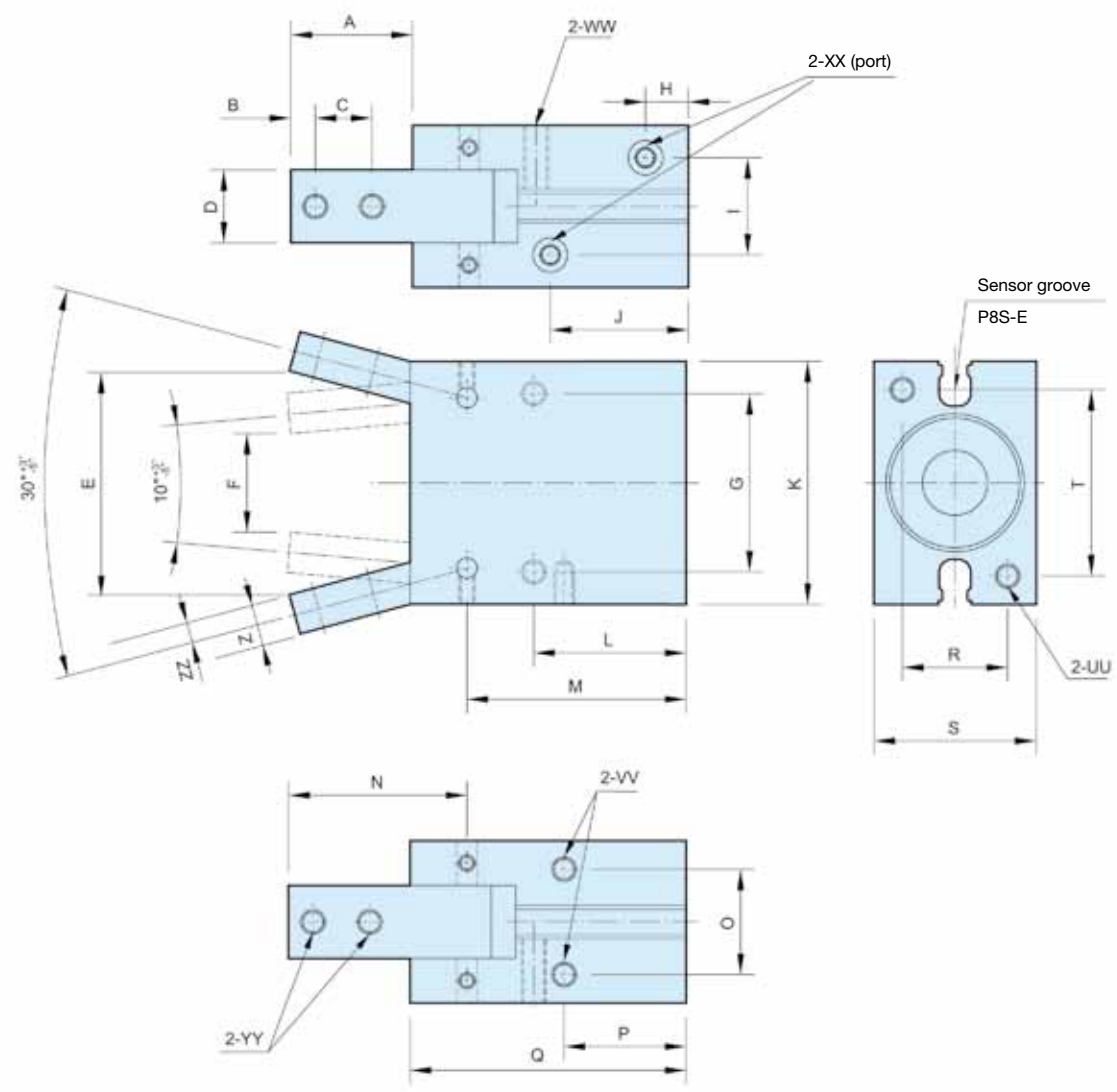
Installation of sensor



Sensors - Series P8S-E

Magnetic Sensor	**M8 - Snap in**	**Flying lead**
	0.165 m PUR cable with M8 connector	2 m PUR cable
PNP	**P8S-EPSUS**	**P8S-EPFXS**
NPN	**P8S-ENSUS**	**P8S-ENFXS**
Reed	**P8S-ERSUS**	**P8S-ERFXS**

Dimensions (mm)



Bore mm	A	B	C	D 0/-0.03	E	F	G	H	I	J	K	L	M	N	O	P	Q	R	S	T
12	15,4	3	6	7	26,3	9	20	7,5	10,2	23,5	28	20	32,9	21,5	10,2	16	39	10	16	22
16	17,5	3	8	9	31,1	14	24	7,5	12	22	34	22,5	35	25	14	18	42,5	14	22	26
20	22	4	10	12	40,1	18	30	8	13	25	45	25	39,5	32,5	16	19	50	16	26	35
25	26	5	12	14	47,9	21	36	8,5	18	28	52	28,5	45,5	38,5	20	21,5	58	20	32	40
32	30	6	14	18	55,1	24	44	10,5	24	34	60	37,5	54	44	26	30	68	26	40	46

Bore mm	UU	VV	WW	XX	YY	Z	ZZ
12	M3 x 5 depth	M3 x 5 depth	M3 x 5 depth	M3 x 5 depth	M3	5	2,5
16	M4 x 7 depth	M4 x 7 depth	M4 x 7 depth	M5 x 5 depth	M3	6	3
20	M5 x 8 depth	M5 x 8 depth	M5 x 8 depth	M5 x 5 depth	M4	7	3,5
25	M6 x 10 depth	M6 x 10 depth	M6 x 10 depth	M5 x 5 depth	M5	9	4
32	M6 x 10 depth	M6 x 10 depth	M6 x 10 depth	M5 x 5 depth	M6	10	5

P5GB - Parallel double acting, square jaw carriers

Available with a comprehensive range of bore sizes Ø12 - 32 mm the P5GB double acting parallel gripper is an accurate workpiece holding device. The anodised aluminium body has flexible installation mountings on three sides and recessed sensor grooves.

- Bore sizes Ø12, 16, 20, 25 and 32mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

Technical Information

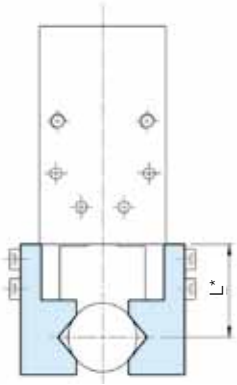
Acting type		Double acting				
Bore (mm)		12	16	20	25	32
Port size		M3 x 0.5		M5 x 0.8		
Medium		Air				
Operating pressure range		1.5 - 7 bar				
Temperature range		-5 to +60°C (no freezing)				
Max frequency		180 Cycles/min				
Lubrication	Cylinder	Not required				
Lever	Grease					
Max. arm length mm (L)		30	40	60	70	85
Theoretical holding force kgf-cm						
	Closed side	0.8	2.4	4.7	7.5	10
	Opened side	0.5	1.8	3.5	6.0	8.5
Lever open / closed stroke		6	8	12	14	16
Weight (g)		66	144	255	419	719

For more information see www.parker.com/euro_pneumatic

P5GB - Parallel Grippers

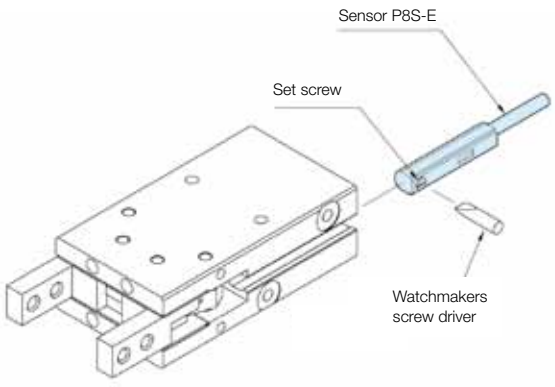
Bore mm	Order code
12	**P5GB-012MSG006B**
16	**P5GB-016MSG008B**
20	**P5GB-020MSG012B**
25	**P5GB-025MSG014B**
32	**P5GB-032MSG016B**

Length of gripping point



* L = gripping joint length 30mm, pressure 5kgf/cm^2

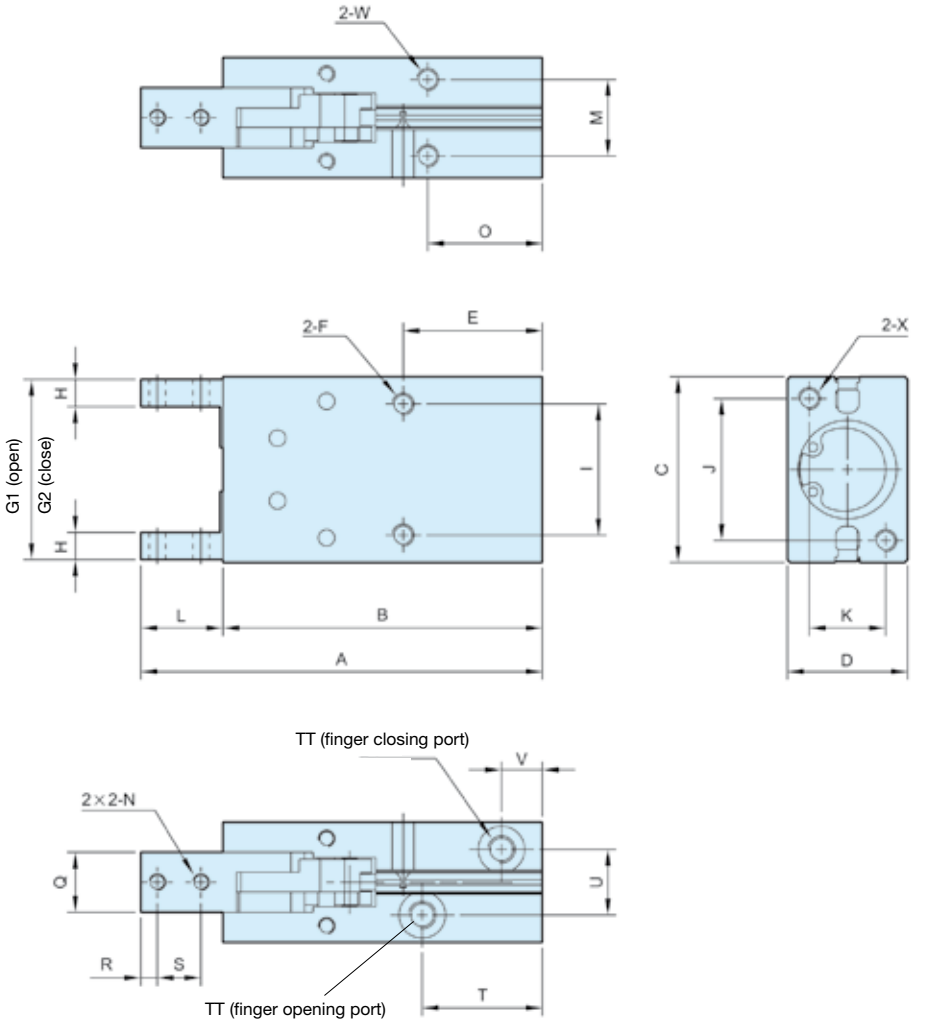
Installation of sensor



Sensors - Series P8S-E

Magnetic Sensor	**M8 - Snap in**	**Flying lead**
	0.165 m PUR cable with M8 connector	2 m PUR cable
PNP	**P8S-EPSUS**	**P8S-EPFXS**
NPN	**P8S-ENSUS**	**P8S-ENFXS**
Reed	**P8S-ERSUS**	**P8S-ERFXS**

Dimensions (mm)



Bore mm	A	B	C	D	E	F	G1	G2	H	I	J	K	L	M	N	O	Q 0/-0.03	R
12	63,5	50,5	28	16	20	M3 x 0.5 x 5 depth	27	21	4	18	17	10	13	10	M3 x 0.5	16	7	3
16	73,5	58,5	34	22	25,5	M4 x 0.7 x 11 depth	33	25	5	24	26	14	15	14	M3 x 0.5	21	11	3
20	88,5	69,5	45	26	25	M5 x 0.8 x 8 depth	44	32	6	30	35	16	19	16	M4 x 0.7	19	12	4
25	102,5	78,5	52	32	28	M6 x 1.0 x 10 depth	51	37	8	36	40	20	24	20	M5 x 0.8	22	14	5
32	120,5	90,5	60	40	34	M6 x 1.0 x 10 depth	59	43	10	44	46	24	30	26	M6 x 1.0	26	20	7

Bore mm	S	T	TT	U	V	W	X
12	6	23	M5 x 0,8 x 5 depth	10,2	7,5	M3 x 0.5 x 5 depth	M3 x 0.5 x 5 depth
16	8	22	M5 x 0,8 x 5 depth	12	7,5	M4 x 0.7 x 7 depth	M4 x 0.7 x 7 depth
20	10	26	M5 x 0,8 x 5 depth	13	8	M5 x 0.8 x 8 depth	M5 x 0.8 x 8 depth
25	12	29	M5 x 0,8 x 5 depth	18	8,5	M6 x 1.0 x 10 depth	M6 x 1.0 x 10 depth
32	15	35	M5 x 0,8 x 5 depth	24	10,5	M6 x 1.0 x 10 depth	M6 x 1.0 x 10 depth

P5GD - Parallel precision guided double acting, square jaw carriers

The P5GD is a parallel double acting gripper with integral linear guides that provide rigidity and high precision for the stainless steel jaw carriers. The anodised aluminium body has mounting points on four sides and integral sensors grooves.

- Bore sizes Ø10, 16, 20 and 25mm
- Double acting
- Stainless steel jaw carriers
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

Technical Information

Acting type	Double acting			
Bore (mm)	10	16	20	25
Port size	M3 x 0.5	M5 x 0.8		
Medium	Air			
Operating pressure range	2 to 7 bar	1 to 7 bar		
Temperature range	-10 to +60°C (no freezing)			
Repeatability	± 0.01 mm			
Max operating frequency	180 Cycles/min			
Lubrication	Not required			
Weight (g)	55	125	250	460

Bore	Gripping force [1] Gripping force per finger effective value N (kgf) External	Internal	Opening closing stroke (both sides) (mm)
10	9.8 (1)	17 (1.7)	4
16	30 (3.1)	40 (4.1)	6
20	42 (4.3)	66 (6.7)	10
25	65 (6.6)	104 (10.6)	14

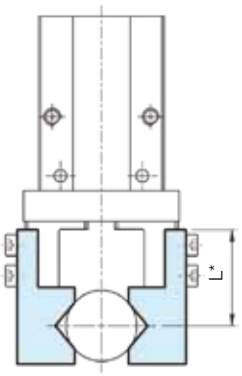
[1] Values based on pressure of 0.5 MPa (5.1 kgf/cm2)

For more information see www.parker.com/euro_pneumatic

P5GD - Parallel Grippers

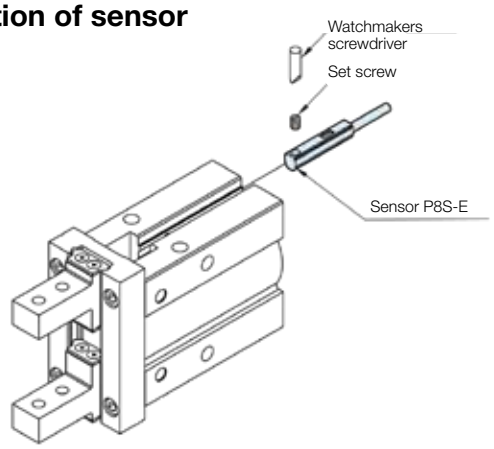
Bore mm	Order code
10	**P5GD-010MSG004B**
16	**P5GD-016MSG006B**
20	**P5GD-020MSG010B**
25	**P5GD-025MSG014B**

Length of gripping point



* L = Gripping point L = 20mm at center of stroke

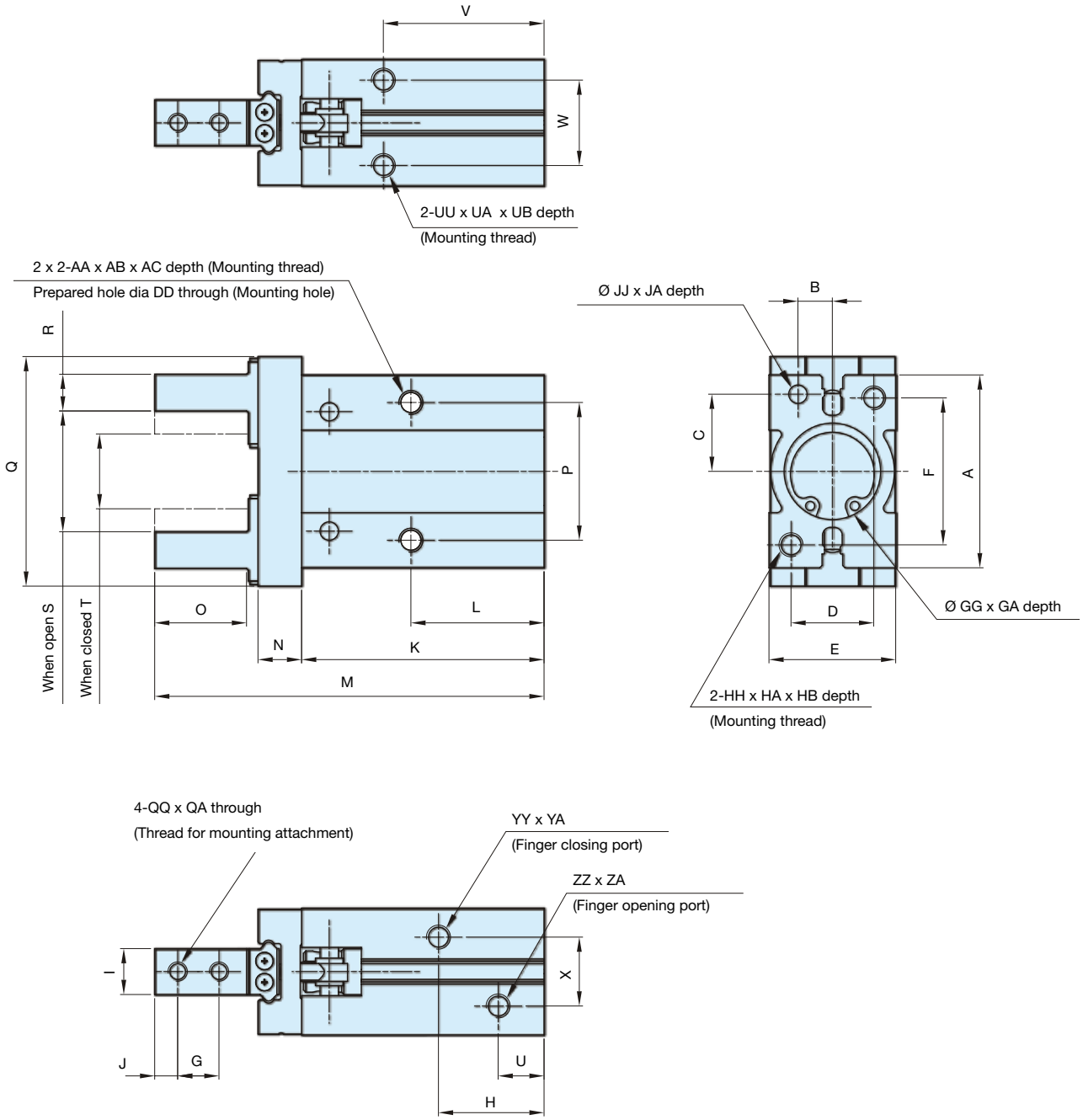
Installation of sensor



Sensors - Series P8S-E

Magnetic Sensor	M8 - Snap in	Flying lead
	0.165 m PUR cable with M8 connector	2 m PUR cable
PNP	**P8S-EPSUS**	**P8S-EPFXS**
NPN	**P8S-ENSUS**	**P8S-ENFXS**
Reed	**P8S-ERSUS**	**P8S-ERFXS**

Dimensions (mm)



Bore mm	A	AA	AB	AC	B	C	D	DD	E	F	G	GG	GA	H	HH	HA	HB	I	J	JJ	JA	K	L	M
10	23	M3	0.5	5.5	5.2 $^{+0.025}_{-0}$	7.6 $^{+0.02}_{-0.02}$	12	2.6	16.4 $^{+0.05}_{-0.05}$	18	5.7	11H9 $^{+0.043}_{-0}$	2	19	M3	0.5	6	5 $^{0}_{-0.05}$	3	2H9 $^{+0.025}_{-0}$	3	37.8	23	57
16	30.6	M4	0.7	8	6.5 $^{+0.25}_{-0}$	11 $^{+0.02}_{-0.02}$	15	3.4	23.6 $^{+0.05}_{-0.05}$	22	7	17H9 $^{+0.043}_{-0}$	2	19	M4	0.7	8	8 $^{0}_{-0.05}$	4	3H9 $^{+0.025}_{-0}$	3	42.5	24.5	67.3
20	42	M5	0.8	10	7.5 $^{+0.030}_{-0}$	16.8 $^{+0.02}_{-0.02}$	18	3.4	27.6 $^{+0.05}_{-0.05}$	32	9	21H9 $^{+0.052}_{-0}$	3	23	M5	0.8	10	10 $^{0}_{-0.05}$	5	4H9 $^{+0.030}_{-0}$	4	52.8	29	84.8
25	52	M6	1	12	10 $^{+0.02}_{-0.02}$	21.8 $^{+0.02}_{-0.02}$	22	5.1	33.6 $^{+0.05}_{-0.05}$	40	12	21H9 $^{+0.052}_{-0}$	3.5	23.5	M6	1	12	12 $^{0}_{-0.05}$	6	4H9 $^{+0.02}_{-0.02}$	4	63.6	30	102.7

Bore mm	N	O	P	Q	QQ	QA	R	S	T	U	UU	UA	UB	V	W	X	YY	YA	ZZ	ZA
10	6	12	16	29	M2.5	0.45	4 $^{0}_{-0.1}$	15.2 $^{+2.2}_{0}$	11.2 $^{0}_{-0.7}$	9	M3	0.5	6	27	11.4	10	M3	0.5	M3	0.5
16	7.5	15	24	38	M3	0.5	5 $^{0}_{-0.1}$	20.9 $^{+2.2}_{-0.2}$	14.9 $^{0}_{-0.7}$	8.5	M4	0.7	4.5	30	16	13	M5	0.8	M5	0.8
20	9.5	20	30	50	M4	0.7	8 $^{0}_{-0.1}$	26.3 $^{+2.2}_{-0.2}$	16.3 $^{0}_{-0.7}$	10	M5	0.8	8	35	18.6	15	M5	0.8	M5	0.8
25	11	25	36	63	M5	0.8	10 $^{0}_{-0.1}$	33.3 $^{+2.2}_{-0.2}$	19.3 $^{0}_{-0.8}$	9.7	M6	1	10	36.5	22	20	M5	0.8	M5	0.8

P5GL - 180° Angular double acting, cam style, square jaw carriers

The P5GL is a 180° angular gripper of compact size and lightweight construction. With double acting movement high gripping forces are achieved via internal cams. The anodised body has mounting points on four sides and sensors can be fitted in any of the four integral grooves.

- Bore sizes Ø10, 16, 20 and 25mm
- Double acting
- Anodised corrosion protection
- Magnetic piston as standard
- Optional sensors

Technical Information

Acting type	Double acting			
Bore (mm)	10	16	20	25
Medium	Air			
Operating pressure range	1 to 6 bar			
Temperature range	-10 to +60°C (no freezing)			
Repeatability	± 0.2 mm			
Max operating frequency	60 Cycles/min			
Lubrication	Not required			
Effective force (Nm) at (5kgf/cm²)	0.16	0.54	1.10	2.28
Operating angle (both sides)				
Opened side	180° - 182°			
Closed side	-3°			
Weight (g)	80	150	320	600

For more information see www.parker.com/euro_pneumatic

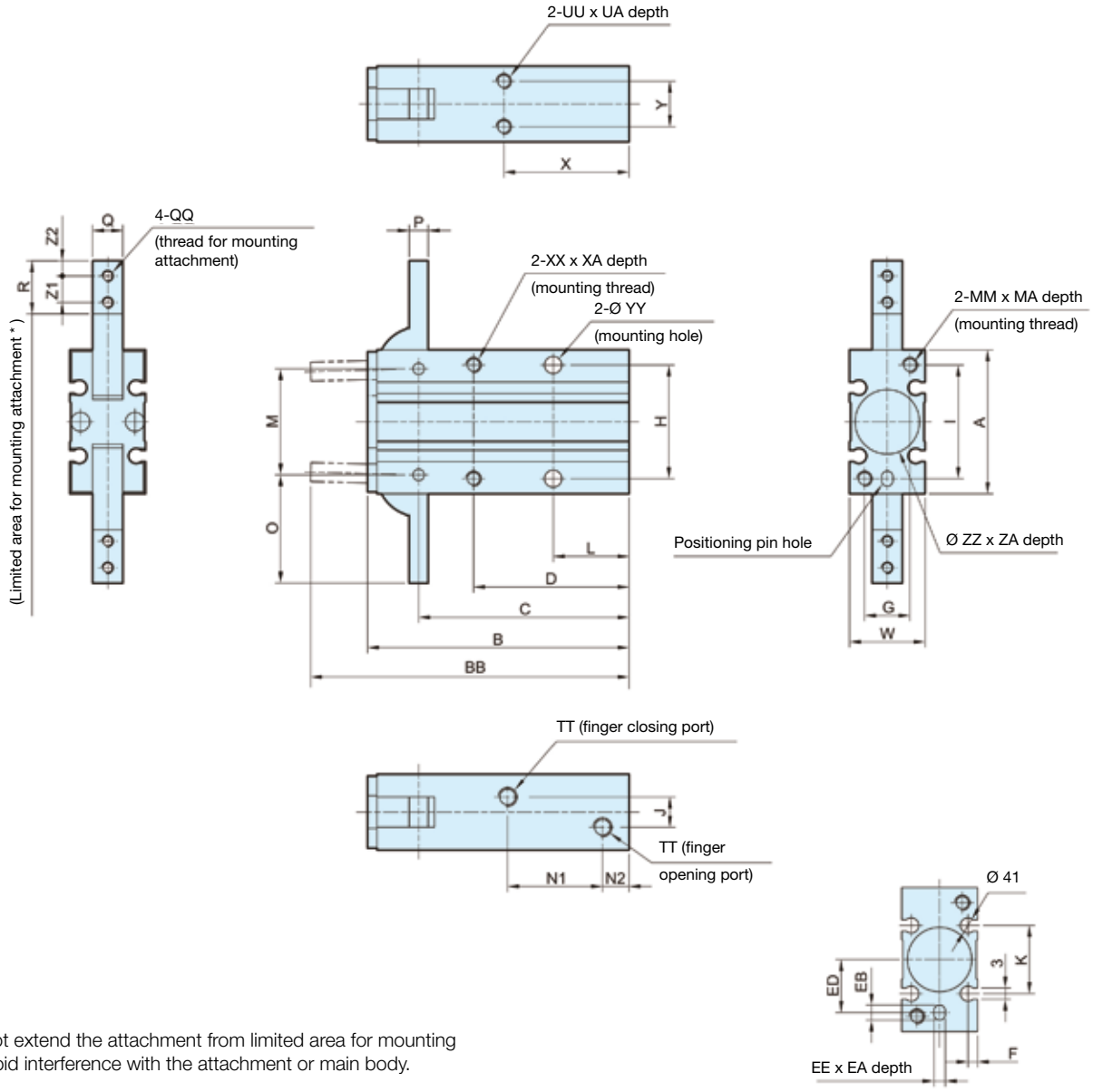
P5GL - 180° Angular Grippers - Cam Style

Bore mm	Order code
10	**P5GL-010MSG180B**
16	**P5GL-016MSG180B**
20	**P5GL-020MSG180B**
25	**P5GL-025MSG180B**

Sensors - Series P8S-H

Magnetic Sensor	**M8 - Snap in**	**Flying lead**
	0.165 m PUR cable with M8 connector	1 m PUR cable
Reed NO	**P8S-HRSUS**	**P8S-HRFCS**

Dimensions (mm)



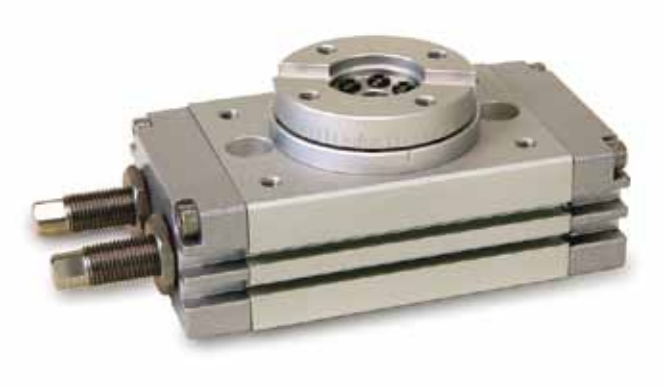
* Do not extend the attachment from limited area for mounting to avoid interference with the attachment or main body.

Bore mm	A	B	BB	C	D	EE	EA	EB	ED	F	G	H	I	J	K	L	M	MA	MM	N1	N2	O	P	Q
12	30	58	71	47,5	35	3H9 $^{+0.025}_{-0}$	3	4	9	2	9	24	24	3	13	18	22	6	M3 x 0.5	23	7	23,5	4	6 $^{+0.005}_{-0.025}$
16	38	69	84	55,5	41	3H9 $^{+0.025}_{-0}$	3	4	15	2,5	12	30	30	8	18	20	28	8	M4 x 0.7	25	7	28,5	5	8 $^{+0.005}_{-0.025}$
20	48	86	106	69	50	4H9 $^{+0.030}_{-0}$	4	5	19	3	16	36	38	12	20	25	36	10	M5 x 0.8	32	8	37	8	10 $^{+0.005}_{-0.025}$
25	58	107	131	86	60	4H9 $^{+0.030}_{-0}$	4	5	23	3	18	42	46	14	24	30	45	12	M6 x 1	42	8	45	10	12 $^{+0.005}_{-0.025}$

Bore mm	QH	QQ	R	TT	UA	UU	W	X	XA	XX	Y	YY	ZA	ZZ	Z1	Z2
12	3,4	M3 x 0.5	12	M5 x 0.8 x 5 depth	4	M3 x 0.5	15	30	6	M3 x 0.5	9	3,4	1,5	11H9 $^{+0.043}_{-0}$	6	3
16	3,4	M3 x 0.5	14	M5 x 0.8 x 5 depth	5	M4 x 0.7	20	33	8	M4 x 0.7	12	4,5	1,5	17H9 $^{+0.043}_{-0}$	7	4
20	4,5	M4 x 0.7	18	M5 x 0.8 x 5 depth	8	M5 x 0.8	26	42	10	M5 x 0.8	14	5,5	1,5	21H9 $^{+0.052}_{-0}$	9	5
25	5,5	M5 x 0.8	22,5	M5 x 0.8 x 5 depth	10	M6 x 1	30	50	12	M6 x 1	16	6,6	1,5	26H9 $^{+0.052}_{-0}$	12	6

P5RS - Rotary Actuators

The P5RS rotary table units provide precise control even under heavy loads, with specially designed load fixing and centring capabilities. End stroke cushioning using supplied adjusting bolts or optional shock absorbers offers dependable linear cushioning enabling objects to be carried and positioned safely and securely.



- Bores Ø16, 20, 25 and 32mm
- Twin rack and pinion
- Adjustable between 0° and 190°
- Magnetic piston standard
- Stroke adjusters standard
- Optional shock absorbers bore Ø20 and 25mm
- Easy mounting of work piece

Operating Information

Pressure range:	1 to 9 bar
Temperature range:	-5° to 60° C
Filtration requirements:	
Air fltration	40 micron or better
Air lubrication	Not necessary*
Air humidity	Low moisture content (dry)

* Addition of lubrication will greatly increase service life

For more information see www.parker.com/euro_pneumatic

Ordering Information: P5RS

Bore mm	Description	Ports (BSPP)	Rotation	Torque (N-m at 5 bar)	Weight (kg)	**Order code**
16	Rotary table, stroke adjusters	1/8	190 degrees	1.21	0.7	**P5RS-016DSG190B**
20	Rotary table, stroke adjusters	1/8	190 degrees	2.51	1.16	**P5RS-020DSG190B**
25	Rotary table, stroke adjusters	1/8	190 degrees	4.91	1.57	**P5RS-025DSG190B**
32	Rotary table, stroke adjusters	1/8	190 degrees	9.86	3.07	**P5RS-032DSG190B**

Note: Above units are supplied with rubber buffer stroke adjusters.

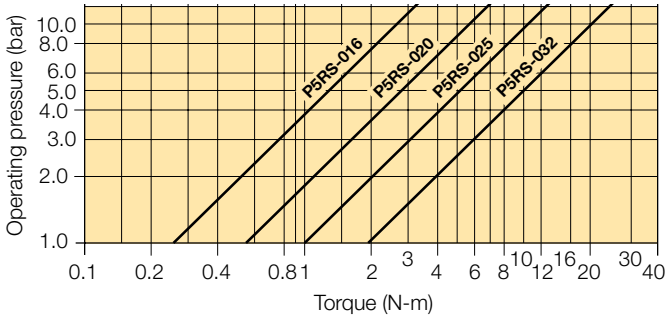
Optional Shock Absorbers

Bore mm	Rotary Actuator	**Order code**
16	P5RS-016DSG190B	**N/A**
20	P5RS-020DSG190B	**N/A**
25	P5RS-025DSG190B	**MC150M**
32	P5RS-032DSG190B	**MC225M**

Sensors - Series P8S-F

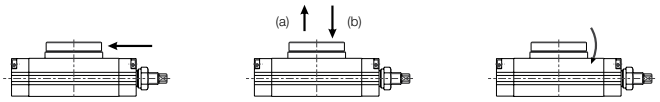
Magnetic Sensor	**M8 - Snap in**	**Flying lead**
	0.15 m PUR cable with M8 connector	2 m PUR cable
Reed, NO	**P8S-FRSUS**	**P8S-FRFXS**

Load capacity P5RS Rotary Table



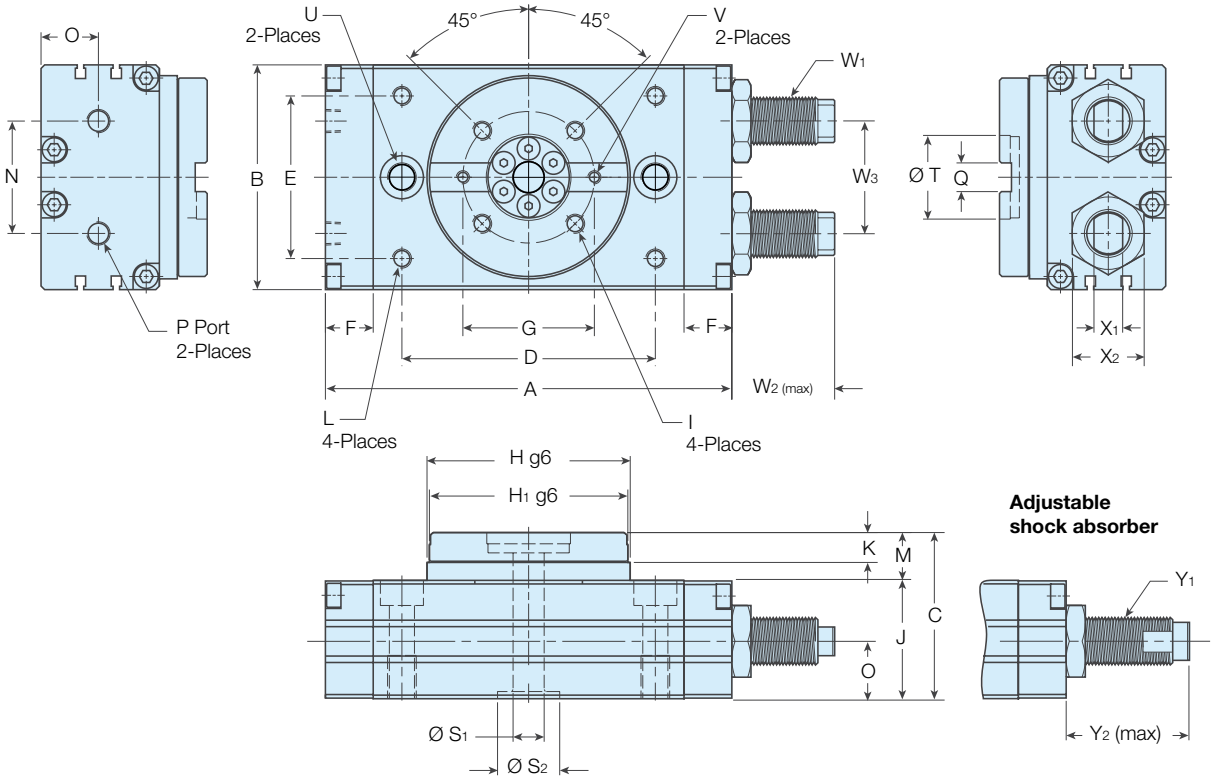
Allowable load

Set the load and moment to be applied to the table within the allowable values shown in the table below.(Values outside of limitations will cause excessive play, deteriorate accuracy, and shorten service life).



Bore	Allowable radial load (N)	Allowable thrust load (N) (a)	(b)	Allowable moment (Nm)
16	78	74	78	2.4
20	147	137	137	4.0
25	196	197	363	5.3
32	314	296	451	9.7

Dimensions P5RS Rotary Table



Bore mm	A	B	C	D	E	F	G	H	H1	I	J	K	L	M	N	O	P BSPP	Q
16	108	58	47	62	38	15	38	50	48	M5 x 7 Dp, P.C.D38	33	8	M5 x 8 Dp	14	26	15.5	PT 1/8	8 $^{+0.03}_{-0}$ x 3.3 Dp
20	128	68	55	78	47	15	46	62.5	60	M6 x 7 Dp, P.C.D46	38	10	M6 x 8 Dp	17	27	18.5	PT 1/8	10 $^{+0.03}_{-0}$ x 3.5 Dp
25	135.5	77	58.5	84	55	15.5	48	67	65	M6 x 9 Dp, P.C.D48	41.5	10	M6 x 8 Dp	17	37	20	PT 1/8	12 $^{+0.03}_{-0}$ x 4 Dp
32	170	94	69.5	106	68	20	55	85	83	M8 x 10 Dp, P.C.D55	49.5	12.5	M8 x 8.5 Dp	20	47	24	PT 1/8	12 $^{+0.03}_{-0}$ x 5 Dp

Bore mm	S1	S2	T	U	V	W1	W2	W3	X1	X2	Y1	Y2
16	6	17 (H7) x 2.5 Dp	24 (H7) x 3 Dp	2-Ø 6.8 thru, Ø11 x 6.5 Dp, M8 x 12 Dp (Sink)	M3 x 4 Dp	M10 x 1,0	27	26	7	17	N/A	N/A
20	10	22 (H7) x 2.5 Dp	32 (H7) x 3 Dp	2-Ø 8.6 thru, Ø14 x 8.5 Dp, M10 x 15 Dp (Sink)	M4 x 6 Dp	M12 x 1,0	23	32	8	19	N/A	N/A
25	13	22 (H7) x 3 Dp	32 (H7) x 3.7 Dp	2-Ø 8.6 thru, Ø14 x 8.5 Dp, M10 x 15 Dp (Sink)	M4 x 5 Dp	M14 x 1,5	36	37	8	22	MC150M	52
32	13	26 (H7) x 3 Dp	35 (H7) x 4.7 Dp	2-Ø 10.5 thru, Ø18 x 10.5 Dp, M12 x 18 Dp (Sink)	M5 x 5 Dp	M20 x 1.5	43	47	12	30	MC225M	62

Dimensions in (mm)

P5SS - Precision Slide Tables

The Precision Slide Table P5SS is a pneumatic actuator, operated by two cylinders mounted in parallel for moving loads fitted on its mobile carriage or on its front plate quickly and accurately. Optional end of stroke adjusters offer precise adjustment even when the slide table is pressurised.

- High precision
- Bores Ø6, 8, 12,16, 20 and 25mm
- Combination of dual bore cylinder and linear rail
- Magnetic piston standard
- Rubber bumper standard
- Optional stroke adjusters
- Optional shock absorbers bores Ø8 - 25mm

Operating Information

Pressure range:	1.5 to 7 bar
Temperature range:	-5° to 60° C
Filtration requirements:	
Air fltration	40 micron or better
Air lubrication	Not necessary*
Air humidity	Low moisture content (dry)

* Addition of lubrication will greatly increase service life

For more information see www.parker.com/euro_pneumatic

Ordering Information: P5SS

Ø6mm bore

Stroke (mm)	Order code
10	**P5SS-006DSG010B**
20	**P5SS-006DSG020B**
30	**P5SS-006DSG030B**
40	**P5SS-006DSG040B**
50	**P5SS-006DSG050B**

Ø12mm bore

Stroke (mm)	Order code
10	**P5SS-012DSG010B**
20	**P5SS-012DSG020B**
30	**P5SS-012DSG030B**
40	**P5SS-012DSG040B**
50	**P5SS-012DSG050B**
75	**P5SS-012DSG075B**
100	**P5SS-012DSG100B**

Ø20mm bore

Stroke (mm)	Order code
10	**P5SS-020DSG010B**
20	**P5SS-020DSG020B**
30	**P5SS-020DSG030B**
40	**P5SS-020DSG040B**
50	**P5SS-020DSG050B**
75	**P5SS-020DSG075B**
100	**P5SS-020DSG100B**
125	**P5SS-020DSG125B**

Ø8mm bore

Stroke (mm)	Order code
10	**P5SS-008DSG010B**
20	**P5SS-008DSG020B**
30	**P5SS-008DSG030B**
40	**P5SS-008DSG040B**
50	**P5SS-008DSG050B**
75	**P5SS-008DSG075B**

Ø16mm bore

Stroke (mm)	Order code
10	**P5SS-016DSG010B**
20	**P5SS-016DSG020B**
30	**P5SS-016DSG030B**
40	**P5SS-016DSG040B**
50	**P5SS-016DSG050B**
75	**P5SS-016DSG075B**
100	**P5SS-016DSG100B**
125	**P5SS-016DSG125B**

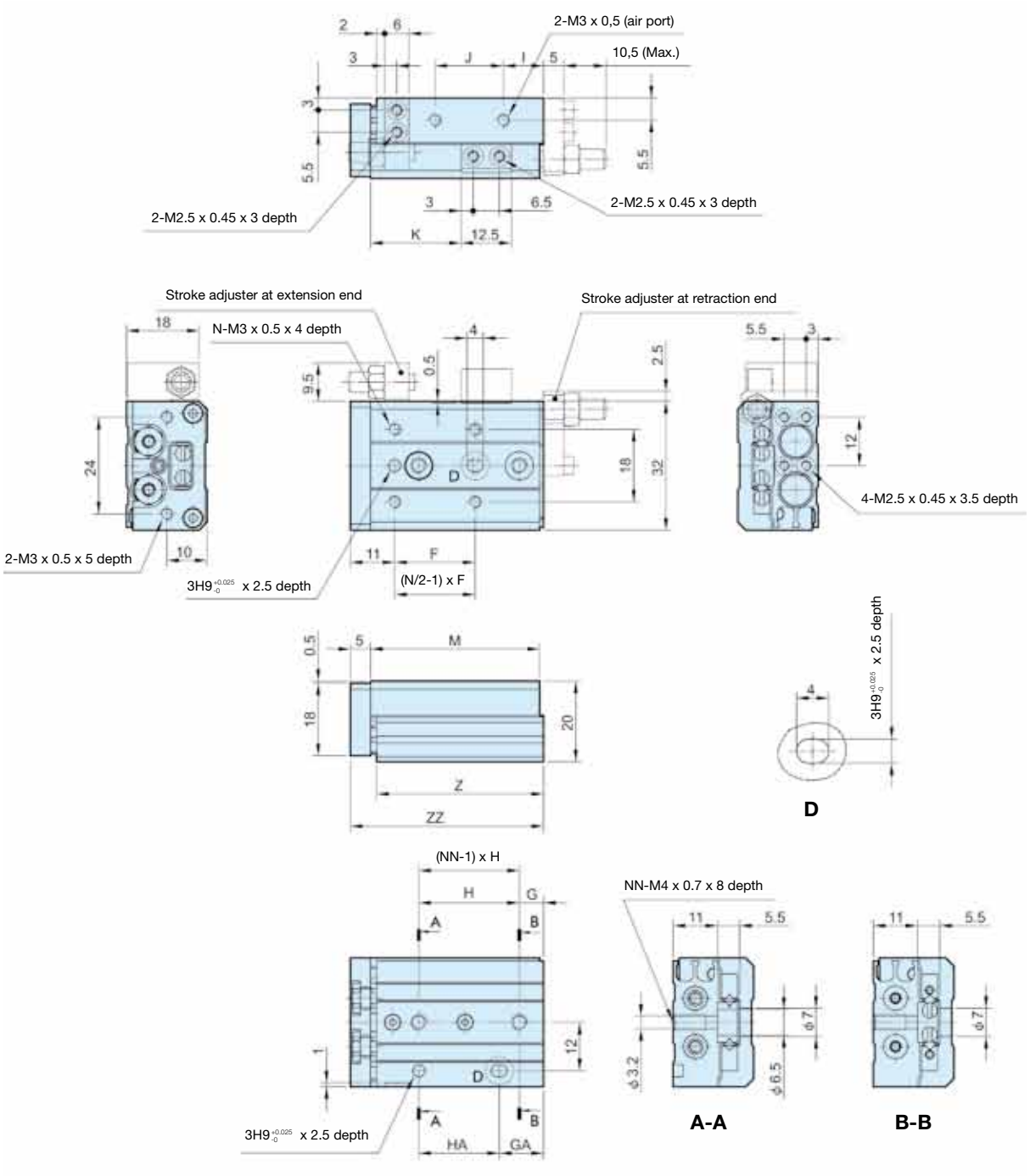
Ø25mm bore

Stroke (mm)	Order code
10	**P5SS-025DSG010B**
20	**P5SS-025DSG020B**
30	**P5SS-025DSG030B**
40	**P5SS-025DSG040B**
50	**P5SS-025DSG050B**
75	**P5SS-025DSG075B**
100	**P5SS-025DSG100B**
125	**P5SS-025DSG125B**
150	**P5SS-025DSG150B**

Sensors - Series P8S-E

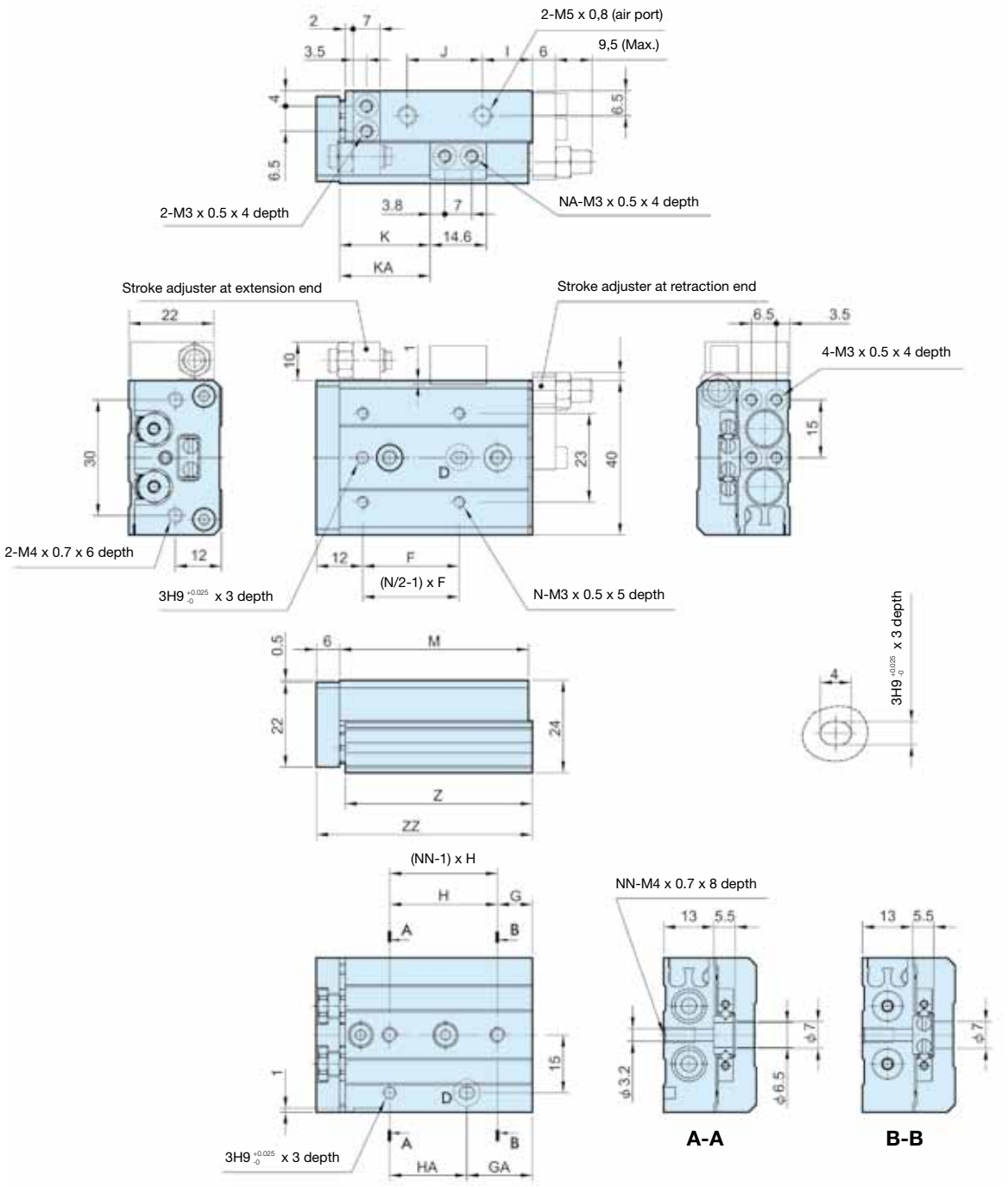
Magnetic Sensor	**M8 - Snap in**	**Flying lead**
	0.165 m PUR cable with M8 connector	2 m PUR cable
PNP	**P8S-EPSUS**	**P8S-EPFXS**
NPN	**P8S-ENSUS**	**P8S-ENFXS**
Reed	**P8S-ERSUS**	**P8S-ERFXS**

Precision Slide Table Ø6 - Dimensions (mm)



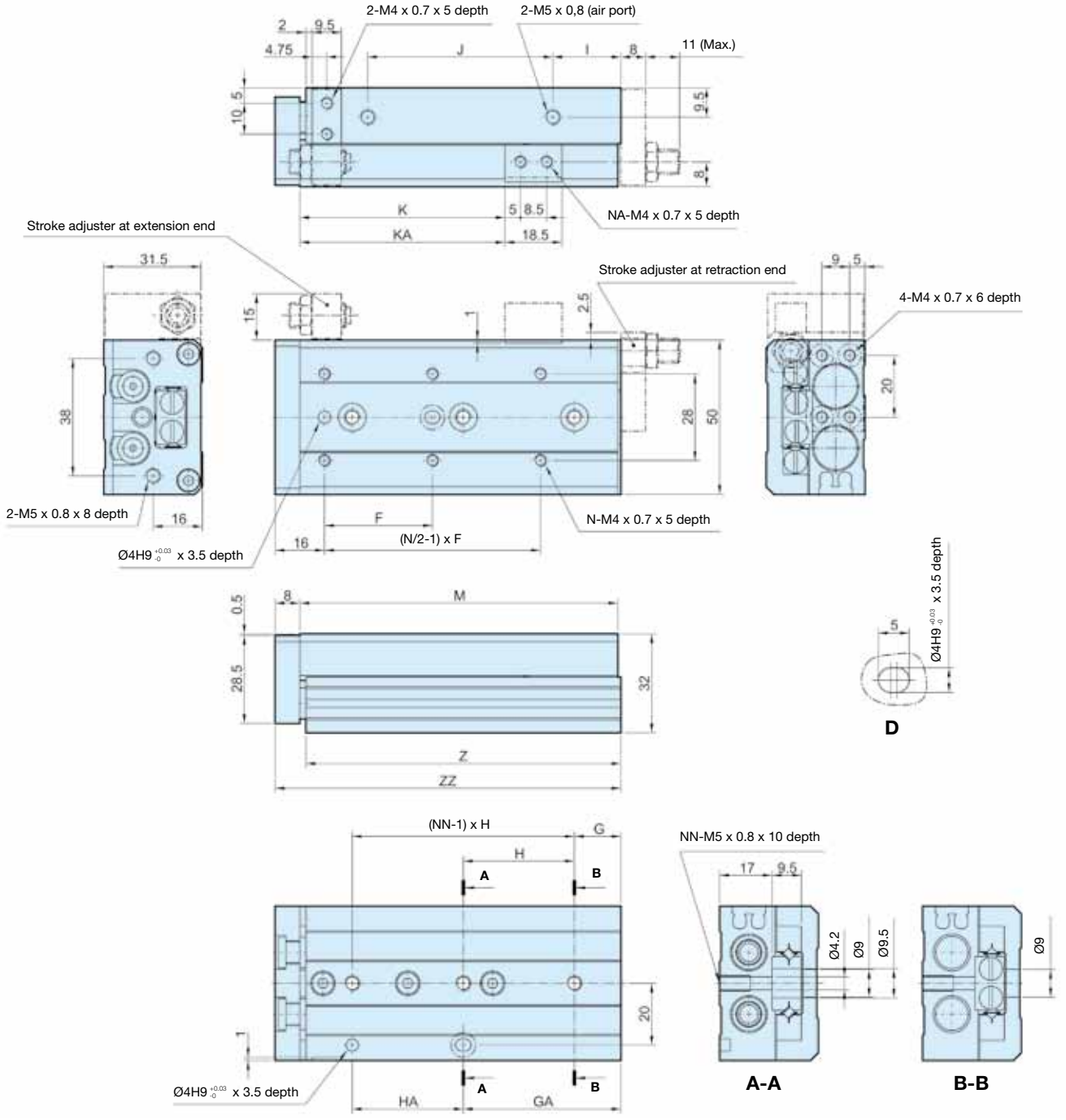
Stroke	F	G	GA	H	HA	I	J	K	M	N	NN	Z	ZZ
10	20	6	11	25	20	10	17	22,5	42	4	2	41,5	48
20	30	6	21	35	20	10	27	32,5	52	4	2	51,5	58
30	20	11	31	20	20	7	40	42,5	62	6	3	61,5	68
40	28	13	43	30	30	19	50	52,5	84	6	3	83,5	90
50	38	17	41	24	48	25	60	62,5	100	6	4	99,5	106

Precision Slide Table Ø8 - Dimensions (mm)



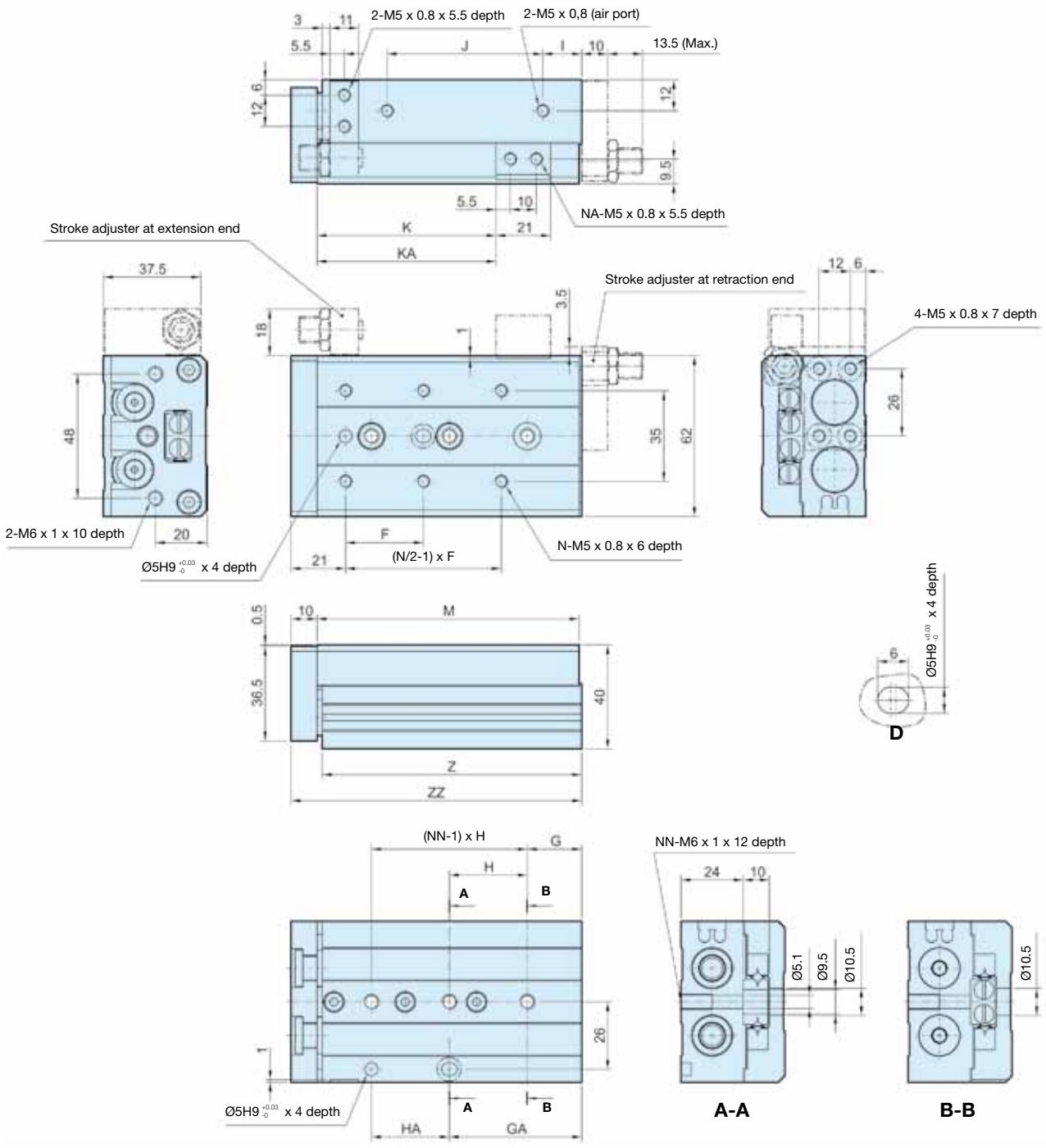
Stroke	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	25	9	17	28	20	13	19,5	23,5	-	49	4	2	2	48,5	56
20	25	12	12	30	30	8,5	29	33,5	-	54	4	2	2	53,5	61
30	40	13	33	20	20	9,5	39	43,5	-	65	4	2	3	64,5	72
40	50	15	43	28	28	10,5	56	53,5	-	83	4	2	3	82,5	90
50	38	20	43	23	46	24,5	60	63,5	82,5	101	6	4	4	100,5	108
75	50	27	83	28	56	38,5	96	88,5	132,5	151	6	4	5	105,5	158

Precision Slide Table Ø12 - Dimensions (mm)



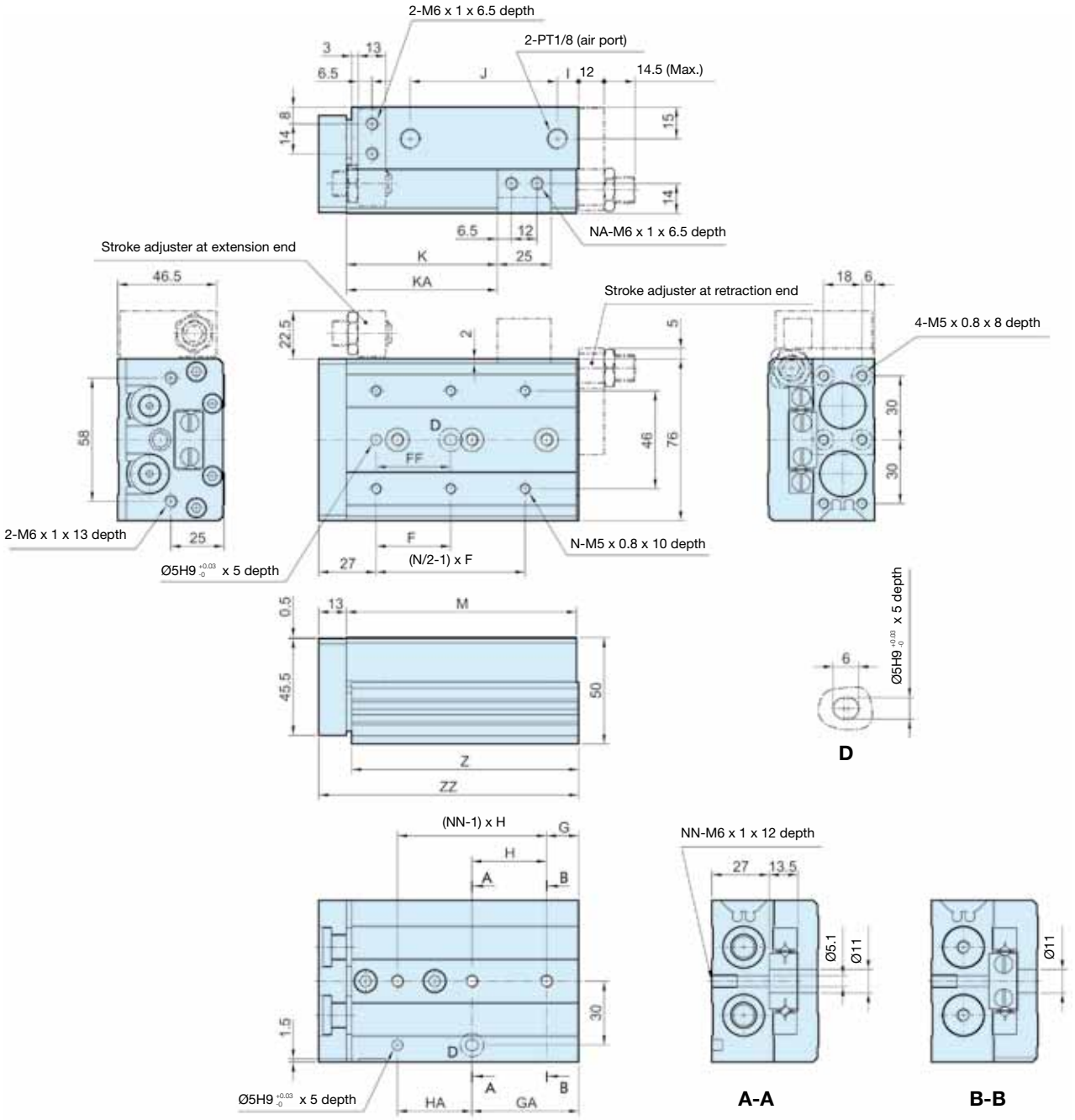
Stroke	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	35	15	15	40	40	10	40	26,5	-	71	4	2	2	70	80
20	35	15	15	40	40	10	40	36,5	-	71	4	2	2	70	80
30	35	15	15	40	40	10	40	46,5	-	71	4	2	2	70	80
40	50	17	42	25	25	10	52	56,5	-	83	4	2	3	82	92
50	35	15	51	36	36	22	60	66,5	-	103	6	2	3	102	112
75	55	25	61	36	72	43	85	91,5	125,5	149	6	4	4	148	158
100	65	35	111	38	76	52	130	116,5	179,5	203	6	4	5	202	212

Precision Slide Table Ø16 - Dimensions (mm)



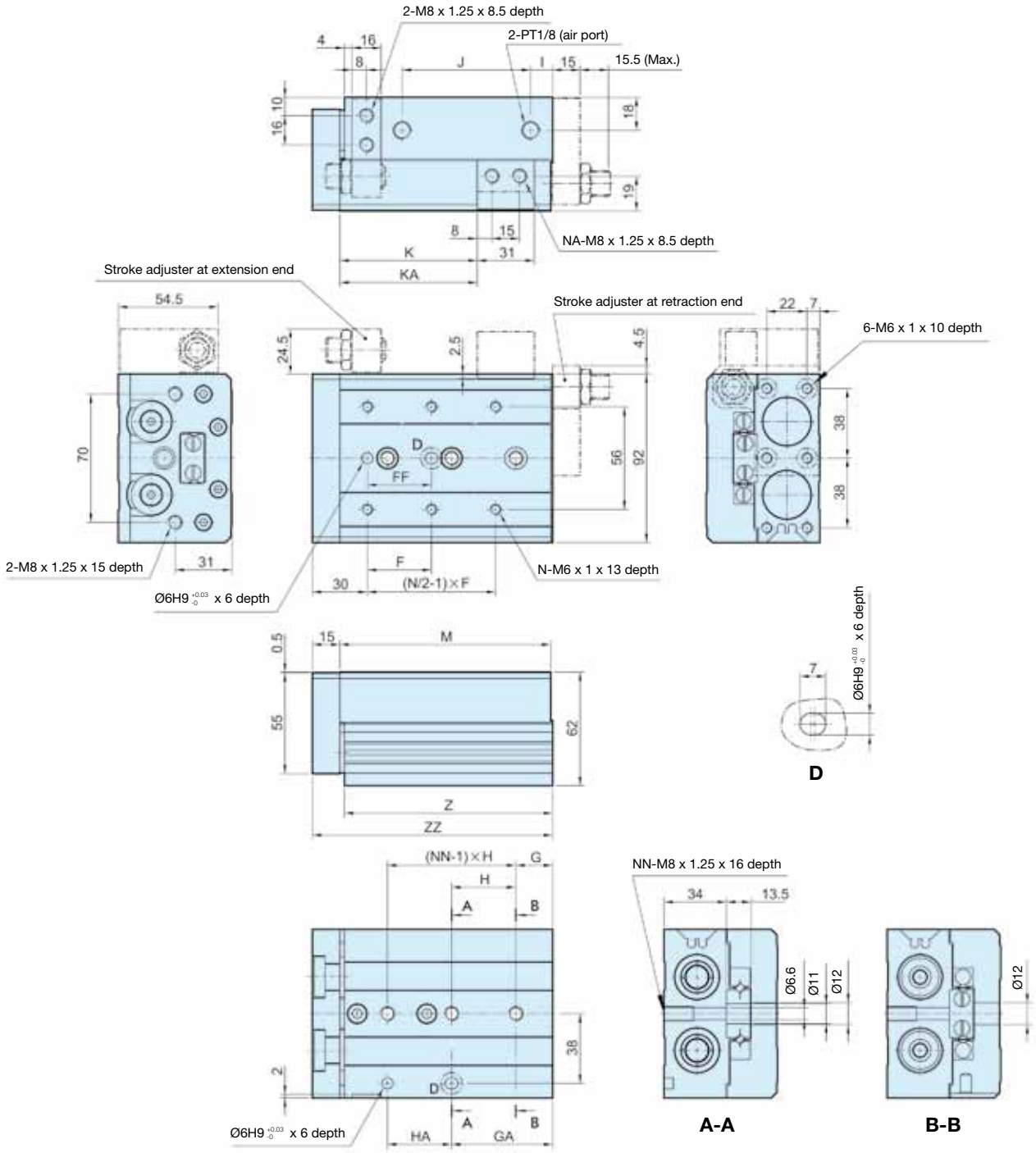
Stroke	F	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	35	16	16	40	40	10	40	29	-	76	4	2	2	75	87
20	35	16	16	40	40	10	40	39	-	76	4	2	2	75	87
30	35	16	16	40	40	10	40	49	-	76	4	2	2	75	87
40	40	16	16	50	50	10	50	59	-	86	4	2	2	85	97
50	30	21	51	30	30	15	60	69	-	101	6	2	3	100	112
75	55	26	61	35	70	40	85	94	125	151	6	4	4	150	162
100	65	39	109	35	70	55	118	119	173	199	6	4	5	198	210
125	70	19	159	35	70	68	155	144	223	249	8	4	7	248	260

Precision Slide Table Ø20 - Dimensions (mm)



Stroke	F	FF	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	50	40	15	25	45	35	10	44	31	-	83	4	2	2	81,5	97
20	50	40	15	25	45	35	10	44	41	-	83	4	2	2	81,5	97
30	50	40	15	25	45	35	10	44	51	-	83	4	2	2	81,5	97
40	60	50	15	35	55	35	10	54	61	-	93	4	2	2	91,5	107
50	35	35	15	50	35	35	10	69	71	-	108	6	2	3	106,5	122
75	60	60	19	54	35	70	10	108	96	-	147	6	2	4	145,5	161
100	70	70	37	107	35	70	58	113	121	169	200	6	4	5	198,5	214
125	70	70	41	155	38	76	70	155	146	223	254	8	4	6	252,5	268
150	80	80	19	195	44	88	87	190	171	275	306	8	4	7	304,5	320

Precision Slide Table Ø25 - Dimensions (mm)

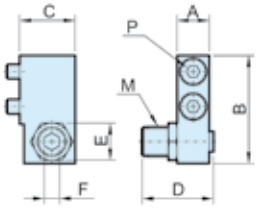


Stroke	F	FF	G	GA	H	HA	I	J	K	KA	M	N	NA	NN	Z	ZZ
10	50	40	22	22	45	45	12	47	35	-	92	4	2	2	90,5	108
20	50	40	22	22	45	45	12	47	45	-	92	4	2	2	90,5	108
30	50	40	22	22	45	45	12	47	55	-	92	4	2	2	90,5	108
40	60	50	22	22	55	55	12	57	65	-	102	4	2	2	100,5	118
50	35	35	20	55	35	35	12	70	75	-	115	6	2	3	113,5	131
75	60	60	26	61	35	70	33	90	100	-	156	6	2	4	154,5	172
100	70	70	32	102	35	70	50	114	125	162	197	6	4	5	195,5	213
125	75	75	40	154	38	76	67	155	150	218	255	8	4	6	253,5	271
150	80	80	30	190	40	80	82	180	175	258	295	8	4	7	293,5	311

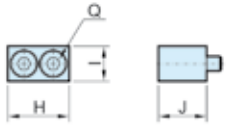
Accessories Ø6 - Ø25

Stroke adjuster at extension end:

Mounted to body



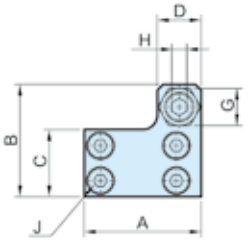
Mounted to table



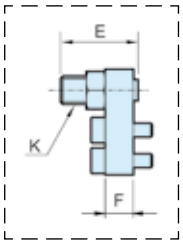
Bore mm	Order code	Adjustable stroke range (mm)	Mounted to body								Mounted to table			
			A	B	C	D	E	F	M	P*	H	I	J	Q*
6	**P5SS-006-EA-05**	5	6	17,8	10,5	16,5	7	2,5	M5 x 0.8	M2.5x10	12,5	6	8,5	M2.5 x 8
	P5SS-006-EA-15	15				26,5								
8	**P5SS-008-EA-05**	5	7	21,5	11	16,5	8	3	M6 x 1	M3 x 10	14,6	7	10	M3 x 10
	P5SS-008-EA-15	15				26,5								
	P5SS-008-EA-25	25				36,5								
12	**P5SS-012-EA-05**	5	9,5	31	16	20	11	4	M8 x 1	M4 x 16	18,5	10	13	M4 x 12
	P5SS-012-EA-15	15				30								
	P5SS-012-EA-25	25				40								
16	**P5SS-016-EA-05**	5	11	37	19	24,5	14	5	M10 x 1	M5 x 16	21	12	16,5	M5 x 16
	P5SS-016-EA-15	15				34,5								
	P5SS-016-EA-25	25				44,5								
20	**P5SS-020-EA-05**	5	13	45,5	24	27,5	17	6	M12 x 1.25	M6 x 20	25	13	21	M6 x 20
	P5SS-020-EA-15	15				37,5								
	P5SS-020-EA-25	25				47,5								
25	**P5SS-025-EA-05**	5	16	53,5	26,5	32,5	19	6	M14 x 1.5	M8 x 25	31	17	25,5	M8 x 25
	P5SS-025-EA-15	15				42,5								
	P5SS-025-EA-25	25				52,5								

* Size of hexagon socket head cap screws

Stroke adjuster at retraction end:



P5SS-006
P5SS-008



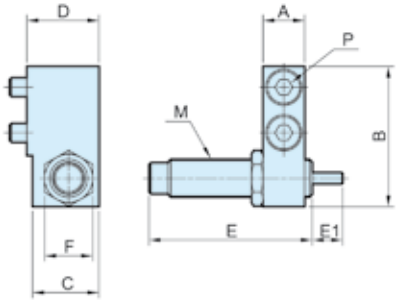
Bore mm	Order code	Adjustable stroke range (mm)	A	B	C	D	E	F	G	H	J*	K
6	**P5SS-006-RA-05**	5	21	19	10,5	8	16,5	5	7	2,5	M2.5 x 8	M5 x 0.8
	P5SS-006-RA-15	15					26,5					
8	**P5SS-008-RA-05**	5	25	22,5	12,5	9	16,5	6	8	3	M3 x 10	M6 x 1
	P5SS-008-RA-15	15					26,5					
	P5SS-008-RA-25	25					36,5					
12	**P5SS-012-RA-05**	5	32	31	18,5	13	20	8	12	4	M4 x 8	M8 x 1
	P5SS-012-RA-15	15					30					
	P5SS-012-RA-25	25					40					
16	**P5SS-016-RA-05**	5	40	38,5	23	15	24,5	10	14	5	M5 x 10	M10 x 1
	P5SS-016-RA-15	15					34,5					
	P5SS-016-RA-25	25					44,5					
20	**P5SS-020-RA-05**	5	50	48	29	21	27,5	12	17	6	M5 x 12	M12 x 1.25
	P5SS-020-RA-15	15					37,5					
	P5SS-020-RA-25	25					47,5					
25	**P5SS-025-RA-05**	5	60	58	35	23	32,5	15	19	6	M6 x 16	M14 x 1.5
	P5SS-025-RA-15	15					42,5					
	P5SS-025-RA-25	25					52,5					

* Size of hexagon socket head cap screws

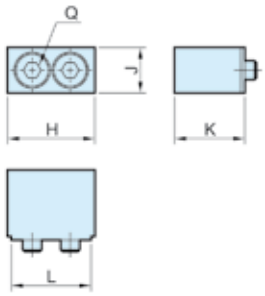
Accessories Ø8 - Ø25

Shock absorber at extension end:

Mounted to body



Mounted to table

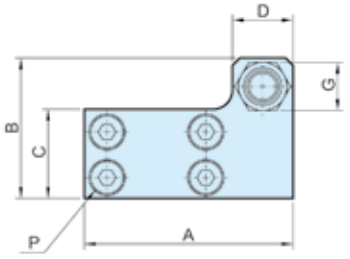


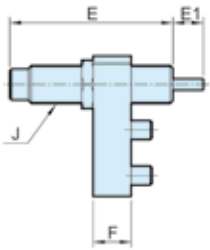
Bore	Order code	Mounted to body									Mounted to table				
mm		A	B	C	D	E	E1	F	M	P*	H	J	K	L	Q*
8	**P5SS-008-ESK**	7	23	14	15,5	40,6	6	11	M8 x 1	M3 x 16	16,6	7	15,5	14,6	M3 x 16
12	**P5SS-012-ESK**	9,5	31	14,5	16	40,6	6	11	M8 x 1	M4 x 16	20,5	10	15	18,5	M4 x 12
16	**P5SS-016-ESK**	11	37	17,5	19	47	7	12,7	M10 x 1	M5 x 16	23	12	18,5	21	M5 x 16
20	**P5SS-020-ESK**	13	45,5	23,5	26	67	12	19	M14 x 1.5	M6 x 25	27	13	25,5	25	M6 x 25
25	**P5SS-025-ESK**	16	53,5	23,5	26,5	67	12	19	M14 x 1.5	M8 x 25	33	17	25,5	31	M8 x 25

* Size of hexagon socket head cap screws

Shock absorber at retraction end:

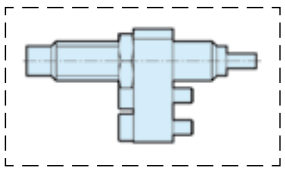
Mounted to body

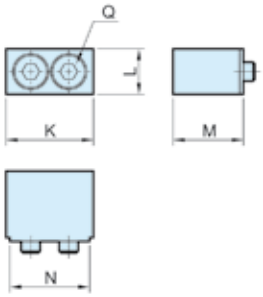




Mounted to table

P5SS-008





Bore	Order code	Mounted to body										Mounted to table				
mm		A	B	C	D	E	E1	F	G	J	P*	K	L	M	N	Q*
8	**P5SS-008-RSK**	38	23	12,5	14	40,6	6	8	12	M8 x 1	M3 x 12	16,6	7	15,5	14,6	M3 x 16
12	**P5SS-012-RSK**	45	31	18	14	40,6	6	8	11	M8 x 1	M4 x 8	20,5	10	15	18,5	M4 x 12
16	**P5SS-016-RSK**	55	37	23,5	16	47	7	10	12,7	M10 x 1	M5 x 10	23	12	18,5	21	M5 x 16
20	**P5SS-020-RSK**	70	47	29	23	67	12	12	19	M14 x 1.5	M5 x 12	27	13	25,5	25	M6 x 25
25	**P5SS-025-RSK**	80	54	35	23	67	12	12	19	M14 x 1.5	M6 x 16	33	17	25,5	31	M8 x 25

* Size of hexagon socket head cap screws

Rotary Actuators

Stainless Steel Air Motors

P1V-S Series

An ideal choice for the ***Food Industry***

Designed for demanding applications and available in a wide variety of speeds and output torques. The all round, dirt-trap free design, stainless steel construction and viton external seals makes them the ideal choice for the Food Industry, where washdown with aggressive cleaning agents is common.

All versions are reversible in use and are fitted with a keyed shaft as standard. Power output from 20 to 1200 Watts is available and they are extremely efficient in operation, air consumption is low, ranging from 3,7 l/s to 27l/s.

P1V-S is a range of air motors with all external components made of stainless steel, which means that they can be used in food grade applications, and in all other applications where there is a risk of corrosion.

- Power from 0,02 kW to 1,2 kW
- ATEX CE Ex approved from 0,12 kW to 1,2 kW
- Designed for arduous applications
- No-lube intermittent operation as standard
- 0,2 kW and 0,3 kW Brakemotors for higher safety

For ATEX specific products contact Sales Office

Note: All air motors can be operated oil-free without special adaptation with only a 20% reduction of power.

Operating information

Working presure: Max 7 bar (max 6 bar in Ex area)
Working temperature: -30° to +100° C (-20° to +40°C in Ex area)
Fluid: Compressed air with ISO 8573-1 Quaility class 3.4.3 (no-lube operation) and 3.-.5 (lube operation)
ATEX approval: CE Ex II 2 GD c IIC T6 (80°C)X
CE Ex II 2 GD c IIC T5 (95°C)X

Note: All technical data is based on a working pressure of 6 bar in the inlet port

Reversible air motors

Keyed shaft, P1V-S002A series, 20 watt - (M5)

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,02	1300	650	0,29	0,44	1.7	M5	3	**P1V-S002A0130**
0,02	950	475	0,40	0,60	1.7	M5	3	**P1V-S002A0095**

Keyed shaft, P1V-S008A series, 80 watt - (M8 x 0,75, 3 push in nippels for plastic pipes Ø6/4 mm supplied)

0,08	24000	12000	0,06	0,09	3.5	M8 x 0,75*	4	**P1V-S008A0Q00**
0,08	7000	3500	0,22	0,33	3.5	M8 x 0,75*	4	**P1V-S008A0700**
0,08	1900	950	0,80	1,20	3.5	M8 x 0,75*	4	**P1V-S008A0190**
0,08	1300	650	1,20	1,80	3.5	M8 x 0,75*	4	**P1V-S008A0130**

Keyed shaft, P1V-S012A series, 120 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5.0	G1/8	6	**P1V-S012A0N00**
0,12	5500	2750	0,42	0,63	5.0	G1/8	6	**P1V-S012A0550**
0,12	3600	1800	0,64	0,95	5.0	G1/8	6	**P1V-S012A0360**
0,12	1400	700	1,64	2,40	5.0	G1/8	6	**P1V-S012A0140**
0,12	900	450	2,54	3,80	5.0	G1/8	6	**P1V-S012A0090**
0,12	600	300	3,82	5,00*	5.0	G1/8	6	**P1V-S012A0060**
0,12	100	50	5,00*	5,00*	5.0	G1/8	6	**P1V-S012A0010**

Threaded shaft, P1V-S012D series, 120 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

0,12	22000	11000	0,10	0,15	5.0	G1/8	6	**P1V-S012D0N00**
0,12	5500	2750	0,42	0,63	5.0	G1/8	6	**P1V-S012D0550**
0,12	3600	1800	0,64	0,95	5.0	G1/8	6	**P1V-S012D0360**
0,12	1400	700	1,64	2,40	5.0	G1/8	6	**P1V-S012D0140**
0,12	900	450	2,54	3,80	5.0	G1/8	6	**P1V-S012D0090**
0,12	600	300	3,82	5,00*	5.0	G1/8	6	**P1V-S012D0060**
0,12	100	50	5,00*	5,00*	5.0	G1/8	6	**P1V-S012D0010**

Keyed shaft, P1V-S020A series, 200 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

0,20	14500	7250	0,26	0,40	6.3	G1/8	10	**P1V-S020A0E50**
0,20	4600	2300	0,80	1,20	6.3	G1/8	10	**P1V-S020A0460**
0,20	2400	1200	1,60	2,40	6.3	G1/8	10	**P1V-S020A0240**
0,20	1400	700	2,70	4,10	6.3	G1/8	10	**P1V-S020A0140**
0,20	700	350	5,40	8,20	6.3	G1/8	10	**P1V-S020A0070**
0,20	350	160	12,00	18,00	6.3	G1/8	10	**P1V-S020A0035**
0,10	180	90	10,50	15,00	6.3	G1/8	10	**P1V-S020A0018**
0,20	110	55	33,00	49,50	6.3	G1/8	10	**P1V-S020A0011**
0,20	60	30	72,00	108,00*	6.3	G1/8	10	**P1V-S020A0006**
0,18	50	25	20,00*	20,00*	6.3	G1/8	10	**P1V-S020A0005**
0,18	20	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020A0002**
0,18	10	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020A0001**
0,20	5	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020A00005**

* Max allowed torque

Reversible air motors

Threaded shaft, P1V-S020D series, 200 watt - (G1/8)

CE Ex II2GD cIIC T6 (80°C) X

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6.3	G1/8	10	**P1V-S020D0E50**
0,20	4600	2300	0,80	1,20	6.3	G1/8	10	**P1V-S020D0460**
0,20	2400	1200	1,60	2,40	6.3	G1/8	10	**P1V-S020D0240**
0,20	1400	700	2,70	4,10	6.3	G1/8	10	**P1V-S020D0140**
0,20	700	350	5,40	8,20	6.3	G1/8	10	**P1V-S020D0070**
0,20	350	160	12,00	18,00	6.3	G1/8	10	**P1V-S020D0035**
0,10	180	90	10,50	15,00	4.5	G1/8	10	**P1V-S020D0018**
0,20	50	25	20,00*	20,00*	6.3	G1/8	10	**P1V-S020D0005**

Keyed shaft, P1V-S030A series, 300 watt - (G1/4)

CE Ex II2GD cIIC T6 (80°C) X

0,30	14500	7250	0,40	0,60	8.0	G1/4	10	**P1V-S030A0E50**
0,30	4600	2300	1,20	1,90	8.0	G1/4	10	**P1V-S030A0460**
0,30	2400	1200	2,40	3,60	8.0	G1/4	10	**P1V-S030A0240**
0,30	1400	700	4,10	6,10	8.0	G1/4	10	**P1V-S030A0140**
0,30	600	300	9,60	14,30	8.0	G1/4	10	**P1V-S030A0060**
0,30	280	140	20,50	26,00	8.0	G1/4	10	**P1V-S030A0028**
0,30	230	115	24,00	36,00	8.0	G1/4	10	**P1V-S030A0023**
0,13	180	90	13,80	21,00	4.7	G1/4	10	**P1V-S030A0018**
0,30	100	50	57,00	85,50	8.0	G1/4	10	**P1V-S030A0010**
0,30	50	25	36,00*	36,00*	8.0	G1/4	10	**P1V-S030A0005**

Threaded shaft, P1V-S030D series, 300 watt - (G1/4)

CE Ex II2GD cIIC T6 (80°C) X

0,30	14500	7250	0,40	0,60	8.0	G1/4	10	**P1V-S030D0E50**
0,30	4600	2300	1,20	1,90	8.0	G1/4	10	**P1V-S030D0460**
0,30	2400	1200	2,40	3,60	8.0	G1/4	10	**P1V-S030D0240**
0,30	1400	700	4,10	6,10	8.0	G1/4	10	**P1V-S030D0140**
0,30	600	300	9,60	14,30	8.0	G1/4	10	**P1V-S030D0060**
0,30	280	140	20,50	26,00	8.0	G1/4	10	**P1V-S030D0028**
0,13	180	90	13,80	21,00	4.7	G1/4	10	**P1V-S030D0018**
0,30	50	25	36,00*	36,00*	8.0	G1/4	10	**P1V-S030D0005**

Keyed shaft, P1V-S060A series, 600 watt - (G3/8)

CE Ex II2GD cIIC T6 (80°C) X

0,60	14000	7000	0,82	1,23	14.5	G3/8	12	**P1V-S060A0E00**
0,60	4000	2000	2,90	4,30	14.5	G3/8	12	**P1V-S060A0400**
0,60	2700	1350	4,20	6,40	14.5	G3/8	12	**P1V-S060A0270**
0,60	1700	850	6,70	10,10	14.5	G3/8	12	**P1V-S060A0170**
0,60	720	360	15,90	24,00	14.5	G3/8	12	**P1V-S060A0072**
0,60	480	240	23,90	36,00	14.5	G3/8	12	**P1V-S060A0048**
0,60	300	150	38,20	57,00	14.5	G3/8	12	**P1V-S060A0030**
0,30	100	50	60,00*	60,00*	14.5	G3/8	12	**P1V-S060A0010**

Keyed shaft, P1V-S120A series, 1200 watt - (G3/4)

CE Ex II2GD cIIC T5 (95°C) X

1,20	8000	4000	2,90	4,30	27,0	G3/4	19	**P1V-S120A0800**
1,20	2700	1350	8,50	12,70	27,0	G3/4	19	**P1V-S120A0270**
1,20	1100	550	21,00	31,00	27,0	G3/4	19	**P1V-S120A0110**
1,20	780	390	29,40	44,00	27,0	G3/4	19	**P1V-S120A0078**
1,20	320	160	71,60	107,00	27,0	G3/4	19	**P1V-S120A0032**
1,20	200	100	66,90	110,00*	19,0	G3/4	19	**P1V-S120A0012**

* Max allowed torque

Brake motors

The integrated brake is a spring-loaded disk brake, which is released at a minimum air pressure of 5 bar. The brake is applied in the absence of pressure.

The technology and the size of air motors with integrated running and stationary brake make them ideal for applications requiring repeated precise positioning.

The motor can also be kept stationary in a specific position, and the stopping time for a rotating weight can be shortened significantly. Another typical application for brake motors is when the output shaft needs to be held in one position when the motor stops delivering torque.

The brake can handle more than 1500 braking operations per hour at maximum braking torque.

Note!
Brake motors must only ever be supplied with unlubricated air, otherwise there is a risk of oil from the supply air getting into the brake unit, resulting in poor brake performance or no braking effect.

Please check the allowed maximum torque applied on the motor from the load in the technical catalogue

Brake motors with keyed shaft, P1V-S020AD series, 200 watt - (G1/8)

Max output kW	Free speed rpm	Speed at max output r/min	Torque at max output Nm	Min start torque Nm	Air consumption at max output l/s	Conn.	Min pipe ID	Order code
0,20	14500	7250	0,26	0,40	6.3	G1/8	10	**P1V-S020ADE50**
0,20	4600	2300	0,80	1,20	6.3	G1/8	10	**P1V-S020AD460**
0,20	2400	1200	1,60	2,40	6.3	G1/8	10	**P1V-S020AD240**
0,20	1400	700	2,70	4,10	6.3	G1/8	10	**P1V-S020AD140**
0,20	700	350	5,40	8,20	6.3	G1/8	10	**P1V-S020AD070**
0,20	350	160	12,00	18,00	6.3	G1/8	10	**P1V-S020AD035**
0,10	180	90	10,50	15,00	4.5	G1/8	10	**P1V-S020AD018**
0,20	110	55	33,00	49,50	6.3	G1/8	10	**P1V-S020AD011**
0,20	60	30	72,00	108,00*	6.3	G1/8	10	**P1V-S020AD006**
0,18	50	25	20,00*	20,00*	6.3	G1/8	10	**P1V-S020AD005**
0,18	20	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020AD002**
0,18	10	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020AD005**
0,18	5	-	20,00*	20,00*	6.3	G1/8	10	**P1V-S020AD0005**

Brake motors with keyed shaft, P1V-S030AD series, 300 watt - (G1/4)

0,30	14500	7250	0,40	0,60	8.0	G1/4	10	**P1V-S030ADE50**
0,30	4600	2300	1,20	1,90	8.0	G1/4	10	**P1V-S030AD460**
0,30	2400	1200	2,40	3,60	8.0	G1/4	10	**P1V-S030AD240**
0,30	1400	700	4,10	6,10	8.0	G1/4	10	**P1V-S030AD140**
0,30	600	300	9,60	14,30	8.0	G1/4	10	**P1V-S030AD060**
0,30	280	140	20,50	26,00	8.0	G1/4	10	**P1V-S030AD028**
0,30	230	115	24,00	36,00	8.0	G1/4	10	**P1V-S030AD023**
0,30	100	50	57,00	85,50	8.0	G1/4	10	**P1V-S030AD010**
0,30	50	25	36,00*	36,00*	8.0	G1/4	10	**P1V-S030AD005**

* Max allowed torque

P1V-S Accessories

Flange

For air motor	For drilling motor	Order code
P1V-S002		**P1V-S4002B**
P1V-S008	P1V-S008	**P1V-S4008B**
P1V-S012		**P1V-S4012B**
P1V-S020	P1V-S025	**P1V-S4020B**
P1V-S030	P1V-S040	**P1V-S4030B**
P1V-S060		**P1V-S4060B**
P1V-S120		**P1V-S4120B**

Foot

For air motor	For drilling motor	Order code
P1V-S008	P1V-S008	**P1V-S4008F**
P1V-S012		**P1V-S4012F**
P1V-S020	P1V-S025	**P1V-S4020F**
P1V-S030	P1V-S040	**P1V-S4030F**
P1V-S020A0011		**P1V-S4020C**
P1V-S020A0006		**P1V-S4020C**
P1V-S020A0023		**P1V-S4020C**
P1V-S020A0010		**P1V-S4020C**
P1V-S060		**P1V-S4060F**
P1V-S120		**P1V-S4120F**

Design Variants

Drilling, milling and grinding motors

A large number of drilling motors, milling motors and grinding motors have been developed using the P1V-S as the base motor in order to make it easier to install air motors in machining applications. These motors are all equipped with standard vanes for intermittent lubrication-free operation, although it is recommended to use oil mist if you are planning to operate them for extended periods.

Note! These motors are not made of 100% stainless steel.

Drilling motors are available with power ratings of 80, 170, 250 and 400 Watts, and several different speeds for the machining of a range of materials. They can be fitted with collet chucks, drill chucks and quick-release chucks. Many of them also have accessories allowing the exhaust air to be removed.

The milling motor, with a power rating of 400 Watts, runs at a relatively high speed, and is fitted with a collet chuck for a shaft diameter of 8 mm. It is equipped with strong bearings able to handle greater shear forces on the spindle.

The grinding motor, with a power rating of 200 Watts, is fitted with a collet chuck for a shaft diameter of 8 mm and runs at a relatively high speed. It is equipped with strong bearings able to handle greater shear forces on the spindle.

The design principle of the 90 Watt grinding motor is different from the others. The turbine principle means that high speeds are possible without the need for lubrication.

Feed movement in drilling, milling and grinding motors

A slow and even feed movement is necessary in machining applications. During drilling, the feed must not uncontrollably speed up once the drill breaks through the material. One good way of solving the problem is to use a pneumatic cylinder for the feed, which is able to provide force during drilling and a rapid approach before the actual drilling phase. Feed during the drilling phase is controlled using a hydraulic brake cylinder (HYDROCHECK) fitted in parallel with the pneumatic cylinder. This provides even, slow and safe feed movement, without the risk of the uncontrolled feed described above.

Note: All air motors can be operated oil-free without special adaptation with only a 20% reduction of power.

Operating information

Working pressure:	Max 7 bar
Working temperature:	-30°C to +100°C
Medium: (unlubricated for grinding motor P1V-S009)	40 µm filtered oil mist

For more information see www.parker.com/euro_pneumatic

P1V-M is a series of air motors, with planetary gearbox and motor made of black varnished steel. Its robustness makes it suitable for all normal air motor applications.

The range contains three different sizes with power ratings of 200, 400 or 600 Watts, shaft speeds ranging from 29 rpm to 10000 rpm, and torques up to 401 Nm at maximum power (more than 800 Nm torque if the motor is braked to stationary).

The standard range includes a total of 27 versions, covering all possible requirements for these power ratings.

- Power 0,2 kW, 0,4 kW and 0,6 kW
- Patented method for simple change of vanes
- Free speeds from 28 up to 10000 rpm
- Torque from 0,38 Nm up to 380NM by max output power
- Standard equipped with flange mounting
- Foot mountings as accesories

Note: All air motors can be operated oil-free without special adaptation with only a 20% reduction of power.

Operating information

Working pressure	Max 7 bar
Working temperature	-30 °C to +100 °C
Medium	Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use.

P1V-M020A, 200 watt motor with flange

Max power kW	Free speed r/Min	Speed at max power r/Min	Torque at max power Nm	Min start torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,200	10 000	5 000	0,38	0,57	6,5	G1/8	10	1,94	**P1V-M020A0A00**
0,200	2 890	1 445	1,31	1,97	6,5	G1/8	10	1,94	**P1V-M020A0290**
0,200	1 466	733	2,59	3,89	6,5	G1/8	10	1,94	**P1V-M020A0150**
0,200	810	405	4,69	7,04	6,5	G1/8	10	2,94	**P1V-M020A0081**
0,200	413	206	9,20	13,81	6,5	G1/8	10	2,94	**P1V-M020A0041**
0,200	209	105	18,14	27,21	6,5	G1/8	10	2,94	**P1V-M020A0021**
0,200	90	45	42,34	63,50	6,5	G1/8	10	7,44	**P1V-M020A0009**
0,200	59	29	64,76	97,15	6,5	G1/8	10	7,44	**P1V-M020A0006**
0,200	30	15	126,99	190,48	6,5	G1/8	10	7,44	**P1V-M020A0003**

P1V-M040A, 400 watt motor with flange

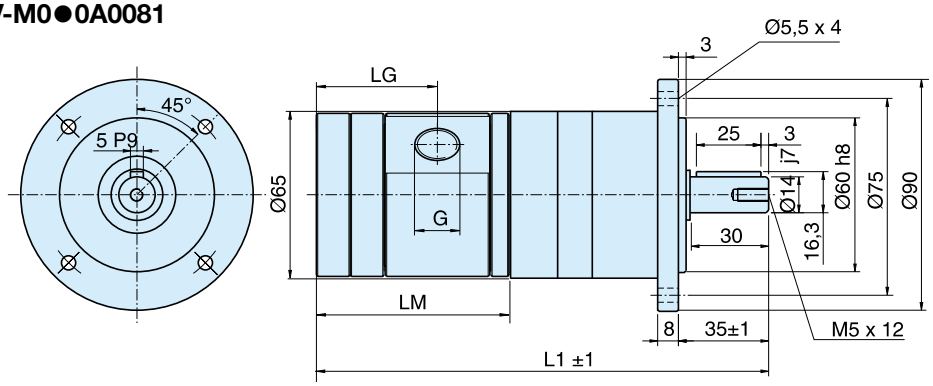
Max power kW	Free speed r/Min	Speed at max power r/Min	Torque at max power Nm	Min start torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,400	10 000	5 000	0,76	1,15	9,5	G3/8	12	2,32	**P1V-M040A0A00**
0,400	2 890	1 445	2,63	3,98	9,5	G3/8	12	2,32	**P1V-M040A0290**
0,400	1 466	733	5,18	7,84	9,5	G3/8	12	2,32	**P1V-M040A0150**
0,400	810	405	9,39	14,20	9,5	G3/8	12	4,32	**P1V-M040A0081**
0,400	413	206	18,41	27,85	9,5	G3/8	12	4,32	**P1V-M040A0041**
0,400	209	105	36,28	54,90	9,5	G3/8	12	4,32	**P1V-M040A0021**
0,400	90	45	84,67	128,12	9,5	G3/8	12	7,82	**P1V-M040A0009**
0,400	59	29	129,53	195,99	9,5	G3/8	12	7,82	**P1V-M040A0006**
0,400	30	15	253,98	384,31	9,5	G3/8	12	7,82	**P1V-M040A0003**

P1V-M060A, 600 watt motor with flange

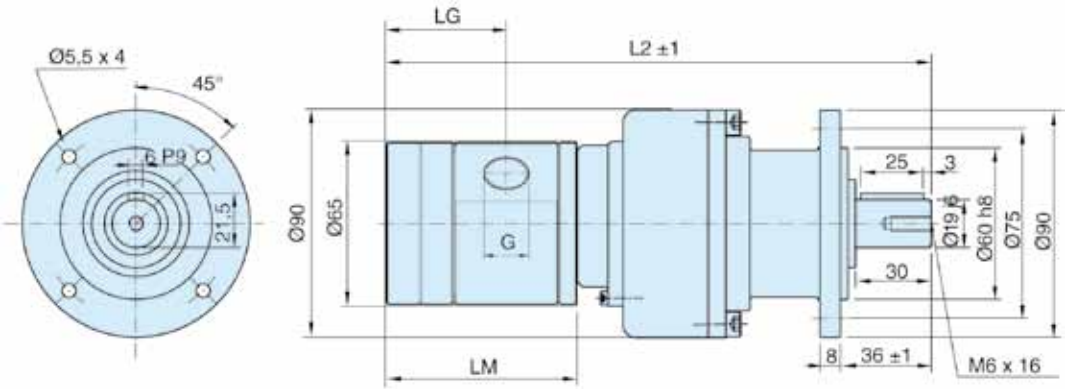
Max power kW	Free speed r/Min	Speed at max power r/Min	Torque at max power Nm	Min start torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,600	10 000	5 000	1,14	1,71	15,0	G3/8	12	5,59	**P1V-M060A0A00**
0,600	2 890	1 445	3,94	5,92	15,0	G3/8	12	5,59	**P1V-M060A0290**
0,600	1 466	733	7,77	11,66	15,0	G3/8	12	5,59	**P1V-M060A0150**
0,600	810	405	14,08	21,12	15,0	G3/8	12	6,59	**P1V-M060A0081**
0,600	413	206	27,61	41,42	15,0	G3/8	12	6,59	**P1V-M060A0041**
0,600	209	105	54,42	81,64	15,0	G3/8	12	6,59	**P1V-M060A0021**
0,600	90	45	127,01	190,51	15,0	G3/8	12	11,09	**P1V-M060A0009**
0,600	59	29	194,29	291,44	15,0	G3/8	12	11,09	**P1V-M060A0006**
0,600	30	15	380,97	571,45	15,0	G3/8	12	11,09	**P1V-M060A0003**

Dimensions

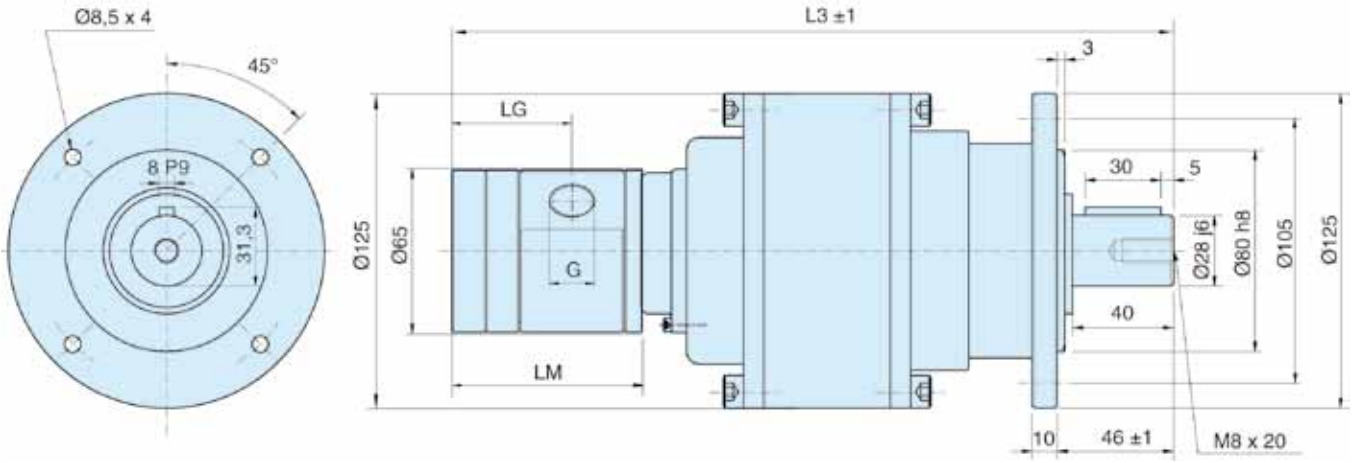
Motor P1V-M0●0A0A00
Motor P1V-M0●0A0290
Motor P1V-M0●0A0150
Motor P1V-M0●0A0081



Motor P1V-M0●0A0041
Motor P1V-M0●0A0021
Motor P1V-M0●0A0009



Motor P1V-M0●0A0006
Motor P1V-M0●0A0003



Motor type	G	LG	LM	L1	L2	L3
P1V-M020A	G1/8	39,0	57,5	160,5	197,5	267,5
P1V-M040A	G3/8	49,0	77,5	180,5	217,5	287,5
P1V-M060A	G3/8	56,5	92,0	195,0	232,0	302,0

Large Air Motors

These large motors are designed for use in the most arduous applications, requiring considerable power, torque, robustness and reliability

Note: All air motors can be operated oil-free without special adaptation with only a 20% reduction of power.

Operating information

Working pressure:	Max 7 bar
Temperature range:	-30°C to +100°C
Medium	Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use

For more information see www.parker.com/euro_pneumatic

Data for reversible air motor

Max power kW	Free speed rpm	Speed at max power rpm	Torque at at max power Nm	Min start torque Nm	Air consumption at max power m^3/min	Conn.	Min pipe ID mm	Weight Kg	Order code
5,1	6000	3000	16.2	24.4	6.2	G1	25	27	**P1V-B510A0600**
9	6000	3000	28.6	43	10	G1	25	25	**P1V-B900A0600**
18	6000	3000	57	85	20	G2	43	54	**P1V-BJ00A0600**

Technical data:

Working pressure	Max 7 bar
Working temperature	-30 °C to +100 °C
Medium	Filtered dry air and oil mist, purity class ISO 8573-1 class 3.-.5 for indoor use and with a dew point lower than ambient temperature for outdoor use.

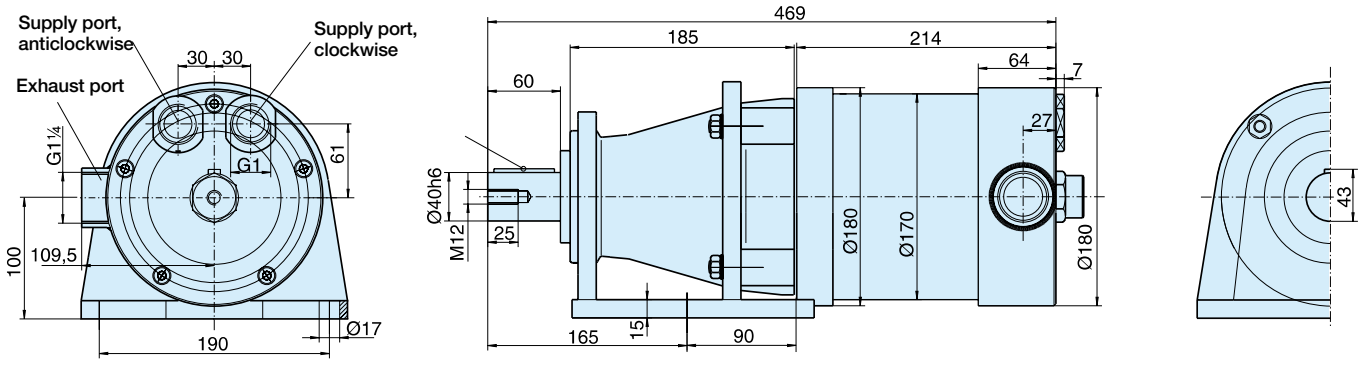
Air motor size	P1V-B510	P1V-B900	P1V-BJ00
Nominal power (kW)	5.1	9	18
Working pressure (bar)		3 to 7	
Working temperature (°C)		-30 to +100	
Air flow required (Nl/min)	6200	10000	20000
Min pipe ID, inlet (mm)	25	25	43
Min pipe ID, outlet (mm)	25	25	43
Medium		40µm filtered, oil mist or dry unlubricated compressed air	
Oil free operation, indoor		ISO8573-1 purity class 3.4.1	
Oil free operation, outdoor		ISO8573-1 purity class 1.2.1	
Oil operation		1-2 drop per cube meter, ISO8573-1 purity class 3.-.5	
Recommended oil		Foodstuffs industry Klüberoil 4 UH 1-32	
Shaft radial force (N)	7500	7500	7500
Shaft axial force (N)	11000	11000	11000

Material specification

Motor housing	Painted steel
Output shaft	Hardened steel

Note: All technical data is based on a working pressure of 6 bar.

P1V-B510A0060



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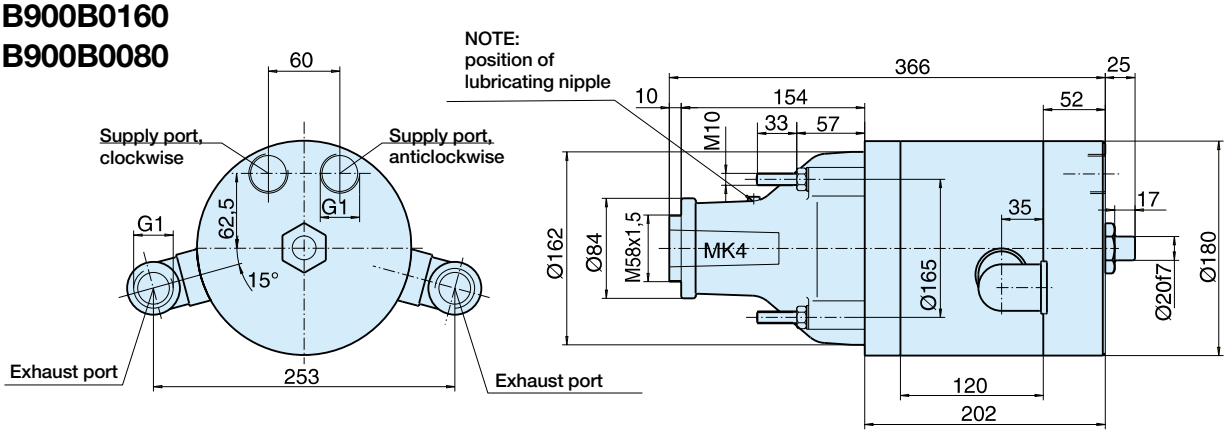

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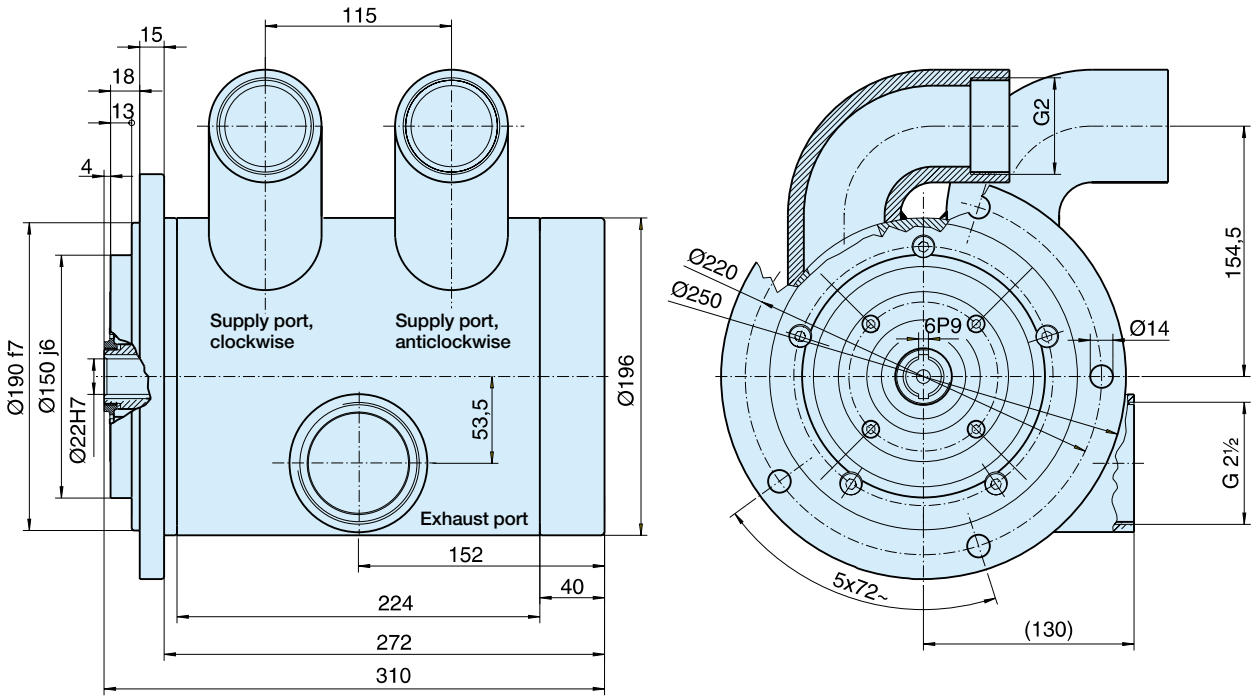


Radial piston air motors P1V-P

P1V-P is a range of air motors using the radial piston principle. Radial piston motors can operate at a low speed while delivering high torque. The low speed keeps the noise level to a minimum, making this type of motor suitable for all applications that are subject to stringent noise level requirements.

- Three basic motors with 73.5, 125 and 228 watt power at 5 bar supply pressure
- Various gearboxes are available for these motors, to provide the right speed and torque for every application
- Equipped with a spring-loaded braking unit
- The medium used by the P1V-P is oil mist. This makes the motors unique in that they require no servicing at all.

Operating information

Working pressure:	Max 6 bar
Temperature range:	-10°C to +70°C
Medium	Oil mist, dry compressed air purity class 3.4.4 according to ISO8573-1
Gearboxes	Grease lubricated

For more information see www.parker.com/euro_pneumatic

Order key

P1V-P **012** **F** **B** **0060**

Air motor range	
P1V-P	Radial piston motor

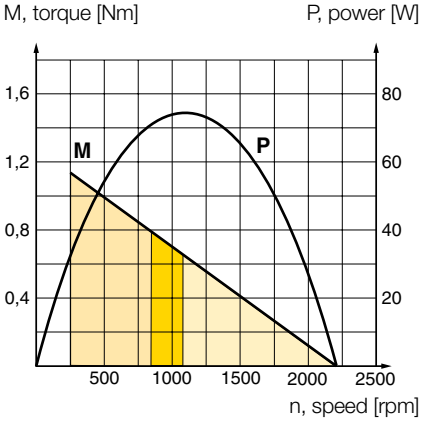
Motor size	
007	74 W
012	125 W
023	228 W

Function	
A	Basic motor
B	Flange version
F	Foot version

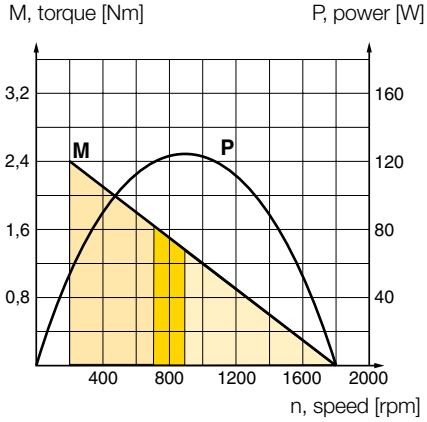
Function	
0	Standard
B	Brake

	Free speed/min
2200	2200
–	–
0007	7

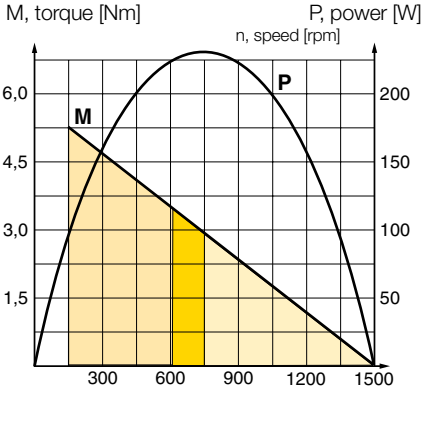
P1V-P007**2200



P1V-P012**1800



P1V-P023**1500



Possible working range of motor. **Optimum working range of motor.** **Working range with shorter service life.**

Note! All technical data is based on a working pressure of 5 bar.

Data for reversible basic motor

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,0735	1100	0,637	0,686	1,18	-	3,34	G1/4	6	1,45	**P1V-P007A02200**
0,125	900	1,37	1,96	2,94	-	4,34	G1/4	10	2,5	**P1V-P012A01800**
0,228	750	2,94	4,71	5,88	-	6,67	G3/8	10	4,6	**P1V-P023A01500**

Data for reversible basic motor with flange

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,0735	1100	0,637	0,686	1,18	-	3,34	G1/4	6	1,45	**P1V-P007B02200**
0,125	900	1,37	1,96	2,94	-	4,34	G1/4	10	2,5	**P1V-P012B01800**
0,228	750	2,94	4,71	5,88	-	6,67	G3/8	10	4,6	**P1V-P023B01500**

Data for reversible basic motor with foot

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,0735	1100	0,637	0,686	1,18	-	3,34	G1/4	6	1,45	**P1V-P007F02200**
0,125	900	1,37	1,96	2,94	-	4,34	G1/4	10	2,5	**P1V-P012F01800**
0,228	750	2,94	4,71	5,88	-	6,67	G3/8	10	4,6	**P1V-P023F01500**

Note! All technical data is based on a working pressure of 5 bar.

Data for reversible basic motor with brake

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,125	900	1,37	1,96	2,94	3,24	4,34	G1/4	10	4,4	**P1V-P012AB1800**
0,228	750	2,94	4,71	5,88	6,47	6,67	G3/8	10	7,8	**P1V-P023AB1500**

Data for reversible basic motor with brake and flange

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,125	900	1,37	1,96	2,94	3,24	4,34	G1/4	10	4,4	**P1V-P012BB1800**
0,228	750	2,94	4,71	5,88	6,47	6,67	G3/8	10	7,8	**P1V-P023BB1500**

Data for reversible basic motor with brake and foot

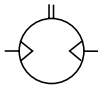
Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,125	900	1,37	1,96	2,94	3,24	4,34	G1/4	10	5,2	**P1V-P012FB1800**
0,228	750	2,94	4,71	5,88	6,47	6,67	G3/8	10	9,4	**P1V-P023FB1500**

Note! All technical data is based on a working pressure of 5 bar.

Data for reversible motor with gearbox and flange

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,0662	220	2,84	2,94	4,90	-	3,34	G1/4	6	4,0	**P1V-P007B00440**
0,0662	110	5,69	5,88	9,81	-	3,34	G1/4	6	4,0	**P1V-P007B00220**
0,0662	73,3	8,53	8,83	15,7	-	3,34	G1/4	6	4,0	**P1V-P007B00147**
0,0662	55	11,5	11,8	20,6	-	3,34	G1/4	6	4,0	**P1V-P007B00110**
0,110	180	5,88	8,83	12,7	-	4,34	G1/4	10	6,7	**P1V-P012B00360**
0,110	90	11,8	17,7	26,5	-	4,34	G1/4	10	6,7	**P1V-P012B00180**
0,110	60	17,7	26,5	39,2	-	4,34	G1/4	10	6,7	**P1V-P012B00120**
0,110	45	23,5	35,3	53,0	-	4,34	G1/4	10	6,7	**P1V-P012B00090**
0,110	30	35,3	53,0	78,5	-	4,34	G1/4	10	8,7	**P1V-P012B00060**
0,110	22,5	47,1	70,6	106	-	4,34	G1/4	10	8,7	**P1V-P012B00050**
0,110	18	58,8	79,4	132	-	4,34	G1/4	10	8,7	**P1V-P012B00040**
0,110	15	70,6	106	157	-	4,34	G1/4	10	8,7	**P1V-P012B00030**
0,110	11,2	93,2	139	206	-	4,34	G1/4	10	8,7	**P1V-P012B00022**
0,103	9	118	175	250	-	4,34	G1/4	10	11,7	**P1V-P012B00018**
0,103	7,5	137	206	300	-	4,34	G1/4	10	11,7	**P1V-P012B00015**
0,103	5,6	176	261	373	-	4,34	G1/4	10	11,7	**P1V-P012B00012**
0,103	4,5	233	350	500	-	4,34	G1/4	10	11,7	**P1V-P012B00009**
0,199	150	12,7	20,6	26,5	-	6,67	G3/8	10	10,5	**P1V-P023B00300**
0,199	75	26,5	41,2	53,0	-	6,67	G3/8	10	10,5	**P1V-P023B00150**
0,199	50	39,2	61,8	79,4	-	6,67	G3/8	10	10,5	**P1V-P023B00100**
0,199	37,5	53,0	82,4	106	-	6,67	G3/8	10	10,5	**P1V-P023B00075**
0,199	25	78,5	124	159	-	6,67	G3/8	10	14,0	**P1V-P023B00050**
0,199	18,7	106	165	212	-	6,67	G3/8	10	14,0	**P1V-P023B00038**
0,199	15	132	206	265	-	6,67	G3/8	10	14,0	**P1V-P023B00030**
0,199	12,5	157	247	318	-	6,67	G3/8	10	14,0	**P1V-P023B00025**
0,199	9,3	203	314	402	-	6,67	G3/8	10	14,0	**P1V-P023B00018**
0,191	7,5	250	392	490	-	6,67	G3/8	10	20,5	**P1V-P023B00015**
0,191	6,2	300	471	598	-	6,67	G3/8	10	20,5	**P1V-P023B00012**
0,191	4,6	396	628	785	-	6,67	G3/8	10	20,5	**P1V-P023B00009**
0,191	3,7	500	785	981	-	6,67	G3/8	10	20,5	**P1V-P023B00007**

Note! All technical data is based on a working pressure of 5 bar.



Data for reversible motor with gearbox and foot

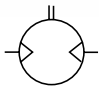
Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,0662	220	2,84	2,94	4,90	-	3,34	G1/4	6	3,5	**P1V-P007F00440**
0,0662	110	5,69	5,88	9,81	-	3,34	G1/4	6	4,0	**P1V-P007F00220**
0,0662	73,3	8,53	8,83	15,7	-	3,34	G1/4	6	3,5	**P1V-P007F00147**
0,0662	55	11,5	11,8	20,6	-	3,34	G1/4	6	3,5	**P1V-P007F00110**
0,110	180	5,88	8,83	12,7	-	4,34	G1/4	10	6,2	**P1V-P012F00360**
0,110	90	11,8	17,7	26,5	-	4,34	G1/4	10	6,2	**P1V-P012F00180**
0,110	60	17,7	26,5	39,2	-	4,34	G1/4	10	6,2	**P1V-P012F00120**
0,110	45	23,5	35,3	53,0	-	4,34	G1/4	10	6,2	**P1V-P012F00090**
0,110	30	35,3	53,0	78,5	-	4,34	G1/4	10	8,2	**P1V-P012F00060**
0,110	22,5	47,1	70,6	106	-	4,34	G1/4	10	8,2	**P1V-P012F00050**
0,110	18	58,8	79,4	132	-	4,34	G1/4	10	8,2	**P1V-P012F00040**
0,110	15	70,6	106	157	-	4,34	G1/4	10	8,2	**P1V-P012F00030**
0,110	11,2	93,2	139	206	-	4,34	G1/4	10	8,2	**P1V-P012F00022**
0,103	9	118	175	250	-	4,34	G1/4	10	11,2	**P1V-P012F00018**
0,103	7,5	137	206	300	-	4,34	G1/4	10	11,2	**P1V-P012F00015**
0,103	5,6	176	261	373	-	4,34	G1/4	10	11,2	**P1V-P012F00012**
0,103	4,5	233	350	500	-	4,34	G1/4	10	11,2	**P1V-P012F00009**
0,199	150	12,7	20,6	26,5	-	6,67	G3/8	10	10,0	**P1V-P023F00300**
0,199	75	26,5	41,2	53,0	-	6,67	G3/8	10	10,0	**P1V-P023F00150**
0,199	50	39,2	61,8	79,4	-	6,67	G3/8	10	10,0	**P1V-P023F00100**
0,199	37,5	53,0	82,4	106	-	6,67	G3/8	10	10,0	**P1V-P023F00075**
0,199	25	78,5	124	159	-	6,67	G3/8	10	13,5	**P1V-P023F00050**
0,199	18,7	106	165	212	-	6,67	G3/8	10	13,5	**P1V-P023F00038**
0,199	15	132	206	265	-	6,67	G3/8	10	13,5	**P1V-P023F00030**
0,199	12,5	157	247	318	-	6,67	G3/8	10	13,5	**P1V-P023F00025**
0,199	9,3	203	314	402	-	6,67	G3/8	10	13,5	**P1V-P023F00018**
0,191	7,5	250	392	490	-	6,67	G3/8	10	20,0	**P1V-P023F00015**
0,191	6,2	300	471	598	-	6,67	G3/8	10	20,0	**P1V-P023F00012**
0,191	4,6	396	628	785	-	6,67	G3/8	10	20,0	**P1V-P023F00009**
0,191	3,7	500	785	981	-	6,67	G3/8	10	20,0	**P1V-P023F00007**

Note! All technical data is based on a working pressure of 5 bar.

Data for reversible motor with gearbox, brake and flange

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,110	180	5,88	8,83	12,7	14,7	4,34	G1/4	10	8,0	**P1V-P012BB0360**
0,110	90	11,8	17,7	26,5	29,4	4,34	G1/4	10	8,0	**P1V-P012BB0180**
0,110	60	17,7	26,5	39,2	44,1	4,34	G1/4	10	8,0	**P1V-P012BB0120**
0,110	45	23,5	35,3	53,0	58,8	4,34	G1/4	10	8,0	**P1V-P012BB0090**
0,110	30	35,3	53,0	78,5	88,3	4,34	G1/4	10	10,0	**P1V-P012BB0060**
0,110	22,5	47,1	70,6	106	118	4,34	G1/4	10	10,0	**P1V-P012BB0050**
0,110	18	58,8	79,4	132	147	4,34	G1/4	10	10,0	**P1V-P012BB0040**
0,110	15	70,6	106	157	177	4,34	G1/4	10	10,0	**P1V-P012BB0030**
0,110	11,2	93,2	139	206	235	4,34	G1/4	10	10,0	**P1V-P012BB0022**
0,103	9	118	175	250	283	4,34	G1/4	10	11,7	**P1V-P012BB0018**
0,103	7,5	137	206	300	339	4,34	G1/4	10	13,0	**P1V-P012BB0015**
0,103	5,6	176	261	373	453	4,34	G1/4	10	13,0	**P1V-P012BB0012**
0,103	4,5	233	350	500	567	4,34	G1/4	10	13,0	**P1V-P012BB0009**
0,199	150	12,7	20,6	26,5	29,4	6,67	G3/8	10	13,5	**P1V-P023BB0300**
0,199	75	26,5	41,2	53,0	58,8	6,67	G3/8	10	13,5	**P1V-P023BB0150**
0,199	50	39,2	61,8	79,4	88,3	6,67	G3/8	10	13,5	**P1V-P023BB0100**
0,199	37,5	53,0	82,4	106	118	6,67	G3/8	10	13,5	**P1V-P023BB0075**
0,199	25	78,5	124	159	177	6,67	G3/8	10	17,0	**P1V-P023BB0050**
0,199	18,7	106	165	212	235	6,67	G3/8	10	17,0	**P1V-P023BB0038**
0,199	15	132	206	265	294	6,67	G3/8	10	17,0	**P1V-P023BB0030**
0,199	12,5	157	247	318	353	6,67	G3/8	10	17,0	**P1V-P023BB0025**
0,199	9,3	203	314	402	471	6,67	G3/8	10	17,0	**P1V-P023BB0018**
0,191	7,5	250	392	490	549	6,67	G3/8	10	24,5	**P1V-P023BB0015**
0,191	6,2	300	471	598	657	6,67	G3/8	10	24,5	**P1V-P023BB0012**
0,191	4,6	396	628	785	873	6,67	G3/8	10	24,5	**P1V-P023BB0009**
0,191	3,7	500	785	981	1100	6,67	G3/8	10	24,5	**P1V-P023BB0007**

Note! All technical data is based on a working pressure of 5 bar.



Data for reversible motor with gearbox, brake and foot

Max power kW	Speed at max power rpm	Torque at max power Nm	Min start torque Nm	Stall torque Nm	Brake torque Nm	Air consumption at max power l/s	Conn.	Min pipe ID mm	Weight Kg	Order code
0,110	180	5,88	8,83	12,7	14,7	4,34	G1/4	10	8,5	**P1V-P012FB0360**
0,110	90	11,8	17,7	26,5	29,4	4,34	G1/4	10	8,5	**P1V-P012FB0180**
0,110	60	17,7	26,5	39,2	44,1	4,34	G1/4	10	8,5	**P1V-P012FB0120**
0,110	45	23,5	35,3	53,0	58,8	4,34	G1/4	10	8,5	**P1V-P012FB0090**
0,110	30	35,3	53,0	78,5	88,3	4,34	G1/4	10	10,5	**P1V-P012FB0060**
0,110	22,5	47,1	70,6	106	118	4,34	G1/4	10	10,5	**P1V-P012FB0050**
0,110	18	58,8	79,4	132	147	4,34	G1/4	10	10,5	**P1V-P012FB0040**
0,110	15	70,6	106	157	177	4,34	G1/4	10	10,5	**P1V-P012FB0030**
0,110	11,2	93,2	139	206	235	4,34	G1/4	10	10,5	**P1V-P012FB0022**
0,103	9	118	175	250	283	4,34	G1/4	10	13,5	**P1V-P012FB0018**
0,103	7,5	137	206	300	339	4,34	G1/4	10	13,5	**P1V-P012FB0015**
0,103	5,6	176	261	373	453	4,34	G1/4	10	13,5	**P1V-P012FB0012**
0,103	4,5	233	350	500	567	4,34	G1/4	10	13,5	**P1V-P012FB0009**
0,199	150	12,7	20,6	26,5	29,4	6,67	G3/8	10	13,0	**P1V-P023FB0300**
0,199	75	26,5	41,2	53,0	58,8	6,67	G3/8	10	13,0	**P1V-P023FB0150**
0,199	50	39,2	61,8	79,4	88,3	6,67	G3/8	10	13,0	**P1V-P023FB0100**
0,199	37,5	53,0	82,4	106	118	6,67	G3/8	10	13,0	**P1V-P023FB0075**
0,199	25	78,5	124	159	177	6,67	G3/8	10	16,5	**P1V-P023FB0050**
0,199	18,7	106	165	212	235	6,67	G3/8	10	16,5	**P1V-P023FB0038**
0,199	15	132	206	265	294	6,67	G3/8	10	16,5	**P1V-P023FB0030**
0,199	12,5	157	247	318	353	6,67	G3/8	10	16,5	**P1V-P023FB0025**
0,199	9,3	203	314	402	471	6,67	G3/8	10	16,5	**P1V-P023FB0018**
0,191	7,5	250	392	490	549	6,67	G3/8	10	24,0	**P1V-P023FB0015**
0,191	6,2	300	471	598	657	6,67	G3/8	10	24,0	**P1V-P023FB0012**
0,191	4,6	396	628	785	873	6,67	G3/8	10	24,0	**P1V-P023FB0009**
0,191	3,7	500	785	981	1100	6,67	G3/8	10	24,0	**P1V-P023FB0007**

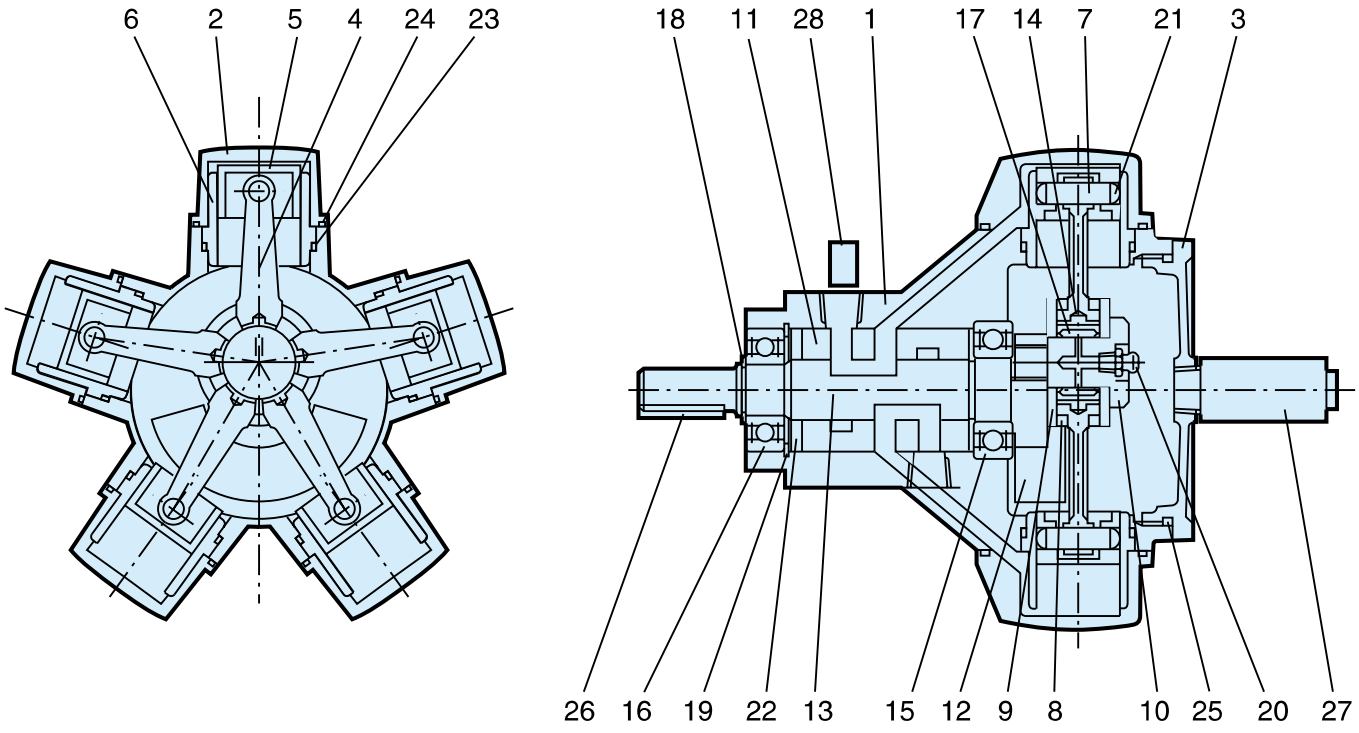
Material specification

Nr	Designation	Material	Qnty.
1	housing	Aluminium alloy casting	1
2	Cylinder cover	Aluminium alloy die-casting	3(5)
3	End cover	Synthetic resin	1
4	Connection rod	Aluminium alloy die-casting	3(5)
5	Piston	Brass casting	3(5)
6	Sleeve	Grey cast iron	3(5)
7	Piston pin	Carbon steel	3(5)
8	Ring	Carbon steel	2
9	Thrust washer	Carbon steel	2
10	Crank pin	Chromium-Molybdenum steel	1
11	Valve bush	Grey cast iron	1
12	Balance weight	Carbon steel	1
13	Shaft	Chrome-Molybdenum steel	1
14	Liner	Synthetic resin	3(5)

Nr	Designation	Material	Qnty.
15	Bearing	-	1
16	Bearing	-	1
17	Needle bearing	-	1
18	Snap ring	-	1
19	Snap ring	-	1
20	Grease nipple	-	1
21	Copper rivet	-	6(10)
22	Oil seal	Nitrile rubber	1
23	O-ring	Nitrile rubber	3(5)
24	O-ring	Nitrile rubber	3(5)
25	O-ring	Nitrile rubber	3(5)
26	Parallel single key	-	1
27	Silencer	-	1
28	Adapter to G-thread	Aluminium	2

P1V-P023

P1V-P007 and P1V-P012



Rotary actuators are an efficient and easy way to generate torque from compressed air, in a very compact size. They are ideal for the compact applications in a wide range of industries such as, packaging, process, electronics etc.

- Compact design
- Durable construction
- Long maintenance-free life
- High output torque/weight ratio
- Wide choice of torques available (up to 247 Nm)
- Range of mounting option, hydro-cushioning and position sensors

Operating information

Working pressure: Max 10 bar
Permissible fluid: Filtered (<5µ) with or without lubrication
Standard working temperature:
PRN/PRO 3 to 20 -5°C to +80°C
Other models -5°C to +60°C

Prelubricated, further lubrication is not normally necessary. If additional lubrication is introduced it must be continued.

For more information see www.parker.com/euro_pneumatic

PRN miniature (fixed oscillating angle)

	Torque at 6 bar	Oscillating reference point		Oscillating angle		
Single vane	(N.m)	45°	90°	90°	180°	270°
PRNA1S	0,16		X	**PRNA1S-90-90**	**PRNA1S-180-90**	
PRNA3S	0,38		X	**PRNA3S-90-90**	**PRNA3S-180-90**	
PRNA10S	1,20		X	**PRNA10S-90-90**	**PRNA10S-180-90**	
PRNA20S	2,10		X	**PRNA20S-90-90**	**PRNA20S-180-90**	
PRN30SE	4,10	X		**PRN30SE-90-45**	**PRN30SE-180-45**	**PRN30SE-270-45**
Double vane						
PRNA3D	0,65			**PRNA3D-90-45**		
PRNA10D	2,54			**PRNA10D-90-45**		
PRNA20D	4,70			**PRNA20D-90-45**		
PRN30DE	9,50			**PRN30DE-90-45**		

PRO (adjustable oscillating angle)

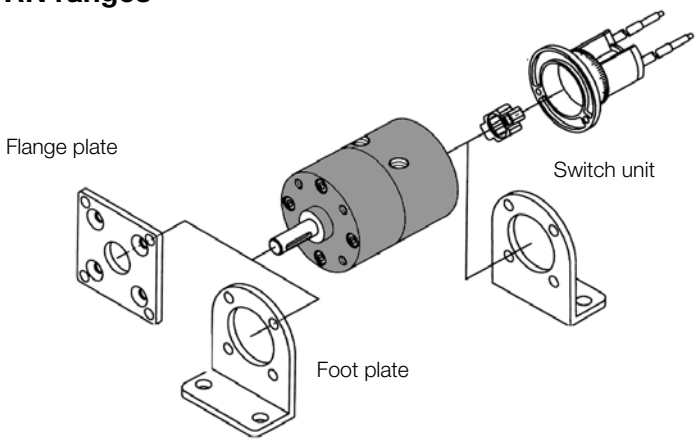
	Torque at 6bar (N.m)	Oscillating angle	Order code		Torque at 6bar (N.m)	Oscillating angle	Order code
Single vane			**Double vane**				
	0,38	30 to 180°	**PROA3S-0-90**		0,65	30 to 90°	**PROA3D-0-45**
	1,20	30 to 180°	**PROA10S-0-90**		2,54	30 to 90°	**PROA10D-0-45**
	2,10	30 to 180°	**PROA20S-0-90**		4,70	30 to 90°	**PROA20D-0-45**
	4,10	30 to 270°	**PRO30SE-0-45**		9,50	30 to 90°	**PRO30DE-0-45**

PRN high torque range (fixed oscillating angle)

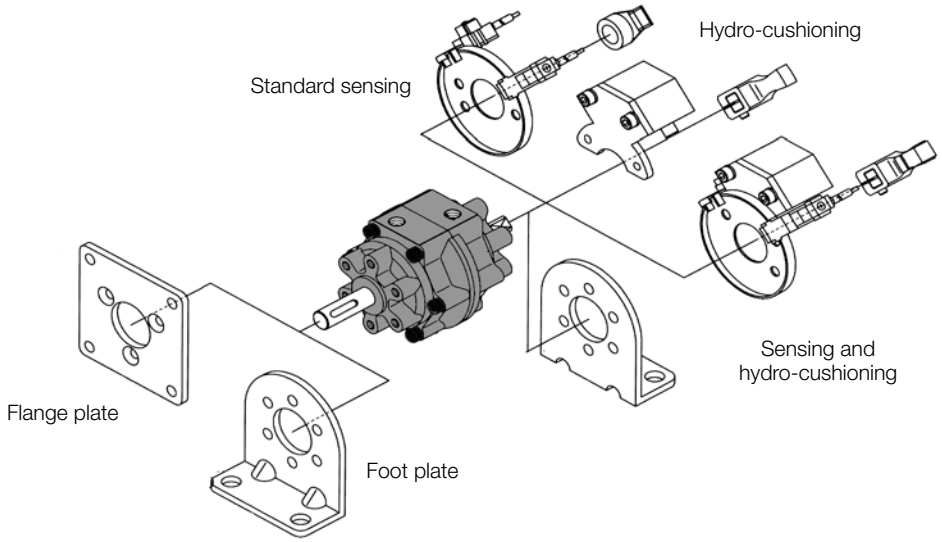
	Torque		Oscillating angle	
Single vane	at 6 bar (N.m)	90°	180°	270°
PRN50SE	5,9	**PRN50SE-90-45**	**PRN50SE-180-45**	**PRN50SE-270-45**
PRN150SE	18,0	**PRN150SE-90-45**	**PRN150SE-180-45**	**PRN150SE-270-45**
PRN300SE	34,5	**PRN300SE-90-45**	**PRN300SE-180-45**	**PRN300SE-270-45**
PRN800SE	123,0	**PRN800SE-90-45**	**PRN800SE-180-45**	**PRN800SE-270-45**
Double vane (oscillating angle 45°)				
PRN50DE	12,8	**PRN50DE-90-45**		
PRN150DE	41,5	**PRN150DE-90-45**		
PRN300DE	83,0	**PRN300DE-90-45**		
PRN800DE	247,0	**PRN800DE-90-45**		

Design Variants

PRO and miniature PRN ranges



PRN high torque range



Hydro-cushion for PRN050 to PRN800 rotary actuators

Rotary actuator	Hydro-cushion	Claw for hydro-cushion - Oscillating angle		
		90°	180°	270°
PRN50S	**CRN50**	**CRN50-90-45-T**	**CRN50-180-45-T**	**CRN50-270-45-T**
PRN150S	**CRN150**	**CRN150-90-45-T**	**CRN150-180-45-T**	**CRN150-270-45-T**
PRN300S	**CRN300**	**CRN300-90-45-T**	**CRN300-180-45-T**	**CRN300-270-45-T**
PRN50D	**CRN50**	**CRN50-90-45-T**		
PRN150D	**CRN150**	**CRN150-90-45-T**		
PRN300D	**CRN300**	**CRN300-90-45-T**		

Vane actuators provide the maximum amount of output torque from the smallest possible envelope size. They convert pneumatic pressure into rotary motion for a wide variety of industrial applications.

Two basic styles are available. Single vane models with a maximum rotation of 280°, while the double vane units produce twice the torque output from identical envelope dimensions and have a maximum rotation of 100°.

- Double acting actuators
- Single or double vane
- Compact smooth design
- Uniform torque in both directions
- Angle adjustment and sensors available.

Operating information

Type		Double acting actuation
Standard rotation (tolerance ±1°)	Single vane	0 to 275°, size 10 to 11 0 to 280°, size 22 to 23
	Double vane	0 to 95°, size 10 to 11 0 to 100°, size 22 to 23
Temperature		-10°C to +80°C
Air supply		Lubricated or non-lubricated
Pressure range		2 to 10 bar max

Basic Unit

Size	Max.rotation	Type	Shaft	Order code.
10	275°	Single	Not through rod	**6V5100010F-275**
	95°	Double		**6V5100010F-095**
11	275°	Single		**6V5200010F-275**
	95°	Double		**6V5200010F-095**
22	280°	Single	Through rod	**6V1300030F-280**
	100°	Double		**6V1300030F-100**
33	280°	Single		**6V2400030F-280**
	100°	Double		**6V2400030F-100**

Angle adjustment and sensor kits

Size	Options	Order code.
22	Angle adjustment kit	**6V03570**
	Angle adjustment kit with sensors PNP	**6V03575**
	Angle adjustment kit with sensors NPN	**6V03576**
33	Angle adjustment Kit	**6V04570**
	Angle adjustment kit with sensors PNP	**6V04575**
	Angle adjustment kit with sensors NPN	**6V04576**

Complete with angle adjustment and sensors

Size	Max.rotation	Type	Shaft	Order code.
22	220°	Single	Angle adjustment kit	**6V1357630F-220**
	100°	Double		**6V1357730F-100**
	220°	Single	As above + PNP Sensors + plug	**6V1357635F-220**
	100°	Double		**6V1357735F-100**
	220°	Single	As above + NPN Sensors + plug	**6V1357636F-220**
	100°	Double		**6V1357736F-100**
33	220°	Single	Angle adjustment kit	**6V2457630F-220**
	100°	Double		**6V2457730F-100**
	220°	Single	As above + PNP Sensors + plug	**6V2457635F-220**
	100°	Double		**6V2457735F-100**
	220°	Single	As above + NPN Sensors + plug	**6V2457636F-220**
	100°	Double		**6V2457736F-100**

The RA is a double-acting rotary actuator of very compact design. It has a high torque and small installation dimensions.
The actuator has double pistons, which transmits the turning moment to the output shaft. The toothed piston rods act on the output shaft in a rack-and-pinion type arrangement. Each piston and toothed rod is of integral construction.
The rack-and-pinion type arrangement gives an even turning moment throughout the rotation movement.

- 5 unit sizes
- Torque from 20 to 200 Nm
- Turning angles of 90° or 180°
- Keyway output shaft
- Direct Namur valve connection

Operating information

Working medium:	dry, filtered compressed air
Working pressure:	Max, 10 bar
Working temperature:	-20°C to +80°C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it has to be continued.

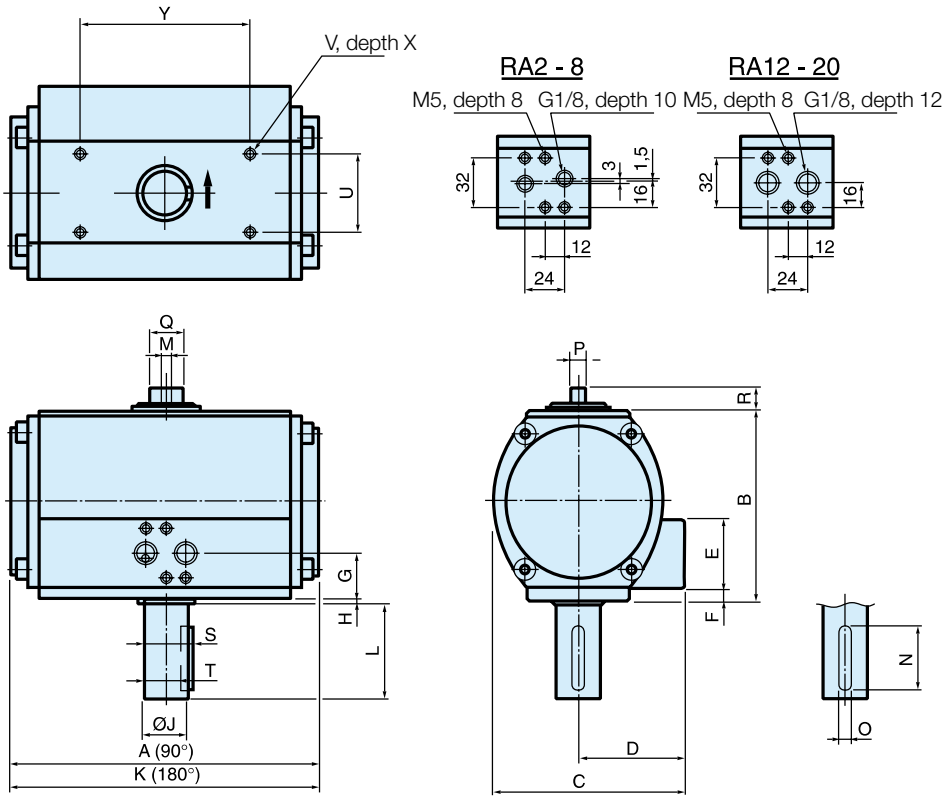
Ordering information for RA

Angle	**Order code**
90°	**RA2-90**
180°	**RA2-180**
90°	**RA4-90**
180°	**RA4-180**
90°	**RA8-90**
180°	**RA8-180**
90°	**RA12-90**
180°	**RA12-180**
90°	**RA20-90**
180°	**RA20-180**

Material specification

Cylinder block / end covers	Anodised aluminium, natural/black
Pistons	Aluminium
Relief surface bars	Stainless steel
Shaft	Zinc-plated steel
End cover screws	Zinc-plated steel
Seals	Nitrile rubber, NRB
Piston bearings	POM
Shaft bearings	Polyethene MOS2

Dimensions



Connection arrangements:
EURO standard
according to ISO and
Namur- VDI/VDE 3845

The turning limits
should be determined
by external stop lugs.

Designation	A	B	C	D	E	F	G	H	ØJh8	K	L	M	N	O	P
RA2	114,5	73,0	75,5	43,5	41	-	20,5	4	14	169	30	M6	19	5	7,5
RA4	133,0	90,5	87,5	47,5	41	-	20,5	4	19	215	40	M6	31	6	7,5
RA8	174,0	109,0	105,0	57,0	42	7,5	28,5	4	19	268	40	M8	31	6	11,5
RA12	203,0	118,5	121,0	67,0	43	8,0	29,5	5	28	295	60	M8	48	8	11,5
RA20	218,0	140,5	136,5	72,0	43	8,0	29,5	5	28	337	60	M8	48	8	11,5

Designation	Q	R	S	T	U	V	X	Y
RA2	13	10,0	16,0	11,0	32	M5	8	50
RA4	15	11,0	21,5	15,5	32	M5	8	73
RA8	17	13,5	21,5	15,5	40	M6	10	90
RA12	20	15,0	31,0	24,0	49	M6	10	107
RA20	25	15,0	31,0	24,0	60	M6	10	120

Table of moments at 6 bar

Designation	Moment in Nm
RA2	22,8
RA4	45,0
RA8	81,7
RA12	134,0
RA20	224,0

Spare parts

Designation	Order code
Mounting plate for VGD15	**9127 3864-01**
seal kits/spare kits:	
RA-2-SS	**9121 6799-20**
RA-4-SS	**9121 6799-21**
RA-8-SS	**9121 6799-22**
RA-12-SS	**9121 6799-23**
RA-20-SS	**9121 6799-24**

Air consumption

Free air consumption in Nl per double stroke at 600 kPa (6 bar).

Rotary actuator,type/ Turning angle	RA2	RA4	RA8	RA12	RA20
RA/90°	1,8	3,2	5,9	7,8	14,9
RA/180°	3,6	6,4	11,8	15,6	30

Variants available on request:

Single-acting rotary actuator with spring return for 90°
Non-standard turning angle
Other surface treatments

Transforms the rectilinear motion of two single acting opposite cylinders into rotary motion via a rack and pinion drive contained within the cylinder body.

- VRA version (Ø32 to Ø80mm)
- VRA standard version (Ø32 to Ø125mm) for corrosive environments
- Rotation angles of 96°, 186° or 366°
- Optional magnetic version
- Several options are available; rotative angle adjustable stop, male shaft or female shaft (through)

Operating information

Working pressure:	Max, 10 bar
Standard working temperature:	-10°C to +60°C

Prelubricated, further lubrication is not normally necessary.
If additional lubrication is introduced it has to be continued.

VRA - Magnetic, Female shaft, No end adjustment

Bore	Rotation Angle (°)	Order code
32	96	**VRAM032-96FNN**
32	186	**VRAM032-186FNN**
32	366	**VRAM032-366FNN**
40	96	**VRAM040-96FNN**
40	186	**VRAM040-186FNN**
40	366	**VRAM040-366FNN**
50	96	**VRAM050-96FNN**
50	186	**VRAM050-186FNN**
50	366	**VRAM050-366FNN**
63	96	**VRAM063-96FNN**
63	186	**VRAM063-186FNN**
63	366	**VRAM063-366FNN**
80	96	**VRAM080-96FNN**
80	186	**VRAM080-186FNN**
80	366	**VRAM080-366FNN**

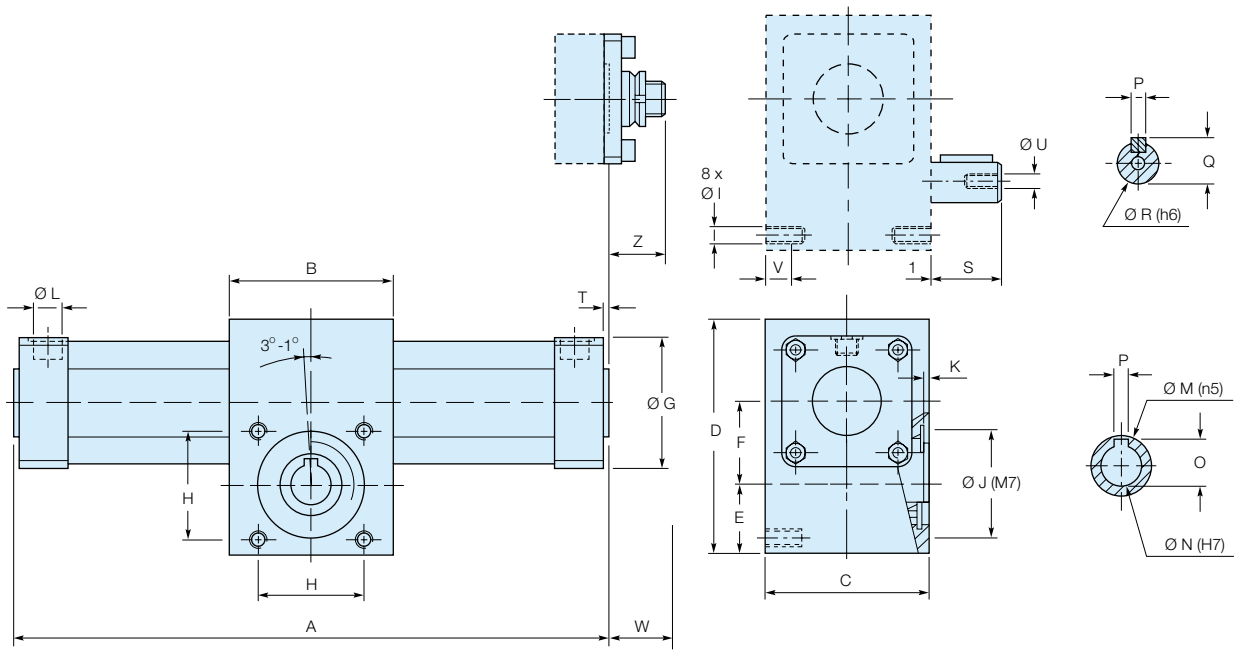
VRS - Magnetic, Female shaft, No end adjustment

Bore	Rotation Angle (°)	Order code
32	96	**VRSM032-96FNN**
32	186	**VRSM032-186FNN**
32	366	**VRSM032-366FNN**
40	96	**VRSM040-96FNN**
40	186	**VRSM040-186FNN**
40	366	**VRSM040-366FNN**
50	96	**VRSM050-96FNN**
50	186	**VRSM050-186FNN**
50	366	**VRSM050-366FNN**
63	96	**VRSM063-96FNN**
63	186	**VRSM063-186FNN**
63	366	**VRSM063-366FNN**
80	96	**VRSM080-96FNN**
80	186	**VRSM080-186FNN**
80	366	**VRSM080-366FNN**
100	96	**VRSM100-96FNN**
100	186	**VRSM100-186FNN**
100	366	**VRSM100-366FNN**
125	96	**VRSM125-96FNN**
125	186	**VRSM125-186FNN**
125	366	**VRSM125-366FNN**

For more options consult techinical catalogue

Dimensions (mm)

Cylinder bores Ø 32 to 80mm



The location of the shaft key is indicated when the pistons are on the left.
First rotation as indicated (clockwise).

Ω : Rotative angle 96°, 186° or 360°

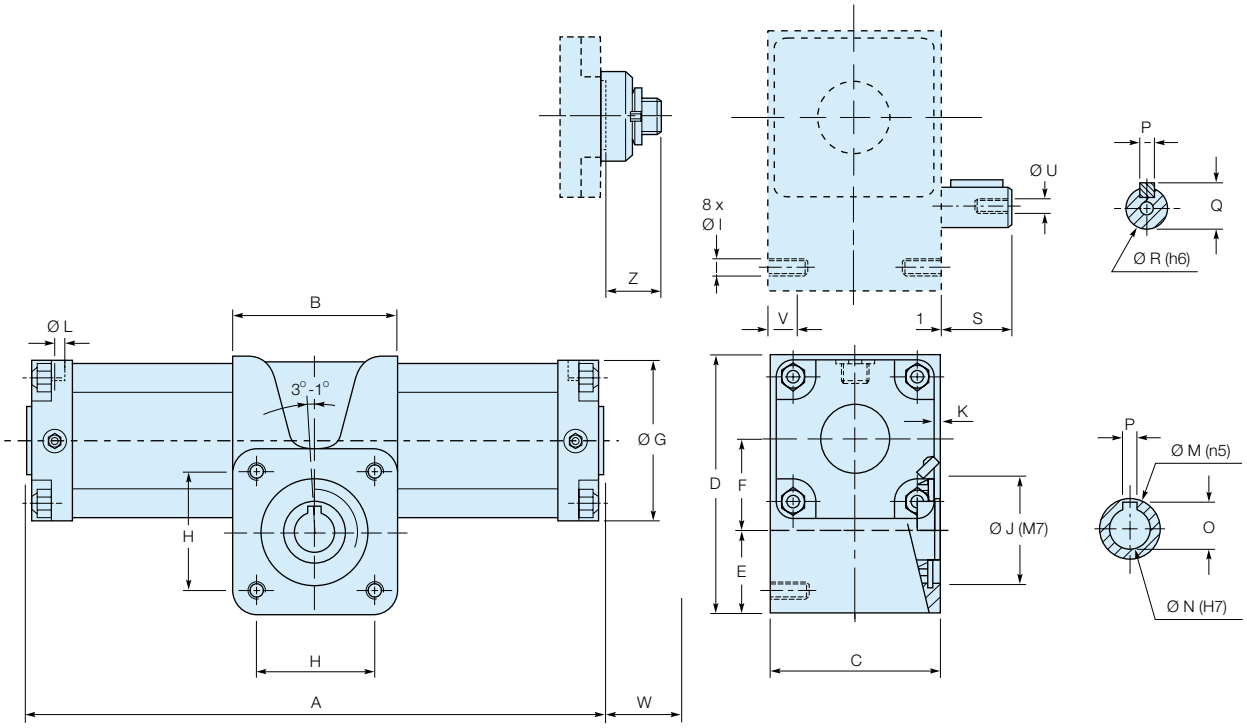
Ø	A*	B	C	D	E	F	G	H	I	J	K	L
32	128 + 0.523 Ω	50	50	72	25.0	24.0	45	35	M6	35	2.0	G1/8"
40	163 + 0.6981 Ω	65	65	95	32.5	29.5	52	47	M8	47	3.0	G1/4"
50	163 + 0.6981 Ω	65	65	95	32.5	29.5	65	47	M8	47	3.0	G1/4"
63	209 + 0.9424 Ω	95	95	126	40.0	38.0	75	62	M10	62	3.5	G3/8"
80	209 + 0.9424 Ω	95	95	126	40.0	38.0	95	62	M10	62	3.5	G3/8"

Ø	M	N	O	P	Q	R	S	T	U	V	W*	Z
32	17	10	11.7	4	13.5	12	20	2	M4 x 10	10	22	31
40	25	15	17.2	5	18.0	16	30	3	M5 x 15	12	24	35
50	25	15	17.2	5	18.0	16	30	3	M5 x 15	12	29	35
63	35	24	27.2	8	27.0	24	40	3	M8 x 20	15	32	32
80	35	24	27.2	8	27.0	24	40	3	M8 x 20	15	32	32

* Add W to A for the magnetic version (magnet on right hand side as standard).

Dimensions (mm)

Cylinder bores Ø 100 to 125mm



The location of the shaft key is indicated when the pistons are on the left.
First rotation as indicated (clockwise).

Ω : Rotative angle 96°, 186° or 360°

Ø	A*	B	C	D	E	F	G	H	I	J	K	L
100	304 + 1309 Ω	130	142	188	64.0	53.5	115	90	M14	90	4.5	G1/2"
125	304 + 1309 Ω	130	142	188	64.0	53.5	140	90	M14	90	4.5	G1/2"

Ø	M	N	O	P	Q	R	S	U	V	W*	Z
100	55	35	38.7	10	38.5	35	50	M12 x 20	24	4	38
125	55	35	38.7	10	38.5	35	50	M12 x 20	24	4	38

* Add W to A for the magnetic version (magnet on right hand side as standard).

Material specification

	VRS	VRA
Rack	XC40 steel	XC40 steel
Floating piston	Aluminium	Aluminium
Magnet (***M version)	Magnetic elastomer	Magnetic elastomer
Piston seals	Polyurethane	Polyurethane
Rack and pinion gear seals		Silicone
Body	Anodised aluminium	Anodised aluminium
Integrated tie rods, nuts, circlips, screws	Zinc plated steel	303 stainless steel
Body	Hard anodised aluminium extrusion	Hard anodised aluminium extrusion
End caps	Anodised aluminium	Anodised aluminium
Male or female transmission shaft	XC40 steel	304 stainless steel (female)
Cushion sleeve	Brass	Brass
Clearance adjusting block (Ø 32 to 80mm)	Acetal	Acetal
Adjusting screw blanking plate		Aluminium + silicone seal

Condition of use

	Ø 32 to 80mm	Ø 100 and 125mm
Temperature range	-10°C to +60°C (14°F to 140°F)	
Pressure range (bar)	0.5 to 10 7 to 145 psi)	0.3 to 10 (4 to 145 psi)
Air condition	Filtered air 40µ, lubricated or non lubricated, dry or non dry	

Theoretical torque

Ø Bore	Pinion mm	Module	ØPm	Torque (N.m) 2 bar	4 bar	6 bar	8 bar 10 bar
32	1.5	20	2.4	4.8	7.2	9.6	12
40	2	40	5.0	10.0	15.0	20.0	25
50	2	40	8.0	16.0	24.0	32.0	40
63	3	54	17.0	34.0	51.0	68.0	85
80	3	54	27.0	54.0	81.0	108.0	135
100	5	75	58.0	116.0	174.0	232.0	290
125	5	75	92.0	184.0	276.0	368.0	460

The table above shows the theoretical torque at different pressures. A maximum efficiency of 80% should be assured due to functional losses.

Technical data

Bore (mm)		32	40	50	63	80	100	125
Maximum load (N)	Axial	110	350	350	1050	1050	2500	2500
	Radial	35	220	220	900	900	2000	2000
Cushion angle (°)		50	45	45	32	32	30	30
Nominal moment of inertia (kg.m³)		0.003	0.01	0.02	0.1	0.2	0.3	0.4
Rotative angle (-1°)		96°, 186°, 366°						
Angular tolerance		0°10'	0°10'	0°10'	0°10'	0°10'	1°	1°

Specialist Actuators

Pneumatic Stop Cylinders

Pneumatic stop cylinders with hydraulic industrial shock absorbers for soft, rebound-free stopping of a conveyed load.

Pneumatic Stop Cylinders

- Soft, rebound-free stopping of a conveyed load.
- Flexible: for vertical or horizontal installation
- Types with shock absorber/roller lever combination, lone roller or roller with a piston rod that ensures direct stoppage
- Shock absorbers are easy to replace, even when fitted
- Rotating stop head for adjustment in line with the direction of travel of the conveyed load
- Rocker can be deactivated for alternate travel function
- Single and double acting cylinder variants
- Operating pressure up to 10 bar
- Different shock absorbers for conveyed load weights of up to 1700 kg and speeds of up to 45 m/min
- Optional: position switch for piston rod and proximity switch for rocker

Rocker locking
After the conveyed load is stopped, the rocker is lowered and unlocked by applying compressed air. After the conveyed load has been moved, the return spring brings the rocker into its upper end position so that it is back in its start position for the next stopping procedure.

Integrated shock absorbers
The shock absorbers, aligned to the weight and speed of the load, ensure gentle and precise stopping of the conveyed load

Guide rod
Thanks to the easy-to-replace guide rod, the rocker can be quickly rotated so that the conveyor can move in a different direction.

Diecast Aluminum
The design of the robust, lightweight diecast aluminum and its compact size enables it to be installed in many different conveyor systems.

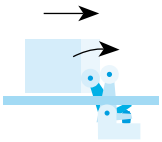
Unrestricted conveyor movement
The rocker is held in the OFF position (deactivated) by simply clipping a spring steel sheet onto it. The conveyed load can pass through the stop cylinder unobstructed while the rocker is in this position.

Stop Cylinder — Vertical Version

STVSR series

Integrated shock absorber for heavy conveyed loads

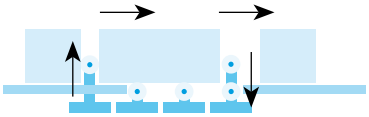
The built-in shock absorber stops the conveyed load in a gentle and precise manner without disturbing the load. Various shock absorbers are available depending on the weight of the conveyed load and the desired transport speed.



STVDR series

Roller for lower conveyed load weights

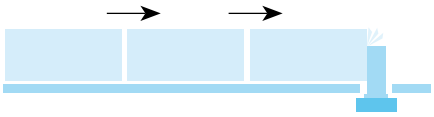
The piston rod with upward facing roller is lowered by applying compressed air once the conveyed load is on the ground. Afterwards, it is brought back into the upper end position by a return spring.



STVD series

Direct stopping piston rod for heavy conveyed loads

Reliably stops heavy conveyed loads at low transport speeds. Can also be used as a locking cylinder due to its solid piston rod.

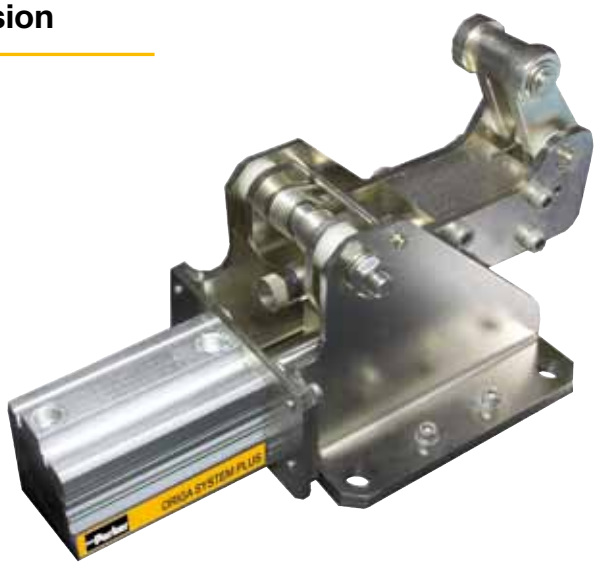


Stop Cylinder — Horizontal Version

STHSR series

Horizontal stop cylinder with shock absorber

Reliably stops heavy conveyed loads at high transport speeds. Well-suited for buffer areas.



Pneumatic Stop Cylinders
Ø 50-80 mm
Available with hydraulic Industrial shock absorbers

Vertical Version:
- STVSR series
- STVDR series
- STVD series

Horizontal Version:
- STHSR series

Vertical versions

Vertical stop cylinder with shock absorber and roller lever

Cylinder Ø mm	Stroke (mm)	Order code
50	30	**STVSR-50-30-.-...**
80	40	**STVSR-80-40-.-...**

Vertical stop cylinder with roller

Cylinder Ø mm	Stroke (mm)	Order code
50	30	**STVDR-50-30-.-...**

Vertical stop cylinder with direct stopping piston rod

Cylinder Ø mm	Stroke (mm)	Order code
50	30	**STVD-50-30-.-...**

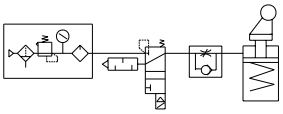
Horizontal versions

Horizontal stop cylinder with shock absorber and roller lever

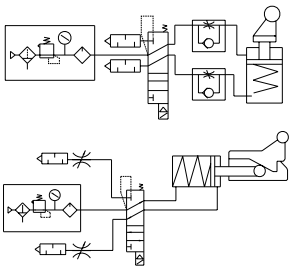
Cylinder Ø mm	Stroke (mm)	Order code
50	50	**STHSR-50-50-.-...**

Pneumatic Circuit Diagrams

Single acting



Double acting



Specifications	Description
Medium	Filtered, unlubricated compressed air (if oil is used then it must be continued)
Operating pressure range	2 to 10 bar
Test pressure	15 bar
Ambient temperature range	0 °C to +65 °C (If intended for use below 0 °C consult Technical Sales)
Lubrication	Unlubricated
Cushioning	Cushioning mat made from oil-resistant rubber

Weight

Type STVSR-50-30	1.800 kg
Type STVSR-80-40	6.820 kg
Type STVDR-50-30	1.800 kg
Type STVD-50-30	1.800 kg
Type STHSR-50-50	8.750 kg

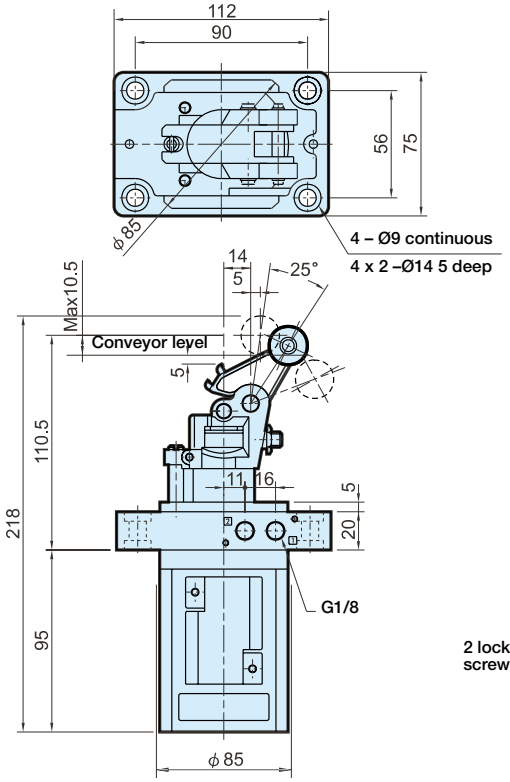
STVSR Series - Stop cylinder Ø 50mm - Vertical version

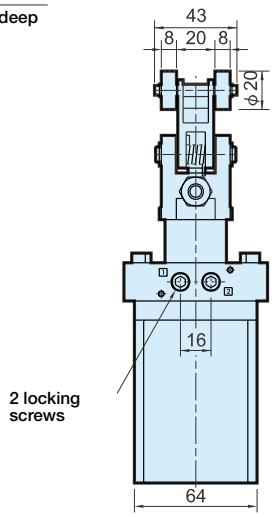
Order Key

STVSR - 50 - 30 - L - STD

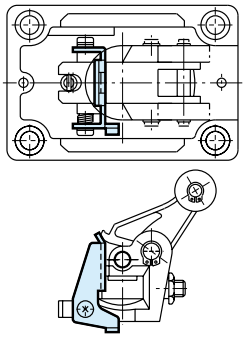
	Shock absorber strength
L	Light 50 - 150 kg
H	High 150 - 300 kg

	Connecting thread
STD	Standard G1/8
NPT	National Pipe Thread 1/8"

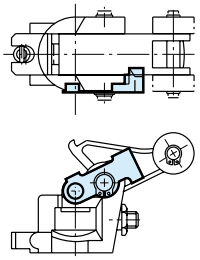




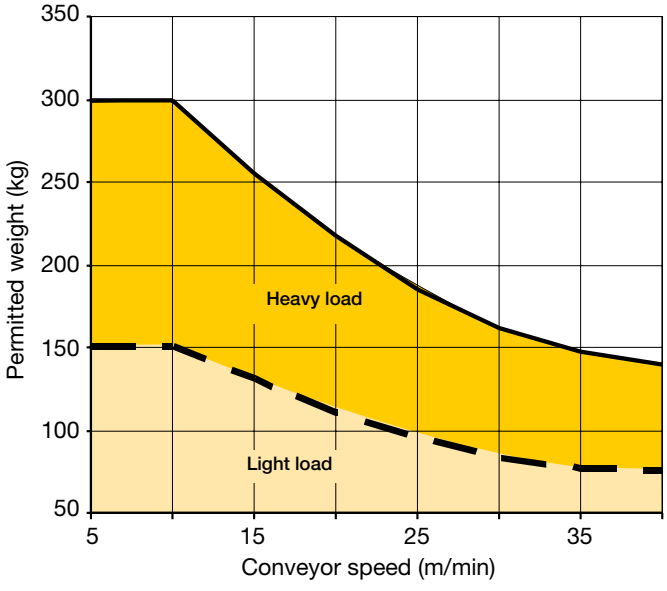
Option
- Rocker locking



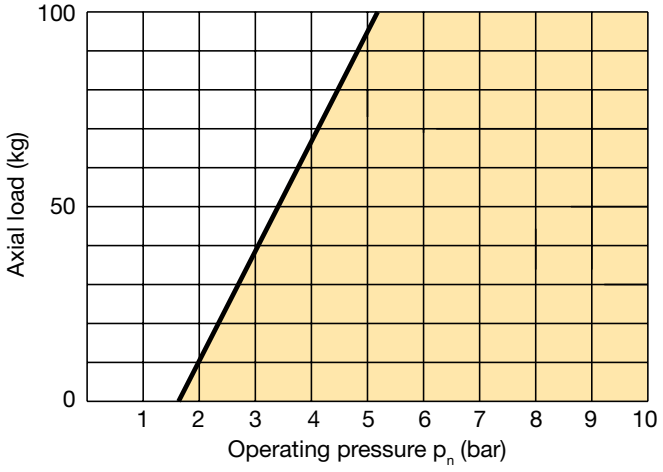
- Free travel of conveyed load



Loads - Moving mass subject to speed — Type STVSR-50-30



Axial load subject to operating pressure — Type STVSR-50-30



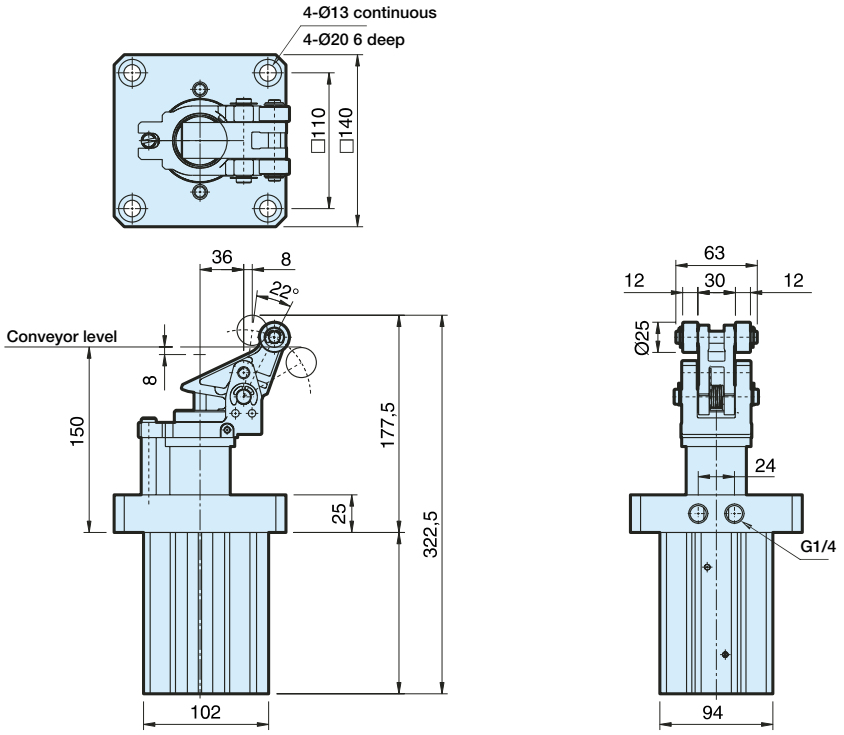
STVSR Series - Stop cylinder Ø 80mm - Vertical version

Order Key

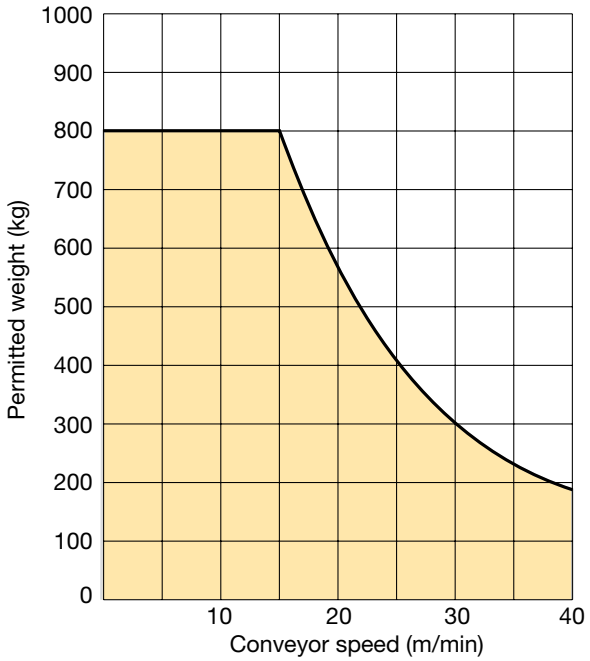
STVSR - 80 - 40 - STD

Note: Shock absorbers can set at 50 - 800kg

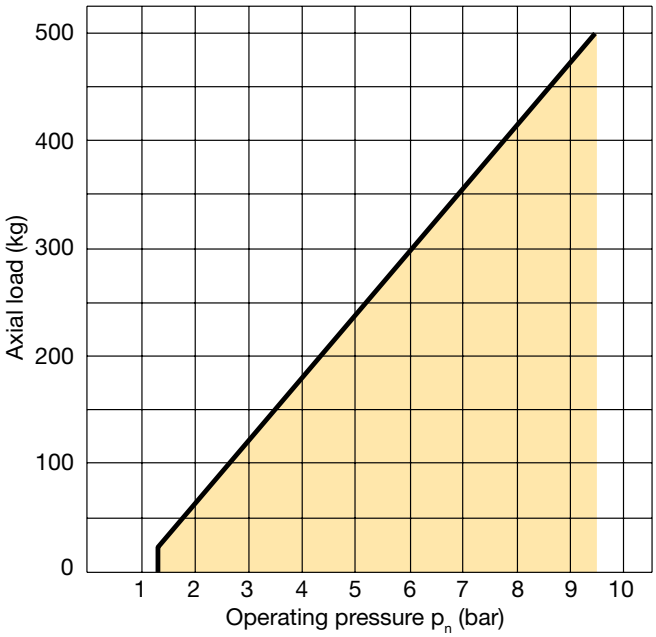
	Connecting thread
STD	Standard G1/4
NPT	National Pipe Thread 1/4"



Loads - Moving mass subject to speed — Type STVSR-80-40



Axial load subject to operating pressure — Type STVSR-80-40

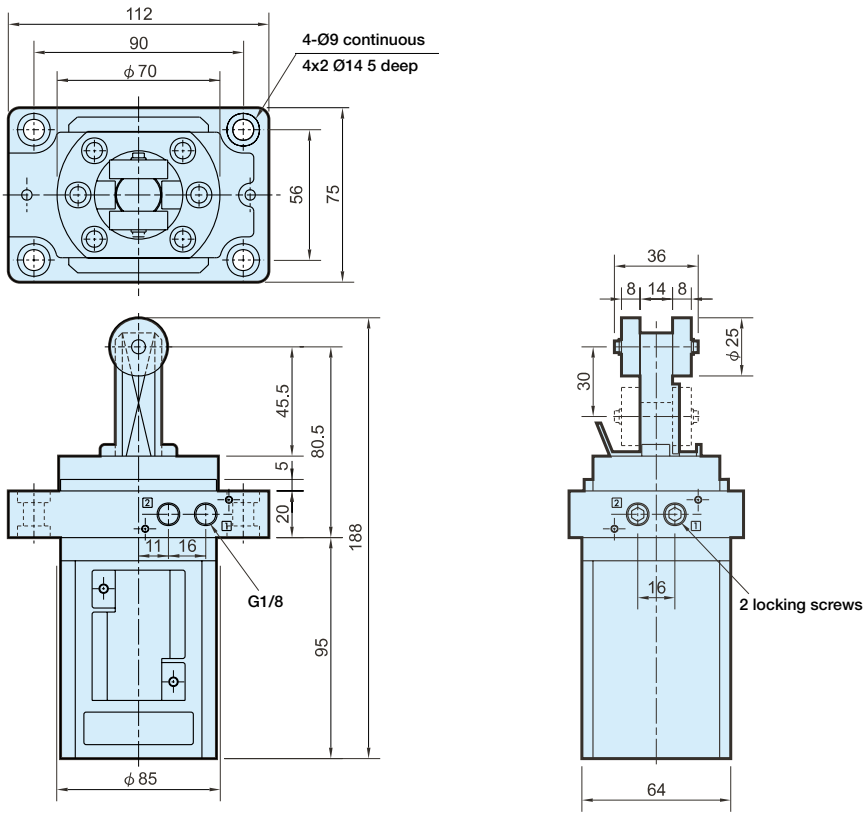


STVDR Series - Stop cylinder Ø 50mm - Vertical version

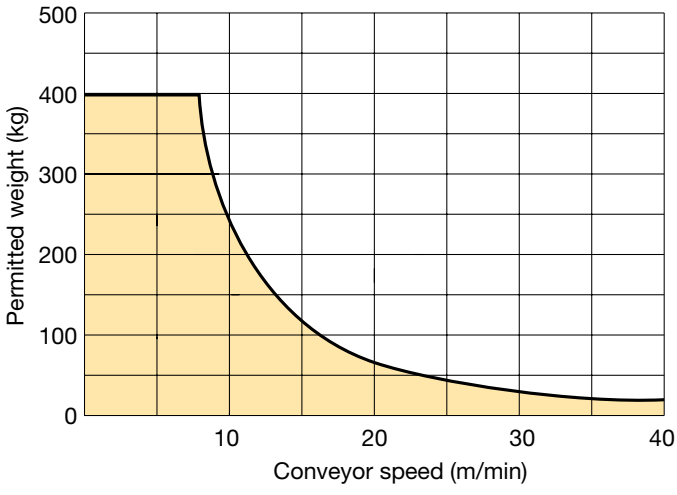
Order Key

STVDR - 50 - 30 - STD

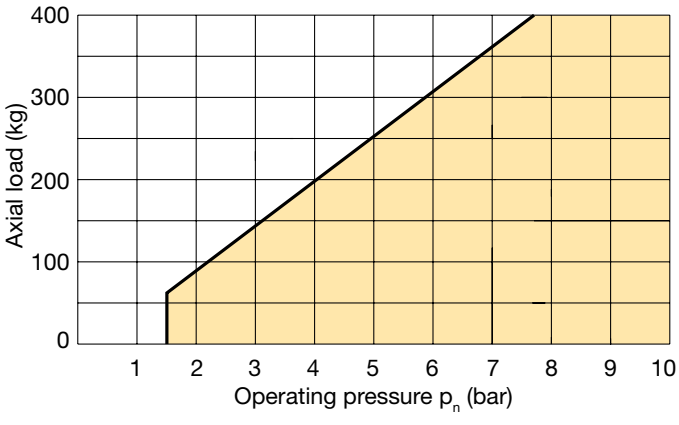
	Connecting thread
STD	Standard G1/8
NPT	National Pipe Thread 1/8"



Loads - Moving mass subject to speed — Type STVDR-50-30



Axial load subject to operating pressure — Type STVDR-50-30

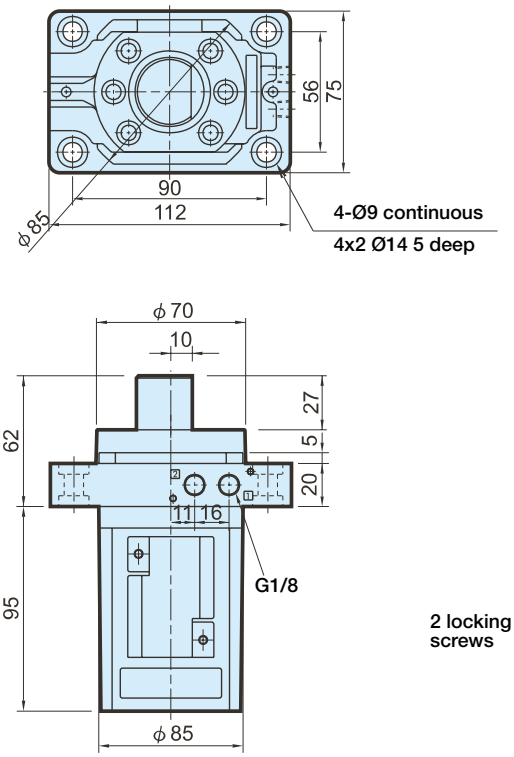


STVSR Series - Stop cylinder Ø 80mm - Vertical version

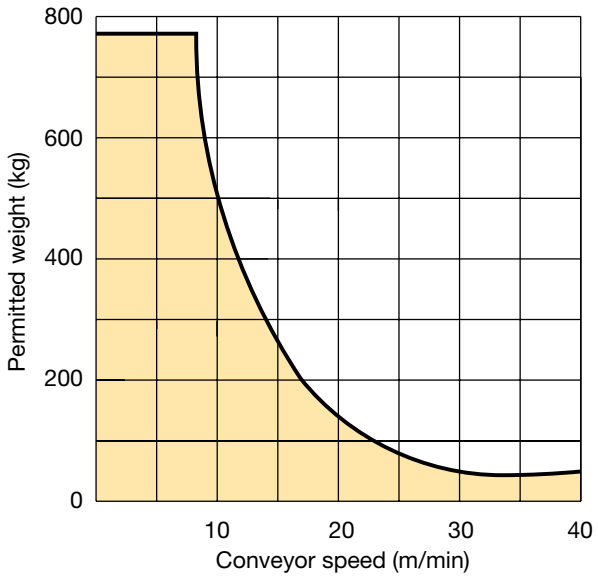
Order Key

STVD - 50 - 30 - STD

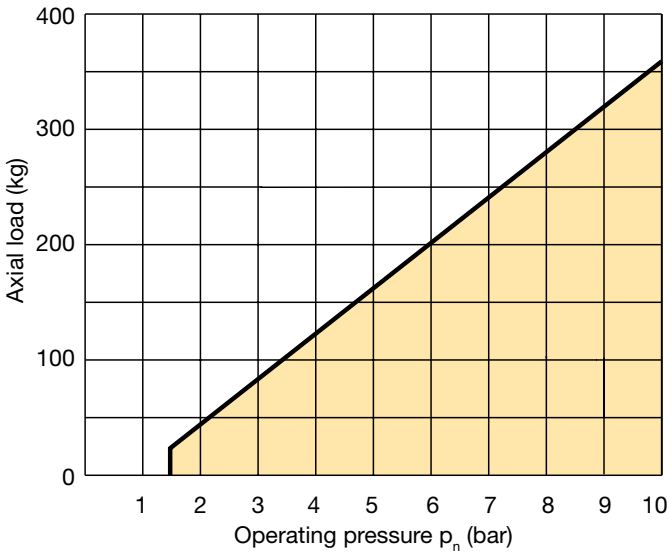
	Connecting thread
STD	Standard G1/8
NPT	National Pipe Thread 1/8"



Loads - Moving mass subject to speed — Type STVD-50-30



Axial load subject to operating pressure — Type STVD-50-30

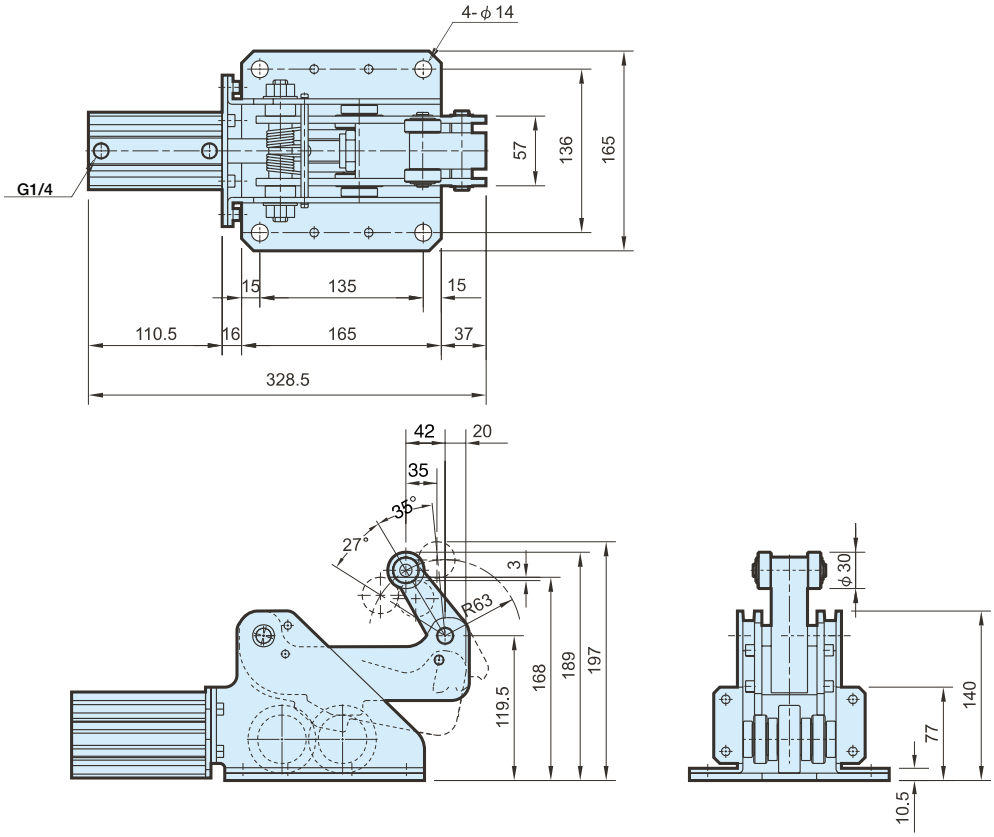


STHSR Series - Stop cylinder Ø 50mm - Horizontal version

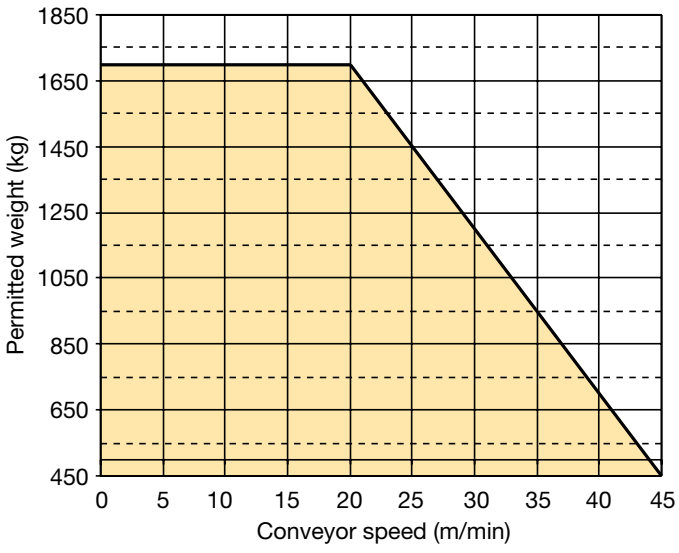
Order Key

STHSR - 50 - 50 - STD

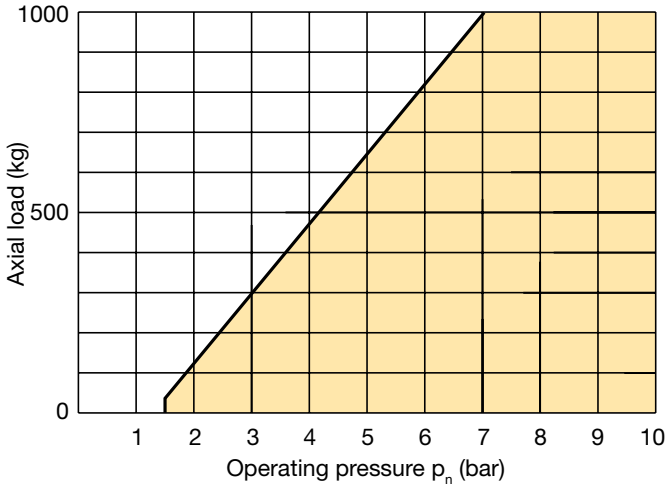
	Connecting thread
STD	Standard G1/4
NPT	National Pipe Thread 1/4"



Loads - Moving mass subject to speed — Type STHSR-50-50



Axial load subject to operating pressure — Type STHSR-50-50



The thrust cylinders are linear actuators, designed for a high force to size ratio. This makes the cylinder ideal to use for clamping, riveting, punching and similar applications where a high force is required.

- Thrust cylinders provide large forces
- Compact dimensions
- C0D, diaphragm type
- C0P, piston type
- Available in single and double acting versions

Operating information

Working pressure: Max 8 bar
Working temperature: -20°C to +70°C

Stainless steel piston rod
Piston rod according to ISO 4395

Compressed air cylinders, types C0D and C0P should not be used in vertical applications without external stop.

For more information see www.parker.com/euro_pneumatic

C0D - Double acting

Force at 6 bar, N	Port size	Stroke mm	Order code
3000	G1/4	40	**C0D300-40**
6000	G1/4	50	**C0D600-50**
12000	G1/2	50	**C0D1200-50**
25000	G1/2	60	**C0P2500-60**
25000	G1/2	80	**C0P2500-80**

C0P - Single acting

Force at 6 bar, N	Spring N force Max N	Spring N force Min N	Port size	Stroke mm	Order code
1600	314	128	G1/4	50	**C0P160-50S**
1600	314	128	G1/4	80	**C0P160-80S**
3000	314	128	G1/4	50	**C0P300-50S**
3000	314	128	G1/4	80	**C0P300-80S**
3000	294	98	G1/4	40	**C0D300-40S**
6000	638	98	G1/4	50	**C0D600-50S**
12000	981	235	G1/2	50	**C0D1200-50S**
25000	2700	883	G1/2	60	**C0P2500-60S**
25000	2700	883	G1/2	100	**C0P2500-100S**

The spring forces in single acting cylinders are sufficient to return the piston rod without load

Accessories

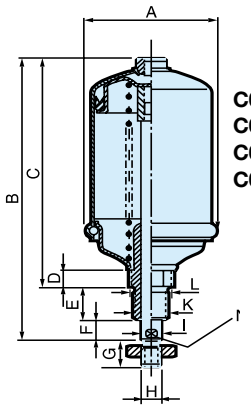
Neck mounting nut

	Lock nut thread	For cylinder	Order code
	M24x2	C0D300	**9141100000**
	M36x3	C0D600/1200	**9141100100**
	M48x3	C0P2500	**9141100200**
	M24x3	C0P160/300	**9141100300**

Piston rod nut (one nut is included)

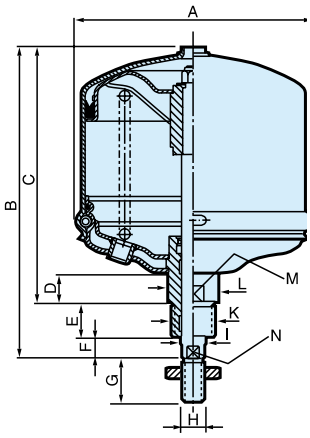
	Piston rod nut thread	For cylinder	Order code
	M12	C0P160/300 and C0D300	**0266211200**
	M16	C0D600	**0266211400**
	M20	C0D1200	**0266211600**
	M24	C0P2500	**0266211800**

Dimensions (mm), piston type



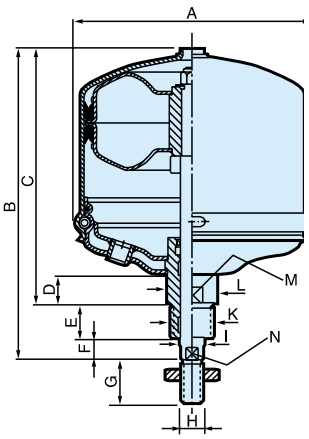
C0P160-50S
C0P160-80S
C0P300-50S
C0P300-80S

Single-acting



C0P2500-60S
C0P2500-100S

Single-acting

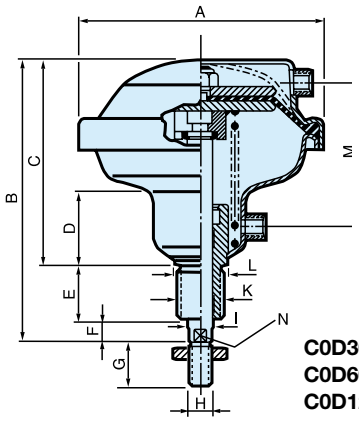


C0P2500-60
C0P2500-80

Double-acting

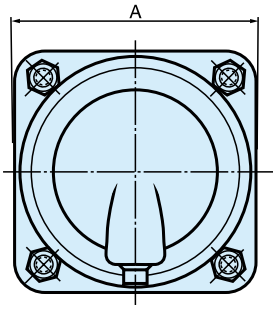
Type	Connection thread	A	B	C	D	E	F	G	H	I Ø	K	L Ø	M	N
C0P160-50S	G1/4	66	192	151	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P160-80S	G1/4	66	222	181	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P300-50S	G1/4	93	192	151	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P300-80S	G1/4	93	222	181	18	30	11	24	M12x1,75	14	M24x3	30	30	12
C0P2500-60S	G1/2	268	345	285	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-100S	G1/2	268	385	325	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-60	G1/2	268	345	285	33	40	20	48	M24x3	28	M48x3	56	50	25
C0P2500-80	G1/2	268	385	325	33	40	20	48	M24x3	28	M48x3	56	50	25

Dimensions (mm), diaphragm type

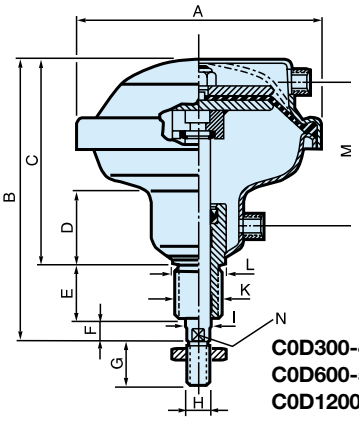


C0D300-40S
C0D600-50S
C0D1200-50S

Single-acting



C0D300-40S **C0D300-40**
C0D600-50S **C0D600-50**
C0D1200-50S **C0D1200-50**



C0D300-40
C0D600-50
C0D1200-50

Double-acting

Type	Connection thread	A	B	C	D	E	F	G	H	I Ø	K	L Ø	M	N
C0D300-40S	G1/4	150	183	131	48	38	14	24	M12x1,75	16	M24x2	30	90	13
C0D300-40	G1/4	150	183	131	48	38	14	24	M12x1,75	16	M24x2	30	90	13
C0D600-50S	G1/4	195	212	154	55	38	20	32	M16x2	20	M36x3	43	107	17
C0D600-50	G1/4	195	212	154	55	38	20	32	M16x2	20	M36x3	43	107	17
C0D1200-50S	G1/2	261	243	178	58	45	20	40	M20x2,5	25	M36x3	43	117	22
C0D1200-50	G1/2	261	243	178	58	45	20	40	M20x2,5	25	M36x3	43	117	22

Press stand for thrust cylinders

A simple press for efficient mounting and pressing can easily be built by screwing the thrust cylinders into the threaded holes in the very stable and strong steel press stand. The stand is available in two versions with different fastening threads for the cylinders.

The top plate has two different threads, and can be rotated through 180 degrees to present the correct thread for nose fitting of the cylinders.

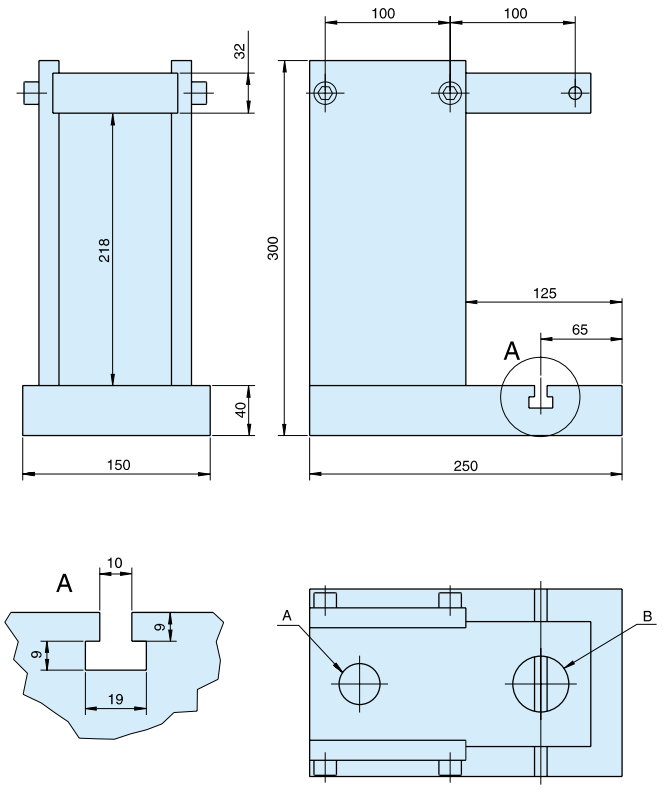
The sub-base is fitted with a T-track for easy mounting of accessories. It also has two through holes for simple and secure fitting to a work bench.

NOTE! Remember that an approved two-handed press control must be used with the cylinders and the press stand to prevent crush injuries.
We recommend the use of our type PXP two-handed press control. It is available in a number of versions, and is simple, ergonomic and safe to incorporate in the press stand. It meets the requirements of safety standards EN574 and EN954-1.

For more information, see our website:
www.parker.com/euro_pneumatic

Description	Threads A/B	Weight kg	Order No.
Press stand for C0P160 / C0P300 / C0D300	M24x2/M24x3	24	**C0P-C0D-P01**
Press stand for C0D600 / C0D1200 / C0P2500	M36x3/M48x3	24	**C0P-C0D-P02**

Dimensions



Clamp cylinders are single acting pneumatic cylinders with built-in oleo-pneumatic intensifiers They can be used to solve most clamping, tightening etc problems.

- Single acting cylinders with built-in hydro-pneumatic intensifier
- Compact size with large clamping forces up to 2700 daN (depending on air pressure)
- Operated using a compressed air supply, no special installation required
- Easy adjustment through a fully threaded body
- Simple and rapid installation

Operating information

Working pressure:	Max 9bar
except VBH603 and VBH606 :	Max 7bar
Permissible fluid:	Filtered (40µ) with or without lubrication
Standard working temperature:	+5°C to +50°C

Hydraulic clamps

Order code	Max.stroke (mm)	Ø external (mm)	Force at 6bar (daN)
VB363C	3	36	240
VB366C	6	36	240
VB369C	9	36	240
VB483C	3	48	530
VB486C	6	48	530
VB489C	9	48	530
VB4812C	12	48	530
VBH483C	3	48	1060
VB606C	6	60	1140
VB609C	9	60	1140
VB6012C	12	60	1140
VBH603C	3	60	1800
VBH606C	6	60	1800

Maintenance

Seal kit for	VB Ø36	VB Ø48	VBH Ø48	VB Ø60	VBH Ø60
Order code	**JJVB36**	**JJVB48**	**JJVBH48**	**JJVB60**	**JJVBH60**

Oil container for all types of hydraulic clamp cylinders (250ml capacity) : Order code BH680VB

Hydraulic clamp mountings

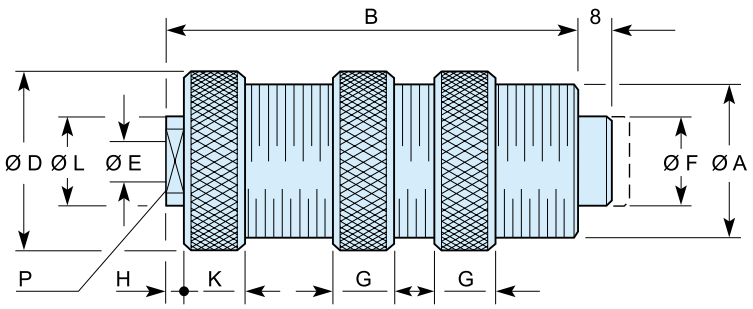
Mounting for VB	Mounting block	Rounded end	V groove end
Ø36	**FVA36-1**	**BVA36-16**	**BVA36-17**
Ø48	**FVA48-1**	**BVA48-16**	**BVA48-17**
Ø60	**FVA60-1**	**BVA60-16**	**BVA60-17**

Mounting block

Rounded clamp piston end

V groove clamp piston end

Dimensions (mm)



Model No	ØA	B	ØD	ØE	ØF	G	H	K	ØL	P
VB363C	M36 x 1,5	98,0	42	G1/8	22	12	4	13	22	17
VB366C	M36 x 1,5	127,5	42	G1/8	22	12	4	13	22	17
VB369C	M36 x 1,5	185,0	42	G1/8	22	12	4	13	22	17
VB483C	M48 x 1,5	111,0	56	G1/8	32	12	4	13	22	17
VBH483C	M48 x 1,5	148,0	56	G1/8	32	12	4	13	22	17
VB486C	M48 x 1,5	148,0	56	G1/8	32	12	4	13	22	17
VB489C	M48 x 1,5	188,0	56	G1/8	32	12	4	13	22	17
VB4812C	M48 x 1,5	234,0	56	G1/8	32	12	4	13	22	17
VBH603C	M60 x 2	175,0	70	G1/4	40	14	5	17	25	22
VB606C	M60 x 2	175,0	70	G1/4	40	14	5	17	25	22
VBH606C	M60 x 2	290,0	70	G1/4	40	14	5	17	25	22
VB609C	M60 x 2	249,0	70	G1/4	40	14	5	17	25	22
VB6012C	M60 x 2	314,0	70	G1/4	40	14	5	17	25	22

Hydrochecks

Self contained hydraulic checking units

Hydrochecks are precision built self contained hydraulic control units designed to smooth out pneumatic cylinder movements over any distance within their own stroke length, up to 450 mm.

Basic single acting models provide adjustable speed control over the full outward or inward stroke and fast return, with the facility for rapid approach to the controlled stroke by adjustment of the piston rod engaging nut.

By the incorporation of 'skip' or 'stop' valves virtually any combination of fast - slow, start - stop motions can be obtained. Similar functions can also be provided on the inward and outward strokes of double acting models.

- Range of imperial sizes
- Gives smooth control feeds
- Strokes up to 450 mm.

Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators.

Manufactured from fabric reinforced synthetic rubber in one, two or three convolutions according to stroke and model. They incorporate no reciprocating metal parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders.

- 10 sizes, diameters 70-660 mm
- Strokes from 45 to 375 mm
- Single, double or triple convolutions
- High thrust and frictionless movement
- Maintenance free

Operating information

Working pressure:	Max 8 bar
Working temperature:	-30°C to +70°C
High temperature version	
Working temperature:	-30°C to +115°C
Operation:	Dry air

It is recommended that external mechanical stops are used to limit the stroke. The units should not achieve maximum stroke or be allowed to 'bottom out'.
Air Bellows may not be stacked, use singly only.

Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

For more information see www.parker.com/euro_pneumatic

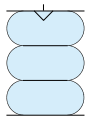
Single convolution

Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	110 (4½ x 1)	G3/8	1150	45	**9109400**
	150 (6 x 1)	G1/2	1900	55	**9109004A**
	200 (8 x 1)	G1/2	3200	75	**9109014**
	250 (10 x 1)	G1/2	5000	100	**9109024**
	300 (12 x 1)	G1/2	6500	100	**9109044**
	370 (14½ x 1)	G1/2	9600	115	**9109064**

Double convolution

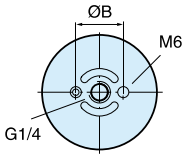
Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	70 (2¾ x 2)	G1/4	400	50	**9109009**
	110 (4½ x 2)	G3/8	900	80	**9109401**
	150 (6 x 2)	G1/2	1800	112	**9109001A**
	200 (8 x 2)	G1/2	3000	180	**9109011**
	250 (10 x 2)	G1/2	4800	200	**9109021**
	300 (12 x 2)	G1/2	6800	195	**9109041**
	370 (14½ x 2)	G1/2	10000	225	**9109061**
	410 (16 x 2)	G1/2	11400	250	**9109171**
	550 (21½ x 2)	G3/4	24000	300	**9109150**
	660 (26 x 2)	G3/4	30800	310	**9109156**

Triple convolution

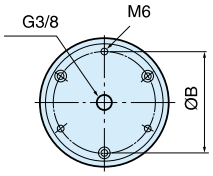
Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Order code
	70 (2¾ x 3)	G1/4	370	65	**9109010**
	110 (4½ x 3)	G3/8	900	100	**9109402**
	150 (6 x 3)	G1/2	1800	173	**9109007A**
	200 (8 x 3)	G1/2	3000	225	**9109017**
	250 (10 x 3)	G1/2	4800	300	**9109031**
	300 (12 x 3)	G1/2	6800	330	**9109051**
	370 (14½ x 3)	G1/2	10200	350	**9109069**
	410 (16 x 3)	G1/2	10500	375	**9109177**

Dimensions (mm)

Ø70 mm *(2¾")*
Aluminium end plate version

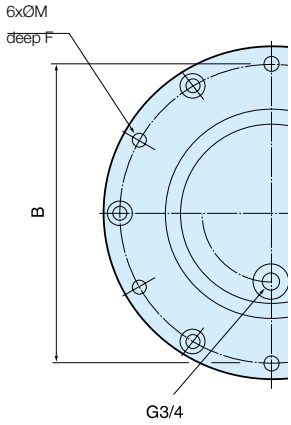


Ø110 mm *(4½")*
Aluminium end plate version

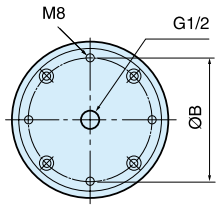


Ø550 mm *(21½")*
Steel end plate version

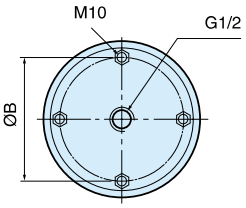
Ø660 mm *(26")*
Steel end plate version



Ø150 mm *(6")*
Aluminium end plate version

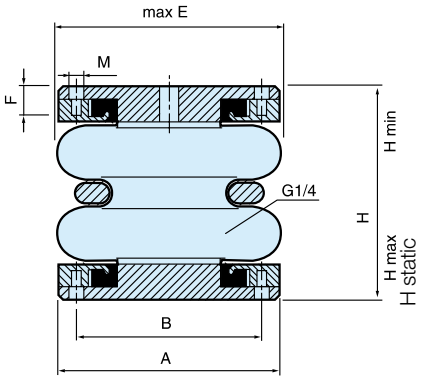


Ø200-410 mm *(8-16")*
Aluminium end plate version

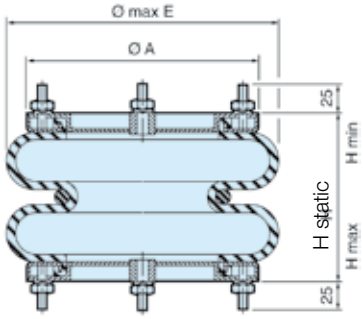


Ø	Number of convolutions	H min	H static	H max	Stroke max	ØE max	ØA	ØB	ØM	F
70	2	65	90	115	50	80	78	36	M6	9
70	3	80	110	145	65	80	78	36	M6	9
110	1	45	65	90	45	125	110	93	M6	13
110	2	65	100	145	80	125	110	93	M6	13
110	3	100	145	200	100	125	110	93	M6	13
150	1	50	80	105	55	175	155	127	M8	16
150	2	78	130	190	172	175	155	127	M8	16
150	3	102	190	275	173	175	155	127	M8	16
200	1	50	90	125	75	230	184	155,5	M10	
200	2	70	160	250	180	230	184	155,5	M10	
200	3	100	205	325	225	230	184	155,5	M10	
250	1	50	100	150	100	280	210	181	M10	
250	2	70	170	270	250	280	210	181	M10	
250	3	100	250	400	300	280	210	181	M10	
300	1	50	100	150	100	330	260	232	M10	
300	2	75	170	270	195	330	260	232	M10	
300	3	100	250	430	330	330	260	232	M10	
370	1	50	110	165	115	395	310	282,5	M10	
370	2	70	180	295	225	395	310	282,5	M10	
370	3	100	280	450	350	395	310	282,5	M10	
410	2	75	200	325	250	440	310	282,5	M10	
410	3	125	300	500	375	440	310	282,5	M10	
550	2	90	200	390	300	580	498,5	470	M10	19
660	2	90	200	400	310	700	498,5	470	M10	19

Ø70-150 mm *(2¾-6")*

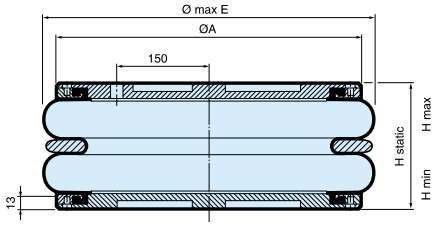


Ø200-410 mm *(8-16")*
Steel end plate version



Ø550 mm *(21½")*
Aluminium end plate version

Ø660 mm *(26")*
Steel end plate version



Air bellows are the ideal choice for applications requiring short stroke, high thrust single acting actuators.

Manufactured from fabric reinforced synthetic rubber in one or two convolutions according to stroke and model. They incorporate no reciprocating metal parts and so provide virtually frictionless thrust compared with conventional pneumatic cylinders.

- 13 variants, diameters 150 to 420 mm
- Strokes from 45 to 170 mm
- Single or double convolutions
- High thrust and frictionless movement
- Maintenance free

Operating information

Working pressure:	Max 8 bar
Working temperature:	-40°C to +70°C
Operation:	Dry air

It is recommended that external mechanical stops are used to limit the stroke. The units should not achieve maximum stroke or be allowed to 'bottom out'.
Air Bellows may not be stacked, use singly only.

Air bellows are suitable for vibration applications i.e. device feeders at high frequency.

For more information see www.parker.com/euro_pneumatic

Single convolution

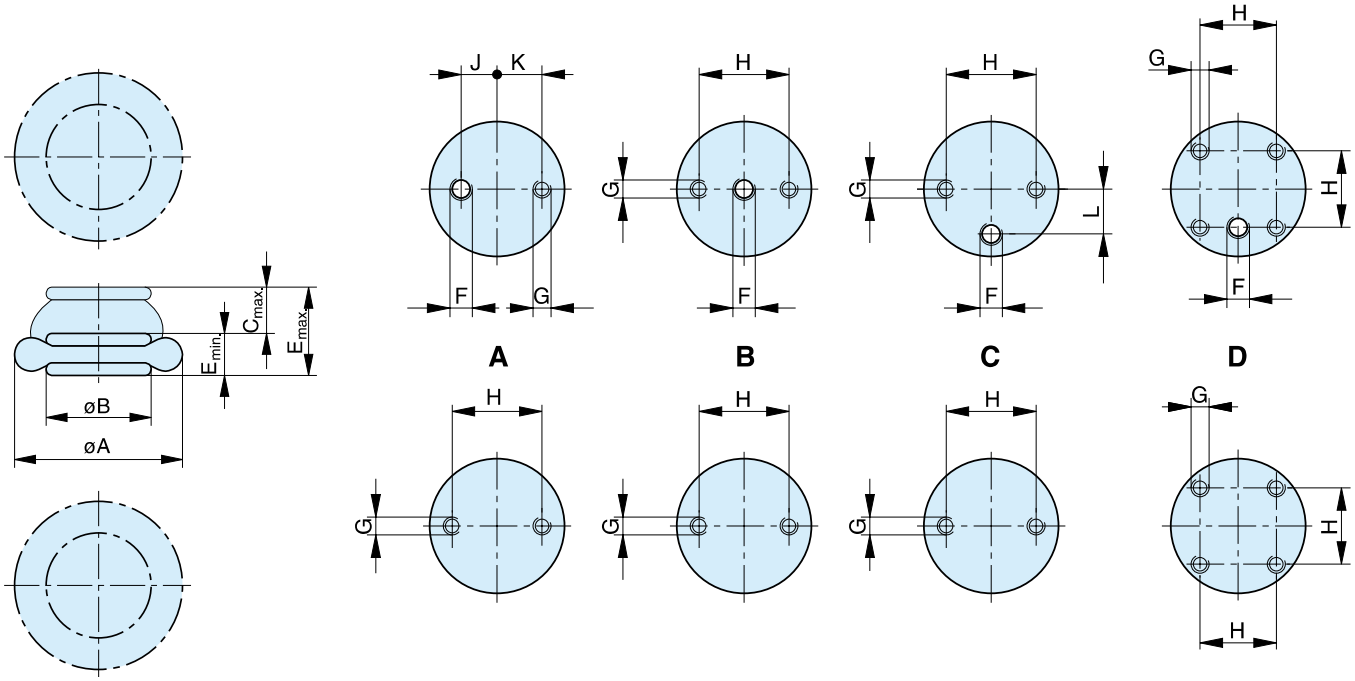
Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Type	Order code
	150	G1/4	1250	55	SP-1B04	**KY9500**
	165	G1/4	1350	45	SP-1B05	**KY8401**
	205	G1/4	1550	90	SP-1B07	**KY9501**
	250	G3/4	2800	100	SP-1B12	**KY9502**
	350	G3/4	5050	110	SP-1B22	**KY9590**
	420	G3/4	7600	110	SP-1B34	**KY8010**

Double convolution

Symbol	Ø mm (inches)	Port size	Max force (N) at 1 bar (0 stroke)	Max stroke mm	Type	Order code
	165	G1/4	1250	110	SP-2B04	**KY9612**
	165	G1/4	1350	80	SP-2B05	**KY8011**
	170	G1/4	1750	105	SP-2B05A	**KY8012**
	215	G1/4	2200	125	SP-2B07	**KY9589**
	250	G3/4	3700	150	SP-2B12	**KY9611**
	320	G3/4	5000	170	SP-2B22	**KY9591**
	390	G3/4	8000	170	SP-2B34	**KY8007**

Dimensions Series SP-1B..

Dimensions of Mounting Plates – Series SP-1B..



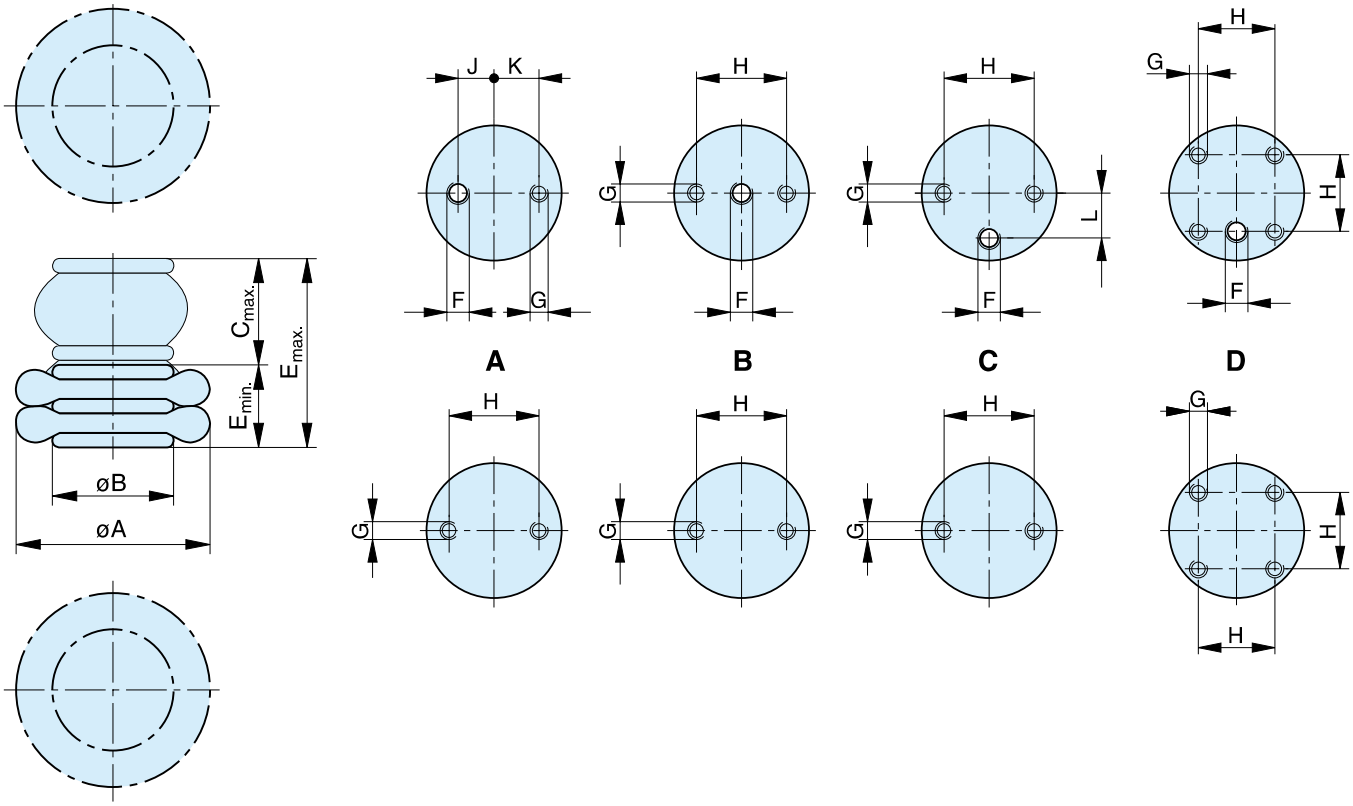
Dimension Table (mm) and Order Instructions

Type	**Order-No.**	Mounting plate	ØA at 8 bar	ØB	C_{max} **	E_{max} **	E_{min}	F	G*	H	J	K	L
SP-1B04	**KY 9500**	A	150	88	55	105	50	G1/4	M8	22	9	11	–
SP-1B05	**KY 8401**	B	165	110	45	95	50	G1/4	M8	44.5	–	–	–
SP-1B07	**KY 9501**	C	205	135	80	130	50	G1/4	M8	54	–	–	27
SP-1B12	**KY 9502**	C	250	160	100	150	50	G3/4	M8	89	–	–	38
SP-1B22	**KY 9590**	C	350	229	110	170	60	G3/4	M12	157.5	–	–	73
SP-1B34	**KY 8010**	D	420	288	110	170	60	G3/4	M8	158.8	–	–	–

*15 deep
**These dimensions depend on the operating pressure: see force diagrams

Dimensions Series SP-2B..

Dimensions of Mounting Plates – Series SP-2B..



Dimension Table (mm) and Order Instructions

Type	**Order-No.**	Mounting	ØA at 8 bar	ØB	C_{max} **	E_{max} **	E_{min}	F	G*	H	J	K	L
SP-2B04	**KY 9612**	A	165	82	110	190	80	G1/4	M8	22	9	11	-
SP-2B05	**KY 8011**	B	165	110	80	160	80	G1/4	M8	44.5	-	-	-
SP-2B05A	**KY 8012**	B	170	110	105	185	80	G1/4	M8	44.5	-	-	-
SP-2B07	**KY 9589**	C	215	135	125	220	95	G1/4	M8	54	-	-	27
SP-2B12	**KY 9611**	C	250	160	150	240	90	G3/4	M8	89	-	-	38
SP-2B22	**KY 9591**	C	320	229	170	260	90	G3/4	M12	157.5	-	-	73
SP-2B34	**KY 8007**	D	390	288	170	260	90	G3/4	M8	158.8	-	-	-

*15 deep
**These dimensions depend on the operating pressure: see force diagrams

ORIGA SYSTEM PLUS OSPE ...

Electric Linear Actuators

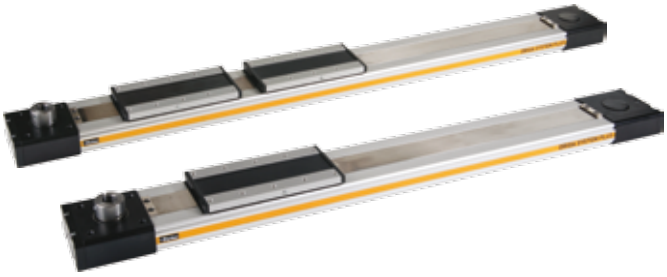
The latest generation of high capacity actuators

The OSP-E series combines robustness, precision and high performance. The aesthetic design is easily integrated into any machine constructions by virtue of extremely adaptable mountings.

- For particularly high requirements regarding loads and forces
- For high-speed applications and highly dynamic motion profiles
- BHD with toothed belt and integrated heavy duty guide: roller guide or re-circulating ball bearing guide

One complete system
- Seven actuator options
For all possible applications

Series OSP-E..BHD
Belt Actuator with integrated Guide
– Ball Bearing Guide
– Roller Guide



Series OSP-E..B
Belt Actuator with Internal Guide

Series OSP-E..SB
Ball Screw Actuator with internal Plain Bearing Guide

Series OSP-E..SBR
Ball Screw Actuator with internal Plain Bearing Guide and Piston Rod

Series OSP-E..BV
Vertical Belt Actuator with integrated Ball Bearing Guide

Series OSP-E..ST
Trapezoidal Screw Actuator with Internal Plain Bearing Guide

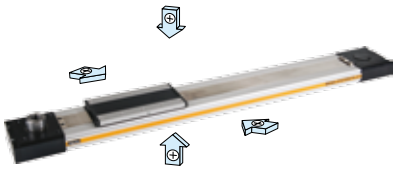
Series OSP-E..STR
Trapezoidal Screw ctuator with Inter-nal Plain Bearing Guide and Piston Rod

Options and Accessories

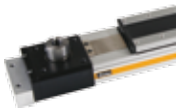
OSP-E..BHD
Belt actuator with integrated guide

STANDARD VERSIONS OSP-E..BHD

Standard carrier with integrated guide and magnets for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.

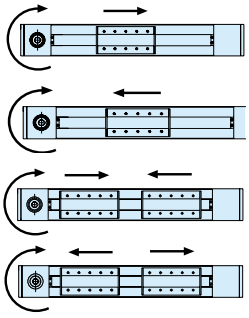


DRIVE SHAFT WITH CLAMP SHAFT



DRIVE SHAFT WITH PLAIN SHAFT

ACTUATING DIRECTION
Important in parallel operations, e.g. with intermediate drive shaft



Standard

Standard – Bi-Parting Version

OPTIONS

TANDEM
For higher moment support.

BI-PARTING VERSION
For perfectly synchronised bi-parting movements.

DRIVE SHAFT WITH CLAMP SHAFT AND PLAIN SHAFT
For connections with intermediate drive shaft

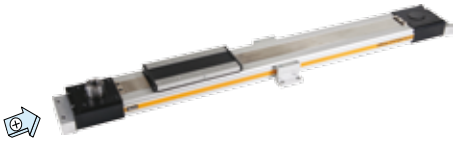
HOLLOW SHAFT WITH KEYWAY
For close coupling of motors and external gears.

INTEGRATED PLANETARY GEARBOX
For compact installation and very low backlash.

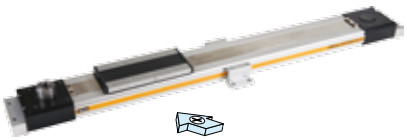
ACCESSORIES

MOTOR MOUNTINGS

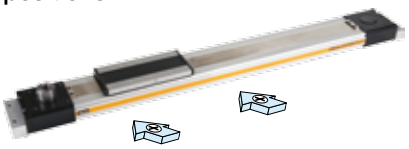
END CAP MOUNTING
For mounting the actuators on the end cap.



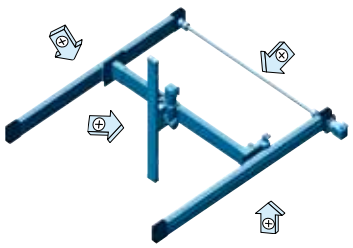
PROFILE MOUNTING
For supporting long actuators or mounting the actuators on dovetail grooves.



MAGNETIC SWITCHES TYPE RS AND ES
For contactless position sensing of end stop and intermediate carrier positions.



MULTI-AXIS SYSTEMS
For modular assembly of actuators up to multi-axis systems.



Belt actuator with integrated guide for heavy duty applications

The latest generation of high capacity actuators, the OSP-E..BHD series combines robustness, precision and high performance. The aesthetic design is easily integrated into any machine constructions by virtue of extremely adaptable mountings.

Belt Actuator with Integrated Guide - selective with Ball Bearing Guide or Roller Guide

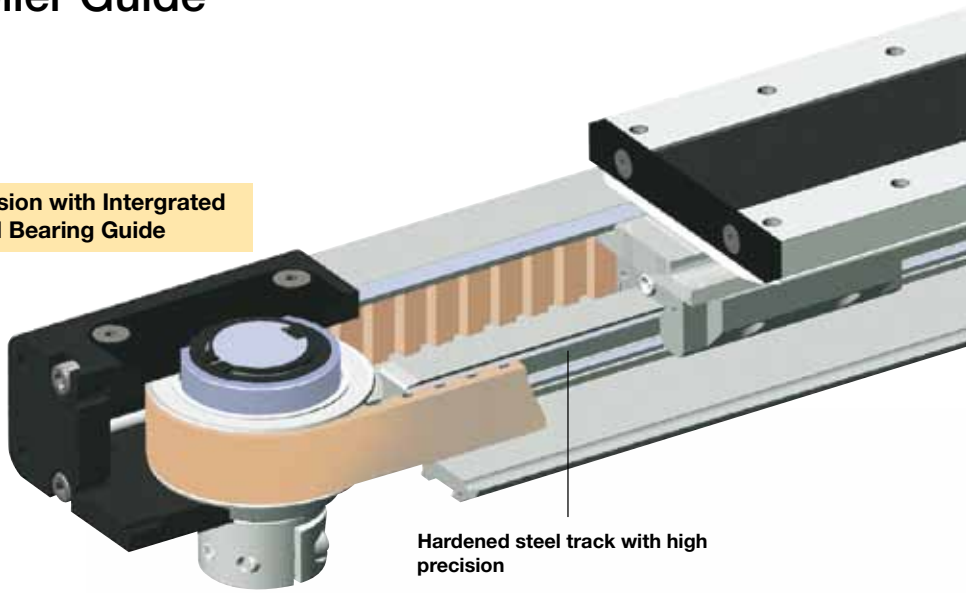
Advantages:

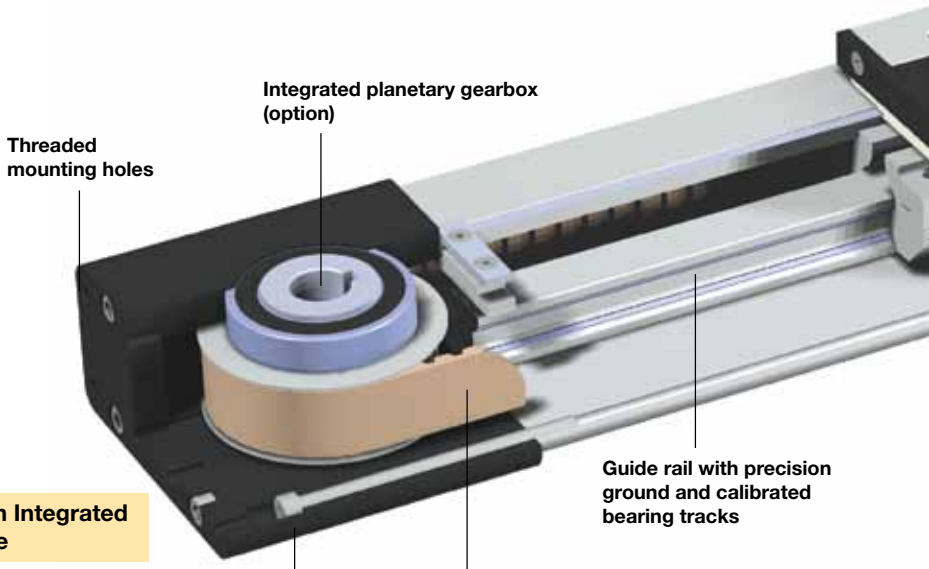
- Accurate path and position control
- High force output
- High speed operation
- High load capacity
- Easy installation
- Low maintenance
- Ideal for multi-axis applications

Features:

- Integrated ball bearing guide or integrated roller guide
- Diverse range of multi-axis connection elements
- Diverse range of accessories and mountings
- Complete motor and control packages
- Optional integrated planetary gearbox
- Special options on request

Version with Intergrated Ball Bearing Guide





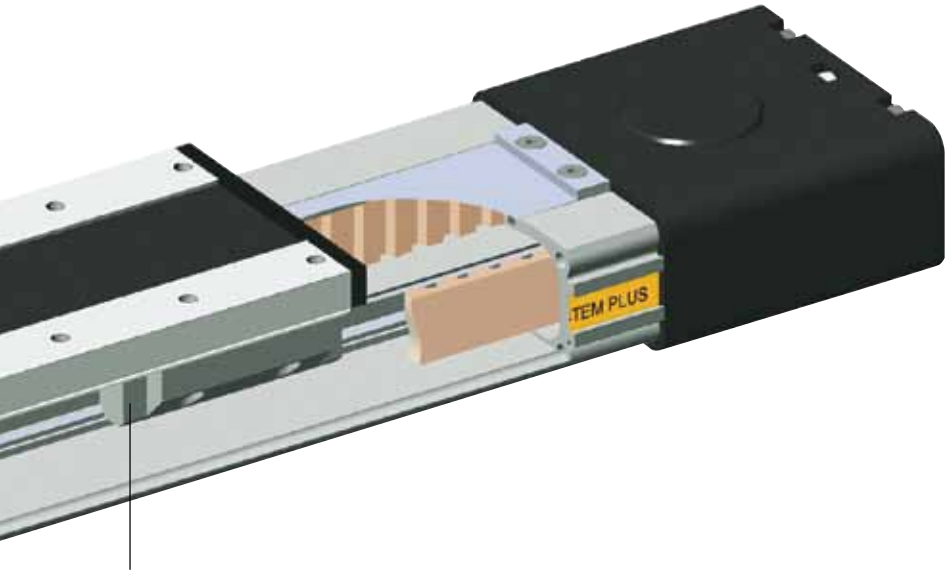
Version with Integrated Roller Guide

Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com

Drive Shaft Versions

Clamp Shaft

Plain Shaft

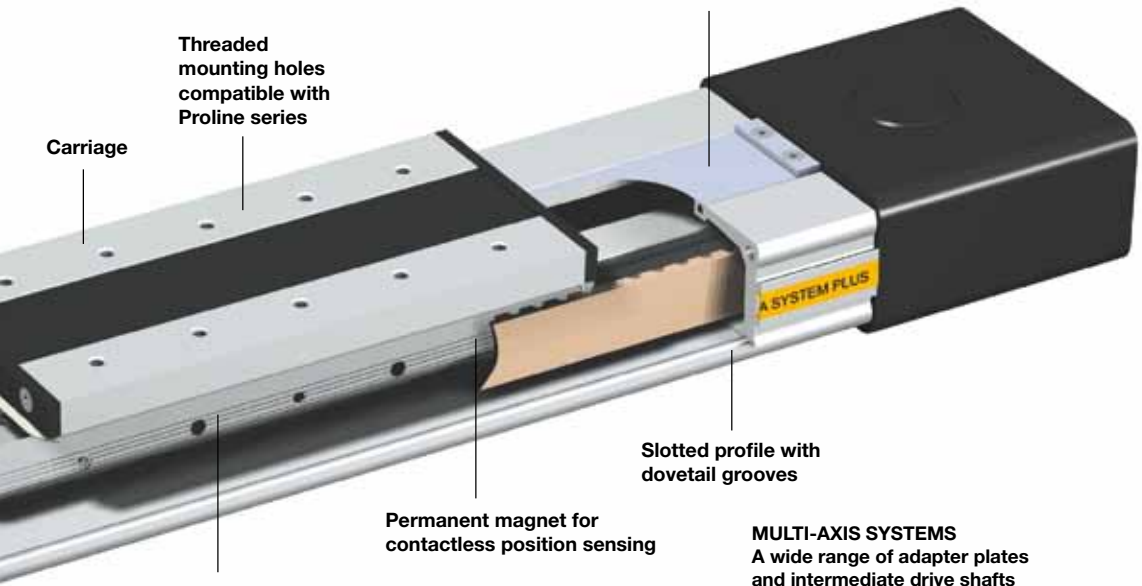


Steel runner block with integrated scraper system and grease nipples

Corrosion resistant steel sealing band

Threaded mounting holes compatible with Proline series

Carriage



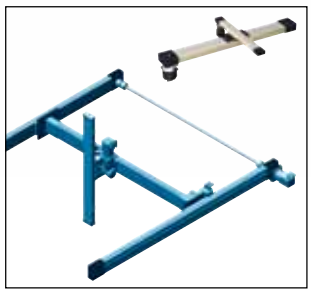
Slotted profile with dovetail grooves

Permanent magnet for contactless position sensing

Rollers on needle bearings for smooth operation up to 10 m/s.

BI-PARTING Version
for perfectly synchronised bi-parting movements.

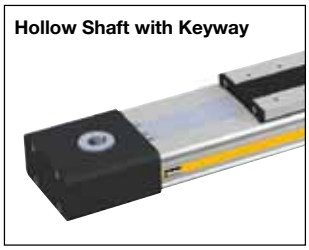
MULTI-AXIS SYSTEMS
A wide range of adapter plates and intermediate drive shafts simplify engineering and installation



Drive Shaft OPTIONS

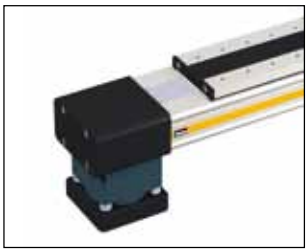
Clamp Shaft and Plain Shaft

Hollow Shaft with Keyway



OPTION

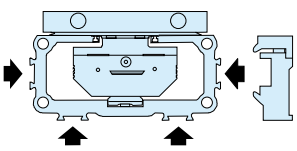
Integrated planetary gearbox



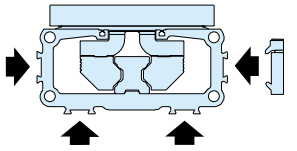
- Highly compact and rigid solution fully integrated in the drive cap housing
- Purpose designed for the BHD series
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges

The dovetailed mounting rails of the new linear actuator expand its function into that of a universal system carrier. Modular system components are simply clamped on

Version with Integrated Ball Bearing Guide



Version with Integrated Roller guide



Belt Actuator with Integrated Ball Bearing Guide

Size 20 to 50

Type: OSP-E..BHD

OSP
ORIGA
SYSTEM
PLUS

Standard Versions:

- Belt Actuator with integrated Ball Bearing Guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side
- Dovetail profile for mounting of accessories and the actuator itself

Options:

- Tandem version for higher moments
- Bi-parting version for synchronised movements
- Integrated planetary gearbox
- Drive shaft with
  – clamp shaft and plain shaft
  – hollow shaft with keyway
- Special drive shaft versions on request

Installation Instructions

Use the threaded holes in the end cap for mounting the actuator.

Check if profile mountings are needed using the maximum allowable unsupported length graph.

At least one end cap must be secured to prevent axial sliding when profile mountings are used.

Characteristics	Description
Series	OSP-E..BHD
Mounting	See drawings
Ambient temperature range	-30 °C to +80 °C
Installation	In any position
Encapsulation class	IP 54
Material	
Slotted profile	Extruded anodized aluminium
Belt	Steel-corded polyurethane
Pulley	Aluminium
Guide	Ball bearing guide
Guide rail	Hardened steel rail with high precision, accuracy class N
Guide carrier preloaded 0.02 x C, accuracy class H	Steel carrier with integrated wiper system, grease nipples,
Steel band	Hardened, corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Weight (mass)[kg]			Inertia [x 10^{-6} kgm^2]		
	At stroke 0 m	Add per metre stroke	Moving mass	At stroke 0 m	Add per metre stroke	per kg mass
OSP-E20BHD	2.8	4	0.8	280	41	413
OSP-E25BHD	4.3	4.5	1.5	1229	227	821
OSP-E32BHD	8.8	7.8	2.6	3945	496	1459
OSP-E50BHD	26	17	7.8	25678	1738	3103
OSP-E20BHD*	4.3	4	1.5	540	41	413
OSP-E25BHD*	6.7	4.5	2.8	2353	227	821
OSP-E32BHD*	13.5	7.8	5.2	7733	496	1459
OSP-E50BHD*	40	17	15	49180	1738	3103

* Version: Tandem and Bi-parting (Option)

Maintenance

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation.
Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Determination of the lever arm length l_x, l_y and l_z from m_e to the centre axis of the actuator.
2. Calculation of the load F_x or F_y to the carrier caused by m_e
   $F = m_e \cdot g$
3. Calculation of the static and dynamic force F_A which must be transmitted by the belt.
   $F_{A(horizontal)} = F_a + F_0$
   $= m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$
   $F_{A(vertical)} = F_g + F_a + F_0$
   $= m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$
4. Calculation of all static and dynamic bending moments M_x, M_y and M_z which occur in the application
   $M = F \cdot l$
5. Selection of maximum permissible loads via Table T3.
6. Calculation and checking of the combined load, which must not be higher than 1.
7. Checking of the maximum torque that occurs at the drive shaft in Table T2.
8. Checking of the required action force F_A with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

Legend

l = distance of a mass in the x-, y- and z-direction from the guide [m]
m_e = external moved mass [kg]
m_{LA} = moved mass of actuator [kg]
m_g = total moved mass ($m_e + m_{LA}$) [kg]
$F_{x/y}$ = load excerted on the carrier in dependence of the installation position [N]
F_A = action force [N]
M_0 = no-load torque [Nm]
U_{ZR} = circumference of the pulley (linear movement per revolution) [m]
g = gravity [m/s²]
$a_{max.}$ = maximum acceleration [m/s²]

Performance Overview (T1)

Characteristics		Unit	Description			
Series			OSP-E20BHD	OSP-E25BHD	OSP-E32BHD	OSP-E50BHD
Max. speed		[m/s]	3[1)]	5[1)]	5[1)]	5[1)]
Linear motion per revolution of drive shaft		[mm]	125	180	240	350
Max. rpm on drive shaft		[min^{-1}]	2000	1700	1250	860
Max. effective Action force F_A at speed	< 1 m/s:	[N]	550	1070	1870	3120
	1-3 m/s:	[N]	450	890	1560	2660
	> 3 m/s:	[N]	–	550	1030	1940
No-load torque		[Nm]	0.6	1.2	2.2	3.2
Max. acceleration/deceleration		[m/s²]	50	50	50	50
Repeatability		[mm/m]	±0.05	±0.05	±0.05	±0.05
Max. standard stroke length		[mm]	5760[2)]	5700[2)]	5600[2)]	5500[2)]

[1)] up to 10 m/s on request
[2)] longer strokes on request

Maximum Permissible Torque on Drive Shaft Speed / Stroke (T2)

OSP-E20BHD				OSP-E25BHD				OSP-E32BHD				OSP-E50BHD			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	11	1	11	1	31	1	31	1	71	1	71	1	174	1	174
2	10	2	11	2	28	2	31	2	65	2	71	2	159	2	174
3	9	3	8	3	(25)	3	31	3	59	3	60	3	153	3	138
4		4	7	4	23	4	25	4	56	4	47	4	143	4	108
5		5	5	5	22	5	(21)	5	52	5	38	5	135	5	89

Important:
The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

Example above:
OSP-E25BHD, stroke 5 m, required speed 3 m/s from table T2
speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm. Max. torque for this application is 21 Nm.

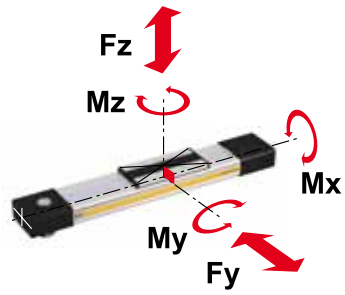
Maximum Permissible Loads (T3)

Series	Max. applied load Fy[N]	Fz[N]	Max. moments [Nm] Mx	My	Mz
OSP-E20BHD	1600	1600	21	150	150
OSP-E25BHD	2000	3000	50	500	500
OSP-E32BHD	5000	10000	120	1000	1400
OSP-E50BHD	12000	15000	180	1800	2500

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



Equation of Combined Loads

$$\frac{Fy}{Fy\,(max)} + \frac{Fz}{Fz\,(max)} + \frac{Mx}{Mx\,(max)} + \frac{My}{My\,(max)} + \frac{Mz}{Mz\,(max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

$M = F \cdot l\ [Nm]$
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance (l_x, l_y, l_z) for calculation of moments relates to the centre axis of the actuator. Bending moments are calculated from the centre of the actuator and F indicates actual force.

Maximum Permissible Unsupported Length

Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to 5700 mm.

Other stroke lengths are available on request.
The end of stroke must not be used as a mechanical stop.
Allow an additional safety clear-ance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.

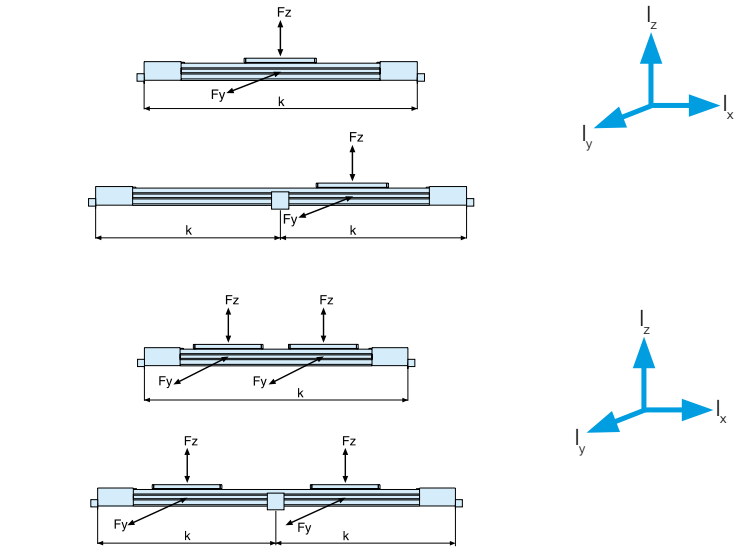
The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.
For advice, please contact your local Parker Origa technical support department.

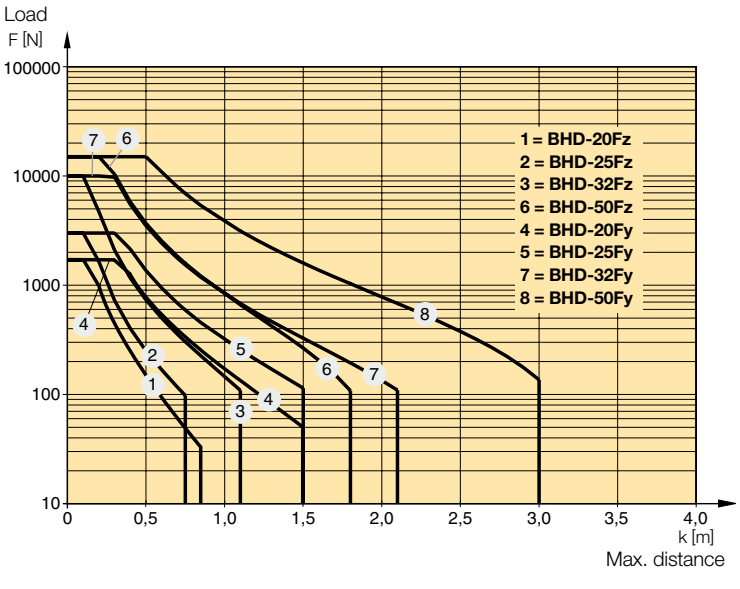
* For Bi-parting version the max. load (F) is the total load of both carriers
$F = F_{carrier\ 1} + F_{carrier\ 2}$

k = Max. permissible distance between mountings/Profile Mounting for a given load F.

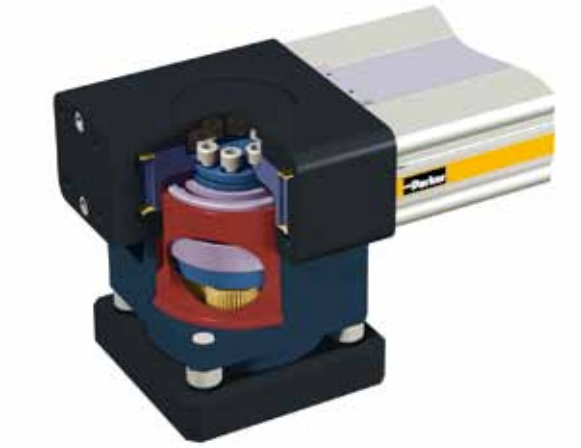
When loadings are below or up to the curve in the graph below the deflection will be max. 0.01 % of distance k.

Maximum Permissible Unsupported Length – Placing of Profile Mounting





Integrated Planetary Gearbox
Series OSP-E..BHD -
with Integrated Planetary Gearbox (Option)



Features:

- Highly compact and rigid solution fully integrated in the drive cap housing
- Purpose designed for the BHD series.
- Available with three standard ratios (3, 5 and 10)
- Very low backlash
- A wide range of available motor flanges

Please contact your local Parker Origa technical support for available motor flanges.

Standard Version:

- Gearbox on opposite side to carrier.

Note:
When ordering, specify model/type of motor and manufacturer for correct motor flange.

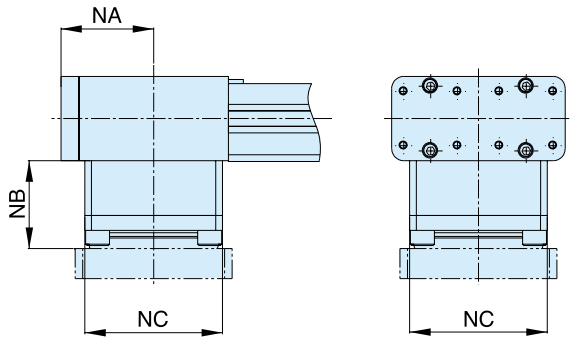
Material:

Aluminium (AL-H) / Steel (St-H)

Performance Overview

Characteristics		Unit	Description		
Series			OSP-E25BHD	OSP-E32BHD	OSP-E50BHD
Ratio (1-stage)	i		3/5/10		
Max. axial load	F_{amax}	[N]	1550	1900	4000
Torsional rigidity (i=5)	$C_{t.21}$	[Nm/arcmin]	3.3	9.5	25.0
Torsional rigidity (i=3/10)	$C_{t.21}$	[Nm/arcmin]	2.8	7.5	222.0
Torsional backlash	J_t	[arcmin]	<12		
Linear motion per revolution of drive shaft		[mm]	220	280	360
Nominal input speed	n_{nom}	[min^{-1}]	3700	3400	2600
Max. input speed		n_{1max}	[min^{-1}] 6000		
No-load torque at Nominal input speed	T_{012}	[Nm]	<0.14	<0.51	<1.50
Lifetime		[h]	20 000		
Efficiency	η	[%]	>97		
Noise level (n_1=3000 min^{-1})	L_{PA}	[db]	<70	<72	<74

Dimensions



Dimension table (mm) and additional weight

Series	NA	NB	NC	Weight (Mass) [kg]
OSP-E25BHD	49	43	76	2.6
OSP-E32BHD	62	47	92	4.9
OSP-E50BHD	80	50	121	9.6

Belt Actuator with Integrated Roller Guide

Size 25, 32, 50

Type: OSP-E..BHD

OSP
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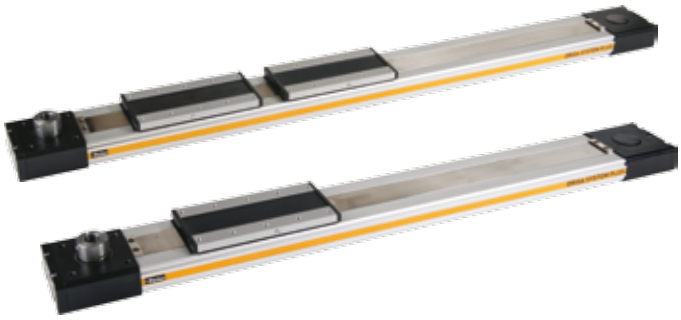


Standard Versions:

- Belt Actuator with integrated Roller Guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side
- Dovetail profile for mounting of accessories and the actuator itself

Options:

- Tandem version for higher moments
- Bi-parting version for synchronised movements
- Integrated planetary gearbox
- Drive shaft with
  – clamp shaft and plain shaft
  – hollow shaft with keyway
- Special drive shaft versions on request

Installation Instructions

Use the threaded holes in the end cap for mounting the actuator.

Check if profile mountings are needed using the maximum allowable unsupported length graph.

At least one end cap must be secured to prevent axial sliding when profile mountings are used.

Characteristics	Description
Series	OSP-E..BHD
Mounting	See drawings
Ambient temperature range	-30 °C to +80 °C
Installation	In any position
Encapsulation class	IP 54
Material	
Slotted profile	Extruded anodized aluminium
Belt	Steel-corded polyurethane
Pulley	Aluminium
Guide	Roller guide
Guide rail	Aluminium
Track	High alloyed steel
Roller cartridge	Steel rollers in aluminium housing
Steel band	Hardened, corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Weight (mass)[kg]			Inertia [x 10^{-6} kgm^2]		
	At stroke 0 m	Add per metre stroke	Moving mass	At stroke 0 m	Add per metre stroke	per kg mass
OSP-E25BHD	3.8	4.3	1.0	984	197	821
OSP-E32BHD	7.7	6.7	1.9	3498	438	1459
OSP-E50BHD	22.6	15.2	4.7	19690	1489	3103
OSP-E25BHD*	5.7	4.3	2.0	1805	197	821
OSP-E32BHD*	11.3	6.7	3.8	6358	438	1459
OSP-E50BHD*	31.7	15.2	9.4	34274	1489	3103

* Version: Tandem and Bi-parting (Option)

Maintenance

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation.
Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Determination of the lever arm length l_x, l_y and l_z from m_e to the centre axis of the actuator.
2. Calculation of the load F_x or F_y to the carrier caused by m_e
   $F = m_e \cdot g$
3. Calculation of the static and dynamic force F_A which must be transmitted by the belt.
   $F_{A(horizontal)} = F_a + F_0$
   $= m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$
   $F_{A(vertical)} = F_g + F_a + F_0$
   $= m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$
4. Calculation of all static and dynamic bending moments M_x, M_y and M_z which occur in the application
   $M = F \cdot l$
5. Selection of maximum permissible loads via Table T3.
6. Calculation and checking of the combined load, which must not be higher than 1.
7. Checking of the maximum torque that occurs at the drive shaft in Table T2.
8. Checking of the required action force F_A with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

Legend

l	=	distance of a mass in the x-, y- and z-direction from the guide [m]
m_e	=	external moved mass [kg]
m_{LA}	=	moved mass of actuator [kg]
m_g	=	total moved mass ($m_e + m_{LA}$) [kg]
$F_{x/y}$	=	load excerted on the carrier in dependence of the installation position [N]
F_A	=	action force [N]
M_0	=	no-load torque [Nm]
U_{ZR}	=	circumference of the pulley (linear movement per revolution) [m]
g	=	gravity [m/s²]
$a_{max.}$	=	maximum acceleration [m/s²]

Performance Overview (T1)

Characteristics		Unit	Description		
Series			OSP-E25BHD	OSP-E32BHD	OSP-E50BHD
Max. speed		[m/s]	10	10	10
Linear motion per revolution drive shaft		[mm]	180	240	350
Max. rpm. drive shaft		[min⁻¹]	3000	2500	1700
Max. effective action force F_A at speed	< 1 m/s:	[N]	1070	1870	3120
	1-3 m/s:	[N]	890	1560	2660
	> 3-10 m/s:	[N]	550	1030	1940
No-load torque		[Nm]	1.2	2.2	3.2
Max. acceleration/deceleration		[m/s²]	40	40	40
Repeatability		[mm/m]	±0.05	±0.05	±0.05
Max. standard stroke length		[mm]	7000	7000	7000

Maximum Permissible Torque on Drive Shaft Speed / Stroke (T2)

OSP-E25BHD				OSP-E32BHD				OSP-E50BHD			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed. [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed. [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	31	1	31	1	71	1	71	1	174	1	174
2	28	2	31	2	65	2	71	2	159	2	174
3	25	3	31	3	59	3	60	3	153	3	138
4	23	4	25	4	56	4	47	4	143	4	108
5	22	5	21	5	52	5	38	5	135	5	89
6	21	6	17	6	50	6	32	6	132	6	76
7	19	7	15	7	47	7	28	7	126	7	66
8	18			8	46			8	120		
9	17			9	44			9	116		
10	16			10	39			10	108		

Important:
The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

Example above:
OSP-E25BHD, stroke 5 m, required speed 3 m/s from table T2
speed 3 m/s gives 25 Nm and stroke 5 m gives 21 Nm. Max. torque for this application is 21 Nm.

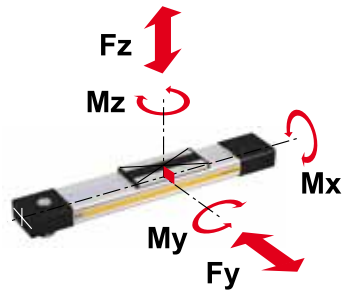
Maximum Permissible Loads (T3)

Series	Max. applied load Fy, Fz [N]	Max. moments [Nm] Mx	My	Mz
OSP-E25BHD	986	11	64	64
OSP-E32BHD	1348	19	115	115
OSP-E50BHD	3704	87	365	365

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



Equation of Combined Loads

$$\frac{Fy}{Fy\,(max)} + \frac{Fz}{Fz\,(max)} + \frac{Mx}{Mx\,(max)} + \frac{My}{My\,(max)} + \frac{Mz}{Mz\,(max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

$M = F \cdot l$ [Nm]
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance (l_x, l_y, l_z) for calculation of moments relates to the centre axis of the actuator. Bending moments are calculated from the centre of the actuator and F indicates actual force.

Maximum Permissible Unsupported Length

Stroke length

The stroke lengths of the actuators are available in multiples of 1 mm up to 5700 mm.

Other stroke lengths are available on request.
The end of stroke must not be used as a mechanical stop.
Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft, but at least 100 mm.
The use of an AC motor with frequency converter normally requires a larger clearance than that required for servo systems.

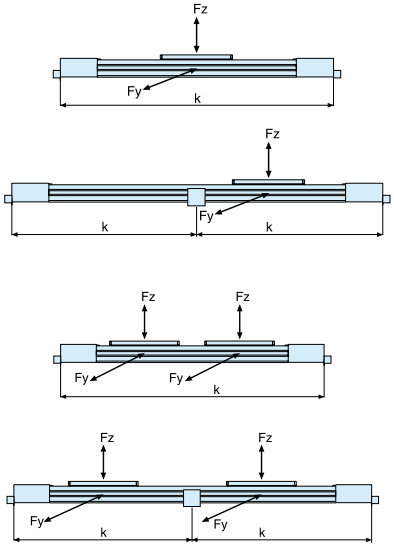
For advice, please contact your local Parker Origa technical support department.

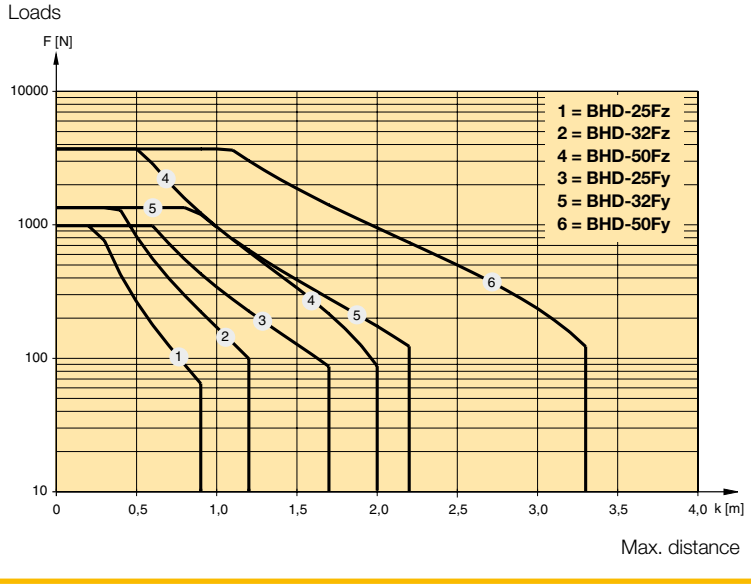
* For the bi-parting version the maximum load (F) complies with the total of the load at both carriers.
$F = F_{carriage\ 1} + F_{carriage\ 2}$

k = Maximum permissible distance between mountings/mid-section support for a given load F.

If the loads are below or up to the curve in the graph the deflection will be max. 0.01 % of distance k.

Maximum Permissible Unsupported Length – Placing of Profile Mounting





Options and Accessories

OSP-E..BV, Vertical belt actuator with integrated ball bearing guide

STANDARD VERSION
OSP-E..BV

Standard actuator head with clamp shaft or plain shaft and integrated ball bearing guide with two carriers.
Choice of side on which gearbox or motor is to be mounted.

Drive Shaft with Clamp Shaft

Drive Shaft with Plain Shaft

Drive Shaft with Clamp Shaft and Plain Shaft

Drive Shaft with Double Plain Shaft

OPTIONS

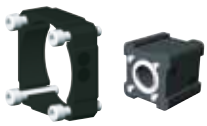
TANDEM
Additional actuator head and two additional carriers for higher bending moments.

HOLLOW SHAFT WITH KEYWAY
For direct connection of gearbox or motor with keyway.

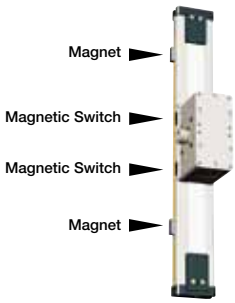
DRIVE SHAFT
"CLAMP SHAFT AND PLAIN SHAFT" OR "DOUBLE PLAIN SHAFT"
e.g. for parallel operation of two Z-axes with an intermediate drive shaft.

ACCESSORIES

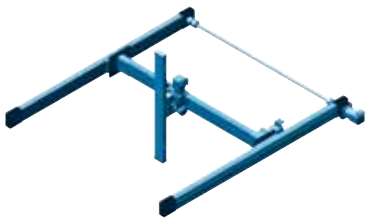
MOTOR MOUNTINGS
For connection of gearbox or motor direct to drive shaft with clamp shaft, or with a motor coupling to drive shaft with plain shaft.



MAGNETIC SWITCHES SET
Magnetic switches with connector, mounting rail and magnets for contactless sensing of the end positions. Cable (suitable for cable chain) can be ordered separately in 5 m, 10 m or 15 m length.



MULTI-AXIS SYSTEMS
For modular assembly of actuators up to multi-axis systems.



Vertical belt actuator with integrated ball bearing guide in multi-axis systems

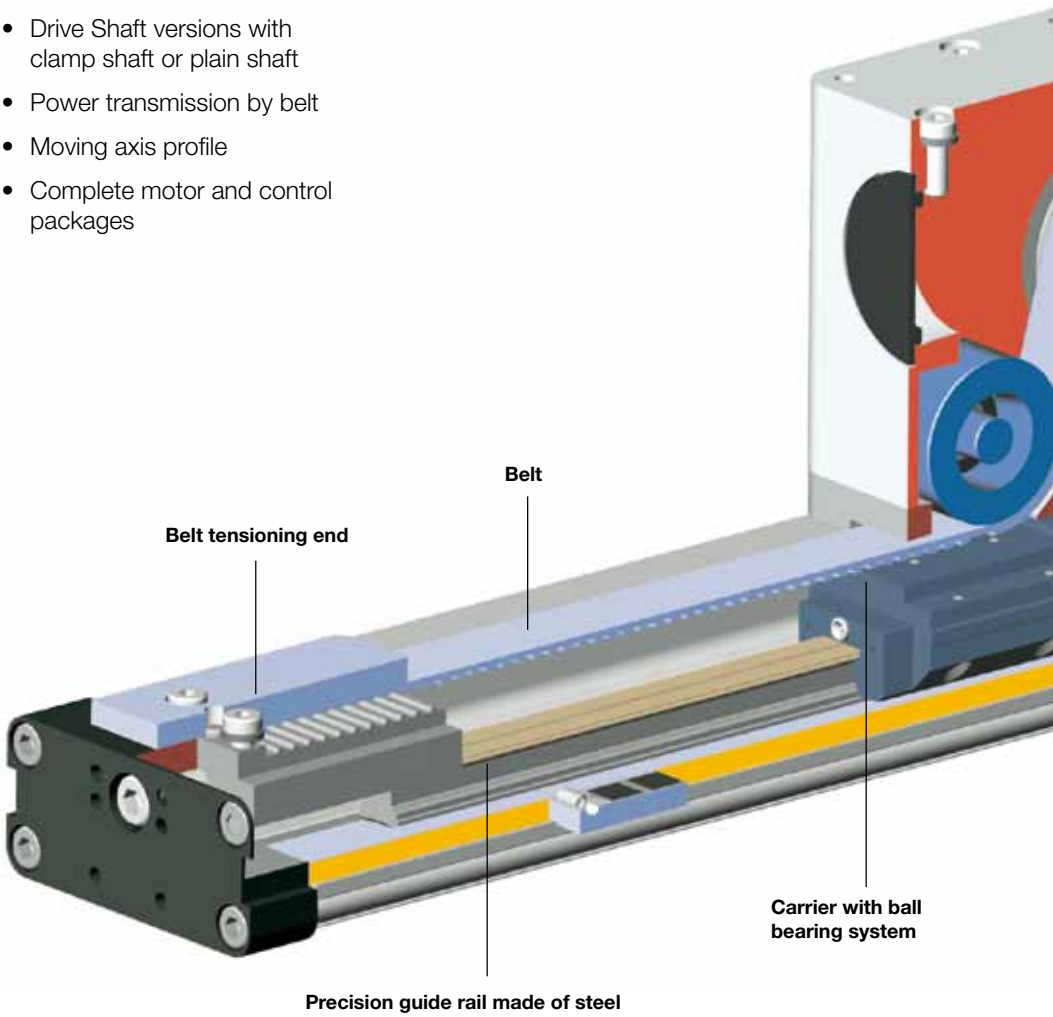
The OSP-E..BV vertical belt actuator with integrated ball bearing guide has been specially developed for lifting movements in the Z-axis.
The especially low vibration OSP-E..BV vertical actuator in combination with the heavy duty series OSP-E..BHD meets the highest demands in portal and handling applications.

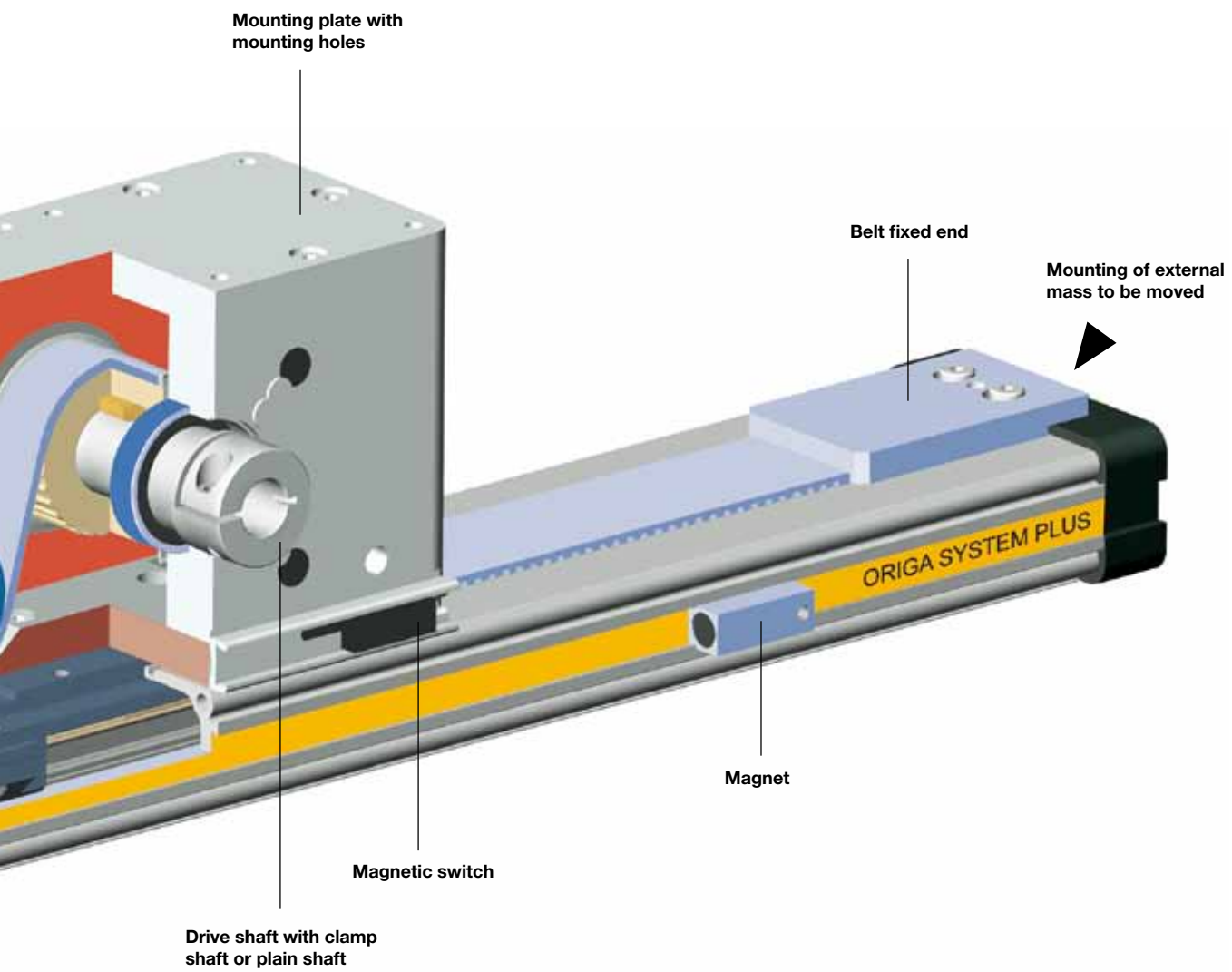
Advantages

- Fixed actuator head for low moving mass
- Integrated ball bearing guide for high bending moments
- Magnetic switch set for contactless position sensing
- Easy to install
- Low maintenance

Features

- High acceleration and speed
- Drive Shaft versions with clamp shaft or plain shaft
- Power transmission by belt
- Moving axis profile
- Complete motor and control packages





Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com

Vertical Belt Actuator with Integrated Ball Bearing Guide

Size 20, 25

Type: OSP-E..BV

Standard Versions:

- Vertical belt actuator with integrated ball bearing guide
- Drive shaft with clamp shaft or plain shaft
- Choice of motor mounting side

Options:

- Tandem version for higher moments
- Drive shaft with
  – clamp shaft and plain shaft or double plain shaft
  – hollow shaft with keyway
- Special drive shaft versions on request

Installation Instructions

Make sure that the OSP-E..BV is always operated by motor with holding brake on the actuator side. For the mounting of the external mass to be moved there are threaded holes in the end caps. Before mounting, check the correct centre of gravity distance from the table.
Mount the external mass on the belt fixed end, so that the belt tension can be checked and adjusted at the belt tensioning end without dismantling.

Characteristics	Description
Series	OSP-E..BV
Mounting	See drawings
Ambient temperature range	-30 °C to +80 °C
Installation	Vertical
Encapsulation class	IP 20
Material	
Profile	Extruded anodized aluminium
Belt	Steel-corded polyurethane
Pulley	Aluminium
Guide	Ball bearing guide
Guide rail	Hardened steel rail with high precision, accuracy class N
Guide carrier preloaded 0.08 x C, accuracy class N	Steel carrier with integrated wiper system, grease nipples,
Screws, nuts	Zinc plated steel

Weight (mass) and Inertia

Series	Total weight (Mass) [kg]		Moving mass [kg]		Inertia [x 10^{-6} kgm^2]		
	At stroke 0 m	Actuator head	At stroke 0 m	Add per metre stroke	At Stroke 0 m	Add per metre stroke	Add per kg mass
OSP-E20BV	3.4	1.9	1.6	4.0	486	1144	289
OSP-E25BV	7.7	5.3	2.4	4.4	1695	2668	617
OSP-E20BV*	5.3	2 x 1.9	1.6	4.0	533	1144	289
OSP-E25BV*	13	2 x 5.3	2.4	4.4	1915	2668	617

* Version: Tandem (Option)

Maintenance

Depending on operating conditions, inspection of the actuator is recommended after 12 months or 3000 km operation.
Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Determination of the lever arm length l_x, l_y and l_z from m_e to the centre axis of the actuator.
2. Calculation of the static and dynamic force F_A which must be transmitted by the belt.
   $F_A = F_g + F_a + F_0$
   $= m_g \cdot g + m_g \cdot a + M_0 \cdot 2\pi / U_{ZR}$
3. Calculation of all static and dynamic moments M_x, M_y and M_z which occur in the application.
   $M = F \cdot l$
4. Selection of maximum permissible loads via Table T3.
5. Calculation and checking of the combined load, which must not be higher than 1.
6. Checking of the maximum moment that occurs at the drive shaft in Table T2.
7. Checking of the required action force F_A with the permissible load value from Table T1.

For motor sizing, the effective torque must be determined, taking into account the cycle time.

Legend

l = distance of a mass in the x-, y- and z-direction from the guide [m]

m_e = external moved mass [kg]

m_{LA} = moved mass of actuator [kg]

m_g = total moved mass ($m_e + m_{LA}$) [kg]

F_A = action force [N]

M_0 = no-load torque [Nm]

U_{ZR} = circumference of the pulley (linear movement per revolution) [m]

g = gravity [m/s²]

a_{max} = maximum acceleration [m/s²]

Performance Overview (T1)

Characteristics		Unit	Description	
Series			OSP-E20BV	OSP-E25BV
Max. Speed		[m/s]	3.0	5.0
Linear motion per revolution of drive shaft		[mm/U]	108	160
Max. rpm. drive shaft		[min⁻¹]	1700	1875
Max. effective action force F_A at speed	1m/s	[N]	650	1430
	1 - 2 m/s	[N]	450	1200
	> 3 - 5 m/s	[N]	–	1050
No-load torque [2]		[Nm]	0.6	1.2
Max. acceleration/deceleration		[m/s²]	20	20
Repeatability		+/- [mm/m]	0.05	0.05
Max. standard stroke length [1]		[mm]	1000	1500
Max. recomended permissible mass [3]		[kg]	10	20

[1] Longer strokes on request

[2] As a result of static friction force

[3] vertical

Maximum Permissible Torque on Drive Shaft Speed / Stroke (T2)

OSP-E-20BV				OSP-E-25BV			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	19	1	17	**1**	36	1	(36)
2	17	2	11	2	30	2	36
3	16			3	(30)		
				4	28		
				5	27		

Important:
The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

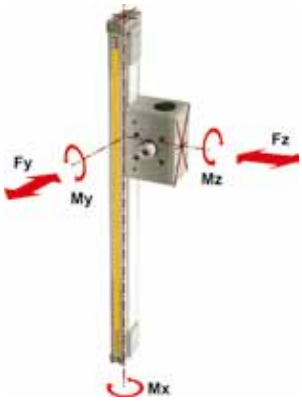
Example above:
OSP-E25BV required speed v = 3 m/s and stroke = 1 m.

Accordingly Table T2 shows permissible moments of 30 Nm for the speed and 36 Nm for the stroke. Therefore the maximum moment at the drive shaft is determined by the speed and must not exceed 30 Nm.

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



$M = F \cdot l$ [Nm]
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

Maximum Permissible Loads

T3

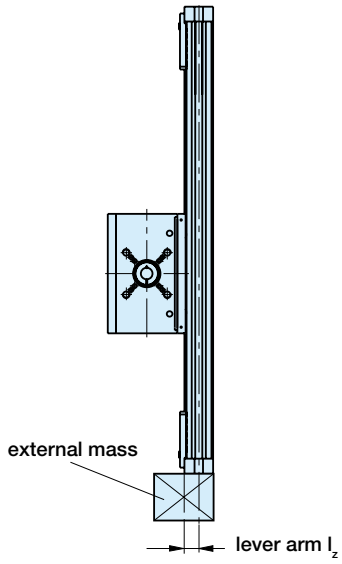
Size	Max. applied load [N] Fy [N]	Fz [N]	Max. moments [Nm] Mx	My	Mz
OSP-E20BV	**1600**	**1600**	**20**	**100**	**100**
OSP-E25BV	**2000**	**3000**	**50**	**200**	**200**

Equation of Combined Loads

$$\frac{Fz}{Fz\ (max)} + \frac{Mx}{Mx\ (max)} + \frac{My}{My\ (max)} + \frac{Mz}{Mz\ (max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

Distance of Centre of Gravity of External Mass from Mid-Point of Actuator



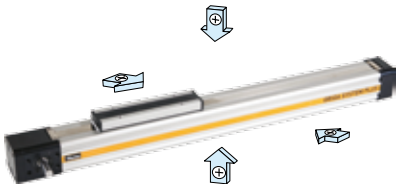
Mass [kg]	OSP-E20BV Lever arm l_z [mm]	OSP-E20BV Max. permissible acceleration/ deceleration [m/ s²]	OSP-E25BV Lever arm l_z [mm]	OSP-E25BV Max. permissible acceleration/ deceleration [m/ s²]
> 3 to 5	0	20	50	20
>5 to 10	0	20	40	20
>10 to 15	-	-	35	20
>15 to 20	-	-	30	15

Options and Accessories

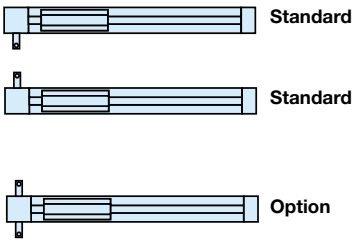
OSP-E..B
Belt actuator with internal plain bearing guide

STANDARD VERSIONS OSP-E..B

Carrier with internal guidance and magnet packet for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.



DRIVE SHAFT VERSIONS
– Plain shaft or
– double plain shaft (Option) e.g. to drive two actuators in parallel.



OPTIONS

TANDEM
For higher moment support.

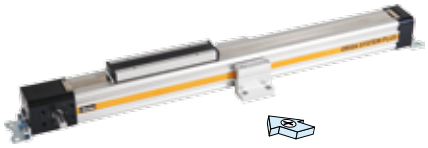
BI-PARTING
For perfectly synchronised bi-parting movements.

ACCESSORIES

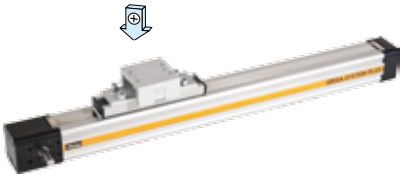
MOTOR MOUNTING

END CAP MOUNTING
For end-mounting of the actuator.

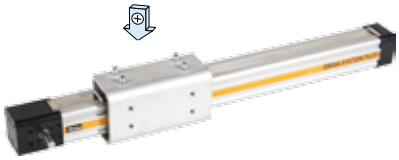
PROFILE MOUNTING
For supporting long actuators or mounting the actuator on the dovetail grooves.



CLEVIS MOUNTING
Carrier with tolerance and parallelism compensation to drive external linear guides.



INVERSION MOUNTING
The inversion mounting, mounted on the carrier, transfers the driving force to the opposite side, e.g. for dirty environments.



MAGNETIC SWITCHES SERIES RST AND EST
For contactless position sensing of end stop and intermediate carrier positions.

Belt actuator with internal plain bearing guide for point-to-point applications

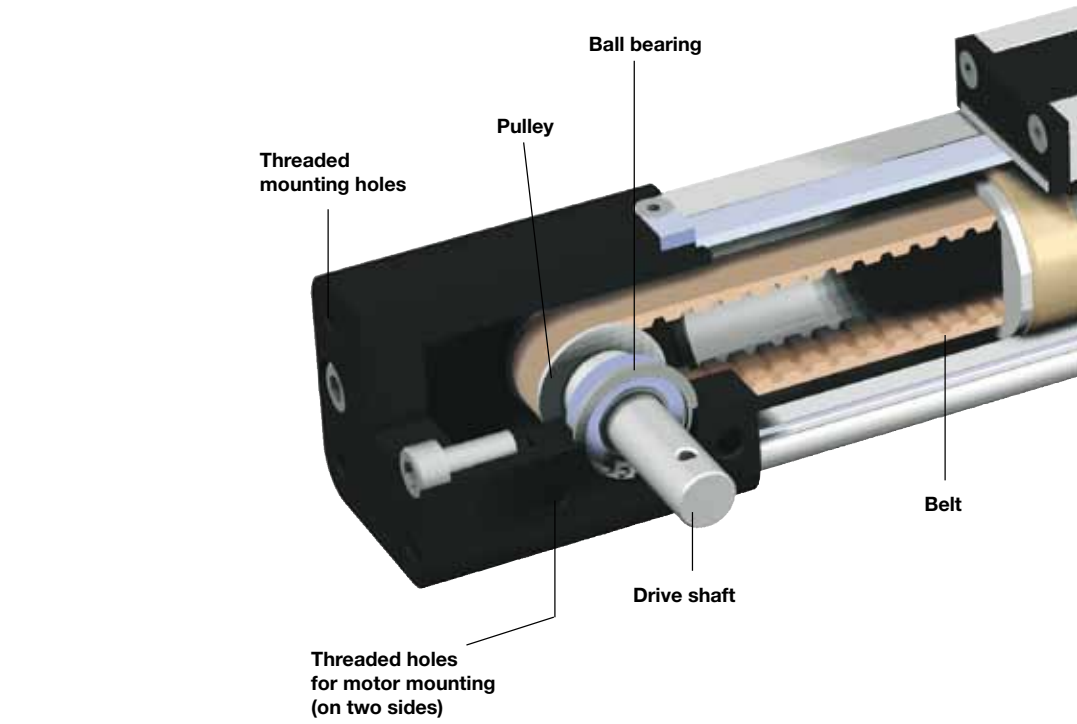
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

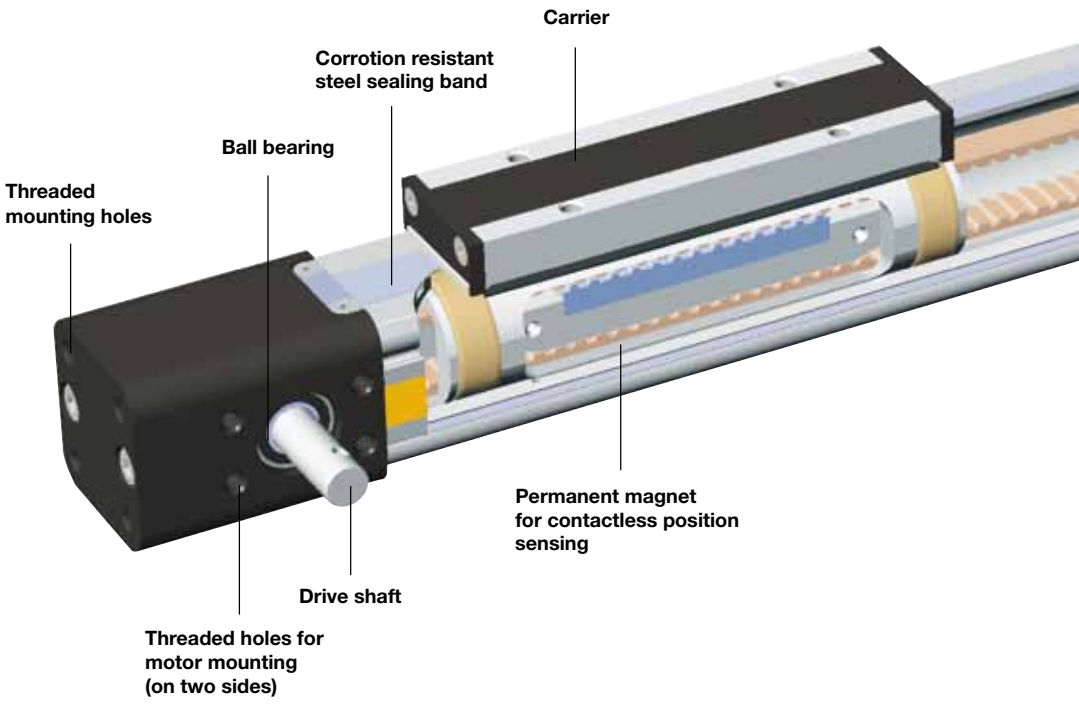
Advantages

- Precise path and position control
- High speed operation
- Easy installation
- Low maintenance
- Ideal for precise point-to-point applications

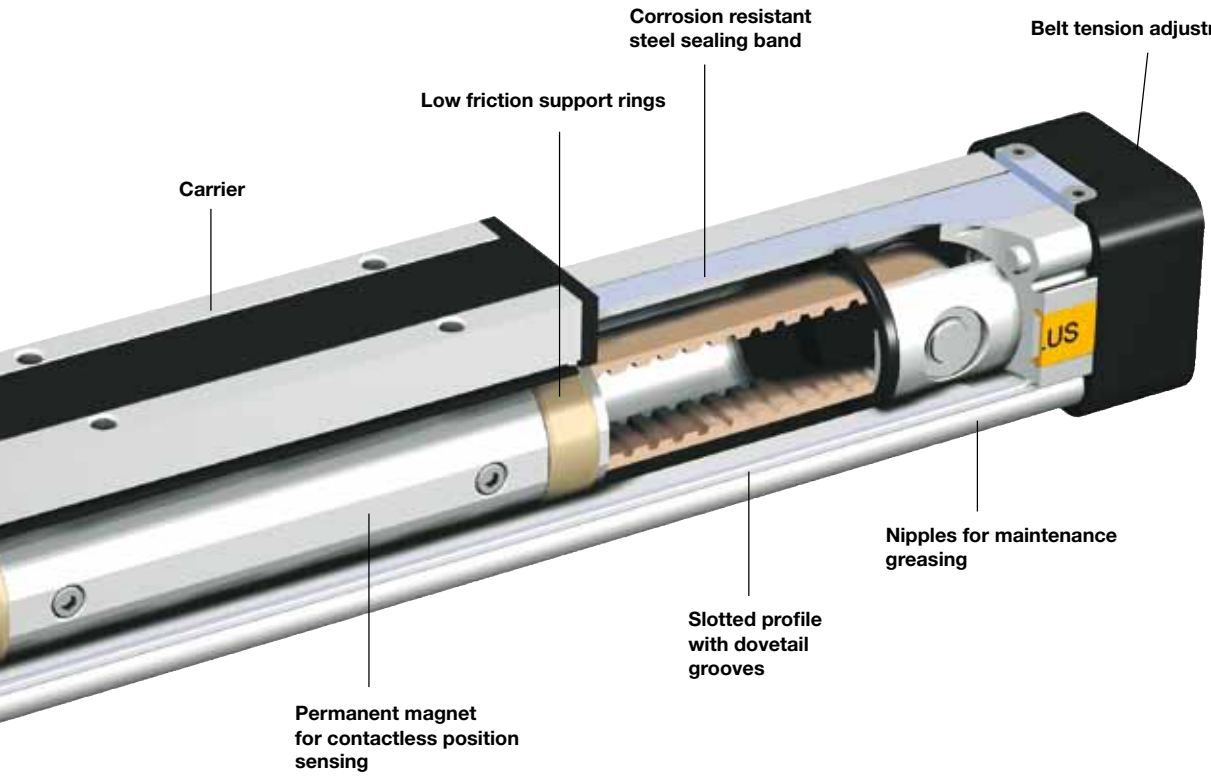
Features

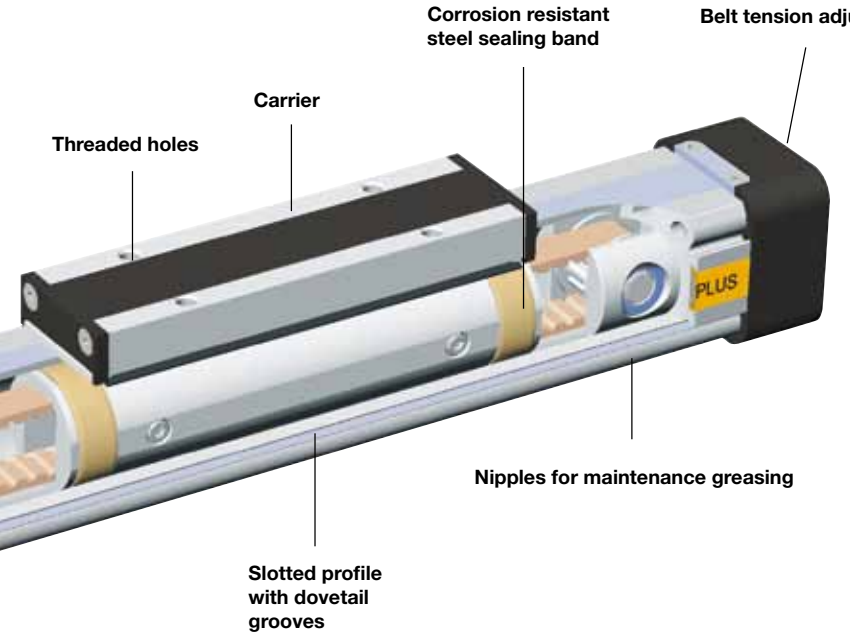
- Integrated drive and guidance system
- Tandem configuration with increased carrier distance for higher moment supports
- Long available strokes
- Complete motor and control packages
- Diverse range of accessories and mountings
- Bi-parting and special options available



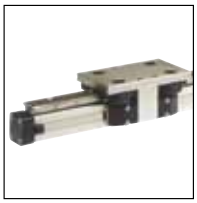


Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com





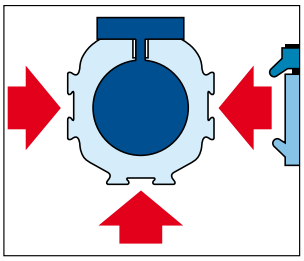
POWERSLIDE
Roller bearing precision guidance for smooth travel and high dynamic or static loads.



PROLINE
The compact aluminium roller guide for high loads and velocities.

Tandem configuration with increased carrier distance for higher moment supports.
Bi-parting version for precise synchronized movements

The dovetailed mounting rails of the new actuator expand its function into that of a universal system carrier.
Modular system components are simply clamped on.



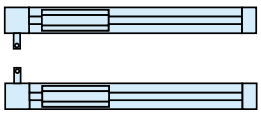
Belt Actuator with Internal Plain Bearing Guide

Size 22, 32, 50

Type: OSP-E..B

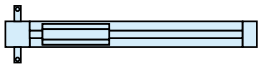
Standard Versions:

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Position of drive shafts



Options:

- Tandem version
- Bi-parting version for synchronized movements
- Drive shaft with double plain shaft



Installation Instructions

Use the threaded holes in the end cap for mounting the actuator. See if Profile Mountings are needed using the maximum allowable unsupported length graph.
At least one end cap must be secured to prevent axial sliding when profile mounting is used.
When the actuator is moving an externally guided load, the compensation must be used.

The actuators can be fitted with the standard carrier mounting facing in any direction.
To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.
The inversion mounting can be fitted to transfer the driving force to the opposite side.

Characteristics	Description
Series	OSP-E..B
Mounting	See drawings
Ambient temperature range	-30 °C to +80 °C
Installation	See table
Encapsulation class	IP 54
Material	
Slotted Profile	Extruded anodized aluminium
Belt	Steel-corded polyurethane
Pulley	Aluminium
Guide bearings	Low friction plastic
Sealing band	Hardened corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Weight (mass) [kg]			Inertia [x 10^{-6} kgm^2]	
	at stroke 0 m	ad per meter stroke	moving mass	at stroke 0 m	ad per meter stroke
OSP-E25B	0.9	1.6	0.2	25	6.6
OSP-E32B	1.9	3.2	0.4	43	10
OSP-E50B	5.2	6.2	1.0	312	45
OSP-E25B*	1.2	1.6	0.5	48	6.6
OSP-E32B*	2.3	3.2	0.8	83	10
OSP-E50B*	6.3	6.2	2.1	585	45

* Version: Tandem and Bi-parting (Option)

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3 000 km travel of distance.
Additional greasing is easily done by using nipples in the slotted profile. Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Required acceleration,
2. Required torque is shown on page 332
3. Check that maximum values in the table 3 are not exceeded
4. Drive shaft by using table T2. (Pay attention to note under table) If value is lower than required, overview the moving profile or select if possible a bigger unit.
5. Before sizing and specifying the motor, the average torque must be calculated using the cycle time of the application.
6. Check that the maximum allowable unsupported length is not exceeded.

Performance Overview

Characteristics		Unit	Description		
Size			**OSP-E25B**	**OSP-E32B**	**OSP-E50B**
Max. speed		**[m/s]**	**2**	**3**	**5**
Linear motion per revolution, drive shaft		**[mm]**	**60**	**60**	**100**
Max. rpm drive shaft		**[min^{-1}]**	**2 000**	**3 000**	**3 000**
Max. effective	< 1 m/s:	[N]	50	150	425
action force	**1- 2 m/s:**	**[N]**	**50**	**120**	**375**
F_A at speed	**> 2 m/s:**	**[N]**	**–**	**100**	**300**
No-load torque		**[Nm]**	**0.4**	**0.5**	**0.6**
Max. acceleration/deceleration		**[m/s^2]**	**10**	**10**	**10**
Repeatability		**[mm/m]**	**±0.05**	**±0.05**	**±0.05**
Max. stroke length OSP-E..B		**[mm]**	**3000**	**5000**	**5000**
Max. stroke length OSP-E..B*		**[mm]**	**2 x 1500**	**2 x 2500**	**2 x 2500**

* Bi-parting version

Maximum Permissible Torque on Drive Shaft Speed / Stroke T2

OSP-E25B				OSP-E32B				OSP-E50B			
Speed [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed. [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]	Speed. [m/s]	Torque [Nm]	Stroke [m]	Torque [Nm]
1	0.9	1	0.9	1	2.3	1	2.3	1	10.0	1	10.0
2	0.9	2	0.9	2	2.0	2	(2.3)	2	9.5	2	10.0
		3	0.9	3	(1.8)	3	2.3	3	9.0	3	9.0
						4	2.3	4	8.0	4	7.0
						5	1.8	5	7.5	5	6.0

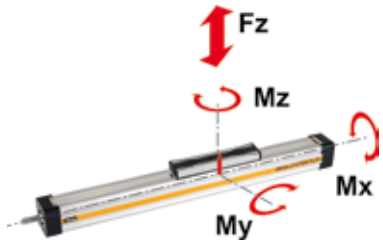
Important:
The maximum permissible torque on the drive shaft is the lowest value of the speed or stroke-dependent torque value.

Example above:
OSP-E32B stroke 2 m, required speed 3 m/s;
From table T2: speed 3 m/s gives 1.8 Nm and stroke 2 m gives 2.3 Nm.
Max. torque for this application is 1.8 Nm.

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



$M = F \cdot l$ [Nm]
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

Maximum Permissible Loads T3

Size	Max. applied load [N] Fz	Max. moments [Nm] Mx	My	Mz
OSP-E25B	**500**	**2**	**12**	**8**
OSP-E32B	**1200**	**8**	**25**	**16**
OSP-E50B	**3000**	**16**	**80**	**32**
OSP-E..B Bi-partional	**The maximum load F must be equally distributed among the two carriers**			

Equation of Combined Loads

$$\frac{Fz}{Fz\,(max)} + \frac{Mx}{Mx\,(max)} + \frac{My}{My\,(max)} + \frac{Mz}{Mz\,(max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

Maximum Permissible Unsupported Length

Stroke length

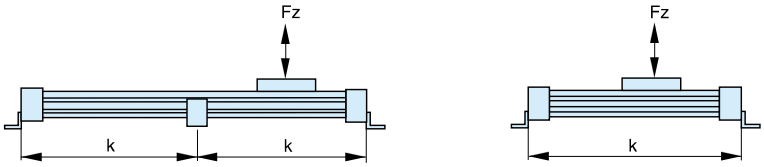
The stroke lengths of the actuators are available in multiples of 1 mm up to max.
OSP-E25B: 3 m / 2 x 1.5 m *
OSP-E32B: 5 m / 2 x 2.5 m *
OSP-E50B: 5 m / 2 x 2.5 m *
* Version: Bi-partional

Other stroke lengths are available on request.

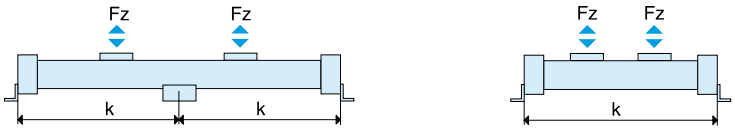
The end of stroke must not be used as a mechanical stop.
Allow an additional safety clearance at both ends equivalent to the linear movement of one revolution of the drive shaft.
The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.
For advise, please contact your local Parker Origa technical support department.

Maximum Permissible Unsupported Length – Placing of Profile Mounting

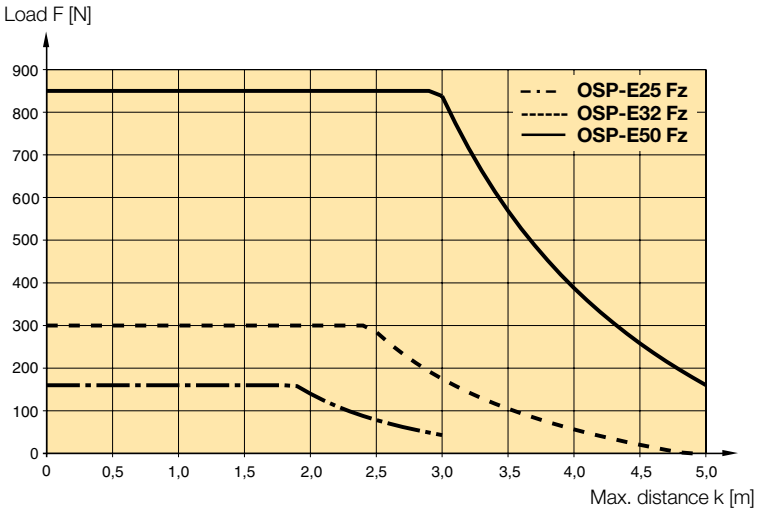
Series OSP-E..B



Series OSP-E..B
Bi-parting version



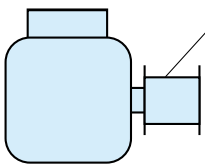
k = Maximum permissible distance between mountings/mid-section support for a given load F.



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)

Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupling or pulley, a steadying block should be used.



Min. Z (AT5)

Min.ø (mm)

Pulleys

Minimum allowable number of teeth Z (AT5) at maximum applied torque.

Size	Min. Z	Min. ø
OSP-E25B	24	38
OSP-E32B	24	38
OSP-E50B	36	57

Required Acceleration

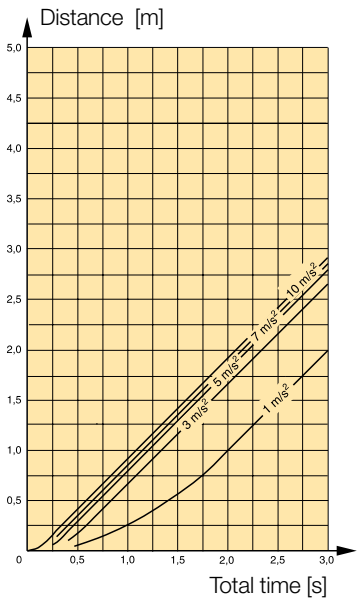
Distance / Time Graph

Using the required travel distance and total time, the adjacent graphs show the required acceleration based on maximum speed.

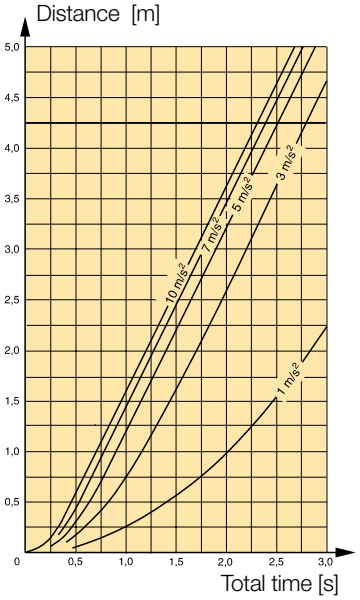
The graphs assume that acceleration and deceleration are equal.

Please note that specifying non-essential high acceleration or short cycle time will result in an oversized motor.

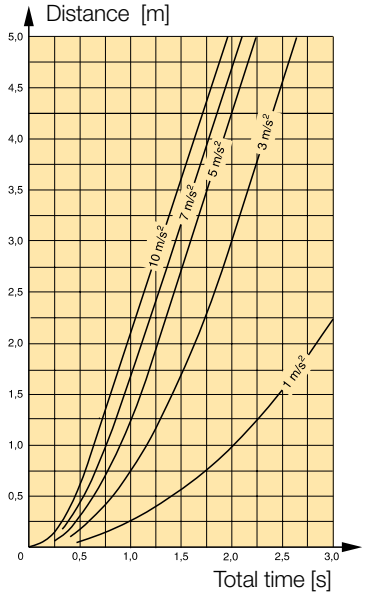
Max speed 1 m/s



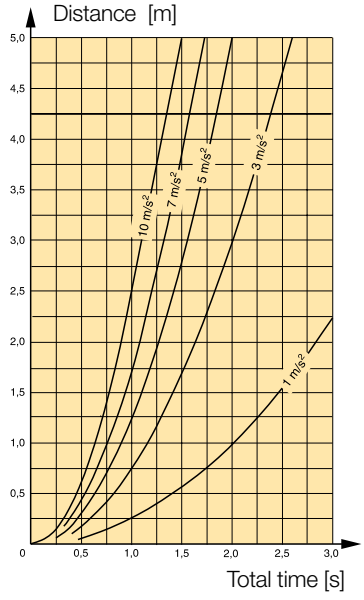
Max speed 2 m/s



Max speed 3 m/s



Max speed 5 m/s

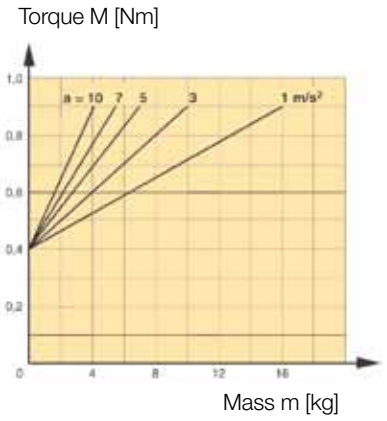


Required Torque / Mass

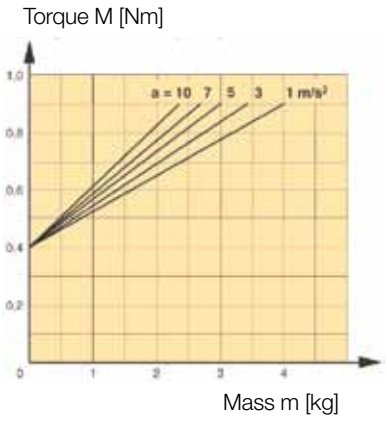
Using the known mass, the direction of the application and the required acceleration from the distance-time graphs, the actuator can be sized and the required torque is shown in the adjacent graphs.
Mass in graphs = Load + moving mass of the actuator.

Please note:
When using an additional guide, please add the mass of the carriage to the total moving mass.

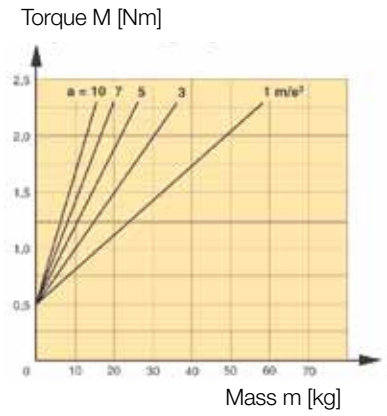
Size OSP-E25B, Horizontal Application



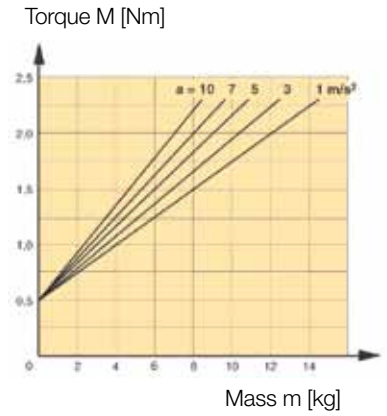
Size OSP-E25B, Vertical Application



Size OSP-E32B, Horizontal Application



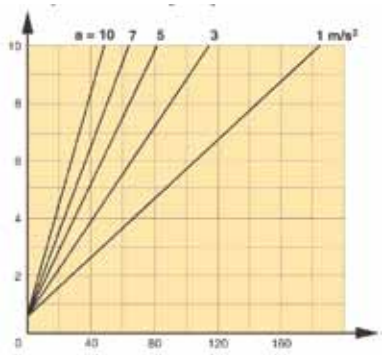
Size OSP-E32B, Vertical Application



Required Torque / Mass

Size OSP-E50B, Horizontal Application

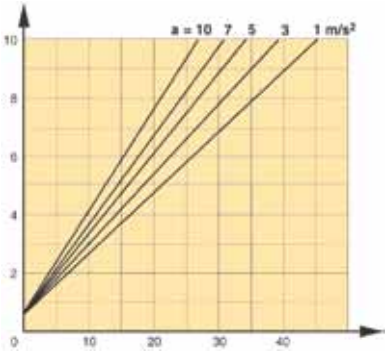
Torque M [Nm]



Mass m [kg]

Size OSP-E50B, Vertical Application

Torque M [Nm]



Mass m [kg]

Ball screw actuator with internal plain bearing guide for high accuracy applications

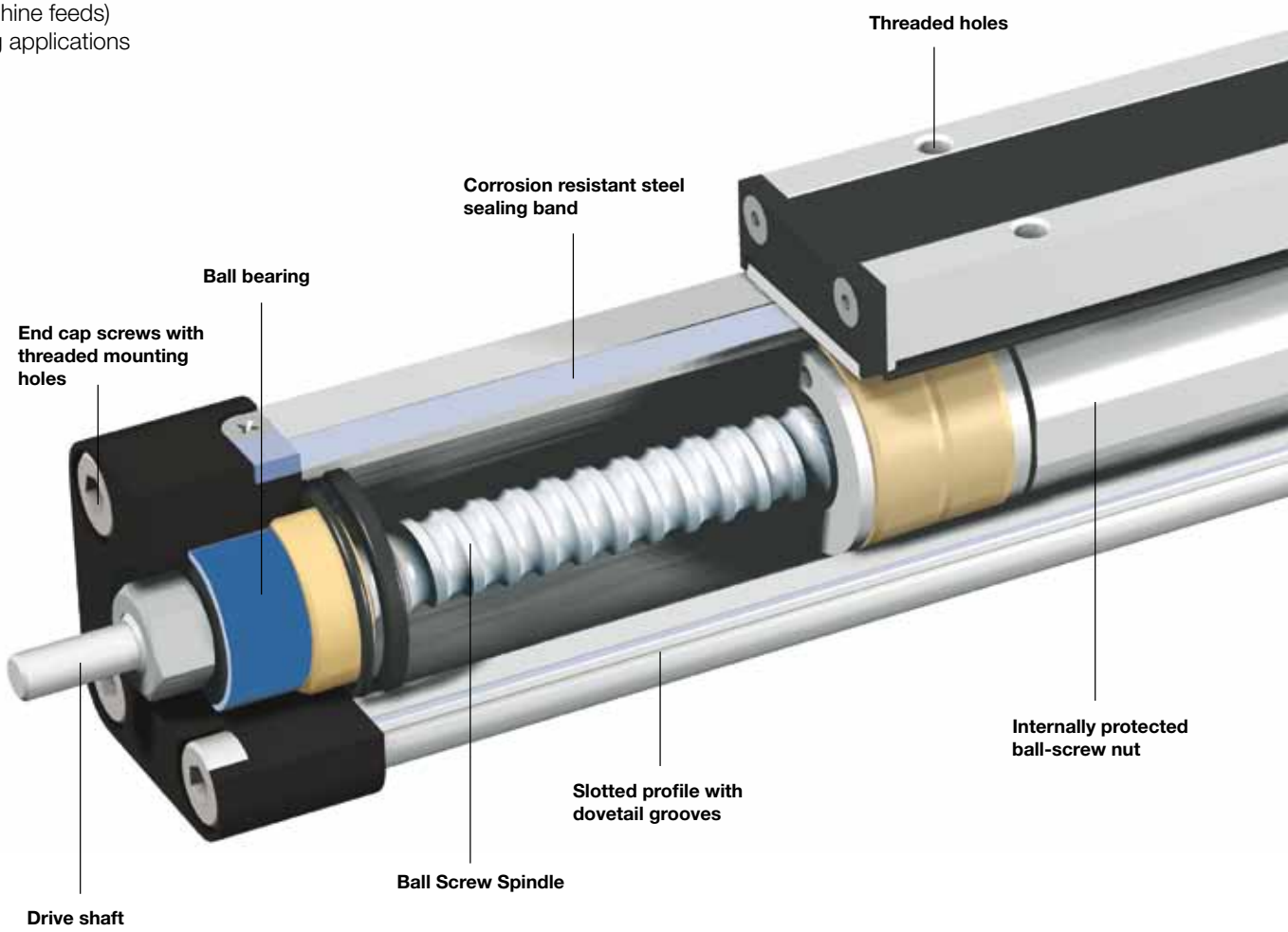
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

Advantages

- Accurate path and position control
- High force output
- Easy installation
- Excellent slow speed characteristics
- Ideal for precise traverse operations (e.g. machine feeds) and lifting applications

Features

- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Optimal screw pitches (5, 10, 25 mm)



Clean Room-Version certified to DIN EN ISO 14644-1

SLIDELINE
Combination with linear guides provides for heavier loads.

POWERSLIDE
Roller bearing precision guidance for smooth travel and high dynamic or static loads.

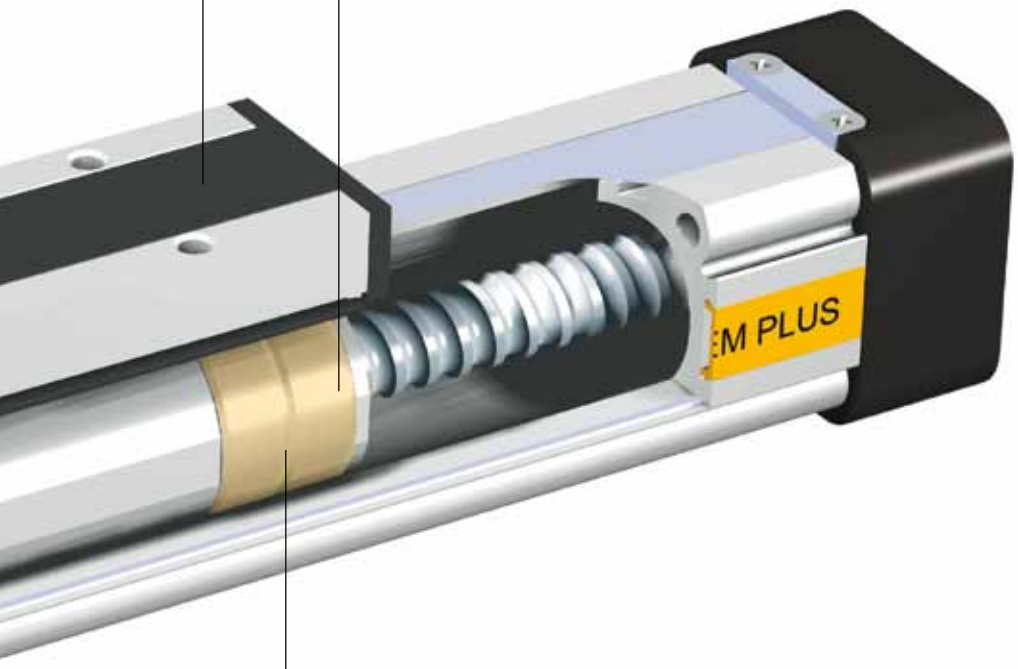
PROLINE
The compact aluminium roller guide for high loads and velocities.

Heavy Duty guide
HD linear guides for heavy duty applications

SFI-plus displacement measuring system

Low friction support rings

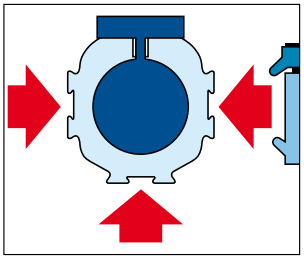
Carrier



Permanent magnet for contactless sensing

Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com

The dovetailed mounting rails of the new actuator expand its function into that of a universal system carrier.
Modular system components are simply clamped on.



Ball Screw Actuator with Internal Plain Bearing Guide

Size 22, 32, 50

Type: OSP-E..SB

Standard Versions:

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Pitches of Ball Screw Spindle
  Type OSP-E25 : 5 mm
  Type OSP-E32: 5 , 10 mm
  Type OSP-E50: 5 , 10, 25 mm

Options:

- Tandem version
- Clean room-version, according to DIN EN ISO 14644-1
- Displacement Measuring System SFI-plus

Installation Instructions

Use the threaded holes in the end cap for mounting the actuator. See if Profile Mountings are needed using the maximum allowable unsupported length graph.
At least one end cap must be secured to prevent axial sliding when profile mounting is used.
When the actuator is moving an externally guided load, the compensation must be used.

The actuators can be fitted with the standard carrier mounting facing in any direction.
To prevent contamination such as fluid ingress, the actuator should be fitted with its sealing band facing downwards.
The inversion mounting can be fitted to transfer the driving force to the opposite side.

Characteristics	Description
Series	OSP-E..SB
Ambient temperature range	-20 °C to +80 °C
Installation	In any position
Mounting	See drawing
Encapsulation class	IP 54
Material	
Slotted Profile	Extruded anodized aluminium
Ball screw	Hardened steel
Ball screw nut	Hardened steel
Guide bearings	Low friction plastic
Sealing band	Hardened corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Weight (mass) [kg]			Inertia [x 10^{-6} kgm^2]	
	at stroke 0 m	ad per meter stroke	moving mass	at stroke 0 m	ad per meter stroke
OSP-E25SB	0.8	2.3	0.2	2.2	11
OSP-E32SB	2.0	4.4	0.4	8.4	32
OSP-E50SB	5.2	9.4	1.2	84.0	225

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3 000 km travel of distance.
Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Recommended maximum acceleration is shown in graphs
2. Required torque is shown in graphs
3. Check that maximum values in the adjacent charts are not exceeded.
4. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time of the application.
5. Check that the maximum allowable unsupported length is not exceeded.

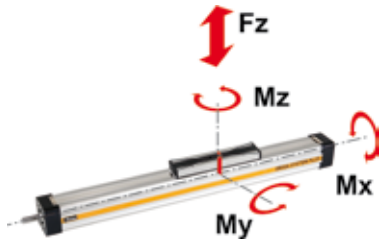
Performance Overview

Characteristics	Unit	Description					
Series		OSP-E25SB	OSP-E32SB		OSP-E50SB		
Pitch	[mm]	5	5	10	5	10	25
Max. speed	[m/s]	0.25	0.25	0.5	0.25	0.5	1.25
Linear motion per revolution drive shaft	[mm]	5	5	10	5	10	25
Max. rpm, drive shaft	[min^{-1}]	3 000	3 000		3 000		
Max. effective action force F_A	[N]	250	600		1 500		
Corresponding torque on drive shaft	[Nm]	0.35	0.75	1.3	1.7	3.1	7.3
No-load torque	[Nm]	0.2	0.2	0.3	0.3	0.4	0.5
Max. allowable torque on drive shaft	[Nm]	0.6	1.5	2.8	4.2	7.5	20
Repeatability	[mm/m]	±0.05	±0.05		±0.05		
Max. Standard stroke length	[mm]	1100	2000		3200		

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



$M = F \cdot l$ [Nm]
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

Maximum Permissible Loads

Size	Max. applied load [N] Fz	Max. moments [Nm] Mx	My	Mz
OSP-E25SB	500	2	12	8
OSP-E32SB	1200	8	25	16
OSP-E50SB	3000	16	80	32

Equation of Combined Loads

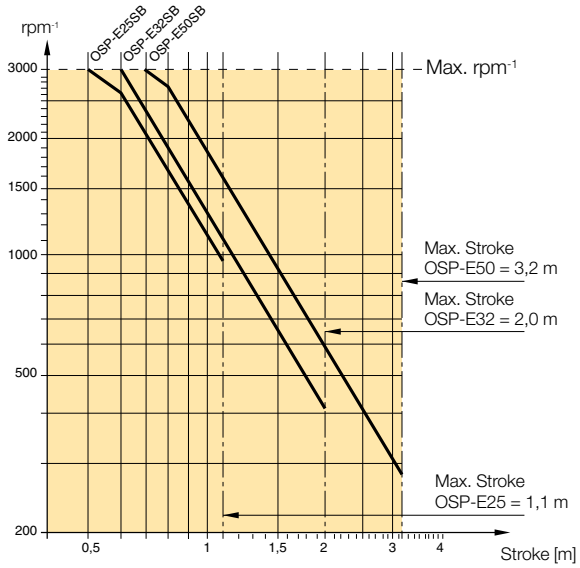
$$\frac{Fz}{Fz\ (max)} + \frac{Mx}{Mx\ (max)} + \frac{My}{My\ (max)} + \frac{Mz}{Mz\ (max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

Maximum rpm / Stroke

At longer strokes the speed has to be redueced according to the adjacent graphs.

Maximum rpm / Stroke



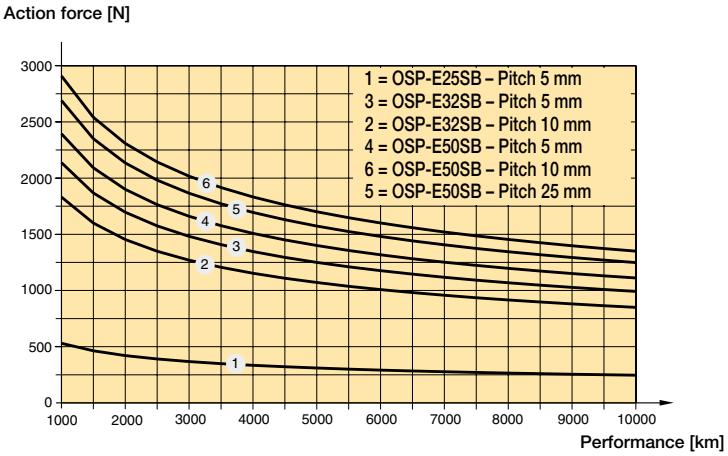
The maximum rpm shown in the graph, is 80% of the critical rpm.

Performance / Action Force

The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

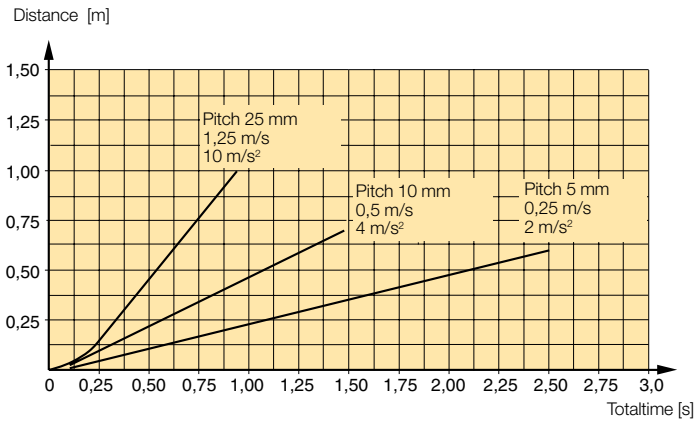
Performance as a function of the action force



Distance / Time Graph

The adjacent graphs show travel distance and total time at maximum speed and recommended maximum acceleration. The graph assumes that acceleration and deceleration are equal.

Distance / Time Graph

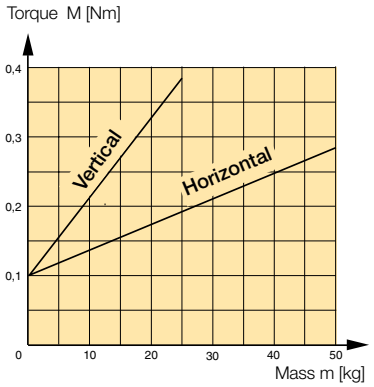


Required Torque / Mass

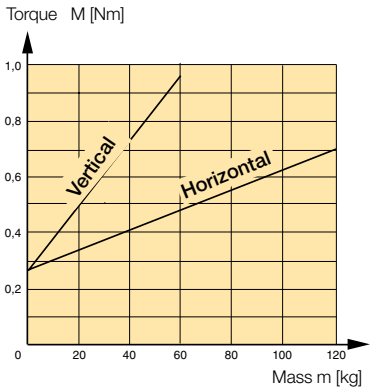
Using the known mass, the direction of the application and the recommended acceleration, the actuator can be sized and the required torque is shown in the adjacent graphs.
Mass in graphs = Load + moving mass of the actuator according to the weight chart.

Please mind:
If an additional guide is used, mind the weight of the guide carriage.

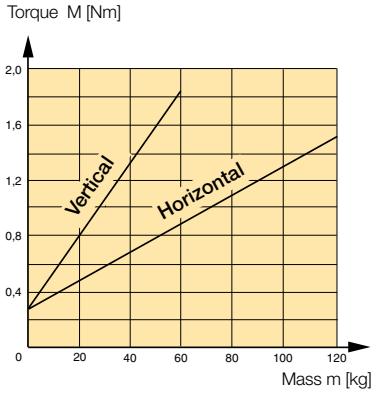
Size OSP-E25SB, Pitch 5mm Acceleration 2 m/s²



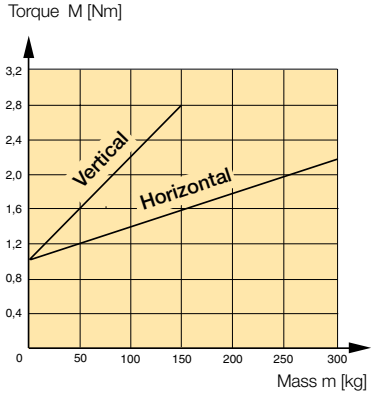
Size OSP-E32SB, Pitch 5mm Acceleration 2 m/s²



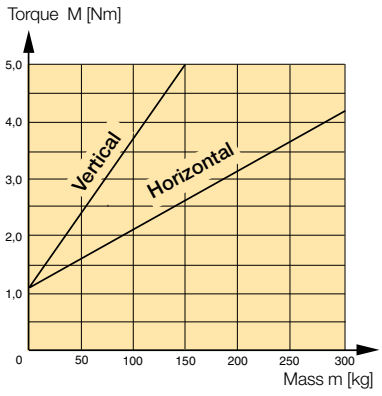
Size OSP-E32SB, Pitch 10mm Acceleration 4 m/s²



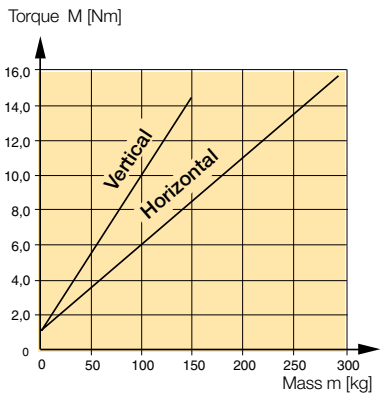
Size OSP-E50SB, Pitch 5mm Acceleration 2 m/s²



Size OSP-E50SB, Pitch 10mm Acceleration 4 m/s²



Size OSP-E50SB, Pitch 25mm Acceleration 10 m/s²



Trapezoidal screw actuator with internal plain bearing guide for intermittent applications

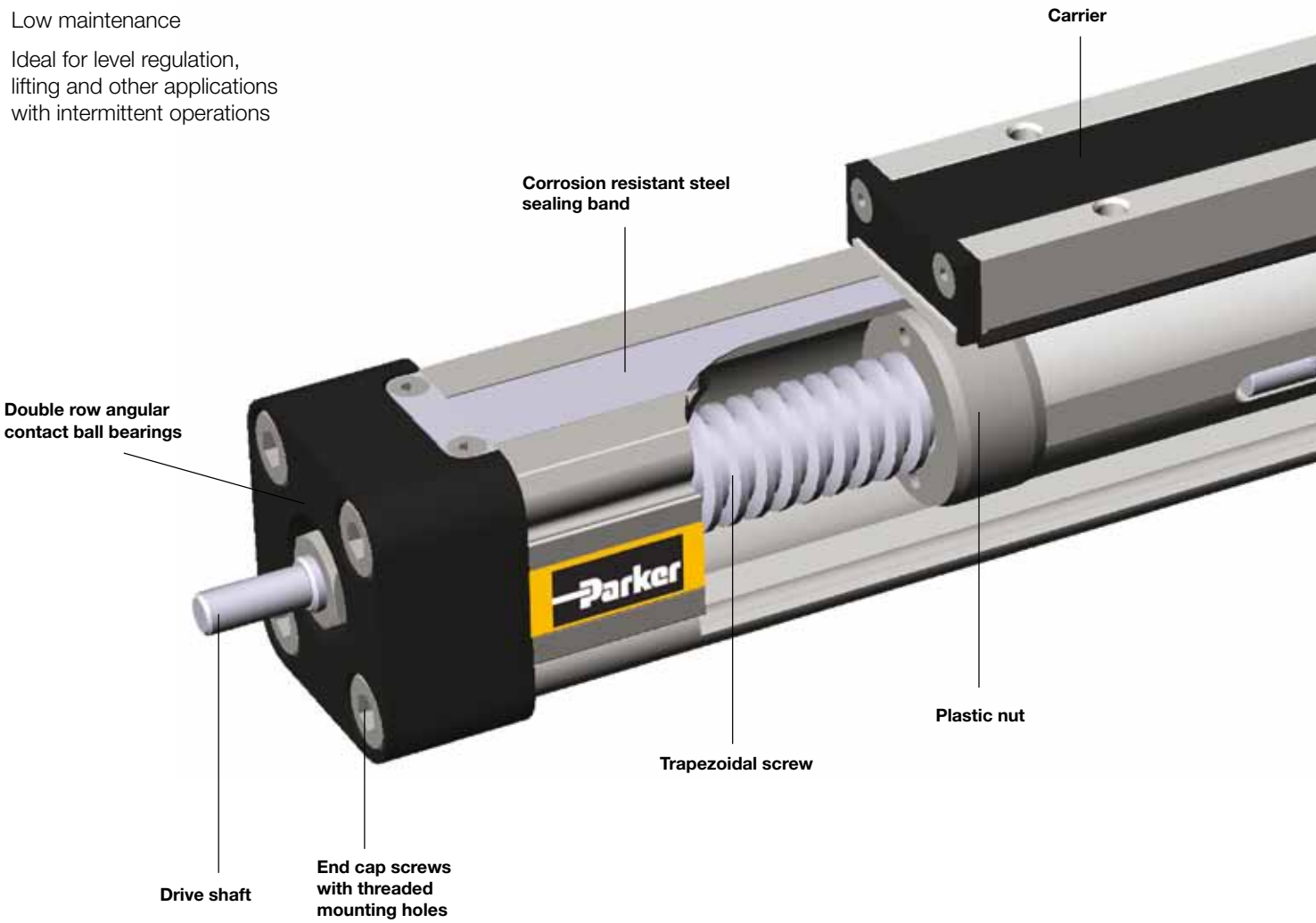
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

Advantages

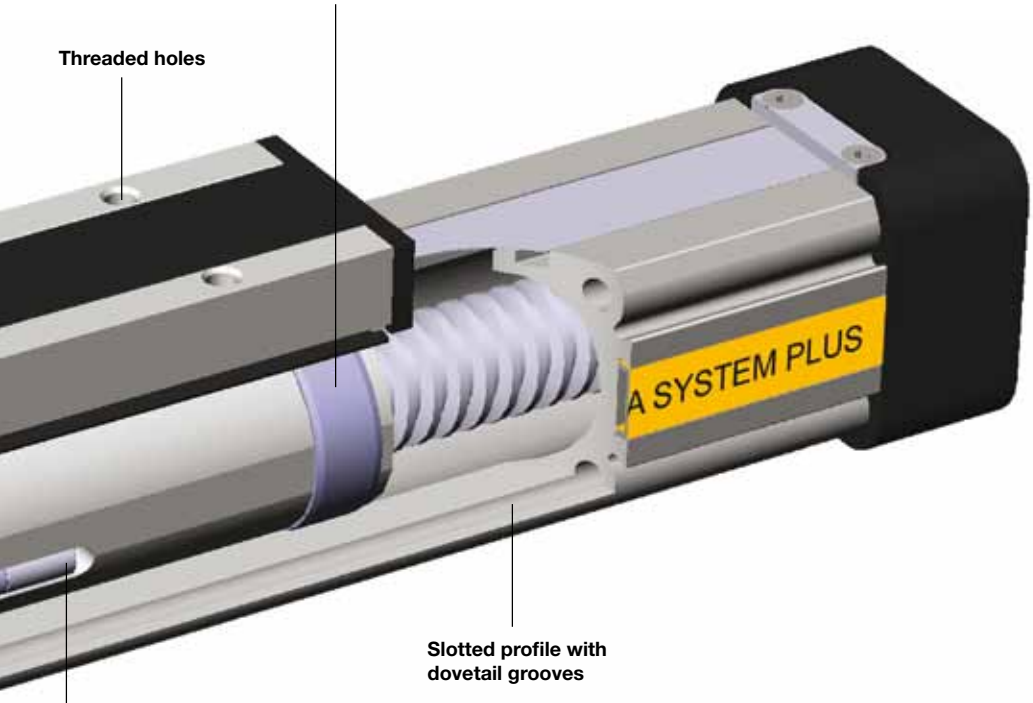
- Accurate path and position control
- High force output
- Self-locking
- Excellent slow speed characteristics
- Easy installation
- Low maintenance
- Ideal for level regulation, lifting and other applications with intermittent operations

Features

- Integrated drive and guidance system
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available



Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com



SLIDELINE
Combination with sliding guide for heavy-duty operation

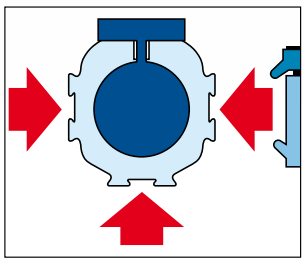
POWERSLIDE
Roller bearing precision guidance for smooth travel and high dynamic or static loads.

PROLINE
The compact aluminium roller guide for high loads and velocities.

Heavy Duty guide
HD linear guides for heavy duty applications

SFI-plus displacement measuring system

The dovetailed mounting rails of the new actuator expand its function into that of a universal system carrier.
Modular system components are simply clamped on.



Trapezoidal Screw Actuator with Internal Plain Bearing Guide

Size 22, 32, 50

Type: OSP-E..ST

Standard Versions:

- Standard carrier with internal plain bearing guide
- Dovetail profile for mounting of accessories and the actuator itself
- Pitch of Trapezoidal Spindle:
  Type OSP-E25ST : 4 mm
  Type OSP-E32ST: 4 mm
  Type OSP-E50ST: 6 mm

Options:

- Displacement Measuring System SFI-plus
- Keyway

Installation Instructions

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator.
See if profile mountings are needed using the maximum permissible unsupported length graph.
At least one end cap must be secured to prevent axial sliding when Profile Mounting is used.
When the actuator is moving an externally guided load, the compensation must be used.
The actuators can be fitted with the standard carrier mounting facing in any direction.
To prevent contamination such as fluid ingress, the drive should be fitted with its sealing band facing downwards.
The inversion mounting can be fitted to transfer the driving force to the opposite side.

Characteristics	Description
Series	OSP-E..ST
Mounting	See drawings
Ambient temperature range	-20 °C to +70 °C
Installation	In any position
Material	
Slotted Profile	Extruded anodized aluminium
Trapazoidal screw	Cold rolled steel
Drive nut	Thermoplastic polyester
Guide bearings	Low friction plastic
Sealing band	Hardened corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Weight (mass) [kg]			Inertia [x 10^{-6} kgm^2]	
	at stroke 0 m	ad per meter stroke	moving mass	at stroke 0 m	ad per meter stroke
OSP-E25ST	0.9	2.8	0.2	6	30
OSP-E32ST	2.1	5.0	0.5	21.7	81
OSP-E50ST	5.1	10.6	1.3	152	400

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of the belt and wear parts, after an operation time of 12 months of operation or 3000 km travel of distance.
Please refer to the operating instructions supplied with the drive

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Check that maximum values in the table T3 are not exceeded.
2. Check the maximum values in graph are not exceeded.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time of the application.
4. Check that the maximum allowable unsupported length is not exceeded

Performance Overview

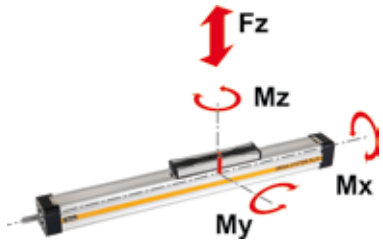
Characteristics	Unit	Description		
Size		OSP-E25ST	OSP-E32ST	OSP-E50ST
Pitch	[mm]	4	4	6
Max. speed	[m/s]	0.1	0.1	0.15
Linear motion per revolution drive shaft	[mm]	4	4	6
Max. rpm, drive shaft	[min-1]	1500	1500	1500
Max. effective action force FA Corresponding torque on drive shaft	[N] [Nm]	600 1.35	1300 3.2	2 500 8.8
No-load torque	[Nm]	0.3	0.4	0.5
Max. allowable torque on drive shaft	[Nm]	1.55	4.0	9.4
Self-locking force FL1)	[N]	600	1300	2500
Repeatability	[mm/m]	±0.5	±0.5	±0.5
Max. Standard stroke length	[mm]	1100	2000	2500*

1) Related to screw types Tr 16x4, Tr 20x4, TR 30x6
* For strokes longer than 2000 mm in horizontal apllications, please contact our customer support.

Loads, Forces and Moments

Combined loads

If the actuator is subjected to several forces, loads and moments at the same time, the maximum load is calculated with the equation shown here.
The maximum permissible loads must not be exceeded.



$M = F \cdot l$ [Nm]
$M_x = M_{x\,static} + M_{x\,dynamic}$
$M_y = M_{y\,static} + M_{y\,dynamic}$
$M_z = M_{z\,static} + M_{z\,dynamic}$

The distance l (lx, ly, lz) for calculation of the bending moments relates to the centre axis of the actuator.

Maximum Permissible Loads

T3

Size	Max. applied load [N] Fz	Max. moments [Nm] Mx	My	Mz
OSP-E25ST	500	2	24	7
OSP-E32ST	1000	6	65	12
OSP-E50ST	1500	13	155	26

Equation of Combined Loads

$$\frac{Fz}{Fz\ (max)} + \frac{Mx}{Mx\ (max)} + \frac{My}{My\ (max)} + \frac{Mz}{Mz\ (max)} \leq 1$$

The total of the loads must not exceed >1 under any circumstances.

Maximum Permissible Unsupported Length

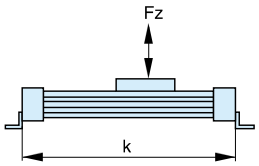
Stroke length

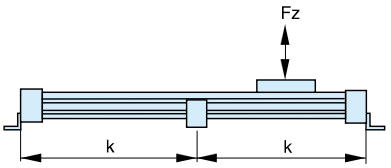
The stroke lengths of the actuators are available in multiples of 1 mm up to the following maximum stroke lengths.
OSP-E25ST: max. 1100 mm
OSP-E32ST: max. 2000 mm
OSP-E50ST: max. 2500 mm *
Other stroke lengths are available on request.

* For strokes longer than 2000 mm in horizontal applications, please contact our customer support

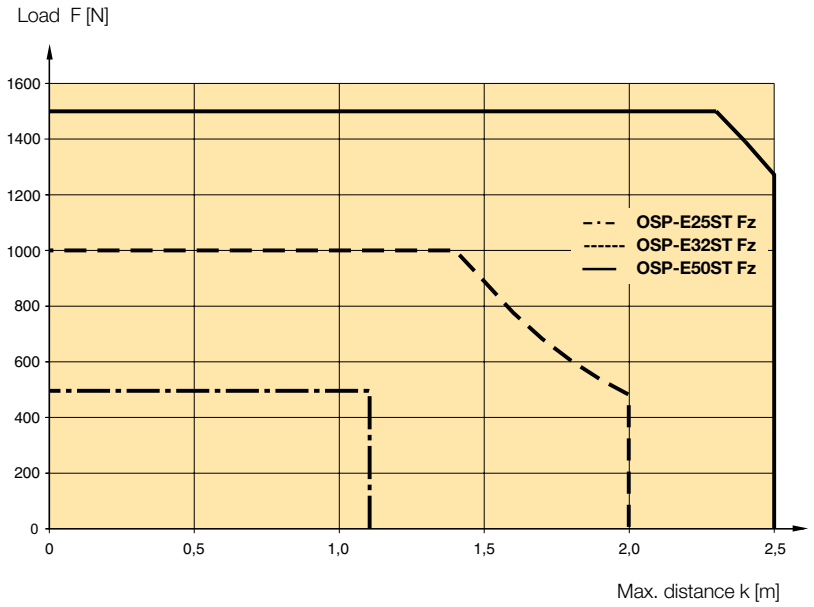
The end of stroke must not be used as a mechanical stop.
Allow an additional safety clearance of minimum 25 mm at both ends.
The use of an AC motor with frequency converter normally requires a larger safety clearance than that required for servo systems.
For advise, please contact your local Parker Origa technical support department.

Maximum Permissible Unsupported Length – Placing of Profile Mounting





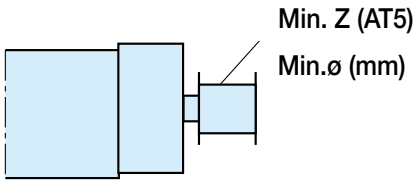
k = Maximum permissible distance between mountings/mid-section support for a given load F.



(Up to the curve in the above graph the deflection will be max. 0.2 % of distance k.)

Mounting on the Drive Shaft

Do not expose the drive shaft to uncontrolled axial or radial forces when mounting coupling or pulley, a steadying block should be used.



Pulleys

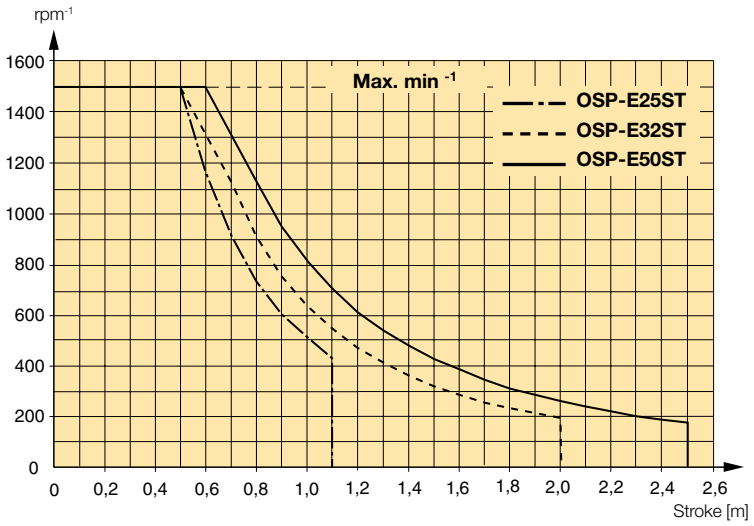
Minimum allowable number of teeth (AT5) and diameter of pulley at maximum applied torque.

Size	Min. Z	Min. ø
OSP-E25ST	24	38
OSP-E32ST	24	38
OSP-E50ST	36	57

Maximum rpm / Stroke

At longer strokes the speed has to be redueced according to the adjacent graphs.

Maximum rpm / Stroke



The maximum rpm shown in the graph, is 80% of the critical rpm.

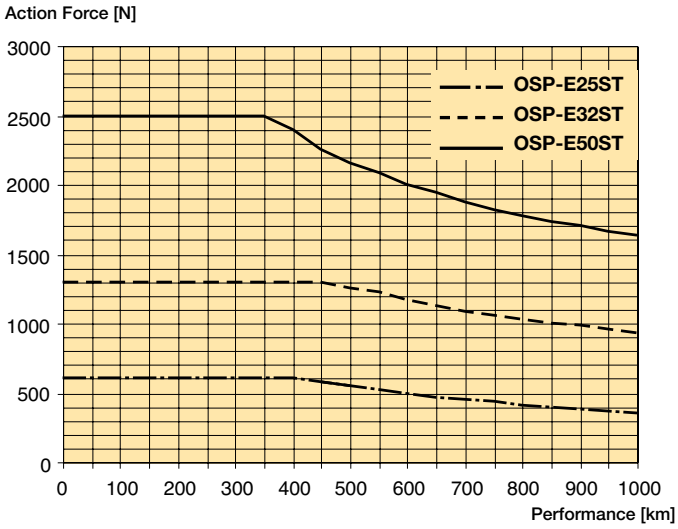
Performance / Action Force

The actuators are designed for a 10% intermittent usage.

The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

Performance as a function of the action force



Note: Graph above is based upon 10% intermittent usage

Ball screw actuator with internal plain bearing guide and piston rod for accurate piston rod applications

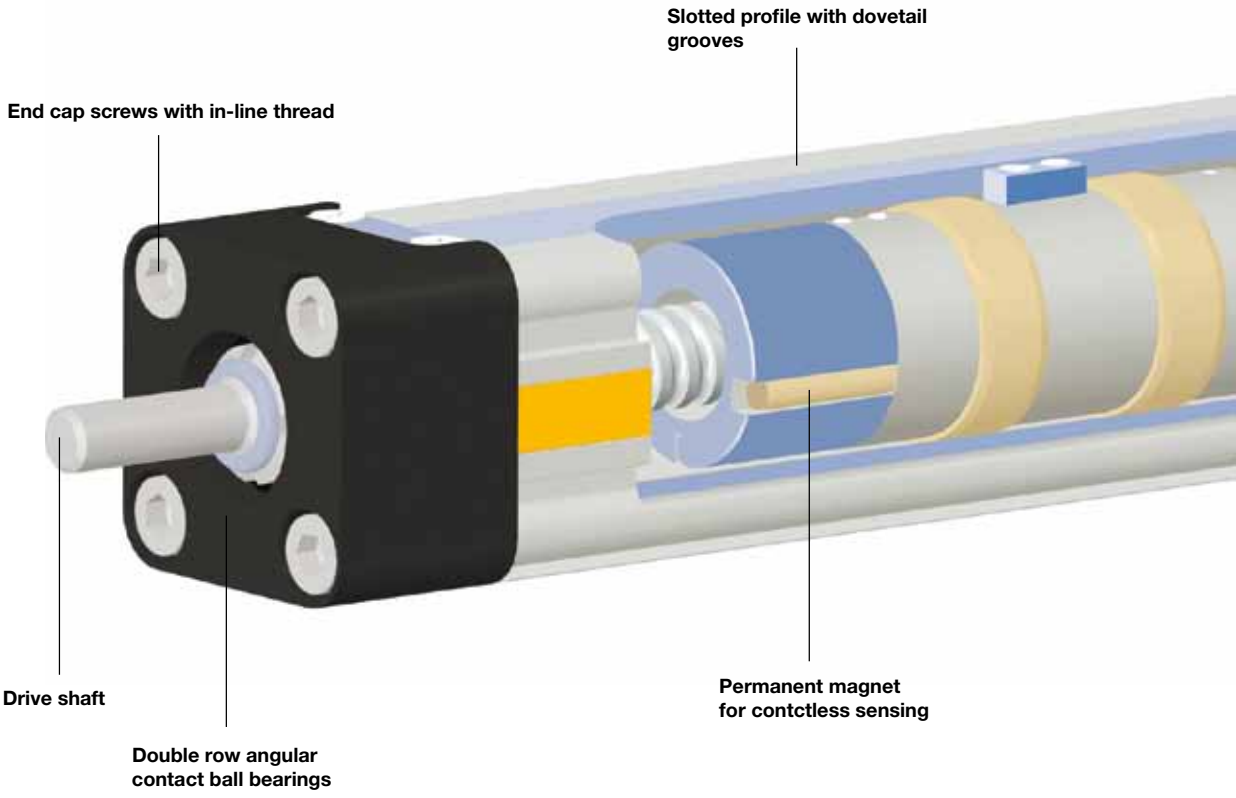
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

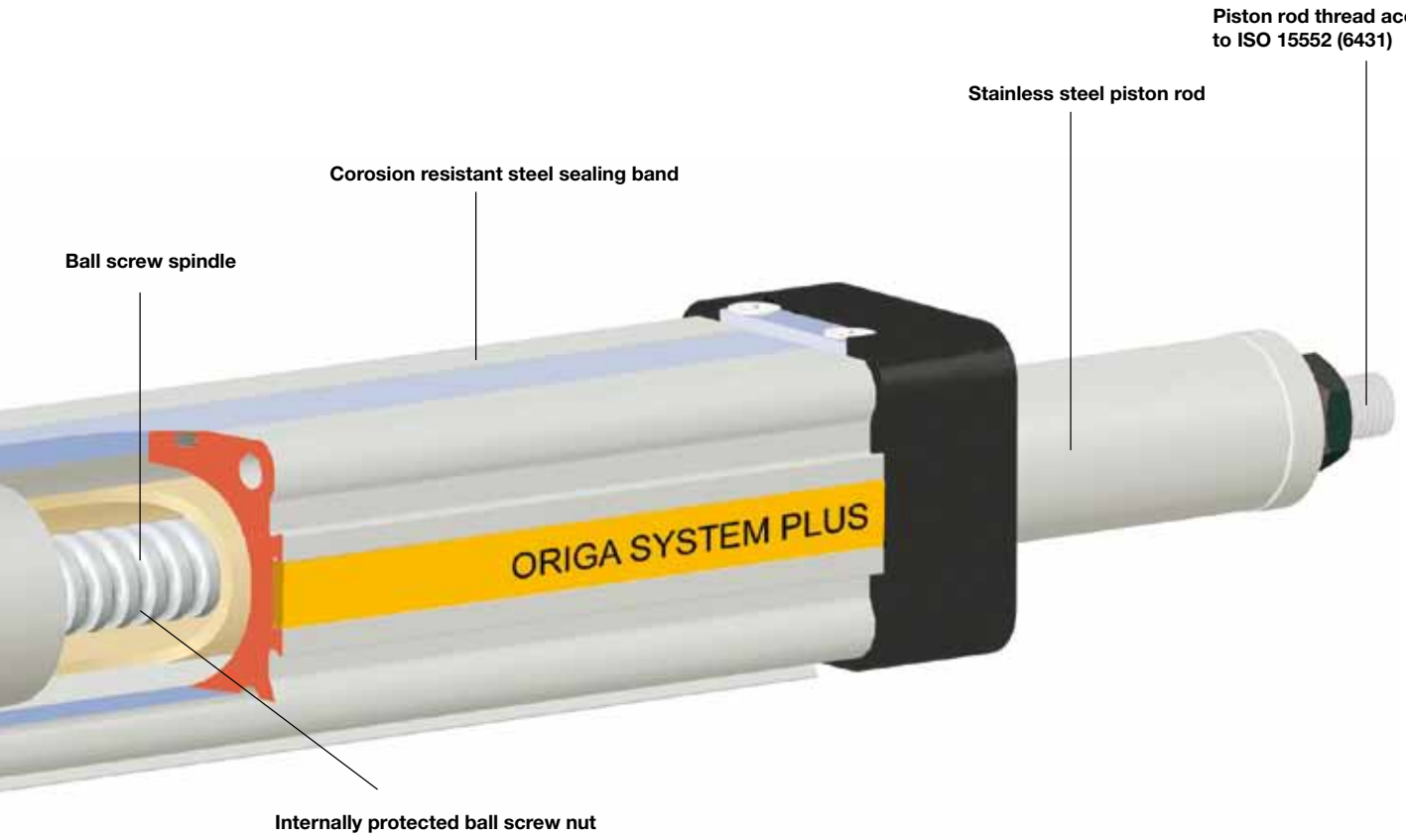
Advantages

- High output force
- Excellent running characteristics
- Accurate path and position control
- High levels of repeatability

Features

- Extending drive rod
- Ball screw spindle
- Non-rotating drive rod
- Continuous duty operation
- Large range of accessories





Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com

Options and Accessories

OSP-E..SBR
Ball screw actuator with internal plain bearing guide and piston rod

STANDARD VERSIONS
OSP-E..SBR

Standard piston rod with internal guidance and integrated magnet set for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.

BALL SCREW PITCH

The ball screws spindles are available
in various pitches:
OSP-E25SBR: 5 mm
OSP-E32SBR: 5, 10 mm
OSP-E50SBR: 5, 10, 25 mm

ACCESSORIES

MOTOR MOUNTINGS

END CAP MOUNTING
For end-mounting the actuator on the extending rod side.

Flange Mounting C
For end-mounting the actuator on the extending rod side.

PROFILE MOUNTING
For mounting the actuator on the dovetail grooves and on the motor end.

Trunning mounting EN in combination with pivot mounting EL.
– steplessly adjustable in axial direction.

COMPENSATION
Piston Rod eye

Piston rod Clevis

Piston Rod compensating coupling
For compensating of radial and angular misaligments

MAGNETIC SWITCHES
SERIES RST AND EST
For contactless position sensing of end stop and intermediate carrier positions.

Ball Screw Actuator with Internal Plain Bearing Guide and Piston Rod

Size 22, 32, 50

Type: OSP-E..SBR

Standard Versions:

- Standard piston rod with internal plain bearing guide
- Pitches of Ball Screw Spindle:
  Type OSP-E25SBR : 5 mm
  Type OSP-E32SBR: 5, 10 mm
  Type OSP-E50SBR: 5, 10, 25 mm

Options:

- Keyway version

Installation Instructions

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator.

The piston rod is locked against rotations, but must not be used for radial loads Mx, that need to be guided externally. A compensation part e. g. piston rod eye is recommended.

Characteristics	Description
Series	OSP-E..SBR
Mounting	See drawings
Ambient temperature range	-20 °C to +80 °C
Installation	In any position
Encapsulation class	IP 54
Material	
Slotted Profile	Extruded anodized aluminium
Ball screw	Steel
Ball nut	Steel
Piston rod	Stainless steel
Guide bearings	Low friction plastic
Sealing band	Hardened corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Total weight (Mass) [kg]		Moving mass [kg]		Inertia [x 10^{-6} kgm^2]	
	At stroke 0 m	Actuator head	At stroke 0 m	Add per metre stroke	At Stroke 0 m	Add per metre stroke
OSP-E25SBR	0.7	3.0	0.2	0.9	1.2	11.3
OSP-E32SBR	1.7	5.6	0.6	1.8	5.9	32.0
OSP-E50SBR	4.5	10.8	1.1	2.6	50.0	225.0

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of wear parts, after an operation time of 12 months or 3000 km travel of distance. Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

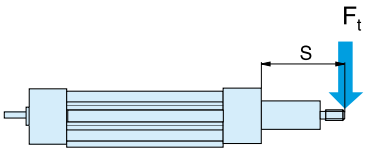
1. Check that the maximum values in the adjacent chart and transverse force/ stroke graph below are not exceeded.
2. Check the lifetime/travel distance in graph below.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time in application

Performance Overview

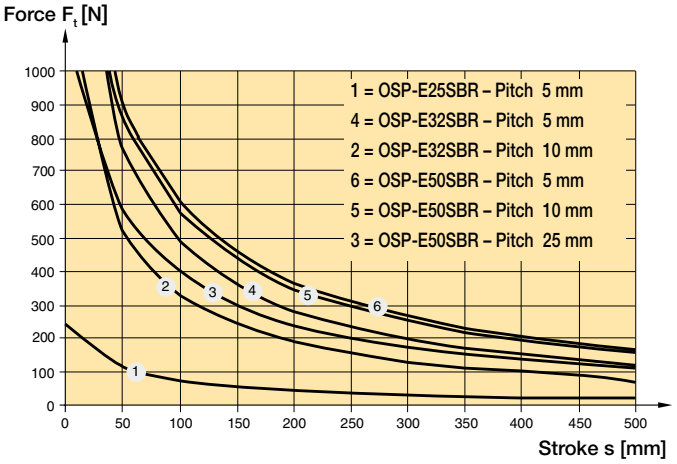
Characteristics	Unit	Description					
Series		OSP-E25SBR	OSP-E32SBR		OSP-E50SBR		
Pitch	[mm]	5	5	10	5	10	25
Max. speed	[m/s]	0.25	0.25	0.5	0.25	0.5	1.25
Linear motion per revolution drive shaft	[mm]	5	5	10	5	10	25
Max. rpm drive shaft		[min^{-1}]	3000	3000	3000		
Max. effective action force F_A	[N]	260	900		1200		
Corresponding torque drive shaft	[Nm]	0.45	1.1	1.8	1.3	2.8	6.0
No-load torque	[Nm]	0.2	0.2	0.3	0.3	0.4	0.5
Max. allowable torque on drive shaft	[Nm]	0.6	1.5	2.8	4.2	7.5	20
Max. allowable acceleration	[m/s^2]	5	5		5		
Typical repeatability	[mm/m]	±0.05	±0.05		±0.05		
Max.Standard stroke length	[mm]	500	500		500		

Transverse Force / Stroke

The permissible transverse force is reduced with increasing stroke length. according to the adjacent graphs.



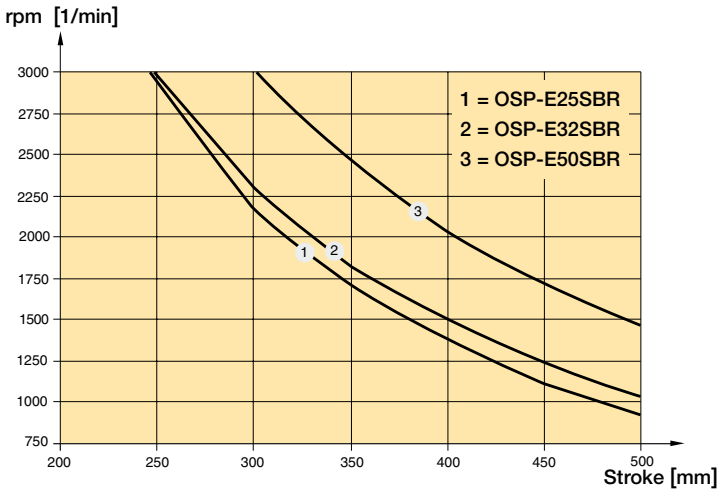
Transverse Force / Stroke



Maximum rpm / Stroke

At longer strokes the speed has to be redueced according to the adjacent graphs.

Maximum rpm / Stroke

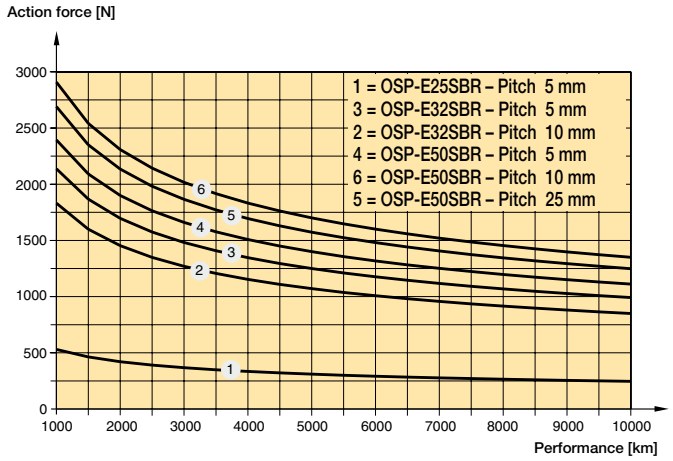


Performance / Action Force

The performance to be expected depends on the maximum required actions force of the application.

An increase of the action force will lead to a reduced performance.

Performance as a function of the action force



Trapezoidal screw actuator with internal plain bearing guide and piston rod for intermittent applications

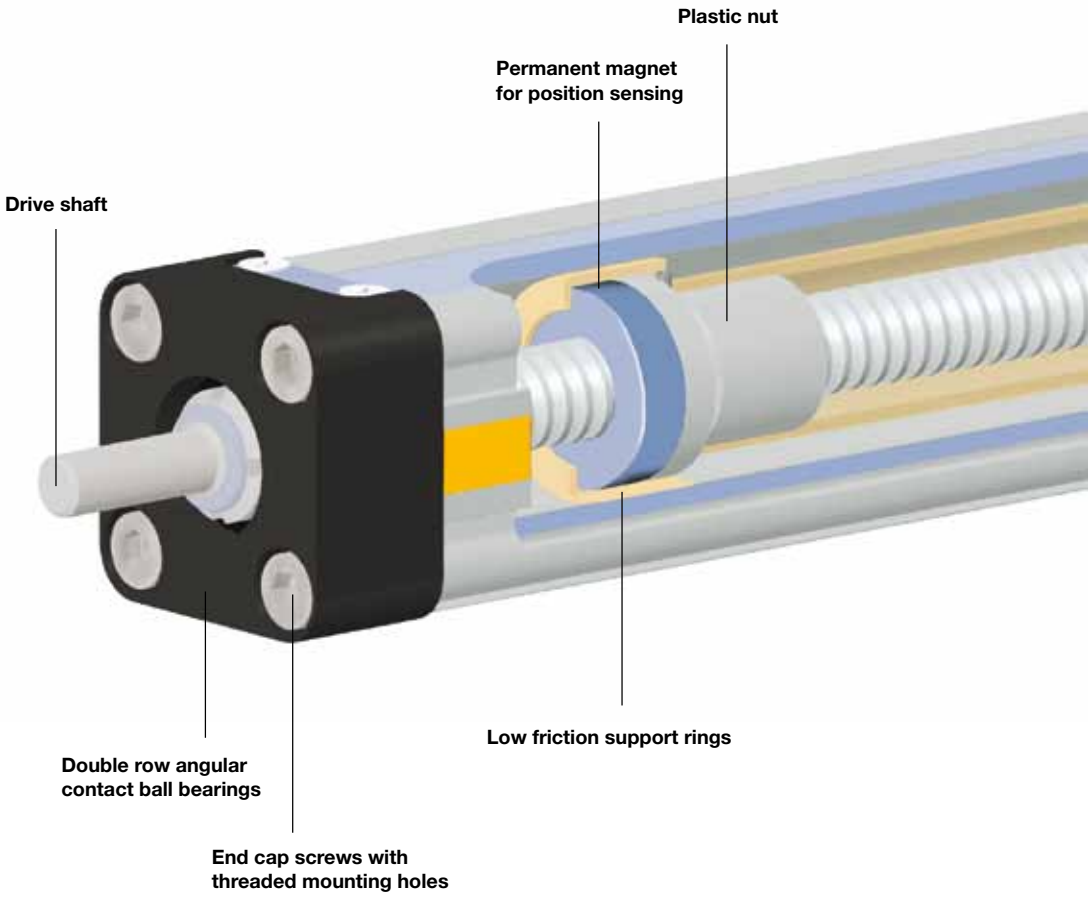
A completely new generation of actuators which can be integrated into any machine layout neatly and simply.

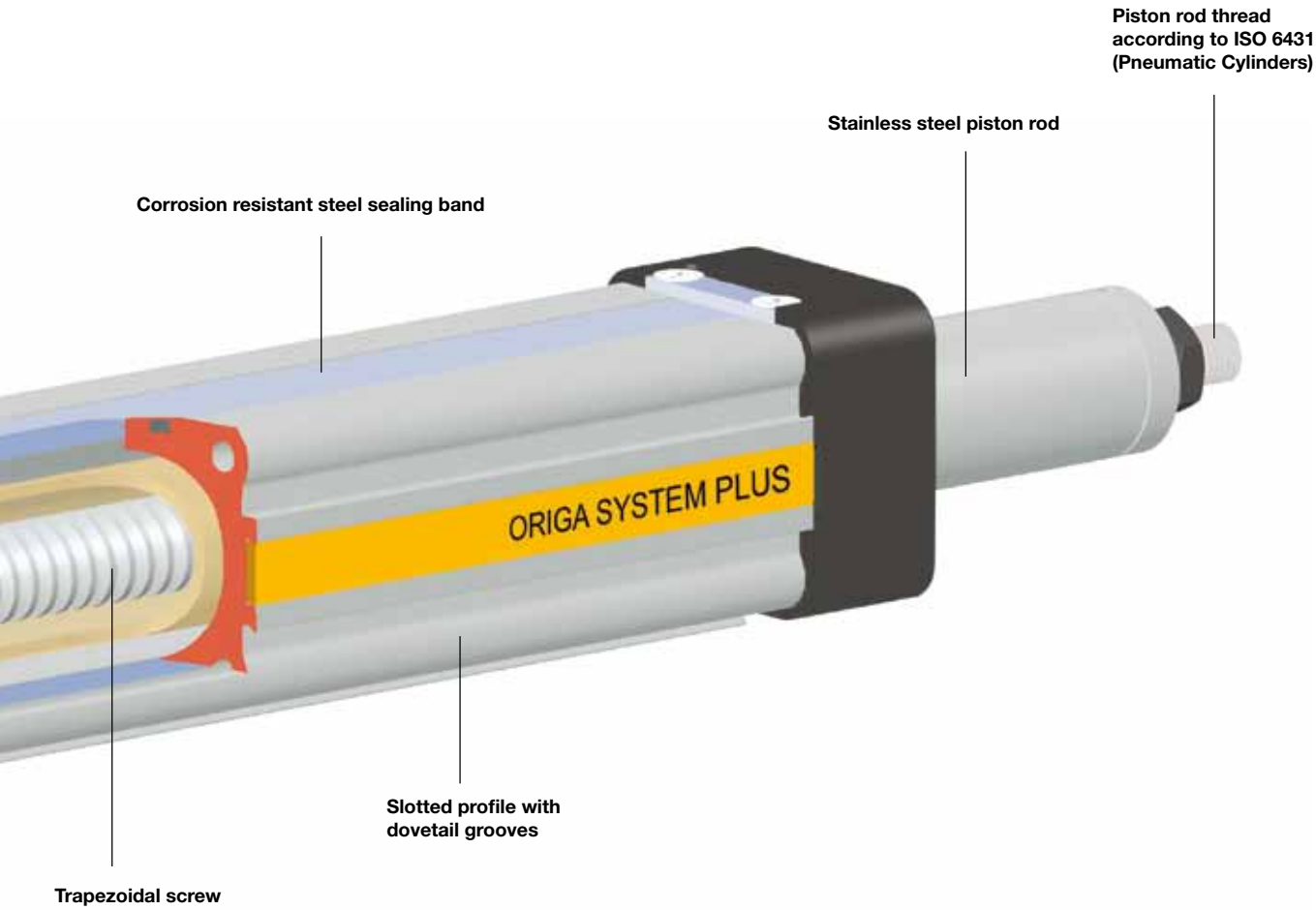
Advantages

- Accurate path and position control
- High force output
- Self-locking
- Excellent slow speed characteristics
- Easy installation
- Low maintenance
- Ideal for level regulation, lifting and other applications with intermittent operations

Features

- Piston rod-end dimensions conforming to ISO pneumatic standards
- Complete motor and control packages
- Diverse range of accessories and mountings
- Special options available





Take the easy route and load all the dimensions into your system. The file is suitable for all current CAD systems – available on CD-Rom or at www.parker-origa.com

Options and Accessories

OSP-E..STR
Trapezoidal screw actuator with internal plain bearing guide and piston rod

STANDARD VERSIONS OSP-E..STR

Standard piston rod with internal guidance and integrated magnet set for contactless position sensing. Dovetail profile for mounting of accessories and the actuator itself.

ACCESSORIES

MOTOR MOUNTINGS

END CAP MOUNTING
For end-mounting the actuator on the extending rod side.

FLANGE MOUNTING C
For end-mounting the actuator on the extending rod side.

PROFILE MOUNTING
For mounting the actuator on the dovetail grooves and on the motor end.

TRUNNING MOUNTING EN in combination with pivot mounting EL.
– steplessly adjustable in axial direction.

COMPENSATION PISTON ROD EYE

PISTON ROD CLEVIS

PISTON ROD COMPENSATING COUPLING
For compensating of radial and angular misaligments

MAGNETIC SWITCHES SERIES RST AND EST
For contactless position sensing of end stop and intermediate carrier positions.

Trapezoidal Screw Actuator with Internal Plain Bearing Guide and Piston rod

Size 25, 32, 50

Type: OSP-E..STR

OSP
ORIGA
SYSTEM
PLUS

Standard Versions:

- Dovetail profile for mounting of accessories and the actuator itself
- Pitch of Trapezoidal Spindle:
  Type OSP-E25STR : 3 mm
  Type OSP-E32STR: 4 mm
  Type OSP-E50STR: 5 mm

Contactless position sensing

Please use the magnetic switch mentioned below:

KL3096 (Type RS-K, normaly closed, Reed-contact, with cable)
KL3098 (Type ES-S, Magnetic electronic, PNP-switch with DIN-plug)

Installation Instructions

Use the threaded holes in the free end cap and a profile mounting close to the motor end for mounting the actuator.

The piston rod is not locked against rotation and needs to be guided externally. A compensation part e. g. piston rod eye is recommended.

Characteristics	Description
Series	OSP-E..STR
Mounting	See drawings
Ambient temperature range	-20 °C to +70 °C
Installation	In any position
Encapsulation class	IP 54
Material	
Slotted Profile	Extruded anodized aluminium
Trapazoidal screw	Cold rolled steel
Drive nut	Thermoplastic polyester
Piston rod	Stainless steel
Guide bearings	Low friction plastic
Sealing band	Hardened corrosion resistant steel
Screws, nuts	Zinc plated steel
Mountings	Zinc plated steel and aluminium

Weight (mass) and Inertia

Series	Total weight (Mass) [kg]		Moving mass [kg]		Inertia [x 10^{-6} kgm^2]	
	At stroke 0 m	Actuator head	At stroke 0 m	Add per metre stroke	At Stroke 0 m	Add per metre stroke
OSP-E25STR	0.4	2.9	0.1	0.7	1.1	10.3
OSP-E32STR	0.9	5.4	0.2	1.2	3.9	29.6
OSP-E50STR	2.4	10.6	0.8	1.6	24.6	150

Maintenance

All moving parts are long-term lubricated for a normal operational environment. Parker Origa recommends a check and lubrication of the actuator, and if necessary a change of wear parts, after an operation time of 12 months or 3000 km travel of distance. Please refer to the operating instructions supplied with the actuator.

First service start-up

The maximum values specified in the technical data sheet for the different products must not be exceeded. Before taking the actuator as a machine into service, the user must ensure the adherence to the EC Machine Directive 2006/42/EG.

Sizing Performance Overview Maximum Loadings

Sizing of Actuator

The following steps are recommended for selection :

1. Check that the maximum values in the adjacent chart and transverse force/ stroke graph below are not exceeded.
2. Check the lifetime/travel distance in graph below.
3. When sizing and specifying the motor, the RMS-average torque must be calculated using the cycle time in application

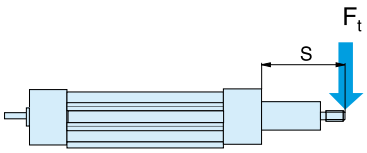
Performance Overview

Characteristics	Unit	Description		
Size		OSP-E25STR	OSP-E32STR	OSP-E50STR
Pitch	[mm]	3	4	5
Max. speed	[m/s]	0.075	0.1	0.125
Linear motion per revolution, drive shaft	[mm]	3	4	5
Max. rpm, drive shaft	[min^{-1}]	1500 [2)]	1500	1500
Max. effective action force F_A Corresponding torque on drive shaft	[N] [Nm]	800 1.35	1600 3.4	3300 9.25
No-load torque	[Nm]	0.3	0.4	0.5
Max. allowable torque on drive shaft	[Nm]	1.7	4.4	12
Self-locking force F_L [1)]	[N]	800	1600	3300
Typical repeatability	[mm/m]	±0,5	±0,5	±0,5
Max.Standard stroke length	[mm]	500	500	500

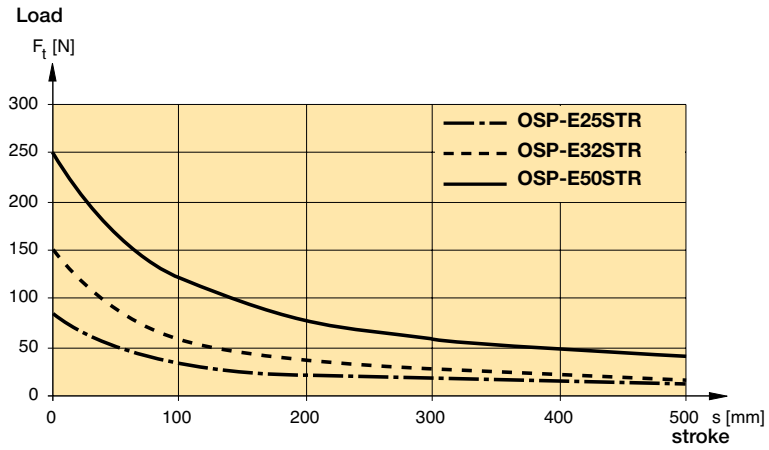
[1)] Related to screw types Tr 12x3, Tr 16x4, Tr 24x5

[2)] from 0,4 m stroke max. 1200 min-1 permissible

Transverse Force / Stroke



Transverse Force / Stroke

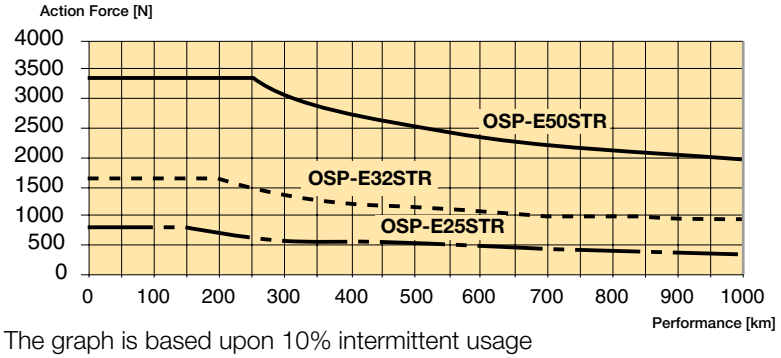


The graph is based upon 10% intermittent usage

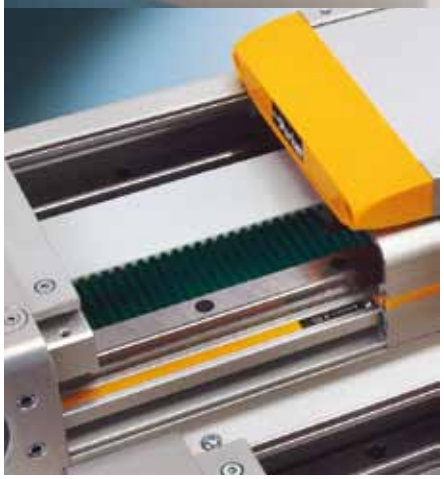
Performance / Action Force

The Actuators are designed for a 10% intermittent usage.
The performance to be expected depends on the maximum required actions force of the application.
An increase of the action force will lead to a reduced performance.

Performance as a function of the action force



The graph is based upon 10% intermittent usage



ORIGA HMR

High Moment Rodless Electric Linear Actuator - Three Drive Technologies: Screw, Toothed Belt, Linear Motor

Linear Drive

Driving the future

The HMR linear drive system can be equipped with a “basic” or “reinforced” profile as standard. The “basic” profile is suitable for fitting directly to a machine base that has a corresponding support surface. The “reinforced” profile, on the other hand, is the preferred choice for self-supporting systems or for use in conjunction with a base surface offering limited support.

- Three alternative drive technologies in one profile
- Unique flexibility and reliability
- High speed and precision
- Two profile versions, four profile sizes
- Optional IP54 snap-in covers

ORIGA HMR Electromechanical Linear Actuators

Profile designs

- Basic profile for assembling directly to the machine base
- Reinforced profile for self-supporting assembly

Mounting systems

- Integrated T-slots for attaching from below and from the side

Protection classes

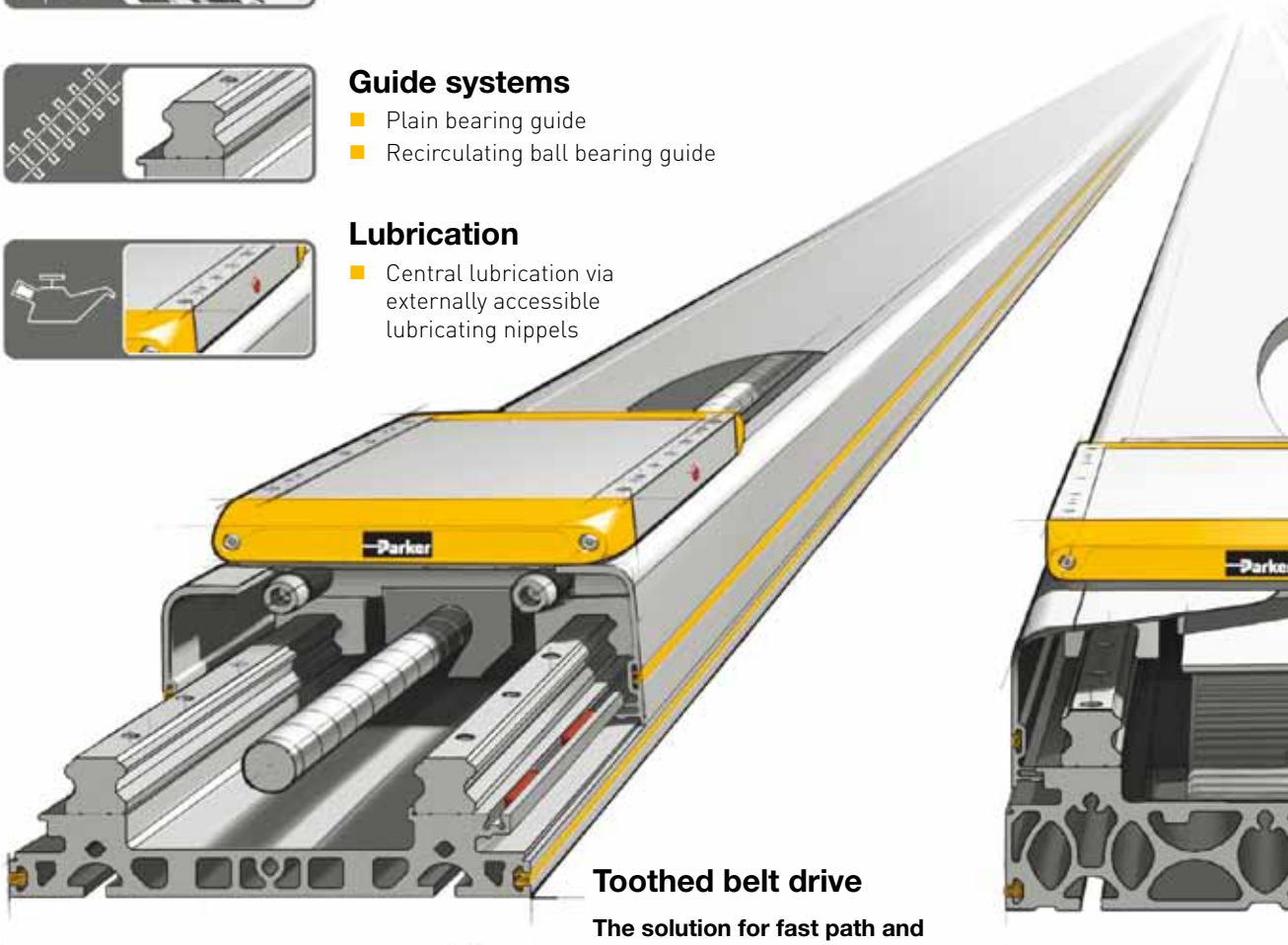
- Without cover: IP20
- With cover: IP54

Guide systems

- Plain bearing guide
- Recirculating ball bearing guide

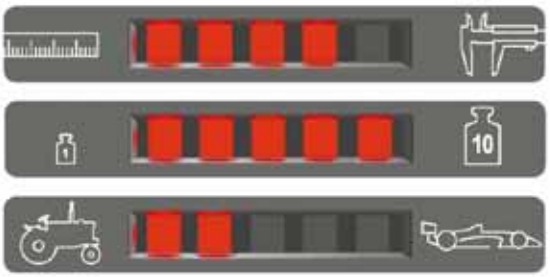
Lubrication

- Central lubrication via externally accessible lubricating nippels



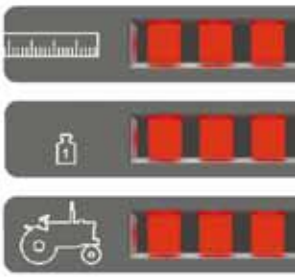
Toothed belt drive

The solution for fast path and position control for medium loads



Screw drive

The solution for precise path and position control for heavy loads



We drive the future - with screw, toothed belt or linear motor.

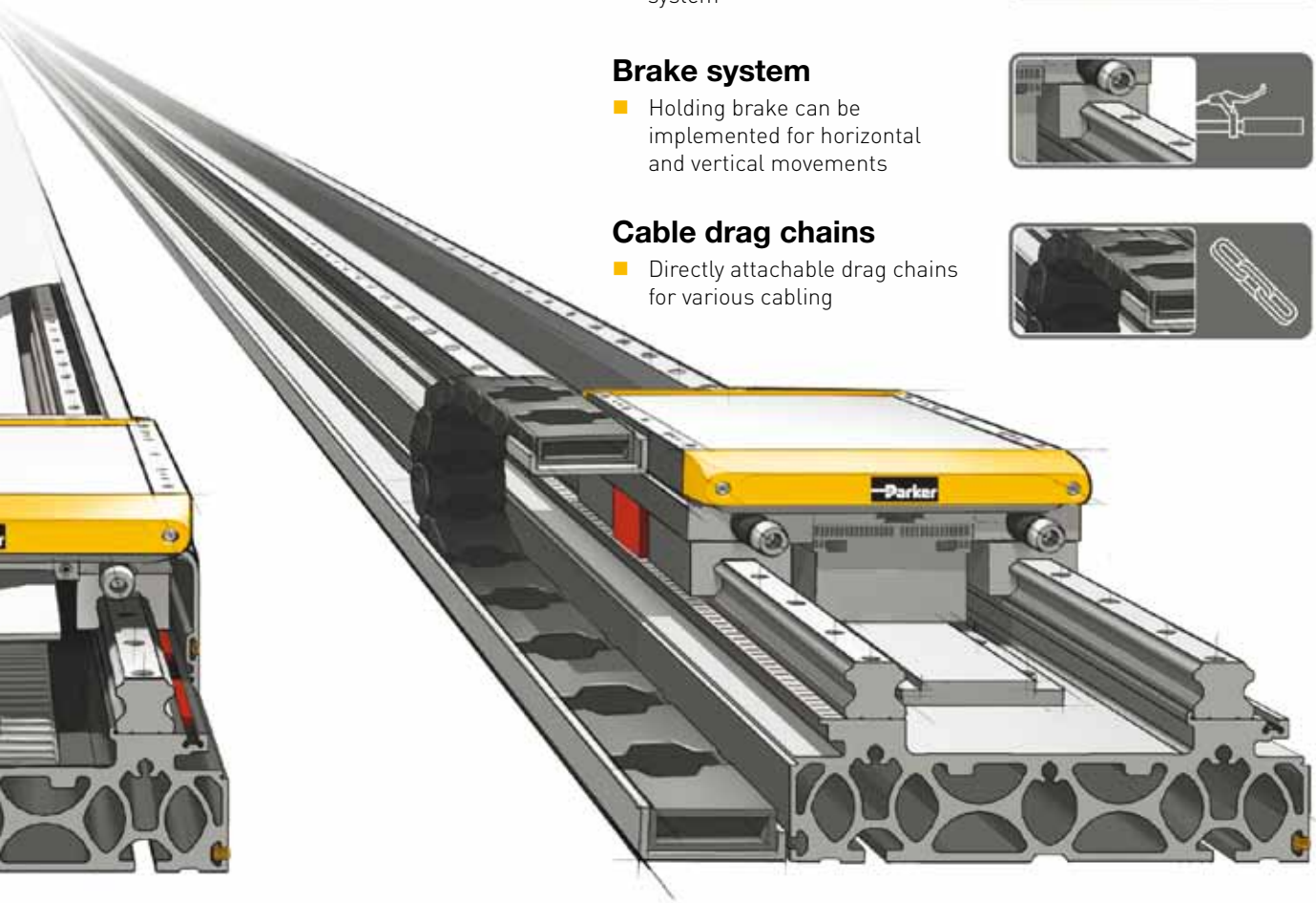
Position sensing
- Integrated, adjustable position switch for end positions and homing

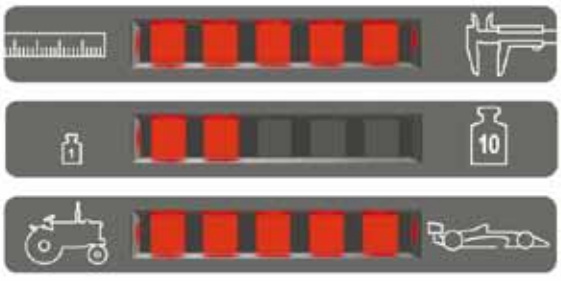
Impact protection
- Integrated shock absorbers for both end positions

Distance measurement
- Contact-free, incremental displacement measuring system

Brake system
- Holding brake can be implemented for horizontal and vertical movements

Cable drag chains
- Directly attachable drag chains for various cabling





Linear drive

The solution for fast travel with the greatest possible dynamics and precision

Origa Linear Drives

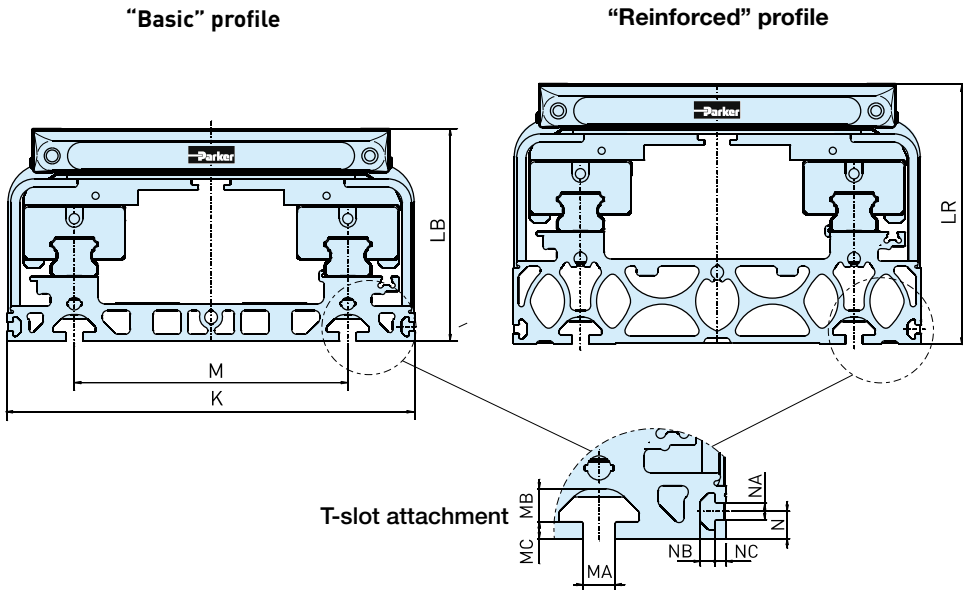
Size 150, 180, 240 mm

HMR Series

Profile versions

Designs:

- Basic
- Reinforced



The HMR linear drive system can be equipped with a "basic" or "reinforced" profile as standard.
The "basic" profile is suitable for fitting directly to a machine base that has a corresponding support surface.
The "reinforced" profile, on the other hand, is the preferred choice for self-supporting systems or for use in conjunction with a base surface offering limited support.

Dimension table - Profile versions

Size	K	LB	LR	M	MA	MB	MC	N	NA	NB	NC
HMRx150	150.0	90.0	114.0	96.0	6.2	6.8	3.0	6.5	5.2	4.6	3.5
HMRx180	180.0	111.5	134.5	116.0	8.0	7.8	4.5	8.5	5.2	4.5	3.5
HMRx240	240.0	125.0	153.0	161.0	10.0	10.2	5.3	8.5	5.2	4.5	3.5

Dimensions in mm

Origa Linear Drives

Size 150, 180, 240 mm

HMR Series

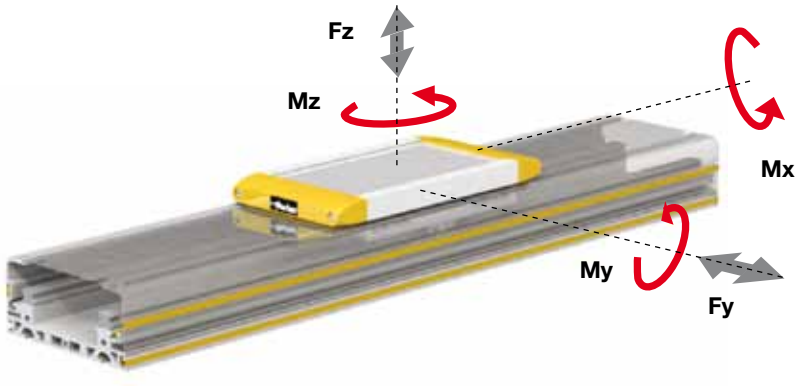
Ball Bearing Guide

Load requirements for guides and installation size.

The occurring loads, forces and bending moments depend on the application. The mass of the construction attached to the carriage has a center of gravity.
This mass creates static forces (F = m · g) and bending moments (M = m · g · l).

Additional dynamic moments (M = m · a · l) arise in dependence of the acceleration during travel.
Care should be taken when selecting suitable guides that the permissible sum of loads does not exceed 1.

Loads, Forces and Moments



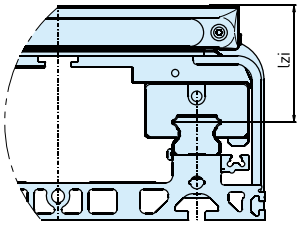
Combined loads

The maximum permissible load for linear drives subject to simultaneous multiple loads, forces and bending moments are calculated using the formula below. Maximum permissible loads must not be exceeded.

$$L = \frac{Fy}{Fy_{(max)}} + \frac{Fz}{Fz_{(max)}} + \frac{Mx}{Mx_{(max)}} + \frac{My}{My_{(max)}} + \frac{Mz}{Mz_{(max)}} \leq 1$$

The sum of all loads must under no circumstance be > 1.

Internal lever arm l_{zi}



Dimension table - l_{zi}

Product size		l_{zi}
HMR-150	[mm]	50.0
HMR-180	[mm]	57.5
HMR-240	[mm]	68.0

Maximum permissible load based on a service life of 8000 km

Product size		HMRx15	HMRx18	HMRx24	HMRx15	HMRx18	HMRx24
Carriage		Standard			Tandem		
Max, permissible force							
F_{Z8000} F_{Y8000}	[N]	6,000	11,000	18,200	9,000	16,500	27,300
Max. bending moment							
M_{X8000}	[Nm]	290	640	1,460	435	960	2,190
M_{Y8000}	[Nm]	380	840	1,660	570	1,260	2,490
M_{Z8000}	[Nm]	380	840	1,660	570	1,260	2,490

Maximum permissible load based on a service life of 2540 km

Product size		HMRx15	HMRx18	HMRx24	HMRx15	HMRx18	HMRx24
Carriage		Standard			Tandem		
Max. permissible force							
F_{Z2540} F_{Y2540}	[N]	8,800	16,200	26,600	13,200	24,300	39,900
Max. bending moment							
M_{X2540}	[Nm]	430	940	2,150	645	1,410	3,225
M_{Y2540}	[Nm]	560	1,230	2,430	840	1,845	3,645
M_{Z2540}	[Nm]	560	1,230	2,430	840	1,845	3,645

Ball Screw

Size 150, 180, 240 mm

HMRS Series

Technical Data HMRS

Product size			HMRS15		HMRS18		HMRS24	
Type of screw			20x5	20x20	25x10	25x25	32x10	32x32
Pitch	p	[mm]	5	20	10	25	10	32
Max. speed	$v_{max.}$	[m/s]	0.25	1.00	0.50	1.25	0.50	1.60
Max. acceleration	$a_{max.}$	[m/s²]	10		10		10	
Max. order stroke		[mm]	2500		3400		4000	
Thrust force and torque								
Max. thrust force	Fa_{max}	[N]	2600	2600	4800	4800	5500	5500
	F_{A2540}	[N]	1800	2160	3300	3960	3500	4880
Max. torque at drive shaft	M_{amax}	[Nm]	2.2	9.0	8.3	20.8	9.5	30.4
	M_{A2540}	[Nm]	1.6	7.5	5.7	17.1	6.1	27.0
No load torque	M_0	[Nm]	0.7	0.9	0.9	1.0	1.0	1.1
Stroke dependent speed								
Max. permissible speed at order stroke	200 mm		250	1000	500	1250	500	1600
	400 mm		250	1000	500	1250	500	1600
	600 mm		250	1000	500	1250	500	1600
	800 mm		169	678	382	956	423	1354
	1000 mm		122	486	277	694	312	997
	1200 mm		91	366	211	526	239	765
	1400 mm		71	285	165	413	189	605
	1600 mm		57	228	133	333	153	491
	1800 mm		47	187	109	274	127	406
	2000 mm		39	156	92	229	107	342
	2200 mm		33	132	78	195	91	291
	2400 mm		28	113	67	167	79	251
	2600 mm		-	-	58	145	68	219
	2800 mm		-	-	51	128	60	193
	3000 mm		-	-	45	113	53	171
	3200 mm		-	-	40	100	48	152
	3400 mm		-	-	-	-	43	137
	3600 mm		-	-	-	-	39	123
	3800 mm		-	-	-	-	35	112
	4000 mm		-	-	-	-	32	102

Ball Screw

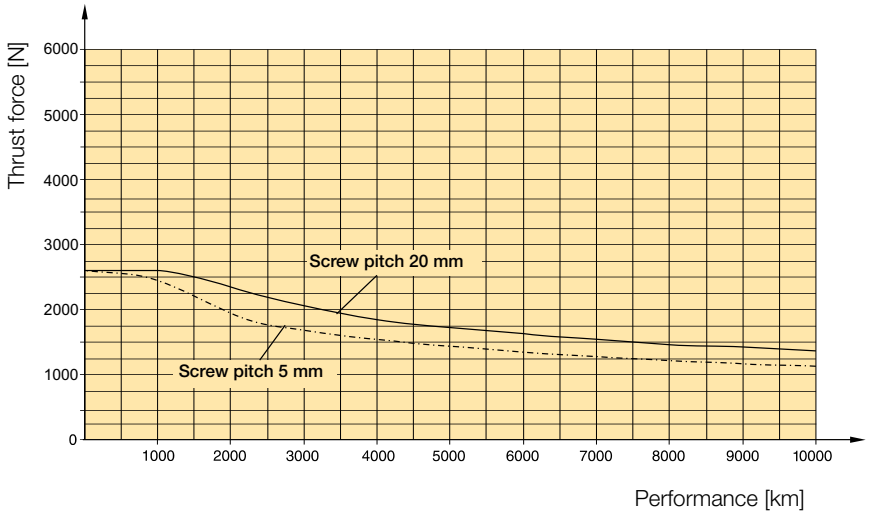
Size 150, 180, 240 mm

HMRS Series

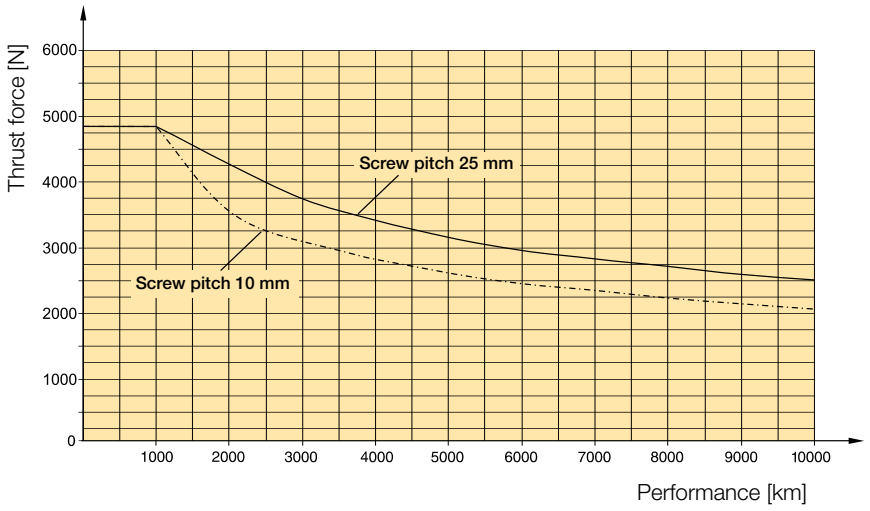
Performance expectancy depends on the application's required force.
An increase in force will reduce performance

Performance / thrust force

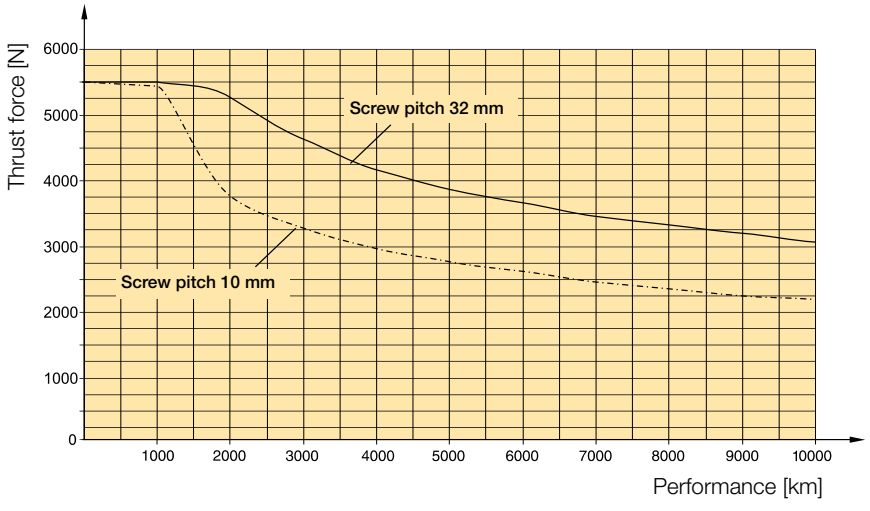
HMR-150 Performance / thrust force



HMR-180 Performance / thrust force



HMR-240 Performance / thrust force

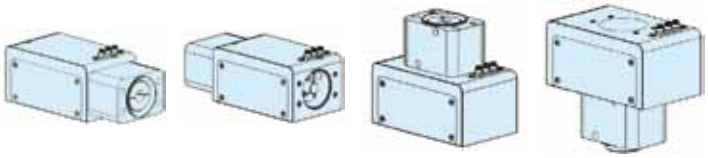


Belt Drive

Size 150, 180, 240 mm

HMRB Series

Description Motor mounting position



horizontal	upright
090° / 270°	000° / 180°
BD, DD	AP, CP, AD, CD

Type and orientation of the belt is given by the motor mounting position.

Technical Data HMRB

Production size			**HMRB15**	
Motor mounting position			090°/270°	000°/180°
Lead constant	$s_{lin.}$	[mm]	100	125
Max. speed	$v_{max.}$	[m/s]	5	
Max. acceleration	$a_{max.}$	[m/s²]	50	
Repeatability		[µm]	±50	
Max. order stroke		[mm]	6000	
Thrust force and torque				
Max. thrust force	$F_{Amax.}$	[N]	1050	630
Max. torque on drive shaft	$M_{Amax.}$	[Nm]	17	13
No load torque	M_0	[Nm]	1.2	1.2
Production size			**HMRB18**	
Motor mounting position			090°/270°	000°/180°
Lead constant	$s_{lin.}$	[mm]	130	150
Max. speed	$v_{max.}$	[m/s]	5	
Max. acceleration	$a_{max.}$	[m/s²]	50	
Repeatability		[µm]	±50	
Max. order stroke		[mm]	6000	
Thrust force and torque				
Max. thrust force	$F_{Amax.}$	[N]	1300	1000
Max. torque on drive shaft	$M_{Amax.}$	[Nm]	27	24
No load torque	M_0	[Nm]	2.0	2.0
Production size			**HMRB24**	
Motor mounting position			090°/270°	000°/180°
Lead constant	$s_{lin.}$	[mm]	160	224
Max. speed	$v_{max.}$	[m/s]	5	
Max. acceleration	$a_{max.}$	[m/s²]	50	
Repeatability		[µm]	±50	
Max. order stroke		[mm]	6000	
Thrust force and torque				
Max. thrust force	$F_{Amax.}$	[N]	4000	3750
Max. torque on drive shaft	$M_{Amax.}$	[Nm]	101	134
No load torque	M_0	[Nm]	4.0	4.0

Belt Drive

Size 150, 180, 240 mm

HMRB Series

The permissible thrust force from the table is depending on speed level and order stroke length.

The minimum thrust force value must not be exceeded in the application.

Information:
Limiting the torque from the motor may avoid exceeding permitted thrust force.

Valid Action Forces HMRB

Version motor mounting position				
Product size			**HMRB15**	
Motor mounting position			**090°/270°**	**000°/180°**
Thrust force F_A corresponding to speed v	$F_{v<1}$	[N]	1050	630
	$F_{v<2}$	[N]	990	630
	$F_{v<3}$	[N]	930	630
	$F_{v<4}$	[N]	890	630
	$F_{v<5}$	[N]	840	630
Thrust force F_A corresponding to order stroke length 0S	$F_{A(OS<1000)}$	[N]	1050	630
	$F_{A(OS<2000)}$	[N]	820	490
	$F_{A(OS<3000)}$	[N]	570	340
	$F_{A(OS<4000)}$	[N]	445	265
	$F_{A(OS<5000)}$	[N]	365	215
	$F_{A(OS<6000)}$	[N]	305	185
Product size			**HMRB18**	
Motor mounting position			**090°/270°**	**000°/180°**
Thrust force F_A corresponding to speed v	$F_{v<1}$	[N]	1300	1000
	$F_{v<2}$	[N]	1300	1000
	$F_{v<3}$	[N]	1300	1000
	$F_{v<4}$	[N]	1300	1000
	$F_{v<5}$	[N]	1300	1000
Thrust force F_A corresponding to order stroke length 0S	$F_{A(OS<1000)}$	[N]	1300	1000
	$F_{A(OS<2000)}$	[N]	1000	775
	$F_{A(OS<3000)}$	[N]	710	550
	$F_{A(OS<4000)}$	[N]	550	430
	$F_{A(OS<5000)}$	[N]	450	350
	$F_{A(OS<6000)}$	[N]	380	295
Product size			**HMRB24**	
Motor mounting position			**090°/270°**	**000°/180°**
Thrust force F_A corresponding to speed v	$F_{v<1}$	[N]	4000	3750
	$F_{v<2}$	[N]	4000	3380
	$F_{v<3}$	[N]	3650	3140
	$F_{v<4}$	[N]	3370	2950
	$F_{v<5}$	[N]	3200	2800
Thrust force F_A corresponding to order stroke length 0S	$F_{A(OS<1000)}$	[N]	4000	3750
	$F_{A(OS<2000)}$	[N]	4000	3360
	$F_{A(OS<3000)}$	[N]	3370	2440
	$F_{A(OS<4000)}$	[N]	2860	1880
	$F_{A(OS<5000)}$	[N]	2350	1540
	$F_{A(OS<6000)}$	[N]	2000	1300

Example:
HMRB18 with motor mounting position 1 (090° front), speed v = 2 m/s (F = 710 N) and order stroke length OS (F = 1.088 N).
The maximum permissible thrust force F = 710 N must not be exceeded.

Protection Class

HMR Series

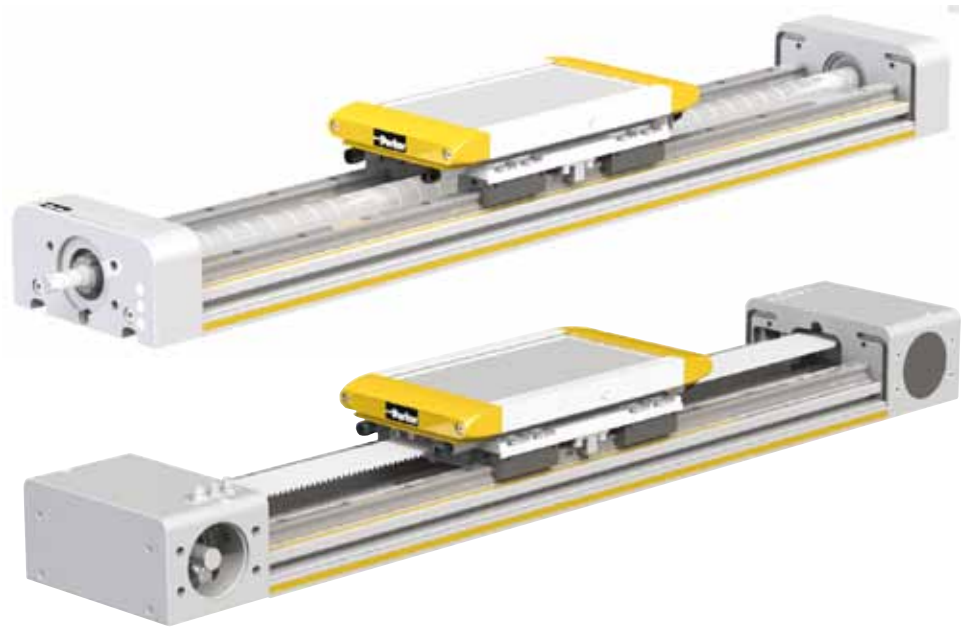
Versions:

IP20 - without cover

IP54 - with cover

HMR got developed for various environment conditions.
The basic design has an IP20 protection class.
HMR can be equipped with a cover to correspond to an IP54 protection class if a higher rating is required.

Version - Protected Class IP20



Version - Protected Class IP54

Impact Protection

HMR Series

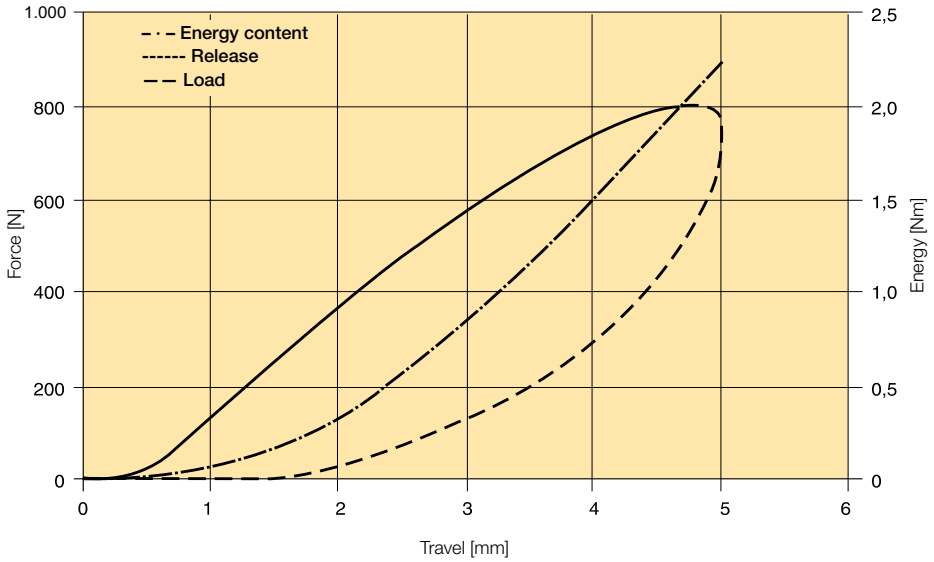
HMR can be equipped with impact protection. The mounted structure shock absorbers can compensate the energy released by unintentional impact and afford protection against mechanical damage.

Two structure shock absorbers are fitted to each side of the carriage prior to delivery.

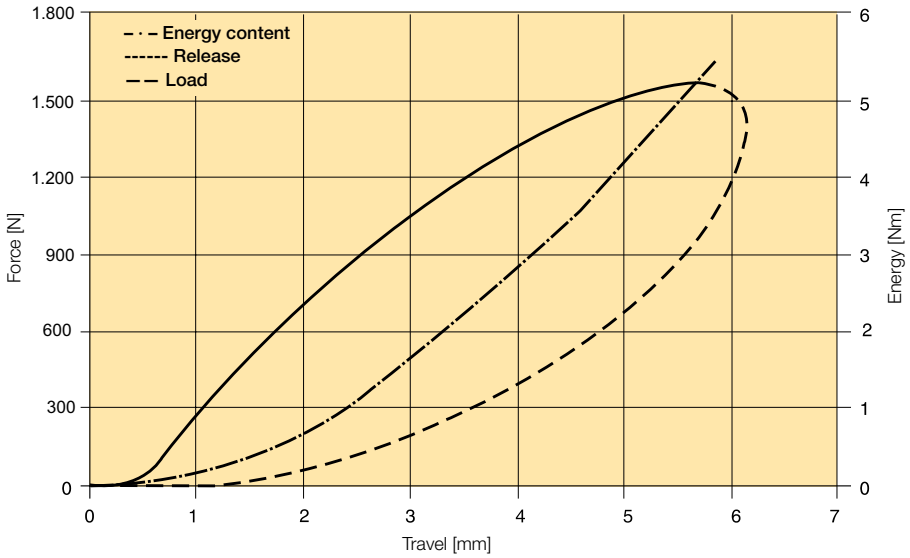
Shock absorbers for impact protection

Product size	HMRx15	HMRx18	HMRx24
Shock absorber	TA12-5	TA17-7	TA17-7
Energy absorption	3.0 Nm	8.5 Nm	8.5 Nm
Maximum stroke	5.0 mm	7.0 mm	7.0 mm

Distance-force and energy-distance characteristic curve (dynamic) – production size HMR-145



Distance-force and energy-distance characteristic curve (dynamic) – production size HMR-175, HMR-225

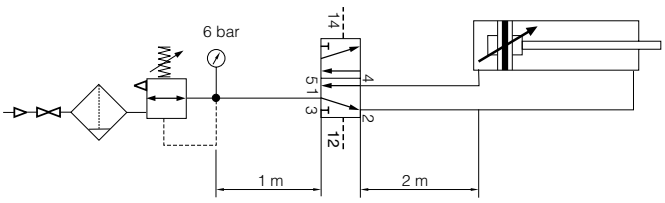


Valves

Choice of components for air supply to cylinders

In the chart below can you find the suitable valves, tubes etc. for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than in the chart. The table is based on a maximum cylinder speed of 0,5m/s.

Following data is valid:
Supply pressure: min 7,0 bar
Regulator pressure setting: 6,0 bar
Pipe length between air treatment unit and valve: max 1 m
Pipe length between valve and cylinder : max 2 m
The table is made for a cylinder speed max 0,5 m/s



Cylinder														
Cylinder diameter mm	Ø10	Ø12	Ø16	Ø20	Ø25	Ø32	Ø40	Ø50	Ø63	Ø80	Ø100	Ø125	Ø160	Ø200
Cylinder ISO connection	M5	M5	M5	G1/8	G1/8	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2	G1/2	G3/4	G3/4
Tube														
Tube diameter mm Ext / Int	4 / 2.7	4 / 2.7	4 / 2.7	6 / 4	6 / 4	6 / 4	8 / 6	8 / 6 10 / 8	10 / 8	12 / 9 14 / 11	12 / 9	16 / 13	18 / 15	22 / 16
FRL units														
Global P31														
Global P32														
Global P33														
Valves														
4mm inst. fitting valve														
M5 valve														
6mm inst. fitting valve														
1/8 valve														
1/4 valve														
3/8 valve														
1/2 valve														

Possible Recommended Cylinder speed < 0,5 m/s Not recommended

Viking Lite

rust and corrosion resistant, high reliability with flexible installation

Rust and corrosion resistant designs.
Viking Lite valves are made of anodized aluminium, for good corrosion resistance. The smooth design, with no dirt-collecting pockets, makes the valve suitable for most environments.

High reliability
Viking Lite valves easily comply with the requirements for the component reliability in accordance with EU Machinery Directive standards EN292-2 and EN983. The valves are designed for use with or without supplementary lubrication.

Compact installation dimensions - flexible installation
Compact dimensions direct body porting and integral mounting holes are all features of the Viking Lite range. In addition to single valve installation, the Viking Lite valves may be installed on manifolds so that the valves have a common supply and manifolded exhausts.

The Viking Lite valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

Designed to operate with pressures up to 10 bar in temperatures -10°C to + 50°C.

- 3 sizes: G1/8, G1/4 and G3/8.
- Large flow capacity with short change-over times.
- Low change over pressure.
- Dynamic bi-directional spool seals.
- Do not require lubrication in operation but can also be installed in systems that are lubricated.

Operating information

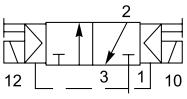
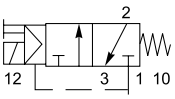
	P2L-AZ	P2L-BZ	P2L-CZ
Port size:	G1/8	G1/4	G3/8
Working pressure:	10 bar	10 bar	10 bar
Working temperature	-10 °C to +50 °C		
Flow (Qmax);	15,6 l/s	37,8 l/s	68,3 l/s

For more information see www.parker.com/euro_pneumatic

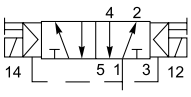
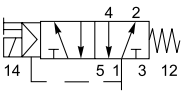
Solenoid operated directional control valves

Internal supply to solenoid valve(s) via port 1.

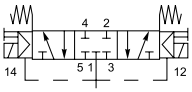
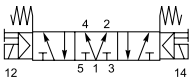
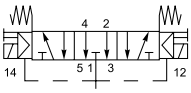
3/2 valves, internal air, standard temperature

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8	Electric signal	Electric signal	1,5	10/10	0,18	**P2LAZ311EENDCN**	**P2LAZ311EENDCB49**
	G1/4			1,5	12/12	0,18	**P2LBZ312EENDCN**	**P2LBZ312EENDCB49**
	G3/8			1,5	17/17	0,36	**P2LCZ313EENDCN**	**P2LCZ313EENDCB49**
	G1/8	Electric signal	Spring	3,0	15/35	0,16	**P2LAZ311ESNDCN**	**P2LAZ311ESNDCB49**
	G1/4			3,0	18/45	0,16	**P2LBZ312ESNDCN**	**P2LBZ312ESNDCB49**
	G3/8			3,0	27/75	0,35	**P2LCZ313ESNDCN**	**P2LCZ313ESNDCB49**

5/2 valves, internal air, standard temperature

Symbol	Size	Actuation	Return	Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8	Electric signal	Electric signal	1,5	10/10	0,19	**P2LAZ511EENDCN**	**P2LAZ511EENDCB49**
	G1/4			1,5	12/12	0,21	**P2LBZ512EENDCN**	**P2LBZ512EENDCB49**
	G3/8			1,5	17/17	0,44	**P2LCZ513EENDCN**	**P2LCZ513EENDCB49**
	G1/8	Electric signal	Spring	3,0	15/35	0,17	**P2LAZ511ESNDCN**	**P2LAZ511ESNDCB49**
	G1/4			3,0	18/45	0,20	**P2LBZ512ESNDCN**	**P2LBZ512ESNDCB49**
	G3/8			3,0	27/75	0,43	**P2LCZ513ESNDCN**	**P2LCZ513ESNDCB49**

5/3 valves, internal air, standard temperature

Symbol	Size	Actuation		Min Operating Pressure (bar)	Changeover time (ms) at 6 bar @20°C actua./return	Weight Kg	Order code Without coil	Order code With 24V DC (22mm coil)
	G1/8		Self centring	3,0	18/40	0,26	**P2LAZ611EENDCN**	**P2LAZ611EENDCB49**
	G1/4	Electric/Electric	Closed	3,0	22/55	0,28	**P2LBZ612EENDCN**	**P2LBZ612EENDCB49**
	G3/8		Centre	3,0	30/90	0,60	**P2LCZ613EENDCN**	**P2LCZ613EENDCB49**
	G1/8		Self centring	3,0	18/40	0,26	**P2LAZ711EENDCN**	**P2LAZ711EENDCB49**
	G1/4	Electric/Electric	Presurised	3,0	22/45	0,28	**P2LBZ712EENDCN**	**P2LBZ712EENDCB49**
	G3/8		Centre	3,0	30/90	0,60	**P2LCZ713EENDCN**	**P2LCZ713EENDCB49**
	G1/8		Self centring	3,0	18/40	0,26	**P2LAZ811EENDCN**	**P2LAZ811EENDCB49**
	G1/4	Electric/Electric	Vented	3,0	22/45	0,28	**P2LBZ812EENDCN**	**P2LBZ812EENDCB49**
	G3/8		Centre	3,0	30/90	0,60	**P2LCZ813EENDCN**	**P2LCZ813EENDCB49**

Note: All valves may be ordered with non locking manual override, replacing

...CN with **...BN**

...CB49 with **...BB49**

Viking Lite

Available in boxed quantities of 25

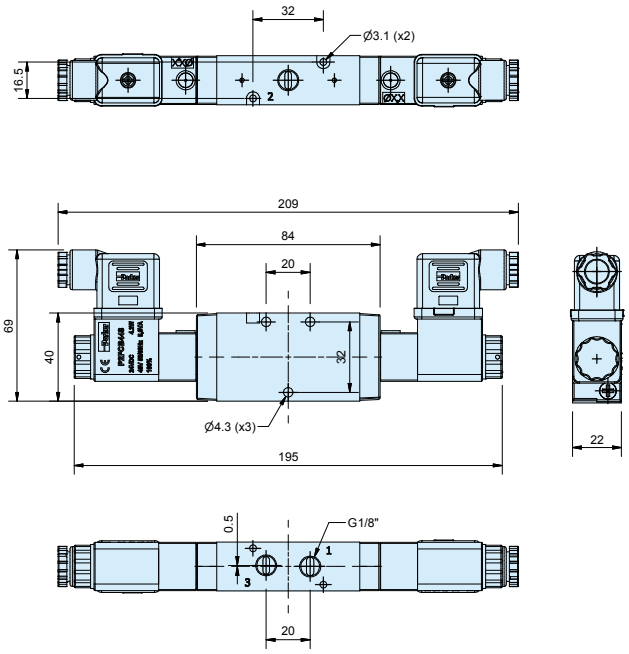
The Viking Lite valve is available in boxed quantities of 25 combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

5/2 valves, internal air, standard temperature

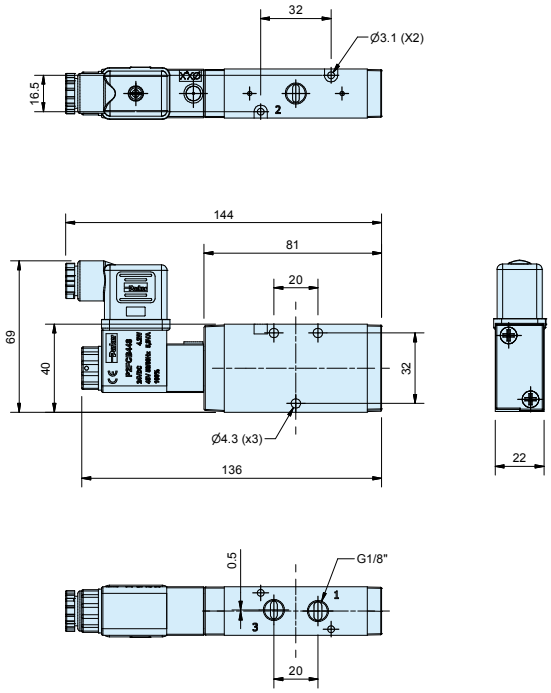
Size	Actuation	Return	Order code Without solenoid	Order code With 24V DC (22mm coil)
G1/8 G1/4	Electric signal	Electric signal	**P2LAZ511EENDCNQ25** **P2LBZ512EENDCNQ25**	**P2LAZ511EENDCB49Q25** **P2LBZ512EENDCB49Q25**
G1/8 G1/4	Electric signal	Spring	**P2LAZ511ESNDCNQ25** **P2LBZ512ESNDCNQ25**	**P2LAZ511ESNDCB49Q25** **P2LBZ512ESNDCB49Q25**

Dimensions

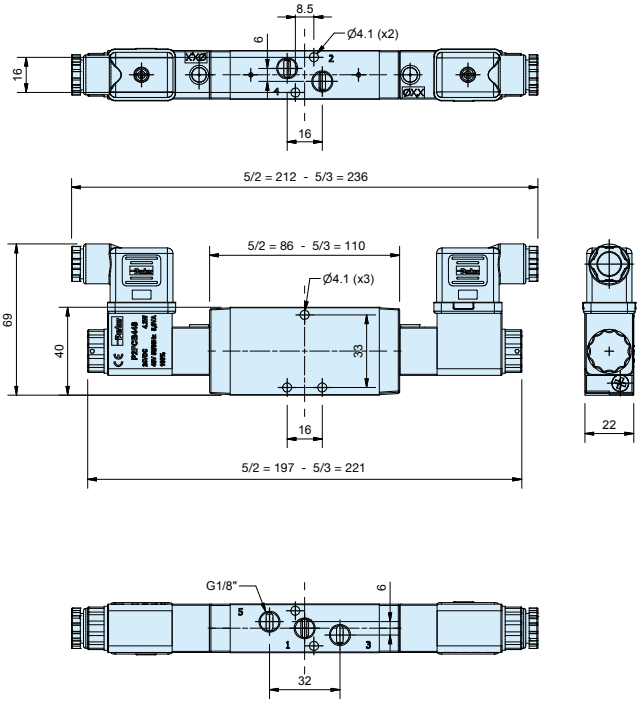
P2LAZ 3/2
Solenoid / Solenoid



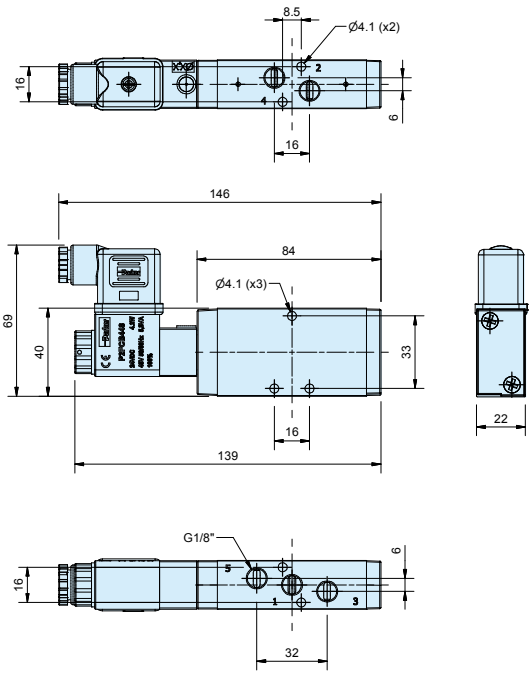
P2LAZ 3/2
Solenoid / Spring



P2LAZ 5/2 and 5/3
Solenoid / Solenoid



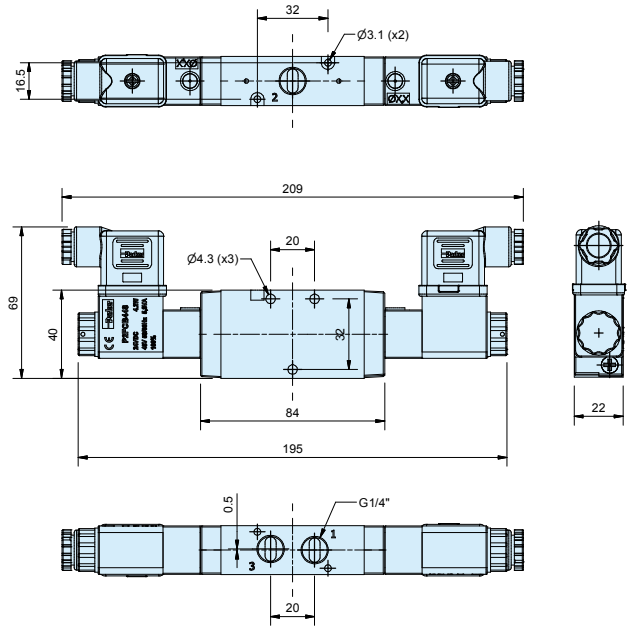
P2LAZ 5/2
Solenoid / Spring



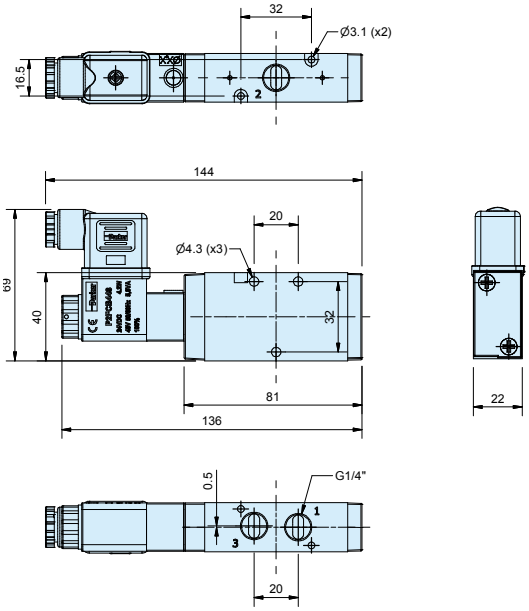
Solenoid valves
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

Dimensions

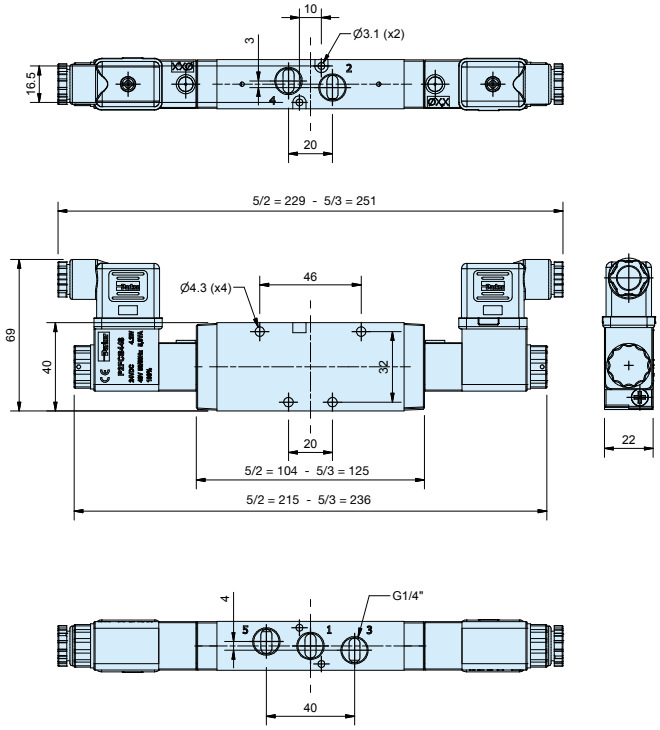
P2LBZ 3/2
Solenoid / Solenoid



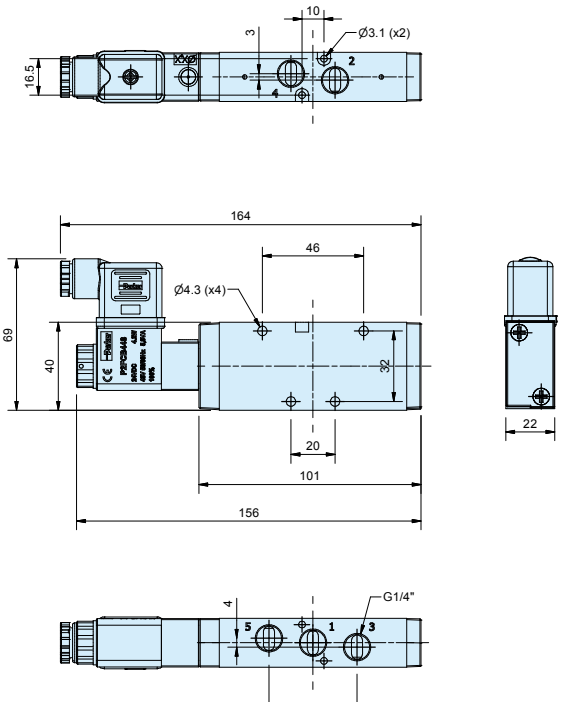
P2LBZ 3/2
Solenoid / Spring



P2LBZ 5/2 and 5/3
Solenoid / Solenoid



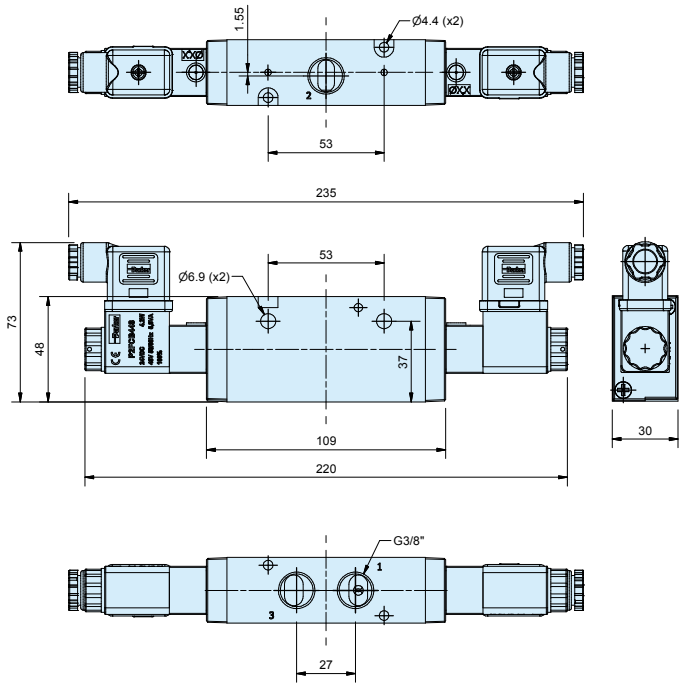
P2LBZ 5/2
Solenoid / Spring



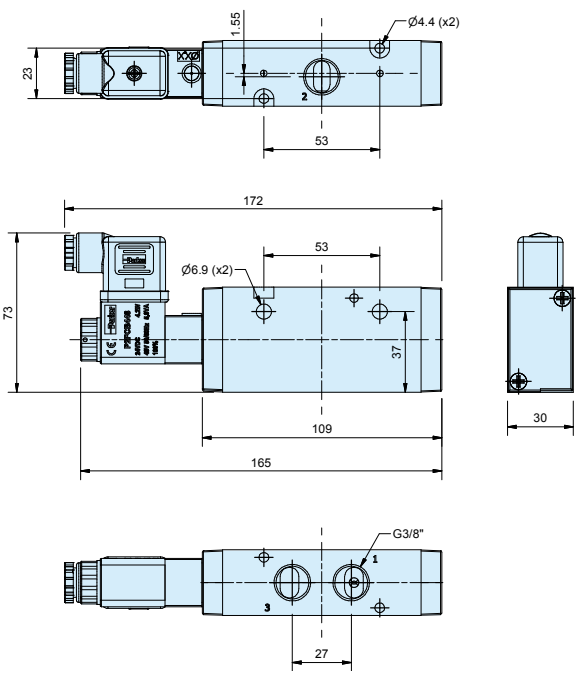
Solenoid valves
Solenoid valves and cable plugs must be ordered separately. One pilot valve is required for each E (NDCN only) in the valve order code.

Dimensions

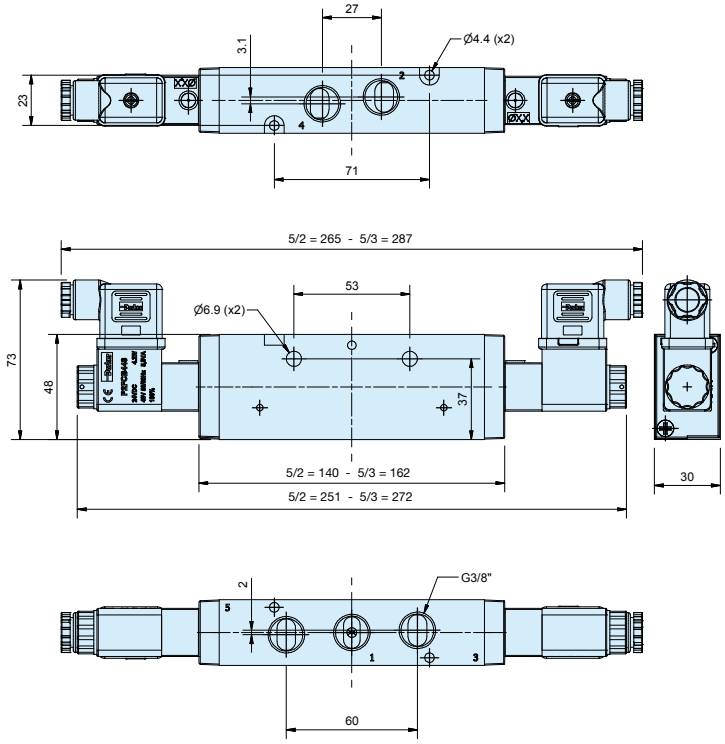
P2LCZ 3/2
Solenoid / Solenoid



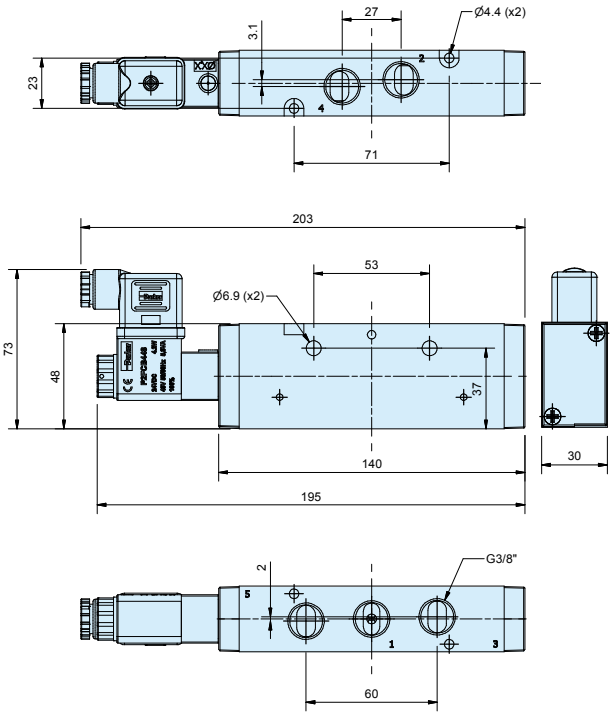
P2LCZ 3/2
Solenoid / Spring



P2LCZ 5/2 and 5/3
Solenoid / Solenoid



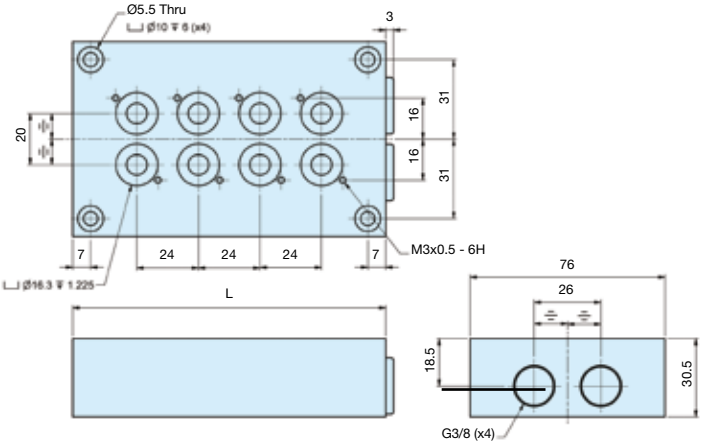
P2LCZ 5/2
Solenoid / Spring



Accessories	Type P2LA / P2LB 3/2 valves	Weight kg	Order code
	Manifold bar, P2LB incl. fasteners and O-ring. G3/8		
	For 2 valves	0,38	**91213202SXZ**
	For 4 valves	0,64	**91213204SXZ**
	For 6 valves	0,89	**91213206SXZ**
	For 8 valves	1,15	**91213208SXZ**
	For 10 valves	1,40	**91213210SXZ**
	Blanking plate for Manifold bar	0,10	**912132BPSXZ**

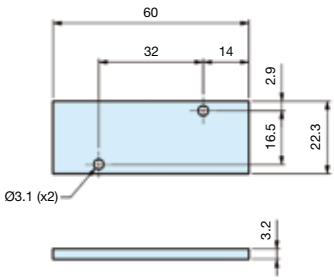
Dimensions

Manifold bar



No. of valves	L mm
2	74
4	122
6	170
8	218
10	266

Blanking plate for manifold bar, P2LB

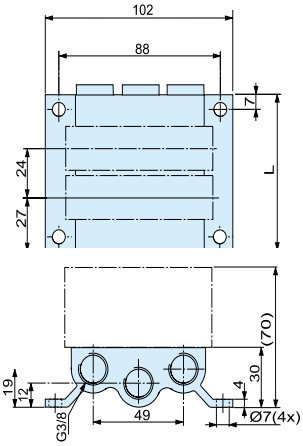


Accessories	Type P2LA 5/2 valves	Weight kg	Order code
	Manifold bar, P2LA including seals, mounting screws. G3/8		
	For 4 valves	0,48	**9121658075**
	For 6 valves	0,63	**9121658076**
	For 8 valves	0,80	**9121658077**
	For 10 valves	0,98	**9121658078**
	For 12 valves	1,10	**9121658079**
	For 14 valves	1,23	**9121658099**
	Blanking plate, P2LA for Manifold bar	0,05	**9121658063**
	Pressure bar, P2LA for common air supply incl. O-rings and mounting screws. G1/4		
	For 2 valves	0,13	**9121658070**
	For 4 valves	0,20	**9121658071**
	For 6 valves	0,26	**9121658072**
	For 8 valves	0,33	**9121658073**
	Blanking plate, P2LA for Pressure bar	0,05	**9121658074**
	Assembly screws, P2LA in stainless steel for valve	0,02	**9121658043**
	Assembly screws, P2LA in stainless steel for blanking plate	0,01	**9121658044**
	O-ring kit, P2LA O-rings between valve and manifold bar/Pressure bar	0,01	**9121658046**

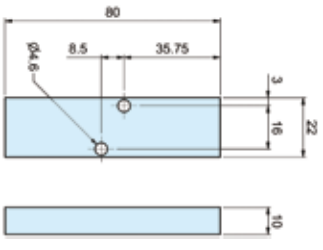
Dimensions

Manifold bar, P2LA

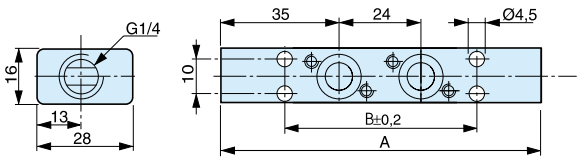
No. of valves	L mm
4	126
6	174
8	222
10	270
12	318
14	366



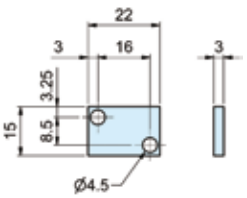
Blanking plate for manifold bar, P2LA



Pressure bar, P2LA



Blanking plate for pressure bar, P2LA

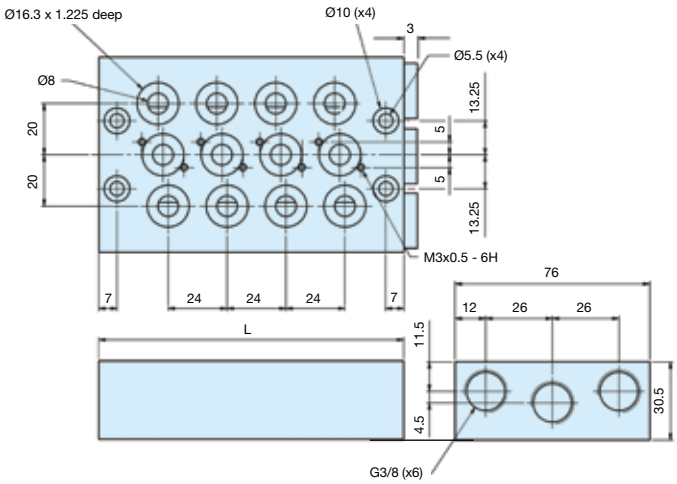


No. of valves	A mm	B mm
2	94	56
4	142	104
6	190	152
8	238	200

Accessories	Type P2LB 5/2 valves	Weight kg	Order code
	Manifold bar, P2LB incl. fasteners and O-ring. G3/8		
	For 2 valves	0,69	**9121594805X**
	For 4 valves	1,13	**9121594806X**
	For 6 valves	1,56	**9121594807X**
	For 8 valves	2,00	**9121594808X**
	For 10 valves	2,45	**9121594812X**
	Blanking plate, P2LB for Manifold bar	0,10	**9121594809X**
	Pressure bar, P2LB for common air supply incl. O-rings and mounting screws. G3/8		
	For 2 valves	0,38	**9127113301X**
	For 4 valves	0,53	**9127113302X**
	For 6 valves	0,68	**9127113303X**
	For 8 valves	0,83	**9127113304X**
	For 10 valves	0,99	**9127113305X**
	Blanking plate P2LB for Pressure bar. G1/4	0,02	**9127113306X**

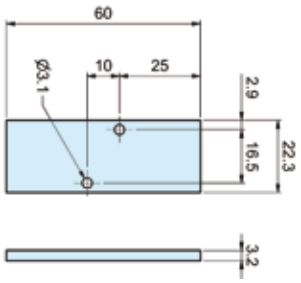
Dimensions

Manifold bar, P2LB

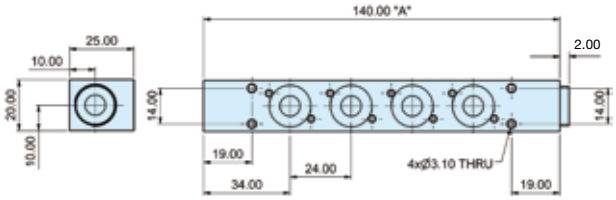


No. of valves	L mm
2	74
4	122
6	170
8	218
10	266

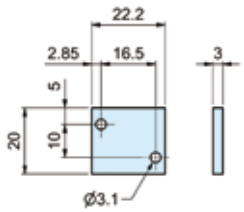
Blanking plate for manifold bar, P2LB



Pressure bar, P2LB



Blanking plate for pressure bar, P2LB



No. of valves	A mm
2	92
4	140
6	188
8	236
10	284

22mm solenoid operator part numbers and spares

Solenoid coils for 22mm solenoid operators

Voltage	Weight (Kg)	Order code Form B
12V 60Hz	0.093	**P2FCB340**
24V 50/60Hz	0.093	**P2FCB342**
12V DC	0.093	**P2FCB345**
24V DC	0.093	**P2FCB349**
48V DC	0.093	**P2FCB351**
110V/50Hz, 120V/60Hz	0.093	**P2FCB353**
230V/50Hz, 230V/60Hz	0.093	**P2FCB357**

Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

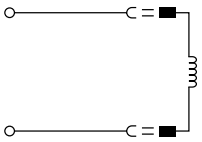
Order code
P2FNP

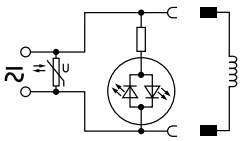
Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
P2FND

Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 22mm Industrial Form B
With standard screw	Standard IP65 without flying lead	**3EV10V10**
	With LED and protection 24V AC/DC	**3EV10V20-24**
	With LED and protection 110V AC	**3EV10V20-110**
	With LED and protection 230V AC	**3EV10V20-230**
With cable	24V AC/DC, 5m cable LED and protection IP65	**3EV10V20-24L5**
	110V AC/DC, 5m cable LED and protection IP65	**3EV10V20-110L5**
	230V AC, 5m cable LED and protection IP65	**3EV10V20-230L5**

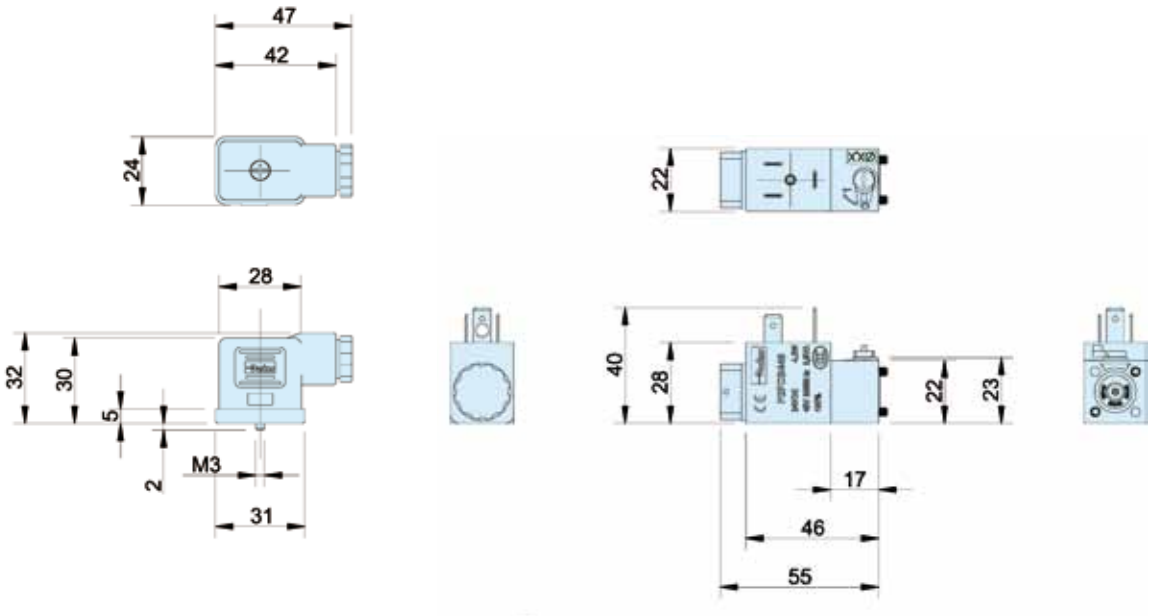




3EV10V10

3EV10V20-24	**3EV10V20-24L5**
3EV10V20-110	**3EV10V20-110L5**
3EV10V20-230	**3EV10V20-230L5**

Cable Plug Dimensions (mm)



Viking Xtreme

High performance directional control valves
G1/8 - G1/2 body ported

Extreme Environments

*Demand The **Viking Xtreme***

The Viking Xtreme valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

The 1/8 & 1/4 sizes are designed to operate with pressures up to 16 bar and the 3/8 & 1/2 sizes up to 12 bar, in ambient temperatures -40°C to + 60°C when fitted with suitable solenoid operators.

The Viking Xtreme valve range is robust, versatile and combines high performance with compact installation dimensions. Large flow capacity, short change-over times and low change-over pressure are important characteristics of this valve range.

- 4 sizes: G1/8, G1/4, G3/8 and G1/2.
- Wide operating temperature range
- Compact design with good corrosion resistance.
- Wide range of 5/2 and 5/3 versions.
- High and low temperature versions available for transport applications.
- Lever operated version.
- Twist operated version.

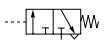
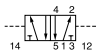
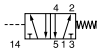
Operating information

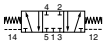
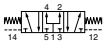
	P2L-AX	P2L-BX	P2L-CX	P2L-DX
Working pressure:	16 bar	16 bar	12 bar	12 bar
Working temperature, standard				
Air pilot solenoid		-40 °C to +60 °C		
Standard and food version		-10 °C to +50 °C		
Mobile & Lever operated version		-40 °C to +60 °C		
Flow (Qmax);	**P2L-AX**	**P2L-BX**	**P2L-CX**	**P2L-DX**
	19,0 l/s	38,0 l/s	72,0 l/s	78,0 l/s

For more information see www.parker.com/euro_pneumatic

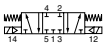
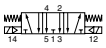
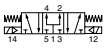
For ATEX specific products contact Sales Office

Pneumatically actuated 3/2, 5/2 and 5/3 valves

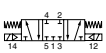
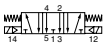
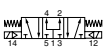
Symbol	Size	Actuator	Return	Order code
3/2 valves, temperature -40°C to +60°C				
	G1/8	Air pilot	Air pilot	**P2LAX311PP**
	G1/4			**P2LBX312PP**
	G3/8			**P2LCX313PP**
	G1/2			**P2LDX314PP**
	G1/8	Air pilot	Spring	**P2LAX311PS**
	G1/4			**P2LBX312PS**
	G3/8			**P2LCX313PS**
	G1/2			**P2LDX314PS**
5/2 valves, temperature -40°C to +60°C				
	G1/8	Air pilot	Air pilot	**P2LAX511PP**
	G1/4			**P2LBX512PP**
	G3/8			**P2LCX513PP**
	G1/2			**P2LDX514PP**
	G1/8	Air pilot	Spring	**P2LAX511PS**
	G1/4			**P2LBX512PS**
	G3/8			**P2LCX513PS**
	G1/2			**P2LDX514PS**

Symbol	Size	Actuator	Return	Order code
5/3 valves, temperature -40°C to +60°C				
	G1/8	Air pilot	Air pilot	**P2LAX611PP**
	G1/4	Closed	Self	**P2LBX612PP**
	G3/8	centre	centring	**P2LCX613PP**
	G1/2			**P2LDX614PP**
	G1/8	Air pilot	Air pilot	**P2LAX811PP**
	G1/4	Vented	Self	**P2LBX812PP**
	G3/8	centre	centring	**P2LCX813PP**
	G1/2			**P2LDX814PP**
	G1/8	Air pilot	Air pilot	**P2LAX711PP**
	G1/4	Pressure	Self	**P2LBX712PP**
	G3/8	centre	centring	**P2LCX713PP**
	G1/2			**P2LDX714PP**

Electrically actuated 3/2, 5/2 and 5/3 valves - 15mm solenoid

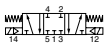
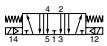
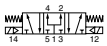
Symbol	Size	Actuator	Return	**Order code** 15mm solenoid with 24 VDC sol	**Order code** without 15mm solenoid
3/2 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX311EENXB549**	**P2LAX311EENXXX**
	G1/4			**P2LBX312EENXB549**	**P2LBX312EENXXX**
	G3/8			**P2LCX313EENXB549**	**P2LCX313EENXXX**
	G1/2			**P2LDX314EENXB549**	**P2LDX314EENXXX**
	G1/8	Solenoid	Spring	**P2LAX311ESNXB549**	**P2LAX311ESNXXX**
	G1/4			**P2LBX312ESNXB549**	**P2LBX312ESNXXX**
	G3/8			**P2LCX313ESNXB549**	**P2LCX313ESNXXX**
	G1/2			**P2LDX314ESNXB549**	**P2LDX314ESNXXX**
5/2 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX511EENXB549**	**P2LAX511EENXXX**
	G1/4			**P2LBX512EENXB549**	**P2LBX512EENXXX**
	G3/8			**P2LCX513EENXB549**	**P2LCX513EENXXX**
	G1/2			**P2LDX514EENXB549**	**P2LDX514EENXXX**
	G1/8	Solenoid	Spring	**P2LAX511ESNXB549**	**P2LAX511ESNXXX**
	G1/4			**P2LBX512ESNXB549**	**P2LBX512ESNXXX**
	G3/8			**P2LCX513ESNXB549**	**P2LCX513ESNXXX**
	G1/2			**P2LDX514ESNXB549**	**P2LDX514ESNXXX**
5/3 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX611EENXB549**	**P2LAX611EENXXX**
	G1/4	Closed	Self	**P2LBX612EENXB549**	**P2LBX612EENXXX**
	G3/8	centre	centring	**P2LCX613EENXB549**	**P2LCX613EENXXX**
	G1/2			**P2LDX614EENXB549**	**P2LDX614EENXXX**
	G1/8	Solenoid	Solenoid	**P2LAX811EENXB549**	**P2LAX811EENXXX**
	G1/4	Vented	Self	**P2LBX812EENXB549**	**P2LBX812EENXXX**
	G3/8	centre	centring	**P2LCX813EENXB549**	**P2LCX813EENXXX**
	G1/2			**P2LDX814EENXB549**	**P2LDX814EENXXX**
	G1/8	Solenoid	Solenoid	**P2LAX711EENXB549**	**P2LAX711EENXXX**
	G1/4	Pressure	Self	**P2LBX712EENXB549**	**P2LBX712EENXXX**
	G3/8	centre	centring	**P2LCX713EENXB549**	**P2LCX713EENXXX**
	G1/2			**P2LDX714EENXB549**	**P2LDX714EENXXX**

Electrically actuated 3/2, 5/2 and 5/3 valves - 22mm solenoid

Symbol	Size	Actuator	Return	**Order code** 22mm solenoid 24 VDC	**Order code** Without solenoid coil
3/2 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX311EENDDB49**	**P2LAX311EENDDN**
	G1/4			**P2LBX312EENDDB49**	**P2LBX312EENDDN**
	G3/8			**P2LCX313EENDDB49**	**P2LCX313EENDDN**
	G1/2			**P2LDX314EENDDB49**	**P2LDX314EENDDN**
	G1/8	Solenoid	Spring	**P2LAX311ESNDDB49**	**P2LAX311ESNDDN**
	G1/4			**P2LBX312ESNDDB49**	**P2LBX312ESNDDN**
	G3/8			**P2LCX313ESNDDB49**	**P2LCX313ESNDDN**
	G1/2			**P2LDX314ESNDDB49**	**P2LDX314ESNDDN**
5/2 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX511EENDDB49**	**P2LAX511EENDDN**
	G1/4			**P2LBX512EENDDB49**	**P2LBX512EENDDN**
	G3/8			**P2LCX513EENDDB49**	**P2LCX513EENDDN**
	G1/2			**P2LDX514EENDDB49**	**P2LDX514EENDDN**
	G1/8	Solenoid	Spring	**P2LAX511ESNDDB49**	**P2LAX511ESNDDN**
	G1/4			**P2LBX512ESNDDB49**	**P2LBX512ESNDDN**
	G3/8			**P2LCX513ESNDDB49**	**P2LCX513ESNDDN**
	G1/2			**P2LDX514ESNDDB49**	**P2LDX514ESNDDN**
5/3 valves, internal air, standard temperature					
	G1/8	Solenoid	Solenoid	**P2LAX611EENDDB49**	**P2LAX611EENDDN**
	G1/4	Closed	Self	**P2LBX612EENDDB49**	**P2LBX612EENDDN**
	G3/8	centre	centring	**P2LCX613EENDDB49**	**P2LCX613EENDDN**
	G1/2			**P2LDX614EENDDB49**	**P2LDX614EENDDN**
	G1/8	Solenoid	Solenoid	**P2LAX811EENDDB49**	**P2LAX811EENDDN**
	G1/4	Vented	Self	**P2LBX812EENDDB49**	**P2LBX812EENDDN**
	G3/8	centre	centring	**P2LCX813EENDDB49**	**P2LCX813EENDDN**
	G1/2			**P2LDX814EENDDB49**	**P2LDX814EENDDN**
	G1/8	Solenoid	Solenoid	**P2LAX711EENDDB49**	**P2LAX711EENDDN**
	G1/4	Pressure	Self	**P2LBX712EENDDB49**	**P2LBX712EENDDN**
	G3/8	centre	centring	**P2LCX713EENDDB49**	**P2LCX713EENDDN**
	G1/2			**P2LDX714EENDDB49**	**P2LDX714EENDDN**

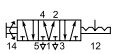
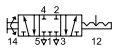
Electrically actuated 3/2, 5/2 and 5/3 - Xtreme duty 16 bar - 40°C to +60°C.

P2LAX/P2LBX 16 bar and P2LCX/P2LDX 12 bar

Symbol	Size	Actuator	Return	**Order code** 22mm solenoid 24 VDC	**Order code** Without solenoid coil
3/2 valves, internal air, low temperature					
	G1/8	Solenoid	Solenoid	**P2LAX311EEHDDB49**	**P2LAX311EEHDDN**
	G1/4		Low temp.	**P2LBX312EEHDDB49**	**P2LBX312EEHDDN**
	G3/8			**P2LCX313EEHDDB49**	**P2LCX313EEHDDN**
	G1/2			**P2LDX314EEHDDB49**	**P2LDX314EEHDDN**
	G1/8	Solenoid	Spring	**P2LAX311ESHDDB49**	**P2LAX311ESHDDN**
	G1/4		Low temp.	**P2LBX312ESHDDB49**	**P2LBX312ESHDDN**
	G3/8			**P2LCX313ESHDDB49**	**P2LCX313ESHDDN**
	G1/2			**P2LDX314ESHDDB49**	**P2LDX314ESHDDN**
5/2 valves, internal air, low temperature					
	G1/8	Solenoid	Solenoid	**P2LAX511EEHDDB49**	**P2LAX511EEHDDN**
	G1/4		Low temp.	**P2LBX512EEHDDB49**	**P2LBX512EEHDDN**
	G3/8			**P2LCX513EEHDDB49**	**P2LCX513EEHDDN**
	G1/2			**P2LDX514EEHDDB49**	**P2LDX514EEHDDN**
	G1/8	Solenoid	Spring	**P2LAX511ESHDDB49**	**P2LAX511ESHDDN**
	G1/4		Low temp.	**P2LBX512ESHDDB49**	**P2LBX512ESHDDN**
	G3/8			**P2LCX513ESHDDB49**	**P2LCX513ESHDDN**
	G1/2			**P2LDX514ESHDDB49**	**P2LDX514ESHDDN**
5/3 valves, internal air, low temperature					
	G1/8	Solenoid	Solenoid	**P2LAX611EEHDDB49**	**P2LAX611EEHDDN**
	G1/4	Closed	Self	**P2LBX612EEHDDB49**	**P2LBX612EEHDDN**
	G3/8	centre	centring	**P2LCX613EEHDDB49**	**P2LCX613EEHDDN**
	G1/2			**P2LDX614EEHDDB49**	**P2LDX614EEHDDN**
	G1/8	Solenoid	Solenoid	**P2LAX811EEHDDB49**	**P2LAX811EEHDDN**
	G1/4	Vented	Self	**P2LBX812EEHDDB49**	**P2LBX812EEHDDN**
	G3/8	centre	centring	**P2LCX813EEHDDB49**	**P2LCX813EEHDDN**
	G1/2			**P2LDX814EEHDDB49**	**P2LDX814EEHDDN**
	G1/8	Solenoid	Solenoid	**P2LAX711EEHDDB49**	**P2LAX711EEHDDN**
	G1/4	Pressure	Self	**P2LBX712EEHDDB49**	**P2LBX712EEHDDN**
	G3/8	centre	centring	**P2LCX713EEHDDB49**	**P2LCX713EEHDDN**
	G1/2			**P2LDX714EEHDDB49**	**P2LDX714EEHDDN**

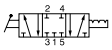
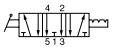
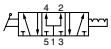
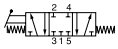
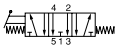
Pneumatic twist operated valves - Xtreme operating pressure / temperature

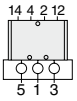
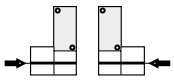
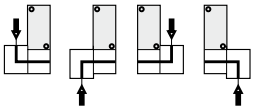
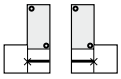
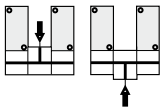
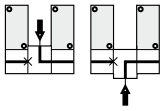
Max operating pressure 16 bar (A & B) 12 bar (C & D). temp range -40°C to +60°C

Symbol	Size	Actuation	Return	Changeover Angle	**Order code**
3/2 valves, temperature -40°C to +60°C					
	G1/4	Twist	Twist	45	**P2LBX312JJ**
5/2 valves, temperature -40°C to +60°C					
	G1/4	Twist	Twist	45	**P2LBX512JJ**
5/3 valves, temperature -40°C to +60°C					
	G1/4	Twist	Twist	54	**P2LBX71277**
	G1/4	Twist	Twist	54	**P2LBX61277**
	G1/4	Twist	Twist	54	**P2LBX81277**

Lever operated directional control valves

Max operating pressure 16 bar (A & B) 12 bar (C & D). temp range -40°C to +60°C

Symbol	Size	Actuation	Return	Changeover angle	Changeover Force	Type	Weight Kg	Order code
3/2 valves, standard temperature / Low temperature, lever 90° to ports								
	G1/8	Lever	Lever	20°	9 N	Std.	0,33	**P2LAX311VV**
	G1/4	Lever	Lever	20°	9 N	Std.	0,33	**P2LBX312VV**
	G3/8	Lever	Lever	32°	25 N	Std.	0,40	**P2LCX313VV**
	G1/2	Lever	Lever	32°	25 N	Std.	0,60	**P2LDX314VV**
	G1/8	Lever	Spring	20°	10N	Std.	0,33	**P2LAX311VS**
	G1/4	Lever	Spring	20°	10N	Std.	0,33	**P2LBX312VS**
	G3/8	Lever	Spring	32°	15 N	Std.	0,40	**P2LCX313VS**
	G1/2	Lever	Spring	32°	15 N	Std.	0,60	**P2LDX314VS**
5/2 valves, standard temperature / Low temperature, lever 90° to ports								
	G1/8	Lever	Lever	28°	9 N	Std.	0,18	**P2LAX511VV**
	G1/4	Lever	Lever	20°	9 N	Std.	0,33	**P2LBX512VV**
	G3/8	Lever	Lever	32°	25 N	Std.	0,40	**P2LCX513VV**
	G1/2	Lever	Lever	32°	25 N	Std.	0,60	**P2LDX514VV**
	G1/8	Lever	Spring	28°	10N	Std.	0,18	**P2LAX511VS**
	G1/4	Lever	Spring	20°	10N	Std.	0,33	**P2LBX512VS**
	G3/8	Lever	Spring	32°	15 N	Std.	0,40	**P2LCX513VS**
	G1/2	Lever	Spring	32°	15 N	Std.	0,60	**P2LDX514VS**
5/3 valves, low temperature, lever 90° to ports								
	G1/8	Lever	Lever	±14°	15 N	Std.	0,18	**P2LAX61122**
	G1/4	Closed centre position held in three positions		±12°	15 N	Std.	0,33	**P2LBX61222**
	G3/8			±16°	17 N	Std.	0,71	**P2LCX61322**
	G1/2			±16°	17 N	Std.	0,73	**P2LDX61422**
	G1/8	Lever	Lever	±14°	15 N	Std.	0,18	**P2LAX81122**
	G1/4	Exhausted centre position held in three positions		±12°	15 N	Std.	0,33	**P2LBX81222**
	G3/8			±16°	17 N	Std.	0,71	**P2LCX81322**
	G1/2			±16°	17 N	Std.	0,73	**P2LDX81422**
	G1/8	Lever	Lever	±14°	15 N	Std.	0,18	**P2LAX71122**
	G1/4	Pressure applied centre position held in three positions		±12°	15 N	Std.	0,33	**P2LBX71222**
	G3/8			±16°	17 N	Std.	0,71	**P2LCX71322**
	G1/2			±16°	17 N	Std.	0,73	**P2LDX71422**
	G1/8	Lever	Lever	±14°	16 N	Std.	0,18	**P2LAX61111**
	G1/4	Closed centre position Self centring		±12°	16 N	Std.	0,33	**P2LBX61211**
	G3/8			±16°	30 N	Std.	0,71	**P2LCX61311**
	G1/2			±16°	30 N	Std.	0,73	**P2LDX61411**
	G1/8	Lever	Lever	±14°	16 N	Std.	0,18	**P2LAX81111**
	G1/4	Exhausted centre position Self centring		±12°	16 N	Std.	0,33	**P2LBX81211**
	G3/8			±16°	30 N	Std.	0,71	**P2LCX81311**
	G1/2			±16°	30 N	Std.	0,73	**P2LDX81411**
	G1/8	Lever	Lever	±14°	16 N	Std.	0,18	**P2LAX71111**
	G1/4	Pressure applied centre position Self centring		±12°	16 N	Std.	0,33	**P2LBX71211**
	G3/8			±16°	30 N	Std.	0,71	**P2LCX71311**
	G1/2			±16°	30 N	Std.	0,73	**P2LDX71411**

Accessories P2LAX	Connection alternatives	Type	Weight kg	Order code
		**Multiple manifold** including seals, mounting screws, and guiding pins.	0,11	**9121658060**
		**Connection block S** including seals, mounting screws, and guiding pins. G1/4	0,15	**9121658064**
		**Connection block L** including seals, mounting screws, and guiding pins. G1/4	0,15	**9121658061**
		**End cover** including seals, mounting screws, and guiding pins.	0,16	**9121658066**
		**Intermediate block T** including seals, mounting screws, and guiding pins. G1/4	0,17	**9121658062**
		**Intermediate block L** including seals, mounting screws, and guiding pins. G1/4	0,17	**9121658065**
		Blanking plate including seals, mounting screws.	0,05	**9121658063**

Accessories P2LAX

	Type	Weight kg	Order code
	Manifold bar, P2LA including seals, mounting screws. G3/8		
	For 4 valves	0,48	**9121658075**
	For 6 valves	0,63	**9121658076**
	For 8 valves	0,80	**9121658077**
	For 10 valves	0,98	**9121658078**
	For 12 valves	1,10	**9121658079**
	For 14 valves	1,23	**9121658099**
	Blanking plate, P2LA for Manifold bar	0,05	**9121658063**
	Pressure bar, P2LA for common air supply incl. O-rings and mounting screws. G1/4		
	For 2 valves	0,13	**9121658070**
	For 4 valves	0,20	**9121658071**
	For 6 valves	0,26	**9121658072**
	For 8 valves	0,33	**9121658073**
	Blanking plate, P2LA for Pressure bar	0,05	**9121658074**
	Assembly screws, P2LA in stainless steel for valve	0,02	**9121658043**
	Assembly screws, P2LA in stainless steel for blanking plate	0,01	**9121658044**
	O-ring kit, P2LA O-rings between valve and manifold bar/ Pressure bar	0,01	**9121658046**

Accessories P2LBX

	Type	Weight kg	Order code
	Manifold bar, P2LB, (not for P2LB with external air supply to solenoid valves) incl. fasteners and O-ring. G3/8		
	For 2 valves	0,69	**9121594805X**
	For 4 valves	1,13	**9121594806X**
	For 6 valves	1,56	**9121594807X**
	For 8 valves	2,00	**9121594808X**
	For 10 valves	2,45	**9121594812X**
	Blanking plate, P2LB for Manifold bar	0,10	**9121594809X**
	Pressure bar, P2LB for common air supply incl. O-rings and banjo-bolts. G3/8		
	For 2 valves	0,38	**9127113301X**
	For 4 valves	0,53	**9127113302X**
	For 6 valves	0,68	**9127113303X**
	For 8 valves	0,83	**9127113304X**
	For 10 valves	0,99	**9127113305X**
	Blanking plug, P2LB for Pressure bar. G1/4	0,02	**9127113306X**

22mm solenoid operator part numbers and spares

Solenoid coils for 22mm solenoid operators

Voltage	Order code Form A	Weight (Kg)	Order code Form B	Weight (Kg)
12V 60Hz			**P2FCB440**	0.093
24V 50/60Hz			**P2FCB442**	0.093
12V DC			**P2FCB445**	0.093
12V DC Mobile	**P2FCA447**	0.17	**P2FCB447**	0.093
24v DC Mobile	**P2FCA448**	0.17	**P2FCB448**	0.093
24V DC			**P2FCB449**	0.093
24V DC Low power			**P2FCB249**	0.093
48V DC			**P2FCB451**	0.093
110V/50Hz, 120V/60Hz			**P2FCB453**	0.093
230V/50Hz, 230V/60Hz			**P2FCB457**	0.093

Note: Mobile solenoids are only suitable for Viking Xtreme valves with 'H' specification having 0,8/1,0 operator type P2FP13H4D

Spare Solenoid Nuts

Valves requiring captured exhaust should be fitted with plastic knurled nut

Order code
P2FNP

Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
P2FND

Spare Solenoid Operators

Solenoid pilot operator 22mm NC, Normal duty (Max Operating pressure 10bar, Temp –10°C to +50°C)

Order code (with locking bi-stable m/o)	Weight Kg	**Order code** (with Non-locking monostable m/o)	Weight Kg
P2FP13N4C	0.05kg	**P2FP13N4D**	0.05kg

Low power pilot operator NC, Normal duty (Max Operating pressure 10bar, Temp –10°C to +50°C)

Order code (with locking bi-stable m/o)	Weight Kg	**Order code** (with Non-locking monostable m/o)	Weight Kg
P2FP13N2C	0.05kg	**P2FP13N2D**	0.05kg

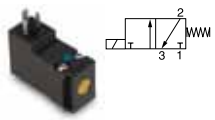
Solenoid pilot operator 22mm NC, Xtreme duty (Max Operating pressure 16bar, Temp –40°C to +60°C)

Order code (with Non-locking (monostable m/o)	Weight Kg
P2FP13H4D	0.05kg

Note.
Solenoid pilot operators are fitted to the Viking valve range. Order the above part numbers for spares. The operators are supplied with mounting screws and interface 'O' rings.
Coils and connectors must be ordered separately.

Solenoid Operators - Electrical connection EN175301-803 C/ISO15217 (Ex DIN 43650C)

Solenoids 15 mm NC, standard

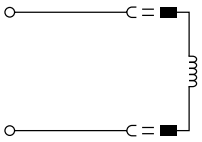


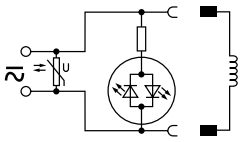
Voltage	Weight Kg	Order code Without manual override	Weight Kg	Order code Override, blue, non locking flush	Weight Kg	Order code Override, yellow, locking flush
12 VDC	0,038	**P2E-KV32B0**	0,038	**P2E-KV32B1**	0,038	**P2E-KV32B2**
24 VDC	0,038	**P2E-KV32C0**	0,038	**P2E-KV32C1**	0,038	**P2E-KV32C2**
48 VDC	0,038	**P2E-KV32D0**	0,038	**P2E-KV32D1**	0,038	**P2E-KV32D2**
24 VAC 50Hz	0,038	**P2E-KV31C0**	0,038	**P2E-KV31C1**	0,038	**P2E-KV31C2**
48 VAC 50/60Hz	0,038	**P2E-KV34D0**	0,038	**P2E-KV34D1**	0,038	**P2E-KV34D2**
115 VAC 50Hz/ 120 VAC 60Hz	0,038	**P2E-KV31F0**	0,038	**P2E-KV31F1**	0,038	**P2E-KV31F2**
230 VAC 50Hz/ 240 VAC 60Hz	0,038	**P2E-KV31J0**	0,038	**P2E-KV31J1**	0,038	**P2E-KV31J2**

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.

Solenoid Connectors / Cable Plugs EN175301-803

	Description	Order code 15mm Form C/ISO15217	Order code 22mm Industrial Form B
With large headed screw suitable for mounting in inaccessible or recess position	Standard IP65	**P8C-C**	
	24V DC LED and protection IP65	**P8C-C26C**	
	110V AC LED and protection IP65	**P8C-C21E**	
With standard screw	Standard IP65 without flying lead	**P8C-D**	**3EV10V10**
	With LED and protection 24V AC/DC	**P8C-D26C**	**3EV10V20-24**
	With LED and protection 110V AC	**P8C-D21E**	**3EV10V20-110**
	With LED and protection 230V AC		**3EV10V20-230**
With cable	Standard with 2m cable IP65	**P8L-C2**	
	Standard with 5m cable IP65	**P8L-C5**	
	24V AC/DC, 2m cable LED and protection IP65	**P8L-C226C**	
	24V AC/DC, 5m cable LED and protection IP65	**P8L-C526C**	**3EV10V20-24L5**
	24V AC/DC, 10m cable LED and protection IP65	**P8L-CA26C**	
	110V AC/DC, 2m cable LED and protection IP65	**P8L-C221E**	
	110V AC/DC, 5m cable LED and protection IP65	**P8L-C521E**	**3EV10V20-110L5**
	230V AC, 5m cable LED and protection IP65		**3EV10V20-230L5**



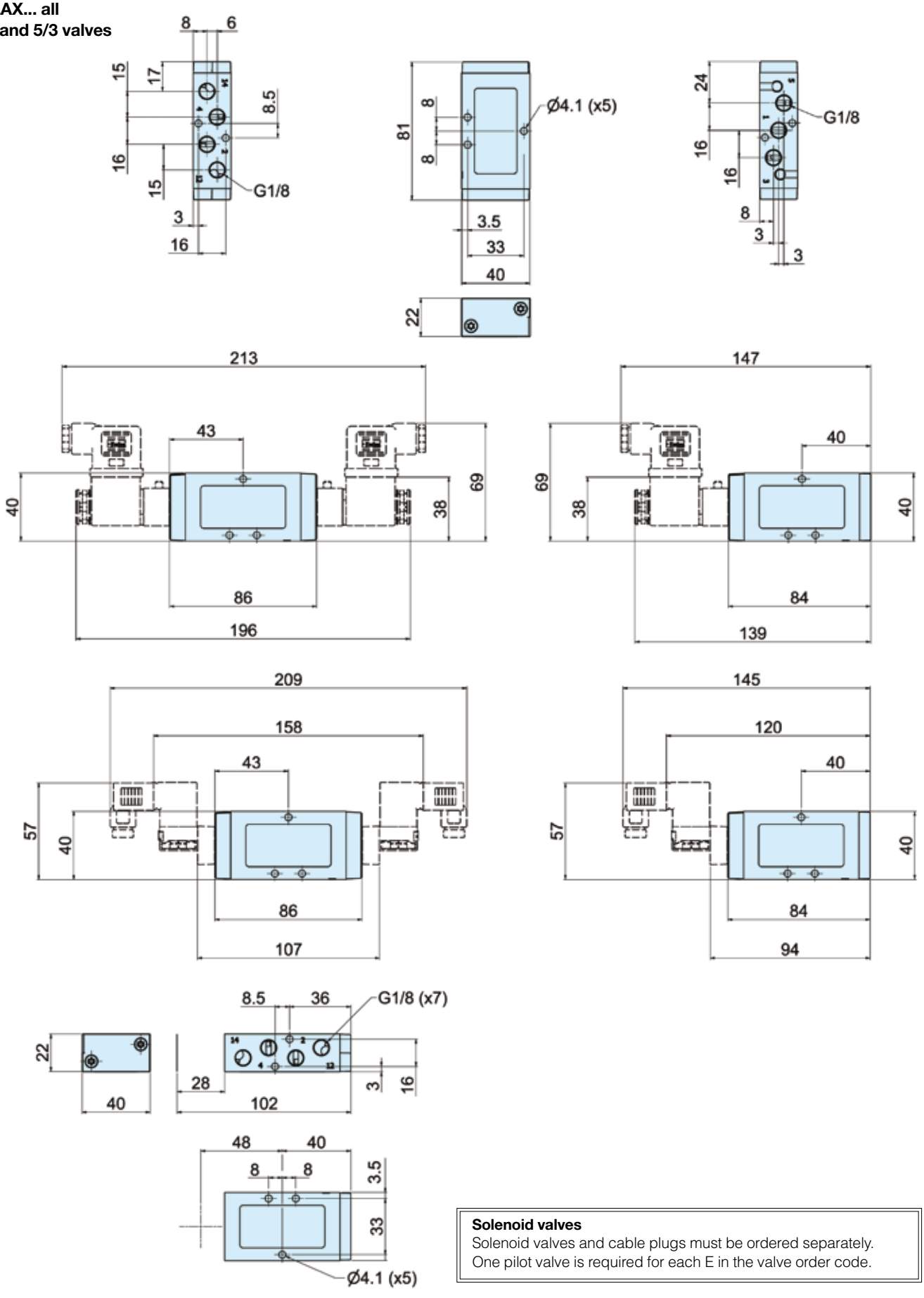


P8C-C
P8C-D
P8L-C2
P8L-C5
3EV10V10
3EV290V10

P8C-D26C	**P8L-C226C**
P8C-D21E	**P8L-C526C**
P8C-C26C	**P8L-CA26C**
P8C-C21E	**P8L-C221E**
	P8L-C521E
3EV10V20-24	**3EV10V20-24L5**
3EV10V20-110	**3EV10V20-110L5**
3EV10V20-230	**3EV10V20-230L5**

Dimensions

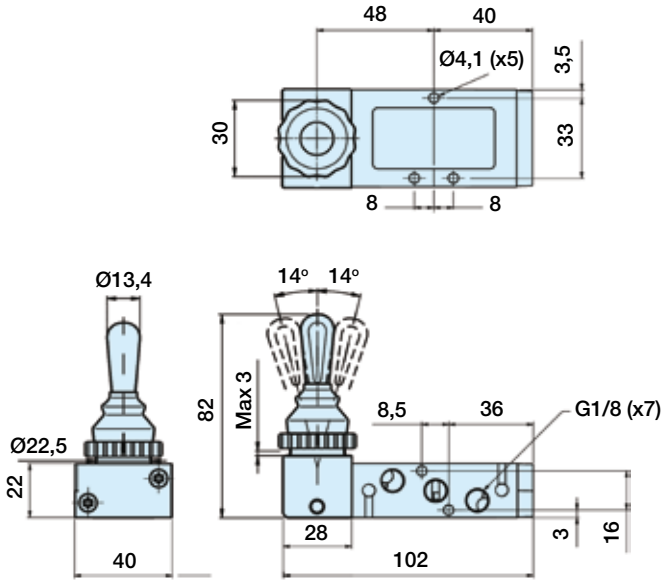
P2LAX... all
5/2 and 5/3 valves



Solenoid valves
Solenoid valves and cable plugs must be ordered separately.
One pilot valve is required for each E in the valve order code.

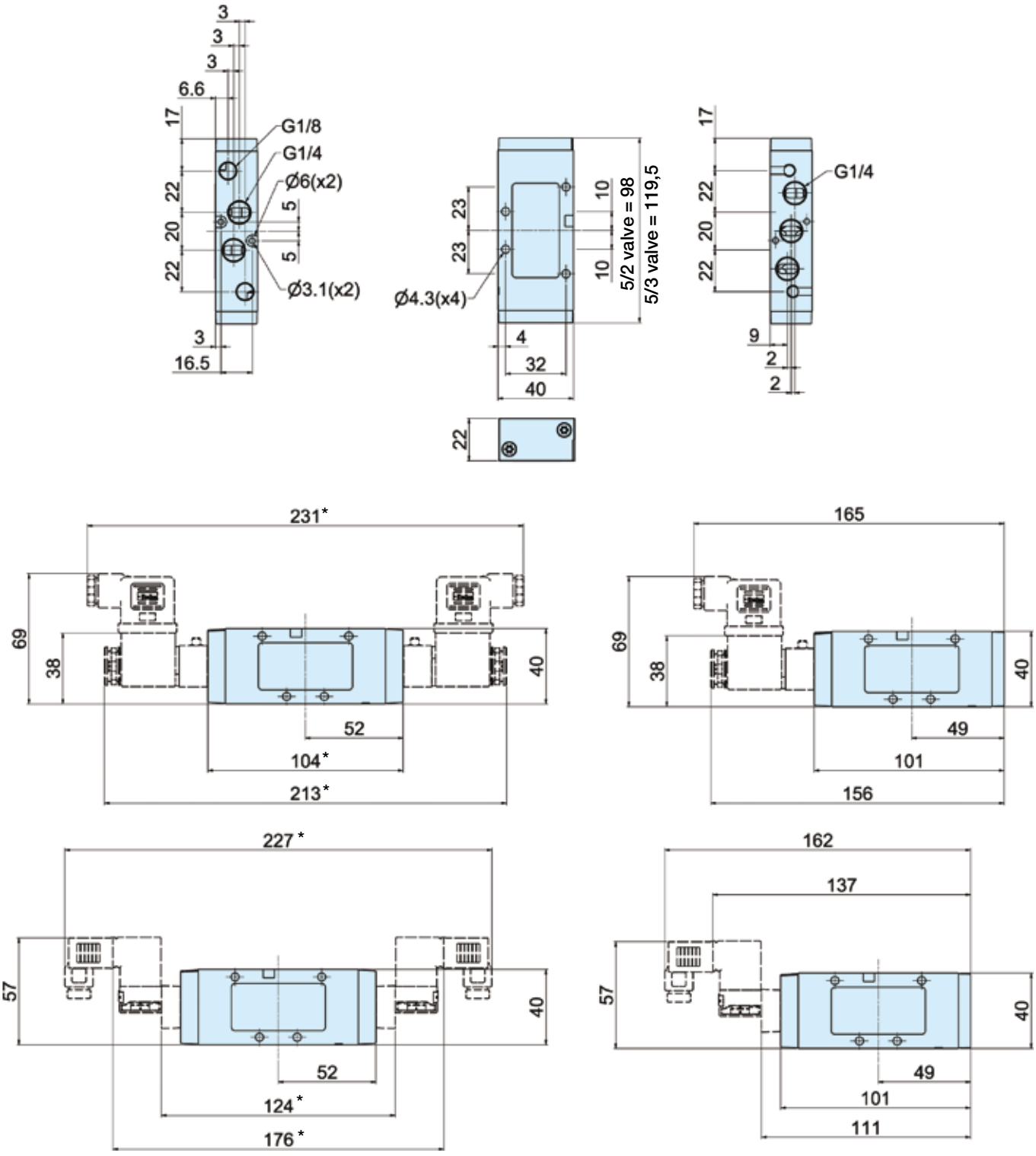
Dimensions

P2LAX - Lever operated directional control valves



Dimensions

P2LBX... all
5/2 and 5/3 valves

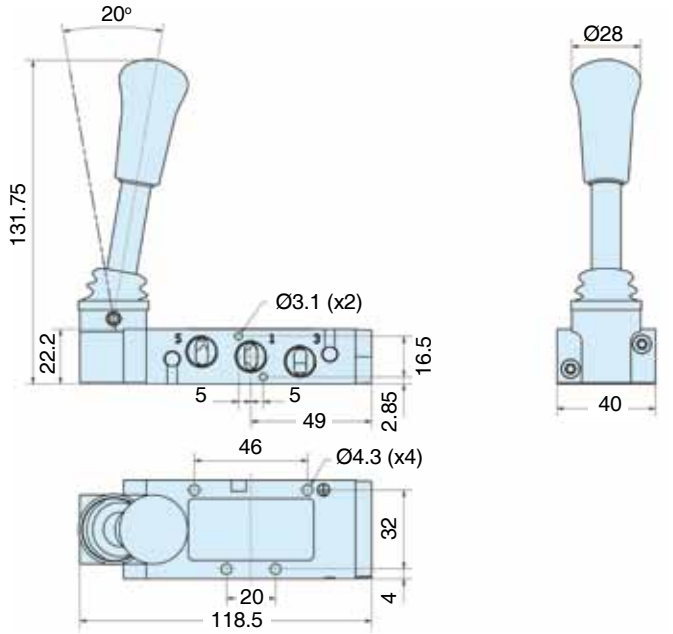


*** Note:** 5/3 valves - add 21.5mm

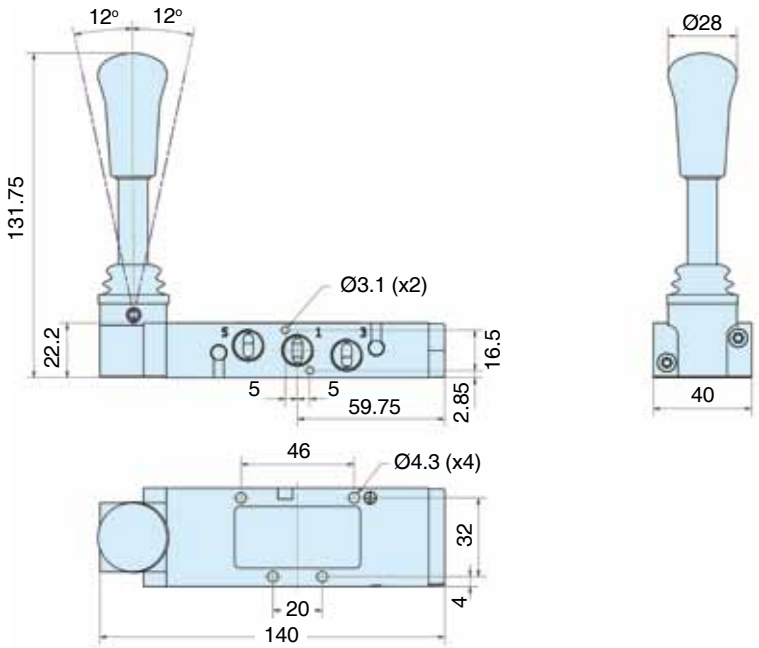
Solenoid valves
Solenoid valves and cable plugs must be ordered separately.
One pilot valve is required for each E in the valve order code.

Dimensions

P2LBX - 5/2 Lever operated directional control valves

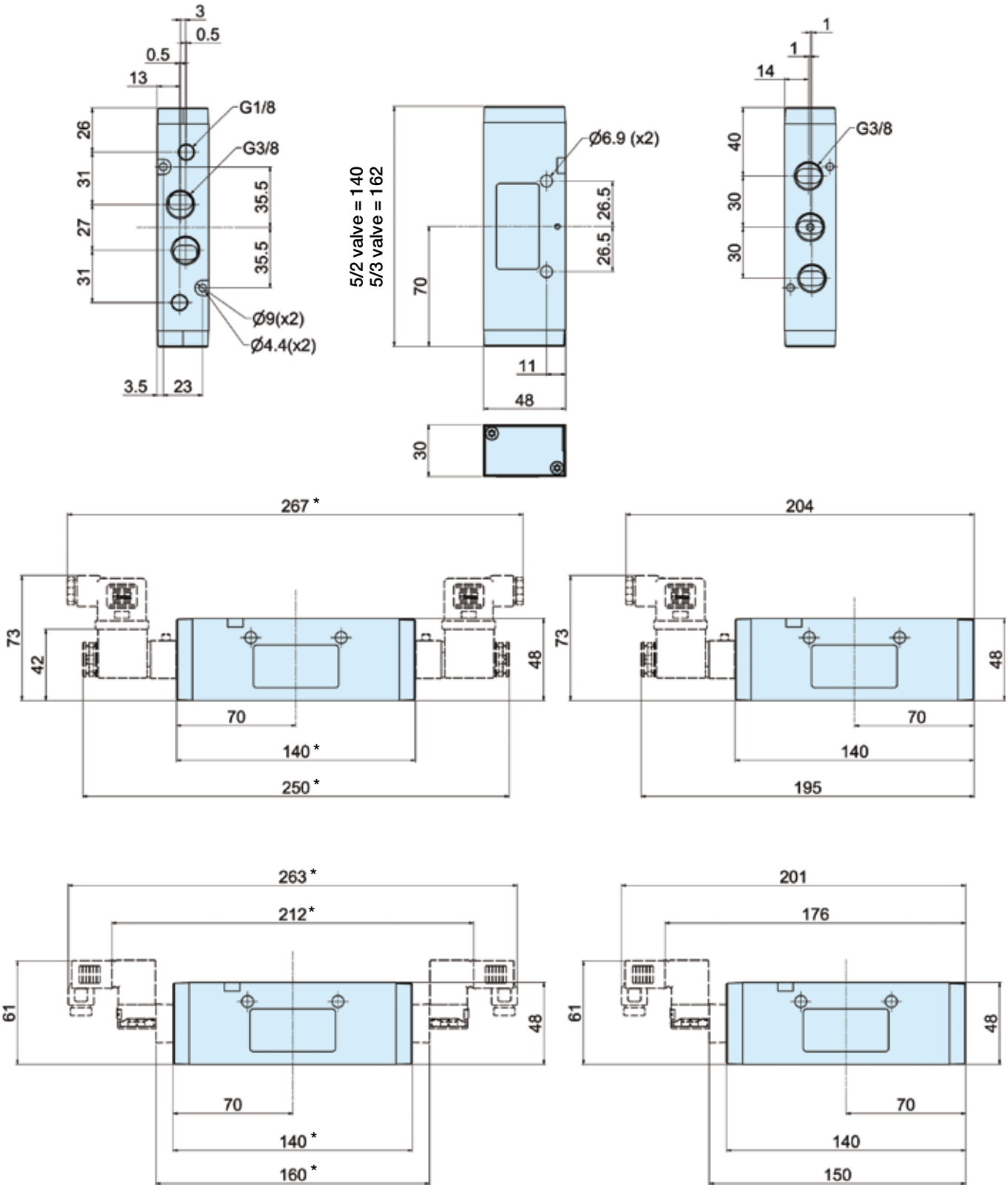


P2LBX - 5/3 Lever operated directional control valves



Dimensions

P2LCX... all
5/2 and 5/3 valves

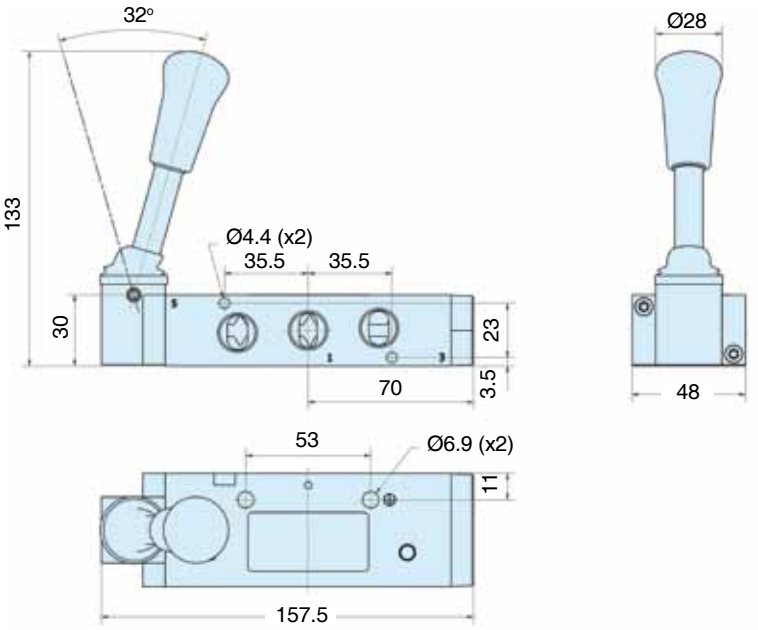


*** Note:** 5/3 valves - add 22.0mm

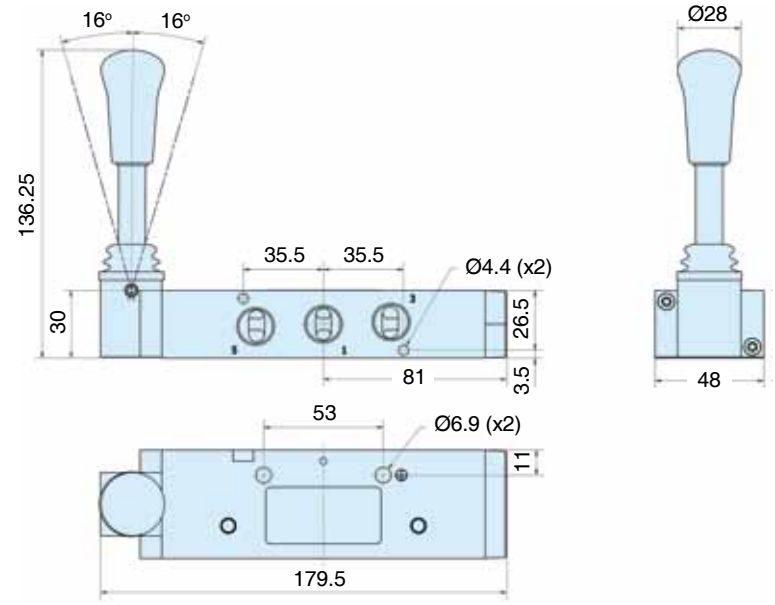
Solenoid valves
Solenoid valves and cable plugs must be ordered separately.
One pilot valve is required for each E in the valve order code.

Dimensions

P2LCX - 5/2 Lever operated directional control valves

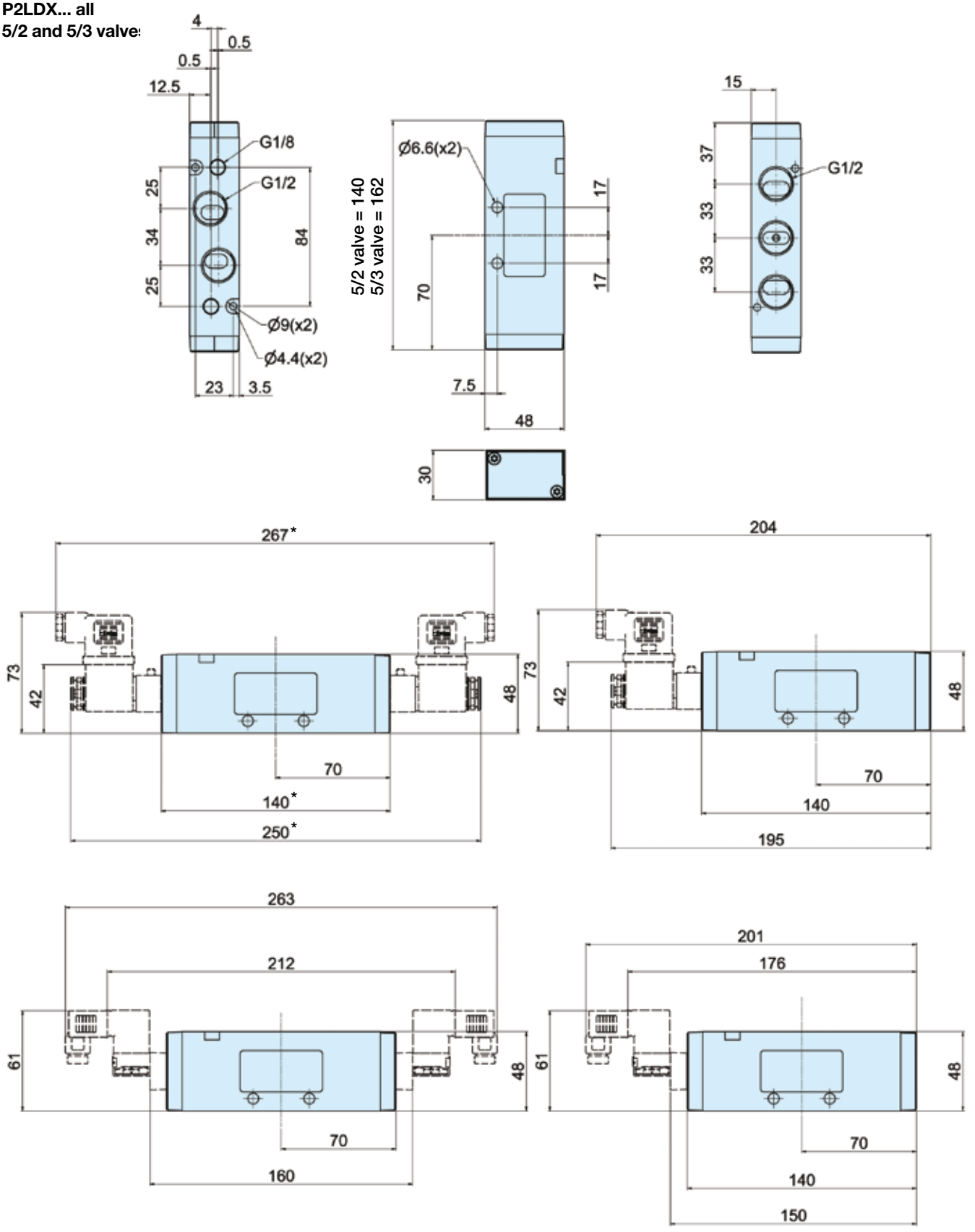


P2LCX - 5/3 Lever operated directional control valves



Dimensions

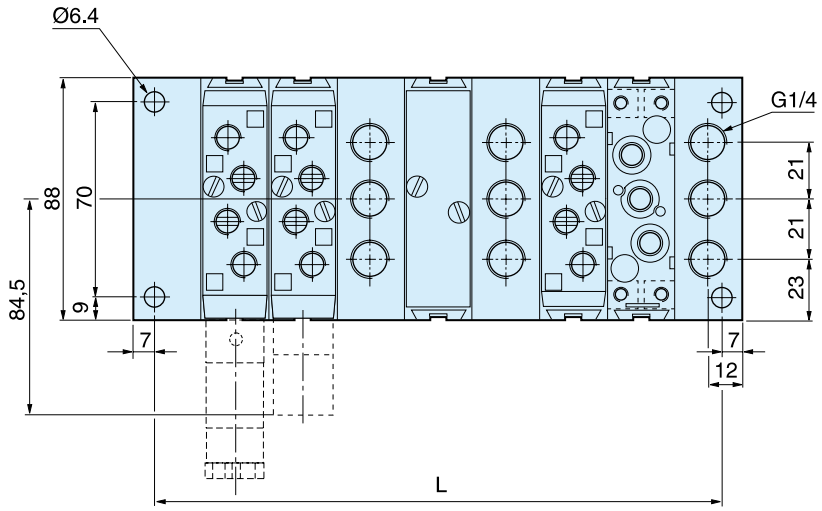
P2LDX... all 5/2 and 5/3 valves



*** Note:** 5/3 valves - add 22.0mm

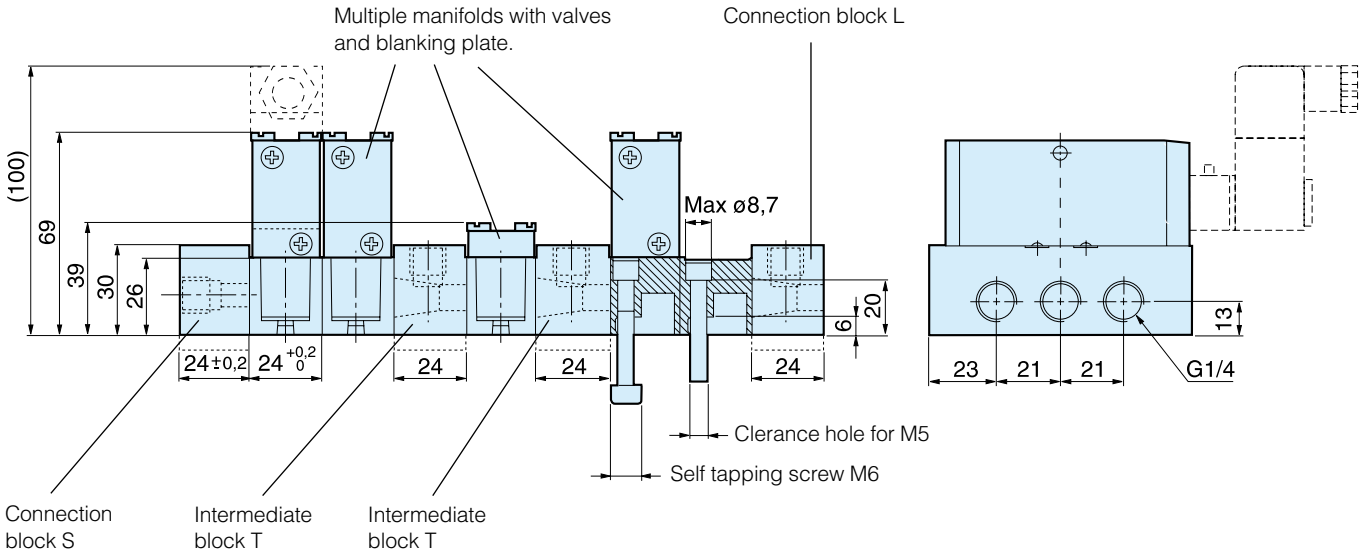
Solenoid valves
Solenoid valves and cable plugs must be ordered separately.
One pilot valve is required for each E in the valve order code.

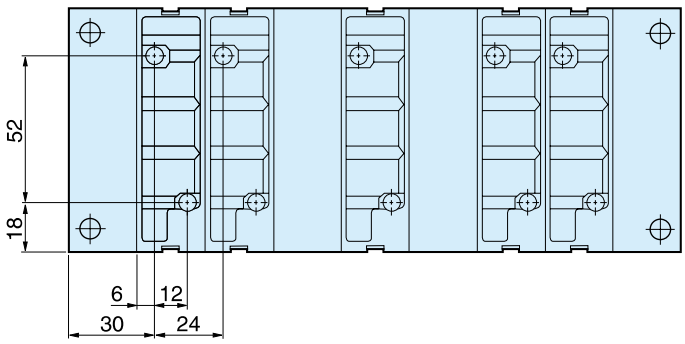
Dimensions



Connection block L and intermediate blocks L and T can be turned so that connection can be made from above or below.
Multiple manifolds must be fitted with the top indication line (a 10 mm long line) facing the same side on all manifolds.

L = 34 + (Number of manifolds and Intermediate blocks x 24)

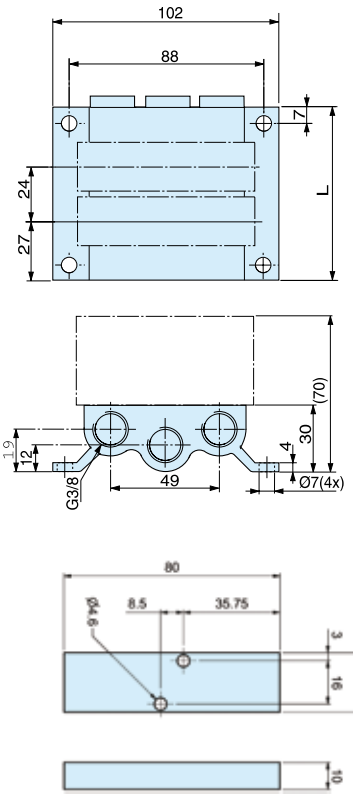




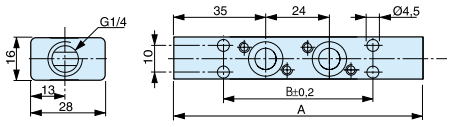
Dimensions

Manifold bar, P2LA

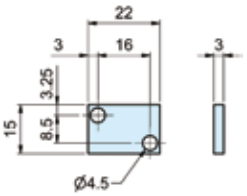
No. of valves	L mm
4	126
6	174
8	222
10	270
12	318
14	366



Pressure bar, P2LA

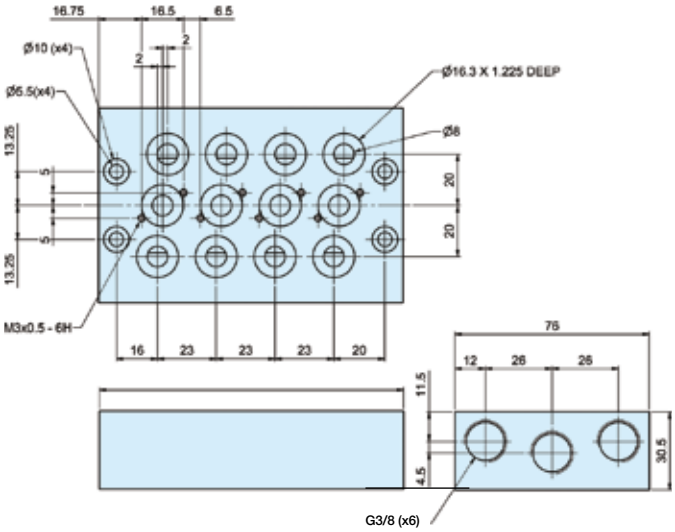


Pressure bar, P2LA

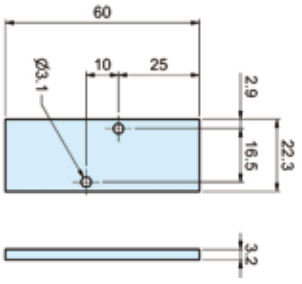


No. of valves	A mm	B mm
2	94	56
4	142	104
6	190	152
8	238	200

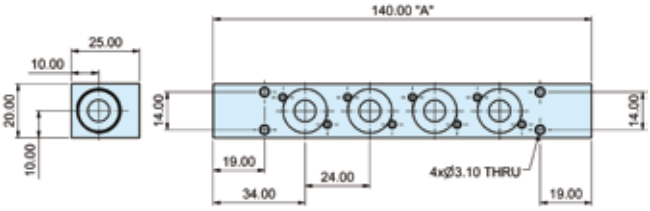
Manifold bar, P2LB



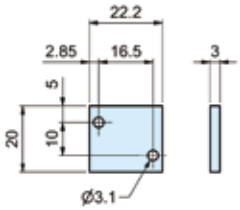
No. of valves	L mm
2	74
4	122
6	170
8	218
10	266



Pressure bar, P2LB



Blanking plug, P2LB



No. of valves	A mm
2	92
4	140
6	188
8	236
10	284

Miniature low voltage solenoid valves, ideal for powering small cylinders in the packaging and process industries. Metal bodies with stand alone or manifold mounted versions.

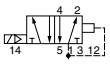
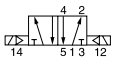
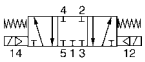
- 2 sizes: M5 and 1/8"
- Compact body with large flow
- Quick response time, faster than 10ms
- Expected life time more than 50,000,000 cycles
- Low power consumption only 0.6W
- Optional multipin connector manifold
- Manual override

Operating information

Working pressure		:	1.5 to 7 bar
Working temperature		:	-5°C to +50°C
Flow (Qmax)	A05	:	260 l/min
	A12	:	850 l/min
Flow Qn	A05	:	160 l/min
	A12	:	510 L/min

For more information see www.parker.com/euro_pneumatic

Directional control valves A05R and A12R series, inline / IEM manifold

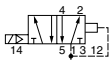
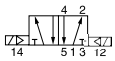
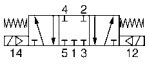
Symbol	Description (Electrically Actuated)	Voltage	Order code A05R - M5 ports	Order code A12R - G1/8 ports
	5/2 single solenoid	24V DC	**A05RS251PM5MF**	**A12RS251PG1MF**
	5/2 double solenoid	24V DC	**A05RD251PM5MF**	**A12RD251PG1MF**
	5/3 closed centre	24V DC	**A05RD351PM5MF**	**A12RD351PG1MF**

A05R/A12R Series Manifolds

Manifold for individual wiring threaded type

No. of stations	Port size	Size	Order Code Manifold
4	M5	A05	**MMFU4A05G**
	G1/8	A12	**MMFU4A12G**
6	M5	A05	**MMFU6A05G**
	G1/8	A12	**MMFU6A12G**
8	M5	A05	**MMFU8A05G**
	G1/8	A12	**MMFU8A12G**

Directional control valves A05P/A12P series, sub-base version

Symbol	Description	Voltage	Order code A05P	Order code A12P
	Electrically actuated 5/2 single solenoid	24V DC	**A05PS251P**	**A12PS251P**
	Electrically actuated 5/2 double solenoid	24V DC	**A05PD251P**	**A12PD251P**
	Electrically actuated 5/3 closed centre	24V DC	**A05PD351P**	**A12PD351P**

A05P/A12P Series manifold sub-bases

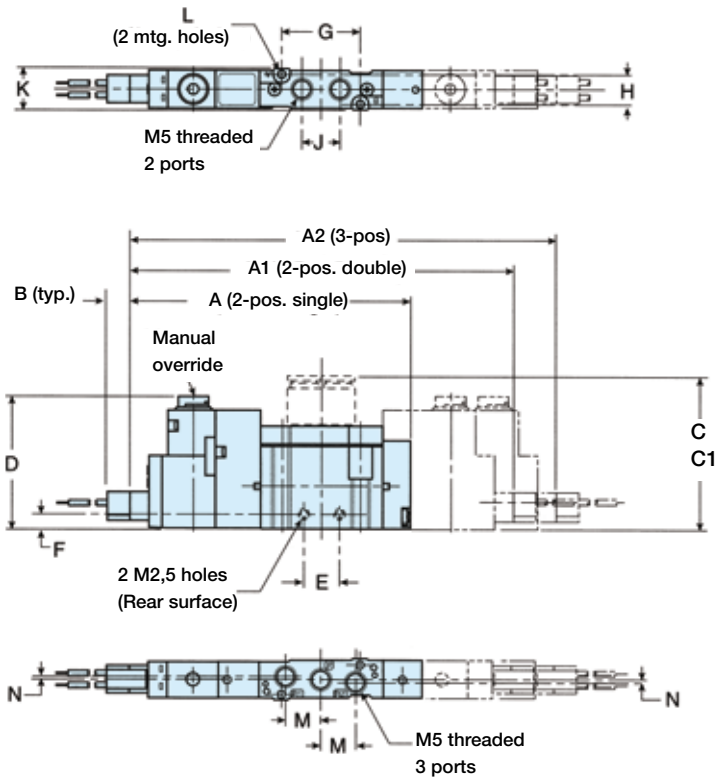
Manifolds individual wiring threaded type

No. of stations	Port size	Size	Order Code Manifold
4	M5	A05	**MMFS4A05GM5**
	G1/8	A12	**MMFS4A12GG1**
6	M5	A05	**MMFS6A05GM5**
	G1/8	A12	**MMFS6A12GG1**
8	M5	A05	**MMFS8A05GM5**
	G1/8	A12	**MMFS8A12GG1**

Mounting and Wiring Accessories

	Description	Order code
	Connector with lead wire black (-) red (+) 500mm	**A05PDCCL5**
	IEM blank plate kit (pack of 5)	**A05RGBP** **A12RGBP**
	Subbase blank plate kit (pack of 5)	**A05PGBP** **A12PGBP**

A05R - Single and double operators - Body ported

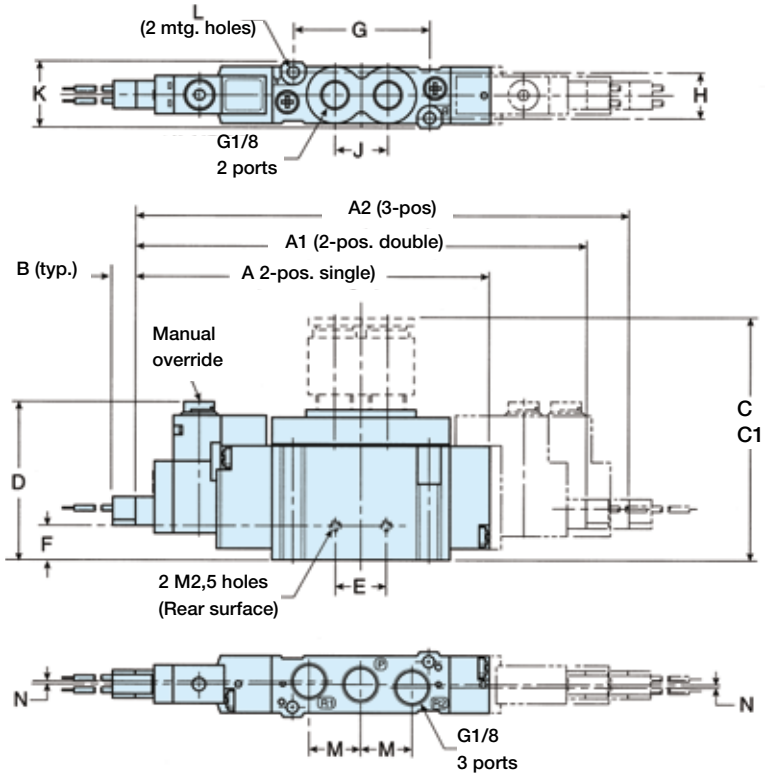


A05R - Body ported

A	A1	A2	B	C
74	100	108	6	-
C1	**D**	**E**	**F**	**G**
-	34,6	9,6	4	21
H	**J**	**K**	**L**	**M**
8,5	10,2	11,4	Ø2,1	9,5
N				
1				

Dimensions in mm

A12R - Single and double operators - Body ported

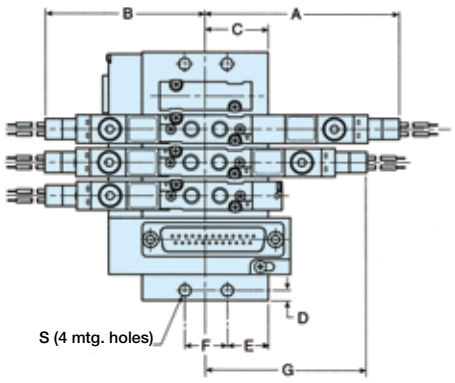


A12R - Body ported

A	A1	A2	B	C
93,5	119	130	6	-
C1	**D**	**E**	**F**	**G**
-	41,6	13,4	9	36
H	**J**	**K**	**L**	**M**
12	14	17,2	Ø3,1	13,6
N				
0,8				

Dimensions in mm

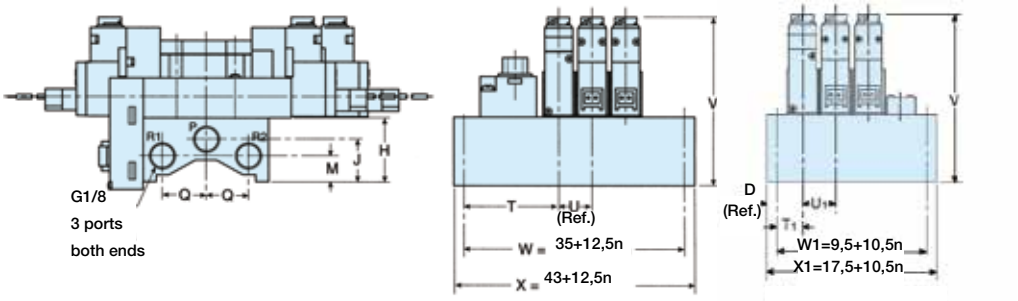
A05R - Manifold - Valve body ports



A05R - Manifold - valve body port

A	B	C	D	E
64	56	23,5	4	15,5
F	**G**	**H**	**J**	**M**
16	56	24	15,5	9,5
Q	**S**	**T**	**T1**	**U**
16	Ø4,5	34	10	12,5
U1	**V**			
10,5	63			

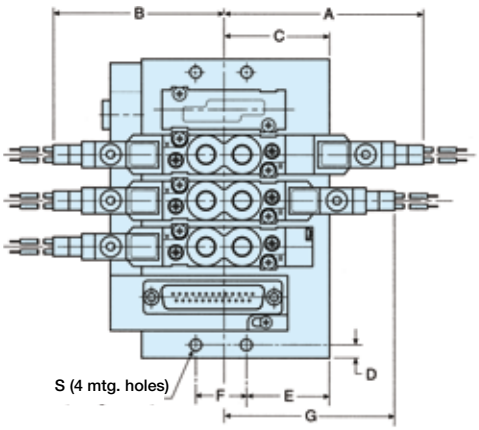
Dimensions in mm



n = number of stations

MMCU... **MMFU...**

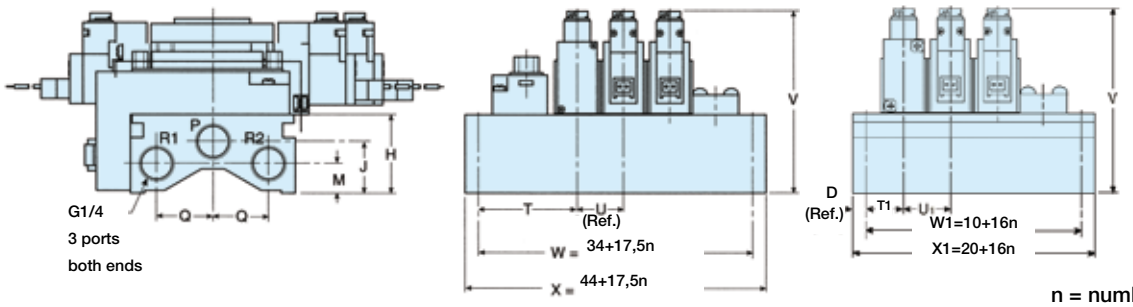
A12R - Manifold - Valve body ports



A12R - Manifold - valve body port

A	B	C	D	E
77	66	29	5	19,2
F	**G**	**H**	**J**	**M**
19,6	66	27,5	18	10,5
Q	**S**	**T**	**T1**	**U**
19,5	Ø4,5	37,5	12,2	17,5
U1	**V**			
16	70			

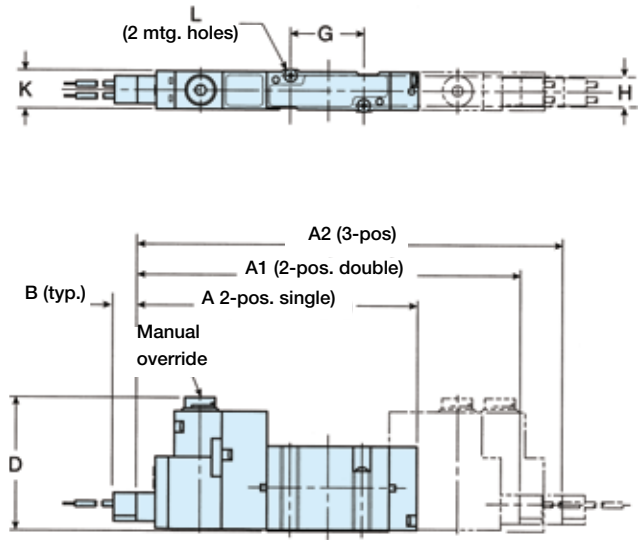
Dimensions in mm



n = number of stations

MMCU... **MMFU...**

A05P - Single and double operators - Subbase

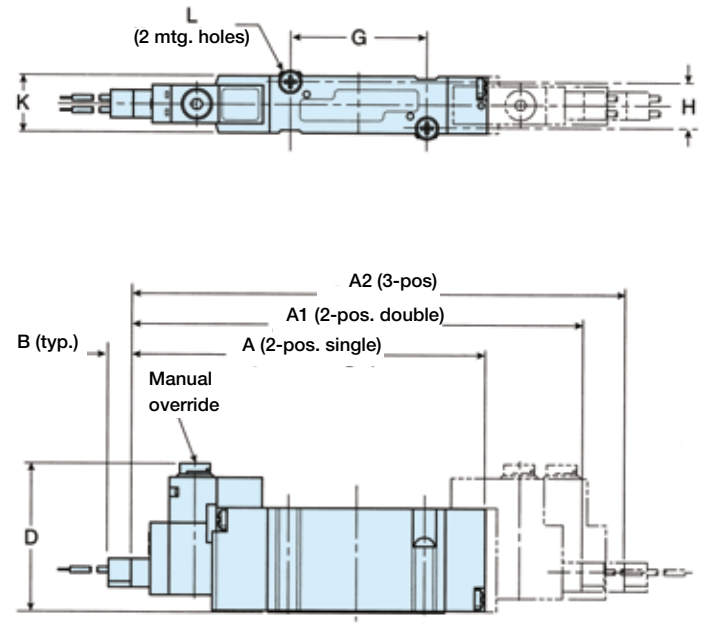


A05P - Subbase

A	A1	A2	B	D
74	100	108	6	35,1
G	**H**	**K**	**L**	
19	8,5	10	Ø2,1	

Dimensions in mm

A12P - Single and double operators - Subbase

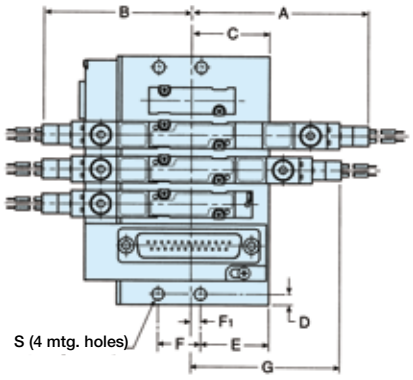


A12P - Subbase

A	A1	A2	B	D
93,5	119	130	6	39,1
G	**H**	**K**	**L**	
34	12	15	Ø3,1	

Dimensions in mm

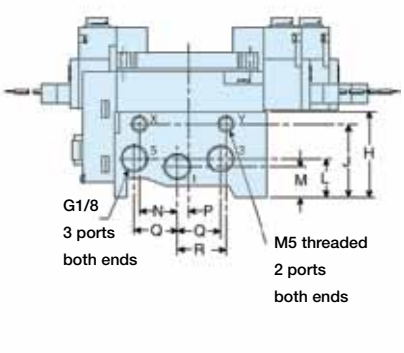
A05P - Manifold - Side ports

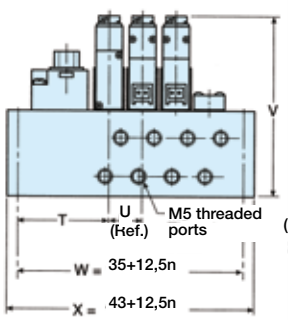


A05P - Manifold - Side ports

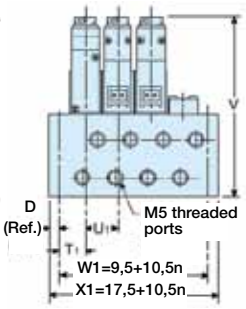
A	B	C	D	E
64	56	30,2	4	25,5
F	**F1**	**G**	**H**	**J**
16	4,7	56	32	28
L	**M**	**N**	**P**	**Q**
14,5	11,5	14	3	16
R	**S**	**T**	**T1**	**U**
18	Ø4,5	33,8	10	12,5
U1	**V**			
10,5	67			

Dimensions in mm





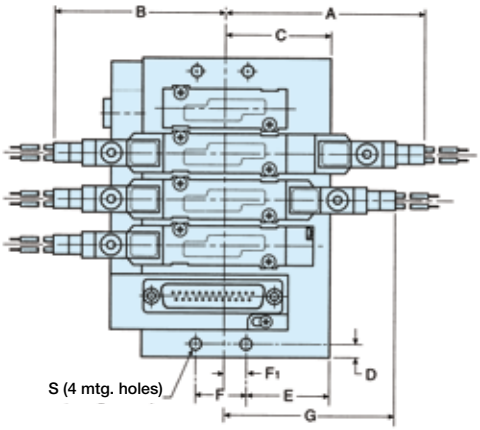
MMCS...



MMFS...

n = number of stations

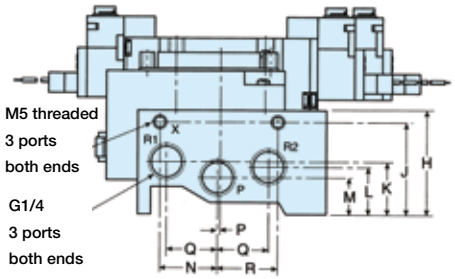
A12P - Manifolds - Side ports

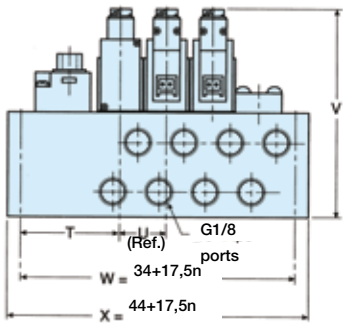


A12P - Manifold - Side ports

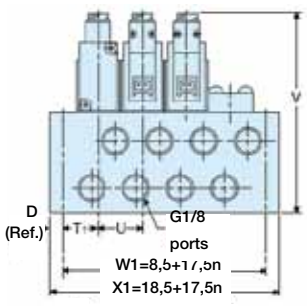
A	B	C	D	E
77	66	40,4	5	31,7
F	**F1**	**G**	**H**	**J**
19,6	11	66	39,5	35
K	**L**	**M**	**N**	**P**
20,5	18	14	22	1
Q	**R**	**S**	**T**	**T1**
19,5	23	Ø4,5	37,2	12,7
U	**V**			
17,5	79			

Dimensions in mm





MMCS...



MMFS...

n = number of stations

The compact design of these valves make them a popular choice for manual or mechanical operation and their modular construction permit different operators to be fitted to the actuator and return assemblies.
The Midget and Intermediate valves are designed to have balanced forces across the spool so that 3/2 valves can be piped normally open or normally closed by changing the inlet supply from port 1 to port 3.

- B 43 - 1/8" ported, B53 - 1/4 ported
- Manual and mechanical operation
- Stainless steel spools
- Viton seals
- 3/2, 5/2, 3/3 and 5/3 versions.
- Integral mounting holes

Operating information

Type	Spool valves	
Style	Body ported	
Port size	G1/8 & G1/4	
Mounting	Any plane	
Pressure range	Vacuum to 10 bar	
Temperature range	-10°C to +80°C	
Flow acc. (to ISO 6358)		
	Midget B43 series	**Intermediate B53 series**
	c = 1.13 Nl/s x bar	c = 3.69 Nl/s x bar
	b = 0.36	b = 0.33
	Qn = 5.5 l/s	Qn = 17.5 l/s
	Qmax = 9.0 l/s	Qmax = 29 l/s
	Cv = 0.24	Cv = 1.02

Material specification

Valve body	Aluminium
Spool	Stainless steel
Seal spacers	Zinc die cast
Seals	Viton
Spring housing	Nylon
Spring	Zinc plated
End covers	Zinc die cast
Actuators	Zinc die cast
End cover screws	Zinc plated

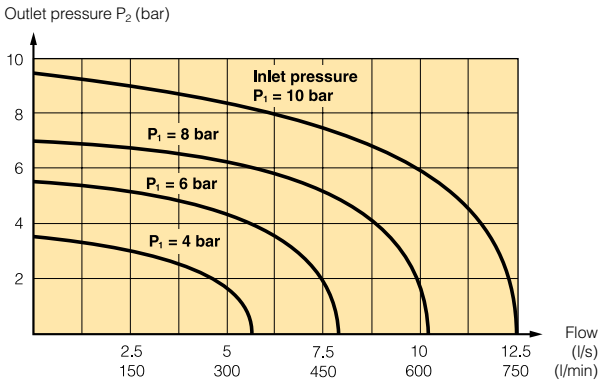
Working medium, air quality

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

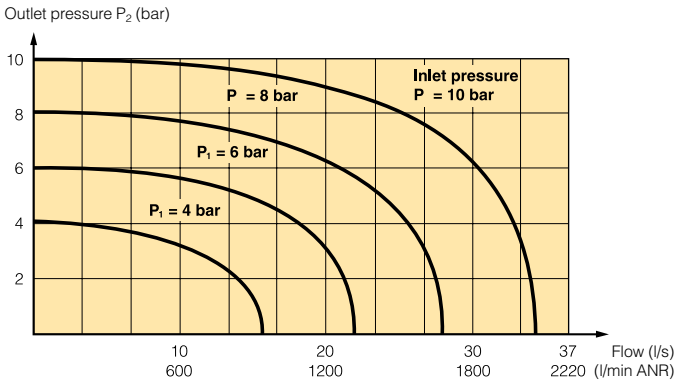
Flow characteristics

Flow capacities in accordance with ISO 6358
The flow curves shown below are typical.

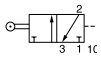
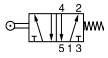
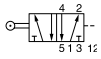
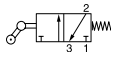
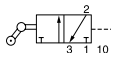
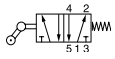
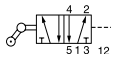
Midget B43 series valves



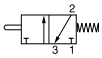
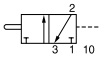
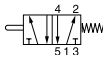
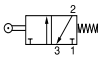
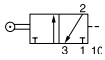
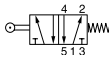
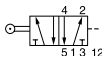
Intermediate B53 series valves



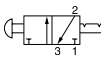
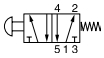
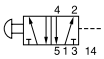
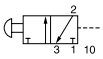
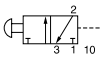
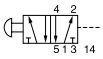
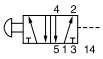
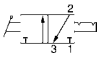
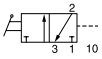
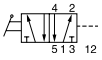
Midget mechanically operated valves, B43 series - G1/8

Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Plunger	Spring	36	**B43003CS**
	3/2	Plunger	Air	14	**B43003CP**
	5/2	Plunger	Spring	36	**B43004CS**
	5/2	Plunger	Air	14	**B43004CP**
	3/2	Roller	Spring Lever	20	**B43003RS**
	3/2	Roller Lever	Air	7	**B43003RP**
	5/2	Roller Lever	Spring	20	**B43004RS**
	5/2	Roller Lever	Air	7	**B43004RP**
	3/2	One way lever	Spring	20	**B43003RTS**
	3/2	One way roller lever	Air	7	**B43003RTP**
	5/2	One way roller lever	Spring	20	**B43004RTS**
	5/2	One way roller lever	Air	7	**B43004RTP**

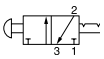
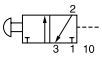
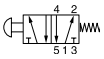
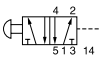
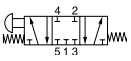
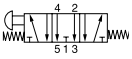
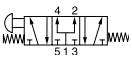
Intermediate mechanically operated valves, B53 series - G1/4

Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Plunger	Spring	53	**B53003CS**
	3/2	Plunger	Air	27	**B53003CP**
	5/2	Plunger	Spring	53	**B53004CS**
	5/2	Plunger	Air	27	**B53004CP**
	3/2	Roller	Spring	53	**B53003RS**
	3/2	Roller	Air	27	**B53003RP**
	5/2	Roller	Spring	53	**B53004RS**
	5/2	Roller	Air	27	**B53004RP**

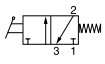
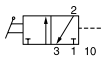
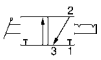
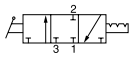
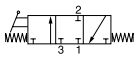
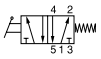
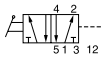
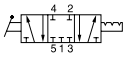
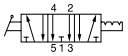
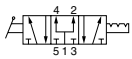
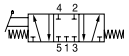
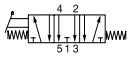
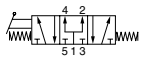
Midget manually operated valves, B43 series - G1/8

Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Black	Spring	36	**B43003BXS**
	3/2	Black	Button	13	**B43003HXS**
	5/2	Black	Spring	36	**B43004BXS**
	5/2	Black	Button	13	**B43004HXS**
	3/2	Black	Air	13	**B43003BXP**
	3/2	Black	Air or Button	13	**B43003HXP**
	5/2	Black	Air	13	**B43004BXP**
	5/2	Black	Air or Button	13	**B43004XHP**
	3/2	Lock down lever	Spring	9	**B43003LS**
	3/2	Lock down lever	Spring	9	**B43004LS**
	3/2	Lock down lever	Air	3	**B43003LP**
	3/2	Lock down lever	Air	3	**B43004LP**

Intermediate manually operated valves, B53 series - G1/4

Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Black	Spring	53	**B53003HXS**
	3/2	Black	Button	27	**B53003HX**
	3/2	Black	Air	27	**B53003HXP**
	5/2	Black	Spring	53	**B53004HXS**
	5/2	Black	Button	27	**B53004HX**
	5/2	Black	Air	27	**B53004HXP**
	5/3	Button closed centrer position	Button self centring	13	**B53005HXX**
	5/3	Button vented centrer position	Air self centring	13	**B53004HXY**
	5/3	Button pressurised centrer position	Air self centring	13	**B53004HXZ**

Intermediate lever operated valve, B53 series - G1/4

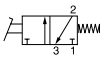
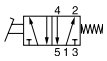
Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Lever	Spring	14	**B53003LS**
	3/2	Lever	Air	9	**B53003LP**
	3/2	Lever	Lever	9	**B53003LT**
	3/3	Lever closed centre position	Lever	9	**B53003L**
	3/3	Lever closed centre position	Lever self centring	14	**B53003LX**
	5/2	Lever	Spring	14	**B53004LS**
	5/2	Lever	Air	14	**B53004LP**
	5/2	Lever	Lever	14	**B53004LT**
	5/3	Lever closed centre position	Lever held in three positions	9	**B53004L**
	5/3	Lever vented centre position	Lever held in three positions	9	**B53004LW**
	5/3	Lever pressurised centre position	Lever held in three positions	9	**B53004LN**
	5/3	Lever closed centre position	Lever self centring	14	**B53004LX**
	5/3	Lever vented centre position	Lever self centring	14	**B53004LY**
	5/3	Lever pressurised centre position	Lever self centring	14	**B53004LZ**

Mounting kit

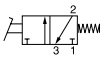
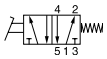
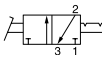
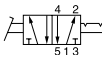
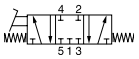
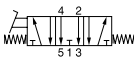
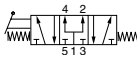
Panel mounting kit **M53004L-10A**

Kit includes panel plate and M5 counter sunk head screws

Midget foot operated valves, B43 series - G1/8

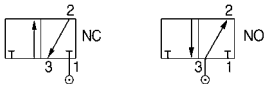
Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
	3/2	Foot pedal	Spring	16	**B43003FS**
	5/2	Foot pedal	Spring	16	**B43004FS**

Intermediate foot operated valves, B53 series - G1/4

Symbol	Type	Actuator Button	Return	Operating force at 6 bar, N	Order code
Single pedal operated					
	3/2	Foot pedal	Spring	95	**B53003FS**
	5/2	Foot pedal	Spring	95	**B53004FS**
Rocker pedal operated					
	3/2	Foot pedal	Foot pedal	18	**B53003G**
	5/2	Foot pedal	Foot pedal	18	**B53004G**
	5/3	Foot pedal closed centre position	Foot pedal self centring	18	**B53004GX**
	5/3	Foot pedal vented centre position	Foot pedal self centring	18	**B53004GY**
	5/3	Foot pedal pressurised centre position	Foot pedal self centring	18	**B53004GZ**

Accessories

Foot guard kit **3117**



All 3/2 type B43 & B5/3 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

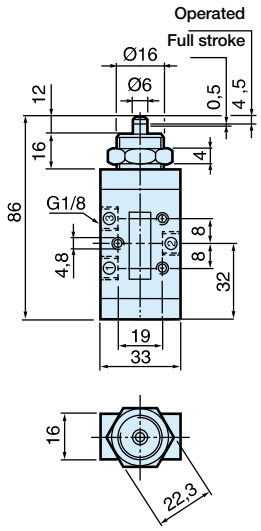
Dimensions, G1/8 ported spool valves

All dimensions in mm unless otherwise stated

Mechanically operated valves

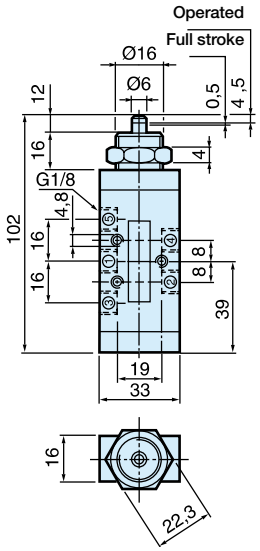
3/2 valves

Plunger operated spring return



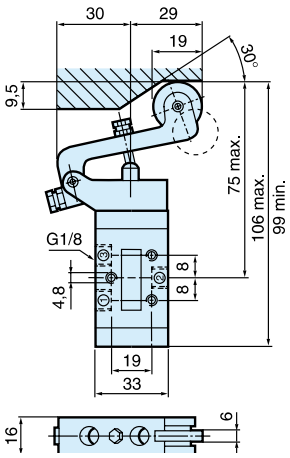
5/2 valves

Plunger operated spring return

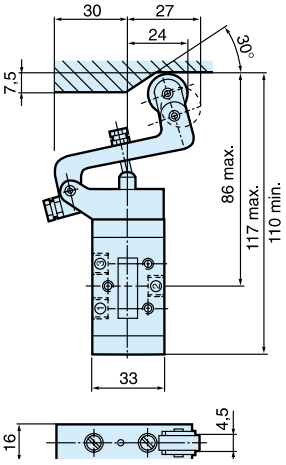


3/2 valves

Roller operated spring return

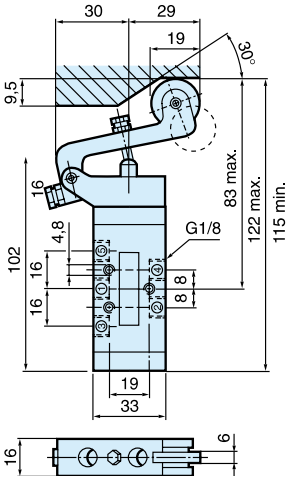


One way roller trip operate spring return

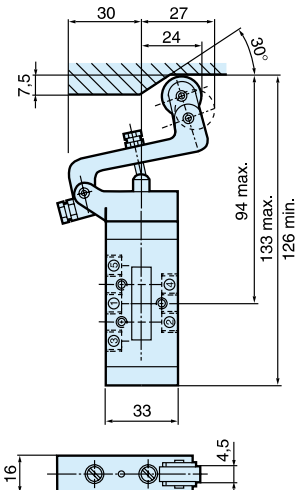


5/2 valves

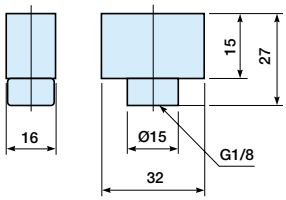
Roller operated spring return



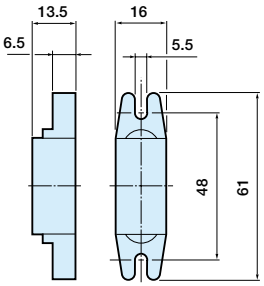
One way roller trip operate spring return



Air Pilot Return



Optional foot mounted - Spring return housing



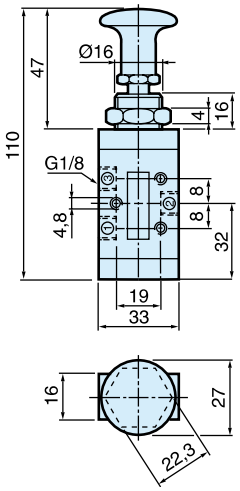
Dimensions, G1/8 ported spool valves

All dimensions in mm unless otherwise stated

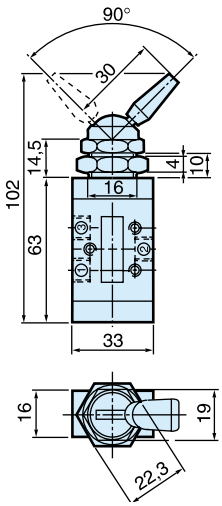
Manually operated valves

3/2 valves

Button operated spring return or button returned

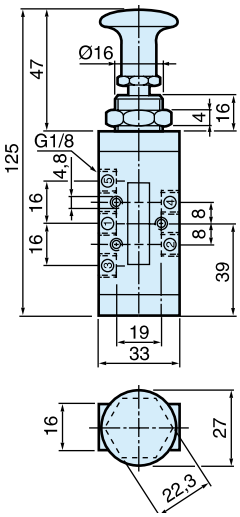


Lock down lever operated spring return

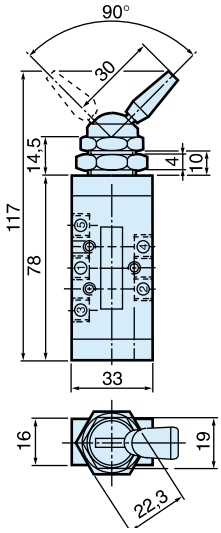


5/2 valves

Button operated spring return or button returned

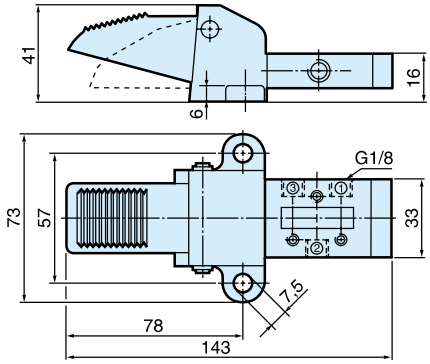


Lock down lever operated spring return



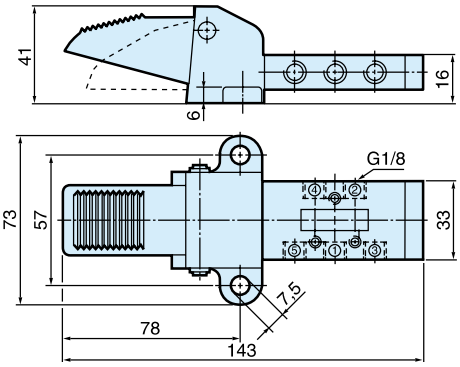
3/2 valves

Foot pedal operated spring return

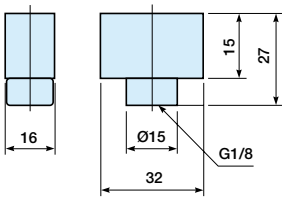


5/2 valves

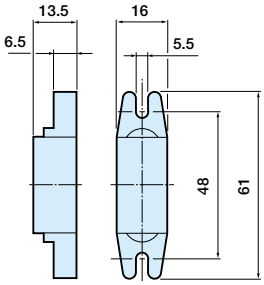
Foot pedal operated spring return



Air Pilot Return



Optional foot mounted - Spring return housing



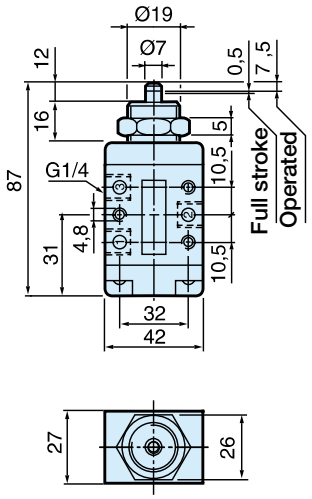
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Mechanically operated valves

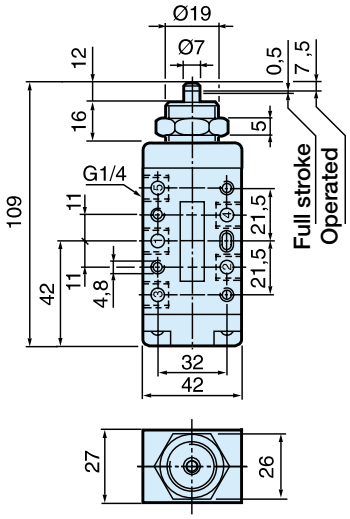
3/2 valves

Plunger operated spring return



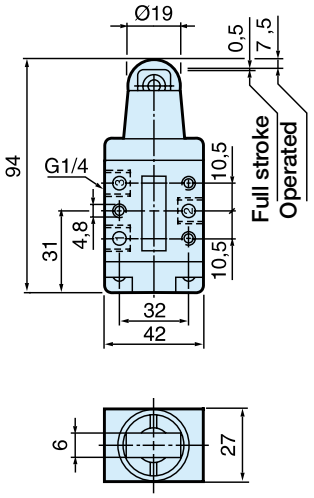
5/2 valves

Plunger operated spring return



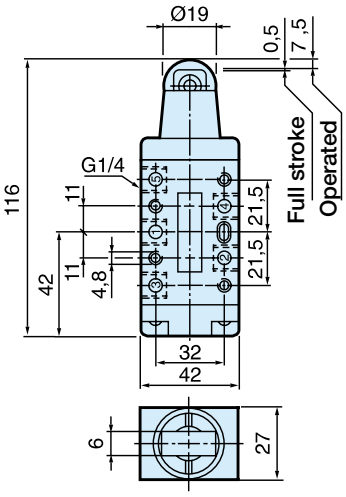
3/2 valves

Roller operated spring return

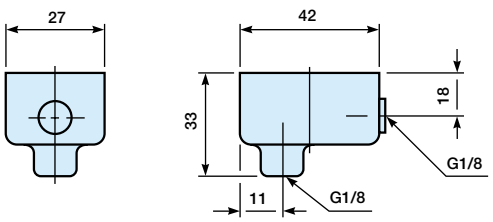


5/2 valves

Roller operated spring return



Air Pilot Return



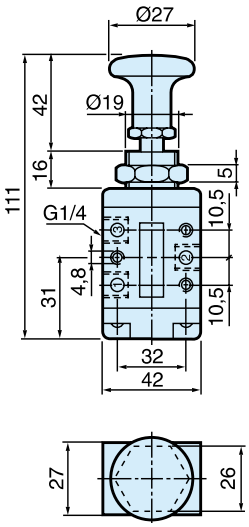
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

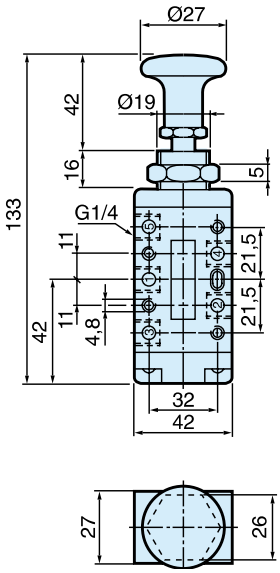
3/2 valves

Button operated spring return
or button returned



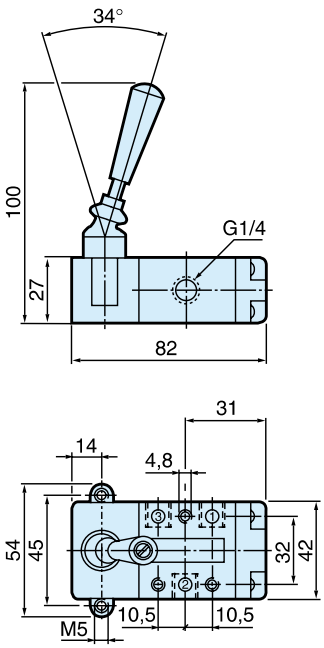
5/2 valves

Button operated spring return
or button returned



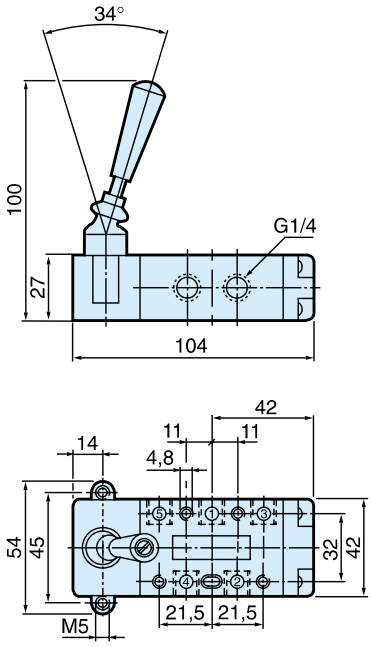
3/2 valves

Lever operated

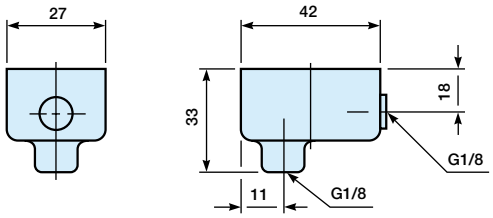


5/2 valves

Lever operated



Air Pilot Return



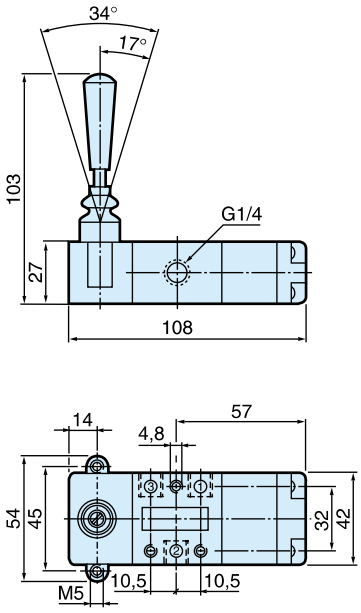
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

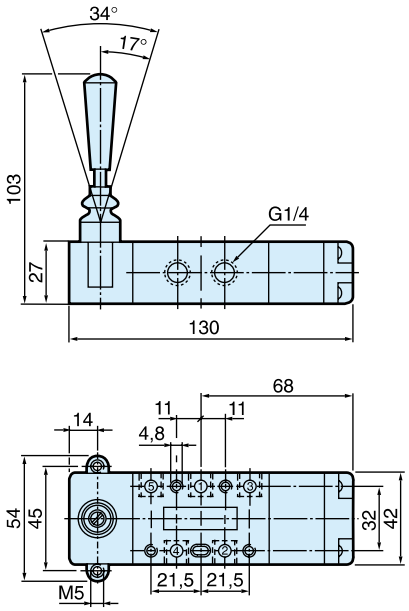
3/3 valves (Self centring)

Lever operated



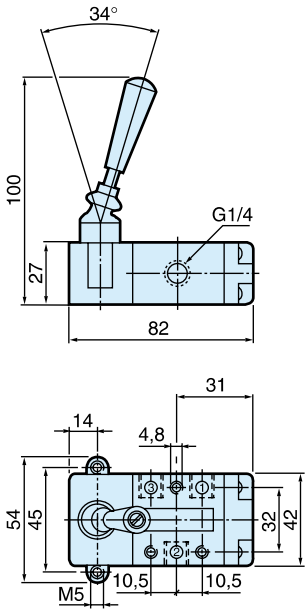
5/3 valves (Self centring)

Lever operated



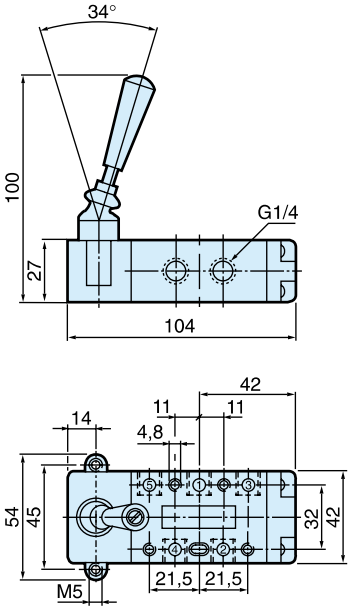
3/3 valves (3 positions)

Lever operated

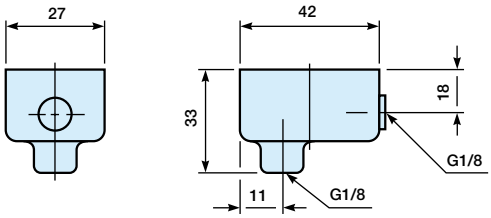


5/3 valves (3 positions)

Lever operated



Air Pilot Return



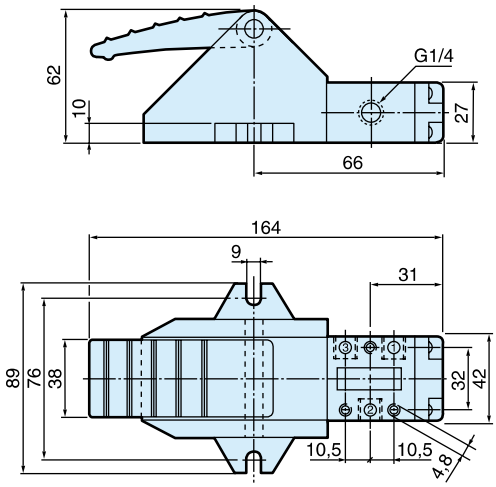
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

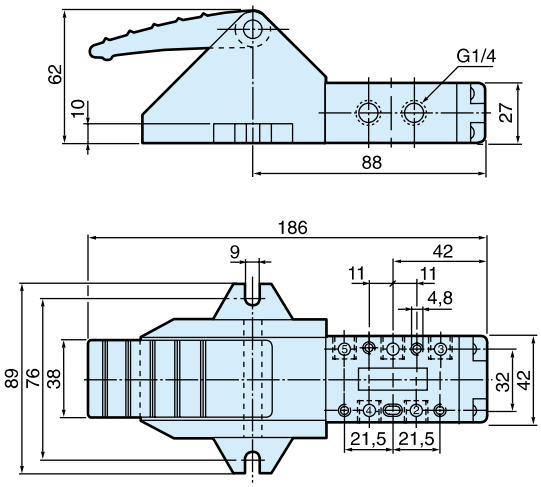
3/2 valves

Foot pedal operated spring return



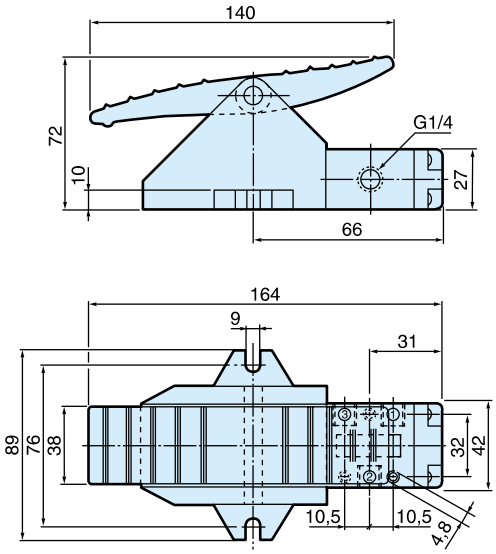
5/2 valves

Foot pedal operated spring return



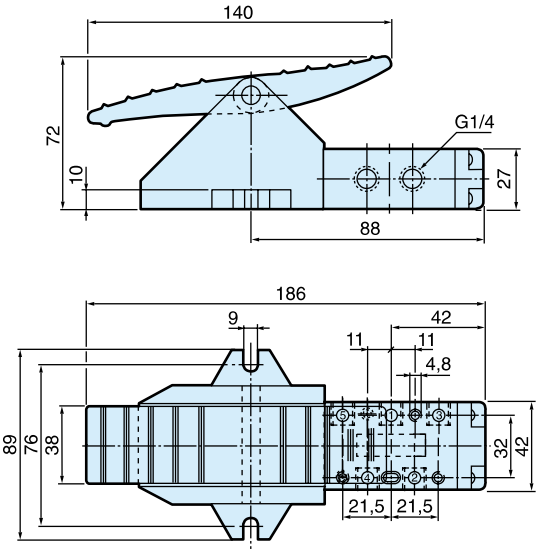
3/2 valves

Foot pedal operated



5/2 valves

Foot pedal operated



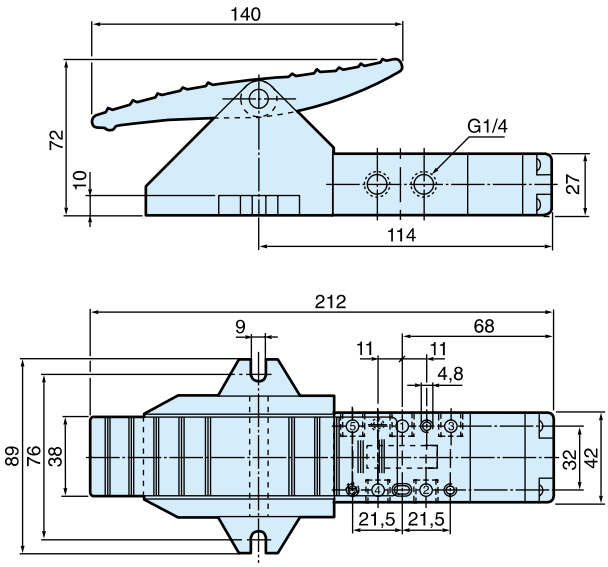
Dimensions, G1/4 ported spool valves

All dimensions in mm unless otherwise stated

Manually operated valves

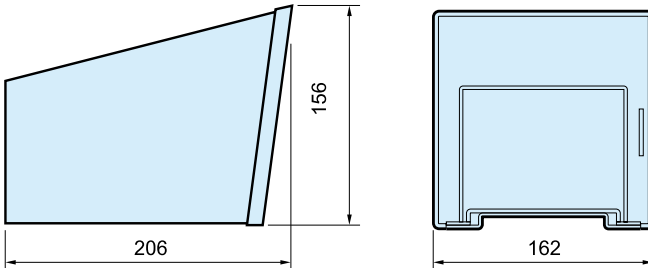
5/3 valves

Foot pedal operated



Foot guard kit

3117



Service and Replacement Parts

B43 Series Manually Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B43003BXS	Button	43004BX-100	Body seal 43007A
B43004BXS	Button		
B43004HXS	Button, Push/Pull	43004H-100	
B43003LS	Lockdown lever	43004L-200	
B43004LS	Lockdown lever		

B53 Series Manually Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B53003HXS	Button	53004HX-100	Body seal 53007
B53004HXS	Button		
B53003HX	Button, Push/Pull		
B53004HX	Button, Push/Pull		
B53004HXX	Button, Self centring		
B53004HXY	Button, Self centring		
B53004HXZ	Button, Self centring		
B53003FS	Foot	53004F-100	
B53004FS	Foot		
B53003LS	Lever	53004L-198	Body seal 53007 Lever kit 53004L-300R
B53004LS	Lever		
B53003LT	Lever, 2 positions	53004L-196	
B53004LT	Lever, 2 positions		
B53004L	Lever, 3 positions	53004L-100	
B53004LW	Lever, 3 positions		
B53004LX	Lever, Self centring	53004L-198	
B53004LY	Lever, Self centring		

B43 Series Mechanically Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B43003CS	Plunger	43004C-100	Body seal 43007A
B43004CS	Plunger		
B43003RS	Roller Lever	43004R-200	
B43004RS	Roller Lever		

B53 Series Mechanically Operated Valves

Order code	Actuator	Replacement actuator	Repair kit
B53003CS	Plunger	53004C-100	Body seal 53007
B53004CS	Plunger		
B53003RS	Roller	53004R-100	
B53004RS	Roller		

Rugged brass bodies with excellent corrosion resistance make these valves the ideal choice for arduous applications. Large and robust manual actuators are available together with air pilot actuators.

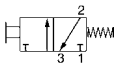
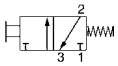
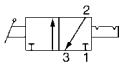
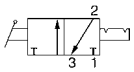
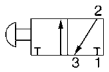
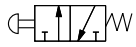
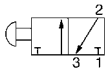
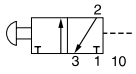
- Rugged valves for heavy duty applications
- Large and robust actuators for easy operation
- Excellent corrosion resistance
- Integral mounting holes
- Panel mounting versions

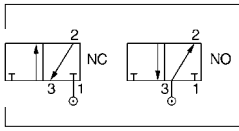
Operating information

Working temperature	-40 °C to +70 °C
Working pressure	Max 10 bar
Flow (Qmax):	380 l/min

For more information see www.parker.com/euro_pneumatic

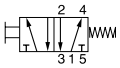
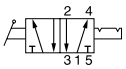
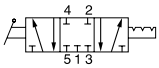
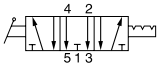
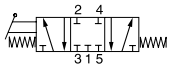
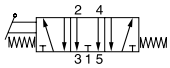
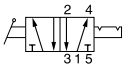
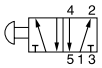
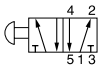
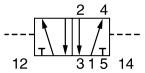
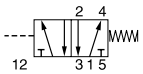
Push button valves, VA13 Series - G1/8

Symbol	Actuator	Return	Operating force at 6 bar, N	Mounting	**Order code**
Hand actuated					
	Flush-Push button, red	Spring	32,5	Panel	**VA13-HIS4**
	Flush-Push button, black	Spring	32,5	Panel	**VA13-HIS4A06**
	Hand lever Held in two positions	Hand lever	8	Panel	**VA13-HB24**
	Hand lever Held in two positions	Hand lever	8	Side	**VA13-HB2**
	Button, red Two positions	Button	3	Panel	**VA13-KL24**
	Button, red	Spring	31,5	Panel	**VA13-KS4**
	Button, red Two positions	Button	3	Side	**VA13-KL2**
	Button, red	Spring	31,5	Side	**VA13-KS**
	Button, red Two positions	Knob/ Air signal	6	Side	**VA13-KL2A**

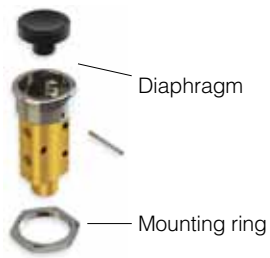


All 3/2 type VA13 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3

Push button valves, VA15 Series - G1/8 connection

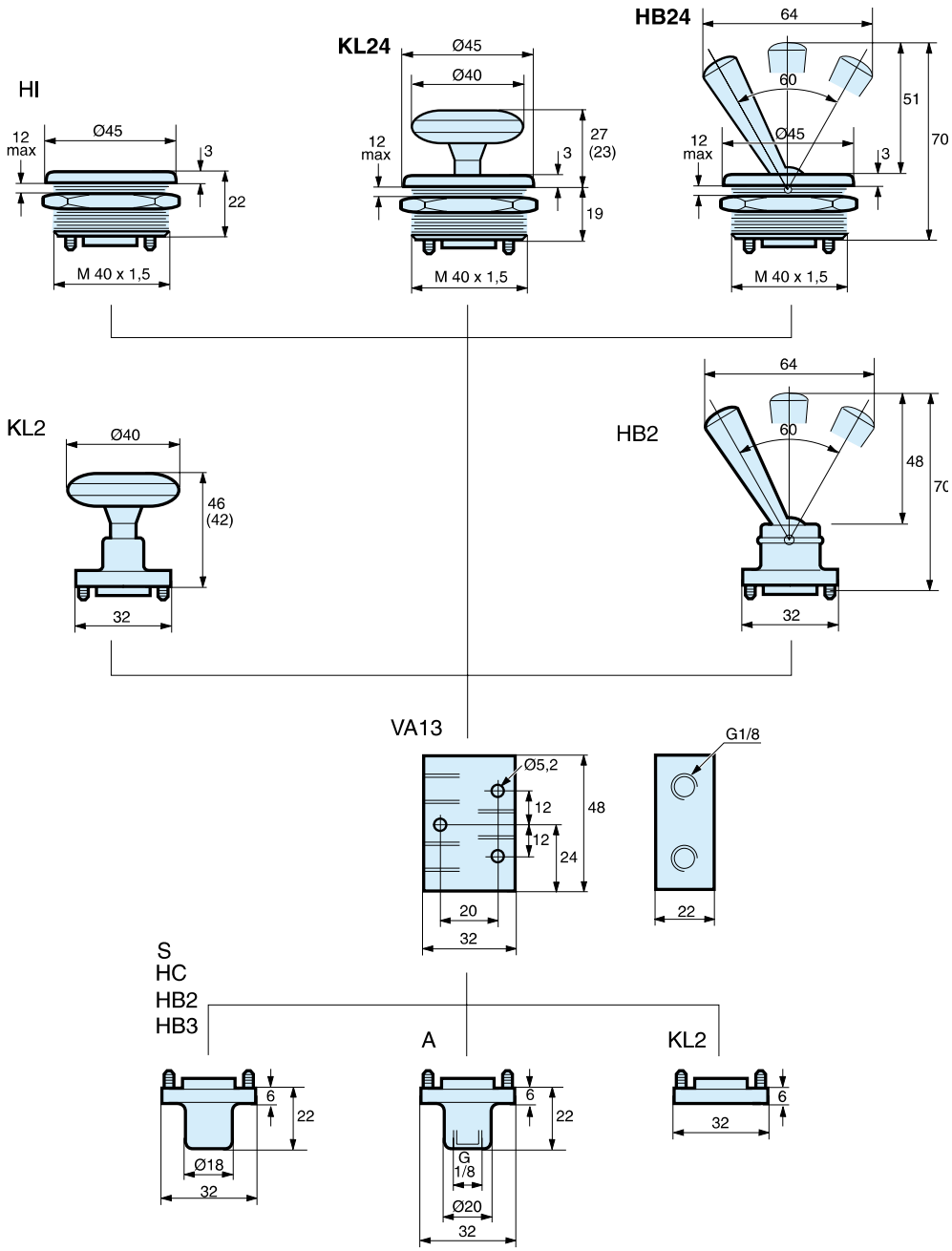
Symbol	Actuator	Return	Operating force at 6 bar, N	Mounting	Order code
Hand actuated					
	Flush-Push button, red	Spring	34,5	Panel	**VA15-HIS4**
	Hand lever Held in two positions	Hand lever	9	Panel	**VA15-HB24**
	Hand lever Held in three positions Closed centre position	Hand lever	9	Panel	**VA15-HB34**
	Hand lever Held in three positions Vented centre position	Hand lever	9	Panel	**VA15-XHB34**
	Hand lever Three positions Closed centre position	Hand lever	9	Panel	**VA15-HC4**
	Hand lever Three positions Vented centre position	Hand lever Self centring	9	Panel	**VA15-XHC4**
	Hand lever Held in two positions	Hand lever	9	Side	**VA15-HB2**
	Button, red Two positions	Button	5	Panel	**VA15-KL24**
	Button, red Two positions	Button	5	Side	**VA15-KL2**
	Air signal	Air signal	3/3	Side	**VA15-AA**
	Air signal	Spring	4/-	Side	**VA15-AS**

Accessories for VA13/15HI... Series valves

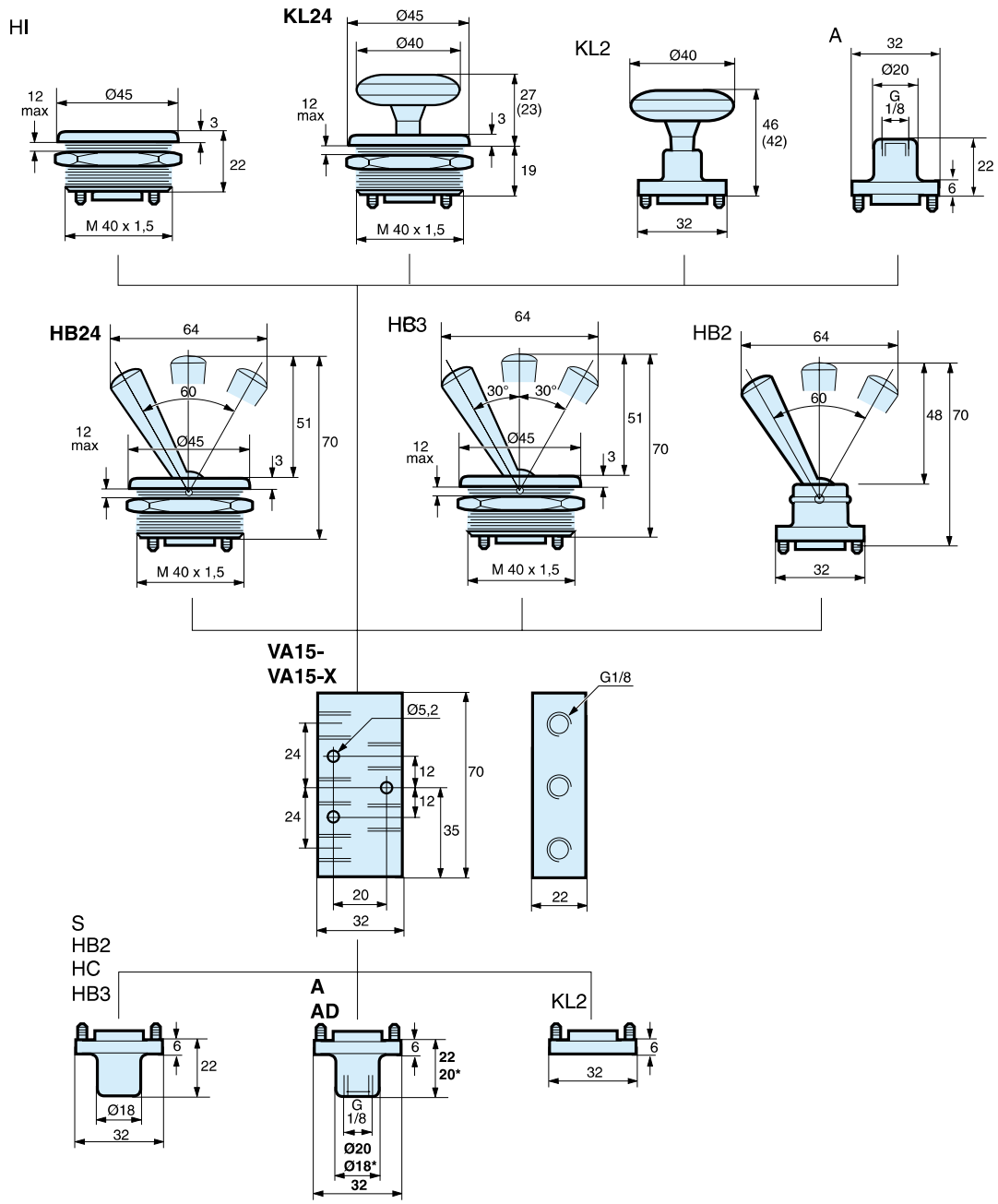


Description	Order code
Diaphragm, black	**9127359331**
Diaphragm, yellow	**9127359332**
Mounting ring	**9127359334**

Dimensions


HI
12 max
Ø45
3
22
M 40 x 1,5
KL24
Ø45
Ø40
12 max
3
27 (23)
19
M 40 x 1,5
HB24
64
60
51
70
12 max
Ø45
3
M 40 x 1,5
KL2
Ø40
46 (42)
32
HB2
64
60
48
70
32
VA13
Ø5,2
12
12
48
24
20
32
G1/8
22
S
HC
HB2
HB3
6
22
Ø18
32
A
6
22
G 1/8
Ø20
32
KL2
6
32

Dimensions


HI
12 max
Ø45
3
22
M 40 x 1,5
KL24
Ø45
Ø40
12 max
3
27 (23)
19
M 40 x 1,5
KL2
Ø40
46 (42)
32
A
32
Ø20
G 1/8
22
6
HB24
64
60
12 max
Ø45
3
51
70
M 40 x 1,5
HB3
64
30°
30°
12 max
Ø45
3
51
70
M 40 x 1,5
HB2
64
60
48
70
32
VA15-
VA15-X
Ø5,2
G1/8
24
24
12
12
70
35
20
32
22
S
HB2
HC
HB3
6
22
Ø18
32
A
AD
6
22
20*
G 1/8
Ø20
Ø18*
32
KL2
6
32

Heavy duty poppet valves
2/2 & 3/2 - G3/8" & G1/2"

These valves use the well proven poppet principle to give high flow rates with short valve travel, both the 2/2 and 3/2 valves in the range are available in G3/8" and G1/2" port sizes. This means that each actuator is available in four configurations i.e. 3/8" ports 2/2 or 3/2 and G1/2" ports 2/2 or 3/2. All valves are normally closed.

The bodies are of block form construction for ease of mounting. Springs are stainless steel; internal seals being of nitrile rubber.
The 2/2 body allows air in one direction only, 3/2 versions having the facility of exhausting air through the actuator unit. This exhaust vent is unthreaded on all valves except the pilot and solenoid types which allows the piping away of exhaust air.

All mechanisms are spring returned.

Operating information

Working pressure	0 - 10 bar
Working temperature	-10°C to +80°C
Solenoid version	-10°C to +50°C
Minimum pilot pressure	1.9 bar @ 6 bar supply
Response time (solenoid energised)	14 msecs
Response time (solenoid de-energised)	75 msecs

Flow capacities in accordance with ISO6358

	B102-B103	B202-B203
Flow;	C = 7,54	C = 10,75 Nl/s x bar
	b = 0,29	b = 0,24
	Qn = 33 l/s	Qn = 43 l/s
	Qmax = 54 l/s	Qmax = 75 l/s
	Cv = 2,65	Cv = 3,20

Material specification

Body	Zinc die cast
Roller	Zinc plated steel
Mechanical arm	Zinc plated steel
Poppet	Stainless steel
Seals	Nitrile
Spring	Stainless steel
Bush	Aluminium
Piston	Aluminium

Working medium, air quality

Working medium: Dry, filtered compressed air to ISO 8573-1 class 3.4.3.

Recommended air quality for valves

For best possible service life and trouble free operation, ISO 8573-1 quality class 3.4.3 should be used. This means 5µm filter (standard filter) dew point +3°C for indoor operation (a lower dew point should be selected for outdoor operation) and oil concentration 1.0 mg oil/m³, which is what a standard compressor with a standard filter gives.

ISO 8573-1 quality classes

Quality class	Pollution particle size (µm)	Pollution max. concentration (mg/m³)	Water max. press. dew point (°C)	Oil max. concentration (mg/m³)
1	0,1	0,1	-70	0,01
2	1	1	-40	0,1
3	5	5	-20	1,0
4	15	8	+3	5,0
5	40	10	+7	25
6	-	-	+10	-

Part number configurator for solenoid valves

D B | 1 | 2 | 2 | A | 4 | 9

	Valve family
DB	HD poppet solenoid operated

	Thread port
1	3/8 BSP
2	1/2 BSP

	Air supply to solenoid
2	Internal

	Function
2	2/2 NC
3	3/2 NC

	Overrides
A	None
C	Flush - Locking
D	Extended - non locking

	Voltage [1]		
	AC		DC
	60Hz	50Hz	
40	12		
42	24	22	
45			12
49			24
53	120	110	
57	240	230	
XX	valve less solenoid/coil		

[1] Shaded part numbers are standard
Unshaded part numbers are available on request but will be subject to minimum order quantities
Otherwise order XX version and order coil separately.

Part number configurator for manual & mechanical operated poppet valves

B | 1 | 0 | 2 | P

	Valve family
B	HD poppet manual & mechanical

	Thread port
1	3/8 BSP
2	1/2 BSP

	Function
2	2/2 NC
3	3/2 NC

	Operator
C	Ball
L	Lever
P	Pilot pressure
R	Roller lever

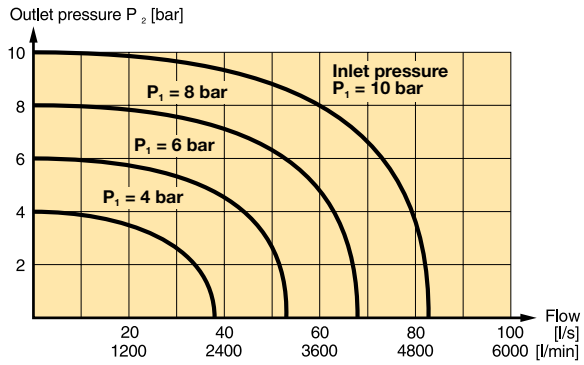
Flow characteristics

Flow capacities in accordance with ISO6358

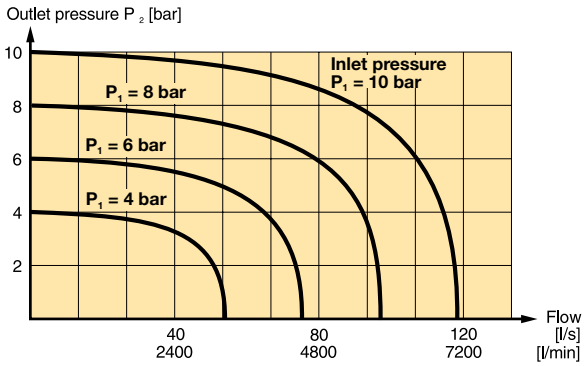
Flow measured with valve on manifold

All pressures = effective pressure

B102

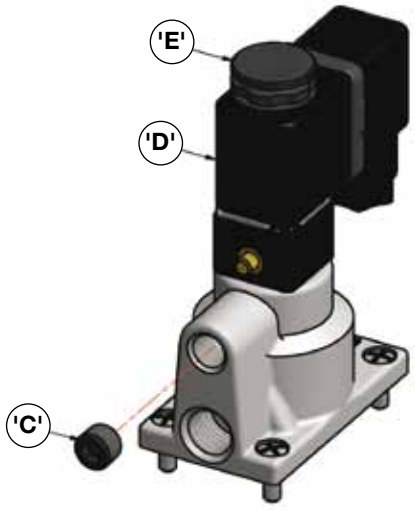


B202



Electrical Information

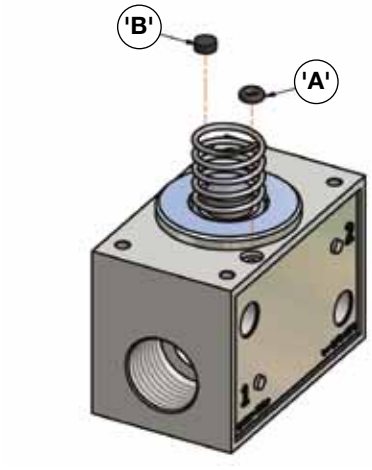
Power consumption		Inrush	Hold
	AC	VA	8.5VA
	DC	4.8 Watt	
Rating		100% continuous	
Isolation class		F	
Protection class		IP 65 (P 54) DIN 40 050	
Connection		DIN 43 650 Form B	
Solenoid response		millisecs at 7 bar	



External pilot supply option

Solenoid pilot operated valves have an internal pilot air supply, but provisions for external pilot supply is provided. To use with external supply interchange 'O'-ring (Item 'A') and Plug (Item 'B') to block off the internal pilot supply. Remove hexagon socket plug (Item 'C') from the external pilot supply port, connecting an air supply as desired.

Orientation of the solenoid coil (Item 'D') can be altered through 90° increments by loosening the diffuser nut (Item 'E').

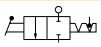
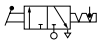
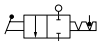
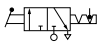
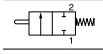


Main data for mechanically operated valves, Heavy duty poppet series (NC only)

Symbol	Type	Connection	Actuator	Return	Operating force at 6 bar, N	Weight Kg	Order code
	2/2	G3/8	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	**DB122A49** **DB122AXX**
	3/2	G3/8	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	**DB123A49** **DB123AXX**
	2/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	**DB222A49** **DB222AXX**
	3/2	G1/2	Solenoid pilot	Spring	24VDC Less solenoid	0.70 0.65	**DB223A49** **DB223AXX**
	2/2	G3/8	Air pilot	Spring		0.61	**B102P**
	3/2	G3/8	Air pilot	Spring		0.61	**B103P**
	2/2	G1/2	Air pilot	Spring		0.61	**B202P**
	3/2	G1/2	Air pilot	Spring		0.61	**B203P**

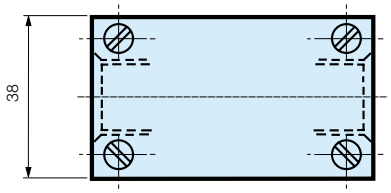
Order electrical connectors for solenoids separately.

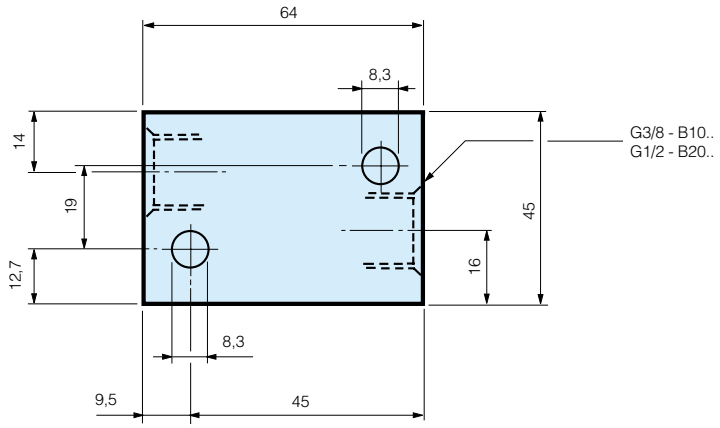
Main data for mechanically operated valves, Heavy duty poppet series (NC only)

Symbol	Type	Connection	Actuator	Return	Operating force at 6 bar, N	Weight Kg	Order code
	2/2	G3/8	Lever	Lever	22	0.65	**B102L**
	3/2	G3/8	Lock down	Lever lever	22	0.65	**B103L**
	2/2	G1/2	Lock down	Lever lever	22	0.65	**B202L**
	3/2	G1/2	Lock down	Lever lever	22	0.65	**B203L**
	2/2	G3/8	Roller lever	Spring	36	0.642	**B102R**
	3/2	G3/8	Roller lever	Spring	36	0.630	**B103R**
	2/2	G1/2	Roller lever	Spring	36	0.614	**B202R**
	3/2	G1/2	Roller lever	Spring	36	0.604	**B203R**
	2/2	G3/8	Ball	Spring	220	0.542	**B102C**
	3/2	G3/8	Ball	Spring	220	0.532	**B103C**
	2/2	G1/2	Ball	Spring	220	0.530	**B202C**
	3/2	G1/2	Ball	Spring	220	0.520	**B203C**

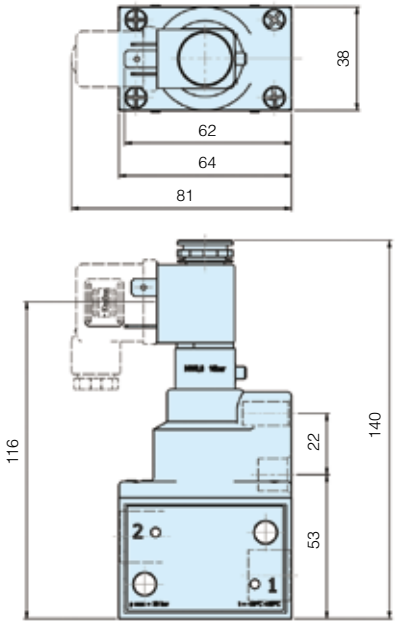
Mechanically operated valves - 2/2, 3/2 valves

Basic body dimensions

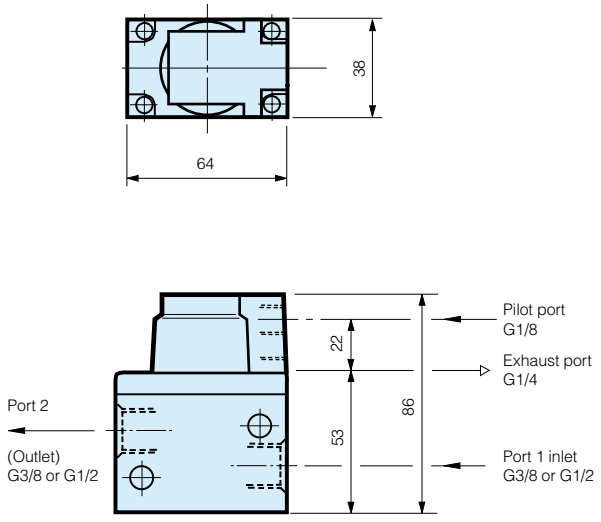




Solenoid pilot operated spring return
DB122, DB123, DB222, DB223



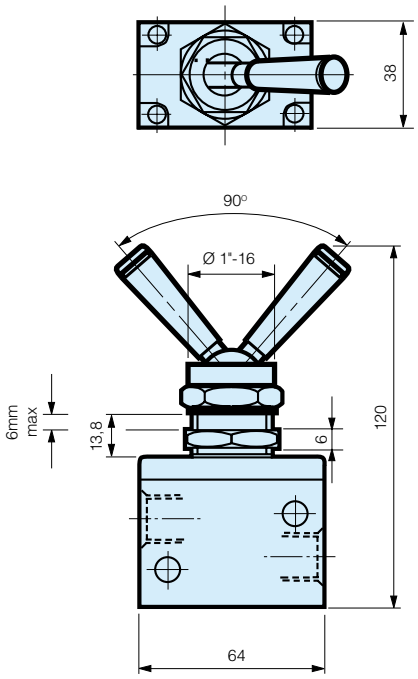
Air pilot operated spring return
B102P, B103P, B202P, B203P



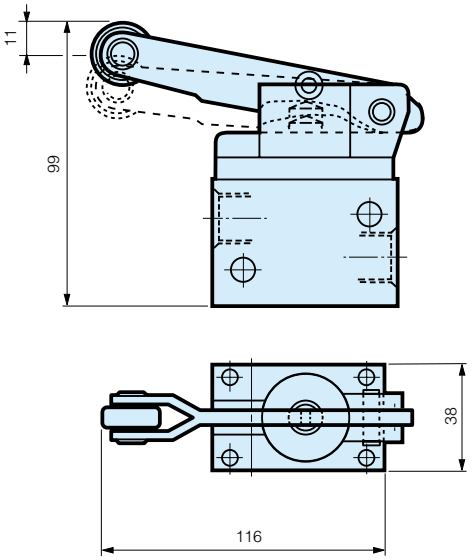
All dimensions in mm unless otherwise stated

Mechanically operated valves - 2/2, 3/2 valves

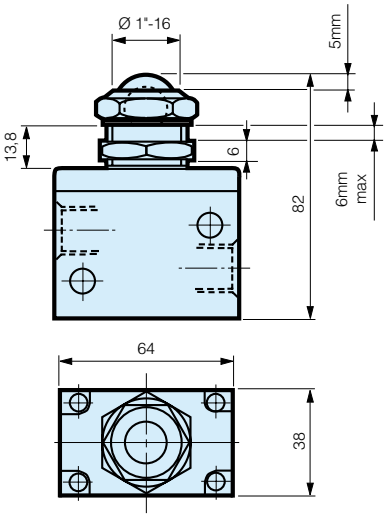
Lock down lever
B102L, B103L, B202L, B203L



Roller lever operated spring return
B102R, B103R, B202R, B203R



Ball operated spring return
B102C, B103C, B202C, B203C



All dimensions in mm unless otherwise stated

22mm solenoid operator part numbers and spares

Solenoid coils for 22mm solenoid operators

Voltage	**Order code** Form B	Weight (Kg)
12V 60Hz	**P2FCB440**	0.093
24V 50/60Hz	**P2FCB442**	0.093
12V DC	**P2FCB445**	0.093
12V DC Mobile	**P2FCB447**	0.093
24v DC Mobile	**P2FCB448**	0.093
24V DC	**P2FCB449**	0.093
48V DC	**P2FCB451**	0.093
110V/50Hz, 120V/60Hz	**P2FCB453**	0.093
230V/50Hz, 230V/60Hz	**P2FCB457**	0.093

Spare Solenoid Nuts

Valves with vented exhaust are fitted with diffuser plastic nut

Order Code
P2FND

Spare Solenoid Operators

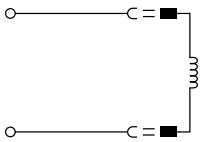
Solenoid pilot operator 22mm NC, Normal duty (Max Operating pressure 10bar, Temp –10°C to +50°C)

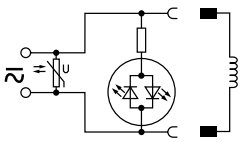
Order code (with locking bi-stable m/o)	Weight Kg
P2FP13N4C	0.05
Order code (with Non-locking monostable m/o)	Weight Kg
P2FP13N4D	0.05
Order code (with no m/o)	Weight Kg
P2FP13N4A	0.05

Note.
The operators are supplied with mounting screws and interface 'O' rings.
Coils and connectors must be ordered separately.

Solenoid Connectors / Cable Plugs EN175301-803

	Description	**Order code** 22mm Industrial Form B
With standard screw	Standard IP65 without flying lead	**3EV10V10**
	With LED and protection 24V AC/DC	**3EV10V20-24**
	With LED and protection 110V AC	**3EV10V20-110**
	With LED and protection 230V AC	**3EV10V20-230**
With cable	24V AC/DC, 5m cable LED and protection IP65	**3EV10V20-24L5**
	110V AC/DC, 5m cable LED and protection IP65	**3EV10V20-110L5**
	230V AC, 5m cable LED and protection IP65	**3EV10V20-230L5**



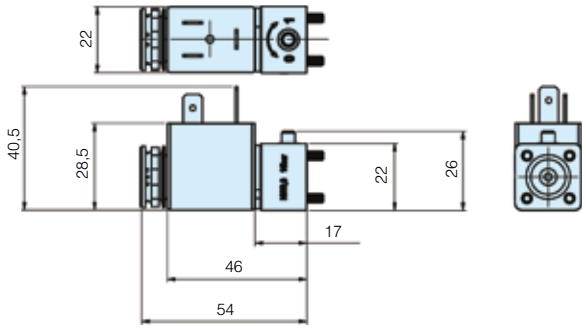


3EV10V10

3EV10V20-24	**3EV10V20-24L5**
3EV10V20-110	**3EV10V20-110L5**
3EV10V20-230	**3EV10V20-230L5**

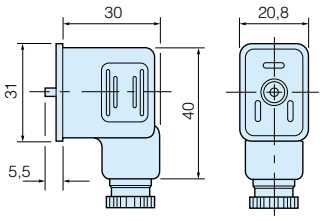
Cable Plug Dimensions (mm)

Solenoid operators P2E-•V...



Cable plugs Form B

3EV10V10

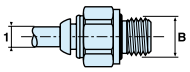


Accessories

Sintered bronze series silencers

Port	Order code	Pack Qty
G1/4	**P6M-BAA2**	1

Male straight connectors - Parallel thread



Tube Ø1	Thread B	Order code	Box Qty
4	1/8	**F4PMB4-1/8**	20
6	1/8	**F4PMB6-1/8**	30
6	1/4	**F4PMB6-1/4**	30
8	1/8	**F4PB8-1/8**	40
8	1/4	**F4PB8-1/4**	30
8	3/8	**F4PB8-3/8**	20
10	1/4	**F4PB10-1/4**	20
10	3/8	**F4PB10-3/8**	20
10	1/2	**F4PB10-1/2**	10
12	1/4	**F4PB12-1/4**	10
12	3/8	**F4PB12-3/8**	10
12	1/2	**F4PB12-1/2**	10
14	3/8	**F4PB14-3/8**	10
14	1/2	**F4PB14-1/2**	10

DX Global ISO Valves

A complete range of pneumatic ISO valves

Rust and corrosion resistant body

With the valve body in polyamide reinforced fiberglass and the casting in anodised aluminium, the Isomax range presents a comprehensive modern design to suit most industrial environments.

- **ISO 15407-1 Sizes 02 & 01 and ISO 5599-1 Sizes 1, 2 & 3**
- **Ceramic technology for long life operation**
- **From vacuum up to 12 bar applications**
- **Internal or external pilot supply with same valves**
- **M12 on each coil**
- **Common M12**

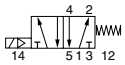
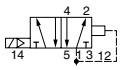
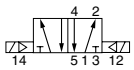
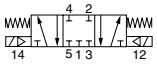
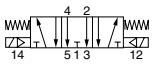
Ceramic slide valves for maximum operational life. Solenoid or air pilot actuation. Vacuum to 10 bar general applications.

- Size 01 and 02 (26 and 18 mm)
- Ceramic technology for long life operation
- From vacuum up to 10 bar applications
- Internal or external pilot supply with same valves
- Capture solenoid exhaust

Operation information

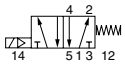
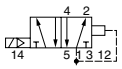
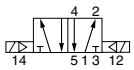
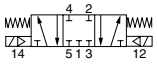
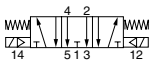
Working pressure :		-0,9 to 10 bar
Working temperature :		-10 to +60°C
	DX02	**DX01**
Flow (Qmax.) :	630 l/min	1000 l/min
Flow (Qn) :	385 l/min	585 l/min

Isomax - ISO 15407-1 - Sizes 02 & 01
15 mm DIN C / 24 Vdc / 1,2 W solenoid valve operator

Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	02 - 18 mm	130	**DX02-621-951M**
		01 - 26mm	170	**DX01-621-951M**
	5/2 Single solenoid - Differential	02 - 18 mm	130	**DX02-651-951M**
		01 - 26mm	170	**DX01-651-951M**
	5/2 Double solenoid	02 - 18 mm	130	**DX02-606-951M**
		01 - 26mm	170	**DX01-606-951M**
	5/3 Closed Centre (APB)	02 - 18 mm	130	**DX02-616-951M**
		01 - 26mm	170	**DX01-616-951M**
	5/3 Vented Center	02 - 18 mm	160	**DX02-611-951M**
		01 - 26mm	170	**DX01-611-951M**

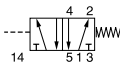
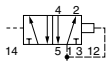
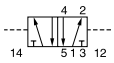
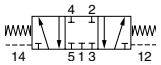
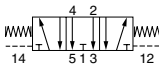
Solenoid connectors & cable plugs to be ordered separately. See solenoid section

Isomax - ISO 15407-1 - Sizes 02 & 01
Without 15 mm DIN C solenoid valve operator

Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	02 - 18 mm	130	**DX02-621-60**
		01 - 26mm	170	**DX01-621-60**
	5/2 Single solenoid - Differential	02 - 18 mm	130	**DX02-651-60**
		01 - 26mm	170	**DX01-651-60**
	5/2 Double solenoid	02 - 18 mm	130	**DX02-606-60**
		01 - 26mm	170	**DX01-606-60**
	5/3 Closed Centre (APB)	02 - 18 mm	130	**DX02-616-60**
		01 - 26mm	170	**DX01-616-60**
	5/3 Vented Center	02 - 18 mm	160	**DX02-611-60**
		01 - 26mm	170	**DX01-611-60**

15mm solenoid valve operator, solenoid connectors & cable plug to be ordered separately. See solenoid section

Isomax - ISO 15407-1 - Sizes 02 & 01
Pneumatic remote pilot operated
Without valve spool manual override

Symbol	Description	Size	Weight (g)	Order code
	5/2 Air pilot - Spring return	02 - 18 mm	90	**DX02-421-60**
		01 - 26mm	130	**DX01-421-60**
	5/2 Air pilot - Differential	02 - 18 mm	90	**DX02-451-60**
		01 - 26mm	130	**DX01-451-60**
	5/2 Double air pilot	02 - 18 mm	90	**DX02-406-60**
		01 - 26mm	130	**DX01-406-60**
	5/3 Closed Centre (APB)	02 - 18 mm	90	**DX02-416-60**
		01 - 26mm	130	**DX01-416-60**
	5/3 Vented Center	02 - 18 mm	90	**DX02-411-60**
		01 - 26mm	130	**DX01-411-60**

Ceramic technology

All ISOMAX products use high-tech ceramic switching technology :

- **Excellent reliability :**

  Long life in excess of 100 million operations*.

  Operates with lubricated or non lubricated air.

  Low sensitivity to air quality changes switching without seal.

  Stiction free.

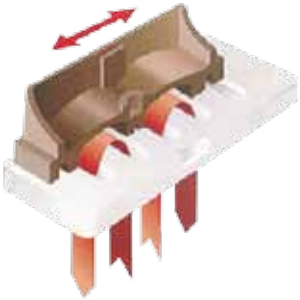
- **High performances :**

  Slide valve concept allows high flow / size ratio and short response time due to short slide stroke and low friction.

- **Switchable selector**

  Valves fitted with switchable selector to give internal or external pilot supply

Ceramic plate



- **Size 02 & Size 01**

  Solenoid exhaust pilot

- **Stable long lasting performances**

  Low friction switching : minimum wear of the valve member/seal assembly.

Ceramic slide valves for maximum operational life. Solenoid or air pilot operated with a wide choice of bases and manifolds. Vacuum to 12 bar general applications.

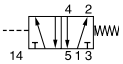
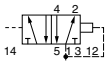
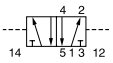
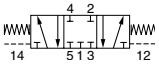
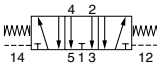
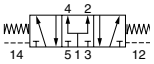
- Size1, 2 and 3
- Ceramic technology for long life operation
- From vacuum up to 12 bar applications
- Internal or external pilot supply with same valves
- M12 on each coil
- Common M12

For ATEX specific products contact Sales Office

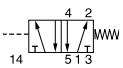
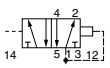
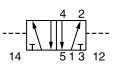
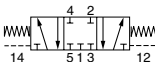
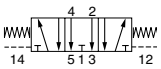
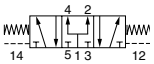
Operation information

Working pressure :	-0,9 to 12 bar		
Working temperature :	-10 to +60°C		
	DX1	**DX2**	**DX3**
Flow (Qmax.) :	1680 l/min	3640 l/min	6420 l/min
Flow (Qn.) :	1150 l/min	2330 l/min	4050 l/min
ATEX approval:	CE Ex II 2 GD c 85°C		

Isomax - ISO 5599-1 - Sizes 1, 2 & 3
Pneumatic remote pilot operated
With direct valve spool manual override

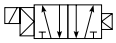
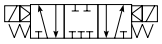
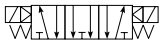
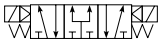
Symbol	Description	Size	Weight (g)	Order code
	5/2 Air pilot - Spring return	1 - 43 mm	350	**DX1-421-70**
		2 - 56 mm	600	**DX2-421-70**
		3 - 71 mm	1100	**DX3-421-70**
	5/2 Air pilot - Differential	1 - 43 mm	350	**DX1-451-70**
		2 - 56 mm	600	**DX2-451-70**
		3 - 71 mm	1100	**DX3-451-70**
	5/2 Double air pilot	1 - 43 mm	350	**DX1-406-70**
		2 - 56 mm	600	**DX2-406-70**
		3 - 71 mm	1100	**DX3-406-70**
	5/3 Closed Center (APB)	1 - 43 mm	350	**DX1-416-70**
		2 - 56 mm	600	**DX2-416-70**
		3 - 71 mm	1100	**DX3-416-70**
	5/3 Vented Center	1 - 43 mm	350	**DX1-411-70**
		2 - 56 mm	600	**DX2-411-70**
		3 - 71 mm	1100	**DX3-411-70**
	5/3 Pressurised Center	1 - 43 mm	350	**DX1-413-70**
		2 - 56 mm	600	**DX2-413-70**

Isomax - ISO 5599-1 - Sizes 1, 2 & 3
Pneumatic remote pilot operated
Without direct valve spool manual override

Symbol	Description	Size	Weight (g)	Order code
	5/2 Air pilot - Spring return	1 - 43 mm	350	**DX1-421-60**
		2 - 56 mm	600	**DX2-421-60**
		3 - 71 mm	1100	**DX3-421-60**
	5/2 Air pilot - Differential	1 - 43 mm	350	**DX1-451-60**
		2 - 56 mm	600	**DX2-451-60**
		3 - 71 mm	1100	**DX3-451-60**
	5/2 Double air pilot	1 - 43 mm	350	**DX1-406-60**
		2 - 56 mm	600	**DX2-406-60**
		3 - 71 mm	1100	**DX3-406-60**
	5/3 Closed Center (APB)	1 - 43 mm	350	**DX1-416-60**
		2 - 56 mm	600	**DX2-416-60**
		3 - 71 mm	1100	**DX3-416-60**
	5/3 Vented Center	1 - 43 mm	350	**DX1-411-60**
		2 - 56 mm	600	**DX2-411-60**
		3 - 71 mm	1100	**DX3-411-60**
	5/3 Pressurised Center	1 - 43 mm	350	**DX1-413-60**
		2 - 56 mm	600	**DX2-413-60**

Isomax - ISO 5599-1 - Sizes 1, 2 & 3
CNOMO operator with 30 x 30 DIN Form A / 24 Vdc / 2,7 W solenoid

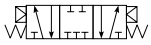
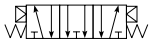
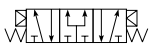
With non locking manual override on solenoid valve operator - Without direct valve spool manual override

Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	1 - 43 mm	500	**DX1-621-BL49**
		2 - 56 mm	750	**DX2-621-BL49**
		3 - 71 mm	1250	**DX3-621-BL49**
	5/2 Single solenoid - Differential	1 - 43 mm	500	**DX1-651-BL49**
		2 - 56 mm	750	**DX2-651-BL49**
		3 - 71 mm	1250	**DX3-651-BL49**
	5/2 Double solenoid	1 - 43 mm	650	**DX1-606-BL49**
		2 - 56 mm	900	**DX2-606-BL49**
		3 - 71 mm	1400	**DX3-606-BL49**
	5/3 Closed Center (APB)	1 - 43 mm	560	**DX1-616-BL49**
		2 - 56 mm	900	**DX2-616-BL49**
		3 - 71 mm	1400	**DX3-616-BL49**
	5/3 Vented Center	1 - 43 mm	650	**DX1-611-BL49**
		2 - 56 mm	900	**DX2-611-BL49**
		3 - 71 mm	1400	**DX3-611-BL49**
	5/3 Pressurised Center	1 - 43 mm	650	**DX1-613-BL49**
		2 - 56 mm	900	**DX2-613-BL49**

Solenoid connectors & cable plug to be ordered separately. See solenoid section

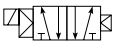
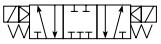
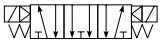
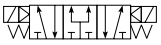
Isomax - ISO 5599-1 - Sizes 1, 2 & 3
CNOMO operator without coil

With non locking manual override on solenoid valve operator - Without direct valve spool manual override

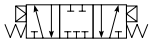
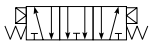
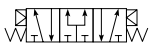
Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	1 - 43 mm	400	**DX1-621-BN**
		2 - 56 mm	650	**DX2-621-BN**
		3 - 71 mm	1150	**DX3-621-BN**
	5/2 Single solenoid - Differential	1 - 43 mm	400	**DX1-651-BN**
		2 - 56 mm	650	**DX2-651-BN**
		3 - 71 mm	1150	**DX3-651-BN**
	5/2 Double solenoid	1 - 43 mm	550	**DX1-606-BN**
		2 - 56 mm	800	**DX2-606-BN**
		3 - 71 mm	1300	**DX3-606-BN**
	5/3 Closed Center (APB)	1 - 43 mm	550	**DX1-616-BN**
		2 - 56 mm	800	**DX2-616-BN**
		3 - 71 mm	1300	**DX3-616-BN**
	5/3 Vented Center	1 - 43 mm	550	**DX1-611-BN**
		2 - 56 mm	800	**DX2-611-BN**
		3 - 71 mm	1300	**DX3-611-BN**
	5/3 Pressurised Center	1 - 43 mm	550	**DX1-613-BN**
		2 - 56 mm	800	**DX2-613-BN**

30 x 30 DIN Form A or 22 x 30 DIN Form B coil & coil connectors to be ordered separately. See solenoid section

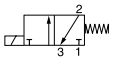
Isomax - ISO 5599-1 - Sizes 1, 2 & 3
Valve alone without operator
With direct valve spool manual override

Symbol	Description	Size	Weight (g)	Order code
	5/2 Air pilot - Spring return	1 - 43 mm	350	**DX1-621-70**
		2 - 56 mm	600	**DX2-621-70**
		3 - 71 mm	1100	**DX3-621-70**
	5/2 Air pilot - Differential	1 - 43 mm	350	**DX1-651-70**
		2 - 56 mm	600	**DX2-651-70**
		3 - 71 mm	1100	**DX3-651-70**
	5/2 Double air pilot	1 - 43 mm	350	**DX1-606-70**
		2 - 56 mm	600	**DX2-606-70**
		3 - 71 mm	1100	**DX3-606-70**
	5/3 Closed Center (APB)	1 - 43 mm	350	**DX1-616-70**
		2 - 56 mm	600	**DX2-616-70**
		3 - 71 mm	1100	**DX3-616-70**
	5/3 Vented Center	1 - 43 mm	350	**DX1-611-70**
		2 - 56 mm	600	**DX2-611-70**
		3 - 71 mm	1100	**DX3-611-70**
	5/3 Pressurised Center	1 - 43 mm	350	**DX1-613-70**
		2 - 56 mm	600	**DX2-613-70**

Isomax - ISO 5599-1 - Sizes 1, 2 & 3
Valve alone without operator
Without direct valve spool manual override

Symbol	Description	Size	Weight (g)	Order code
	5/2 Air pilot - Spring return	1 - 43 mm	350	**DX1-621-60**
		2 - 56 mm	600	**DX2-621-60**
		3 - 71 mm	1100	**DX3-621-60**
	5/2 Air pilot - Differential	1 - 43 mm	350	**DX1-621-60**
		2 - 56 mm	600	**DX2-621-60**
		3 - 71 mm	1100	**DX3-621-60**
	5/2 Double air pilot	1 - 43 mm	350	**DX1-606-60**
		2 - 56 mm	600	**DX2-606-60**
		3 - 71 mm	1100	**DX3-606-60**
	5/3 Closed Center (APB)	1 - 43 mm	350	**DX1-616-60**
		2 - 56 mm	600	**DX2-616-60**
		3 - 71 mm	1100	**DX3-616-60**
	5/3 Vented Center	1 - 43 mm	350	**DX1-611-60**
		2 - 56 mm	600	**DX2-611-60**
		3 - 71 mm	1100	**DX3-611-60**
	5/3 Pressurised Center	1 - 43 mm	350	**DX1-613-60**
		2 - 56 mm	600	**DX2-613-60**

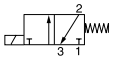
15 mm N.C. Solenoid Operator - Standard version



Voltage	W (g)		Not Extended: Without Manual Override Order code	Not Extended: Blue Override non locking flush Order code	Not Extended: Yellow Override Locking flush Order code	Extended: Blue Overide non locking flush Order code	Extended: Yellow Override Locking flush Order code
12 Vdc	38		**P2E-KV32B0**	**P2E-KV32B1**	**P2E-KV32B2**		
24 Vdc	38		**P2E-KV32C0**	**P2E-KV32C1**	**P2E-KV32C2**	**P2E-KV32C3**	**P2E-KV32C4**
48 Vdc	38		**P2E-KV32D0**	**P2E-KV32D1**	**P2E-KV32D2**		
24 Vac 50 Hz	38		**P2E-KV31C0**	**P2E-KV31C1**	**P2E-KV31C2**	**P2E-KV31C3**	**P2E-KV31C4**
48 Vac 50/60Hz	38		**P2E-KV34D0**	**P2E-KV34D1**	**P2E-KV34D2**		
115 Vac 50Hz/ 120 Vac 60Hz	38		**P2E-KV31F0**	**P2E-KV31F1**	**P2E-KV31F2**		
230 Vac 50Hz 240 Vac 60Hz/	38		**P2E-KV31J0**	**P2E-KV31J1**	**P2E-KV31J2**		

Mounting screws included with the solenoid valve operator

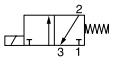
15 mm N.C. Solenoid Operator - Mobile version



Voltage	W (g)	Without Manual Override Order code	Not Extended Blue Override non locking flush Order code
12 Vdc	38	**P2E-MV35B0**	**P2E-MV35B1**
24 Vdc	38	**P2E-MV35C0**	**P2E-MV35C1**
37,5 Vdc	38	**P2E-MV35W0**	**P2E-MV35W1**
48 Vdc	38	**P2E-MV35D0**	**P2E-MV35D1**
72 Vdc	38	**P2E-MV35T0**	**P2E-MV35T1**
78 Vdc	38	**P2E-MV35Y0**	**P2E-MV35Y1**
96 Vdc	38	**P2E-MV35V0**	**P2E-MV35V1**
110 Vdc	38	**P2E-MV35E0**	**P2E-MV35E1**

Mounting screws included with the solenoid valve operator

15 mm N.C. Solenoid Operator - Food Industry version



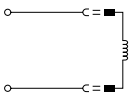
Voltage	W (g)		Not Extended: Without Manual Override Order code	Not Extended: Blue Override non locking flush Order code	Not Extended: Yellow Override Locking flush Order code	Extended: Blue Overide non locking flush Order code	Extended: Yellow Override Locking flush Order code
24 Vdc	38		**P2E-QV32C0**	**P2E-QV32C1**	**P2E-QV32C2**	**P2E-QV32C3**	**P2E-QV32C4**
48 Vdc	38		**P2E-QV32D0**	**P2E-QV32D1**	**P2E-QV32D2**		
24 Vac 50 Hz	38		**P2E-QV31C0**	**P2E-QV31C1**	**P2E-QV31C2**	**P2E-QV31C3**	**P2E-QV31C4**
48 Vac 50/60Hz	38		**P2E-QV34D0**	**P2E-QV34D1**	**P2E-QV34D2**		
115 Vac 50Hz/ 120 Vac 60Hz	38		**P2E-QV31F0**	**P2E-QV31F1**	**P2E-QV31F2**	**P2E-QV31F3**	**P2E-QV31F4**
230 Vac 50Hz 240 Vac 60Hz/	38		**P2E-QV31J0**	**P2E-QV31J1**	**P2E-QV31J2**	**P2E-QV31J3**	**P2E-QV31J4**

Mounting screws included with the solenoid valve operator

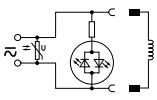
Solenoid Connectors 15 mm DIN Form C / ISO15217

Connector schematic

No LED version



LED version



Description	Characteristic	Visualisation	Cable length	W (g)	Order code
With large headed screw suitable for mounting in inaccessible or recess position	Standard IP65	No LED	No cable	20	**P8C-C**
		24 Vdc LED	No cable	20	**P8C-C26C**
		110 Vac LED	No cable	20	**P8C-C21E**
With standard screw	Standard IP65	No LED	No cable	15	**P8C-D**
			2 meters	115	**P8L-C2**
			5 meters	240	**P8L-C5**
		24 Vdc/Vac LED	No cable	15	**P8C-D26C**
			2 meters	170	**P8L-C226C**
			5 meters	240	**P8L-C526C**
			10 meters	440	**P8L-CA26C**
		110 Vac LED	No cable	115	**P8C-D21E**
			2 meters	115	**P8L-C221E**
			5 meters	230	**P8L-C521E**

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.

3/2 N.C. CNOMO Operator - Without Coil

	Description	Manual override	W (g)	Order code
	Solenoid operator for 30 x 30 DIN Form A Coil	No manual override	65	**P2FP23N4A**
	Dedicated to Low Power 2,5W / 3VA Coil	Pulse non locking	65	**P2FP23N4B**
		Locking	65	**P2FP23N4C**
	Solenoid operator for 30 x 30 DIN Form A Coil	No manual override	65	**EV3000100**
	Dedicated to High Power 4,5W / 5VA Coil	Pulse non locking	65	**EV3001100**
		Locking	65	**EV3003100**
	Solenoid operator for 22 x 30 DIN Form B Coil	No manual override	65	**1EV0*310**
	Dedicated to Low Power 2,5W / 4,5VA Coil	Pulse non locking	65	**1EV1*310**
		Locking	65	**1EV3*310**

30 x 30 DIN Form A and 22 x 30 DIN Form B Coils for CNOMO Operator

		30 x 30 DIN Form A			22 x 30 DIN Form B	
			Low Power (to be used with P2FP23N4x)	High Power (to be used with EV300x100)		Low Power (to be used with 1EVx*310)
	Voltage	W (g)	**Order code**	**Order code**	W (g)	**Order code**
	12 Vdc	105	**P2FCA445**	**P2FCA545**	93	**P2FCB345**
	24 Vdc	105	**P2FCA449**	**P2FCA549**	93	**P2FCB349**
	48 Vdc	105	**P2FCA451**	**P2FCA351**	93	**P2FCB351**
	12 Vac 50/60 Hz	105	**P2FCA440**	**P2FCA540**	93	**P2FCB340**
	24 Vac 50/60 Hz	105	**P2FCA445**	**P2FCA545**	93	**P2FCB345**
	48 Vac 50/60 Hz	105	**P2FCA449**	**P2FCA549**	93	**P2FCB349**
	110 Vac 50 Hz / 120 Vac 60 Hz	105	**P2FCA453**	**P2FCA553**	93	**P2FCB353**
	230 Vac 50 Hz / 240 Vac 60 Hz	105	**P2FCA457**	**P2FCA557**	93	**P2FCB357**

Spare Solenoid Nuts

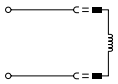
	Description	Usage	W (g)	Order code
	Plastic knurled nut	For valve requiring Captured exhaust	5	**P2FNP**
	Diffuser plastic nut	For valve requiring Vented exhaust	5	**P2FND**

30 x 30 DIN Form A or 22 x 30 DIN Form B Solenoid Connectors

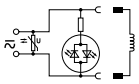
	Description	Characteristic	Visualisation	Cable length	W (g)	Order code
	30 x 30 DIN Form A connector	Standard IP65	No LED	No cable	15	**3EV290V10**
	With standard screw		24 Vdc/Vac LED	No cable	30	**3EV290V20-24**
				5 meters	355	**3EV290V20-24L5**
			110 Vac LED	No cable	30	**3EV290V20-110**
				5 meters	470	**3EV290V20-110L5**
			230 Vac LED	No cable	30	**3EV290V20-230**
				5 meters	350	**3EV290V20-230L5**
	22 x 30 DIN Form B connector	Standard IP65	No LED	No cable	15	**3EV290V10**
	With standard screw		24 Vdc/Vac LED	No cable	20	**3EV10V20-24**
				5 meters	350	**3EV10V20-24L5**
			110 Vac LED	No cable	25	**3EV10V20-110**
				5 meters	355	**3EV10V20-110L5**
			230 Vac LED	No cable	25	**3EV10V20-230**
				5 meters	360	**3EV10V20-230L5**

Connector schematic

No LED version



LED version



Spare Solenoid Nuts

	Description	Characteristics	Visualisation	Cable	W (g)	Order code
	M12 Connector for one coil	24 V AC/DC - 4A	LED	No cable	30	**P8C-A626C**
	M12 Connector for two coils	24 V AC/DC - 4A	LED	No cable	70	**P8C-AM26C**

Note: Solenoid pilot operators are fitted to the Viking valve range.
Order the above part numbers for spares.
The operators are supplied with mounting screws and interface 'O' rings.
Coils and connectors must be ordered separately.

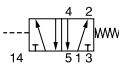
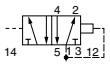
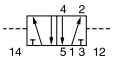
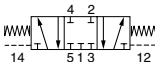
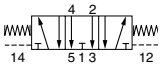
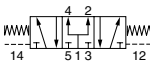
Solenoid or air pilot actuation. Vacuum to 10 bar heavy duty applications.

- Size HA and HB (26mm and 18mm)
- Heavy duty and corrosion resistant body
- Internal led & rectifier
- Internal or external pilot supply with same valve
- M12 common wiring

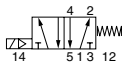
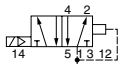
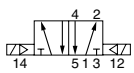
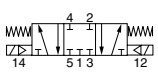
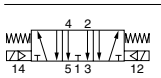
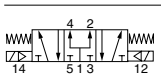
Operation information

Working pressure :	2,0 to 10 bar	
Working temperature :	-15 to +50°C	
	Size 02	**Size 01**
Flow (Qmax.) :	10,8 l/s	25,3 l/s
Flow (Qn) :	6,5 l/s	15,3 l/s

Isys ISO 15407-1 - Sizes 02 & 01
Pneumatic remote pilot operated
Oriented side 14, LED & Surge suppressor

	Symbol	Description	Size	Weight (g)	Order code
HB 18 mm		5/2 Air pilot - Spring return	02 - 18 mm	150	**HBFWX000XXA**
			01 - 26 mm	250	**HAFWX000XXA**
		5/2 Air pilot - Differential	02 - 18 mm	150	**HB3WX000XXA**
			01 - 26 mm	250	**HA3WX000XXA**
		5/2 Double air pilot	02 - 18 mm	165	**HB4WX000XXA**
			01 - 26 mm	265	**HA4WX000XXA**
		5/3 Closed Center (APB)	02 - 18 mm	165	**HB8WX000XXA**
			01 - 26 mm	265	**HA8WX000XXA**
HA 26 mm		5/3 Vented Center	02 - 18 mm	165	**HB9WX000XXA**
			01 - 26 mm	265	**HA9WX000XXA**
		5/3 Pressurised Center	02 - 18 mm	165	**HB0WX000XXA**
			01 - 26 mm	265	**HA0WX000XXA**

Isys ISO 15407-1 - Sizes 02 & 01
With 24 Vdc / 1 W built-in coil - Integrated M12 connector
Oriented side 14, LED & Surge suppressor

	Symbol	Description	Size	Weight (g)	Order code
HB 18 mm		5/2 Air pilot - Spring return	02 - 18 mm	150	**HBEWXBG2G9000FA**
			01 - 26 mm	250	**HAEWXBG2G9000FA**
		5/2 Air pilot - Differential	02 - 18 mm	150	**HB1WXBG2G9000FA**
			01 - 26 mm	250	**HA1WXBG2G9000FA**
		5/2 Double air pilot	02 - 18 mm	165	**HB2WXBG2G9000FA**
			01 - 26 mm	265	**HA2WXBG2G9000FA**
		5/3 Closed Center (APB)	02 - 18 mm	165	**HB5WXBG2G9000FA**
			01 - 26 mm	265	**HA5WXBG2G9000FA**
HA 26 mm		5/3 Vented Center	02 - 18 mm	165	**HB6WXBG2G9000FA**
			01 - 26 mm	265	**HA6WXBG2G9000FA**
		5/3 Pressurised Center	02 - 18 mm	165	**HB7WXBG2G9000FA**
			01 - 26 mm	265	**HA7WXBG2G9000FA**

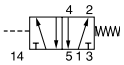
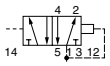
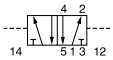
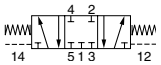
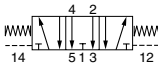
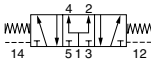
Heavy duty valve. Solenoid or air pilot. Vacuum to 10 bar. Wide choice of electrical connections.

- Size 1, 2, 3
- Heavy duty and corrosion resistant body
- Vacuum to 10 bar
- Internal or external pilot supply with same valve
- Din A, M12, M23 connections

Operation information

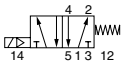
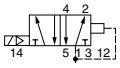
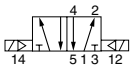
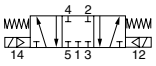
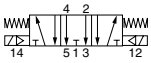
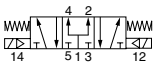
Working pressure :	2,0 to 10 bar		
Working temperature :	-15 to +50°C		
	Size 1	**Size 2**	**Size 3**
Flow (Qmax.) :	34,5 l/s	69,0 l/s	130,8 l/s
Flow (Qn) :	20,8 l/s	42,0 l/s	83,7 l/s

Isys ISO 5599-1 - Sizes 1, 2 & 3
Pneumatic Remote Pilot operated valve

	Symbol	Description	Size	Weight (g)	Order code
		5/2 Single solenoid - Spring return	1 - 43 mm	600	**H1FWX000XXD**
			2 - 56 mm	1020	**H2FWX000XXD**
			3 - 71 mm	1300	**H3FWX000XXD**
		5/2 Single solenoid - Differential	1 - 43 mm	600	**H13WX000XXD**
			2 - 56 mm	1020	**H23WX000XXD**
			3 - 71 mm	1300	**H33WX000XXD**
		5/2 Double solenoid	1 - 43 mm	600	**H14WX000XXD**
			2 - 56 mm	1020	**H24WX000XXD**
			3 - 71 mm	1300	**H34WX000XXD**
		5/3 Closed Center (APB)	1 - 43 mm	600	**H18WX000XXD**
			2 - 56 mm	1020	**H28WX000XXD**
			3 - 71 mm	1300	**H38WX000XXD**
		5/3 Vented Center	1 - 43 mm	600	**H19WX000XXD**
			2 - 56 mm	1020	**H29WX000XXD**
			3 - 71 mm	1300	**H39WX000XXD**
		5/3 Pressurised Center	1 - 43 mm	600	**H10WX000XXD**
			2 - 56 mm	1020	**H20WX000XXD**
			3 - 71 mm	1300	**H30WX000XXD**

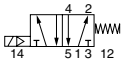
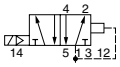
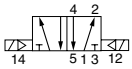
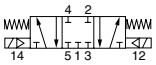
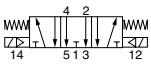
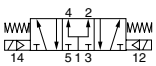
30 x 30 DIN Form A or 22 x 30 DIN Form B solenoid & solenoid connectors to be ordered separately. See solenoid section

Isys ISO 5599-1 - Sizes 1, 2 & 3
CNOMO operator with 30 x 30 DIN Form A / 24 Vdc / 2,7 W solenoid

Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	1 - 43 mm	770	**H1EWXBBL49D**
		2 - 56 mm	1190	**H2EWXBBL49D**
		3 - 71 mm	1470	**H3EWXBBL49D**
	5/2 Single solenoid - Differential	1 - 43 mm	770	**H11WXBBL49D**
		2 - 56 mm	1190	**H21WXBBL49D**
		3 - 71 mm	1470	**H31WXBBL49D**
	5/2 Double solenoid	1 - 43 mm	940	**H12WXBBL49D**
		2 - 56 mm	1360	**H22WXBBL49D**
		3 - 71 mm	1640	**H32WXBBL49D**
	5/3 Closed Center (APB)	1 - 43 mm	940	**H15WXBBL49D**
		2 - 56 mm	1360	**H25WXBBL49D**
		3 - 71 mm	1640	**H35WXBBL49D**
	5/3 Vented Center	1 - 43 mm	940	**H16WXBBL49D**
		2 - 56 mm	1360	**H26WXBBL49D**
		3 - 71 mm	1640	**H36WXBBL49D**
	5/3 Pressurised Center	1 - 43 mm	940	**H17WXBBL49D**
		2 - 56 mm	1360	**H27WXBBL49D**
		3 - 71 mm	1640	**H37WXBBL49D**

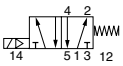
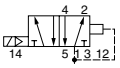
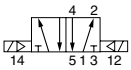
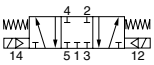
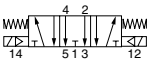
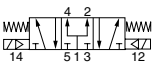
Solenoid connectors & cable plug to be ordered separately. See solenoid section

Isys ISO 5599-1 - Sizes 1, 2 & 3
CNOMO operator without coil

Symbol	Description	Size	Weight (g)	Order code
	5/2 Single solenoid - Spring return	1 - 43 mm	650	**H1EWXBBNXXD**
		2 - 56 mm	1070	**H2EWXBBNXXD**
		3 - 71 mm	1350	**H3EWXBBNXXD**
	5/2 Single solenoid - Differential	1 - 43 mm	650	**H11WXBBNXXD**
		2 - 56 mm	1070	**H21WXBBNXXD**
		3 - 71 mm	1350	**H31WXBBNXXD**
	5/2 Double solenoid	1 - 43 mm	700	**H12WXBBNXXD**
		2 - 56 mm	1120	**H22WXBBNXXD**
		3 - 71 mm	1400	**H32WXBBNXXD**
	5/3 Closed Center (APB)	1 - 43 mm	700	**H15WXBBNXXD**
		2 - 56 mm	1120	**H25WXBBNXXD**
		3 - 71 mm	1400	**H35WXBBNXXD**
	5/3 Vented Center	1 - 43 mm	700	**H16WXBBNXXD**
		2 - 56 mm	1120	**H26WXBBNXXD**
		3 - 71 mm	1400	**H36WXBBNXXD**
	5/3 Pressurised Center	1 - 43 mm	700	**H17WXBBNXXD**
		2 - 56 mm	1120	**H27WXBBNXXD**
		3 - 71 mm	1400	**H37WXBBNXXD**

30 x 30 DIN Form A or 22 x 30 DIN Form B solenoid & solenoid connectors to be ordered separately. See solenoid section

Isys ISO 5599-1 - Sizes 1, 2 & 3
CNOMO operator with Central M12 connector / 24 Vdc / 2,7 W solenoid

	Symbol	Description	Size	Weight (g)	Order code
		5/2 Single solenoid - Spring return	1 - 43 mm	770	**H1EWXBG2B9000FD**
			2 - 56 mm	1290	**H2EWXBG2B9000FD**
			3 - 71 mm	1570	**H3EWXBG2B9000FD**
		5/2 Single solenoid - Differential	1 - 43 mm	770	**H11WXBG2B9000FD**
			2 - 56 mm	1290	**H21WXBG2B9000FD**
			3 - 71 mm	1570	**H31WXBG2B9000FD**
		5/2 Double solenoid	1 - 43 mm	1040	**H12WXBG2B9000FD**
			2 - 56 mm	1460	**H22WXBG2B9000FD**
			3 - 71 mm	1740	**H32WXBG2B9000FD**
		5/3 Closed Center (APB)	1 - 43 mm	1040	**H15WXBG2B9000FD**
			2 - 56 mm	1460	**H25WXBG2B9000FD**
			3 - 71 mm	1740	**H35WXBG2B9000FD**
		5/3 Vented Center	1 - 43 mm	1040	**H16WXBG2B9000FD**
			2 - 56 mm	1460	**H26WXBG2B9000FD**
			3 - 71 mm	1740	**H36WXBG2B9000FD**
		5/3 Pressurised Center	1 - 43 mm	1040	**H17WXBG2B9000FD**
			2 - 56 mm	1460	**H27WXBG2B9000FD**
			3 - 71 mm	1740	**H37WXBG2B9000FD**

Side ported individual subbase - ISO 15407-1 - Sizes 02 & 01

	Description	Size	Port Size	Weight (g)	Order code
	Invidual Subbase Can be used for External pilot supply or Single or Double pneumatic remote pilot	02 - 18 mm	1/8 BSPP	70	**PL02-01-70**
			1/8 NPT	70	**PL02-01-70**
		01 - 26 mm	1/4 BSPP	120	**PL02-01-70**
			1/4 NPT	120	**PL02-01-70**

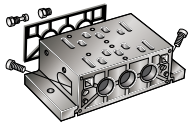
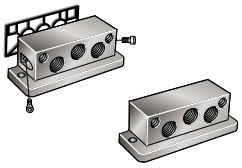
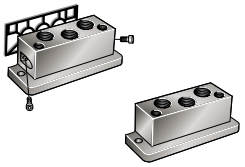
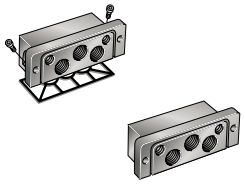
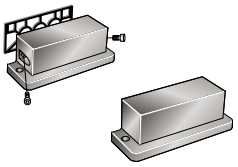
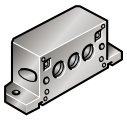
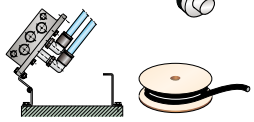
Front ported manifold & End plate - ISO 15407-1 - Sizes 02 & 01

	Description	Size	Port Size	Weight (g)	Order code
	Two position manifold base Can be used for External pilot supply Cannot be used for remote pilot	02 - 18 mm	1/8 BSPP	140	**PJLP02-201-70**
			1/8 NPT	140	**PJLP02-201-80**
		01 - 26 mm	1/4 BSPP	700	**PJLP01-202-70**
			1/4 NPT	700	**PJLP01-202-80**
	Two position manifold base Can be used for External pilot supply using #14 or Single or Double pneumatic remote pilot	01 - 26 mm	1/4 BSPP	730	**PJL01-202-70**
			1/4 NPT	730	**PJL01-202-80**
	End plate kit	02 - 18 mm	1/4 BSPP	150	**PEJ02-02-70**
			1/4 NPT	150	**PEJ02-02-80**
		01 - 26 mm	3/8 BSPP	520	**PEJ01-03-70**
			3/8 NPT	520	**PEJ01-03-80**

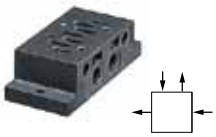
Accessories

	Description	Size	Weight (g)	Order code
	Blanking plate	02 - 18 mm	40	**DX02BLK**
		01 - 26 mm	50	**DX01BLK**
	Blanking plug	02 - 18 mm	10	**DX02BD0**
		01 - 26 mm	20	**DX01BD0**
	Bolt, Washer and Nut	02 - 18 mm	120	**DX02M2MB**
		01 - 26 mm	120	**DX01M2MB**

Bottom ported manifold & End plate - ISO 15407-1 - Sizes 02 & 01

	Description		Size	Port Size	Weight (g)	Order code
	**Two valve position manifold** Including seal, fitting screws and plugs.	Int. pilot supply	02 - 18 mm	1/8 BSPP	200	**P2V-AM511PB**
			01 - 26 mm	1/4 BSPP	400	**P2V-BM512PB**
		Ext. pilot supply	02 - 18 mm	1/8 BSPP	200	**P2V-AM511NB**
			01 - 26 mm	1/4 BSPP	400	**P2V-BM512NB**
	**Side ported**	Left end plate Including seal and fitting screws	02 - 18 mm	1/4 BSPP	180	**P2V-AM512GS**
			01 - 26 mm	3/8 BSPP	210	**P2V-BM513GS**
		Right end plate	02 - 18 mm	1/4 BSPP	180	**P2V-AM512HS**
			01 - 26 mm	3/8 BSPP	210	**P2V-BM513HS**
	**Top ported**	Left end plate Including seal and fitting screws	02 - 18 mm	1/4 BSPP	180	**P2V-AM512GT**
			01 - 26 mm	3/8 BSPP	210	**P2V-BM513GT**
		Right end plate	02 - 18 mm	1/4 BSPP	180	**P2V-AM512HT**
			01 - 26 mm	3/8 BSPP	210	**P2V-BM513HT**
	**Bottom ported**	Left end plate Including seal and fitting screws	02 - 18 mm	1/4 BSPP	180	**P2V-AM512GB**
			01 - 26 mm	3/8 BSPP	220	**P2V-BM513GB**
		Right end plate	02 - 18 mm	1/4 BSPP	180	**P2V-AM512HB**
			01 - 26 mm	3/8 BSPP	220	**P2V-BM513HB**
	**End cover**	Left end plate Including seal and fitting screws	02 - 18 mm		190	**P2V-AM500G0**
			01 - 26 mm		240	**P2V-BM500G0**
		Right end plate	02 - 18 mm		190	**P2V-AM500H0**
			01 - 26 mm		240	**P2V-BM500H0**
	**Size manifolds adaptor plate**		02 to 01		330	**P2V-AM500BE**
	Plug	Left end plate	02 - 18 mm		4	**P2V-AK0P**
			01 - 26 mm		10	**P2V-BK0P**
	**Angle mounting set**		01 & 02		140	**P2V-AK0M**
	O-ring stip seal		01 & 02		70	**9304331543**

VDMA Side Ported Subbases

	Description	Size	Port size	Weight (g)	Order code
	**Subbases VDMA** Side port according to VDMA	1 - 43mm	G1/4	160	**P2N-VS512SD**
		2 - 56mm	G3/8	280	**P2N-WS513SD**
		3 - 71mm	G1/2	350	**P2N-YS514SD**

VDMA Bottom Ported Manifold

	Description	Size	Port size	Weight (g)	Order code
	VDMA Form C Bottom port according to VDMA	1 - 43mm	G1/4	240	**P2N-VM512MB**
		2 - 56mm	G3/8	360	**P2N-WM513MB**
		3 - 71mm	G1/2	700	**P2N-YM514MB**
	VDMA Transition plate Size 1 to Size 3 **Kit includes:** Transition plate only	1 to 3	G1/4		**P2N-VM500AK**
	VDMA Form D - End plate According to VDMA	1 - 43mm	G3/8	210	**P2N-VM513ES**
		2 - 56mm	G1/2	360	**P2N-WM514ES**
		3 - 71mm	G1	680	**P2N-YM518ES**
	VDMA Isolation - Main galley According to VDMA **Kit includes:** (1) Isolator plug.	1 - 43mm			**P2N-VK0P**
		2 - 56mm			**P2N-WK0P**
		3 - 71mm			**P2N-YK0P**

Accessories

	Description	Size	Port size	Weight (g)	Order code
	Blanking plate **Kit includes:** (1) Blanking plate, (1) Gasket and (4) Mounting bolts	1 - 43mm	G1/4	100	**P2N-AA5B**
		2 - 56mm	G3/8	150	**P2N-BA5B**
		3 - 71mm	G1/2	200	**P2N-CA5B**

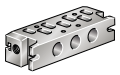
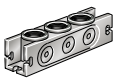
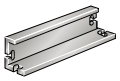
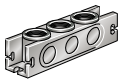
Side ported subbases

	Description	Size	Port size	Weight	Order code BSP	Order code NPT
	Single subbase with side ports 1 3 5 2 4 ports & 12 14	1 - 43mm 1 - 43mm	G1/4 G3/8	0.16 0.16	**PL1-1/4-70** **PL1-3/8-70**	**PL1-1/4-80**
		2 - 56mm 2 - 56mm	G3/8 G1/2	0.28	**PL2-3/8-70** **P2N-HS514SS**	**PL2-3/8-80**
		3 - 71mm 3 - 71mm	G1/2 G3/4		**PL3-1/2-70** **P2N-JS516SD**	**PL3-1/2-80**

Bottom ported subbases

	Description	Size	Port size	Weight	Order code BSP	Order code NPT
	Single subbase with bottom ports 1 3 5 2 4 ports & 12 14	1 - 43mm 2 - 56mm 3 - 71mm	G1/4 G3/8 G1/2	0.37 0.59 0.59	**PD1-1/4-70** **PD2-3/8-70** **PD3-1/2-70**	**PD1-1/4-80** **PD2-3/8-80**

Size 1 bottom ported manifold

	Description	Size	Port size	Weight	Order code
	**Manifold** with bottom ports low profile	1 - 43mm	G1/4	0.2	**P2N-AM512MB**
	**Connecting block** Top or bottom ported connecting block for above manifold "low profile"	1 - 43mm	G3/8	0.15	**P2N-AM513GT**
	**End** End piece for above manifold "low profile"	1 - 43mm	no	0.06	**P2N-AM500J**
	**Intermediate supply** Top or bottom ported intermediate supply for above manifold "low profile"	1 - 43mm	G3/8	0.14	**P2N-AM513BT**
	Isolation plugs isolating seal for above manifold "low profile"	1 - 43mm		0.07	**P2N-AK0P**

Sizes 1 & 2 side ported manifold

	Description	Size	Port size	Weight	Order code
	Manifold Manifold with side port	1 - 43mm 2 - 56mm	G1/4 G3/8	0.24 0.21	**P2N-EM512MD** **P2N-FM513MD**
	End Side ported connecting kit for above manifold with side ports	1 - 43mm 2 - 56mm	G3/8 G1/2	0.36 0.29	**P2N-EM513ES** **P2N-FM514ES**

Plug-in 15407-2, Size 02 (18mm - HB) & 01 (26mm - HA) End Plate Kits

Left and Right end plates, with pressure exhaust and auxilliary ports

Individual connection

	Description	ISO Size	Port size	Weight (g)	Order code
	No connector To be used with individually wired base	02 & 01	G3/8"	-	**PS5631011P**

Multiwiring connection

	Description	ISO Size	Port size	Weight (g)	Order code
	16-Points Terminal Strip	02 & 01	G3/8"	-	**PS5620L51P**
	25-Pin, D-Sub	02 & 01	G3/8"	-	**PS5620L21P**
	19-Pin, Round, Brad Harrison	02 & 01	G3/8"	-	**PS5620L31P**
	M23, 12-Pin	02 & 01	G3/8"	-	**PS5620L41P**
	M23, 19-Pin	02 & 01	G3/8"	-	**PS5620M21P**

Accessories

	Description	Protection	Length	Weight (g)	Order code
	25-Pin - D-Sub cable	IP40	3 meters	380	**P8LMH25M3A**
			9 meters	780	**P8LMH25M9A**
		IP65	9 meters	790	**P8LMH25B9A**

Adaptors for Industrial Communication

	Description	ISO Size	Port size	Weight (g)	Order code
	Turck BL76 Valve Driver Module Without 16 DO module 16 outputs and blank module to be ordered seaparely (See Turck BL67 section)	02 & 01	G3/8"	-	**PS5620T01P**
	Turck BL76 Valve Driver Module For configuration up to 16 solenoids Including 1 x 16 DO & 1 blank module	02 & 01	G3/8"	-	**PS5620T11P**
	Turck BL76 Valve Driver Module For configuration up to 32 solenoids Including 2 x 16 DO modules	02 & 01	G3/8"	-	**PS5620T21P**
	Isysnet Valve Driver Module For configuration up to 32 solenoids	02 & 01	G3/8"	-	**PS5620L61P**
	Moduflex Fieldbus module adaptor	02 & 01	G3/8"	-	**PS5620M41P**

For Turck BL67, Isysnet, Moduflex communication gateways and I/O modules, refer to respective sections in following pages.

Plug-in 15407-2, Size 02 (18mm - HB) & 01 (26mm - HA) Manifold Kits

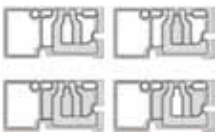
2 Position Front Ported Manifold

Description		ISO Size	Port size	Weight (g)	Order code
Non collective wiring	Terminal strip For single or double solenoid valves	01	G1/4"	520	**PS551154CP**
Collective wiring	Single address board For single solenoid valves	02	G1/8"	450	**PS561152JP**
		01	G1/4"	520	**PS551154JP**
	Double address board For double solenoid valves	02	G1/8"	450	**PS561152MP**
		01	G1/4"	520	**PS551154MP**
Extension Manifold Including ribbon cable	Single address board For single solenoid valves	02	G1/8"	450	**PS561152NP**
		01	G1/4"	520	**PS551154NP**
	Double address board For double solenoid valves	02	G1/8"	450	**PS561152PP**
		01	G1/4"	520	**PS551154PP**

2 Position Front and Bottom Ported Manifold

Description		ISO Size	Port size	Weight (g)	Order code
Non collective wiring	Terminal strip For single or double solenoid valves	01	G1/4"	520	**PS551164CP**
Collective wiring	Single address board **For single solenoid valves**	**02**	**G1/8"**	450	**PS561162JP**
		01	**G1/4"**	520	**PS551164JP**
	Double address board **For double solenoid valves**	**02**	**G1/8"**	450	**PS561162MP**
		01	**G1/4"**	520	**PS551164MP**
Extension Manifold **Including ribbon cable**	Single address board **For single solenoid valves**	**02**	**G1/8"**	450	**PS561162NP**
		01	**G1/4"**	520	**PS551164NP**
	Double address board **For double solenoid valves**	**02**	**G1/8"**	450	**PS561162PP**
		01	**G1/4"**	520	**PS551164PP**

Accessories



Description	Blocked ports	ISO Size	Port size	Weight (g)	Order code
Blanking Plate		02	G1/8"	-	**PS5634P**
		01	G1/4"	-	**PS5534P**
Manifold to Manifold	No port plugged	02 & 01		-	**PS561AP**
gasket kit	#1	02 & 01		-	**PS561BP**
	#1, 3 & 5	02 & 01		-	**PS561CP**
	#3 & 5	02 & 01		-	**PS561DP**

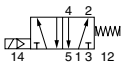
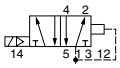
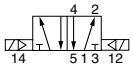
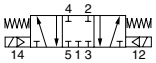
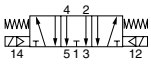
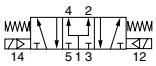
Solenoid actuated Iso valve for multiple and centralised field bus (Plug-in)

- Size HA and HB (26mm and 18mm)
- Heavy duty and corrosion resistant body
- Internal led & rectifier
- Internal or external pilot supply with same valve
- Multiple connection, Sub D25, M23, Terminal block
- Communication with Turck BL67 Remote I/O System, Isysnet System or Moduflex Bus

Operation information

Working pressure :	2,0 to 10 bar	
Working temperature :	-15 to +50°C	
	Size 02	**Size 01**
Flow (Qmax.) :	10,8 l/s	25,3 l/s
Flow (Qn) :	6,5 l/s	15,3 l/s

Isys ISO Plug-in 15407-2 - Sizes 02 & 01
With 24 Vdc / 1 W built-in coil
Manual override non locking, LED & surge suppressor

	Symbol	Description	Size	Weight (g)	Order code
HB 18 mm		5/2 single solenoid - Spring return	02 - 18mm	130	**HBEVXBG0G9A**
			01 - 26mm	230	**HAEVXBG0G9A**
		5/2 single solenoid - Differential	02 - 18mm	130	**HB1VXBG0G9A**
			01 - 26mm	230	**HA1VXBG0G9A**
		5/2 double solenoid	02 - 18mm	145	**HB2VXBG0G9A**
			01 - 26mm	245	**HA2VXBG0G9A**
		5/3 Closed center (APB)	02 - 18mm	145	**HB5VXBG0G9A**
			01 - 26mm	245	**HA5VXBG0G9A**
HA 26 mm		5/3 Vented center	02 - 18mm	145	**HB6VXBG0G9A**
			01 - 26mm	245	**HA6VXBG0G9A**
		5/3 Pressurised center	02 - 18mm	145	**HB7VXBG0G9A**
			01 - 26mm	245	**HA7VXBG0G9A**

Plug-in 5599-2, Sizes 1, 2 & 3 End Plate Kits

Left and Right end plates, with pressure exhaust and auxilliary ports

Individual connection

	Description	ISO Size	Port size	Weight (g)	Order code
	No connector To be used with individually wired base	Size 1	G1/2"	1360	**PS4031011CP**
		Size 2	G3/4"	1600	**PS4131011CP**
		Size 3	G3/4"	2800	**PS4231011CP**

Multiwiring connection

	Description	ISO Size	Port size	Weight (g)	Order code
	25-Pin, D-Sub	Size 1	G1/2"	1360	**PS4020L21CP**
		Size 2	G3/4"	1600	**PS4120L21CP**
		Size 3	G3/4"	2800	**PS4220L21CP**
	19-Pin, Round, Brad Harrison	Size 1	G1/2"	1360	**PS4020L31CP**
		Size 2	G3/4"	1600	**PS4120L31CP**
		Size 3	G3/4"	2800	**PS4220L31CP**
	19-Pin, M23	Size 1	G1/2"	1360	**PS4020M21CP**
		Size 2	G3/4"	1600	**PS4120M21CP**
		Size 3	G3/4"	2800	**PS4220M21CP**
	12-Pin, M23	Size 1	G1/2"	1360	**PS4020L41CP**
		Size 2	G3/4"	1600	**PS4120L41CP**
		Size 3	G3/4"	2800	**PS4220L41CP**

Accessories

	Description	Protection	Length	Weight (g)	Order code
	25-Pin - D-Sub cable	IP40	3 meters	380	**P8LMH25M3A**
			9 meters	780	**P8LMH25M9A**
		IP65	9 meters	790	**P8LMH25B9A**

Adaptors for Industrial Communication

	Description	ISO Size	Port size	Weight (g)	Order code
	Turck BL76 Valve Driver Module Without 16 DO module 16 outputs and blank module to be ordered seaparely (See Turck BL67 section)	Size 1	G1/2"	1400	**PS4020T01CP**
		Size 2	G3/4"	1600	**PS4120T01CP**
		Size 3	G3/4"	2800	**PS4220T01CP**
	Turck BL76 Valve Driver Module For configuration up to 16 solenoids Including 1 x 16 DO & 1 blank module	Size 1	G1/2"	1520	**PS4020T11CP**
		Size 2	G3/4"	1720	**PS4120T11CP**
		Size 3	G3/4"	2920	**PS4220T11CP**
	Turck BL76 Valve Driver Module For configuration up to 32 solenoids Including 2 x 16 DO modules	Size 1	G1/2"	1520	**PS4020T21CP**
		Size 2	G3/4"	1720	**PS4120T21CP**
		Size 3	G3/4"	2920	**PS4220T21CP**
	Isysnet Valve Driver Module For configuration up to 32 solenoids	Size 1	G1/2"	1580	**PS4020L61CP**
		Size 2	G3/4"	1800	**PS4120L61CP**
		Size 3	G3/4"	3000	**PS4220L61CP**
	Moduflex Fieldbus module adaptor	Size 1	G1/2"	1300	**PS4020M41CP**
		Size 2	G3/4"	1500	**PS4120M41CP**
		Size 3	G3/4"	2700	**PS4220M41CP**

For Turck BL67, Isysnet, Moduflex communication gateways and I/O modules, refer to respective sections in following pages.

Plug-in 5599-2, Sizes 1, 2 & 3 Manifold Kits

Single Position Front Ported Manifold

Description		ISO Size	Port size	Weight (g)	Order code
Non collective wiring	Terminal strip For single or double solenoid valves	2 - 56 mm	G1/2"	-	**PS411158CCP**
		3 - 71 mm	G3/4"	-	**PS421150CCP**
Collective wiring	Single address board For single solenoid valves	2 - 56 mm	G1/2"	-	**PS411158JCP**
		3 - 71 mm	G3/4"	-	**PS421150JCP**
	Double address board For double solenoid valves	2 - 56 mm	G1/2"	-	**PS411158MCP**
		3 - 71 mm	G3/4"	-	**PS421150MCP**

Single Position Front & Bottom Ported Manifold

Description		ISO Size	Port size	Weight (g)	Order code
Non collective wiring	Terminal strip For single or double solenoid valves	1 - 43 mm	G3/8"	-	**PS401166CCP**
		2 - 56 mm	G1/2"	-	**PS411168CCP**
		3 - 71 mm	G3/4"	-	**PS421160CCP**
Collective wiring	Single address board For single solenoid valves	1 - 43 mm	G3/8"	-	**PS401166JCP**
		2 - 56 mm	G1/2"	-	**PS411168JCP**
		3 - 71 mm	G3/4"	-	**PS421160JCP**
	Double address board For double solenoid valves	1 - 43 mm	G3/8"	-	**PS401166MCP**
		2 - 56 mm	G1/2"	-	**PS411168MCP**
		3 - 71 mm	G3/4"	-	**PS421160MCP**

Accessories

	Description	ISO Size	Port size	Weight (g)	Order code
	Blanking Plate	1 - 43 mm	G3/8"	-	**PS4034CP**
		2 - 56 mm	G1/2"	-	**PS4134CP**
		3 - 71 mm	G3/4"	-	**PS4234CP**
	Insulating Plugs	1 - 43 mm	G3/8"	-	**PS4032CP**
		2 - 56 mm	G1/2"	-	**PS4132CP**
		3 - 71 mm	G3/4"	-	**PS4232CP**
	Manifold to Manifold Gasket Kit	1 - 43 mm	G3/8"	-	**PS4013P**
		2 - 56 mm	G1/2"	-	**PS4113P**
		3 - 71 mm	G3/4"	-	**PS4213P**

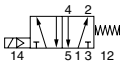
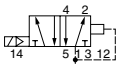
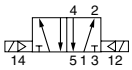
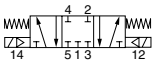
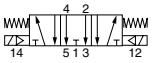
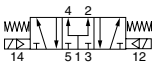
Solenoid actuator Iso valve for multiple and centralised field bus

- Size 1, 2, 3
- Heavy duty and corrosion resistant body
- Internal led rectifier
- Internal or external pilot supply with same valve
- Multiple connection, SubD25, M23, Terminal block
- Communication with Turck BL67 Remote I/O System, Isysnet System or Moduflex Bus

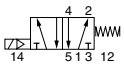
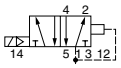
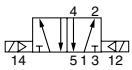
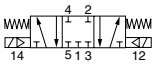
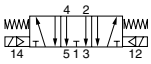
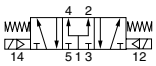
Operation information

Working pressure :	2,0 to 10 bar		
Working temperature :	-15 to +50°C		
	Size 1	**Size 2**	**Size 3**
Flow (Qmax.) :	34,5 l/s	69,0 l/s	130,8 l/s
Flow (Qn) :	20,8 l/s	42,0 l/s	83,7 l/s

Isys ISO 5599-2 - Sizes 1, 2 & 3
Solenoid operated ISO valve with operator and 24 Vdc / 2,7 W Plug-in coil

Symbol	Description	Size	Weight (g)	Order code
	5/2 single solenoid - Spring return	1 - 43 mmmm	770	**H1EVXBG0B9D**
		2 - 56 mm	1190	**H2EVXBG0B9D**
		3 - 71 mm	1470	**H3EVXBG0B9D**
	5/2 single solenoid - Differential	1 - 43 mmmm	770	**H11VXBG0B9D**
		2 - 56 mm	1190	**H21VXBG0B9D**
		3 - 71 mm	1470	**H31VXBG0B9D**
	5/2 double solenoid	1 - 43 mmmm	940	**H12VXBG0B9D**
		2 - 56 mm	1360	**H22VXBG0B9D**
		3 - 71 mm	1640	**H32VXBG0B9D**
	5/3 Closed center (APB)	1 - 43 mmmm	940	**H15VXBG0B9D**
		2 - 56 mm	1360	**H25VXBG0B9D**
		3 - 71 mm	1640	**H35VXBG0B9D**
	5/3 Vented center	1 - 43 mmmm	940	**H16VXBG0B9D**
		2 - 56 mm	1360	**H26VXBG0B9D**
		3 - 71 mm	1640	**H36VXBG0B9D**
	5/3 Pressurised center	1 - 43 mmmm	940	**H17VXBG0B9D**
		2 - 56 mm	1360	**H27VXBG0B9D**
		3 - 71 mm	1640	**H37VXBG0B9D**

Isys ISO 5599-2 - Sizes 1, 2 & 3
Solenoid operated ISO valve with operator without Plug-in coil

Symbol	Description	Size	Weight (g)	Order code
	5/2 single solenoid - Spring return	1 - 43 mmmm	650	**H1EVXBGNXXD**
		2 - 56 mm	1070	**H2EVXBGNXXD**
		3 - 71 mm	1350	**H3EVXBGNXXD**
	5/2 single solenoid - Differential	1 - 43 mmmm	650	**H11VXBGNXXD**
		2 - 56 mm	1070	**H21VXBGNXXD**
		3 - 71 mm	1350	**H31VXBGNXXD**
	5/2 double solenoid	1 - 43 mmmm	700	**H12VXBGNXXD**
		2 - 56 mm	1120	**H22VXBGNXXD**
		3 - 71 mm	1400	**H32VXBGNXXD**
	5/3 Closed center (APB)	1 - 43 mmmm	700	**H15VXBGNXXD**
		2 - 56 mm	1120	**H25VXBGNXXD**
		3 - 71 mm	1400	**H35VXBGNXXD**
	5/3 Vented center	1 - 43 mmmm	700	**H16VXBGNXXD**
		2 - 56 mm	1120	**H26VXBGNXXD**
		3 - 71 mm	1400	**H36VXBGNXXD**
	5/3 Pressurised center	1 - 43 mmmm	700	**H17VXBGNXXD**
		2 - 56 mm	1120	**H27VXBGNXXD**
		3 - 71 mm	1400	**H37VXBGNXXD**

Plug-in Coil for 5599-2 ISO Valve - Sizes 1, 2 &3

Description	Voltage	Weight (g)	Order code
Plug-in coil	12 Vdc	-	**PS404145P**
	24 Vdc	-	**PS4041B9P**
	24 Vac	-	**PS404142P**
	120 Vac	-	**PS404123P**
	240 Vac	-	**PS404157P**

Sandwich regulator for Plug-in or not Plug-in ISO 15407 (Sizes 02 & 01) and 5599 (Sizes 1, 2 & 3)

Order chart

Function Description see below

PS40	37	1	6	6	CP

ISO Size	
ISO 15407	
PS56	Size 02 (HB - 18 mm)
PS55	Size 01 (HA - 26 mm)
ISO 5599	
PS40	Size 1 (H1 - 43 mm)
PS41	Size 2 (H2 - 56 mm)
PS42	Size 3 (H3 - 71 mm)

Connecting version	
37	ISO-1 : For Non Plug-in Valve
38	ISO-2 : For Plug-in Valve

Regulator function	
1	Common Pressure Regulator
2	Independent Pressure Regulator

ISO Version	
P	For ISO 15407
CP	For ISO 5599

Port 4 **Port 2**

Port Regulator / Gauge*	
0	Line By-Pass Plate**
1	0-2 Bar - without gauge
2	0-4 Bar - without gauge
3	0-8 Bar - without gauge
4	0-2 Bar - with gauge
5	0-4 Bar - with gauge
6	0-8 Bar - with gauge

* For Common Pressure Regulator Option, Regulator Gauge callout must be the same number for both port #4 and Port #2 (Example: 166)

** For H1, H2 & H3 only. Pressure Line By-Pass Option can only be used with Independent Pressure Regulators

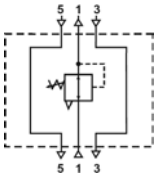
Pressure Regulators functions

Common port regulation

Provides adjustable regulated air pressure to the valves #1 port which gives the same regulated pressure to both the #2 and #4 port of the manifold or subbase. The regulator is always on the 14 end of the valve.

For HB & HA

For H1, H2 & H3



Part number code 1 X X

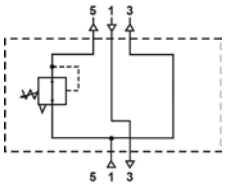
Independent port regulation

Single Port Regulator

Provides regulated pressure to both ports. Pressure regulation can occur out of the #2 or #4 port of the valve. Full line pressure would be provided with a pass plate.

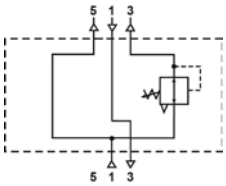
For H1, H2 & H3

Regulation on port #4



Part number code 2 X 0

Regulation on port #2



Part number code 2 0 Y

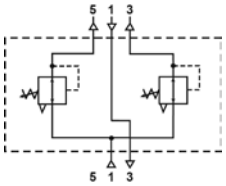
Dual Port Regulator

When using an independent Pressure Sandwich Regulator, the cylinder outlet ports are reversed. The 12 end energizes the #2 port.
The 3-position CE and PC functions are also reversed.

For HB & HA

For H1, H2 & H3

Regulation on both ports #4 & #2



Part number code 2 X Y

Sandwich regulator with Gauge

	ISO Size	Regulator function	Pressure On port 4 and / or port 2	Order code ISO-1 Non Plug-in	Order code ISO-2 Plug-in
	02 - 18 mm	Common	0 to 4 bar	**PS5637155P**	**PS5638155P**
			0 to 8 bar	**PS5637166P**	**PS5638166P**
		Independent	0 to 4 bar	**PS5637255P**	**PS5638255P**
			0 to 8 bar	**PS5637266P**	**PS5638266P**
	01 - 26 mm	Common	0 to 4 bar	**PS5537155P**	**PS5538155P**
			0 to 8 bar	**PS5537166P**	**PS5538166P**
		Independent	0 to 4 bar	**PS5537255P**	**PS5538255P**
			0 to 8 bar	**PS5537266P**	**PS5538266P**
	1 - 43 mm	Common	0 to 4 bar	**PS4037155CP**	**PS4038155CP**
			0 to 8 bar	**PS4037166CP**	**PS4038166CP**
		Independent	0 to 4 bar	**PS4037255CP**	**PS4038255CP**
			0 to 8 bar	**PS4037266CP**	**PS4038266CP**
	2 - 56 mm	Common	0 to 4 bar	**PS4137155CP**	**PS4138155CP**
			0 to 8 bar	**PS4137166CP**	**PS4138166CP**
		Independent	0 to 4 bar	**PS4137255CP**	**PS4138255CP**
			0 to 8 bar	**PS4137266CP**	**PS4138266CP**
	3 - 71 mm	Common	0 to 4 bar	**PS4237155CP**	**PS4238155CP**
			0 to 8 bar	**PS4237166CP**	**PS4238166CP**
		Independent	0 to 4 bar	**PS4237255CP**	**PS4238255CP**
			0 to 8 bar	**PS4237266CP**	**PS4238266CP**

How to Configure Sandwich Regulator / Valve Combinations

Ordering Components

- Manifold or Subbase Kit required.
- Sandwich Regulator Kit configured for Internal Pilot as standard.
- Order valve as External Pilot.

Internal Pilot Configuration

Pressure in Base Port 1 feeds regulator configured for Internal Pilot which feeds valve configured for External Pilot.

External Pilot Configuration - H1, H2, H3

An External Pilot pressure in port 12 or 14 of the base feeds threw the Sandwich Regulator 12 or 14 galley directly to the 12/14 pilot of the valve. This configuration takes an External Pilot from the 12 port of the base and passes it threw the regulator to feed the 12 galley of the valve.

Sandwich Regulator Accessories

	Description	Pressure range	w (g)	Order code
	Gauge kit Including: Gauge 1/8" female to 1/8" female coupling 1/8" male to 1/8" male long nipple	0 to 8 bar	80	**PS5651160P**

Sandwich Flow Control

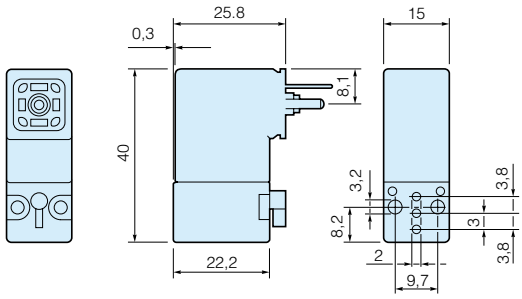
	ISO Size	w (g)	Order code ISO-1 Non Plug-in	Order code ISO-2 Plug-in
	02 - 18 mm	180	**PS5635P**	**PS5642P**
	01 - 26 mm	240	**PS5535P**	**PS5542P**
	1 - 43 mm	340	**PS4035CP**	**PS4042CP**
	2 - 56 mm	520	**PS4135CP**	**PS4142CP**
	3 - 71 mm	1180	**PS4235CP**	**PS4242CP**

Note:

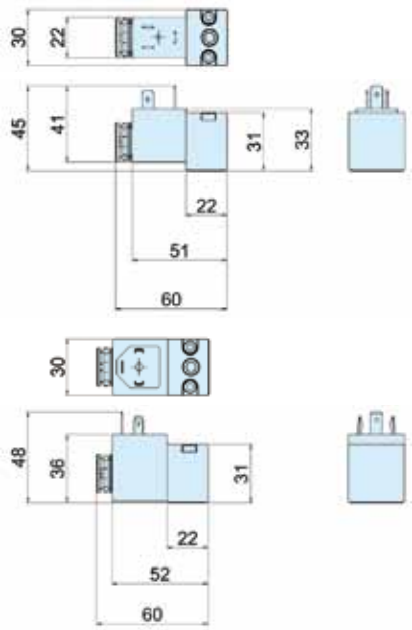
- Both adjustment screws are located on the same 12 end of the unit
- Sandwich Flow Control mounts with its own studs, which means the valve uses standard bolts for mounting
- Sandwich Flow Control is not to be used as a shut off device and is not bubble tight when needles are fully turned down

Cable Plug Dimensions (mm)

Solenoid operators P2E - 15mm

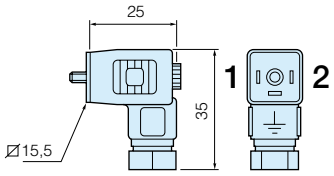


Solenoid operators P2F - CNOMO - 22 x 30mm



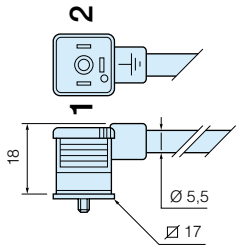
Cable plugs

P8L-C2
P8LC5
P8L-C226C
P8L-C526C
P8L-CA26C
P8L-C221E
P8L-C521E



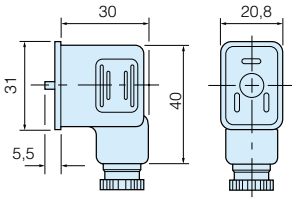
Cable plugs

P8C-C
P8C-C26C
P8C-C21E
P8C-D
P8C-D26C
P8C-D21E



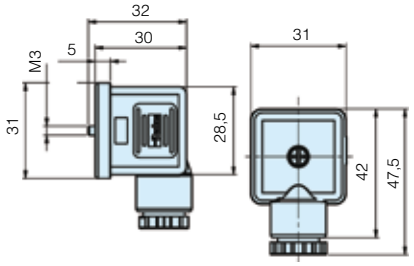
Cable plugs

3EV10V10



Cable plugs

3EV290V10

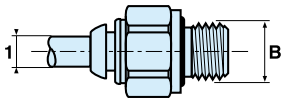


Accessories

Silencers

Port	Ordercode	Pack Qty
G1/8	**P6M-PAB1**	10
G1/4	**P6M-PAB2**	10
G3/8	**P6M-PAB3**	10
G1/2	**P6M-PAB4**	10

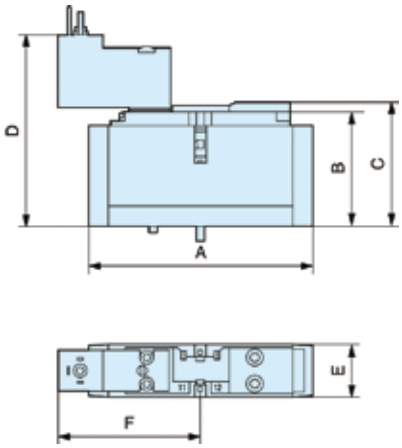
Fittings



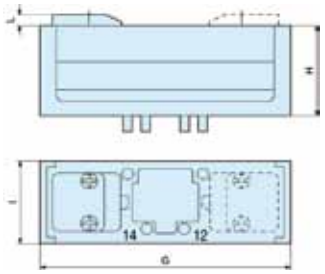
Male connector - BSPP

Tube dia 1	Thread B	Ordercode	Box Qty
4	1/8	**F4PMB4-1/8**	20
4	1/8	**F4PMB4-1/8**	20
6	1/8	**F4PMB6-1/8**	30
8	1/8	**F4PB8-1/8**	40
6	1/4	**F4PMB6-1/4**	30
8	1/4	**F4PB8-1/4**	30
10	1/4	**F4PB10-1/4**	20
12	1/4	**F4PB12-1/4**	10
8	3/8	**F4PB8-3/8**	20
10	3/8	**F4PB10-3/8**	20
12	3/8	**F4PB12-3/8**	10
14	3/8	**F4PB14-3/8**	10
10	1/2	**F4PB10-1/2**	10
12	1/2	**F4PB12-1/2**	10
14	1/2	**F4PB14-1/2**	10

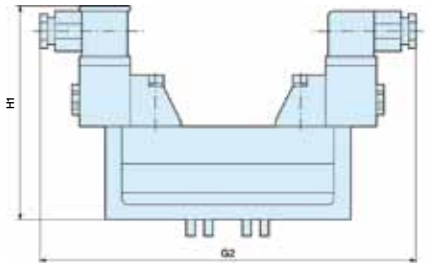
Isomax - Dimensions (mm)



Pneumatically actuated



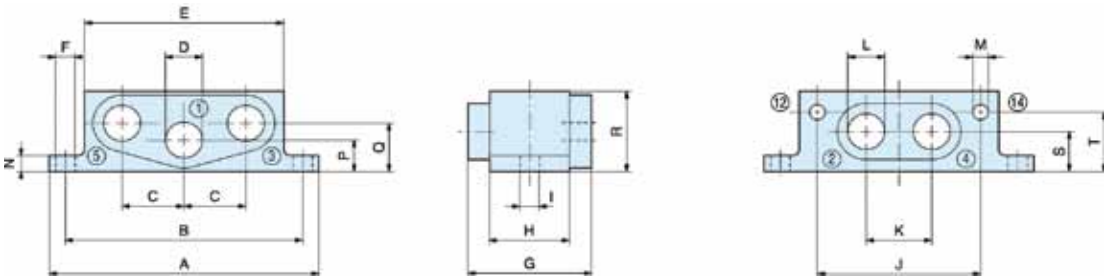
With P2F solenoids



	A	B	C	D	E	F
Isomax 02	80	41	44,5	67,8	18	51,2
Isomax 01	100	42	45,5	68,8	26	51,2

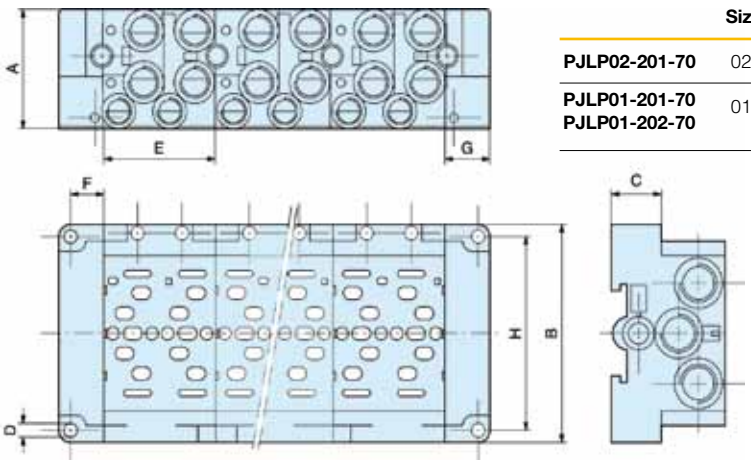
	G	G1	G2	G3	H	H1	I	L
Size 1	120	164	202,5	160	47	119	42	5
Size 2	140	179,5	218	175,5	58,5	130	54	5
Size 3	170	198	235,5	194	71	142,5	68	5

Single subbases side ported



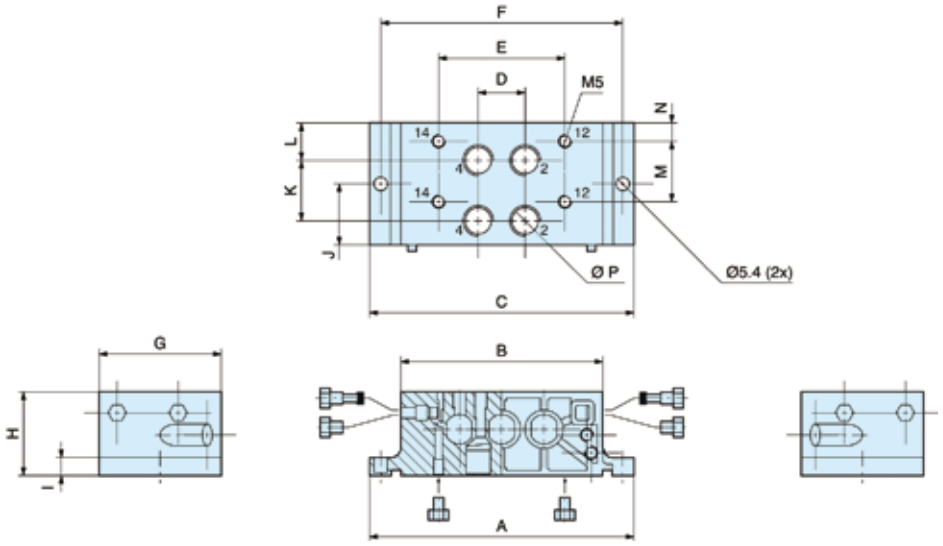
	Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P	Q	R	S	T
PL02-01-70	02	80	70	16	G1/8	52	8	27	19	5,5	40	17	G1/8	M5	8	8	8	22	13	6
P2V-BS512SS	01	92	80	21,2	G1/8	68	6,5	42	27	5,5	55	22	G1/8	M5	6	11	17	28	14	21

Side ported manifolds for 2 valve positions



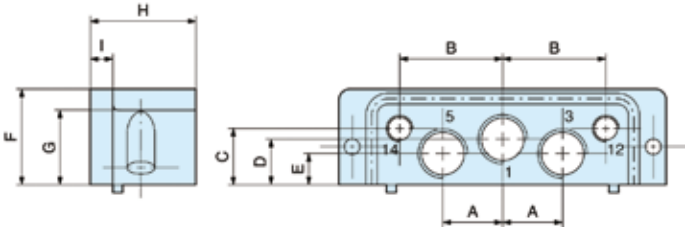
	Size	A	B	C	D	E	F	G	H
PJLP02-201-70	02	38,5	80	12	Ø 4,2	38	14	18	72
PJLP01-201-70 **PJLP01-202-70**	01	55	100	24	Ø 5,5	54	17	22	90

Bottom ported manifolds for 2 valve positions



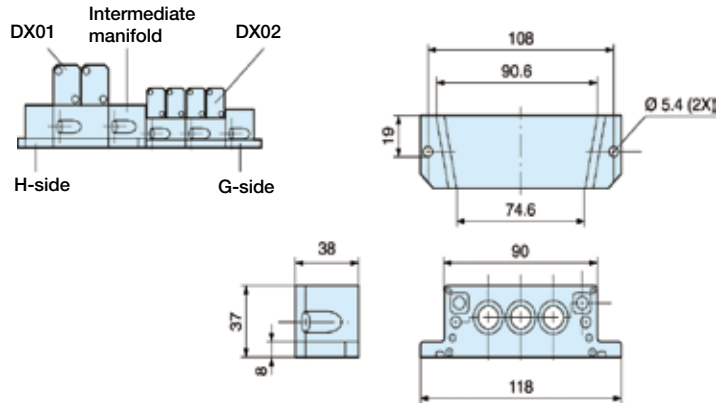
	Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	P
P2V-AM511PB	02	102	74	74,6	16	43	92	38	26	7	19	19	11	19	5	G1/8
P2V-BM512PB	01	118	90	90,6	21	56,5	108	54	37	8	27	27	16,5	27	8	G1/4

G and H side end plate bottom ported for above bottom ported manifold

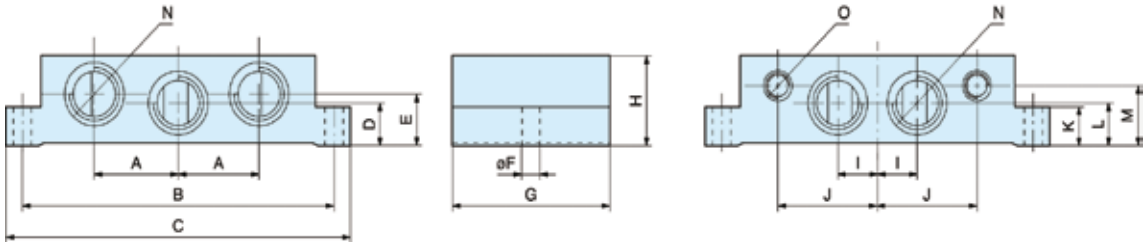


	Size	Port size 1,2,3	Port size 12, 14	A	B	C	D	E	F	G	H	I
P2V-AM512GB and P2V-AM512HB	02	G1/4	G1/8	17	29	21	18,5	9,5	35,5	28	33	7
P2V-BM513GB and P2V-BM513HB	01	G3/8	G1/8	21,5	37	20	16	11	34,5	28	38	8

Transfer plate size 01 to size 02 for above bottom ported manifold

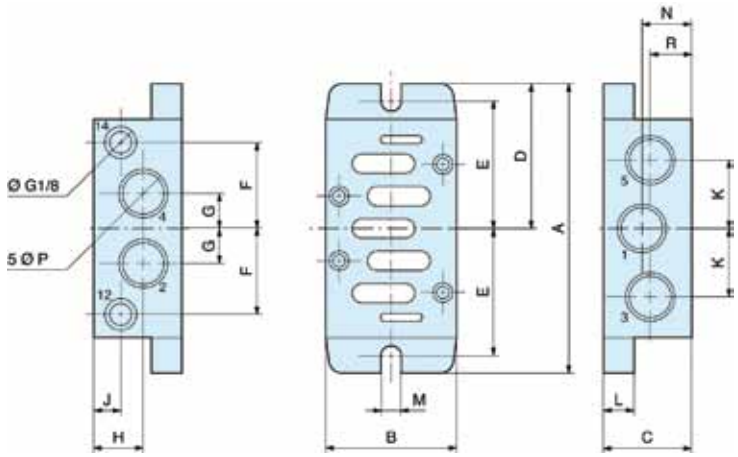


Single subbase with side ports according to VDMA



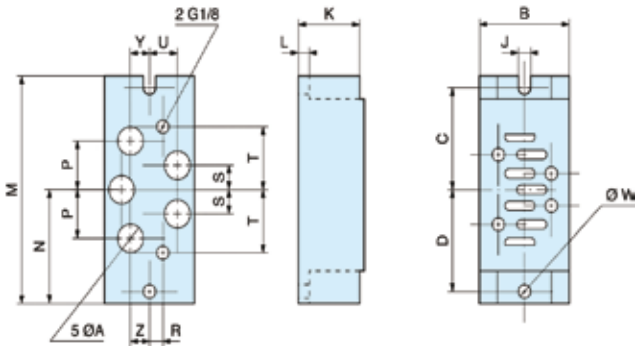
Order code	ISO Size	Port Size	A	B	C	D	E	F	G	H	I	J	K	L	M	N	O
P2N-VS512SD	1	G1/4	21,5	98	110	11	20	5,5	48	32	12	29	10	11	23	G1/4	G1/8
P2N-WS513S	2	G3/8	28	112	124	14	26	6,6	56	40	15	37	13	14	30	G3/8	G1/8
P2N-YS514SD	3	G1/2	34	136	149	17	17	6,6	71	32	16	45	18	17	22	G1/2	G1/8

Single subbase with side ports



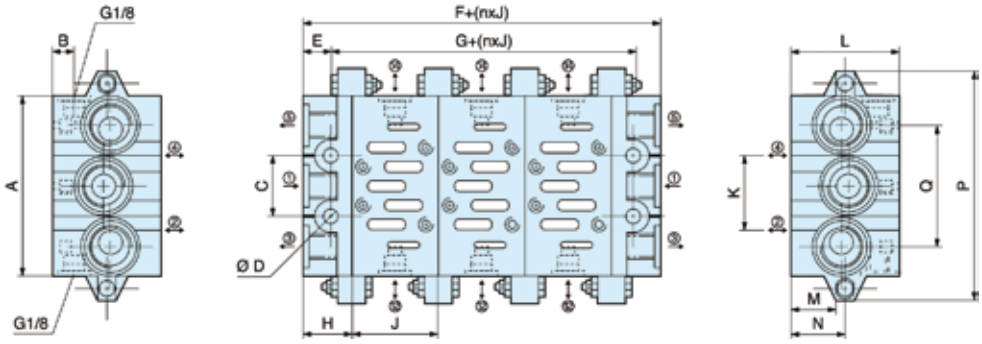
Order code	ISO Size	ØP	A	B	C	D	E	F	G	H	J	K	L	M	N	R
PL1-1/4-70	1	G1/4	110	46	29	55	49	30	11	17,75	17,75	22	6	5,5	17,75	17,75
PL2-3/8-70	2	G3/8	124	56	37	62	55	37	14,5	22,5	14	28	6	5,5	22,5	14,5
P2N-JS516SD	3	G3/4	149	71	60	74,5	68	45	21	33	10	40	18	6,6	37,5	22,5

Single subbase with bottom ports



Order code	A	B	C	D	J	K	L	M	N	P	R	S	T	U	W	Y	Z
PD1-1/4-70	G1/4	46	49	49	5,5	29	6	110	55	22	10	11	30	10	5,5	10	10
PD2-3/8-70	G3/8	56	55	55	5,5	37	6	124	62	29	10	14,5	37	12,5	5,5	12,5	12,5
PD3-1/2-70	G1/2	77	68	68	6,6	32	18	149	74,5	34	10	17	45	17	6,5	17	17

Manifold and end plates according to VDMA (P2N-VM / WM / YM)



ISO Size	Port 1, 3, 5	Port 2, 4	A	B	C	D	E	F	G	H	J	K	L	M	N	O	P
1	G3/8	G1/4	85	8,5	28	7	11	44	22	22	43	26	46	21	24	56	110
2	G1/2	G3/8	100	9	35	9	13	52	26	26	56	30	47	22	24	68	135
3	G1	G1/2	140	10	52	12	15	60	30	30	71	38	56	31	34	104	190

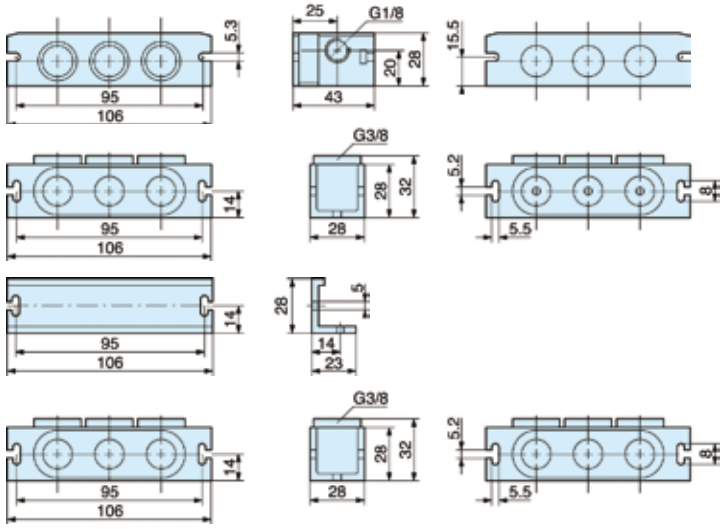
Manifold and end plates with bottom ports "low profile" (P2N-AM..)

Manifold P2N-AM512MB

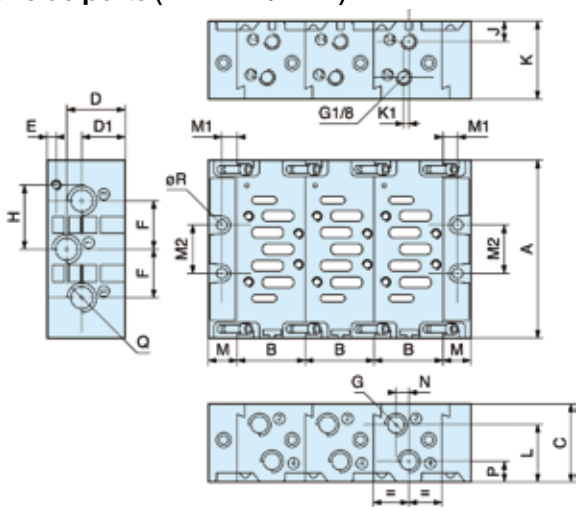
Connecting block P2N-AM513GT

End piece P2N-AM500J

Intermediate supply P2N-AM513BT

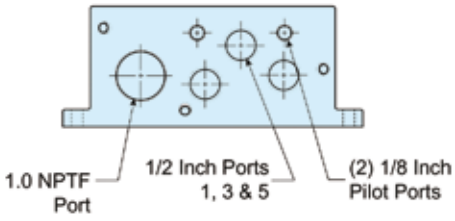


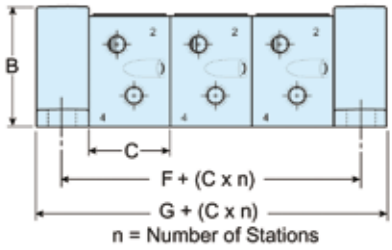
Manifold and end plates with side ports (P2N-EM / FM..)

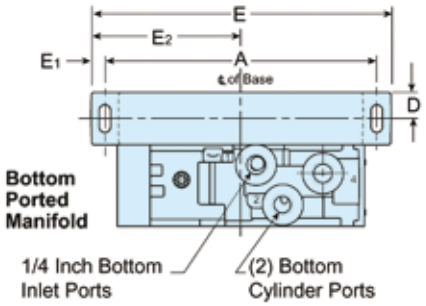


Order code	A	B	C	D	D1	E	F	G	H	J	K	K1	L	M	M1	M2	N	P	Q	R
P2N-EM . . .	110	43	48	35,5	26,5	5,5	28	G1/4	36	15,5	35	3	32	20	11	28	12	12,5	G3/8	6
P2N-FM . . .	129	56	60	44,5	35,5	6	34,5	G3/8	45	16	41,5	3	41	24	13	35	12,5	16	G1/2	8

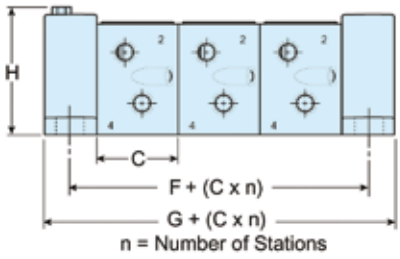
H1 5599-2 / 5599-1 Manifold





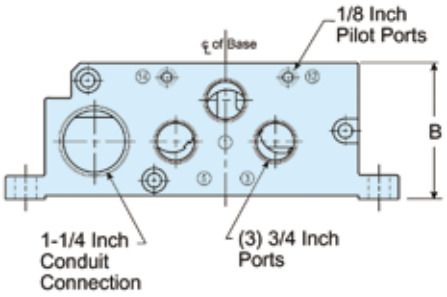


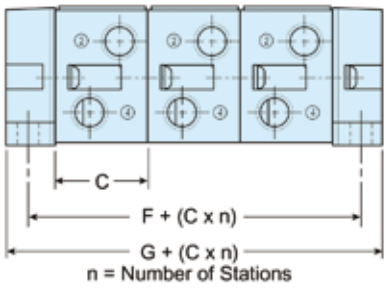
Manifold with Optional Collective Wiring System

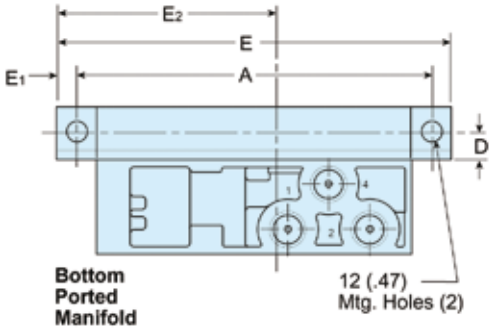


	A	B	C	D	E	E1	E2	F	G	H
H1	165	73	49	15.9	182	.84	91	31.8	63.5	76

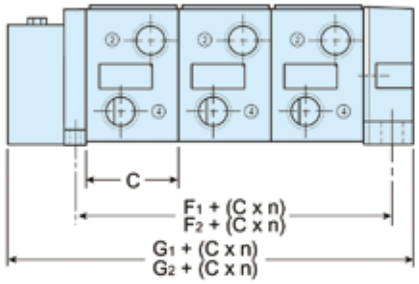
H2 / H3 5599-2 / 5599-1 Manifold







Manifold with Optional Collective Wiring System



n = Number of Stations
F1, G1 = Blank End Plate
F2, G2 = Top Port End Plate

	A	B	C	D	E	E1	E2	F	F1	F2	G	G1*	G2*
H2	215	85	56	15	239	12	134	30	27	33	60	87	99

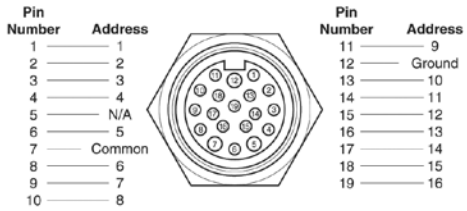
	A	B	C	D	E	E1	E2	F	F1	F2	G	G1*	G2*
H3	265	105	71	17	295	15	159	33	29	41	63	90	114

Maximum Solenoids Energized Simultaneously

HA HB code	Voltage D-Sub	25-pin round	19-pin M23	Single 12-pin Isysnet		
24 V DC	B9 / G9	24	16	8	32	
120 V AC*	23	24	16	8	32	
H1 H2 H3	Voltage code	25-pin D-Sub	19-pin round	Single 12-pin M23	Isysnet	SAM 3.0
12 V DC	45	13	13	8	N/A	N/A
24 V AC*	42	24	16	8	N/A	N/A
24 V DC	B9	20	16	8	21	4
120 V AC*	23	24	16	8	N/A	N/A

* Not CSA certified for 25-pin, D-Sub option.

19-Pin Round Brad Harrison



Face View - Male 19-Pin Connector

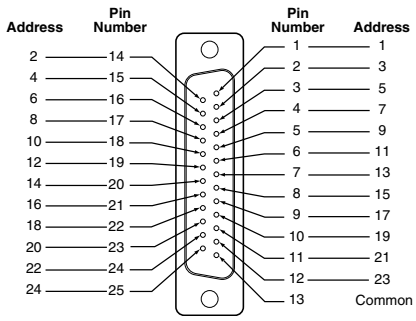
19-Pin Round Cable Specifications

Common Pin "7" is rated for 8 amps. Cable common wire must be greater than total amperage of solenoids on Add-A-Fold assembly.

Example:- 8 station manifold, 16 solenoids,
120VAC - 16 x .039 amps = .63 total amp rating.
NEMA 4 rated with properly assembled NEMA 4 rated cable.

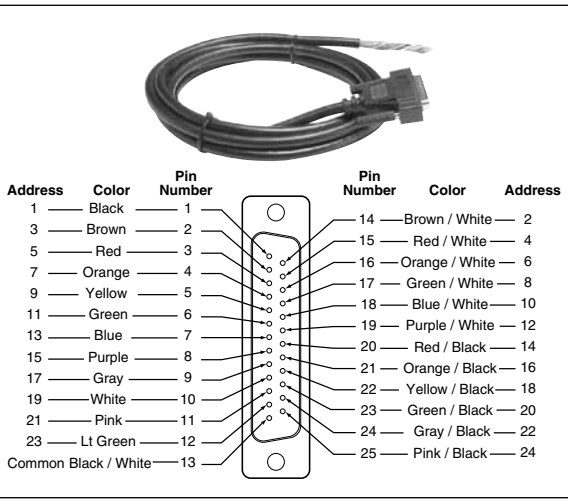
Brad Harrison #333030P80M050	16.40 ft. (Female to Male Cable)
Brad Harrison #333030P80M0100	32.80 ft. (Female to Male Cable)

25-Pin, D-Sub Connector (Male)



Face View - Male D-Sub, 25-Pin Connector

25-Pin, D-Sub Cable (Female)

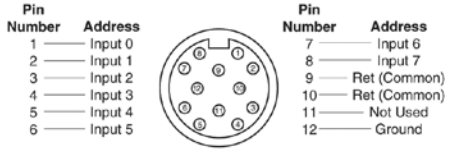


25-Pin, D-Sub Cable Specifications

Common Pin “13” is rated for 3 amps. Common wire rating must be greater than total amperage of all solenoids on a Add-A-Fold assembly.

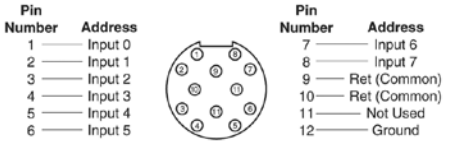
IP65 rated with properly assembled IP65 rated cable.

M23, 12-Pin Round Connector (Male)



Face View - Male M23, 12-Pin Connector

M23, 12-Pin Round Connector (Female)

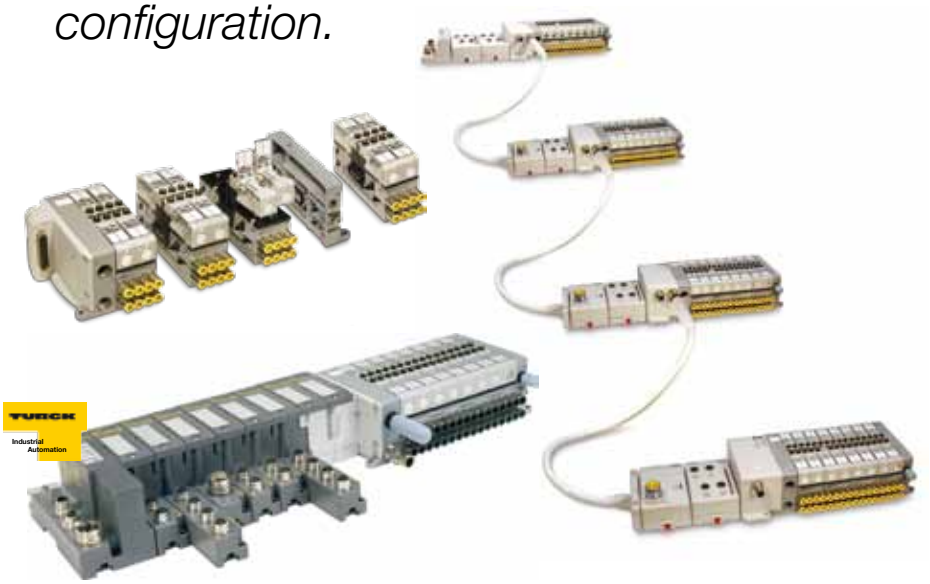


Face View - Female M23, 12-Pin Connector

Isys Micro

Plug-in valve island

*Parker's newest and most innovative valve design offers functionality for **every** machine configuration.*



The Isys Micro valve redefines flexibility for pneumatic users. When either configured from basic components or ordered as pre-assembled and tested valve islands, Isys Micro valves are the answer to all your needs.

Flexible in use

The Isys Micro range is fully dedicated to centralized applications where a high quantity of valves have to be concentrated in a single location.

Solenoid valve island can also be implemented with digital or analogical electrical I/O.

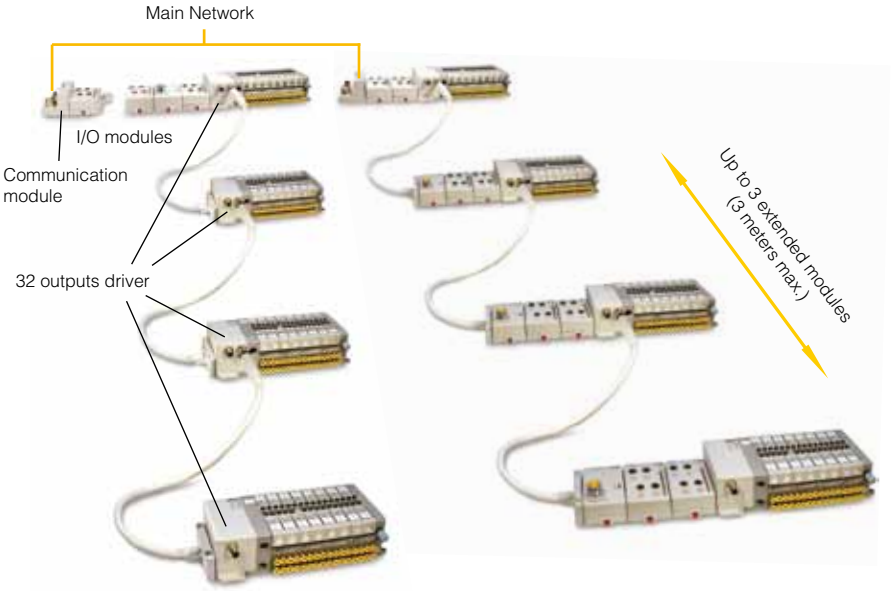
From a centralized application high complexity level to a basic configuration, with industrial communication or traditional multi-connection, an Isys Micro valve island can be designed.

One communication module for 256 Inputs and 256 Outputs

The combination of 32 output drivers and electrical I/O modules linked to the main communication module allows Isys Micro valve islands to drive up to 512 I/O, including up to 128 solenoids splited between 4 interconnected devices.

Both electrical inputs and outputs modules can also be assembled either on the main or extended islands.

Expansion power supply may be used to provide additional Pointbus backplane current.



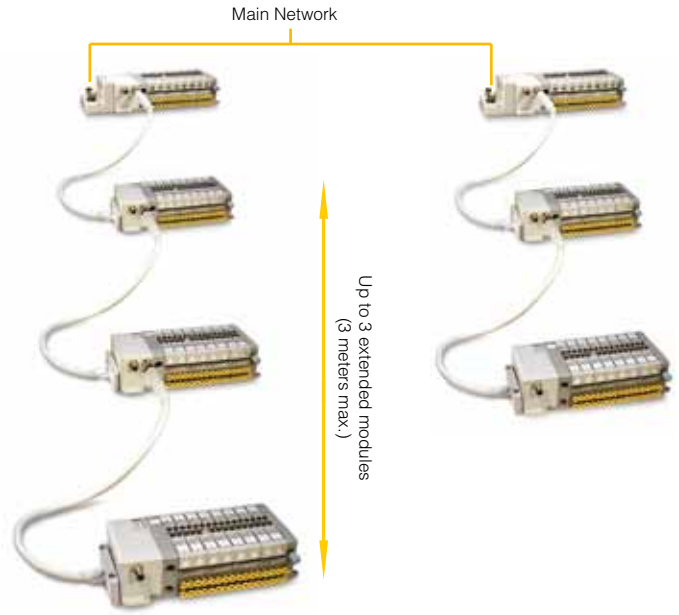
Up to 128 solenoid valves configuration

If a high quantity of valves is required in a centralized application, up to 3 extended islands can be connected to the main device communication module.

All extended islands are connected through a bus extension cable PSSVEXT1 (including 1 m cable and head plate).

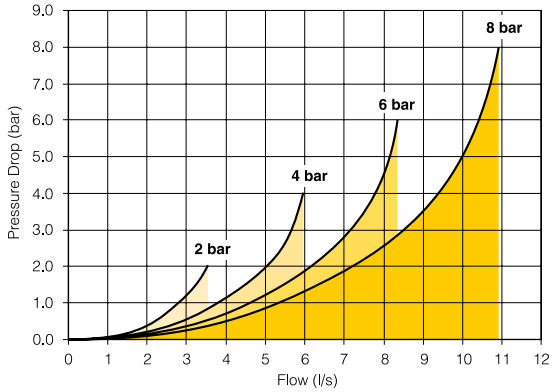
In this configuration, the 32 outputs driver module, on the main island and the extended island, have to be equiped with a "bus extention" M12 connector, excepted for the last extended island.

All 32 outputs driver modules need to be equiped with a M12 solenoids power supply connector.



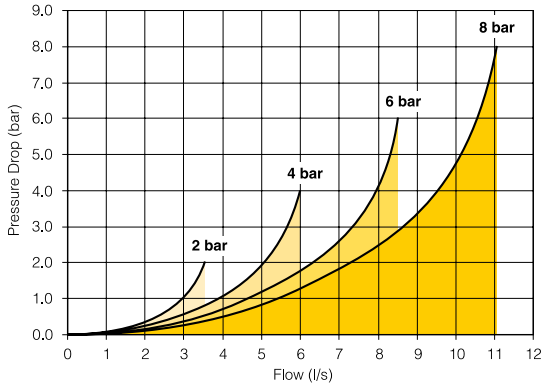
Flow Characteristics

Dual 3/2



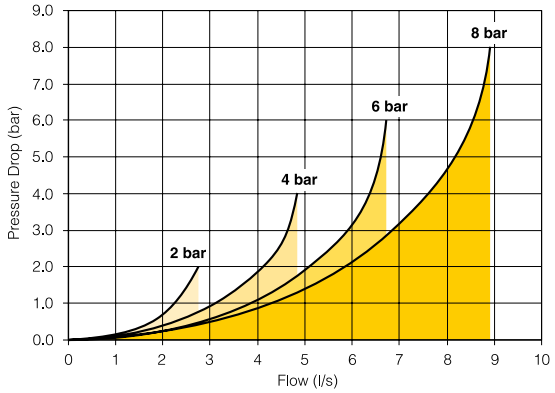
Operating pressure :	2,7 to 8,3 bar
Change-over time (side 14)	Actua. 15 ms Return 20 ms P = 6b
Change-over time (side 12)	15 ms / 25 ms P = 6b
Flow (acc. to ISO 6358) :	c = 1,2 Nl/s x bar b = 0,13 Qn = 4,6 Nl/s Qmax = 8,4 Nl/s

5/2 single and double solenoid



Operating pressure single solenoid:	2,7 to 8,3 bar
Operating pressure double solenoid:	1,7 to 8,3 bar
Change-over time single solenoid:	Actua. 15 ms Return 25 ms P = 6b
Change-over time double solenoid:	13 ms / 13 ms P = 6b
Flow (acc. to ISO 6358) :	c = 1,2 Nl/s x bar b = 0,13 Qn = 4,7 Nl/s Qmax = 8,5 Nl/s

5/3 all ports blocked



Operating pressure :	2,7 to 8,3 bar
Change-over time	Actua. 20 ms Return 20 ms P = 6b
Flow (acc. to ISO 6358) :	c = 1 Nl/s x bar b = 0,14 Qn = 3,8 Nl/s Qmax = 6,7 Nl/s

Characteristics

Fluid :	Air or inert gas Filtered 40 µ Class 5 (according to ISO 8573-1) Dry class 4 (according to ISO 8573-1) Non-lubricated or lubricated
Storage temperature :	-40 °C to + 70 °C
Working temperature	-15 °C to + 50°C
Vibration :	according to IEC 68-2-6 2G to 150 Hz
Shock :	according to IEC 68-2-27 15G 11 ms

Operating pressure :	-0.9 to 8,3 bar with external pressure 6 bar
Piloting pressure :	2.7 to 8.3 bar
Exhaust collection :	Independant exhaust collection
Rated coil voltage :	24 VDC -15 % / +10 %
Electrical connection:	Not polarised
Coil insulation :	Class B
Power consumption :	1 W (42 mA) with LED
Duty factor :	100 % at 20°C

Valve ordering chart

HMEVX2049A

Pneumatic function	
E	5/2 Single solenoid - Spring return
2	5/2 Double solenoid
5	5/3 All ports blocked (APB)
N	Double 3/2 NC
P	Double 3/2 NO
Q	Double 3/2 NC + NO

Manual override	
0	None, (no solenoid *)
2	Non locking, Flush, Multi-functional

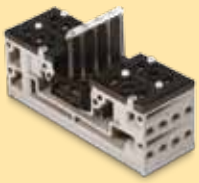
Solenoid pilot	
49	24 VDC standard

B	Blanking plate
C	Pressure module

XX	No solenoid pilot *

* Only available with B & C

Manifold ordering chart (without valve module and fitting)



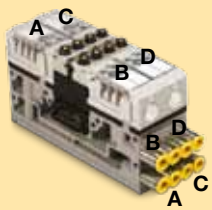
PSM21JAP

Manifold design	Thread type
1 Side ported	M7
2 Bottom ported	M7

Electronic circuit board	
J	Single address *
M	Double adress

Single address sub-bases are only used with 5/2 single solenoid for saving the address

Manifold ordering chart (complete with valve modules and/or fittings)



								A		B		C		D	
1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P	S	M	3	1	J	A	P	N	6	N	6	2	4	5	6

Manifold design	Thread type
1 Side ported	M7
2 Bottom ported	M7

Electronic circuit board	
J	Single address
M	Double adress

Digits 9, 11, 13 & 15

Pneumatic function	
X	Without valve module - fittings only
E	5/2 Single solenoid - Spring return
2*	5/2 Double solenoid
5*	5/3 All ports blocked (APB)
N*	Double 3/2 NC
P*	Double 3/2 NO
Q*	Double 3/2 NC + NO

C	Pressure module
B	Blanking plate

Digits 10, 12, 14 & 16

Straight fittings	
0	Without fitting
4	4 mm OD
6	6 mm OD
7	1/4" OD

P	Plug (for blanking plate)

* Double address electronic circuit board (type M) required

Solenoid operated valve fitted with 24 VDC solenoid

	Symbol	Description	Weight (g)	Order code
		Double 3/2 NC + NC	60	**HMNVX2049A**
		Double 3/2 NO + NO	60	**HMPVX2049A**
		Double 3/2 NC + NO	60	**HMQVX2049A**
		5/2 single solenoid - Spring return	49	**HMEVX2049A**
		5/2 double solenoid	60	**HM2VX2049A**
		5/3 all ports blocked (APB)	65	**HM5VX2049A**
		Blanking module kit (including two M7 plugs for manifold)	30	**HMBVX00XXA**
		Additional pressure module	30	**HMCVX00XXA**

Metal manifold for 4 valves (M7 threaded)

	Description	Weight (g)	Order code
Side ported	4 position manifold single electrical address	332	**PSM21JAP**
	4 position manifold double electrical address	332	**PSM21MAP**
Bottom ported	4 position manifold single electrical address	310	**PSM22JAP**
	4 position manifold double electrical address	310	**PSM22MAP**

Complete manifold without fitting (M7 threaded)

	Symbol	Description	Weight (g)	Order code
Side ported		4 x Double 3/2 NC + NC	572	**PSM31MAPN0N0N0N0**
		4 x 5/2 single solenoid - Spring return	528	**PSM31JAPE0E0E0E0**
		4 x 5/2 double solenoid	572	**PSM31MAP20202020**
		4 x 5/3 all ports blocked (APB)	592	**PSM31MAP50505050**
Bottom ported		4 x Double 3/2 NC + NC	550	**PSM32MAPN0N0N0N0**
		4 x 5/2 single solenoid - Spring return	506	**PSM32JAPE0E0E0E0**
		4 x 5/2 double solenoid	550	**PSM32MAP20202020**
		4 x 5/3 all ports blocked (APB)	570	**PSM32MAP50505050**

Pneumatic accessories

	Description	Size	Tube OD	Material	Order code
	Straight pneumatic connector for sub-base and **Px**	M7	4 mm	Metal	**F28PMB4M7MD**
		M7	6 mm	Metal	**F28PMB6M7MD**
	Straight pneumatic connector for **Ex**	1/8"	6 mm	Metal	**F4PMB6-1/8**
	Straight pneumatic connector for Pressure and Exhaust ports	3/8"	8 mm	Metal	**F4PB8-3/8**
		3/8"	10 mm	Metal	**F4PB10-3/8**
		3/8"	12 mm	Metal	**F4PB12-3/8**
	Muffler for **Ex**	1/8"		Metal	**ESB12MC**
		1/8"		Plastic	**P6M-PAB1**
	Muffler for exhaust port	3/8"		Metal	**ESB37MC**

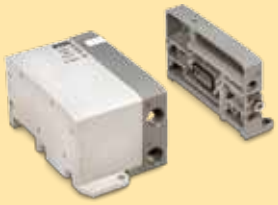
Multi-pressure inter-manifold seal plate

	Description	Pressure port	Exhaust port	Weight (g)	Order code
	Inter-manifold seal plate	Passing / Passing	Passing	16	**PSM0001**
		Passing / Block	Passing	20	**PSM0002**
		Passing / Block	Block	30	**PSM0003**
		Block / Block	Block	40	**PSM0004**

Spare parts

	Description	Weight (g)	Order code
	24 VDC Pilot solenoid with screws	11	**PSM0010**
	Set of 10 multifunction manual override caps	15	**PSM0011**
	Set of 5 valve manifold gaskets and 10 screws	25	**PSM0012**
	Set of 10 M7 plugs for auxiliary pressure selection	30	**PSM0013**
	Set of 10 labels (in the P/N, **x** has to be replaced with the valve function letter)	5	**PSM002x**
	Set of 10 manifold to manifold M3 screws	20	**PSM0014**

Isysnet 32 output driver end modules ordering chart



P	S	M	L	6	1	A	P

ISYSNET 32 Output driver end modules		
	24 VDC power supply connector	Extender bus connector
L6	NO	NO
M5	NO	YES
M6	YES	NO
M7	YES	YES

	Ported design	Thread type
1	Side ported	3/8" BSPP
2	Bottom ported	3/8" BSPP
5	Side ported	3/8" NPT
6	Bottom ported	3/8" NPT

32 outputs driver selection guide :

L6 type

- Isysnet 32 outputs driver with internal solenoids power supply from the communication head module
- Extended valve island not possible

Up to 32 solenoid valves per island

M6 type

- Isysnet 32 outputs driver with external solenoids power supply by M12 male connector
- Extended valve island not possible

Up to 32 solenoid valves per island

M7 type

- Isysnet 32 outputs driver with external solenoids power supply by separated M12 male connector
- Extended Bus link connection for additional valve islands by separate M12 female connector

Up to 32 solenoid valves per island

M5 type

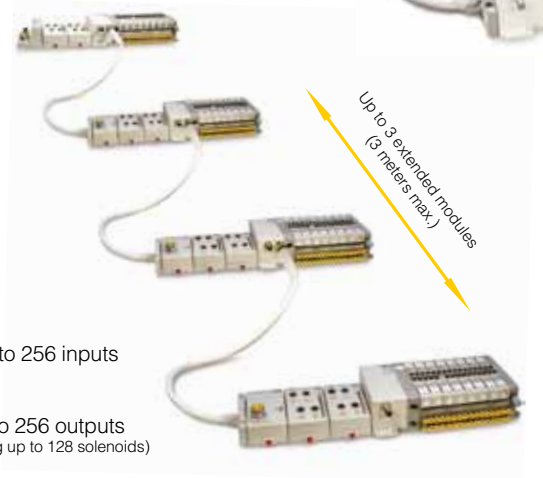
- Isysnet 32 outputs driver with internal solenoids power supply from the communication head module
- Extended Bus link connection for additional valve islands by separate M12 female connector

Up to 32 solenoid valves per island

Isysnet bus extender

Isysnet bus extender communication 1 meter cable for instant valve island plug-in by M12 male connector and direct head connection plate on Isysnet device

Every extended island has to be separately power supplied



Technical data

Isysnet 32 Outputs driver modules

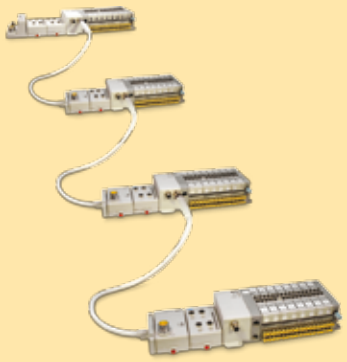
Number of Outputs :	32
Operating Voltage Range :	20,4 to 26.4 VDC
Output current rating Nom. :	50 mA per chanel (100 mA Max)
	3.2A per module
Pointbus current :	200 mA
Working temperature :	-15°C to 50°C
Dust and water protection :	IP65

Isysnet 32 outputs driver modules

	Sub-base design	Thread type	24 VDC power supply	Extender bus	Weight (g)	Order code
	Side ported	3/8" BSPP	NO	NO	400	**PSML61AP**
	Bottom ported	3/8" BSPP	NO	NO	400	**PSML62AP**
	Side ported	3/8" BSPP	YES	NO	400	**PSMM61AP**
	Bottom ported	3/8" BSPP	YES	NO	400	**PSMM62AP**
	Side ported	3/8" BSPP	NO	YES	400	**PSMM51AP**
	Bottom ported	3/8" BSPP	NO	YES	400	**PSMM52AP**
	Side ported	3/8" BSPP	YES	YES	400	**PSMM71AP**
	Bottom ported	3/8" BSPP	YES	YES	400	**PSMM72AP**

Isysnet bus extender

	Description	Weight (g)	Order code
	Head plate 1 meter cable / M12 male connector for extended island inter-connection	380	**PSSVEXT1**



Communication modules :
- Fieldbus
- Industrial Ethernet

Digital and Analogical I/O modules
Extended power supply module
IP67 modules

Isysnet Communication and I/O modules

Isysnet Communication modules

Isysnet communication modules are available in :

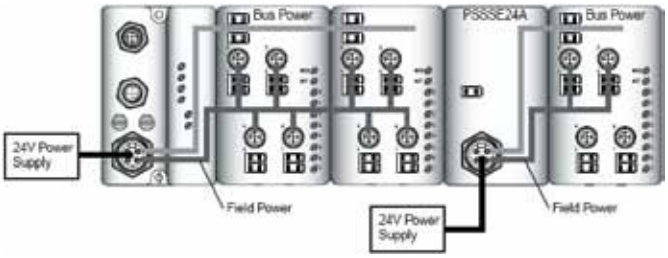
- DeviceNet
- Profibus DP
- Ethernet I/P
- ControlNet

Digital or Analogical electrical I/O modules

Some modules have diagnostic features, electronic fusing, or individually isolated inputs/ outputs. The Isysnet family provides a wide range of input and output modules to span many applications, from highspeed discrete to process control. Isysnet supports producer/consumer technology, which allows input information and output status to be shared among multiple Logix controllers.

Isysnet Extension Power Unit

The auxiliary power supports up to 10 I/O modules and 32 output driver with a maximum of 10 A field power.
The 24 VDC extension power unit (PSSSE24A) extends the backplane bus power to support up to 10 more I/O modules.
Connect additional extension power units to expand the I/O assembly up to 63 I/O modules



Technical data

Isysnet Communication modules & Extension power unit

Bus power supply :	24 VDC at 400 mA
Power supply input voltage :	24 VDC
Operative voltage range :	10 to 28.8 VDC
Input overvoltage protection :	Reverse polarity protected

Isysnet Analogue Input modules

Number of Outputs :	2
Input signal Range :	4 to 20 mA / 0 to 10 VDC
Pointbus current :	75 mA

Isysnet Analogue Output modules

Number of Outputs :	2
Input signal Range :	4 to 20 mA / 0 to 10 VDC
Pointbus current :	75 mA

Isysnet Digital Input modules

Number of Outputs :	8 – PNP or NPN
Operating Voltage Range :	10 to 28.8 VDC
Input current on-state :	2 to 5 mA
Input current off-state :	1,5 mA
Pointbus current :	75 mA

Isysnet Digital Ouput modules

Number of Outputs :	8
Operating Voltage Range :	10 to 28.8 VDC
Output current rating Max. :	1 A per channel 3 A per module
Pointbus current :	75 mA

Isysnet Relay Output modules

Number of Outputs :	4 – NO contacts
Operating Voltage Range :	5 to 28.8 VDC
Output current rating Max. :	2 A per channel 8 A per module
Pointbus current :	90 mA

Isysnet communication modules

Description	Fieldbus connection	Power supply connector	Weight (g)	Order code
DeviceNet	M18	7/8" - 4 pins	400	**PSSCDM18PA**
	M12 - A coding	7/8" - 4 pins	400	**PSSCDM12A**
Profibus DP	M12 - B coding	7/8" - 5 pins	380	**PSSCPBA**
Ethernet I/P	M12 - D coding	7/8" - 4 pins	380	**PSSCENA**
ControlNet	M12 - D coding	7/8" - 4 pins	380	**PSSCCNA**

Isysnet electrical I/O modules

Description	Polarity	Connector type	Weight (g)	Order code
8 Digital Inputs	PNP	8 x M8	400	**PSSN8M8A**
		4 x M12	380	**PSSN8M12A**
	NPN	8 x M8	400	**PSSP8M8A**
		4 x M12	380	**PSSP8M12A**
8 Digital Ouputs	PNP	8 x M8	400	**PSST8M8A**
		4 x M12	380	**PSST8M12A**
		1 x M23	400	**PSST8M23A**
4 Digital Ouputs	Relay	4 x M12	410	**PSSTR4M12A**
2 Analogue Inputs	0 - 10 V	2 x M12	400	**PSSNAVM12A**
	4 - 20 mA	2 x M12	400	**PSSNACM12A**
2 Analogue Outputs	0 - 10 V	2x M12	400	**PSSTAVM12A**
	4 - 20 mA	2 x M12	400	**PSSTACM12A**

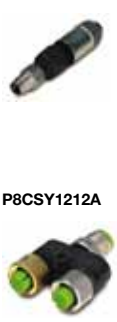
Isysnet auxiliary electrical modules

Description	Connector type	Weight (g)	Order code
24 VDC expansion power unit	7/8" - 4 pins	420	**PSSSE24A**

Isysnet bus extender

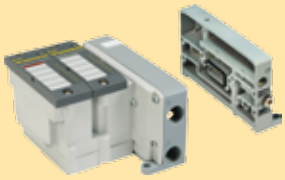
Description	Length	Weight (g)	Order code
Bus extender cable	1 meter	380	**PSSVEXT1**
for Isysnet module interconnection	3 meters	760	**PSSVEXT3**
Isysnet termination module		200	**PSSTERM**

Isysnet accessories



Description	Bus protocol	Connector type	Weight (g)	Order code
Power supply connector	DeviceNet, ControlNet & Ethernet	7/8" - 4 pins	40	**P8CS7804AA**
	Profibus DP	7/8" - 5 pins	40	**P8CS7805AA**
Line termination	DeviceNet	M12 - A coding	25	**P8BPA00MA**
	Profibus DP	M12 - B coding	25	**P8BPA00MB**
Bus IN	DeviceNet	M12 - A coding	25	**P8CS1205AA**
female connector	Profibus DP	M12 - B coding	25	**P8CS1205AB**
Bus OUT	DeviceNet	M12 - A coding	25	**P8CS1205BA**
male connector	Profibus DP	M12 - B coding	25	**P8CS1205BB**
Cable quick connect		M8	25	**P8CS0803J**
connector		M12 - A coding	25	**P8CS1204J**
"Y" shape, thread to thread		M12 - 2 x M12	25	**P8CSY1212A**

16 Outputs Moduflex Bus ends module adaptator



P	S	M	T	2	1	A	P

TURCK BL67 Series adaptor	
T0	Valve Driver Module without output module
T1	Valve Driver Module for 16 Outputs
T2	Valve Driver Module for 32 Outputs

For T0 version, 16 output module and blank module can be ordered separately from the next page or directly from TURCK under the same part number.

	Ported design	Thread type
1	Side ported	3/8" BSPP
2	Bottom ported	3/8" BSPP
5	Side ported	3/8" NPT
6	Bottom ported	3/8" NPT

Valve driver Module for 16 or 32 Outputs

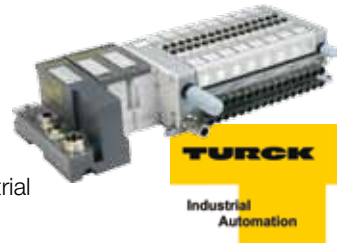
Modularity up to 16 or 32 Outputs :

- Populated with 1 or 2 standard TURCK 16 Output modules BL67-16DO-0. 1A-P, the Valve Driver Module can handle up to 16 or 32 solenoid valves.
- For a 16 Outputs configuration, the second slot has to be populated with 1 standard TURCK blank module BL67-E.

TURCK BL67 communication gateway

Industrial Communication :

- Linked to a TURCK BL67 communication module (programmable or not programmable), the device can be connected to a wide choice of Field Bus or Industrial Ethernet protocols.



PROFIBUS DeviceNet CANopen
PROFINET EtherNet/IP MODBUS TCP

TURCK BL67 I/O and Base modules

The 2 piece design allows to complete the device with a choice through a full digital or analogue **I/O modules** range populating the **base module** existing with a multiple choice of electrical connection (M8, M12, M23, 7/8")
The complete resulting configuration can handle :

- Up to 32 electrical modules (up to 2 in the Valve Driver Module)
- Up to 256 digital I/O (up to 32 outputs in the Valve Driver Module)
- Up to 64 analog I/O

BL67 Ethernet IP gateway to DeviceNet

Using the TURCK BL67 Ethernet/IP gateway with DeviceNet master BL67-GW-EN-IP-DN, you can easily connect and configure a DeviceNet subnetwork thanks to the "Magic Black Button".

Full description or TURCK BL67 Series on http://www.turck.com

Valve Driver Module - TURCK BL67 adaptor

	Description	Solenoid Valves	Sub-base design	Thread type	Weight (g)	Order code
	Valve Driver Module	0 Without 16 O module	Side ported	3/8" BSPP	200	**PSMT01AP**
			Bottom ported	3/8" BSPP	200	**PSMT02AP**
		16 Outputs or blank module to be ordered separately (see below)				
		16 Including : - 1 x 16 O module - 1 blank module	Side ported	3/8" BSPP	270	**PSMT11AP**
			Bottom ported	3/8" BSPP	270	**PSMT12AP**
		32 Including : - 2 x 16 O modules	Side ported	3/8" BSPP	310	**PSMT21AP**
			Bottom ported	3/8" BSPP	310	**PSMT22AP**

Standard TURCK BL67 module

	Description	Weight (g)	Order code
	16 Outputs module for 16 or 32 solenoid valves configuration	55	**BL67-16DO-0.1A-P**
	Blank module for 16 solenoid valves configuration	15	**BL67-E**

Both standard TURCK BL67 Outputs module and Blank module can be ordered directly from TURCK under the same part number.

16 Outputs module BL67-16DO-0.1A-P technical specifications

Number of channels	16
Nominal voltage V_O	24 VDC
Rated current from field supply	≤ 100 mA
Rated current from module bus	≤ 30 mA
Power loss, typical	≤ 1.5 W
Output type	PNP
Output voltage	24 VDC
Output current per channel	140 mA rated current (with VN 01-05 or higher)
Output delay	3 ms
Load type	resistive, inductive
Short-circuit protection	yes
Simultaneity factor	1
Electrical isolation	electronics for the field level

Dimensions (W x L x H)	32 x 91 x 59 mm
Approvals	CE, cULus
Operating temperature	Refer to solenoid valve
Storage temperature	-40°C to +70°C
Vibration	According to IEC68-2-6 : 2g to 150 Hz
Shock test	According to IEC68-2-27 : 15g to 11 ms
Electro-magnetic compatibility	acc. to EN61131-2
Protection class	IP 65
Tightening torque fixing screws	0.9 ... 1.2 Nm

16 Outputs Moduflex Bus ends module adaptator

P S M M C 1 A P

Moduflex 16 Outputs adaptator	
M4	Adaptor without bus module
MC	Adaptor with CANopen module
MD	Adaptor with DeviceNet module
MP	Adaptor with Profibus DP module

	Ported design	Thread type
1	Side ported	3/8" BSPP
2	Bottom ported	3/8" BSPP
5	Side ported	3/8" NPT
6	Bottom ported	3/8" NPT

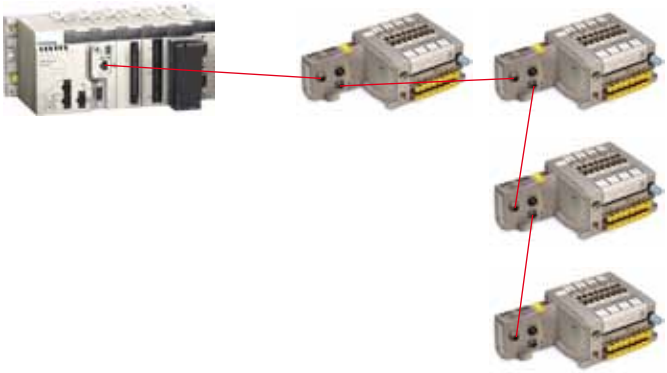
For AS-i communication, use M4 and see Moduflex Valve catalogue for AS-i module part number.

Moduflex Bus 16 Outputs

16 solenoids fieldbus modules available in DeviceNet, CANopen, and Profibus DP protocols.

Closer to the cylinder

Decentralized application when solenoid valves have to be closer to the pneumatic actuators.



Technical data

Moduflex Bus communication modules

Bus power supply :	20 to 30 VDC
Power supply output voltage :	24 VDC
Module consumption :	
• DeviceNet :	1,5 W
• CANopen :	1,5 W
• Profibus DP :	1,5 W
Water and dust Protection :	IP65
Output protection :	overload protected

Moduflex Bus modules

	Description	Bus protocol	Sub-base design	Thread type	Weight (g)	Order code
	Moduflex Bus module	CANopen	Side ported	3/8" BSPP	250	**PSMMC1AP**
			Bottom ported	3/8" BSPP	250	**PSMMC2AP**
		DeviceNet	Side ported	3/8" BSPP	250	**PSMMD1AP**
			Bottom ported	3/8" BSPP	250	**PSMMD2AP**
		Profibus DP	Side ported	3/8" BSPP	250	**PSMMP1AP**
			Bottom ported	3/8" BSPP	250	**PSMMP2AP**

Also available, AS-i interface protocol, standard version or extended version (A - B coded). See Moduflex Valve catalogue.

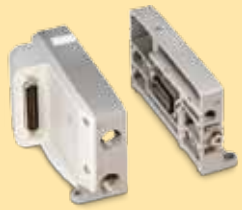
	End modules adaptator without Moduflex Bus module	All	Side ported	3/8" BSPP	200	**PSMM41AP**
			Bottom ported	3/8" BSPP	200	**PSMM42AP**

For configuration files, go to : http://www.parker.com/pneu/moduflex.

Decentralized Device bus accessories

	Description	Bus protocol	Connector type	Weight (g)	Order code
	Power supply female straight connector	All	M12 - A coding	25	**P8CS1205AA**
	Line termination	DeviceNet CANopen	M12 - A coding	25	**P8BPA00MA**
P8CS0803J		Profibus DP	M12 - B coding	25	**P8BPA00MB**
	Bus IN female connector	DeviceNet CANopen	M12 - A coding	25	**P8CS1205AA**
		Profibus DP	M12 - B coding	25	**P8CS1205AB**
	Bus OUT male connector	DeviceNet CANopen	M12 - A coding	25	**P8CS1205BA**
		Profibus DP	M12 - B coding	25	**P8CS1205BB**
	Cable quick connect connector		M8	25	**P8CS0803J**
			M12 - A coding	25	**P8CS1204J**
P8CSY1212A	"Y" shape, thread to thread		M12 - 2 x M12 - A coding	25	**P8CSY1212A**

Multi-connection head module



P	S	M	L	2	1	A	P

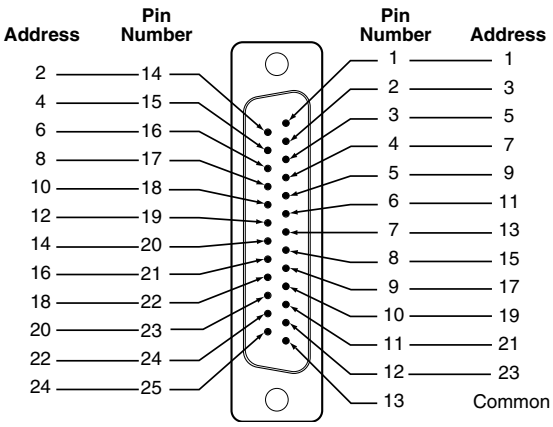
Multi-wire connection	
L2	Sub-D25 connector

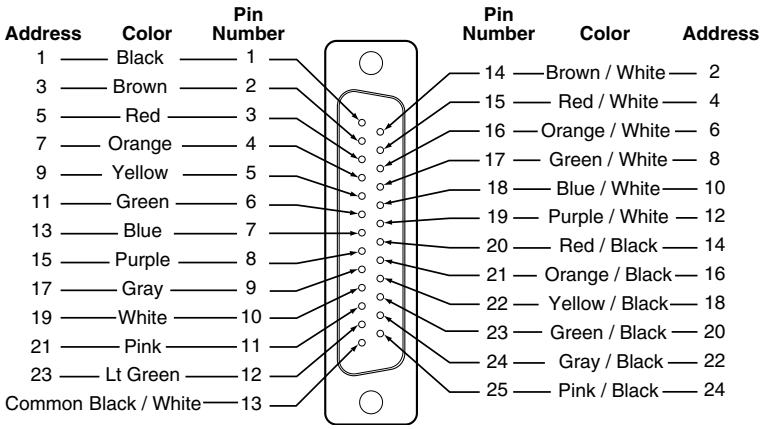
	Ported design	Thread type
1	Side ported	3/8" BSPP
2	Bottom ported	3/8" BSPP
5	Side ported	3/8" NPT
6	Bottom ported	3/8" NPT

Sub-D25 connection

Up to 24 solenoids on standard Sub-D25 connector.

Technical data





Rated voltage :	24 VDC
Maximum addresses :	24
Maximum energised simultaneously :	24
Electrical connection :	Sub-D25 pin DIN 41652, MIL-C-24308, NFC93425 type HE5
Polarity :	PNP and NPN compatible (solenoids not polarized)
Dust and water protection :	IP65 rated with properly assembled IP65 rated cable

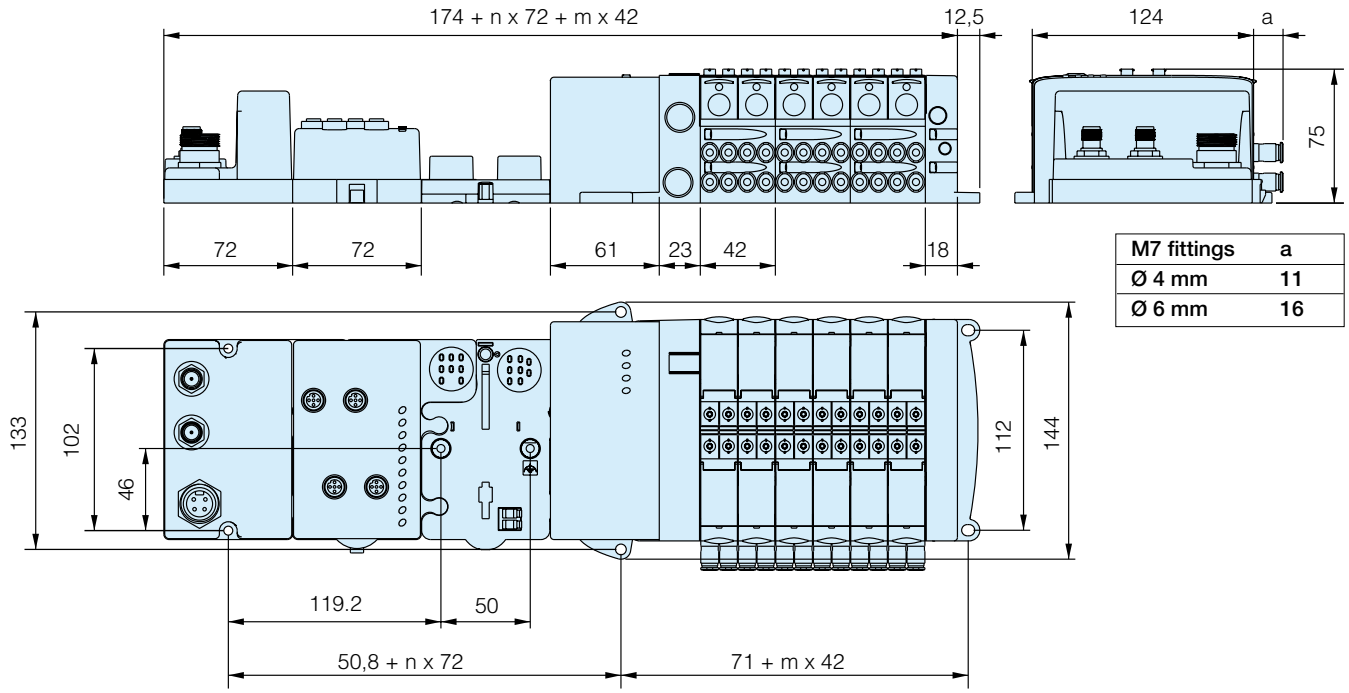
Electrical multi-pole end modules

	Description	Sub-base design	Thread type	Weight (g)	Order code
	Sub-D25 ends module	Side ported	3/8" BSPP	250	**PSML21AP**
		Bottom ported	3/8" BSPP	250	**PSML22AP**

Electrical accessories

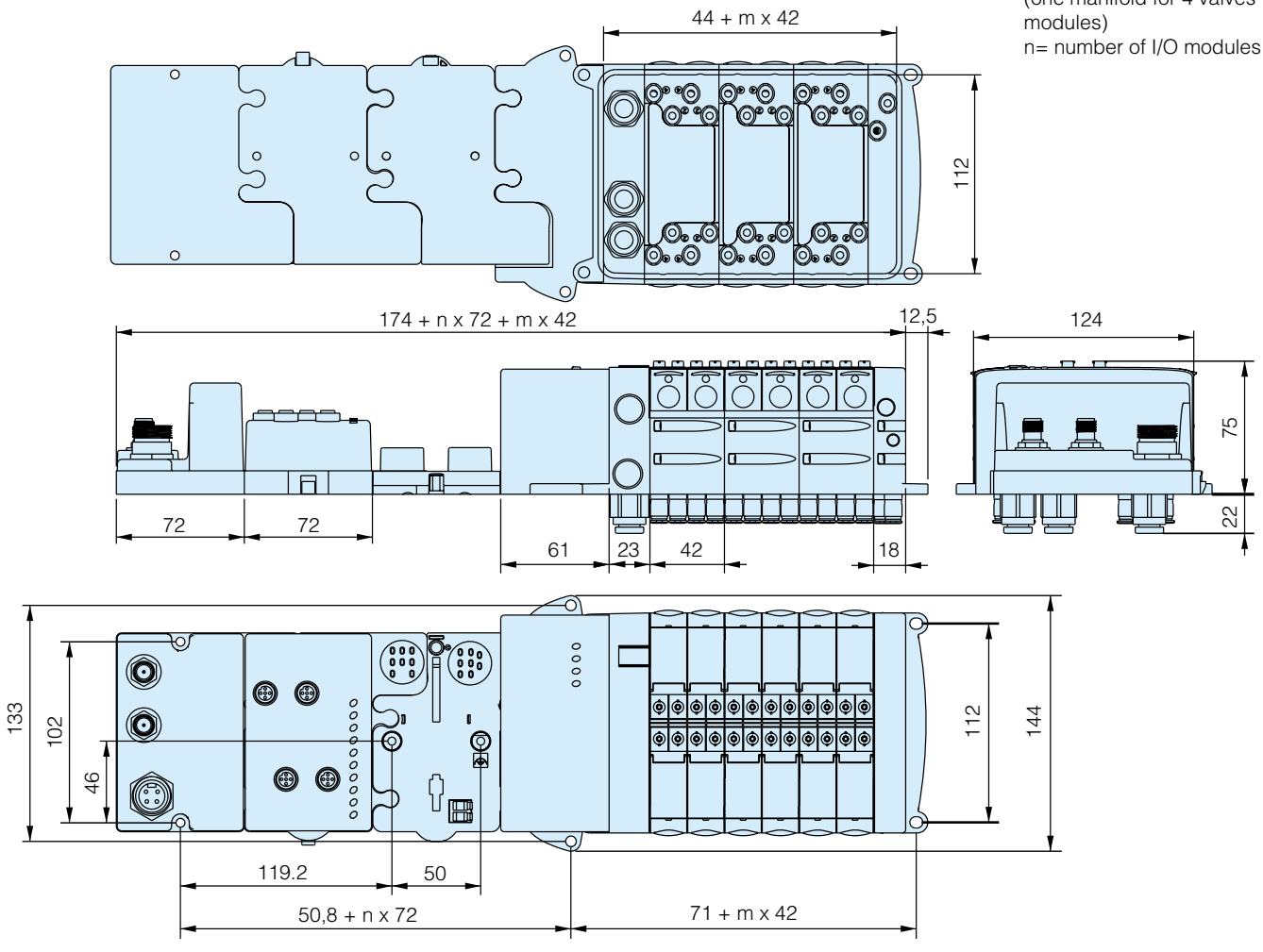
	Description	Cable length	Weight (g)	Order code
P8LMH25M3A	Sub-D25 connector IP40 with flying leads multi-cable	3 m	380	**P8LMH25M3A**
		9 m	780	**P8LMH25M9A**
	Sub-D25 connector IP65 with flying leads multi-cable	9 m	790	**P8LMH25B9A**

Centralized bus - Side ported



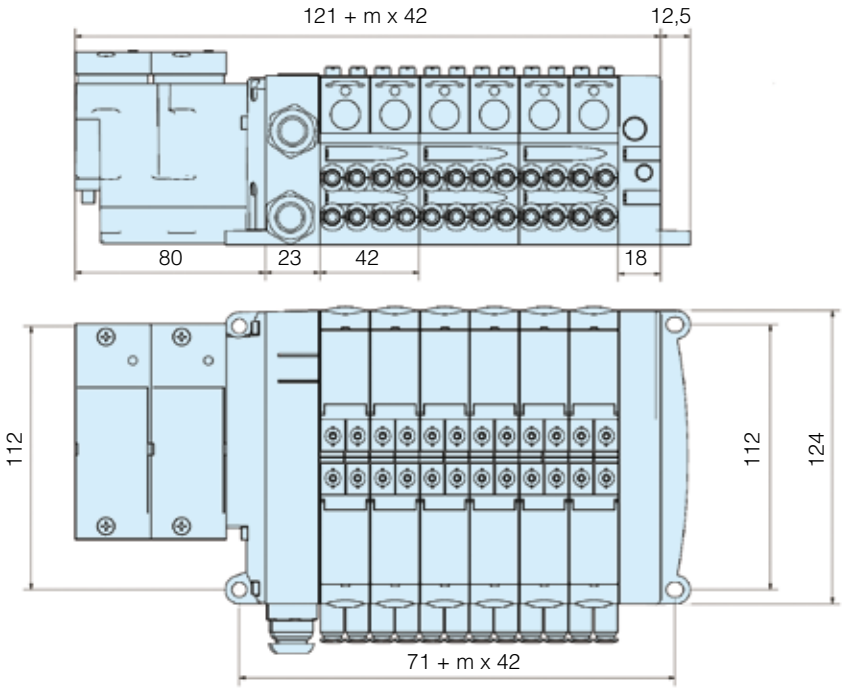
M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

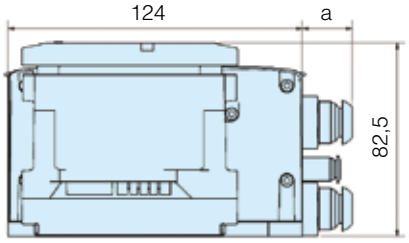
Centralized bus - Bottom ported



Note:
m = number of manifolds (one manifold for 4 valves modules)
n= number of I/O modules

Isys Micro with TURCK BL67 adaptor - Side ported

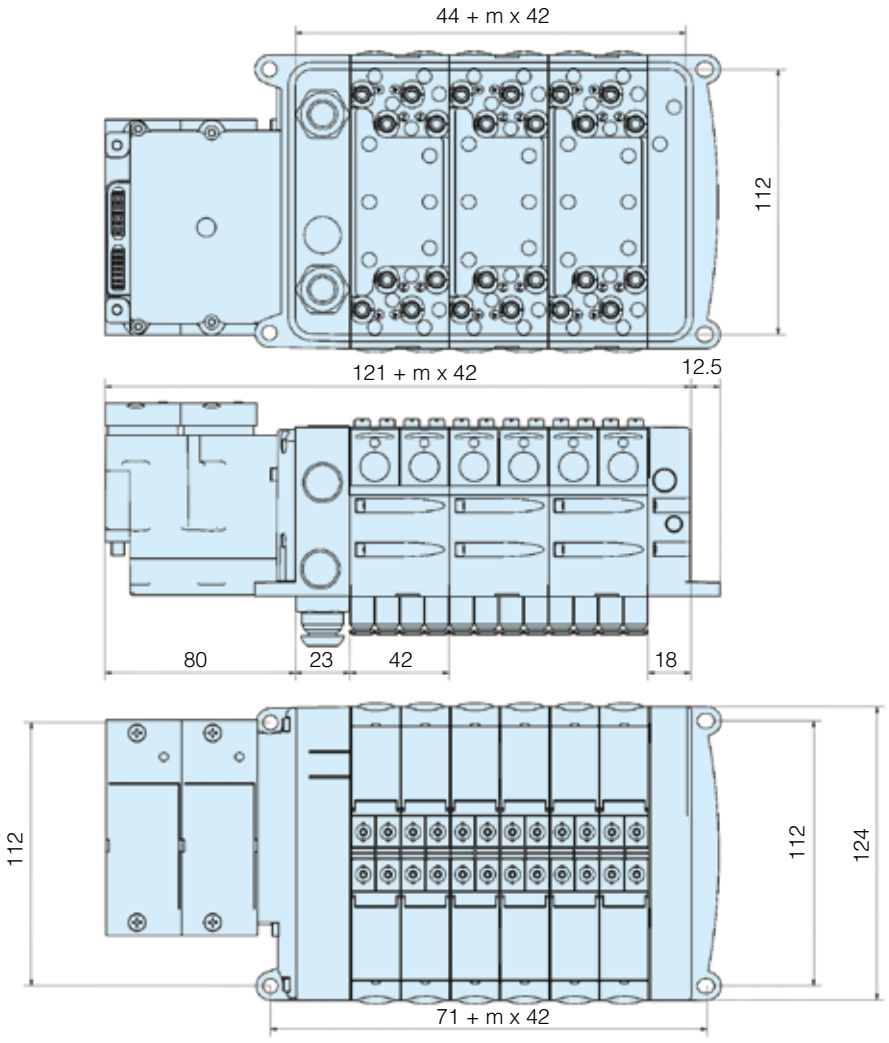


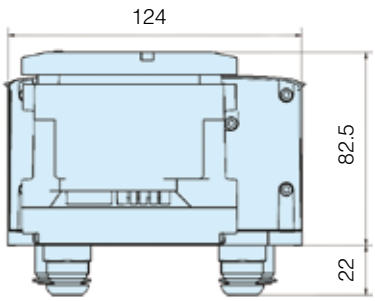


M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

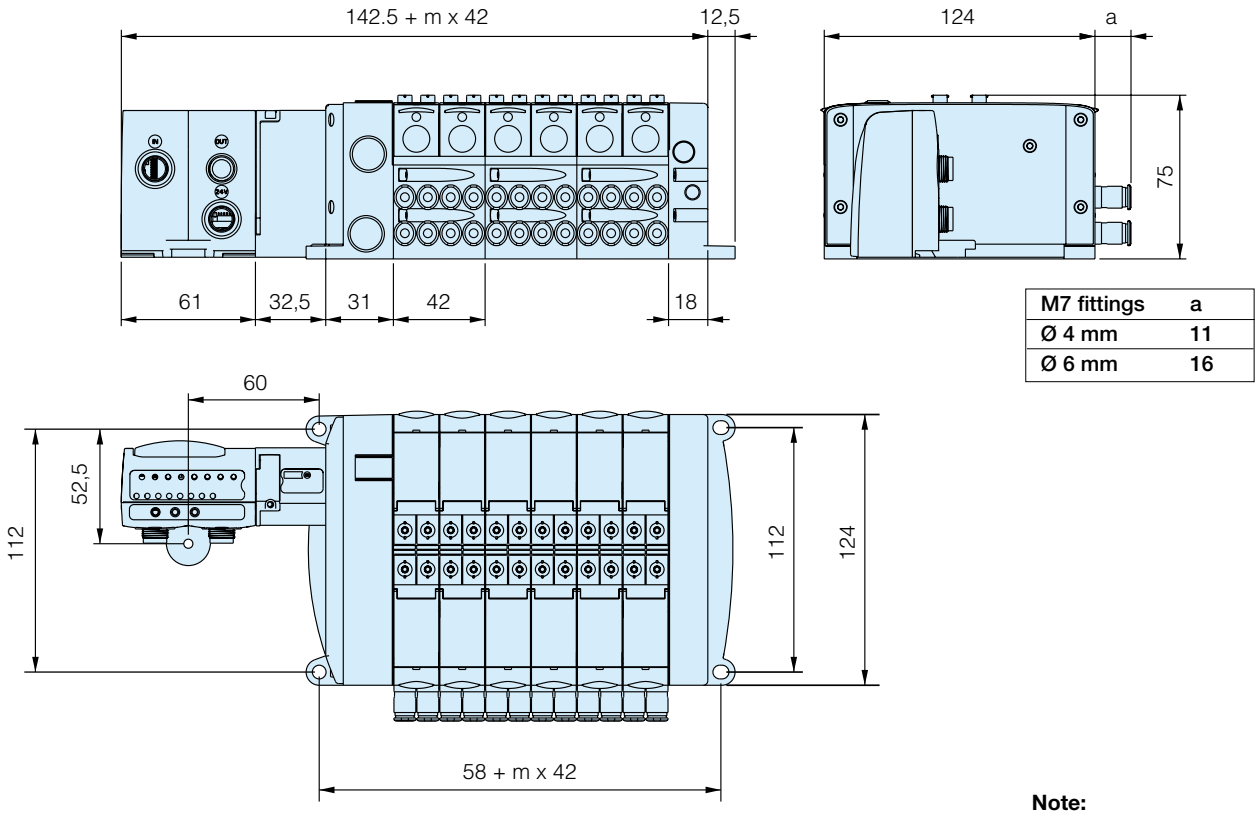
Isys Micro with TURCK BL67 adaptor - Bottom ported

Note:
m = number of manifolds (one manifold for 4 valves modules)





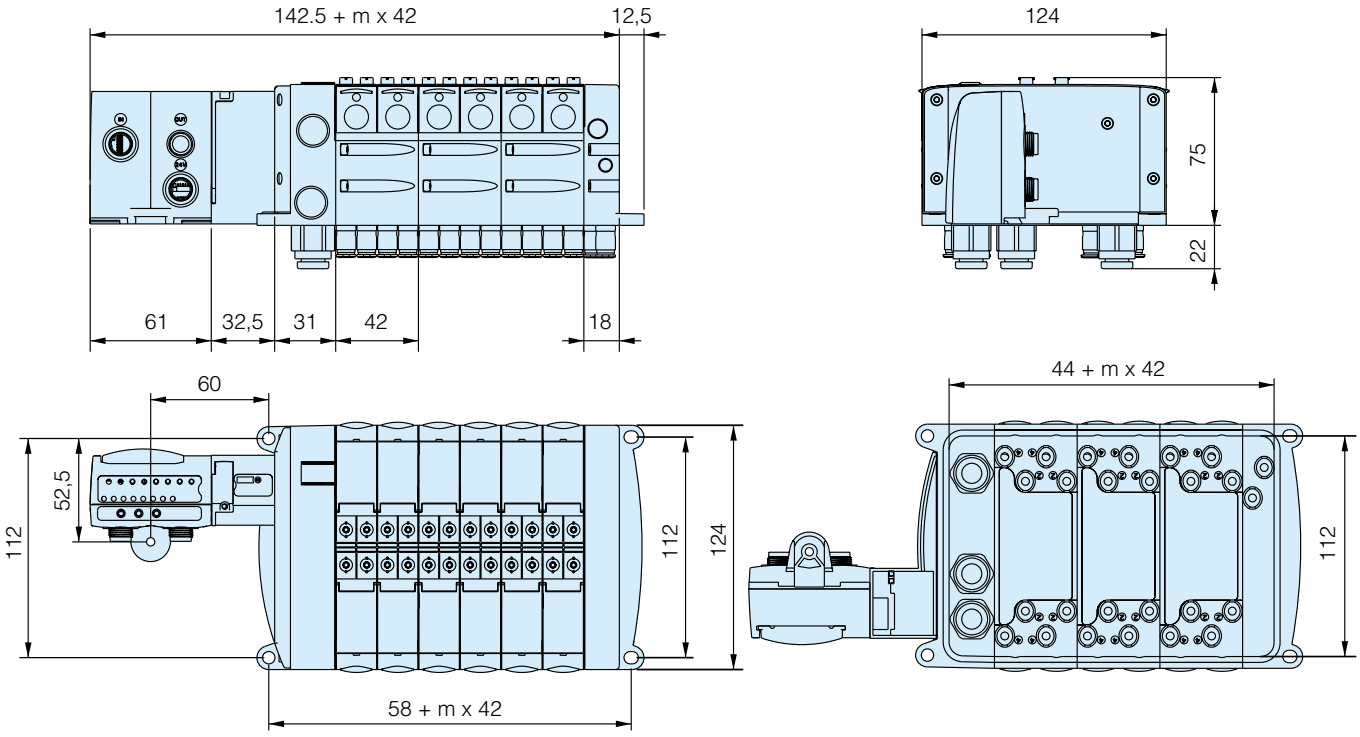
Fieldbus - Side ported



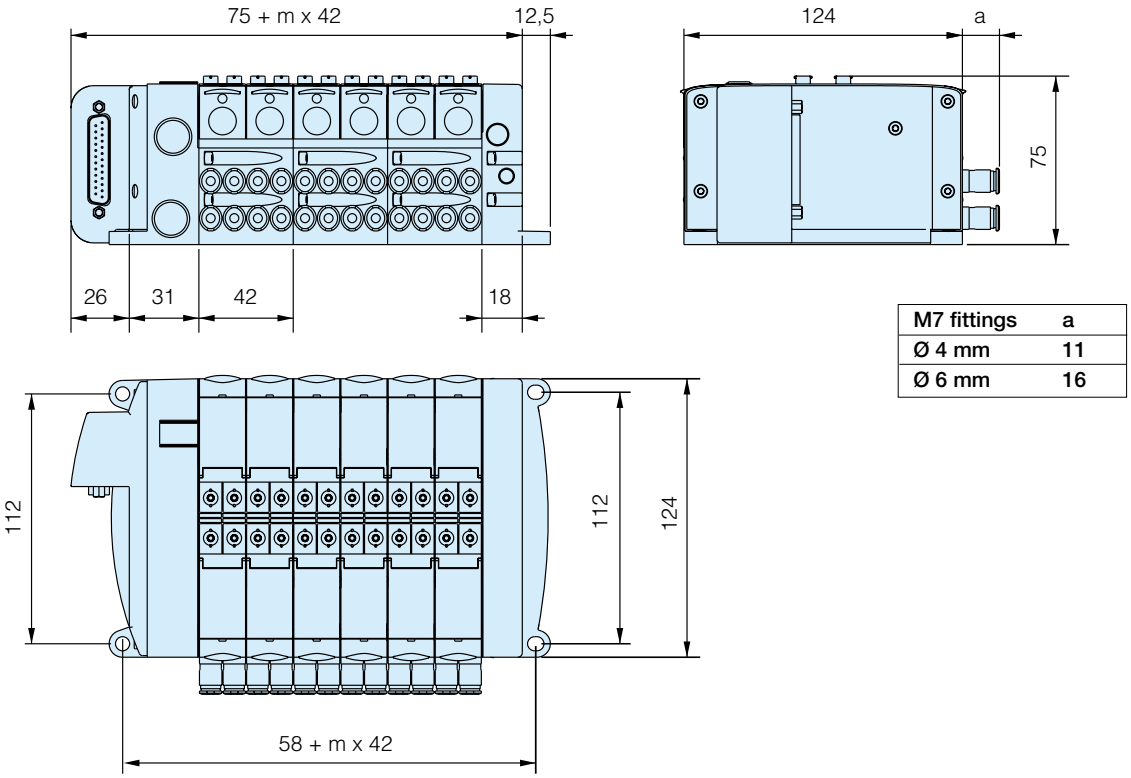
M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

Note:
m = number of manifolds (one manifold for 4 valves modules)

Fieldbus - Bottom ported



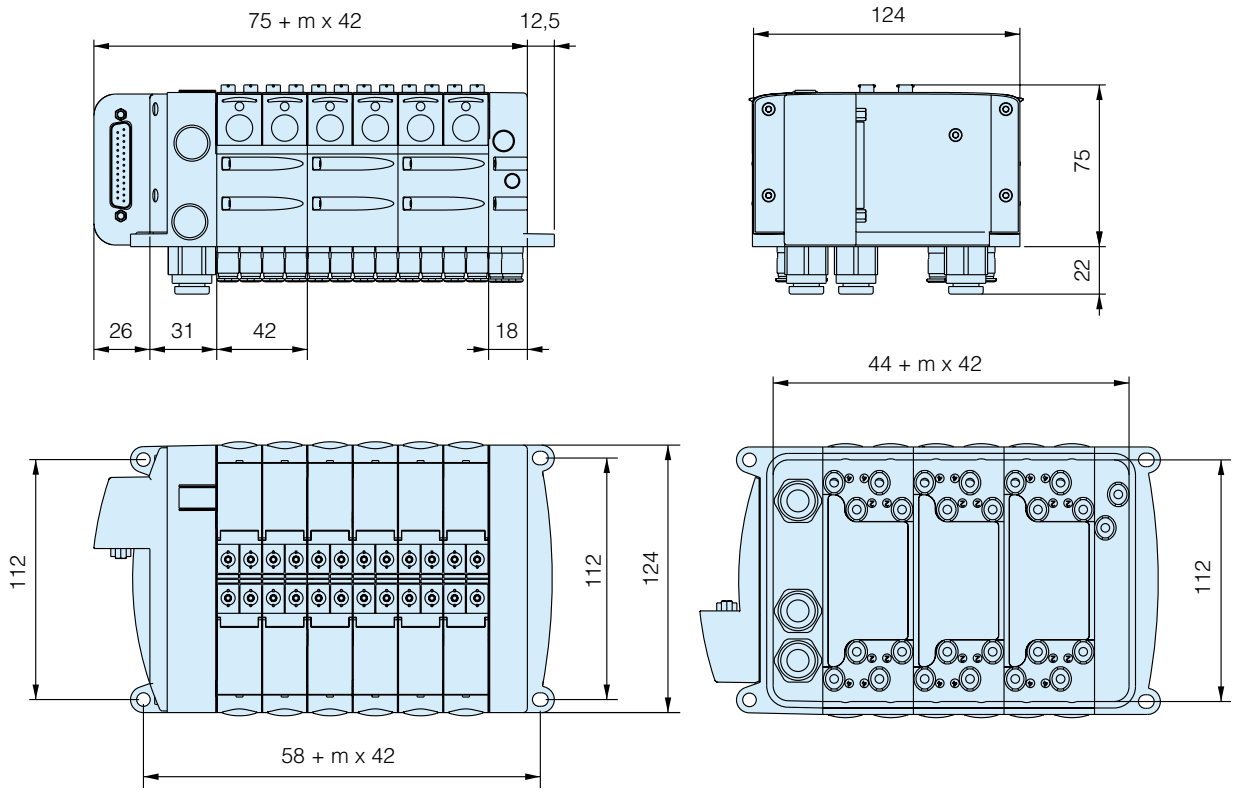
SubD25 - Side ported



M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

Note:
m = number of manifolds (one manifold for 4 valves modules)

SubD25 - Bottom ported



Moduflex Valve System®

Flexibility for pneumatic users

Whether configured from basic components or ordered as a pre-assembled and tested valve island, ***Moduflex flexibility*** *is unmatched in the market place.*

Innovative

The 6 patents awarded to the Moduflex Valve System reflect that innovation is core to the Parker design process. Maintaining a clear understanding of our customer's expectations has defined the individuality of the Moduflex, and clearly differentiated it as a leading automation solution.

Adaptive

No other system can be adapted so simply once specified. Unique, captive fitting release system, quick release electrical connectors and single mechanical screw connection between manifolds offer the ultimate capability for late system design changes.

Multi-Functional

From stand-alone valves to fieldbus ready valve islands, from cylinder flow controls to vacuum generators with integrated blow-off, the Moduflex Valve System meets the requirements of the whole automation spectrum.

Moduflex Valve technology

Two technology platforms enable the compact design and high performance of the Moduflex Valve System.

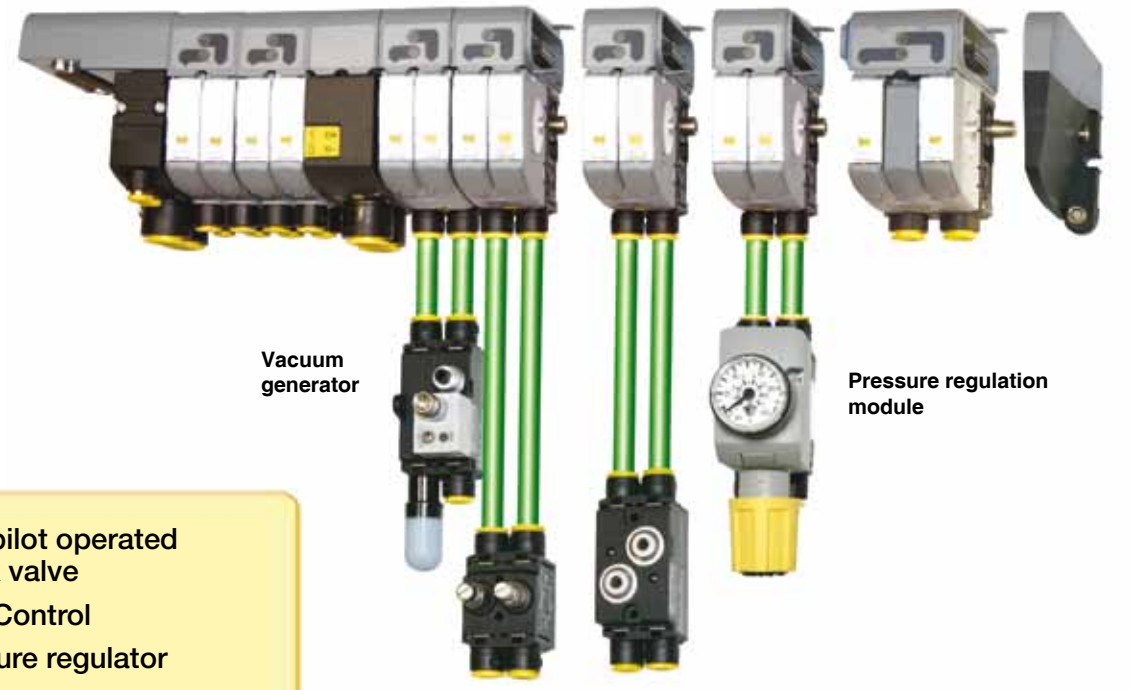
The compact dual 4/2 and 3/2 valves utilize well proven Parker seal technology. The standard 4/2 valves adopt the long life super durable ceramic switching technology.

Dual 4/2 valve

4/2 Valve

Moduflex Complete Control

With the introduction of the dual 4/2 size 1 valves, Moduflex now offers unrivaled ability of matching valves to exact flow requirements, ensuring cost and space are minimized.
In addition, Moduflex Valve System offers all the necessary control peripherals to provide a complete automation solution.
Moduflex is the complete control package.



- Dual pilot operated check valve
- Flow Control
- Pressure regulator
- Vacuum / Blow off module.

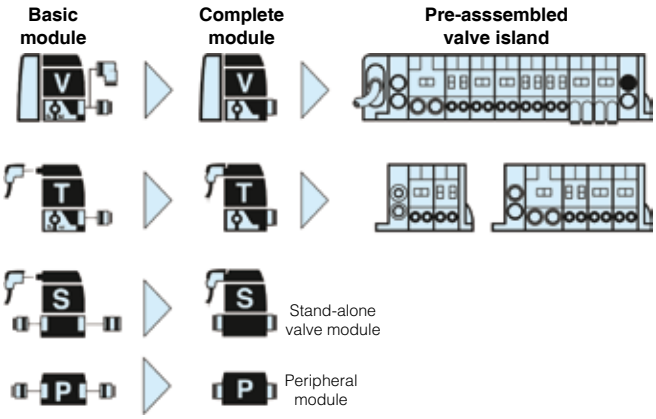
Operating information

Working pressure	-0,9 to 8 bar
Pilot pressure	3 to 8 bar *
Working temperature	-15 °C to 60 °C
Protection individual connectors	IP 67 NEMA4
Protection integrated connectors	IP 65
Voltage	24 V DC
* Single and double 3/2	3,5 to 8 bar

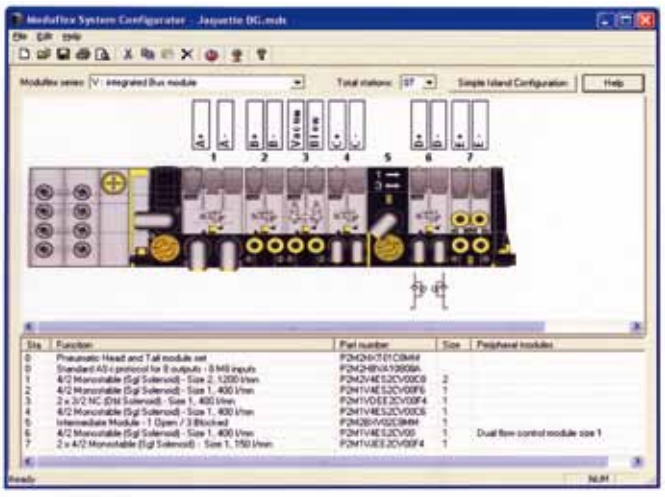
		Dual 4/2	Dual 3/2	3/2	4/2
Size 1	**Qmax.**	275 l/min	415 l/min	415 l/min	510 l/min
	Qn	165 l/min	235 l/min	235 l/min	310 l/min
Size 2	**Qmax.**	-	805 l/min	805 l/min	1340 l/min
	Qn	-	450 l/min	440 l/min	800 l/min

Total ordering flexibillity

Additionally to the complete product adaptability, the Moduflex Valve range offers for V, T, S and P series an ordering flexibility with 3 different designs; from all components separately ordered (basic module) to pre-assembled and tested valve island.



The Moduflex Valve Island Configurator software is the easy way to, step by step, configure and order the required valve island for the application.



Ordering options

1 - Basic modules ordering

Using this option, all basic components are separately ordered :

- Head and Tail set
- Valve modules
- Intermediate module kit
- Peripheral modules
- Pneumatic connectors, mufflers and plugs
- Electrical connection or fieldbus module

The complete bill of material needed for the valve island assembly can be easily details using page 1 of the Moduflex Valve Configurator software report.

2 - Complete modules ordering

Using this option, modules are defined, ordered and supplied, pneumatic connectors and electrical connection equiped. One part number defines :

- Function module
- Pneumatic connectors, muffler and plugs
- Electrical connection and cable

For an entire valve island configuration, the list of complete modules can be easily details using page 3 of the Moduflex Valve Configurator software report.

3 - Pre-assembled valve islands ordering

Using this option, the complete valves island configuration has to be defined, and may be ordered, delivered fully assembly and tested under one part number.

The Moduflex Valve Configurator software is an easy way for a clear definition of the requested valve island configuration.

V series

Integrated connection field bus or multi-connector valve island

T series

Individual connector valve islands
Solenoid or air pilot

S series

Stand alone valves
Solenoid or air pilot

P series

Peripheral modules
Flow control, check valves, pressure regulator, vacuum

Moduflex Valve Configurator software

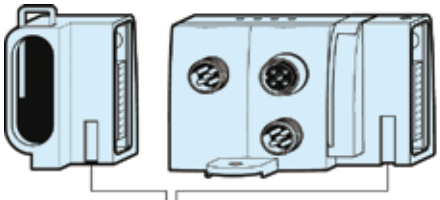
For more information see - Parker Pneumatic Catalogue PDE2600PNUK

Integrated connections valve islands : V series

In a V series Moduflex valve island, electrical controls are all received by the head module and transmitted to the concerned valve modules through the modular integrated circuit.

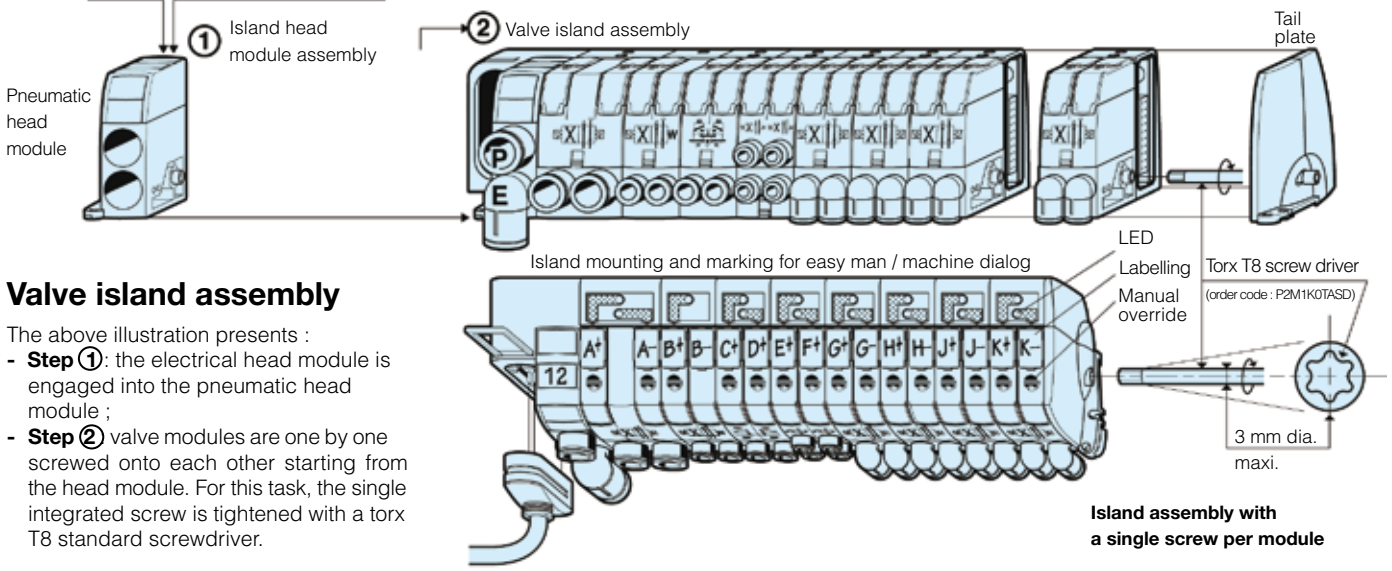
The head module may either be a cable multi-connector or a Fieldbus communication module : the next pages show multi-connector cable and a complete choice of bus protocoles.

Valve island electrical head module :
multi-connector or field bus connection



Valve island configuration

The following page shows all valve sizes and functions that may enter into a V series valve island and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow...
To receive its pressure supply and collect its exhaust, the island also requires a pneumatic head and tail module set and sometimes an intermediate module set with 4 configuration plates for different functions.
To receive its electrical controls, the island is completed by an electrical head module, either a multi-connector or by a bus module to be chosen from the next pages.



Island assembly with a single screw per module

Valve island assembly

The above illustration presents :
- **Step ①**: the electrical head module is engaged into the pneumatic head module ;
- **Step ②** valve modules are one by one screwed onto each other starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.

The pneumatic connectors may be clipped or unclipped at any stage.

With a LED, a manual override and a labelling for each valve pilot (see illustration), the island front face eases the "man / machine" dialog.

The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on dimensions pages.

Modules and island ordering

Choice between 3 approaches :
1 - Basic modules ordering :
The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

2 - Complete modules ordering :
Page 265 shows the ordering chart for modules supplied with their connectors.
3 - Assembled island ordering :
Page 268 shows the valve island configurator CD-Rom to specify a valve island that may be delivered assembled.

Field bus head module :
▪ width : 94 mm

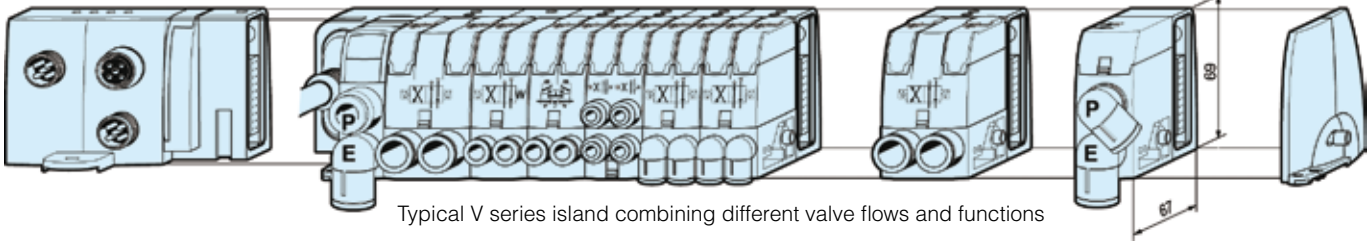
Multi-connector head module :
▪ guillotine, width : 47 mm
▪ sub-D 25, width : 56 mm

Valve modules size 1 :
▪ width : 25 mm

Valve module size 2 :
▪ width : 37.5 mm

Intermediate module :
▪ width : 25 mm

Tail plate :
▪ width : 16 mm



Typical V series island combining different valve flows and functions

Basic modules (without connector)

Valve Modules

Size 1

Size 2

		Size 1		Size 2	
Symbol	Description	Weight (g)	**Order code**	Weight (g)	**Order code**
	4/2 Solenoid spring	94	**P2M1V4ES2CV**	100	**P2M2V4ES2CV**
	4/2 Double solenoid	103	**P2M1V4EE2CV**	110	**P2M2V4EE2CV**
	2 x 3/2 NC + NC with exhaust check valves	106	**P2M1VDEE2CV**	115	**P2M2VDEE2CV**
	2 x 3/2 NO + NO with exhaust check valves	106	**P2M1VCEE2CV**	115	**P2M2VCEE2CV**
	2 x 3/2 NC + NO with exhaust check valves	106	**P2M1VEEE2CV**	115	**P2M2VEEE2CV**
	2 x 4/2 Solenoid spring with exhaust check valves	114	**P2M1VJEE2CV**		
	3/2 NC with exhaust check valves	102	**P2M1V3ES2CV**	110	**P2M2V3ES2CV**
	4/3 Centre exhaust 2 x 3/2 NC + NC without exhaust check valves	106	**P2M1VGEE2CV**	115	**P2M2VGEE2CV**

Island head and intermediate module sets

Valve Modules

P2M2HXT01

P2M2BXV0A

	Size 2	
Description	Weight (g)	**Order code**
Valve island pneumatic head and tail module set	64	**P2M2HXT01**
Valve island intermediate supply module with a set of 4 configuration plates	68	**P2M2BXV0A**

Clip-On pneumatic connectors *

Valve Modules

			Size 1		Size 2	
Description	Tube OD	Weight (g)	**Order code**	Weight (g)	**Order code**
Straight connector	G1/8"	2	**FMDG1-1**		
	4 mm	2	**FMD04-1**		
	6 mm	3	**FMD06-1**	3	**FMD06-2**
	8 mm			4	**FMD08-2**
	10 mm			5	**FMD10-2**
	12 mm			6	**FMD12-2**
Elbow connector	G1/8"	3	**CMDG1-1**		
	4 mm	3	**CMD04-1**		
	6 mm	5	**CMD06-1**	5	**CMD06-2**
	8 mm			6	**CMD08-2**
	10 mm			7	**CMD10-2**
	12 mm			8	**CMD12-2**
Silencer				5	**MMDVA2**
Plug		3	**PMDXX1**	5	**PMDXX2**

* Fittings and plugs pack quantity : 10

Electrical multi-connection and field bus head modules

Multiconnector or field bus head module to be chosen from next pages.

V series valve island : Electrical multi-connector head module

Description		Protection	Cable length	Weight (g)	Order code
Guillotine type	Multi-connection head module			38	**P2M2HEV0A**
	Guillotine connector with flying leads multi-cable	IP65	2 m	335	**P8LMH20M2A**
			5 m	802	**P8LMH20M5A**
			9 m	1425	**P8LMH20M9A**
Standard Sub-D 25 type	Multi-connection head module			60	**P2M2HEV0D**
	Sub-D 25 connector with flying leads multi-cable	IP40	3 m	435	**P8LMH25M3A**
			9 m	1425	**P8LMH25M9A**
		IP65	9 m	1425	**P8LMH25B9A**

V series valve island : Electrical field bus head modules for AS-i protocol

Standard AS-i protocol (up to 31 nodes) electrical head modules

Electrical module for **8 outputs** max.

- V series islands may have up to 8 solenoid pilots
- 2 nodes per module, 4 I / 4 O per node

Input connections	Weight(g)	Order code
no input	150	**P2M2HBVA10800**
8 M8 inputs	200	**P2M2HBVA10808A**
8 inputs on 4 M12	200	**P2M2HBVA10808B**

Electrical module for **4 outputs** max.

- V series islands may have up to 4 solenoid pilots
- 1 node per module, 4 I / 4 O

No inputs	150	**P2M2HBVA10400**
4 inputs on 4 M12	200	**P2M2HBVA10404B**

AS-i version 2-1 protocol (up to 62 nodes) electrical head modules

Electrical module for **6 outputs** max.

- V series islands may have up to 6 solenoid pilots
- 2 nodes per module, 4 I / 3 O per node

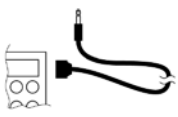
none	150	**P2M2HBVA20600**
8 M8 Inputs	200	**P2M2HBVA20608A**
8 inputs on 4 M12	200	**P2M2HBVA20608B**

AS-i head module accessories

P8CS0803J

P8CSY1212A

Description	Connector type	Weight (g)	Order code
Cable quick connect connector	M8 Male	25	**P8CS0803J**
	M12 Male - A coding	25	**P8CS1204J**
« Y » shape	M12 Male - 2 x M12 Female	25	**P8CSY1212A**



Addressing cable 1 meter	M12 Male - Jack	100	**P8LS12JACK**

V series valve island : Electrical field bus head modules for device bus

Electrical modules for 16 outputs
(The V series modules may have up to 16 solenoid pilot valves)

Description	Bus Protocol	Bus In / Bus Out	Power supply	Weight (g)	Order code
Moduflex Bus Communication module	**Profibus DP**	M12 - B coding	M12 - A coding	250	**P2M2HBVP21600**
	For GSD file, go to http://www.parker.com/pneu/moduflex				
	DeviceNet	M12 - A coding	M12 - A coding	250	**P2M2HBVD21600**
			M12 - B coding	250	**P2M2HBVD11600**
	For EDS file, go to http://www.parker.com/pneu/moduflex				
	CANopen	M12 - A coding	M12 - A coding	250	**P2M2HBVC21600**
			M12 - B coding	250	**P2M2HBVC11600**
	For EDS file, go to http://www.parker.com/pneu/moduflex				
	InterBus-S	M23 - 9 Pins	M12 - A coding	300	**P2M2HBVS11600**

Device Bus connection accessories

P2M2HBVP21600

P8CS1205AA

Description	Bus Protocol	Connector type	Weight (g)	Order code
Power supply female straight connector	All	M12 - A coding	25	**P8CS1205AA**
	DeviceNet CANopen	M12 - B coding	25	**P8CS1205AB**
Bus IN female connector	DeviceNet CANopen	M12 - A coding	25	**P8CS1205AA**
	Profibus DP	M12 - B coding	25	**P8CS1205AB**
Bus OUT male connector	DeviceNet CANopen	M12 - A coding	25	**P8CS1205BA**
	Profibus DP	M12 - B coding	25	**P8CS1205BB**
Line termination	DeviceNet CANopen	M12 - A coding	25	**P8BPA00MA**
	Profibus DP	M12 - B coding	25	**P8BPA00MB**

M12 - A coding connector

M12 - B coding connector

Individual connection valve islands : T series

In a T series valve island, electrical controls are individually connected to each valve module, onto its solenoid pilot.

As an alternative, air pilot valve modules are also available, to be controlled by individual pneumatic signals.

Valve island assembly

As shown by the above illustration, the valve modules are one by one screwed onto each other, starting from the head module. For this task, the single integrated screw is tightened with a torx T8 standard screwdriver.
The pneumatic connectors may be clipped or unclipped at any stage.
With a LED, a manual override and a labelling for each valve pilot (see above illustration), the island front face eases the "man / machine" dialog.
The resulting valve island length is expressed by the drawing below, while further size details and mountings are presented on dimensions pages.

Valve pilot connections

1 - Solenoid valve modules

Electrical connectors

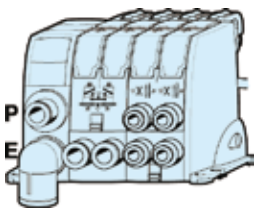
Each solenoid shows a M8 connection.
Lockable clip-on connectors, IP67 protected, with LED, voltage surge protection and flying lead cable may be ordered for the required length.

2 - Air pilot valve modules

4 mm OD tube

No connector has to be ordered : each pneumatic pilot port includes its integrated swivable elbow 4 mm OD tube push-in connector.

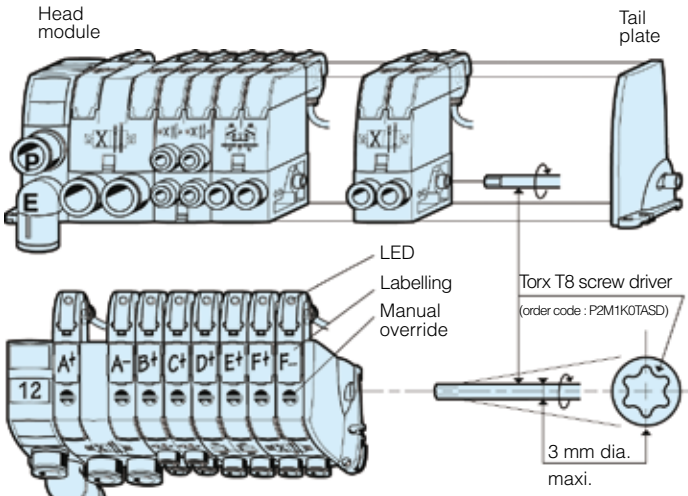
Typical T series short island for single or double acting small cylinders.



Valve island configuration

The following page presents all valve sizes and functions that may enter into a T series valve island and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow...
To receive its pressure supply and collect its exhaust, the island also requires a pneumatic head and tail module set and sometimes an intermediate module set including 4 configuration plates for different functions.
Valve modules may either be solenoid versions or air pilot versions. Mixing both versions into the same valve island is possible.

Valve island assembly



Island mounting and marking for easy man / machine dialog

Island assembly with a single screw per module

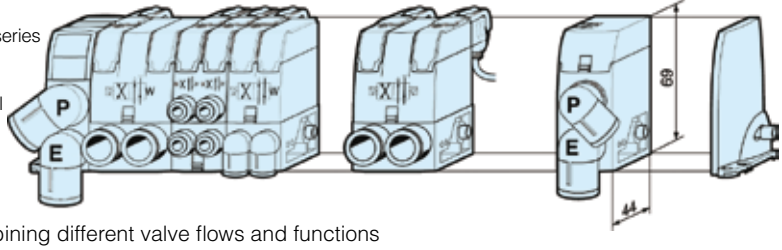
Modules and island ordering

Choice between 3 approaches :
1 - Basic modules ordering :
The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

2 - Complete modules ordering :
Page 265 shows the ordering chart for modules supplied with their connectors.
3 - Assembled island ordering :
Page 268 shows the valve island configurator CD-Rom to specify a valve island that may be delivered assembled.

Pneumatic head module : ▪ width : 32 mm
Valve module size 1 : ▪ width : 25 mm
Valve module size 2 : ▪ width : 37.5 mm
Intermediate module : ▪ width : 25 mm
Tail plate : ▪ width : 16 mm

Typical T series hight flow island for both small and large cylinders.



Typical T series islands combining different valve flows and functions

Basic modules (without connector)

Valve Modules					Size 1		Size 2
	Symbol	Description	Actuator	Weight (g)	**Order code**	Weight (g)	**Order code**
Size 1 Dual 4/2		4/2 Spring return	Solenoid Air pilot	68 63	**P2M1T4ES2C** **P2M1T4PS**	74 69	**P2M2T4ES2C** **P2M2T4PS**
		4/2 Double pilot	Solenoid Air pilot	77 67	**P2M1T4EE2C** **P2M1T4PP**	83 73	**P2M2T4EE2C** **P2M2T4PP**
Size 1		2 x 3/2 NC + NC with exhaust check valves	Solenoid Air pilot	80 70	**P2M1TDEE2C** **P2M1TDPP**	94 84	**P2M2TDEE2C** **P2M2TDPP**
		2 x 3/2 NO + NO with exhaust check valves	Solenoid Air pilot	80 70	**P2M1TCEE2C** **P2M1TCPP**	94 84	**P2M2TCEE2C** **P2M2TCPP**
		2 x 3/2 NC + NO with exhaust check valves	Solenoid Air pilot	80 70	**P2M1TEEE2C** **P2M1TEPP**	94 84	**P2M2TEEE2C** **P2M2TEPP**
Size 2		2 x 4/2 Spring return with exhaust check valves	Solenoid Air pilot	88 78	**P2M1TJEE2C** **P2M1TJPP**		
		3/2 NC with exhaust check valves	Solenoid Air pilot	76 71	**P2M1T3ES2C** **P2M1T3PS**	90 70	**P2M2T3ES2C** **P2M2T3PS**
		4/3 Centre exhaust 2 x 3/2 NC + NC without exhaust check valves	Solenoid Air pilot	80 70	**P2M1TGEE2C** **P2M1TGPP**	94 84	**P2M2TGEE2C** **P2M2TGPP**

Island head and intermediate module sets

Valve Modules				Size 2
	Description		Weight (g)	**Order code**
P2M2HXT01	Valve island pneumatic head and tail module set		64	**P2M2HXT01**
P2M2BXT0A	Valve island intermediate supply module with a set of 4 configuration plates		64	**P2M2BXT0A**

Clip-On pneumatic connectors *

Valve Modules				Size 1		Size 2
	Description	Tube OD	Weight (g)	**Order code**	Weight (g)	**Order code**
	Straight connector	G1/8"	2	**FMDG1-1**		
		4 mm	2	**FMD04-1**		
		6 mm	3	**FMD06-1**	3	**FMD06-2**
		8 mm			4	**FMD08-2**
		10 mm			5	**FMD10-2**
		12 mm			6	**FMD12-2**
	Elbow connector	G1/8"	3	**CMDG1-1**		
		4 mm	3	**CMD04-1**		
		6 mm	5	**CMD06-1**	5	**CMD06-2**
		8 mm			6	**CMD08-2**
		10 mm			7	**CMD10-2**
		12 mm			8	**CMD12-2**
	Silencer				5	**MMDVA2**
	Plug		3	**PMDXX1**	5	**PMDXX2**

* Fittings and plugs pack quantity : 10

Electrical connectors

	Description	Connector type	Cable length	Weight (g)	**Order code**
	Clip-on individual electrical connector, for each solenoid pilot IP67 protected, including LED, voltage surge protection and flying lead cable	M8 / 2 x Flying leads	2 meters	62	**P8LS08L226C**
			5 meters	155	**P8LS08L526C**
			9 meters	180	**P8LS08L926C**
	Straight cable quick connect to thread connector, IP67 protected	M8		12	**P8CS0803J**
		M12		15	**P8CS1204J**

Stand-Alone Valve Modules : S series

Very useful to control isolated cylinders, these stand-alone valves module are compact and easy to mount on the machines with neat electrical and pneumatic connections.

As an alternative to electrical controls, valves with air pilots are also available, to be controlled by individual pneumatic signals.

Valve functions

The following page shows all valve sizes and functions and, for each valve size, a choice of clip-on pneumatic connectors : tubing size, straight, elbow, ...

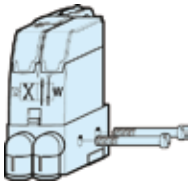
Valve main connections

- Outlets to cylinders (ports 2 and 4) on one side.
- Supply P (port 1) and exhaust E (port 3) on the other side. At port 3, exhaust may be collected or receive a clip-on muffler.

Valve mounting

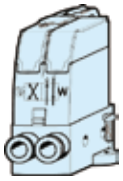
All valves may be mounted either with side screws or with their integrated retractable brackets.

Side screw mounting



The brackets are then retracted.

Optional foot mounting

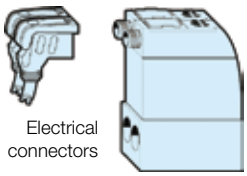


The brackets are then extended.

Valve pilot connections

1- Solenoid valve modules

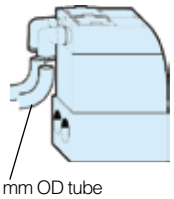
Each solenoid presents an M8 connection. Lockable clip-on connectors, IP 67 protected, with LED, voltage surge protection and flying lead cable may be ordered for the required length.



Electrical connectors

2- Air pilot valve modules

No connector has to be ordered : each pneumatic pilot port includes its integrated swivable elbow 4 mm OD tube push-in connector.



4 mm OD tube

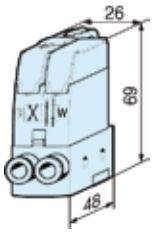
Modules and island ordering

Choice between 2 approaches :

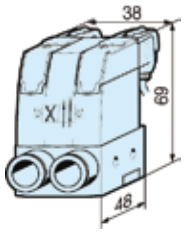
1 - Basic modules ordering :
The following page shows these modules supplied without connector, together with the choice of clip-on connectors separately supplied (10 units packs). This approach gives the maximum flexibility.

2 - Complete modules ordering :
Ordering chart for modules supplied with their pneumatic and electrical connectors and muffler.

Valve module size 1



Valve module size 2



Basic modules (without connector)

Valve Modules					Size 1		Size 2
	Symbol	Description	Actuator	Weight (g)	**Order code**	Weight (g)	**Order code**
Size 1		4/2 Spring return	Solenoid Air pilot	72 67	**P2M1S4ES2C** **P2M1S4PS**	72 67	**P2M2S4ES2C** **P2M2S4PS**
		4/2 Double pilot	Solenoid Air pilot	87 77	**P2M1S4EE2C** **P2M1S4PP**	87 77	**P2M2S4EE2C** **P2M2S4PP**
		2 x 3/2 NC + NC with exhaust check valves	Solenoid Air pilot	85 75	**P2M1SDEE2C** **P2M1SDPP**	85 75	**P2M2SDEE2C** **P2M2SDPP**
		2 x 3/2 NO + NO with exhaust check valves	Solenoid Air pilot	85 75	**P2M1SCEE2C** **P2M1SCPP**	85 75	**P2M2SCEE2C** **P2M2SCPP**
Size 2		2 x 3/2 NC + NO with exhaust check valves	Solenoid Air pilot	85 75	**P2M1SEEE2C** **P2M1SEPP**	85 75	**P2M2SEEE2C** **P2M2SEPP**
		3/2 NC with exhaust check valves	Solenoid Air pilot	85 75	**P2M1S3ES2C** **P2M1S3PS**	85 75	**P2M2S3ES2C** **P2M2S3PS**
		4/3 Centre exhaust 2 x 3/2 NC + NC without exhaust check valves	Solenoid Air pilot	85 75	**P2M1SGEE2C** **P2M1SGPP**	85 75	**P2M2SGEE2C** **P2M2SGPP**

Clip-On pneumatic connectors *

Valve Modules				Size 1		Size 2
	Description	Tube OD	Weight (g)	**Order code**	Weight (g)	**Order code**
	Straight connector	G1/8"	2	**FMDG1-1**		
		4 mm	2	**FMD04-1**		
		6 mm	3	**FMD06-1**	3	**FMD06-2**
		8 mm			4	**FMD08-2**
		10 mm			5	**FMD10-2**
		12 mm			6	**FMD12-2**
	Elbow connector	G1/8"	3	**CMDG1-1**		
		4 mm	3	**CMD04-1**		
		6 mm	5	**CMD06-1**	5	**CMD06-2**
		8 mm			6	**CMD08-2**
		10 mm			7	**CMD10-2**
		12 mm			8	**CMD12-2**
	Silencer		3	**MMDVA1**	5	**MMDVA2**
	Plug		3	**PMDXX1**	5	**PMDXX2**

* Fittings and plugs pack quantity : 10

Electrical connectors

	Description	Connector type	Cable length	Weight (g)	**Order code**
	Clip-on individual electrical connector, for each solenoid pilot IP67 protected, including LED, voltage surge protection and flying lead cable	M8 / 2 x Flying leads	2 meters	62	**P8LS08L226C**
			5 meters	155	**P8LS08L526C**
			9 meters	180	**P8LS08L926C**
	Straight cable quick connect to thread connector, IP67 protected	M8		12	**P8CS0803J**
		M12		15	**P8CS1204J**

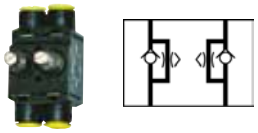
Peripheral Valve Modules : P series

Four additional peripheral modules complete the valve system in order to facilitate the installation of specific cylinder controls :
- Dual flow control, for cylinder speed adjusting;
- Dual pilot operated check valve, for cylinder positionning;
- Pressure regulator, for cylinder thrust adjusting;
- Vacuum generator, for vacuum pad controls.

Module function selection

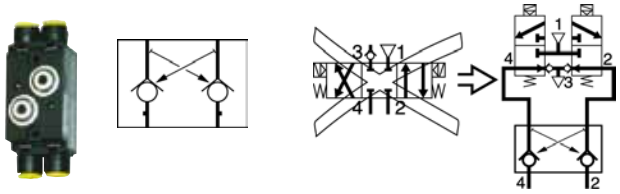
Dual flow control

By controlling the exhaust flows of a double acting cylinder, this module can adjust both speeds : forward and backward.



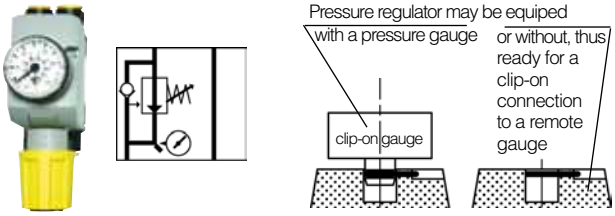
Dual pilot operated check valve

Combined with a double 3/2 NC + NC valve, this module will block flows and stop cylinder movement as soon as the valve outputs are both exhausted. Better than a 3 position closed centre valve, it provides accurate positionning when mounted close to the cylinder.



Pressure regulator

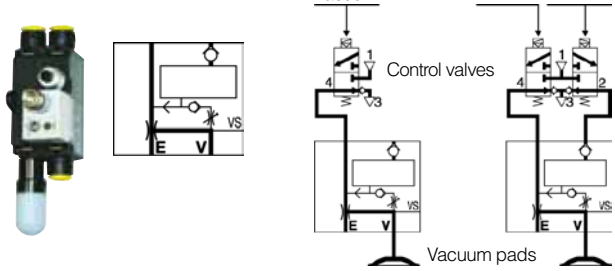
The thrust developped by a cylinder often requires adjustment by controlling the pressure to the front or back of the piston. This pressure regulator module enables manual adjustment of pressure on one side of the piston, with visual indication provided by the pressure gauge.



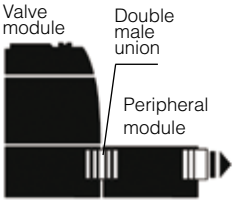
Vacuum generator

This multi-purpose module controls vacuum pads with a choice between two basics schematics :
- Controlled with only one 3/2 NC valve, the vacuum generator provides vacuum to the pads during valve actuation and then blow-off supplied from an integrated chamber.
- Controlled with a double 3/2 NC + NC, the vacuum generator provides vacuum during the first valve actuation, and then strong blow-off from the second valve.

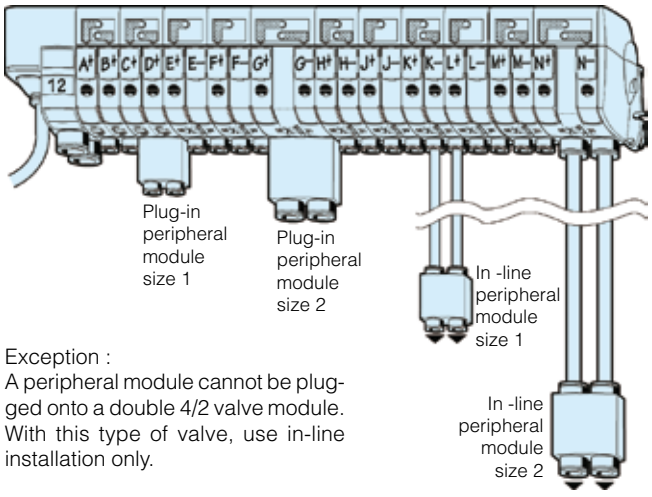
Integrated blow-off flow controller. Optional plug-in vacuum sensor.



Module installation selection



Stand alone valve complete with a plug-in peripheral module



Peripheral modules may either be mounted :
- Plugged into the valve module through double male unions;
- Or in line, close to the cylinder to control it better.

Exception :
A peripheral module cannot be plugged onto a double 4/2 valve module. With this type of valve, use in-line installation only.

Basic peripheral modules (without connector)

Peripheral Modules					Size 1		Size 2
Symbol	Description			Weight (g)	Order code	Weight (g)	Order code
	Dual flow control			50	**P2M1PXFA**	50	**P2M2PXFA**
	Dual P.O. check valve			50	**P2M1PXCA**	50	**P2M2PXCA**
	Pressure regulator	Pressure range	Gauge				
		0 - 2 bar	0 - 4 bar	135	**P2M1PXSR**	135	**P2M2PXSR**
			Without	105	**P2M1PXST**	165	**P2M2PXST**
		0 - 4 bar	0 - 7 bar	135	**P2M1PXSM**	135	**P2M2PXSM**
			Without	105	**P2M1PXSL**	165	**P2M2PXSL**
		0 - 8 bar	0 - 11 bar	135	**P2M1PXSG**	135	**P2M2PXSG**
			Without	105	**P2M1PXSN**	165	**P2M2PXSN**
	90% Vacuum generator			30	**P2M1PXVA**		

Clip-On pneumatic connectors *

Valve Modules				Size 1		Size 2
Description	Tube OD	Weight (g)	Order code	Weight (g)	Order code
Straight connector	G1/8"	2	**FMDG1-1**		
	4 mm	2	**FMD04-1**		
	6 mm	3	**FMD06-1**	3	**FMD06-2**
	8 mm			4	**FMD08-2**
	10 mm			5	**FMD10-2**
	12 mm			6	**FMD12-2**
Elbow connector	G1/8"	3	**CMDG1-1**		
	4 mm	3	**CMD04-1**		
	6 mm	5	**CMD06-1**	5	**CMD06-2**
	8 mm			6	**CMD08-2**
	10 mm			7	**CMD10-2**
	12 mm			8	**CMD12-2**
Double male union		5	**HMDXX1**	8	**HMDXX2**
Silencer		3	**MMDVA1**		
Plug		3	**PMDXX1**	5	**PMDXX2**

* Fittings and plugs pack quantity : 10

Clip-on accessories

Description	Connection	Pressure range	Weight (g)	Order code
Clip-on pressure gauge	Clip-on	0 to 4 bar	30	**P2M1K0GT**
for pressure regulator modules,		0 to 7 bar	30	**P2M1K0GL**
size 1 or size 2		0 to 11 bar	30	**P2M1K0GN**
Analog (1 - 5 Vdc) Vacuum Sensor	Diam. 4 mm tube	0 to -1 bar	25	**MPS-V8T4-AG**
Flying lead 2 meter cable	Diam. 6 mm tube	0 to -1 bar	25	**MPS-V8T-AG**
Dig. PNP / Ana (4 - 20 mA) Vacuum Sensor 15 cm cable - M8 4 pin's connector	G 1/8" male	0 to -1 bar	45	**MPS-V34G-PCI**

Complete module ordering, as compared to basic module ordering

Complete modules

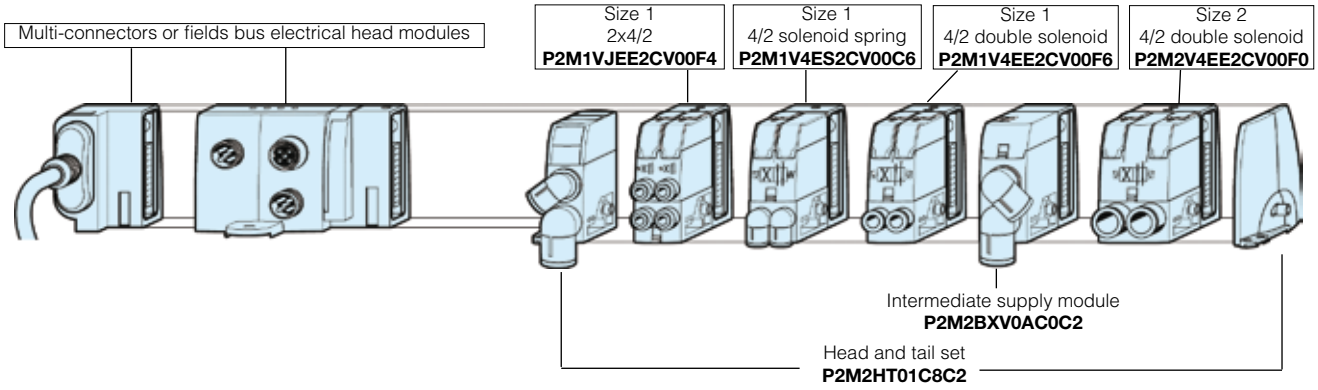
Ordered from the following pages, the complete modules are supplied all equiped with their electrical and pneumatic connectors.
Only one order line is necessary, and each module comes complete, with just the necessary chosen connectors.

Basic modules

Ordered from the previous pages, the basic modules are to be equiped with their connectors. There clip-on assembly to the module is easy.
The main advantage is flexibility : connector type and size may be chosen at the last moment, to fit better the machine needs.

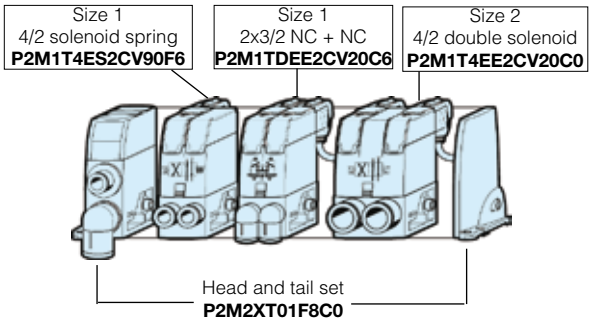
V series

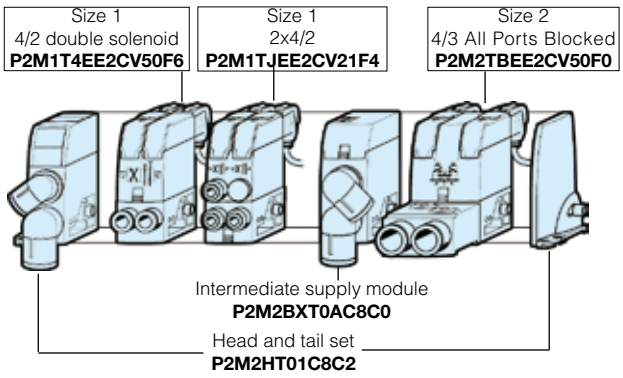
See opposite page for complete module order code chart



T series

See opposite page for complete module order code chart





Special case : the 2 x 4/2 mini-module plug configuration

For micro-cylinders, this very compact 2 x 4/2 module (order code. JEE) may also be used to obtain 3/2 valves, either Normally Closed or Normally Open.
To do so, the complete module may be supplied with plugs that may replace some of the plug-in connectors.
To order, use the top chart from opposite page.

P2M1VJEE2CV00F4

2x4/2 — No plug

The module will be used as a 2x4/2 valve

P2M1TJEE2CV21F4

2x4/2 — 1 plug

The module will be used as a 4/2 +3/2 valve

Complete Moduflex modules, equipped with their electrical and pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Valve modules

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P	2	M	1	V	4	E	E	2	C	V	0	0	F	6

Minimum ordering quantity : 10 pieces

Size	
1	Size 1
2	Size 2

Series	
V	Integrated connections
T	Individual connectors

Electrical connections	
V Series	
V0	Integrated connection
T Series	
00	No cable
V2	2 m cable
V5	5 m cable
V9	9 m cable

Pneumatic connectors Ports 2 & 4	
Size 1 modules	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
Size 2 modules	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD

* For T series only, air pilot versions p21, as basic modules.

Valve Function - Solenoid Versions *	
4 E S	4/2 Solenoid spring
4 E E	4/2 Double solenoid
D E E	2 x 3/2NC + NC (with exhaust check valve)
C E E	2 x 3/2 NO + NO (with exhaust check valve)
E E E	2 x 3/2 NC + NO (with exhaust check valve)
3 E S	3/2 NC (with exhaust check valve)
G E E	4/3 centre exhaust (= 2x3/2 without exhaust check valve)
B E E	2x3/2 + clipped dual PO check (= 4/3 APB)

Plug configurations	
0	No plug

Only for JEE 2x4/2 modules	
0	0 plug (2x 4/2)
1	1 plug (4/2 + 3/2)
2	2 plugs (2x3/2 or 1x4/2)
3	3 plugs (1x3/2)

Size 1 only		
J E E	2x4/2 with exhaust check valve with plug configuration

Head/Tail & Intermediate Modules

Minimum ordering quantity : 10 pieces

1	2	3	4	5	6	7	8	9	10	11	12	13
P	2	M	2	H	X	T	0	1	F	0	C	2

	Head and intermediate module	
	HXT01	**V** and **T** series Pneumatic head and tail set
	BXV0A	**V** series intermediate supply module with a set of 4 configuration plates
	BXT0A	**T** series intermediate supply module with a set of 4 configuration plates

Pressure port connector	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD
F2	Straight 12 mm OD
C2	Elbow 12 mm OD
PP	Plug
MM	Muffler

Exhaust port connector	
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F8	Straight 8 mm OD
C8	Elbow 8 mm OD
F0	Straight 10 mm OD
C0	Elbow 10 mm OD
F2	Straight 12 mm OD
C2	Elbow 12 mm OD
PP	Plug
MM	Muffler

Complete Moduflex stand alone valves, equipped with their electrical and pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Stand alone valve modules

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15
P	2	M	1	S	4	E	E	2	C	V	5	A	F	6

Minimum ordering quantity : 10 pieces

Size	
1	Size 1
2	Size 2

Series	
S	Stand alone valve modules

Electrical connector	
00	No cable
V2	2 m cable
V5	5 m cable
V9	9 m cable

Valve Function - Solenoid Versions *	
4 E S	4/2 Solenoid spring
4 E E	4/2 Double solenoid
D E E	2 x 3/2NC + NC (with exhaust check valve)
C E E	2 x 3/2 NO + NO (with exhaust check valve)
E E E	2 x 3/2 NC + NO (with exhaust check valve)
3 E S	3/2 NC (with exhaust check valve)
G E E	4/3 centre exhaust (= 2x3/2 without exhaust check valve)
B E E	2x3/2 + clipped dual PO check (= 4/3 APB)

Pneumatic connectors

Ports 1 & 3	
A	Straight & straight
B	Elbow & elbow
C	Straight & muffler
D	Elbow & muffler

Outlet ports 2 & 4	
F	Straight & straight
C	Elbow & elbow
0	No connector for plug-in P module

Tube OD	
Size 1 modules	
4	4 mm OD
6	6 mm OD
Size 2 modules	
6	6 mm OD
8	8 mm OD
0	10 mm OD

Size 1
4/2 solenoid spring
P2M1S4ES2CV5CC6

Size 2
4/2 double solenoid
P2M2S4EE2CV9CC8

Size 2
2x3/2 NC + NC
P2M2SDEE2CV2CC0

Size 1
2x3/2 NC + NC
P2M1SDEE2CV2BC6

Size 2
4/3 All Ports Blocked
P2M2SBEE2CV2AF0

Complete Moduflex peripheral module, equipped with their pneumatic connectors, may be ordered. To do so, use the below chart to define the complete module order codes.

Dual flow control, dual pilot operated check valve, and pressure regulator peripheral modules

Minimum ordering quantity : 10 pieces

1	2	3	4	5	6	7	8	9	10	11	12
P	2	M	1	P	X	F	A	J	J	F	6

Size	
1	Size 1
2	Size 2

Peripheral module function	
F A	Dual flow control
C A	Dual P.O. check valve
Pressure regulators	
S R	0-2 bar, with pressure gauge
S M	0-4 bar, with pressure gauge
S G	0-8 bar, with pressure gauge

Inlet port pneumatic connectors			
Size 1 modules			
F4	Straight	4 mm	OD
C4	Elbow	4 mm	OD
F6	Straight	6 mm	OD
C6	Elbow	6 mm	OD
Size 2 modules			
F6	Straight	6 mm	OD
C6	Elbow	6 mm	OD
F8	Straight	8 mm	OD
C8	Elbow	8 mm	OD
F0	Straight	10 mm	OD
C0	Elbow	10 mm	OD

Outlet port pneumatic connectors			
Size 1 modules			
F4	Straight	4 mm	OD
C4	Elbow	4 mm	OD
F6	Straight	6 mm	OD
C6	Elbow	6 mm	OD
Size 2 modules			
F6	Straight	6 mm	OD
C6	Elbow	6 mm	OD
F8	Straight	8 mm	OD
C8	Elbow	8 mm	OD
F0	Straight	10 mm	OD
C0	Elbow	10 mm	OD

Vacuum generator peripheral module

Minimum ordering quantity : 10 pieces

1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
P	2	M	1	P	X	V	A	F	6	A	F	6	C	M	A

Size	
1	Size 1

Peripheral module function	
V A	Vacuum generator

Exhaust port (3) *	
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
MA	Clip-on muffler

Pressure & Blow-off port connectors	
JJ	Clip-on double male union
F4	Straight 4 mm OD
C4	Elbow 4 mm OD
F6	Straight 6 mm OD
C6	Elbow 6 mm OD
F1	Straight threaded 1/8"
C1	Elbow threaded 1/8"

A	2 clip-on male union
A	2 push-in connectors
B	1 push-in connector 1 plug on blow-off port

Vacuum and Vacuum Sensor port connectors			
F4	Straight	4 mm OD	
C4	Elbow	4 mm OD	
F6	Straight	6 mm OD	
C6	Elbow	6 mm OD	
F1	Straight	threaded 1/8"	
C1	Elbow	threaded 1/8"	

A	2 similar connectors
B	1 connector on vacuum port 1 plug on vacuum sensor port
D	1 Connector on Vacuum Port 1 Dig/Ana Vacuum Sensor MPS-V34G-PCI
E	1 Connector on Vacuum Port 1 Analog Vacuum Sensor MPS-V8T-AG

Moduflex Valve Island Configurator

This software facilitates any valve island configuration and its bill ordering through basic or complete modules.

Pre-assembled valve island ordering

As an option, so defined with the configurator, any Moduflex Valve island may be ordered as pre-assembled.

Island configuration practice

An easy step by step procedure, finalized with the complete valve island print, composition report and 2D drawing.

Valve island modules identification

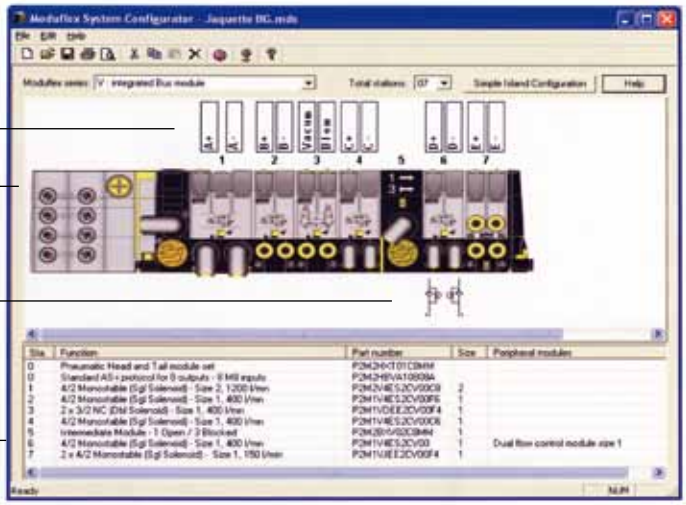
Valve island graphic description

including pneumatic function module symbol, outlet port connector, pneumatic and elecrical head module,...

Additional peripheral modules

Valve island composition

including each module description and order code

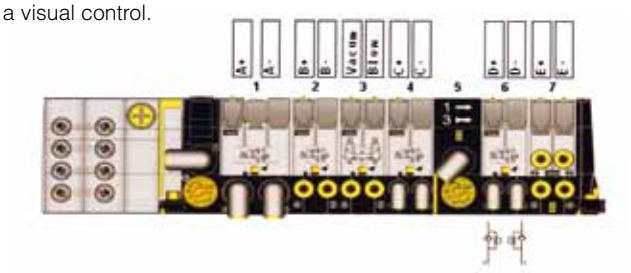


An easy to use software for a complete ordering tool

The Moduflex Valve Island Configurator software offers an easy way to, step by step, configure the required valve island for the application.

Valve island print with symbols and markings

Once the valve island configured, picture of the configuration allows a visual control.



4 pages report :

A complete 4 pages report can be edit, giving :

Page 1	Page 2	Page 3	Page 4
Complete list of **"basic modules"** pneumatic connectors mufflers and electrical connectors	Complete list of components splited slice by slice	Detail list of **"complete module"** with module width and total valve island lenght	Warnings and advices depending on the configuration

Multi-language CD-Rom order code :

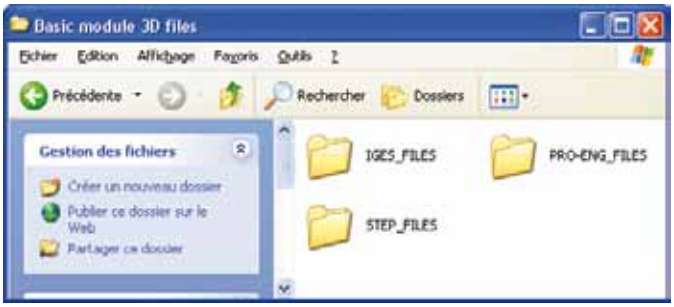
PDE2536CDV3.1-ev

2D drawing :

A direct valve island configuration exportation function to .dxf format included.

3D drawing library :

3 formats are available on the CD for each basic module, electrical components and pneumatic connectors.



3D e-configurator software :

Also available, a 3D e-configurator on :
http://www.parker.com/pneu/moduflex

1 - Multi-connector or sub-D 25 valve island

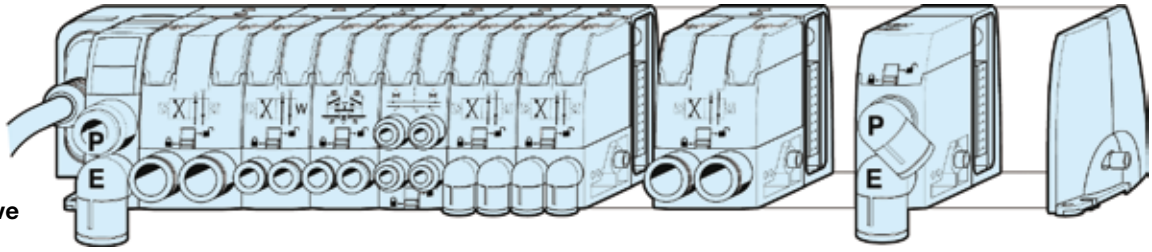
Multi-connector or sub-D 25 electrical head module width : 15 mm

Head and tail pneumatic module set width : 48 mm

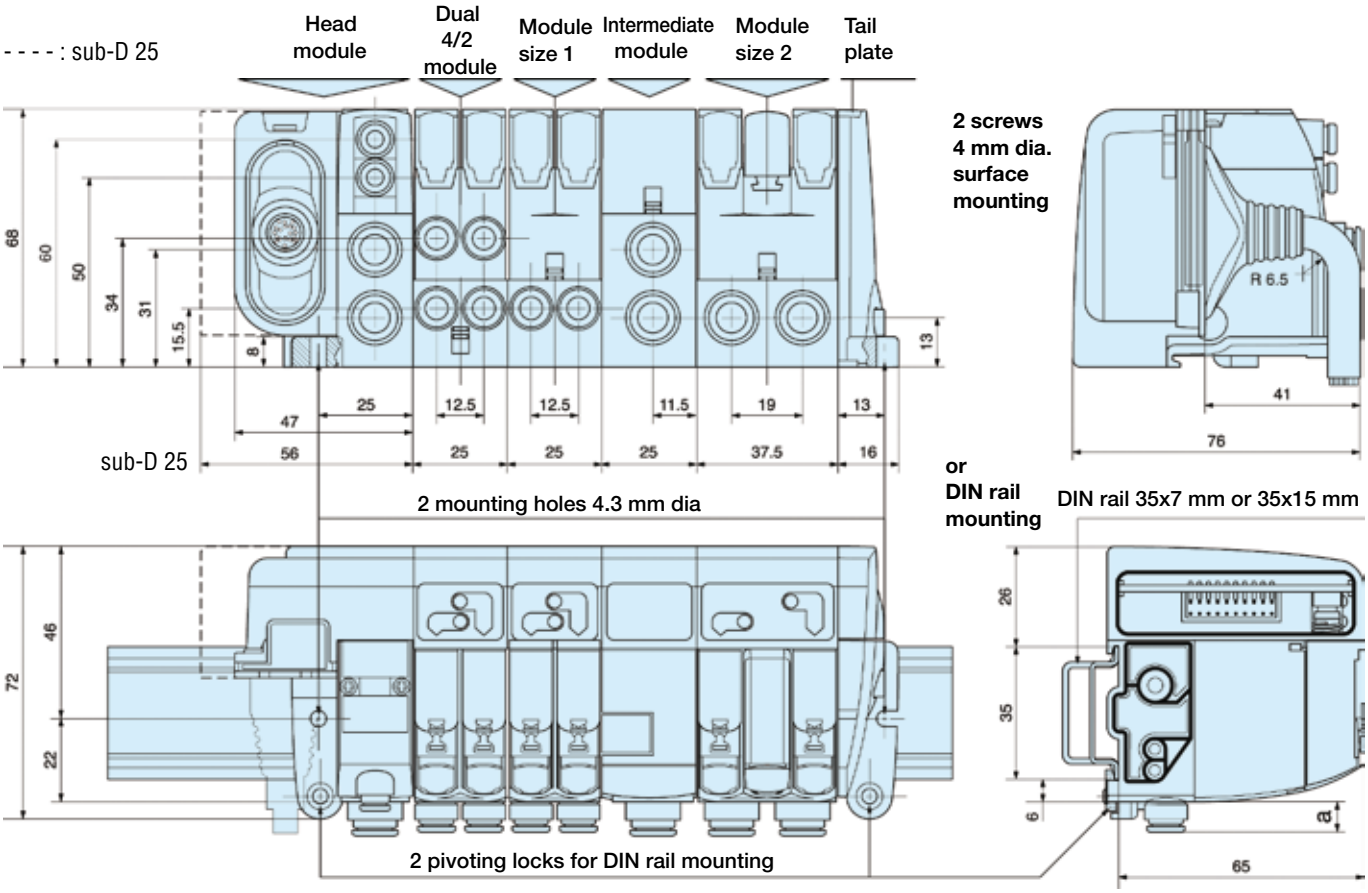
Modules size 1 width : 25 mm

Modules size 2 width : 37.5 mm

Intermediate module width : 25 mm



Island total width depending on valve composition



2 screws 4 mm dia. surface mounting

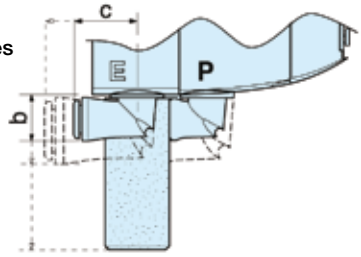
or DIN rail mounting

DIN rail 35x7 mm or 35x15 mm

Special case : 4/3 closed centre function within island version : Add the dimensions of the dual P.O. check valve module plugged into the island.

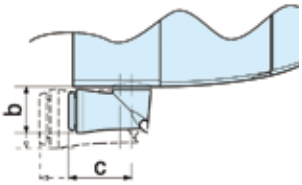
Island head and intermediate modules

	a	b	c
6 mm tube OD	8	13	16
8 mm tube OD	9	16	19
10 mm tube OD	13	18	22
12 mm tube OD	13	19	25
muffler		40	



Island valves modules

	OD tube	a	b	c
Size 1 modules	4 mm	8	10	12
	6 mm	8	13	16
Size 2 modules	8 mm	9	16	19
	10 mm	13	18	22



2 - Field bus connected islands

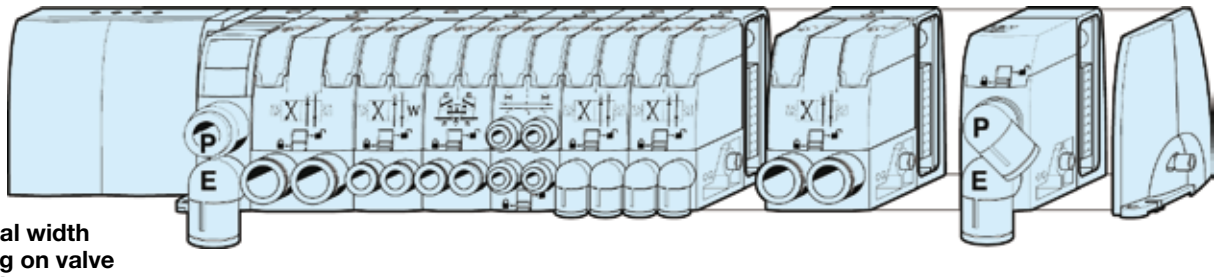
Electrical field bus head module width : 62 mm

Head and tail pneumatic module set width : 48 mm

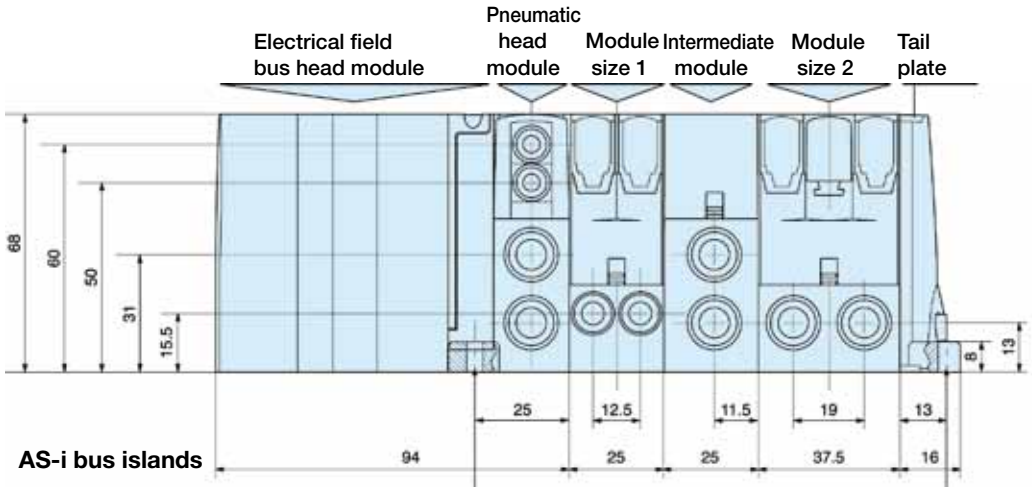
Modules size 1 width : 25 mm

Modules size 2 width : 37.5 mm

Intermediate module width :25 mm



Island total width depending on valve composition

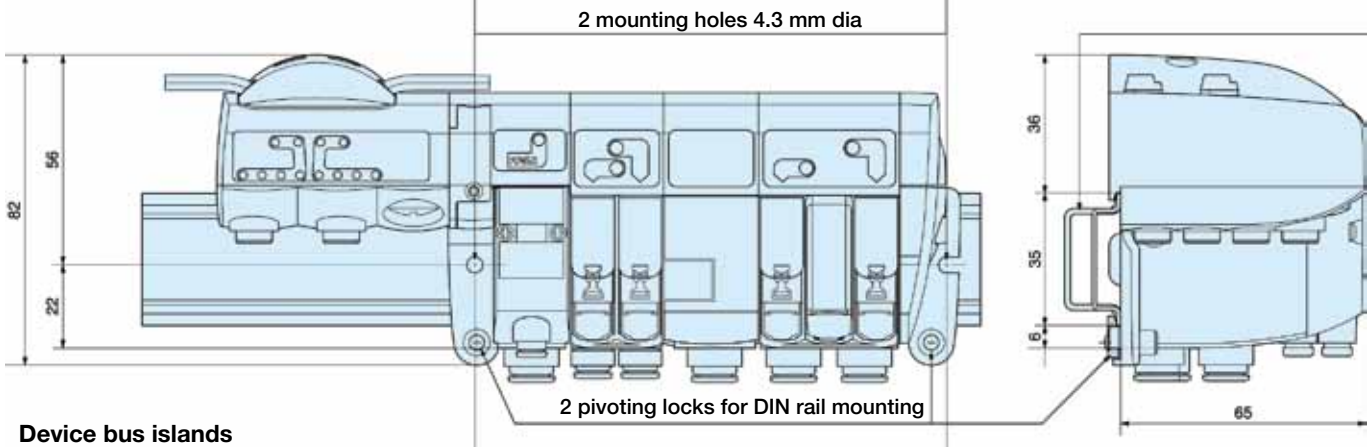


2 screws 4 mm dia. surface mounting

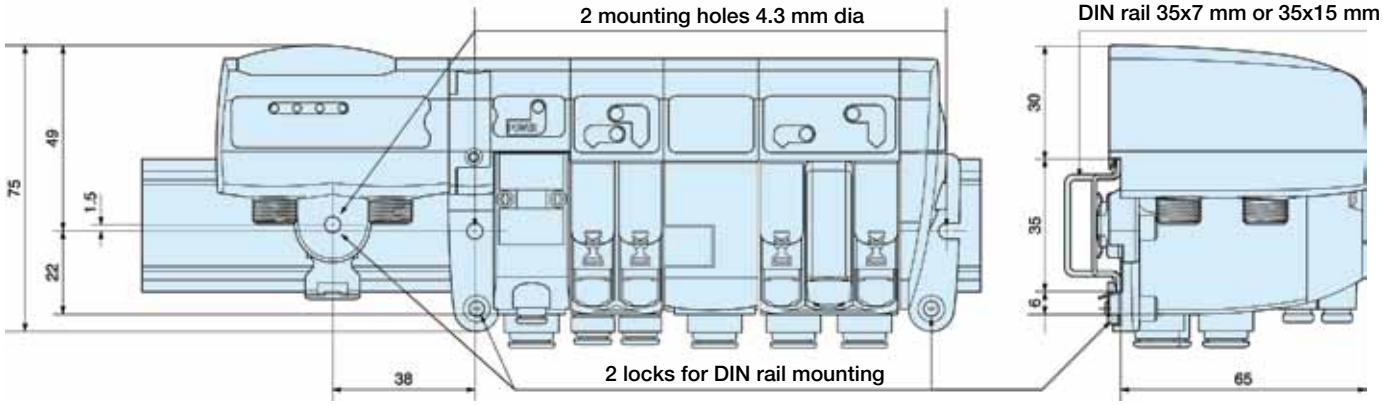
or DIN rail mounting

DIN rail 35x7 mm or 35x15 mm

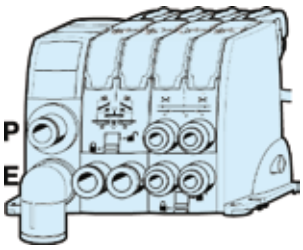
AS-i bus islands

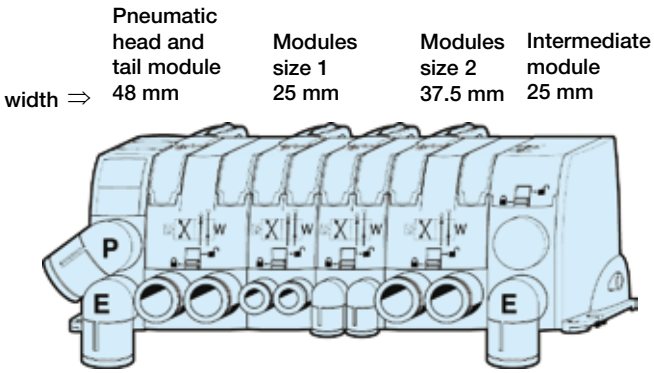


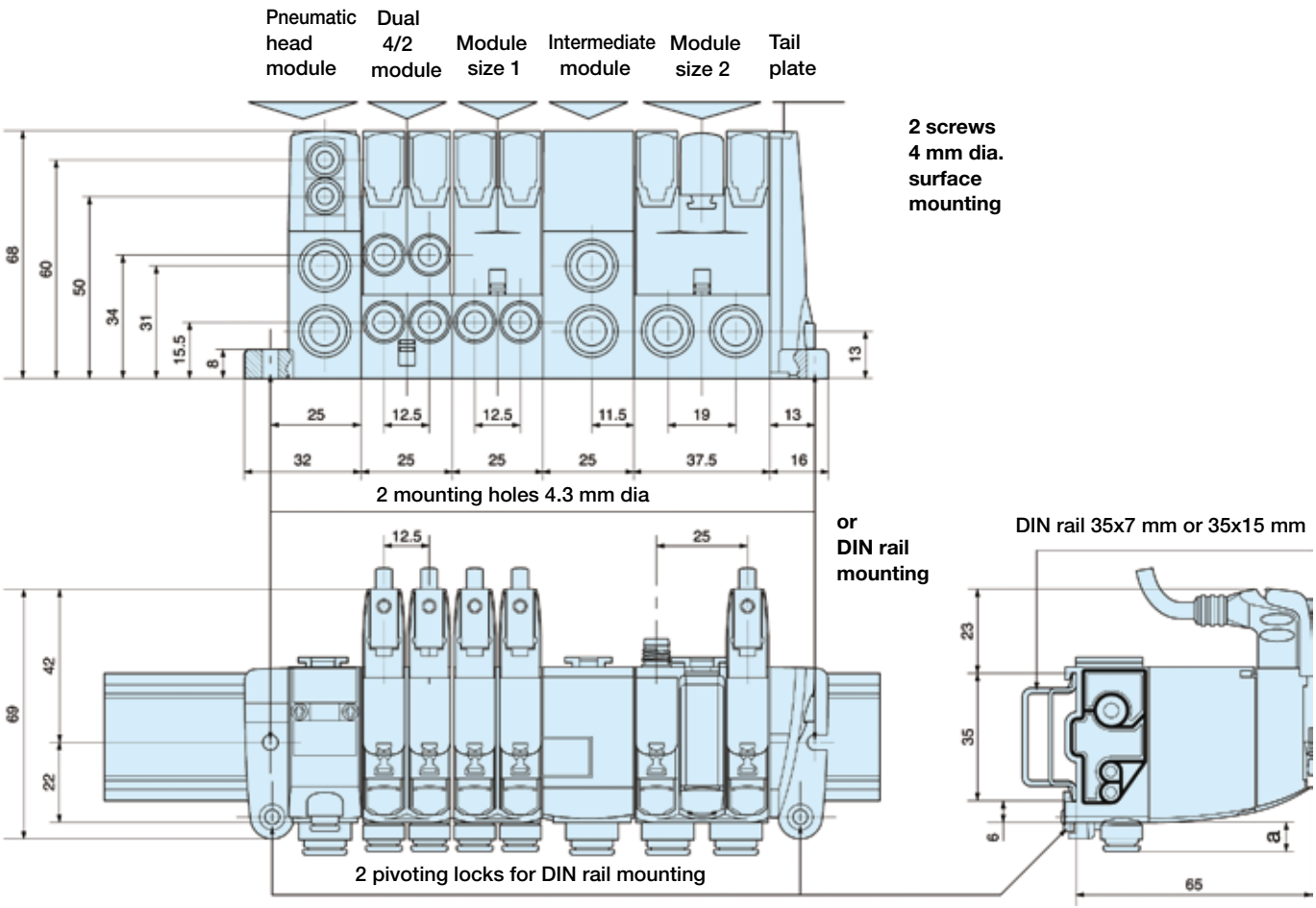
Device bus islands



Island total width depending on valve composition



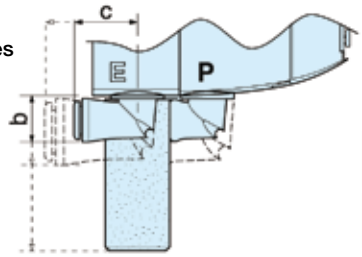




Special case : 4/3 closed centre function within island version : Add the dimensions of the dual P.O. check valve module plugged into the island.

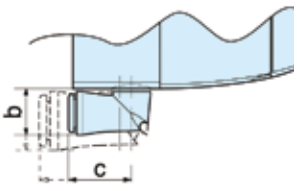
Island head and intermediate modules

	a	b	c
6 mm tube OD	8	13	16
8 mm tube OD	9	16	19
10 mm tube OD	13	18	22
12 mm tube OD	13	19	25
muffler		40	



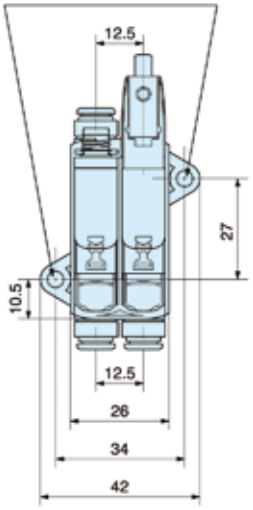
Island valves modules

	OD tube	a	b	c
Size 1 modules	4 mm	8	10	12
	6 mm	8	13	16
Size 2 modules	8 mm	9	16	19
	10 mm	13	18	22

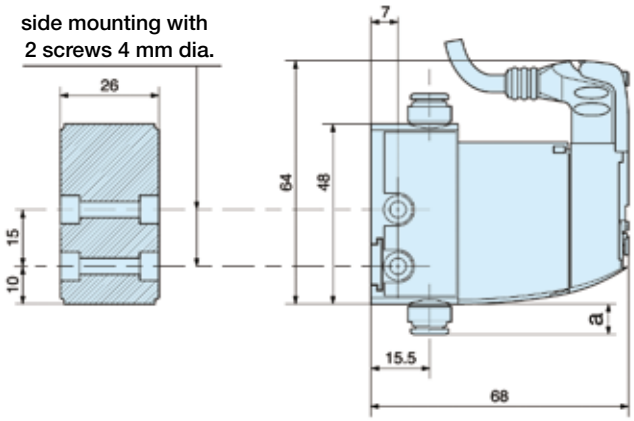


Stand-alone valve size 1

surface mounting with screws
4 mm dia. into retractable brackets 3 mm thick

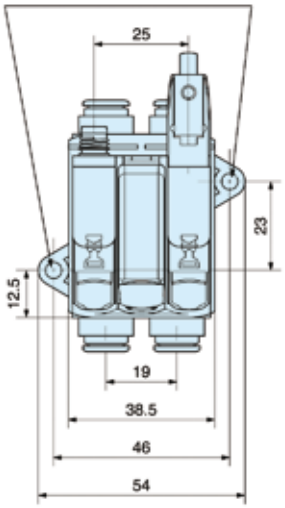


or side mounting with
2 screws 4 mm dia.

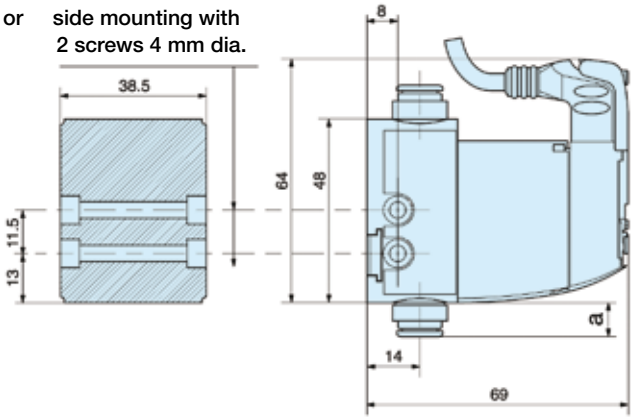


Stand-alone valve size 2

surface mounting with screws
4 mm dia. into retractable brackets 3 mm thick



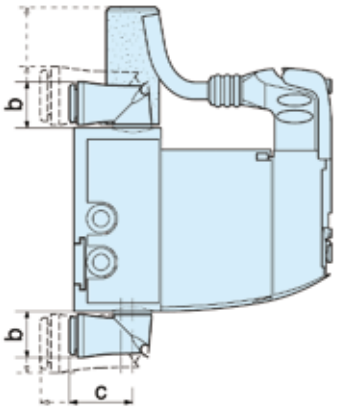
or side mounting with
2 screws 4 mm dia.



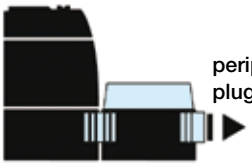
Dimensions and mountings of the stand-alone valves 4/2, double and single 3/2, 4/3 vented centre and 4/3 pressure centre.

Special case : 4/3 closed centre. Add the dual P.O. check valve module that has been plugged in the basic valve.

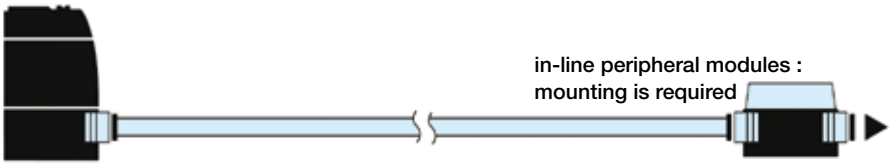
		a	b	c
Size 1 modules	4 mm tube OD	8	10	12
	6 mm tube OD	8	13	16
	muffler		31	
Size 2 modules	8 mm tube OD	9	16	19
	10 mm tube OD	13	18	22
	muffler		40	



Reminder : peripheral modules may either be plugged in the valve output ports or mounted in line separate from the valve

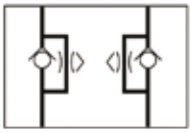


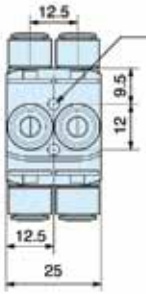
peripheral module plugged in a valve or an island



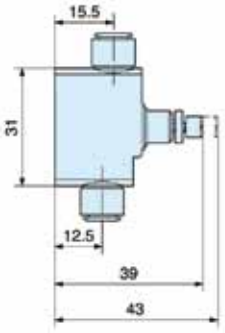
in-line peripheral modules : mounting is required

Dual flow control module size 1





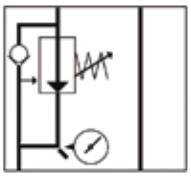
possible mounting with 2 screws 3 mm dia.

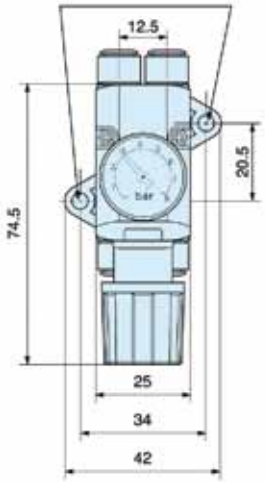


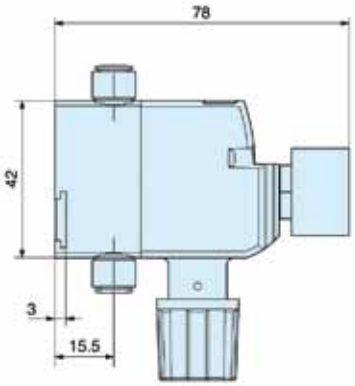
Pressure regulation module size 1

mounting with 2 screws 4 mm dia. on retractable brackets

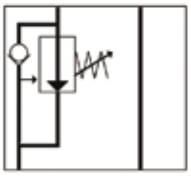
- with gauge

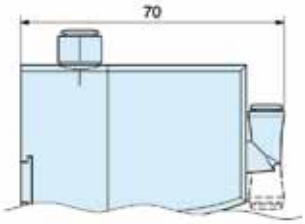






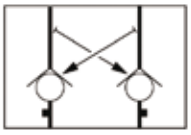
- without gauge

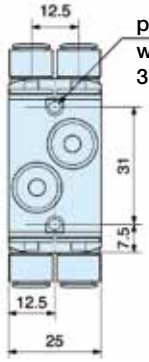




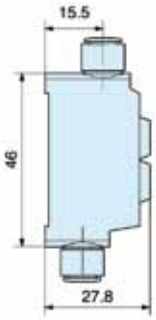
swivel elbow push-in connector 4 mm OD tube

Dual P.O. check valve module size 1

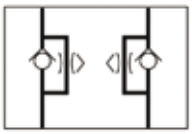


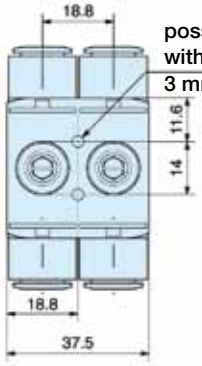


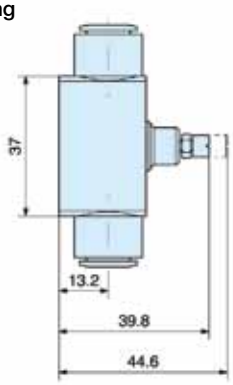
possible mounting with 2 screws 3 mm dia.



Dual flow control module size 2

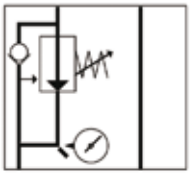




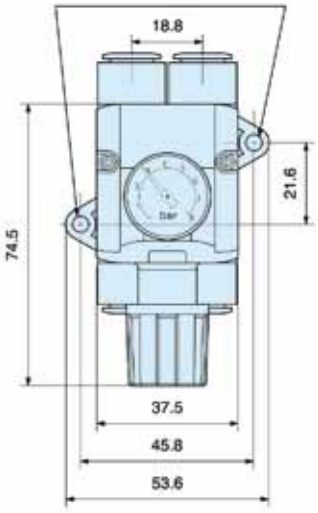


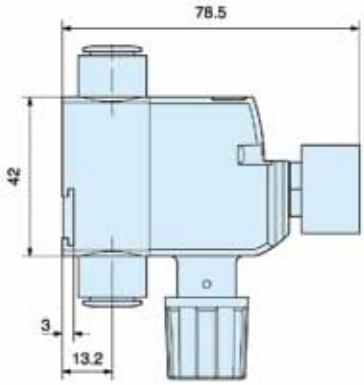
Pressure regulation module size 2

- with gauge

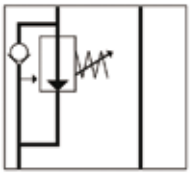


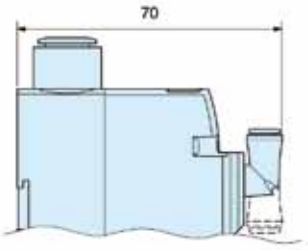
mounting with 2 screws 4 mm dia.
on retractable brackets





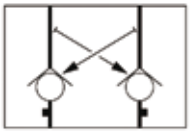
- without gauge

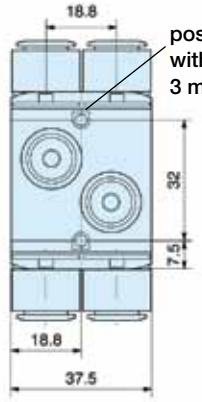


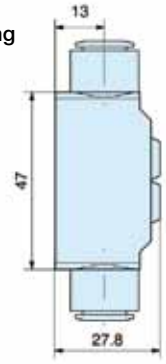


swivel elbow push-in
connector 4 mm OD tube

Dual P.O. check valve module size 2

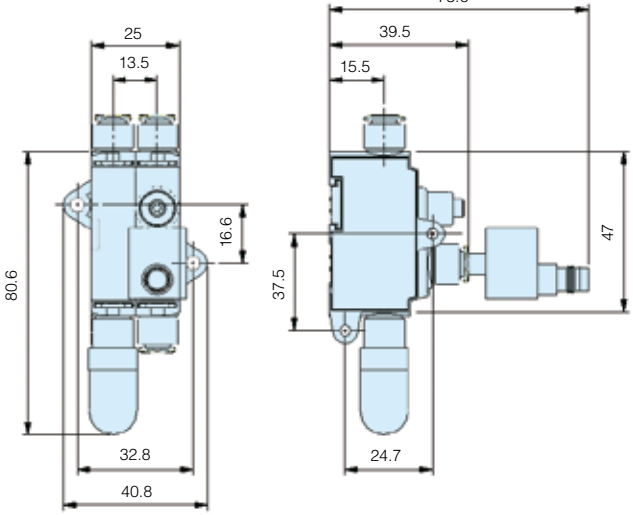




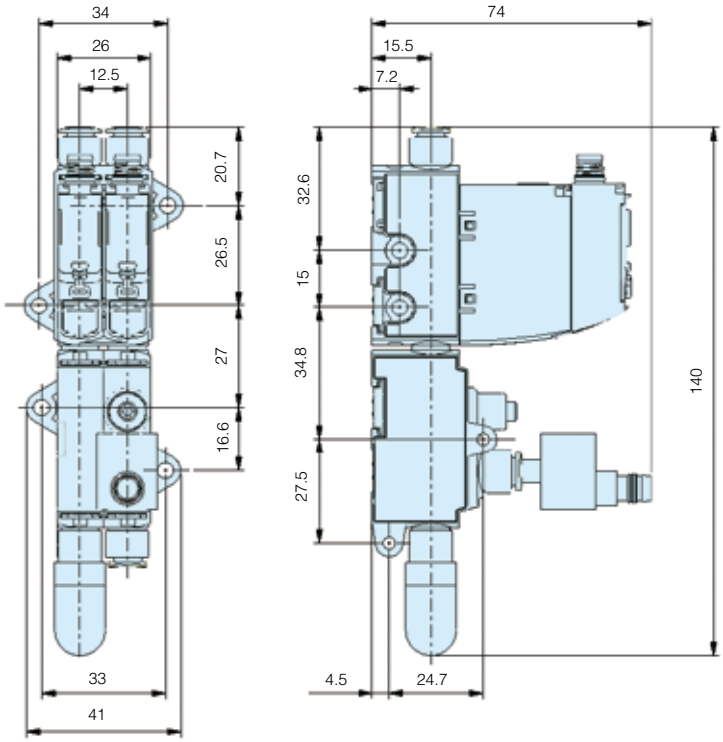


Vacuum generator module

In-line



With Moduflex valve



High speed poppet type solenoid valves with individual electrical connections. Light weight plastic bodies with DIN rail manifold. Ideal for cabinet installations.

- High speed poppet valve
- Push-in connection
- Built-in terminal block
- Pneumatic output indicator
- DIN rail mounting

Poppet valve, not suitable for use with Soft or Slow start Valves. When pressure is applied, the double solenoid interface takes a pre-determined position (non activated). In the absence of electrical signal, output 2 (yellow indicator) is activated, output 4 (red indicator) is non activated. Double solenoid version is delivered as standard with Non locking flush override.

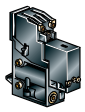
Operating information

Working pressure;	
3/2 and 4/2:	3-8 bar
Low pressure interface 3/2:	1-8 bar
Flow (Qmax):	200 l/min
Working temperature	-15 °C to +60 °C

For more information see www.parker.com/euro_pneumatic

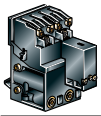
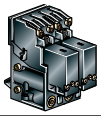
Electro-Pneumatic modules 3/2

With solenoid valve, output with Ø4 mm Push-in connection
Visual indication of pneumatic output (NC) red : (NO) yellow
Spring return manual override. 24V DC

Symbol	Order code
	**PS1-E21102B**
	PS1-E22102B

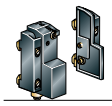
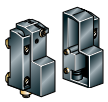
Electro-Pneumatic modules 4/2

With solenoid valve, two outputs with Ø 4 mm Push-in connections
Visual indication of pneumatic output (NC) red and (NO) yellow
Spring return manual override. 24V DC

Symbol	Order code
	**PS1-E28102B**
	**PS1-E29102B**

Head and tail sets - intermediate supply modules

For 3/2 and 4/2 interface modules

	Description	Pneumatic connection	Characteristics	Order code
	Set for single air supply connection	Push-in Ø 6 mm G1/8	1 electrical common terminal 1 main air supply port 1 exhaust port	**PS1-E101** **PS1-E1018**
	Set for double air supply connection	Push-in Ø 6 mm G1/8	1 electrical common terminal 2 main air supply ports 2 exhaust ports	**PS1-E102** **PS1-E1028**
	Intermediate air supply module	Threaded G1/8 *(see description below)* *	1 air supply port 1 exhaust port	**PS1-E1038**

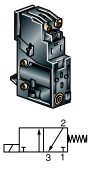
Incorporating an intermediate supply module into a group of electro-pneumatic modules gives the following options:
Air supply connection
- Additional G1/8 port to supplement the air supply to the manifold
- Blank the common air supply, enabling different pressures to be supplied to groups of modules within the manifold

Exhaust connection
- Additional exhaust flow through the G1/8 port
- Blank the common exhaust, enabling seperation of exhaust from module groups

* The intermediate supply module is supplied with 4 interchangeable connectors to enable the above supply options to be achieved

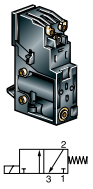
Electro-Pneumatic modules 3/2

Modules without solenoid valve*
3 to 8 bar version

Symbol	Connection	Actuator	Return	Order code
	Push-in Ø4 mm Visual indication of pneumatic output (NC) red	Solenoid	Spring	**PS1-E111**
	Push-in Ø6 mm Visual indication of pneumatic output (NC) red	Solenoid	Spring	**PS1-E116**
	Push-in Ø4 mm Visual indication of pneumatic output (NO) yellow	Solenoid	Spring	**PS1-E121**
	Push-in Ø6 mm Visual indication of pneumatic output (NO) yellow	Solenoid	Spring	**PS1-E126**

Electro-Pneumatic modules 3/2

Modules without solenoid valve* - 1 to 8 bar version

Symbol	Connection	Actuator	Return	Order code
	Push-in Ø4 mm Visual indication of pneumatic output (NC) red	Solenoid	Spring	**PS1-E311**
	Push-in Ø6 mm Visual indication of pneumatic output (NC) red	Solenoid	Spring	**PS1-E316**

* To obtain a complete Electro-Pneumatic interface module, order: 1 module without solenoid valve (e.g.: PS1-E121) + 1 solenoid valve (e.g.: PS1-E2302B)

Solenoids 15 mm 1,2 W / 1,6 VA

(8mm pin spacing)

Spring return manual override

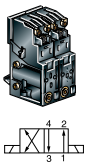
Voltage	Order code
24 VDC	**P2E-KS32C1**
48 VDC	**P2E-KS32D1**
24 V 50/60Hz	**P2E-KS31C1**
48 V 50/60Hz	**P2E-KS34D1**
115 V 50Hz, 120 V 60Hz	**P2E-KS31F1**
230 V 50Hz, 240 V 60Hz	**P2E-KS31J1**

Indexing manual override

Voltage	Order code
24 VDC	**P2E-KS32C2**
48 VDC	**P2E-KS32D2**
24 V 50/60Hz	**P2E-KS31C2**
48 V 50/60Hz	**P2E-KS34D2**
115 V 50Hz, 120 V 60Hz	**P2E-KS31F2**
230 V 50Hz, 240 V 60Hz	**P2E-KS31J2**

Electro-Pneumatic modules 4/2

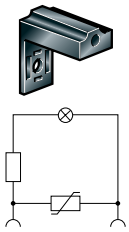
Modules without solenoid valve*
Visual indication of pneumatic output (NC) red and (NO) yellow

Symbol	Connection	Actuator	Return	Order code
	Push-in Ø4 mm	Solenoid	Solenoid	**PS1-E191**
	Push-in Ø6 mm	Solenoid	Solenoid	**PS1-E196**
	Push-in Ø4 mm	Solenoid	Spring	**PS1-E181**
	Push-in Ø6 mm	Solenoid	Spring	**PS1-E186**

* To obtain a complete Electro-Pneumatic interface module, order: 1 module without solenoid valve (e.g.: **PS1-E191**) + 2 solenoids valves (e.g.: **PS1-E2302B**)

Suppressor and LED indicators

For mounting between the solenoid valve and the cable plug.

Symbol	Description	Voltage	Order code
	LED Indicator	24 V AC/DC	**P8V-CR26C**
		115 V 50 Hz 120 V 60 Hz	**P8V-CR24F**
		230 V~50 Hz 240 V~60 Hz	**P8V-CR24J**

Note: The Interface modules have been re-designed to accept the 9,4mm spacing and the 8mm spacing versions of the suppressor and LED indicators listed above. If you are purchasing a suppressor for maintenance on an Interface module purchased before June 2004, then refer to Interface Technical leaflet supplied with this catalogue.

Pressure switches

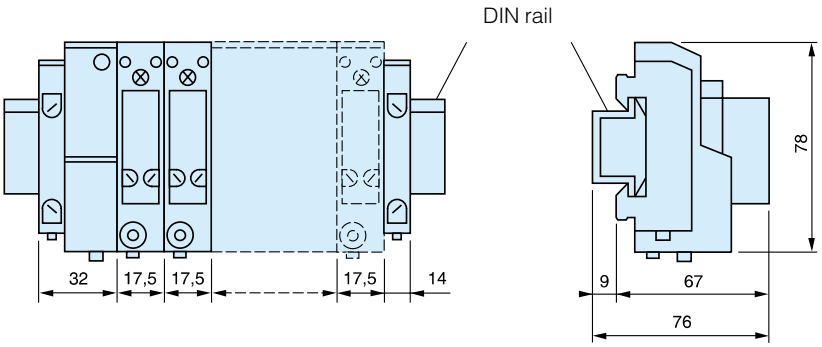
			Order code
	1 changeover contact 5 A/250 V Pneu. Ø 4 mm	Fixed operating threshold < 1,3 bar	**PS1-P1081**
	1 changeover contact 5 A/250 V Pneu. Ø 4 mm	Adjustable operating threshold 2 to 5 bar	**PS1-P1091**

Note: The Interface modules have been re-designed to accept the previous 9,4mm spacing solenoids and the new 8mm spacing solenoids listed above. If you are purchasing a solenoid for maintenance on an Interface module purchased before June 2004, then refer to Interface Technical leaflet supplied with this catalogue.

Dimensions, PS1 valve Series

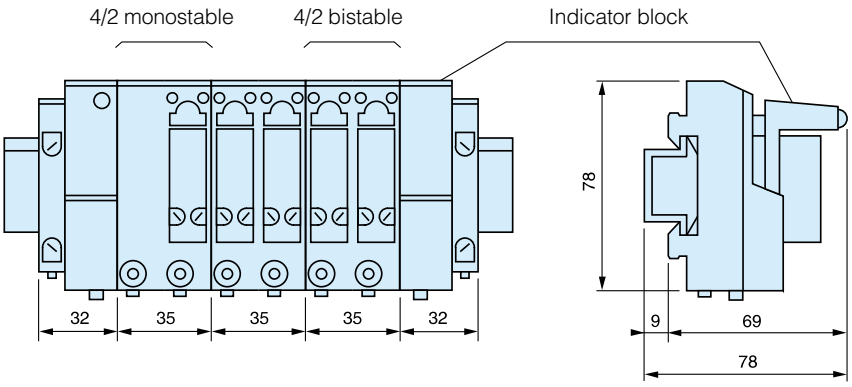
Electropneumatic interface modules 3/2

PS1-E21102• with PS1-E101 head and tail units



Electropneumatic interface modules 4/2

PS1-E28• and PS1-E29 with PS1-E102 head and tail units



Stacking high flow valves with air pilot or solenoid actuation. Lightweight plastic bodies feature push-in or threaded connections. Stacking valves feature modular inlet and exhaust facility.

- High flow, compact size
- Push-in or threaded connection
- DIN rail or block mounting
- Light weight construction

For ATEX specific products contact Sales Office

Operating information

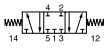
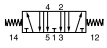
Working pressure;		
Pneumatically operated:		2-10 bar
Electrically operated, bistable:		2-10 bar
Electrically operated, monostable:		3-10 bar
Working temperature		-15 °C to +60 °C
	PVL-B	**PVL-C**
Flow (Qmax):	900 l/min	1800 l/min
Flow Qn:	540 l/min	1100 l/min

Flow measured with valve stacked in island.

Electrically/Pneumatically actuated 5/2 valves size G1/8*

Symbol	Connect	Order code
	Ø6 mm	**PVL-B122606**
	G1/8	**PVL-B122618**
	Ø6 mm	**PVL-B121606**
	G1/8	**PVL-B121618**

Electrically/Pneumatically actuated 5/3 valves size G1/8*

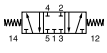
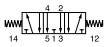
Symbol	Connect	Order code
	Ø6 mm	**PVL-B127606**
	G1/8	**PVL-B127618**
	Ø6 mm	**PVL-B128606**
	G1/8	**PVL-B128618**

Electrically/Pneumatically actuated 5/2 valves size G1/4*

Symbol	Connect	Order code
	Ø8 mm	**PVL-C122608**
	G1/4	**PVL-C122619**
	Ø8 mm	**PVL-C121608**
	G1/4	**PVL-C121619**

* For solenoids and pilot connectors, see next page

Electrically/Pneumatically actuated 5/3 valves size G1/4*

Symbol	Connect	Order code
	Ø8 mm	**PVL-C127608**
	G1/4	**PVL-C127619**
	Ø8 mm	**PVL-C128608**
	G1/4	**PVL-C128619**

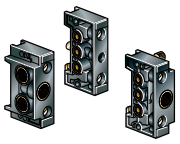
* For solenoids and pilot connectors, see next page

Electrically/Pneumatically actuated 2 x 3/2 valves

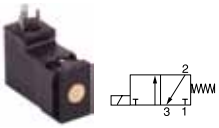
Symbol	Connect	Order code
	Ø6 mm	**PVL-B125606**

Head and tail sets

For stacking power valves 5/2, sizes M5, G1/8 and G1/4

	Type of mounting	Description	Valve size	Port size	Order code
	DIN rail mounting	Single air supply head and tail set	1/8" 1/4"	G1/4 G3/8	**PVL-B1719 PVL-C1713**
		Dual air supply head and tail set	1/8" 1/4"	G1/4 G3/8	**PVL-B1729 PVL-C1723**
	Surface mounting	Single air supply head and tail set	1/8" 1/4"	G1/8 G1/4	**PVL-B1818 PVL-C1819**
		Double air supply head and tail set	1/8" 1/4"	G1/8 G1/4	**PVL-B1828 PVL-C1829**

Solenoids 15mm NC Standard flow DIN 1.2W/1.6VA

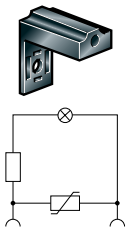
	Voltage	Order code Override flush non locking	Order code Override flush locking
	24 VDC	**P2E-KV32C1**	**P2E-KV32C2**
	48 VDC	**P2E-KV32D1**	
	24 VAC 50Hz	**P2E-KV31C1**	**P2E-KV31C2**
	48 VAC 50/60Hz	**P2E-KV34D1**	**P2E-KV34D2**
	115 VAC 50Hz/ 120 VAC 60Hz	**P2E-KV31F1**	**P2E-KV31F2**
	230 VAC 50Hz/ 240 VAC 60Hz	**P2E-KV31J1**	**P2E-KV31J2**

Cable plugs 15 mm (8 mm pin spacing) IP 65

	Description	Order code
	Large headed screw for inaccessible or recess position	
	Standard to be wired universal	**P8C-C**
	To be wired LED+protection 24 VDC	**P8C-C26C**
	With standard screw	
	Standard to be wired universal	**P8C-D**
	To be wired LED+protection 24 VDC	**P8C-D26C**
	With cable and standard screw	
	Standard with 2 m cable	**P8L-C2**
	Standard with 5 m cable	**P8L-C5**
	LED+protection 24 VAC/DC, 2 m	**P8L-C226C**
	LED+protection 24 VAC/DC, 5 m	**P8L-C526C**

Suppressor and LED indicators

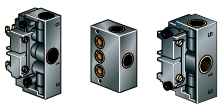
For mounting between the solenoid valve and the cable plug.

Symbol	Description	Voltage	Order code
	LED Indicator	24 V AC/DC	**P8V-CR26C**
		48 V AC/DC	**P8V-CR26D**
		115 V 50 Hz 120 V 60 Hz	**P8V-CR24F**
		230 V~50 Hz 240 V~60 Hz	**P8V-CR24J**

Air Pilot Connectors for PVL - B and C

	Mounting	Type of connection	Order code
	Mounts on the same interface as the 1 W / 1,2 VA solenoid actuator	Push-in Ø4 mm Threaded M5	**PVA-P111 PVA-P115**

Components for stacking two sizes of valve

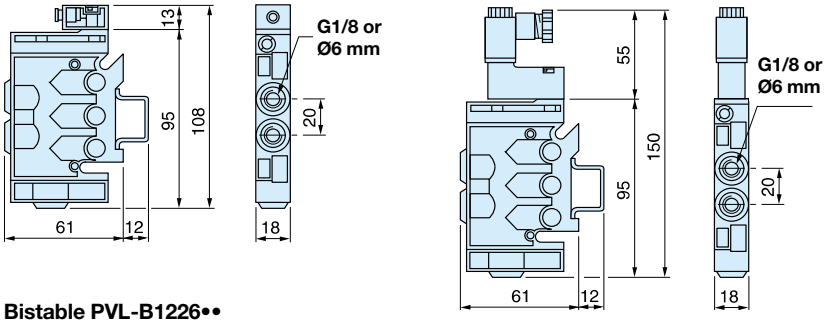
	Type of mounting	Description	Valve size	Order code
Components for stacking 2 sizes: "transfer/take-off" module and corresponding head and tail set 	DIN rail - Head and tail set with one in each size.	Kit for stacking power valves : - one "transfer/take-off" module	1/8" and 1/4"	**PVU-LCB119**
Components for inlet/exhaust common gallery sealing		Kit for sealing the commons: - 3 common blanking plugs - 2 drilled and threaded rods - 2 screws for extended tie rods	1/8" 1/4"	**PVL-B1901 PVL-C1901**

Dimensions, PVL valve Series

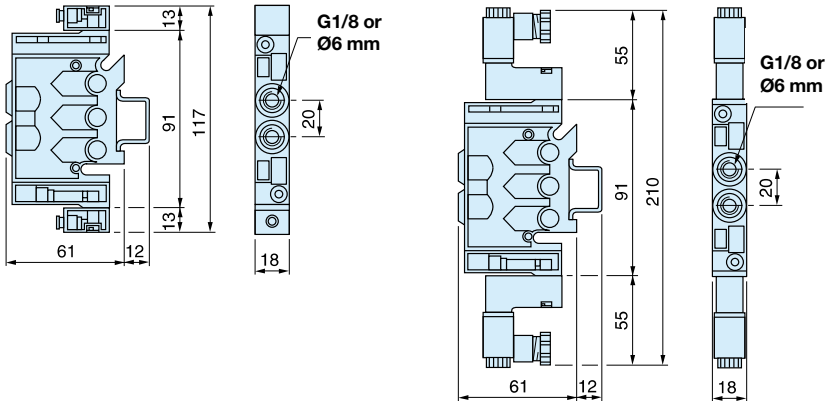
All dimensions in mm unless otherwise stated

Stacking power valves 1/8" with pneumatic or electrical piloting

Monostable PVL-B1216••, PVL-B1236••



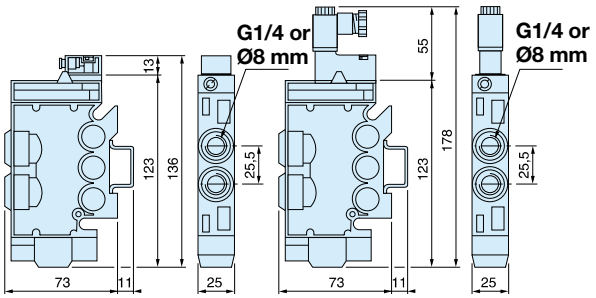
Bistable PVL-B1226••

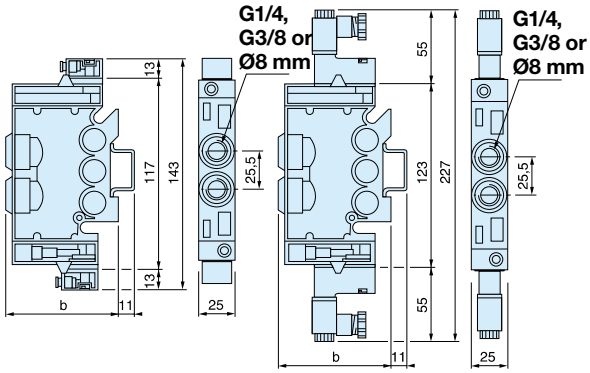


Stacking power valves 1/4" with pneumatic or electrical control

With 1 W solenoid actuator and suitable pneumatic connector

Monostable PVL-C1216••, PVL-C1236••

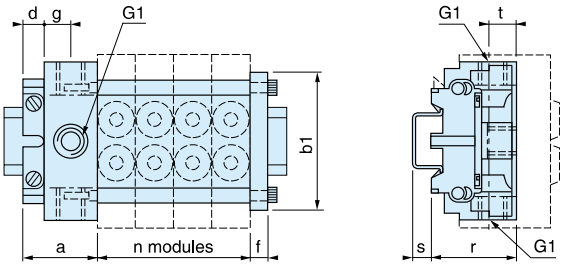




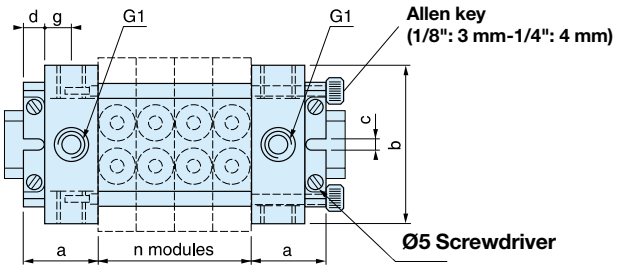
	G1/4	G3/8
b	73	77

Head and tail sets

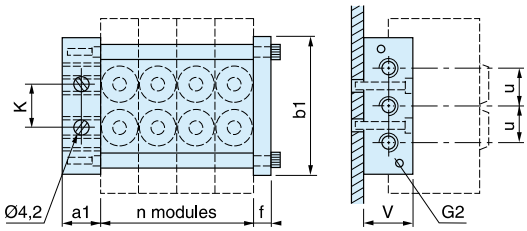
Single air supply
PVL-B1719, PVL-C1713, mounting on DIN rail



Dual air supply
PVL-B1729, PVL-C1723, mounting on DIN rail



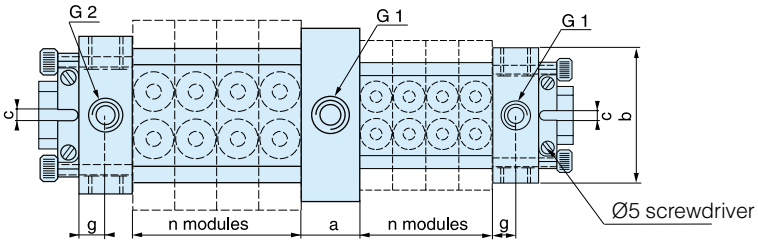
Single air supply
PVL-B1818, PVL-C1819, "stack mounting"



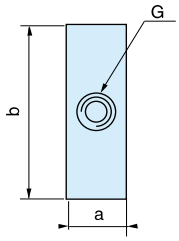
	a	a1	b	b1	c	d	f	g	G1	G2	k	r	s	t	u	v
1/8"	38	16	83	70	4,2	10	8	12	1/4"	1/8"	17,3	44	9	11	16	25
1/4"	38	20	108	100	4,2	10	8	12	3/8"	1/4"	63,5	55	9	13	20	30

"Transfer / take-off" module, intermediate supply module

For combination of sizes 1/4" - 1/8" - PVU-LCB119



PVUL-BB118 - PVU-LCC119



	a	b	G
1/8"	18	75	1/8
1/4"	25	100	1/4

Industrial Communication System

Isysnet / Moduflex

*Isysnet system for **centralised** and **decentralised** applications*

Isysnet System for Centralised applications

Isysnet System has 4 major components :

- **Communication interface modules** provide the network- interface circuitry
- **I/O modules** provide the field interface, system-interface circuitry, and bases for mounting
- **Power distribution module** provide the solution to expandability of the Isysnet system or multiple power supply

Moduflex Bus System for Decentralised applications

The Moduflex communication module is directly attach the either, a Moduflex, Isys Micro or Isys ISO manifold in a compact valve island directly connectable to the industrial network.

Pneumatic variants using Isysnet Industrial communication system for Centralised applications

Isysnet device with electric modules only

Isysnet with Isys Micro extended device

Isysnet with Isys Micro Valves island

Isysnet with Isys ISO valves island

Isys ISO 15407-2 – HA & HB
Isys ISO 5599-2 – H1

Pneumatic variants using Moduflex Fieldbus modules for Decentralised applications

Moduflex Bus with Moduflex Valve System

Moduflex Bus with Isys Micro Valves island

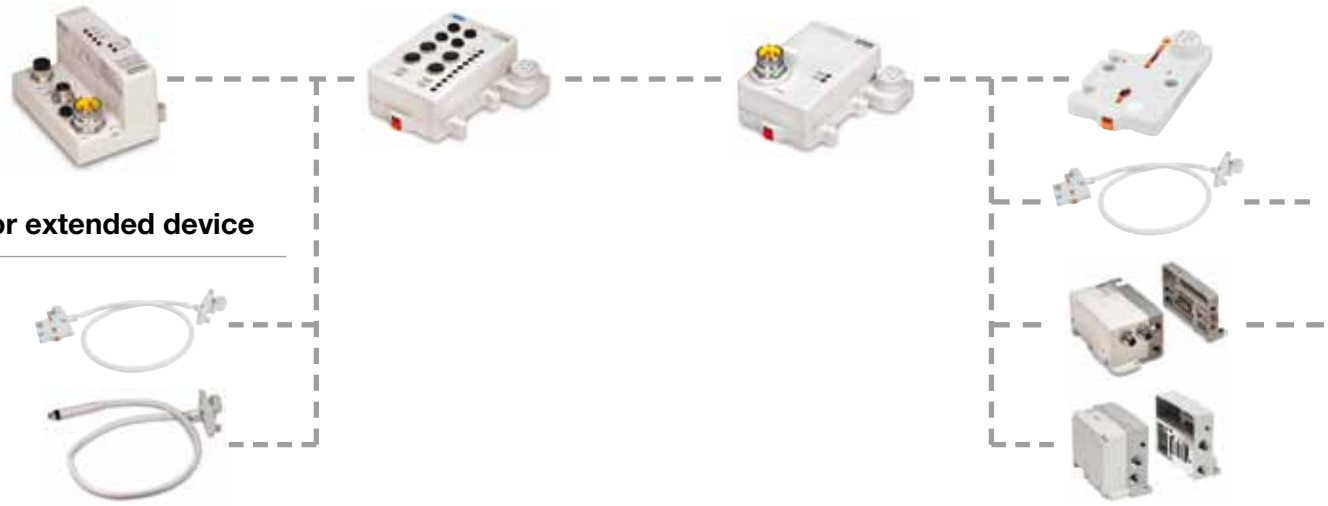
Moduflex Bus With Isys ISO 15407-2 or 5599-2 valves island

Isys ISO 15407-2 – HA & HB
Isys ISO 5599-2 – H1

Isysnet Device constitution overview for a Centralised application

For main device

For both main and extended devices



For extended device

Communication modules :
- Fieldbus or Industrial Ethernet protocol
- Network connection
- Separated 24VDC for logic and user power supply
- Configuration with codding wells and bus status display by LED

Bus extender cable :
- Cable linking extended device through the Sub-network
- Sub-network connection from Isysnet module or Isys Micro Valve driver
- Transfering both sub-network communication and 5VDC for bus power supply

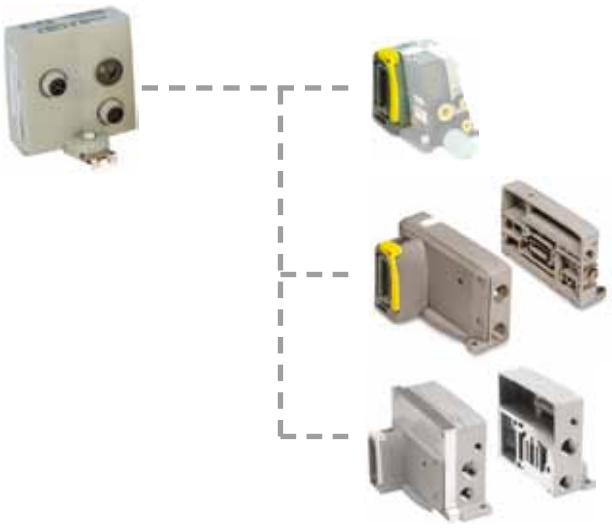
I/O modules :
- Choice of Digital or Analogic I/O modules offering multiple industrial connection types
- Connection to the Sub-network and the separated 24VDC for both logic and user through the socket
- I/O and sub-network status display by LEDs

Power extender module :
- Additional separated 24VDC power supply for logic and user allowing multiple permanant or safety power supply recommandations
- Both Logic and User electrical power supply display by separated LEDs

Isysnet end section :
- Specific socket or valve driver without extender bus connector for Isysnet end section

Isysnet prologation section :
- Specific socket with sub-network extender cable and extended device head plate
- Valve driver including extender bus connector for sub-network continuity

Moduflex constitution overview for a Decentralised application



Communication module :
- Fieldbus protocols
- Network connection
- Separated power supply for commmunication and solenoid valves
- Addressing and speed communication configuration by codding wells
- Bus status display by LED

Bus module adaptor :
Using the appropriate adaptor, the Moduflex Bus module can be assembled to :
- Moduflex Valve System
- Isys Micro
- Isys ISO 15407-2 – HA & HB
- Isys ISO 5599-2 – H1

Isysnet Industrial Communication modules

A choice of different protocols to connect the Isysnet device to the requested industrial network :

- DeviceNet
- Profibus DP
- ControlNet
- Ethernet I/P

Digital and Analogue Isysnet I/O modules :

Application always needs a wide sensor quantity, diversity and additional electric actuators as well, with an appropirate electrical connection.
With a modularity from 2 to 16 chanels, the wide Isysnet range of digital or analogue inputs and outputs modules offers a choice of industrial connection :

- M8 -3 PINs
- M12 -5 PINs
- M23 - 12 PINs

Isysnet extension power supply module :

The auxiliary power from the communication module supports up to 10 I/O modules. Also, for application needing a huge I/O modules quantity, this 24VDC extension power module extends the backplane bus power to support up to 10 more I/O modules.

Also, when safety recommandations require multiple permanant and safety power supplies, this 24VDC extension power module avoide to get a separated power supply section in the Isysnet device.

Isysnet and Isys Micro bus extender cable

An Isysnet device can be splited into the Isysnet section or, from an Isys Micro valve manifold to an extended Isysnet section. Both cables avoide the backplane Bus power and communication.

The Isysnet device has to be closed with a 32 output driver (internally ending the backplane bus) or using the Isysnet terminating base module

Isysnet 32 Outputs driver for valve islands in centralised applications

Isysnet 32 Outputs driver for Isys Micro Valve Islands

- Isys Micro valve nominal flow up to 280 Nl/mn
- 32 outputs per module to handle up to 32 solenoids per valve island
- Up to 4 valve islands linked through the internal sub-network for a total of 128 solenoids per device
- With or without additional user power supply
- With or without bus extender

Isysnet 32 Outputs driver for Isys ISO Valve Islands

ISO 15407-2

ISO 5599-2

- ISO 15407-2 Size 02 (HB) 18 mm 380 Nl/mn
- ISO 15407-2 Size 01 (HA) 26 mm 590 Nl/mn
- ISO 5599-2 Size 1 (H1) 42 mm 1030 Nl/mn
- 32 outputs per module to handle up to 32 solenoids per valve island.

Moduflex fieldbus modules for valve islands in decentralised applications

Moduflex fieldbus adaptor for Isys Micro and Isys ISO valve islands

Moduflex valve system

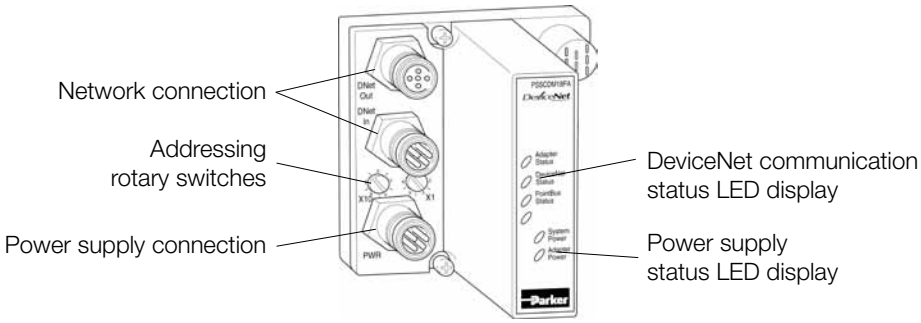
Isys Micro

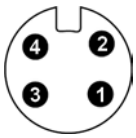
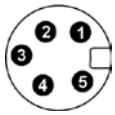
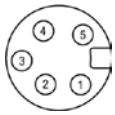
ISO 15407-2
HA - HB

ISO 5599-2
H1

- Compatible with all Moduflex fieldbus protocol modules handling up to 16 solenoids:
  - DeviceNet
  - CANopen
  - Profibus DP
  - InterBus-S
  - AS-i standard and extended a-b coding versions.

DeviceNet communication module



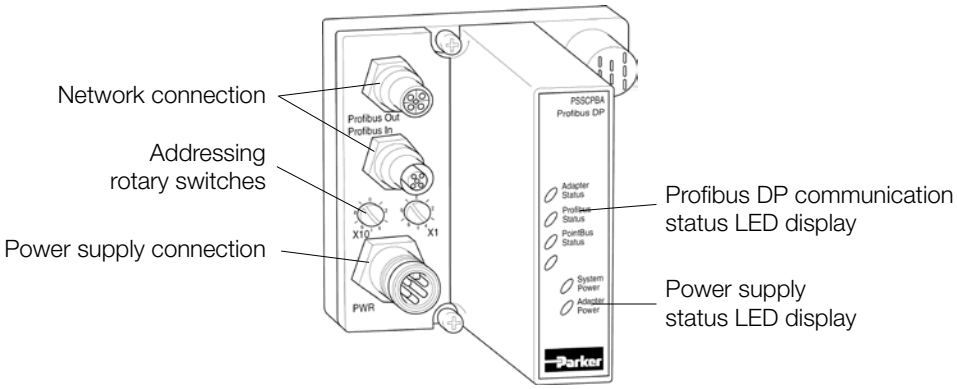
DeviceNet Adapters		
DeviceNet module order code	**PSSCDM12A**	**PSSCDM18PA**
Adapters connection		
Power supply connection	7/8" - 4 PINs - Male :  - PIN 1 : User power + - PIN 2 : Adapter power + - PIN 3 : Adapter power - - PIN 4 : User power -	
Bus IN connection	M12 - 5 PINs - Male - A coding 	M18 - 5 PINs - Male : 
	- PIN 1 : Drain - PIN 2 : DeviceNet V+ - PIN 3 : DeviceNet V- - PIN 4 : CAN High - PIN 5 : CAN Low	
Bus OUT connection	M12 - 5 PINs - Female - A coding 	M18 - 5 PINs - Female : 
	- PIN 1 : Drain - PIN 2 : V+ - PIN 3 : V- - PIN 4 : CAN High - PIN 5 : CAN Low	
LED display	1 - Adapter status : green/red 2 - DeviceNet status : green/red 3 - Status : green/red 4 - System power (5V power) : green 5 - Adapter power (24V from field supply) : green	

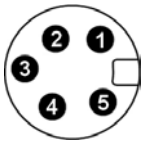
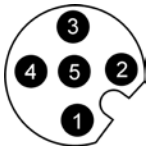
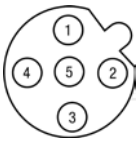
DeviceNet communication module connection accessories

P8CS1205BA

Description	Connector type	W (g)	**Order code**
Power supply connector	7/8" - 4 PINs	40	**P8CS7804AA**
Bus IN connector	M12 female - A coding	25	**P8CS1205AA**
Bus OUT connector	M12 male - A coding	25	**P8CS1205BA**
Line terminaison	M12 male - A coding	25	**P8BPA00MA**

Profibus DP communication module



Profibus DP Adapters	
Profibus DP module order code	**PSSCPBA**
Profibus DP adapters connection	
Power supply connection	7/8" - 5 PINs - Male :  - PIN 1 : User power - - PIN 2 : Adapter power - - PIN 3 : Protective GND - PIN 4 : Adapter power + - PIN 5 : User power +
BUS IN connection	M12 - 5 PINs - Male - B coding  - PIN 1 : + 5 VDC Bus - PIN 2 : A - Line - PIN 3 : GND Bus - PIN 4 : B - Line - PIN 5 : Shield
BUS OUT connection	M12 - 5 PINs - Female - B coding  - PIN 1 : + 5 VDC Bus - PIN 2 : A - Line - PIN 3 : GND Bus - PIN 4 : B - Line - PIN 5 : Shield
LED display	1 - Adapter status : green/red 2 - Profibus DP status : green/red 3 - Bus status : green/red 4 - System power (5V power) : green 5 - Adapter power (24V from field supply) : green

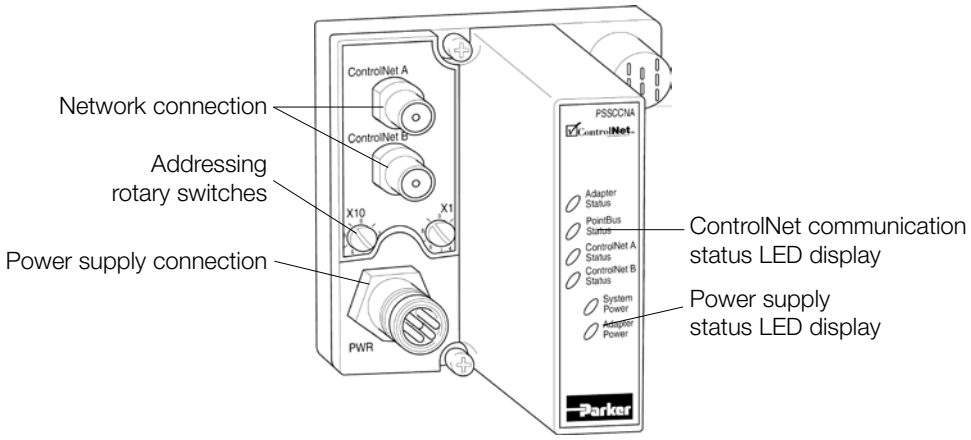
Profibus DP communication module connection accessories

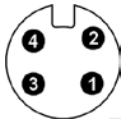
P8CS1205BB

Description	Connector type	W (g)	**Order code**
Power supply connector	7/8" - 5 PINs	40	**P8CS7805AA**
Bus IN connector	M12 female - B coding	25	**P8CS1205AB**
Bus OUT connector	M12 male - B coding	25	**P8CS1205BB**
Line terminaison	M12 male - B coding	25	**P8BPA00MB**

ControlNet communication module

ControlNet™



ControlNet Adapters	
ControlNet module order code	**PSSCCNA**
ControlNet adapters connection	
Power supply connection	7/8" - 4 PINs - Male :  - PIN 1 : User power + - PIN 2 : Adapter power + - PIN 3 : Adapter power - - PIN 4 : User power -
ControlNet IN connection	TNC style connector
ControlNet OUT connection	TNC style connector
LED display	1 - Adapter status : green/red 2 - Bus status : green/red 3 - ControNet A status : green/red 4 - ControNet B status : green/red 5 - System power (Bus 5V power) : green 6 - Adapter power (24V from field supply) : green

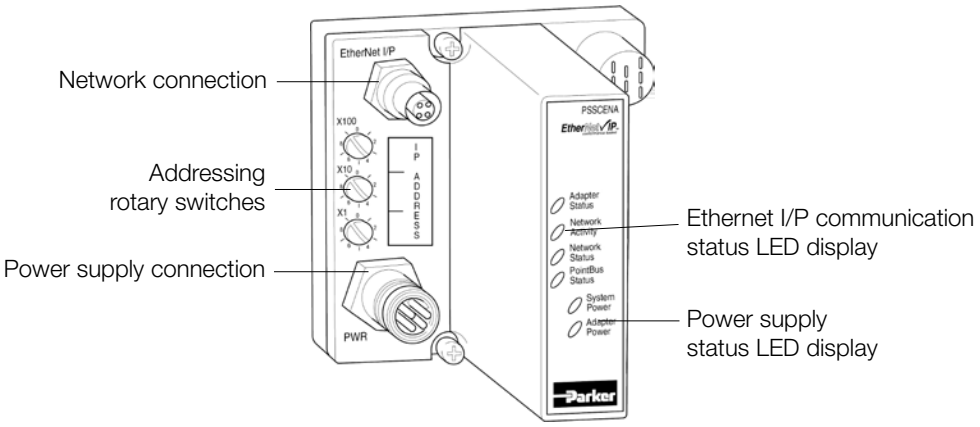
ControlNet communication module connection accessories

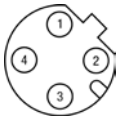
P8CS7804AA

Description	Connector type	W (g)	**Order code**
Power supply connector	7/8" - 4 PINs	40	**P8CS7804AA**

Ethernet I/P communication module

EtherNet/IP



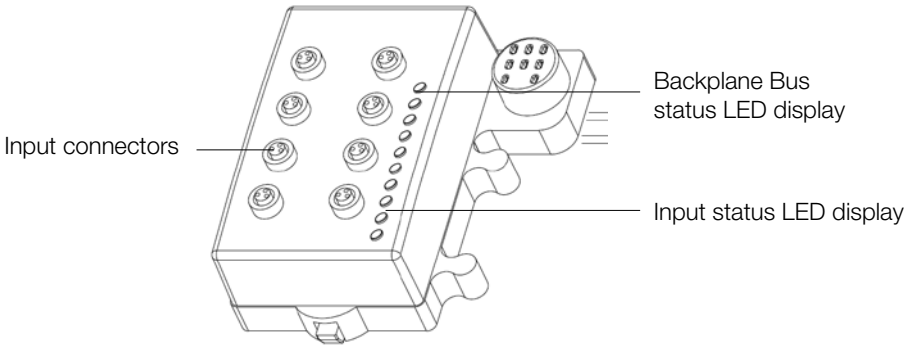
Ethernet I/P Adapters	
Ethernet I/P module order code	**PSSCENA**
Ethernet I/P adapters connection	
Power supply connection	7/8" - 4 PINs - Male : - PIN 1 : User power + - PIN 2 : Adapter power + - PIN 3 : Adapter power - - PIN 4 : User power -
Ethernet I/P connection	M12 - 4 PINs - Female - D coding :  - PIN 1 : Tx + - PIN 2 : Rx + - PIN 3 : Tx - - PIN 4 : Rx -
LED display	1 - Adapter status : green/red 2 - Network activity : green 3 - Network status : green/red 4 - Bus status : green/red 5 - System power (Bus 5V power) : green 6 - Adapter power (24V from field supply) : green

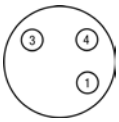
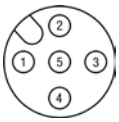
Ethernet I/P communication module connection accessories

P8CS7804AA

Description	Connector type	W (g)	**Order code**
Power supply connector	7/8" - 4 PINs	40	**P8CS7804AA**

Isysnet Digital Input modules



Isysnet Digital DC Input modules				
Input module order code	**PSSN8M8A**	**PSSP8M8A**	**PSSN8M12A**	**PSSP8M12A**
Nb of Inputs	8	8	8	8
Nb of Input connectors	8 x M8	8 x M8	4 x M12	4 x M12
Input density / connector	1	1	2	2
Sensor polarity	PNP	NPN	PNP	NPN
Input module connection				
Input connector	M8 - 3 PINs - Female  - PIN 1 : + 24 VDC - PIN 3 : Common - PIN 4 : Input		M12 - 5 PINs - Female  - PIN 1 : + 24 VDC - PIN 2 : Odd input (1, 3, 5, 7) - PIN 3 : Common - PIN 4 : Even input (0, 2, 4, 6) - PIN 5 : n/a	
Input status LED display (Logic side)	8 x Yellow			
Backplane Bus status LED display (Logic side)	Network status : 1 x green / red Module status : 1 x green / red			

Isysnet Backplane Bus accessories

Description	Cable length	W (g)	**Order code**
Backplane Bus extender	1 meter	380	**PSSEXT1**
	3 meter	760	**PSSEXT3**
Terminaison module		200	**PSSTERM**

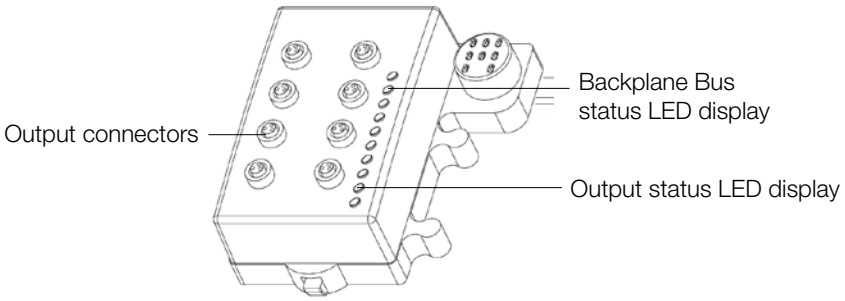
Connectors for inputs

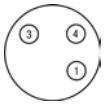
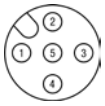
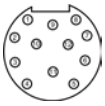
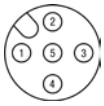
P8CS0803J

P8CSY1212A

Description	Connector type	W (g)	**Order code**
Cable quick connect connector	M8 male	25	**P8CS0803J**
	M12 male - A coding	25	**P8CS1204J**
Y shape	M12 male - 2 x M12 female	25	**P8CSY1212A**

Isysnet Digital Output modules



Isysnet Digital DC Output modules				
Output module order code	**PSST8M8A**	**PSST8M12A**	**PSST8M23A**	**PSSTR4M12A**
Nb of Outputs	8	8	8	4
Nb of Output connectors	8 x M8	4 x M12	1 x M23	4 x M12
Output density / connector	1	2	8	1
Output module connection				
Output connector	M8 - 3 PINs Female  - PIN 1 : + 24 VDC - PIN 3 : Common - PIN 4 : Outputs (0 to 7)	M12 - 5 PINs Female  - PIN 1 : + 24 VDC PIN 2 : Odd output (1, 3, 5, 7) - PIN 3 : Common PIN 4 : Even output (0, 2, 4, 6) - PIN 5 : n/a	M23 - 12 PINs Female  - PIN 1 : Output 0 - PIN 2 : Output 1 - PIN 3 : Output 2 - PIN 4 : Output 3 - PIN 5 : Output 4 - PIN 6 : Output 5 - PIN 7 : Output 6 - PIN 8 : Output 7 - PIN 9 : Return (common) - PIN 10 : Return (common) - PIN 11 : +24 VDC - PIN 12 : Chassis	M12 - 5 PINs Female  - PIN 1 : +24 VDC - PIN 2 : Odd outputs - PIN 3 : Common - PIN 4 : Even outputs - PIN 5 : n/a
Output status LED display (Logic side)	8 x Yellow / Red			4 x Yellow / Red
Backplane Bus status LED display (Logic side)	Network status : 1 x green / red Module status : 1 x green / red			

Isysnet Backplane Bus accessories

Description	Connector type	W (g)	**Order code**
Backplane Bus extender	1 meter	380	**PSSEXT1**
	3 meter	760	**PSSEXT3**
Terminaison module		200	**PSSTERM**

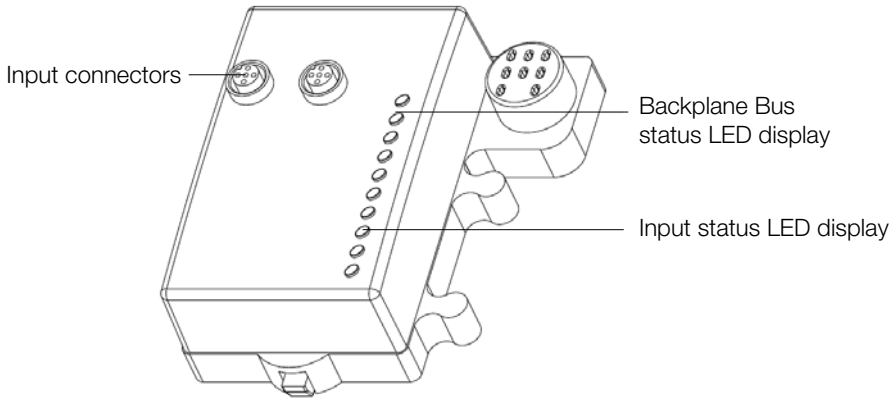
Connectors for Outputs

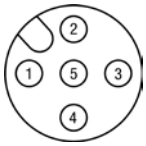
P8CS0803J

P8CSY1212A

Description	Connector type	W (g)	**Order code**
Cable quick connect connector	M8 male	25	**P8CS0803J**
	M12 male - A coding	25	**P8CS1204J**
Y shape	M12 male - 2 x M12 female	25	**P8CSY1212A**

Isysnet Analogue Input modules



Isysnet Analogue Input modules		
Input module order code	**PSSNAVM12A**	**PSSNACM12A**
Nb of Inputs	2	2
Nb of Input connectors	2 x M12	2 x M12
Input density / connector	1	1
Input signal	0 - 10 V	4 - 20 mA
Analogue Input module connection		
Input connector	M12 - 5 PINs - Female  - PIN 1 : +24 VDC - PIN 2 : Inputs - PIN 3 : Common - PIN 4 : Common - PIN 5 : n/a	
Input status LED display (Logic side)	2 x green / red	
Backplane Bus status LED display (Logic side)	Module status : 1 x green / red Network status : 1 x green / red	

Isysnet Backplane Bus accessories

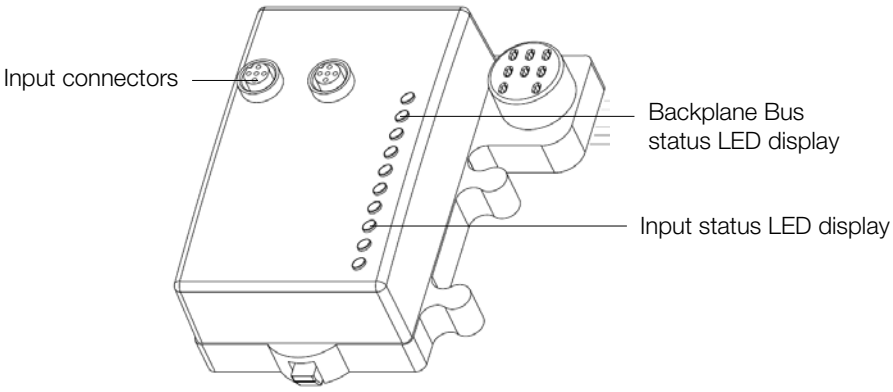
Description	Cable length	W (g)	Order code
Backplane Bus extender	1 meter	380	**PSSEXT1**
	3 meter	760	**PSSEXT3**
Terminaison module		200	**PSSTERM**

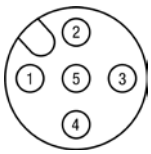
Connectors for inputs

P8CS1205BA

Description	Connector type	W (g)	Order code
Straight connector	M12 male - A coding	25	**P8CS1205BA**

Isysnet Analogue Output modules



Isysnet Analogue Output modules		
Output module order code	**PSSTAVM12A**	**PSSTACM12A**
Nb of Outputs	2	2
Nb of Output connectors	2 x M12	2 x M12
Output density / connector	1	1
Output signal	0 - 10 V	4 - 20 mA
Analogue Output module connection		
Output connector	M12 - 5 PINs - Female  - PIN 1 : Outputs - PIN 2 : +24 VDC - PIN 3 : Common - PIN 4 : Common - PIN 5 : n/a	
Output status LED display (Logic side)	2 x green / red	
Backplane Bus status LED display (Logic side)	Module status : 1 x green / red Network status : 1 x green / red	

Isysnet Backplane Bus accessories

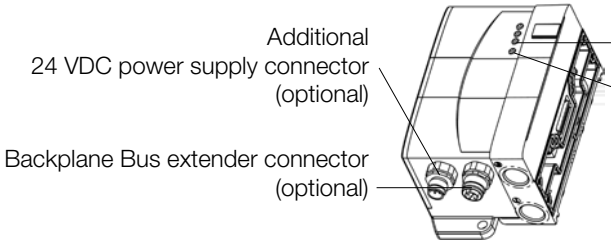
Description	Cable length	W (g)	**Order code**
Backplane Bus extender	1 meter	380	**PSSEXT1**
	3 meter	760	**PSSEXT3**
Terminaison module		200	**PSSTERM**

Connectors for Outputs

P8CS1205BA

Description	Connector type	W (g)	**Order code**
Straight connector	M12 male - A coding	25	**P8CS1205BA**

Isysnet 32 Output drivers

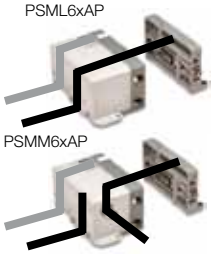


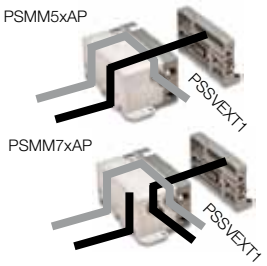
Isysnet 32 Output driver modules

Dedicated valve range		Isys Micro				Isys ISO 15407-2	Isys ISO 5599-2
32 Output driver modules order code	Side ported	**PSML61AP**	**PSMM61AP**	**PSMM71AP**	**PSMM51AP**	**PS5620L61P**	**PS4020L61CP**
	Bottom ported	**PSML62AP**	**PSMM62AP**	**PSMM72AP**	**PSMM52AP**	-	-
Pneumatic port sizes	Power supply	G3/8"					
	Exhaust	G3/8"					
Pneumatic pilot port sizes	Power supply	Internal or M7				Internal	
	Exhaust	G1/8"				Internal	
32 Output driver module connection							
24 VDC power supply connector		NO	YES	YES	NO	NO	NO
			M12 - 5 PINs - Male - PIN 1 : +24 VDC - PIN 2 : n/a - PIN 3 : Common - PIN 4 : n/a - PIN 5 : Protective Earth				
Backplane Bus Extender connector		NO	NO	YES	YES	NO	NO
				M12 - 5 PINs - Female To use with PSSVEXT1 - PIN 1 : CAN SHLD - PIN 2 : CAN V+ - PIN 3 : CAN GND - PIN 4 : CAN High - PIN 5 : CAN Low		
Backplane Bus status LED display (Logic side)		Backplane Bus power supply : 1 x green / red Backplane Bus status : 1 x green / red Output fault : 1 x red Valve power supply : 1 x green				Module status : 1 x green / red Backplane Bus status : 1 x green/red Output fault : 1 x yellow / red	

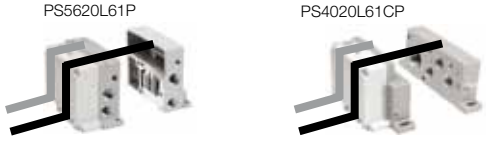
Backplane Bus and Solenoid Valves Power Supply Sourcing :

Isys Micro 32 output driver modules





Isys ISO 32 output driver modules



Backplane Bus power supply
Solenoid Valves power supply

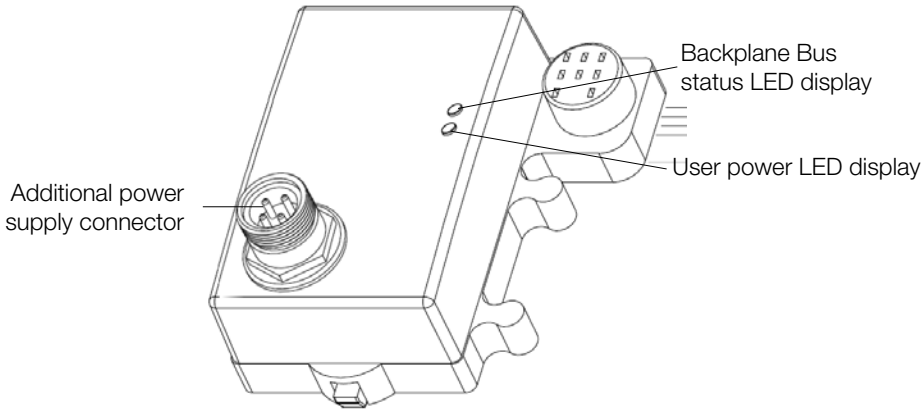
For further details on Multiple Power supply, see at end of this section.

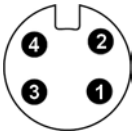
Accessories

Description	Connector type	W (g)	Order code
Backplane Bus extension cable with 1 meter cable	M12 male - A coding Head plate	380	**PSSVEXT1**
Connector for 24 VDC power supply connector	M12 Female - A coding	25	**P8CS1205AA**
Line terminaison	M12 Male - A coding	25	**P8BPA00MA**

P8CS1205AA

Isysnet Power Extender module



Backplane Bus Extension Power Supply module	
Power Supply Extender module Order Code	**PSSE24A**
Extender module connection	
Power supply connection	7/8" - 4 PINs - Male  - PIN 1 : User power + - PIN 2 : Backplane bus power + - PIN 3 : Backplane bus power + - PIN 4 : User power -
Status LED display (Logic side)	Field power status : 1 x green 5 VDC system power status : 1 x green

Isysnet Backplane Bus connector

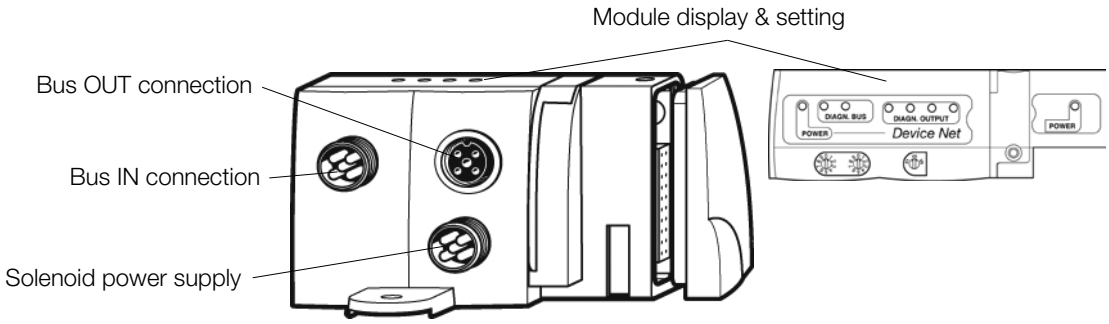
P8CS7804AA

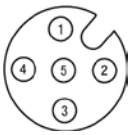
Description	Connector type	W (g)	**Order code**
power supply connector	7/8" - 4 PINs	40	**P8CS7804AA**

Isysnet Backplane Bus accessories

Description	Cable length	W (g)	**Order code**
Backplane Bus extender from Isysnet module	1 meter	380	**PSSEXT1**
	3 meter	760	**PSSEXT3**
Backplane Bus extension cable from 32 outputs driver	1 meter	380	**PSSVEXT1**

DeviceNet 16 outputs communication module



DeviceNet Adapters			
Dedicated valve range	**Moduflex Valve System**		**Isys Micro**
DeviceNet module Order Code	**P2M2HBVD11600**	**P2M2HBVD21600**	**Side ported : PSMMD1AP** **Bottom ported : PSMMD2AP**
Adapter connection			
Power supply connection	M12 - 5 PINs - Male - B coding - PIN 1 : n/a - PIN 2 : n/a - PIN 3 : 0 VDC Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)		M12 - 5 PINs - Male - A coding - PIN 1 : n/a - PIN 2 : n/a - PIN 3 : 0 VDC Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)
Bus IN connection			M12 - 5 PINs - Male - A coding - PIN 1 : Drain - PIN 2 : CAN V+ - PIN 3 : CAN V- - PIN 4 : CAN High - PIN 5 : CAN Low
Bus OUT connection			M12 - 5 PINs - Female - A coding - PIN 1 : Drain - PIN 2 : CAN V+ - PIN 3 : CAN V- - PIN 4 : CAN High - PIN 5 : CAN Low
LED Display	Adapter power : 1 x green DeviceNet status : 2 x green/red Solenoid pilots power : 1 x green/red Solenoid pilots diagnostic : 4 x red		

Valve range adapters

PSMM41AP

Description	Valve range		W (g)	Order code
Moduflex Bus adapter without communication module	Moduflex Valve		30	**P2M2HEV0B**
	Isys Micro	Side ported	200	**PSMM41AP**
		Bottom ported	200	**PSMM42AP**
	Isys ISO 15407-2 - HA - HB		200	**PS5620M41P**
	Isys ISO 5599-2 - H1		300	**PS4020M41CP**

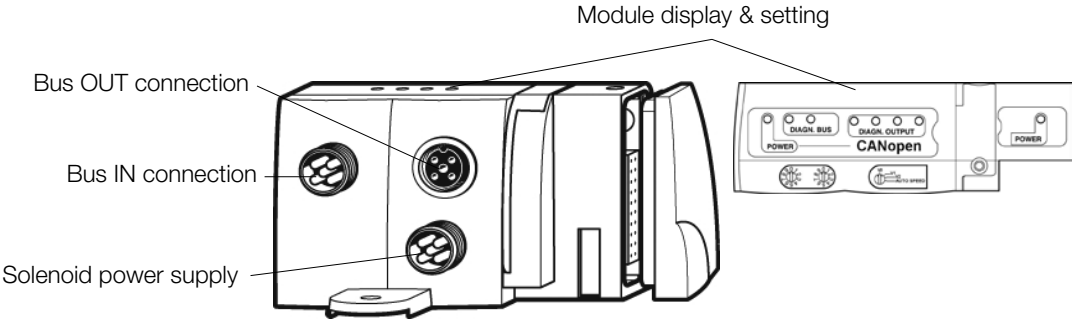
DeviceNet communication module connection accessories

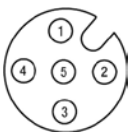
P8CS1205BA

Description	Connection type	W (g)	Order code
Power supply connector	M12 Female - A coding	40	**P8CS1205AA**
	M12 Female - B coding	40	**P8CS1205AB**
Bus IN connector	M12 Female - A coding	25	**P8CS1205AA**
Bus OUT connector	M12 Male - A coding	25	**P8CS1205BA**
Line terminaison	M12 Male - A coding	25	**P8BPA00MA**

CANopen 16 outputs communication module

CANopen



CANopen Adapters			
Dedicated valve range	**Moduflex Valve System**		**Isys Micro**
CANopen module Order Code	**P2M2HBVC11600**	**P2M2HBVC21600**	**Side ported : PSMMC1AP** **Bottom ported : PSMMC2AP**
Adapter connection			
Power supply connection	M12 - 5 PINs - Male - B coding - PIN 1 : n/a - PIN 2 : n/a - PIN 3 : 0 VDC Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)		M12 - 5 PINs - Male - A coding - PIN 1 : n/a - PIN 2 : n/a - PIN 3 : 0 VDC Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)
Bus IN connection	M12 - 5 PINs - Male - A coding - PIN 1 : Drain - PIN 2 : CAN V+ - PIN 3 : CAN V- - PIN 4 : CAN High - PIN 5 : CAN Low		
Bus OUT connection 	M12 - 5 PINs - Female - A coding - PIN 1 : Drain - PIN 2 : CAN V+ - PIN 3 : CAN V- - PIN 4 : CAN High - PIN 5 : CAN Low		
LED Display	Adapter power : 1 x green CANopen status : 2 x green/red Solenoid pilots power : 1 x green/red Solenoid pilots diagnostic : 4 x red		

Valve range adapters

PSMM41AP

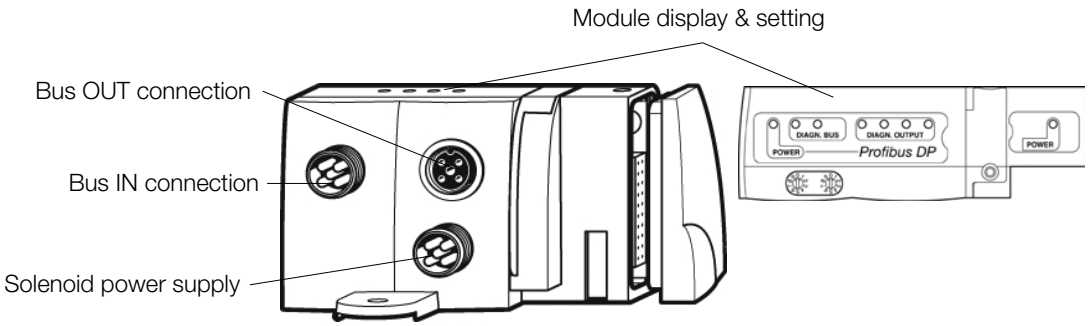
Description	Valve range		W (g)	Order code
Moduflex Bus adapter without communication module	Moduflex Valve		30	**P2M2HEV0B**
	Isys Micro	Side ported	200	**PSMM41AP**
		Bottom ported	200	**PSMM42AP**
	Isys ISO 15407-2 - HA - HB		200	**PS5620M41P**
	Isys ISO 5599-2 - H1		300	**PS4020M41CP**

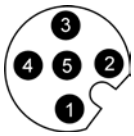
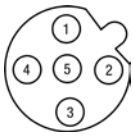
CANopen communication module connection accessories

P8CS1205BA

Description	Connection type	W (g)	Order code
Power supply connector	M12 Female - A coding	40	**P8CS1205AA**
	M12 Female - B coding	40	**P8CS1205AB**
Bus IN connector	M12 Female - A coding	25	**P8CS1205AA**
Bus OUT connector	M12 Male - A coding	25	**P8CS1205BA**
Line terminaison	M12 Male - A coding	25	**P8BPA00MA**

Profibus DP 16 outputs communication module



Profibus DP Adapters		
Dedicated valve range	**Moduflex Valve System**	**Isys Micro**
Profibus DP module Order Code	**P2M2HBVP21600**	**Side ported : PSMMP1AP** **Bottom ported : PSMMP2AP**
Adapter connection		
Power supply connection		M12 - 5 PINs - Male - A coding - PIN 1 : +24 VDC adapter - PIN 2 : n/a - PIN 3 : 0 VDC Adapter & Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)
Bus IN connection		M12 - 5 PINs - Male - B coding - PIN 1 : + 5 VDC Bus - PIN 2 : A - Line - PIN 3 : GND Bus - PIN 4 : B - Line - PIN 5 : Shield
Bus OUT connection		M12 - 5 PINs - Female - B coding - PIN 1 : + 5 VDC Bus - PIN 2 : A - Line - PIN 3 : GND Bus - PIN 4 : B - Line - PIN 5 : Shield
LED Display	Adapter power : 1 x green Profibus DP status : 2 x green/red Solenoid pilots power : 1 x green/red Solenoid pilots diagnostic : 4 x red	

Valve range adapters

PSMM41AP

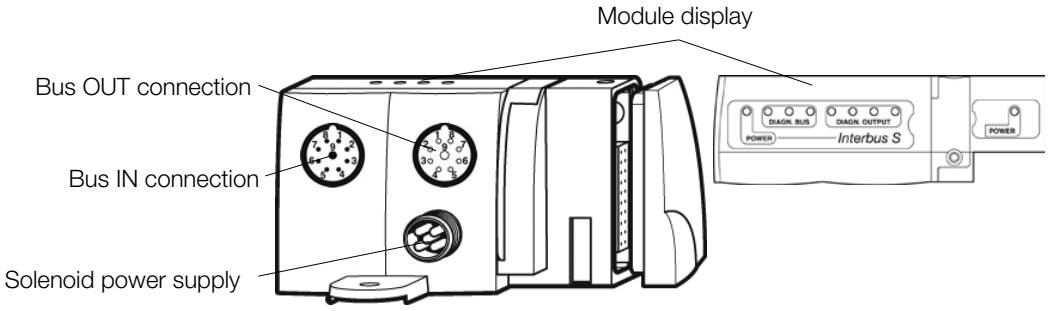
Description	Valve range		W (g)	Order code
Moduflex Bus adapter without communication module	Moduflex Valve		30	**P2M2HEV0B**
	Isys Micro	Side ported	200	**PSMM41AP**
		Bottom ported	200	**PSMM42AP**
	Isys ISO 15407-2 - HA - HB		200	**PS5620M41P**
	Isys ISO 5599-2 - H1		300	**PS4020M41CP**

Profibus DP communication module connection accessories

P8CS1205BB

Description	Connection type	W (g)	Order code
Power supply connector	M12 Female - A coding	40	**P8CS1205AA**
Bus IN connector	M12 Female - B coding	25	**P8CS1205AB**
Bus OUT connector	M12 Male - B coding	25	**P8CS1205BB**
Line terminaison	M12 Male - B coding	25	**P8BPA00MB**

InterBus-S 16 outputs communication module



INTERBUS-S

InterBus-S Adapters	
Dedicated valve range	**Moduflex Valve System**
InterBus-S module Order Code	**P2M2HBVS11600**
Adapter connection	
Power supply connection	M12 - 5 PINs - Male - A coding - PIN 1 : +24 VDC adapter - PIN 2 : n/a - PIN 3 : 0 VDC Adapter & Solenoids - PIN 4 : 24 VDC Solenoids - PIN 5 : Protected earth (PE)
Bus IN connection	M23 - 9 PINs - Male: - PIN 1 : DO - PIN 2 : DO - PIN 3 : DI - PIN 4 : DI - PIN 5 : Ground - PIN 6 : n/a - PIN 7 : n/a - PIN 8 : n/a - PIN 9 : n/a
Bus OUT connection	M23 - 9 PINs - Female: - PIN 1 : DO - PIN 2 : DO - PIN 3 : DI - PIN 4 : DI - PIN 5 : Ground - PIN 6 : n/a - PIN 7 : n/a - PIN 8 : n/a - PIN 9 : RBST
LED Display	Adapter power : 1 x green InterBus S status : 3 x green/red Solenoid pilots power : 1 x green/red Solenoid pilots diagnostic : 4 x red

Valve range adapters

P8MM41AP

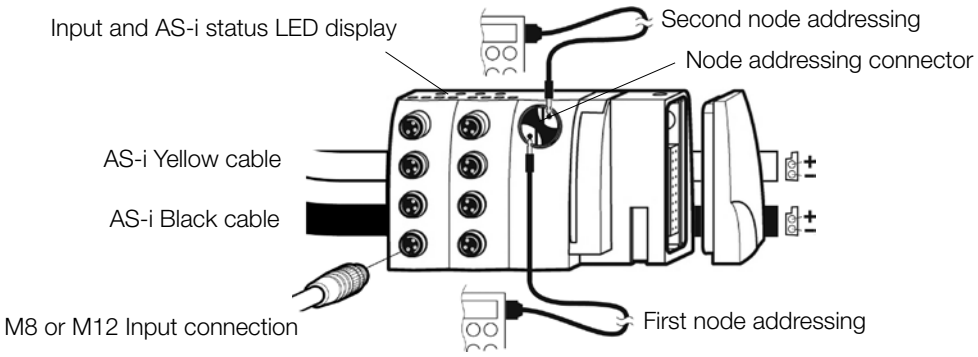
Description	Valve range		W (g)	Order code
Moduflex Bus adapter without communication module	Moduflex Valve		30	**P2M2HEV0B**
	Isys Micro	Side ported	200	**PSMM41AP**
		Bottom ported	200	**PSMM42AP**
	Isys ISO 15407-2 - HA - HB		200	**PS5620M41P**
	Isys ISO 5599-2 - H1		300	**PS4020M41CP**

InterBus-S communication module connection accessories

P8CS1205AA

Description	Connection type	W (g)	Order code
Power supply connector	M12 Female - A coding	40	**P8CS1205AA**

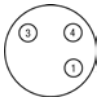
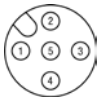
AS-interface communication module



AS-i Adapters

AS-i module Order Code	P2M2HBVA10400	P2M2HBVA10800	P2M2HBVA20600	P2M2HBVA10808A	P2M2HBVA20608A	P2M2HBVA10404B	P2M2HBVA10808B	P2M2HBVA20608B
AS-i Version	V2.0	V2.0	V2.1	V2.0	V2.1	V2.0	V2.0	V2.1
Number of adresses	1 / 31	2 / 31	2 / 31a + 31b	2 / 31	2 / 31a + 31b	1 / 31	2 / 31	2 / 31a + 31b
Nb of outputs for sol. valves	4	8	6	8	6	4	8	6
Nb of Inputs	-			8	8	4	8	8
Nb of Input connectors	-			8 x M8	8 x M8	4 x M12	4 x M12	4 x M12
Input density / connector	-			1	1	1	2	2

Adapter connection

Yellow cable	Bus signal Bus module and sensors power supply		
Black cable	24 VDC outputs for solenoid valves		
INPUTS connection		M8 - 3 PINs - Female:  - PIN 1 : +24 VDC - PIN 3 : Common - PIN 4 : Input	M12 - 5 PINs - Female:  PIN 1: +24 VDC / - PIN 1 : +24 VDC PIN 2*: Input 2&3 / - PIN 2* : Odd Input PIN 3: Common / - PIN 3 : Common PIN 4: Input 0 to 3 / - PIN 4 : Even Input PIN 5: n/a / - PIN 5 : n/a *on left connectors only
LED Display	Node status : 2 x green/red per node Input status : 4 x yellow per node Valve power (24V from field supply) : 1 x green / red		

Valve range adapters

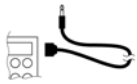
P8MM41AP

Description	Valve range		W (g)	Order code
Moduflex Bus adapter without communication module	Moduflex Valve		30	**P2M2HEV0B**
	Isys Micro	Side ported	200	**PSMM41AP**
		Bottom ported	200	**PSMM42AP**
	Isys ISO 15407-2 - HA - HB		200	**PS5620M41P**
	Isys ISO 5599-2 - H1		300	**PS4020M41CP**

Connectors for Inputs

P8CS0803J

P8CSY1212A

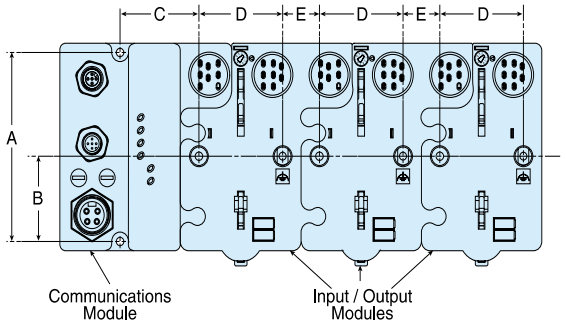


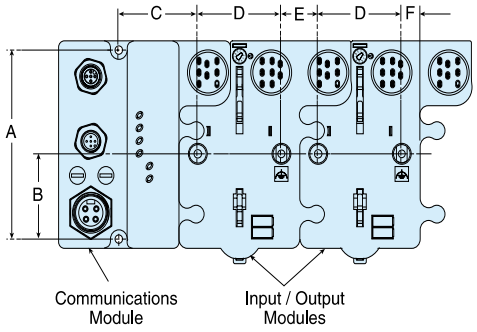
Description	Connection type	W (g)	Order code
Cable quick connect connector	M8 Male	25	**P8CS0803J**
	M12 Male - A coding	25	**P8CS1204J**
"Y" shape	M12 Male - 2 x M12 Female	25	**P8CSY1212A**
Addressing cable	M12 Male - Jack	100	**P8LS12JACK**

Isysnet modules

Dimensions

A	B	C
102	46	48
D	**E**	**F**
51	22	11

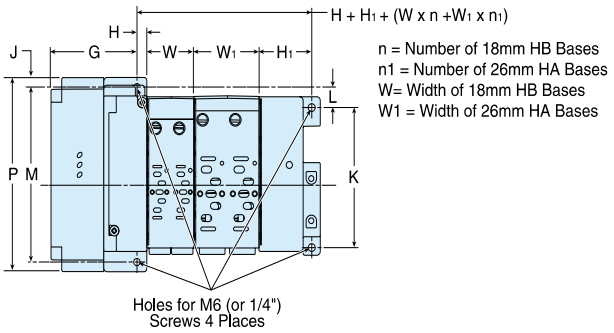




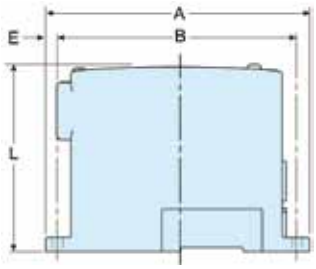
Isysnet with Isys ISO Valves

HB-HA
Dimensions

A	B	E	L	G
152	137	7,5	106	68
H	**H1**	**J**	**K**	**L**
8,4	45,8	4	110	16
M	**P**	**W**	**W1**	
137	152	40,8	56,8	

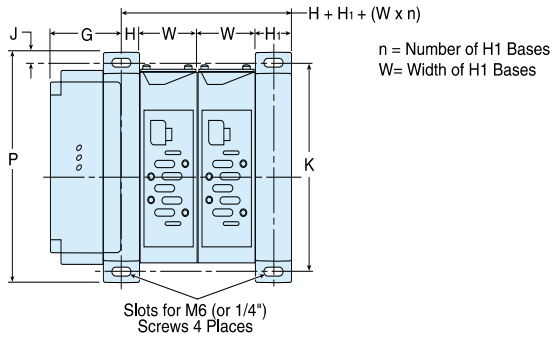


n = Number of 18mm HB Bases
n1 = Number of 26mm HA Bases
W= Width of 18mm HB Bases
W1 = Width of 26mm HA Bases



H1
Dimensions

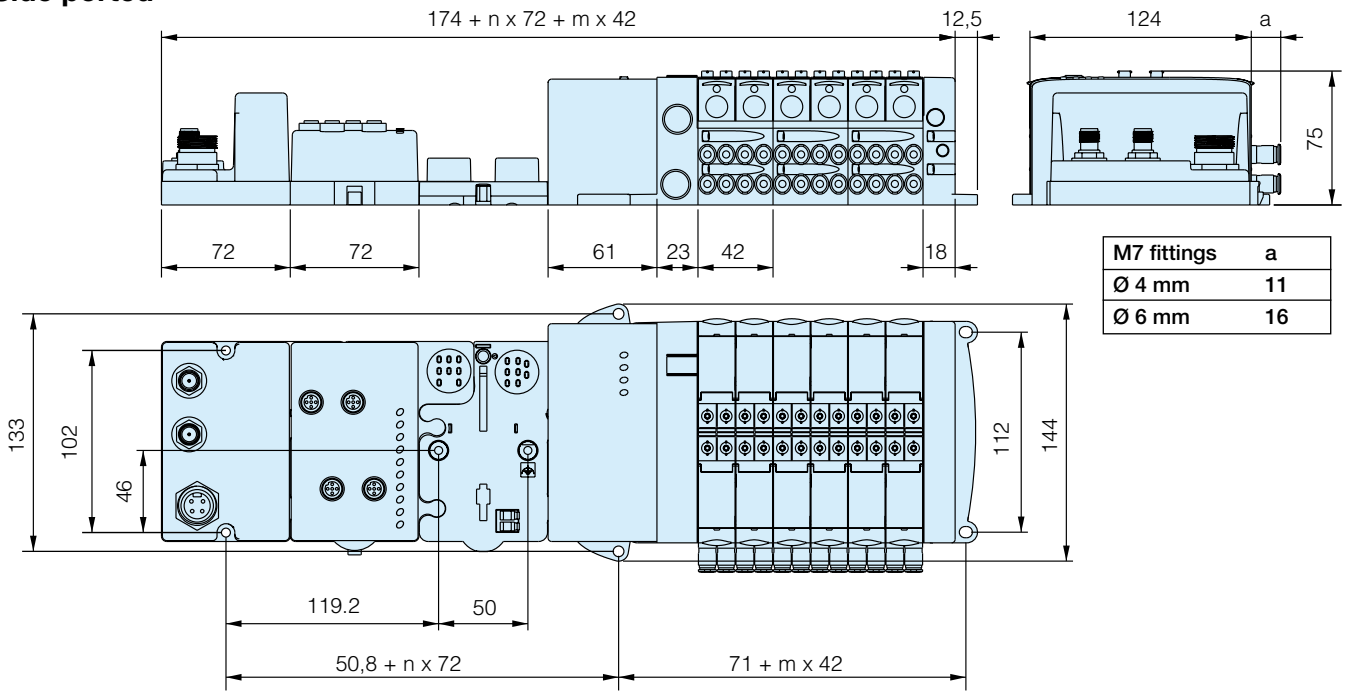
G	H	H1	J	K
56	15,9	15,9	8,5	165
P	**W**			
182	49			



n = Number of H1 Bases
W= Width of H1 Bases

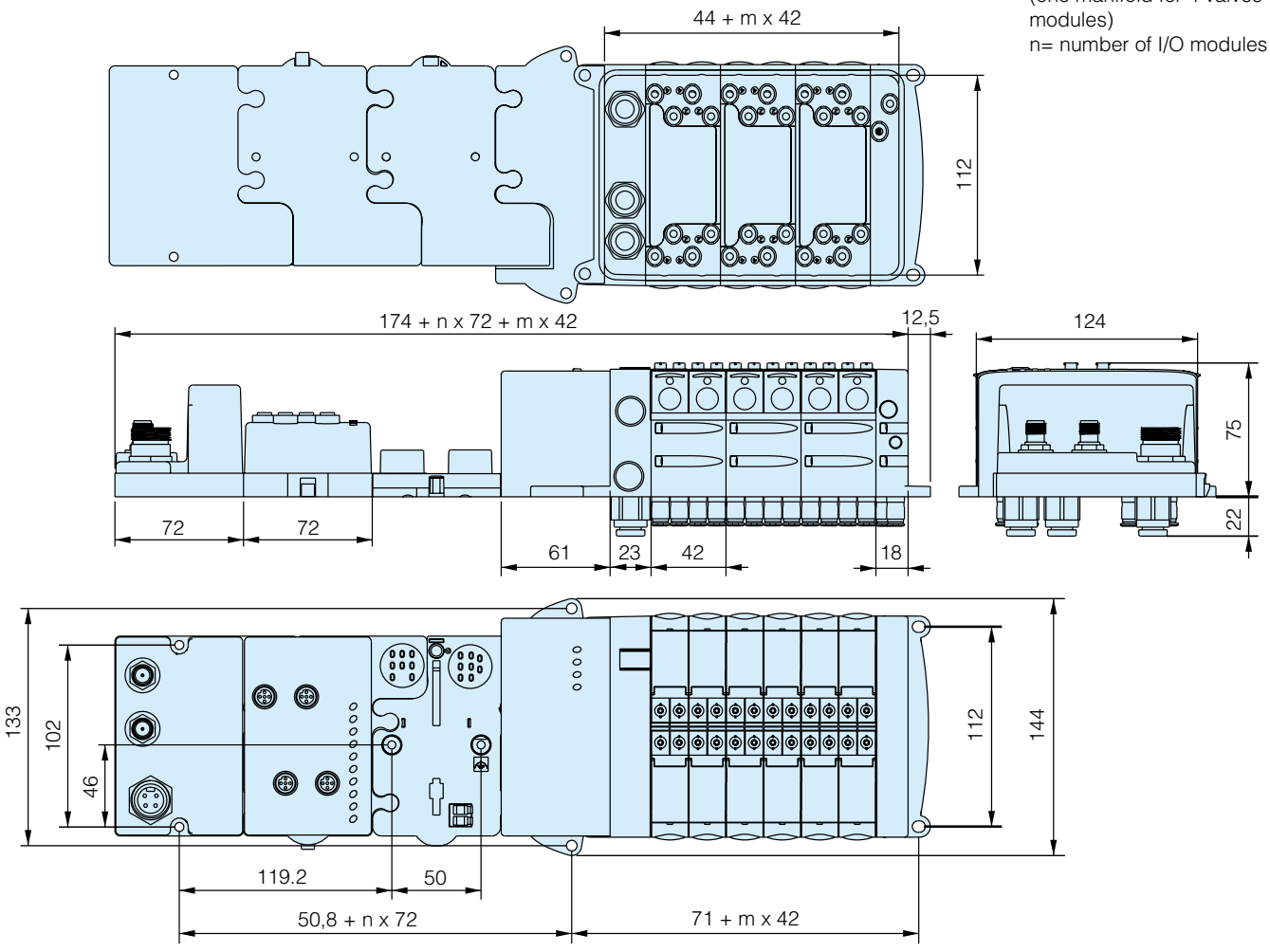
Isysnet with Isys Micro Valves

Side ported



M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

Bottom ported



Note:
m = number of manifolds (one manifold for 4 valves modules)
n= number of I/O modules

Moduflex Bus with Moduflex Valve

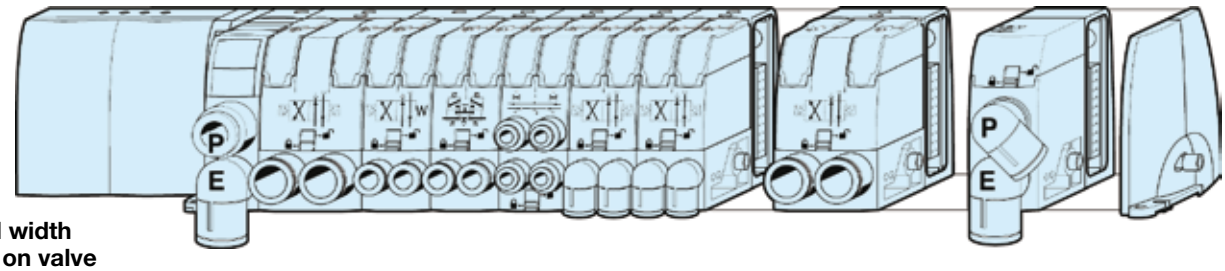
Electrical field bus head module width : 62 mm

Head and tail pneumatic module set width : 48 mm

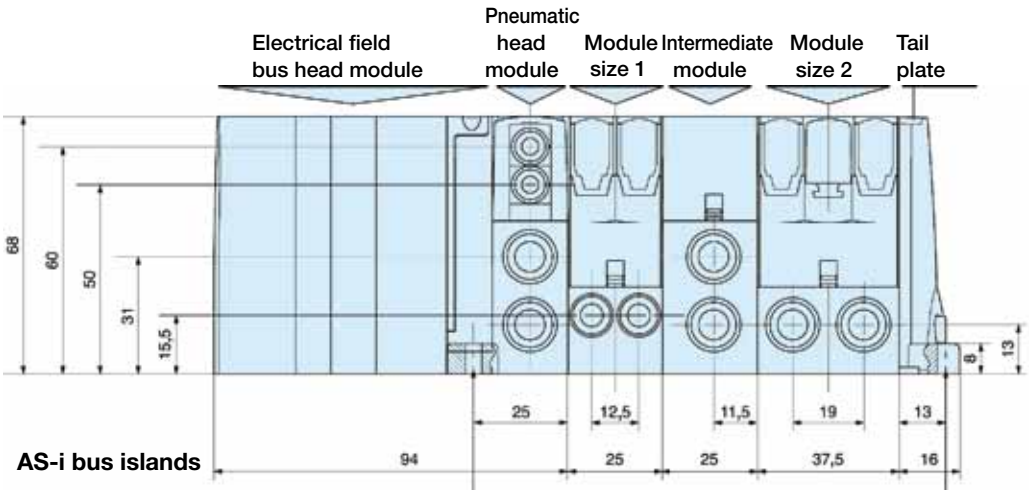
Modules size 1 width : 25 mm

Modules size 2 width : 37.5 mm

Intermediate module width :25 mm



Island total width depending on valve composition

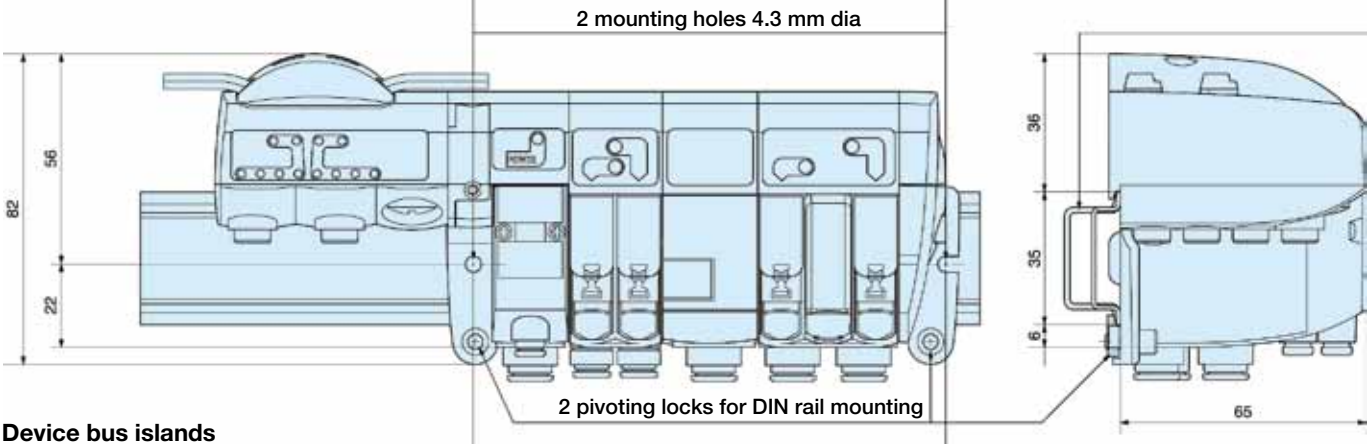


2 screws 4 mm dia. surface mounting

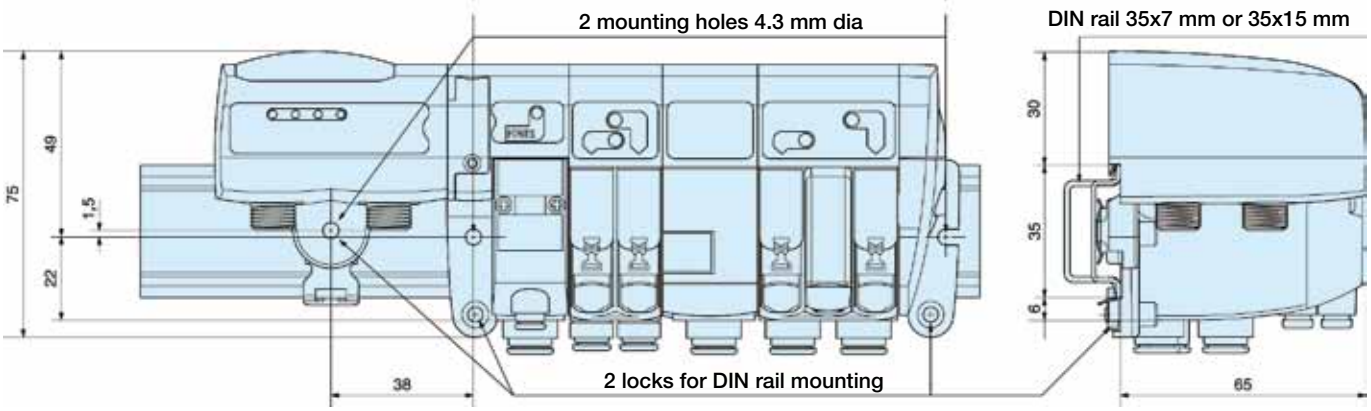
or DIN rail mounting

DIN rail 35x7 mm or 35x15 mm

AS-i bus islands

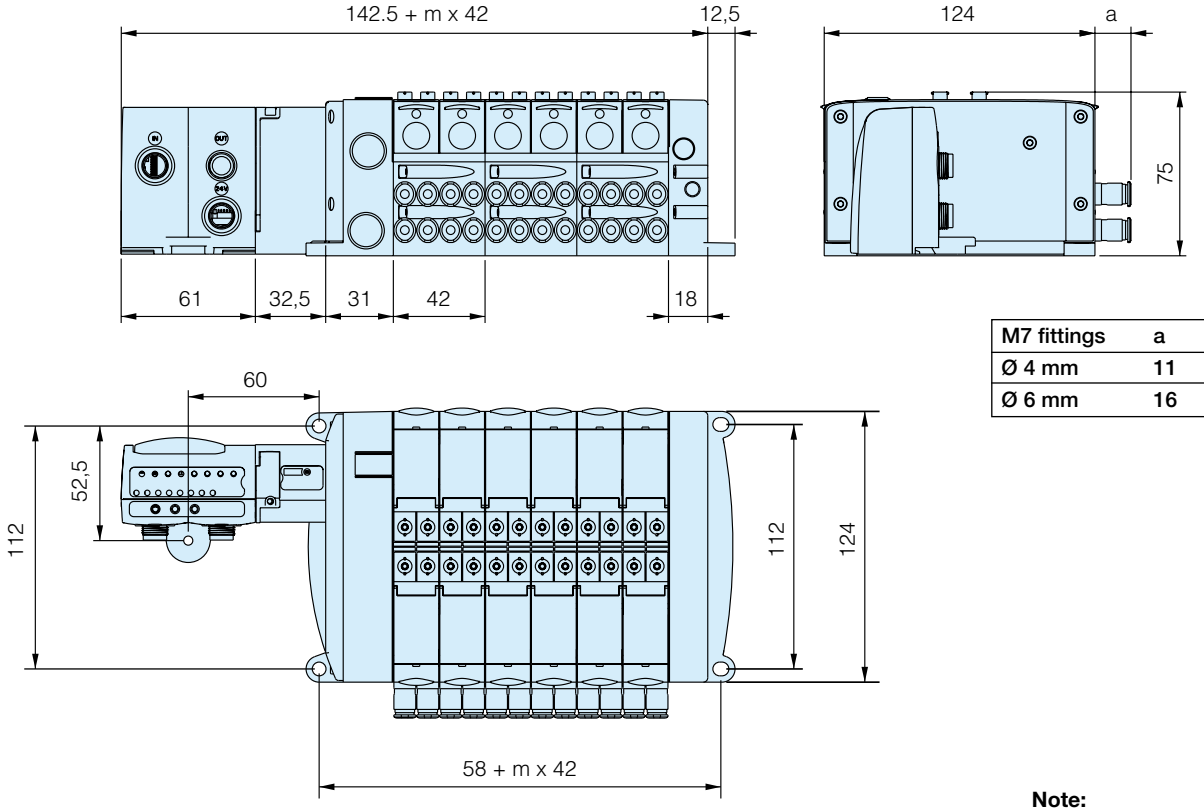


Device bus islands



Moduflex Bus with Isys Micro Valves

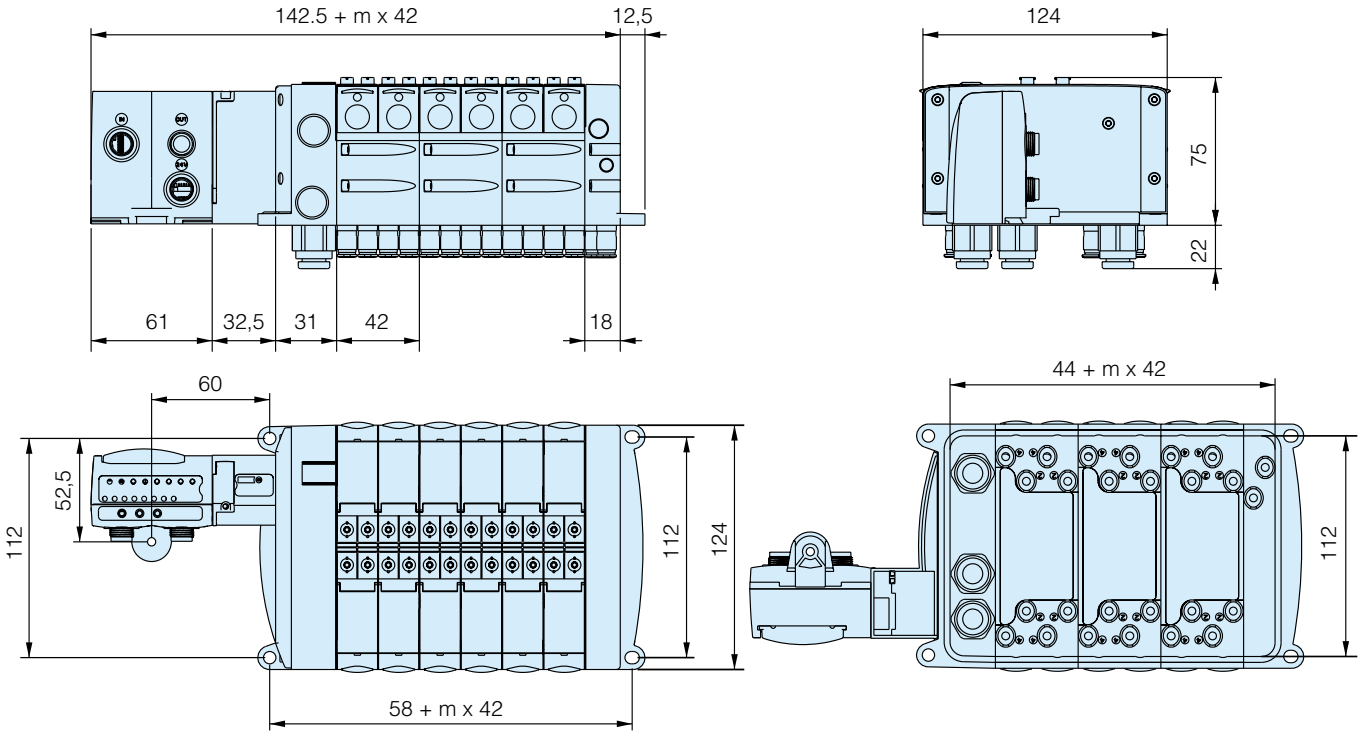
Side ported



M7 fittings	a
Ø 4 mm	11
Ø 6 mm	16

Note:
m = number of manifolds (one manifold for 4 valves modules)

Bottom ported



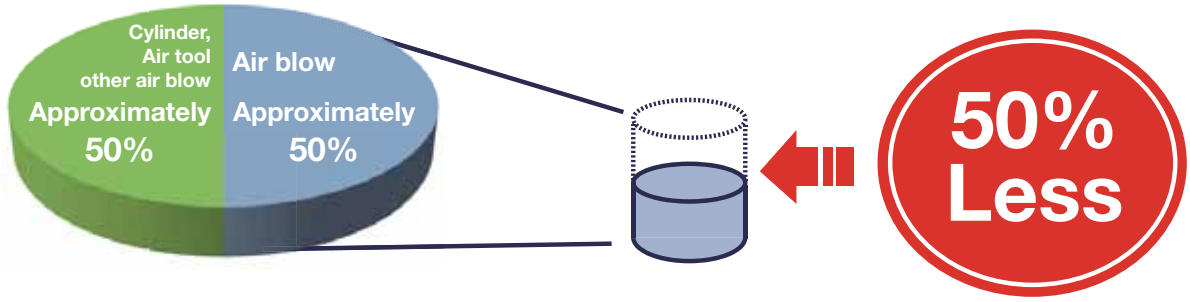
Air Saver Unit ASC/ASV Series

An easy solution to your environmental protection efforts!
The air saving unit contributes to power savings and CO2 reduction.

VMS2408

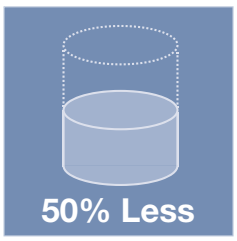
ASV5000

The air Saver Unit can reduce air consumption by up to 50% and improves blow efficiency in air blow applications.



Savings example (Using 100 ASC500, Unit 8 hours/day and 20 days)

Power Consumption	53,600kW / month	➡	26,800kW / month
CO_2 discharge	17 t	➡	8.5 t
Cost	EUR 7,000 / month	➡	EUR 3,500 / month



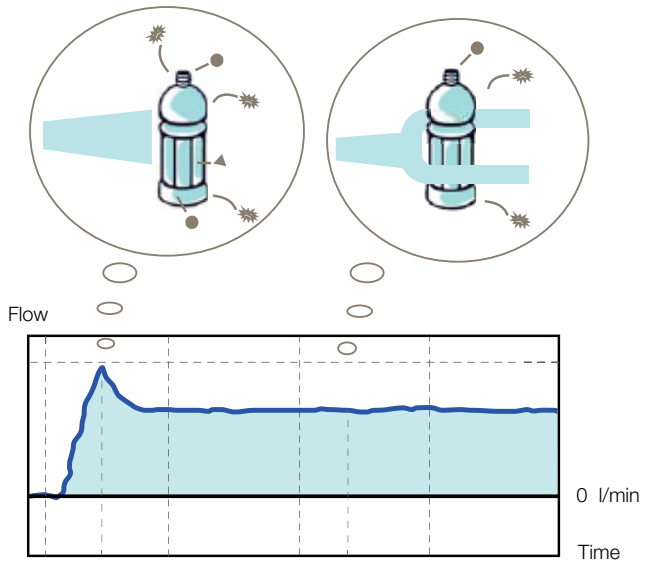
ASV200

ASC/ASO500

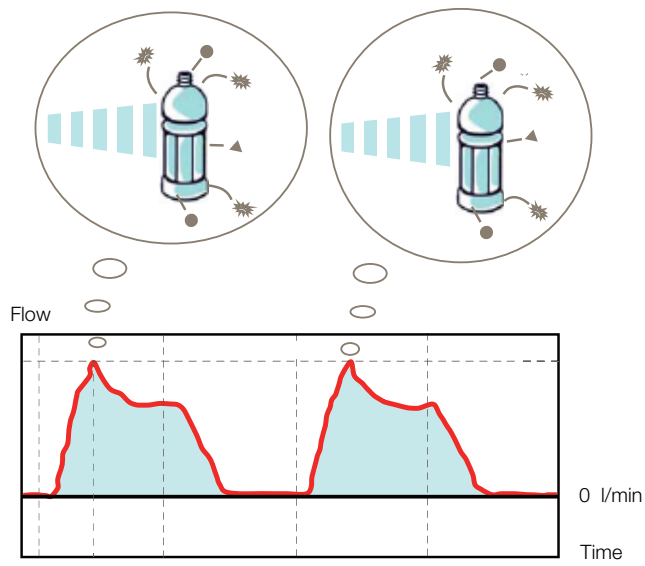
Pulsed air by Air Saver Unit reduces air consumption.

The Air saver unit is a valve that converts a continuous air blow to a pulsed air blow without the need for any other external control. Air is blown with a series of ON and OFF pulses. When the blow is OFF, there is no air consumption. This is how the air saver unit contributes to reduction in air consumption.

Continuous air blow



Pulsed air blow



Compared to continuous air blow, the pulsed air blow hits the work repeatedly, improving the efficiency of the air blow.

When an air saver unit is used, several positive effects can be expected. Air blow accounts for almost 50% of all compressed air used in plants. The air saver unit with a switching valve technology for air blow. Can reduce air consumption by up to 50% !

- Large reductions in plant air consumption.
- Savings in plant compressor power consumption.
- Reduction in plant CO_2 emissions.
- Big contribution to energy-saving activities.

Operating information

	Unit	ASV200	ASC500	ASO500	VMS2408	ASV5000
Function		Normally closed	Normally closed	Normally open	Normally closed	Normally closed
Fluid		Non-lubricated air				
Flow (at 0.5 MPa)	l/min (ANR)	150	450	450	2000	5000
Operating temperature	°C	-5 ~ 50 Note 1)				
Pressure range	MPa	0.3 ~ 0.8	0.2 ~ 0.7 Note 2)	0.2 ~ 0.5 Note 2)	0.3 ~ 0.8	0 ~ 0.8
Pilot supply	MPa	0.3 ~ 0.8	Internal pilot	Internal pilot	0.3 ~ 0.8 Note 3)	0.3 ~ 0.8
Blow		Pulse blow / Continuous blow				
Port size (1,2)		M5	Rc1/8	Rc1/8	Rc3/8	Rc1/2
Rated voltage	V	Power not necessary	DC24V		Power not necessary	
Power consumption	W	-	1.2W		-	
Grade of insulation		-	JIS grade E		-	
Permissible voltage fluctuation	%	-	±10		-	
Wiring		-	e-con standard 4 pole sockets		-	

Note 1) In case of using the Unit under 5°C, complete dry air by air dryer shall be supplied to prevent from freezing.
Note 2) Please note that supply air for port 1 should be more than 0.2MPa.
Note 3) Please note that supply air for port 1 should be more than 0.3MPa.

Order key

ASV200 - **AA** - **M5**

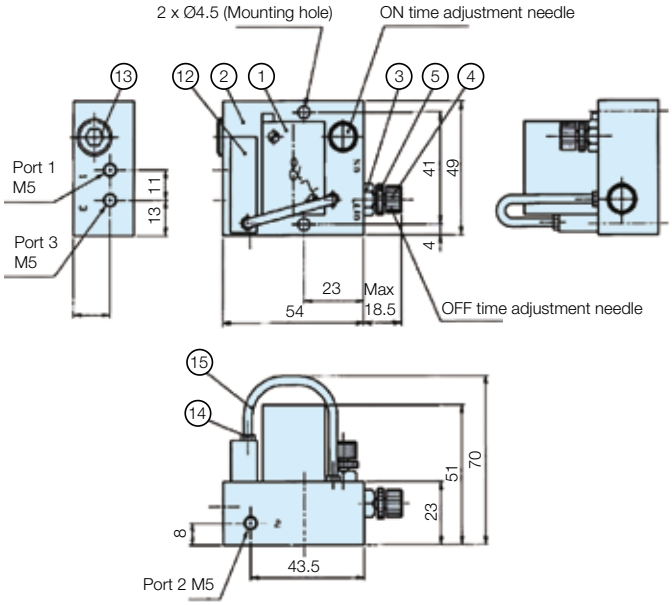
Model No.	
ASV200	Air Saver Unit pneumatically operated, Internal pilot port
ASC500	Normally closed (2 position single solenoid)
ASO500	Normally open (2 position single solenoid)
VMS2408	Normally closed (2 position single solenoid)
ASV5000	Normally closed (2 position single solenoid)

Voltage / Wiring	
AA	All air (No electrical wiring)
1W	24VDC, e-CON standard 4 polar socket

Port size / VMS2408 only	
03	Rc 3/8

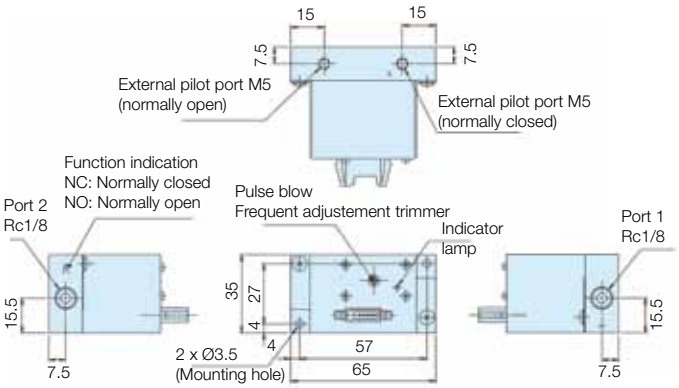
Port size	
M5	M5
01	Rc 1/8
04	Rc 1/2
-	Without sub-base

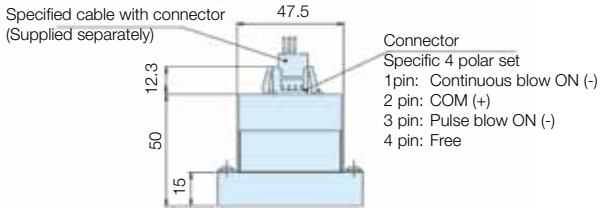
ASV200-AA-M5



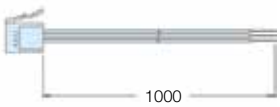
	Part name	Qty	Material treatment
1	PLN-D10	1	Assembly
2	Flicker base	1	Aluminium alloy
3	Cover	2	Brass
4	Needle	2	Aluminium alloy
5	Lock nut	2	Aluminium alloy
6	VCC232-NB-Z12-005	1	Assembly
7	Plug R1/4	1	Black oxide finish
8	BC-03-M3	2	Stainless
9	TN-3.2	8cm	Polyamide resin

ASC500-1W-01 / ASO500-1W-01



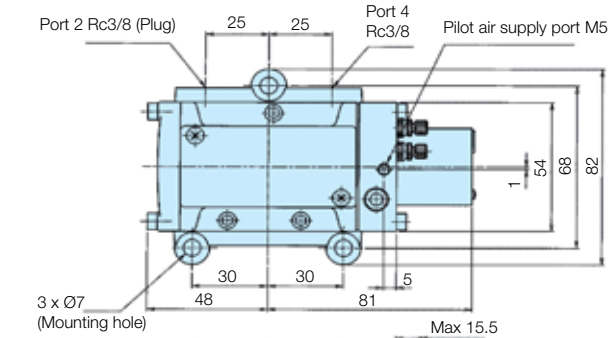


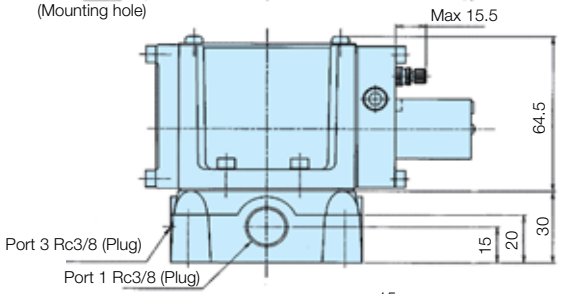
Pin no.	Colour
1	Black
2	Red
3	Yellow
4	(Free)

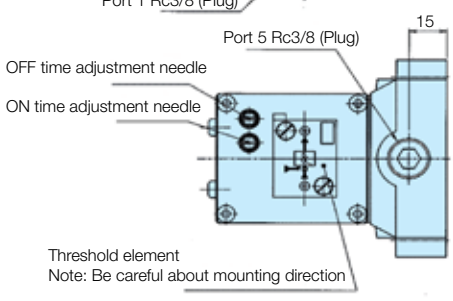


*Cable with specific connector "ASC-D24-CL10" (AWG26 ASC/ASO in common)

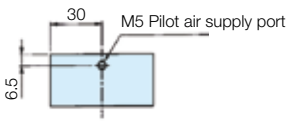
VMS2408-03-Z11-031

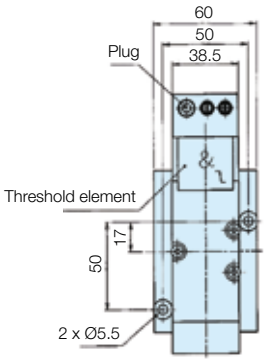


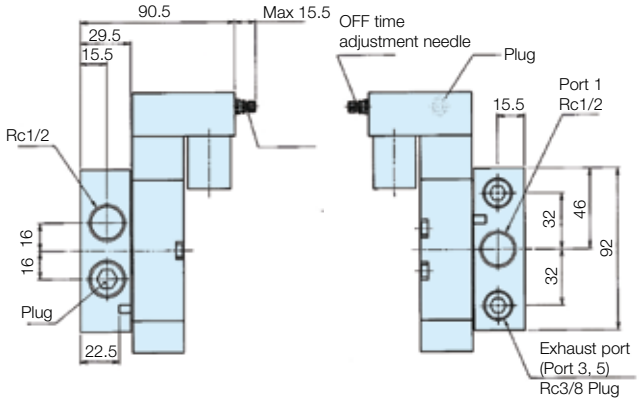




ASV5000







Miniature high-speed valves in stand alone, stackable or combined modules, incorporating standard logic functions. The range also includes timers and impulse modules.

- Complete range
- Stand alone, stackable or combinable modules
- Very fast response time
- Flexible and highly maintainable system
- DIN rail mounting
- Ø 4mm connection

For ATEX specific products contact Sales Office

Operating information

Working pressure	3 to 8 bar
Working temperature	-15 °C to 60 °C
Flow (Qmax)	180 l/min (PRD = 60 l/min)
ATEX approval:	CE Ex II 2 GD c 85°C

For more information see www.parker.com/euro_pneumatic

Logic sequencer

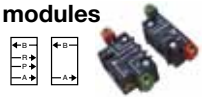
Step modules

	Order code
Without sub base Pneumatic output	**PSM-A10**
Visual indication of pneumatic output and manual override	**PSM-A12**
With sub base Wihtout manual overide	**PSM-B12**

Step module subbase

	Order code
Subbase	**PSB-A12**
Additional interlock	**PSV-A12**

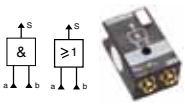
Set of head and tail modules and deviation modules



	Order code
Head & tail set	**PSE-A12**
Deviation standard	**PSD-A12**
Deviation for remote	**PSD-B12**

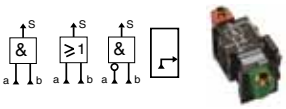
Logic elements

Line mounted elements



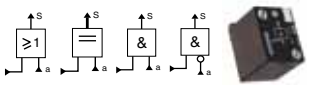
Logic Function	Order code
AND	**PLL-A11**
OR	**PLK-A11**
Clip on Din-rail	**PZM-L199**

Combinable elements



Logic Function	Order code
AND	**PLL-B12**
OR	**PLK-B12**
NOT	**PLN-B12**
INPUT	**PLE-B12**

Subbase mounted elements



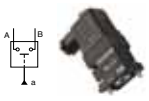
Logic Function	Order code
AND	**PLL-C10**
NOT inhibit standard	**PLN-C10**
NOT inhibit threshold	**PLN-D10**
OR	**PLK-C10**
YES regenerated	**PLJ-C10**

3 port subbase to be ordered separately.

Logic relays

Pressure switch

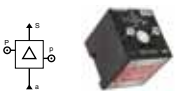
To be used with 3 port subbase



	Order code
With subbase	**PRE-A12**
Without subbase	**PRE-A10**

Amplifier relays

To be used with 4 port subbase



	Order code
With subbase	**PRD-A12**
Without subbase	**PRD-A10**

Memory relays

To be used with 4 port subbase

	Order code
With subbase	**PLM-A12**
Without subbase	**PLM-A10**

Sensor relays

	Order code
With subbase	**PRF-A12**
Without subbase	**PRF-A10**

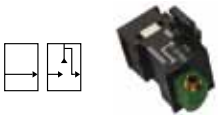
Time delay relays

To be mounted on 3 port subbase

Function	Timing	Order code
Output after timed period	0,1 to 3s	**PRT-E10**
	0,1 to 30s	**PRT-A10**
	10 to 180s	**PRT-B10**
With subbase	0,1 to 30s	**PRT-A12**
Output during timed period	0,1 to 3s	**PRT-F10**
	0,1 to 30s	**PRT-C10**
	10 to 180s	**PRT-D10**

Subbase for logic elements and relays

3 port and 4 port subbases

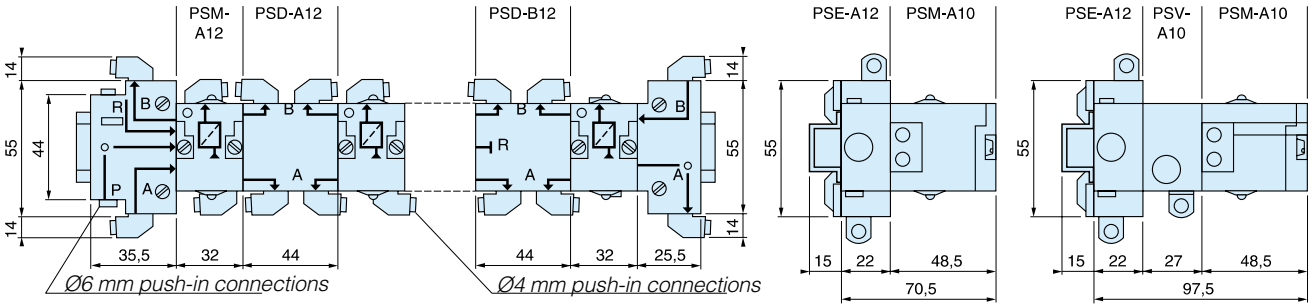


	Order code
Input module	**PZU-E12**
3 port "common input"	**PZU-A12**
3 port "cascade"	**PZU-C12**
4 port subbase*	**PZU-B12**

* For combination with memory relay and amplified relay.

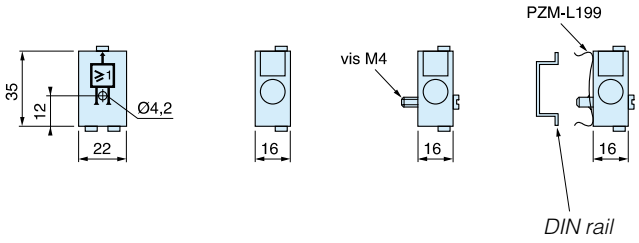
Dimensions, Logic processing

Modular sequencer



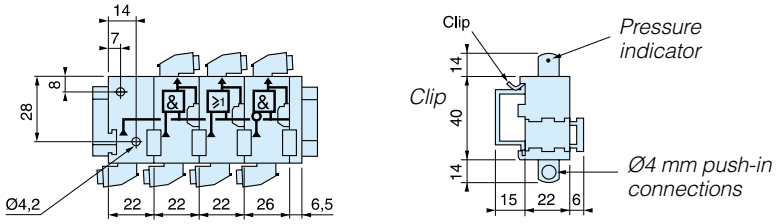
Line mounted logic elements

PLL-A11 and PLK-A11



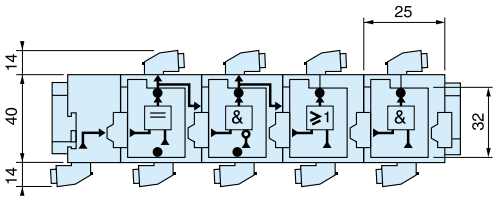
Combinable logic elements

PLE-B12 — PLL-B12 — PLK-B12 and PLN-B12

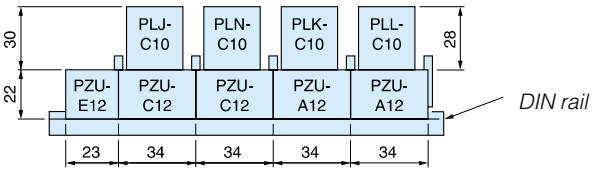


Logic elements mounted on 3-port modular subbases

PZU-E12

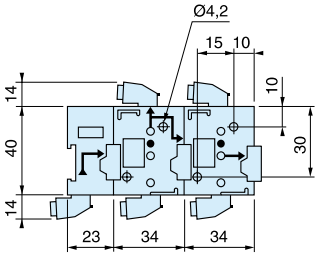


PLJ-C10 — PLN-C10 — PLK-C10 and PLL-C10 mounted on PZU-C12 and PZU-A12

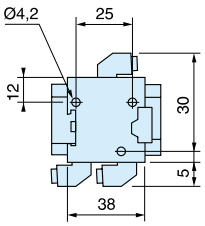


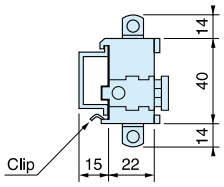
3 and 4-port modular subbases

PZU-E12 — PZU-C12 — PZU-A12



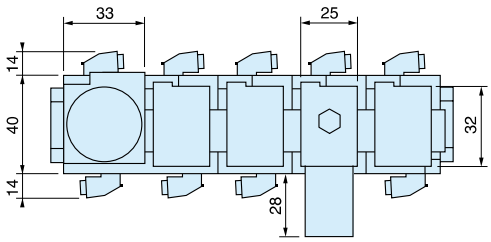
PZU-B12

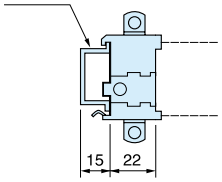


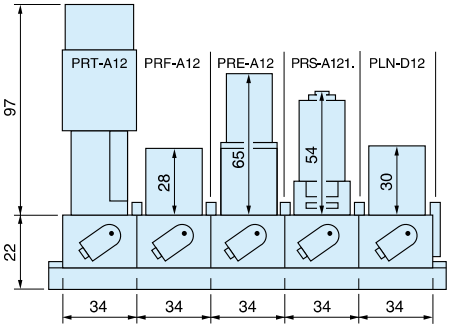


Relays mounted on 3-port modular subbases

PRT-A12 — PRF-A12 — PRE-A12 — PRS-A121 and PLN-D12

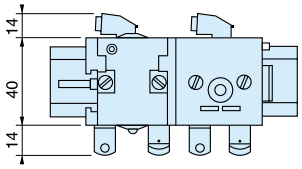


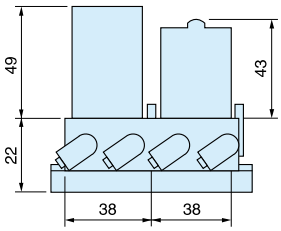




Relays mounted on 4-port modular subbases

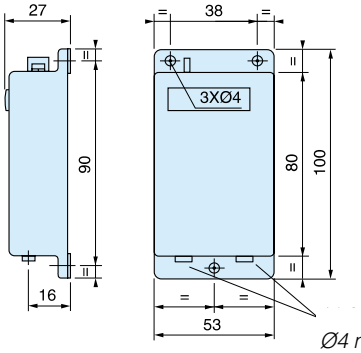
PLM-A12 and PRD-A12





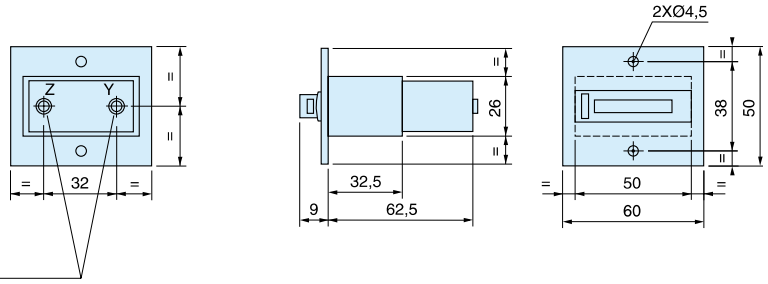
Totalising counters

PCT-A11



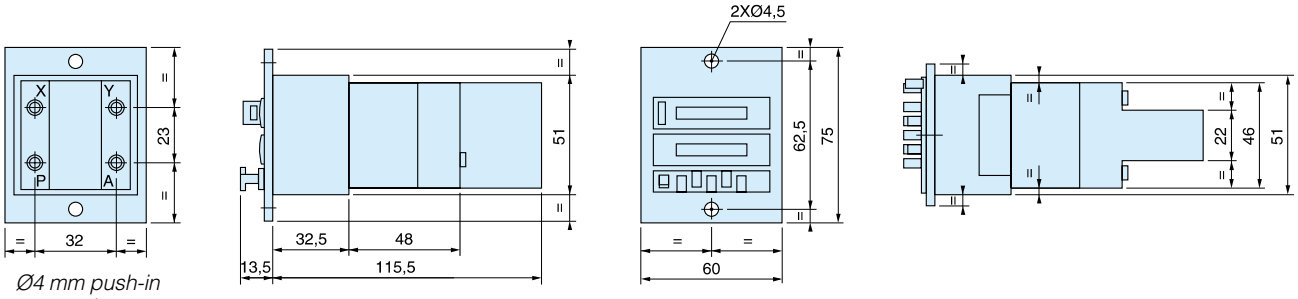
Ø4 mm push-in connections

PCT-B11



Digital display timers

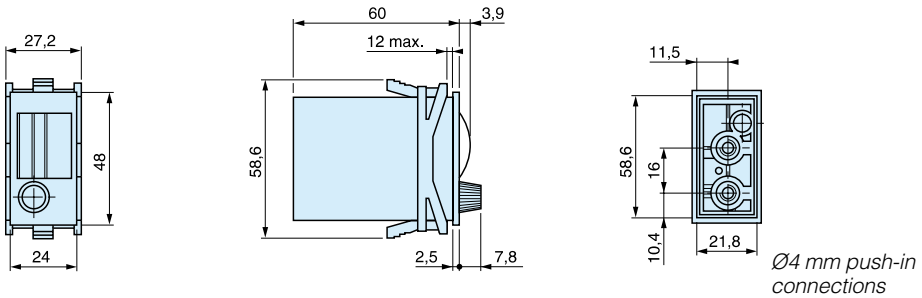
PCM-A11 to PCM-B11



Ø4 mm push-in connections

Timers with calibrated dial

PCM-F11 and PCM-G11



Ø4 mm push-in connections

Designed to fit the standard electrical Ø22mm knock out, they can provide dual pneumatic and electrical output signals. A variety of button and switch actuators are available.

- Facia mounted operation
- 3/2 NO or NC
- Modular construction
- Wide range of actuators
- Dual pneumatic an electrical output signal

For ATEX specific products contact Sales Office

Flow characteristics

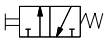
PXB-B3••	Qmax = 60 l/min Qn = 30 l/min
PXB-B4••	Qmax = 240 l/min Qn = 120 l/min
Connections	Ø 4 mm push-in

Operating information

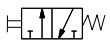
Push button valves - Visual indicators

Working pressure	
PXB-B3••	1 to 9 bar
PXB-B4••	1 to 10 bar
PXV-••	1 to 8 bar
Working temperature	-15°C to +60°C
ATEX approval:	CE Ex II 3 GD

Spring return push buttons

Symbol	Flow	Order code
	60 l/min	**PXB-B3111BA2**
	240 l/min	**PXB-B4131BA2**

Black - With 1 NC valve

Symbol	Flow	Order code
	60 l/min	**PXB-B3111BA3**
	240 l/min	**PXB-B4131BA3**

Green - With 1 NC valve

Symbol	Flow	Order code
	60 l/min	**PXB-B3111BA4**
	240 l/min	**PXB-B4131BA4**

Red - With 1 NC valve

Mushroom head push buttons

Symbol	Flow	Order code
	60 l/min	**PXB-B3111BC2**
	240 l/min	**PXB-B4131BC2**

Black - Spring return - With 1 NC valve

Symbol	Flow	Order code
	60 l/min	**PXB-B3111BT4**
	240 l/min	**PXB-B4131BT4**

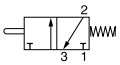
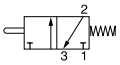
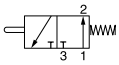
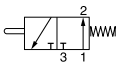
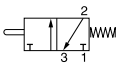
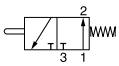
Red - Latching - With 1 NC valve

Selector switches

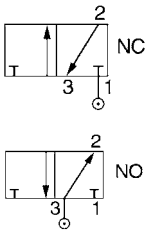
Symbol	Flow	Order code
	60 l/min	**PXB-B3111BD2**
	240 l/min	**PXB-B4131BD2**

Black - 2 positions - With 1 NC valve

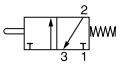
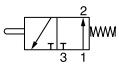
Additional switch valves, electrical contact block and mounting brackets

Symbol	Flow	Order code
	60 l/min NC	**PXB-B3911**
	240 l/min NC	**PXB-B4931**
	60 l/min NO	**PXB-B3921**
	240 l/min NO	**PXB-B4931**
	60 l/min NC	**PXB-B3912**
	60 l/min NO	**PXB-B3922**

Contact	Order code
Normally open NO	**ZBE-101**
Normally closed NC	**ZBE-102**



All PXB-B4 valves can be connected either as normally closed 3/2 valve (NC) or normally open 3/2 valve (NO) as required, by connecting the primary air supply to port 1 or port 3.

Symbol	Flow	Order code
	60 l/min NC	**PXB-B3111B**
	60 l/min NO	**PXB-B3121B**

	Description	Order code
	Mounting block	**ZB4-BZ009**

Spring return push buttons

Spring return

	Colour	Order code
Flush	Black	**ZB4-BA2**
	Green	**ZB4-BA3**
	Red	**ZB4-BA4**

Mushroom head

	Colour	Order code
Ø40 mm spring return	Black	**ZB4-BC2**
	Green	**ZB4-BC3**
	Red	**ZB4-BC4**

Selector switches

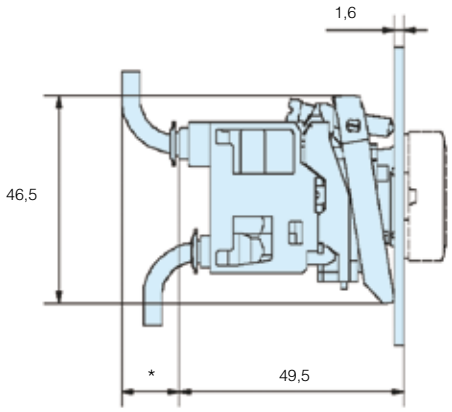
Black handle

	Function	Order code
Standard	2 positions fixed	**ZB4-BD2**
	3 positions fixed	**ZB4-BD3**

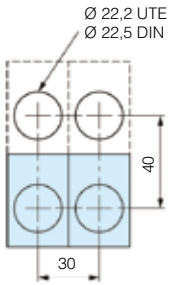
Visual indicators

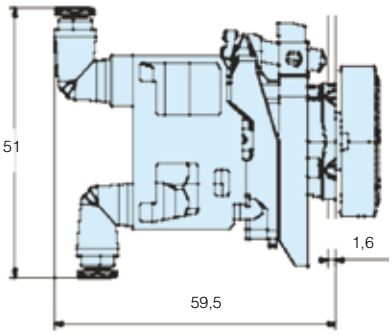
	Colour actuated	Colour unactuated	Order code
	Green	Black	**PXV-F131**
	Red	Black	**PXV-F141**
	Yellow	Black	**PXV-F151**
	Blue	Black	**PXV-F161**
	White	Black	**PXV-F111**
	Green	Red	**PXV-F1314**

PXB-B3

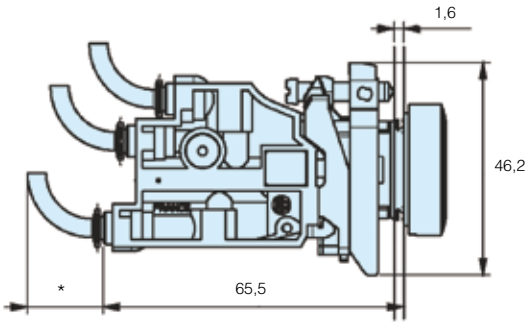


Body width 30mm
* With 2 x 4mm tube = 10
With 2,7 x 4mm tube = 15

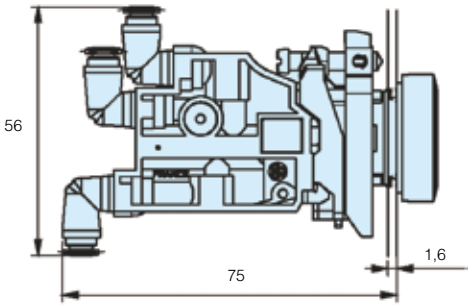




PXB-B4



Body width 30mm
* With 2 x 4mm tube = 10
With 2,7 x 4mm tube = 15



Compact 3/2 normally closed metal bodied valves with push-in air connections. Designed for the process duty cycle with high durability. Ideal for the process or packaging industry.

- High durability
- Very good repeat accuracy
- Design for process duty cycle
- Push-in connection
- Versatile and easily maintained
- Miniature size

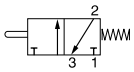
For ATEX specific products contact Sales Office

Operating information

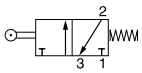
Working pressure; PXC-M	3 to 8 bar			
Working temperature	-15 °C to +60 °C			
	PXC-M111	**PXC-M121**	**PXC-M521**	**PXC-M601**
Flow (Qmax):	60 l/min	85 l/min	250 l/min	250 l/min

For more information see www.parker.com/euro_pneumatic

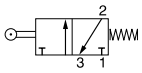
Bore Ø1,5 mm, flow 60 Nl/min

Symbol	Actuator	Return	Operating forces at 6 bar, N	Order code
	Steel plunger	Spring	11	**PXC-M111**

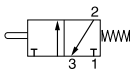
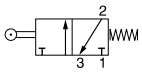
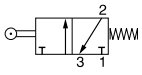
Bore Ø1,5 mm, flow 85 Nl/min

Symbol	Actuator	Return	Operating forces at 6 bar, N	Order code
	Plastic roller	Spring	4,5	**PXC-M121**
	Steel roller	Spring	4,5	**PXC-M131**

Bore Ø2,5 mm, flow 250 Nl/min

Symbol	Actuator	Return	Operating forces at 6 bar, N	Order code
	Plastic roller	Spring	7	**PXC-M521**

3/2 compact limit switches - With Ø4mm Push-in connections with pipeable exhaust port
Bore Ø2,5mm, flow 250 Nl/min - With plunger head

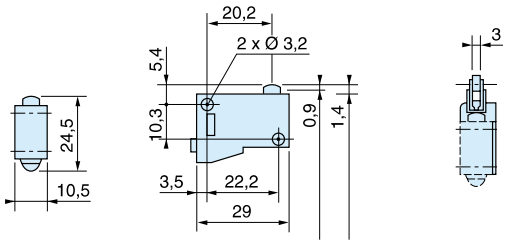
Symbol	Actuator	Return	Operating forces at 6 bar, N	Order code
	Steel plunger	Spring	24	**PXC-M601A110**
	Steel roller plunger	Spring	24	**PXC-M601A102**
	90° Steel roller plunger	Spring	24	**PXC-M601A103**

Dimensions, Limit switches, Series PXC

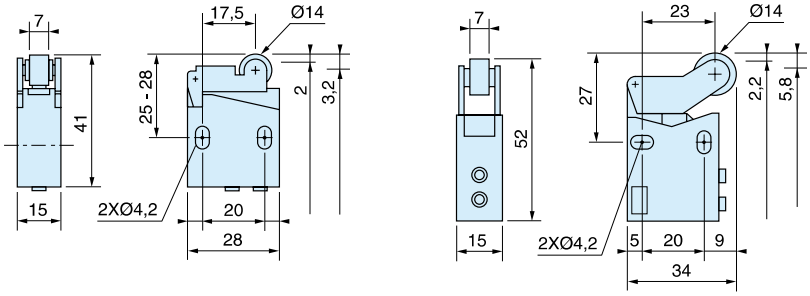
All dimensions in mm unless otherwise stated

3/2 miniature limit switches

PXC-M111 **PXC-Z12** **PXC-Z11**

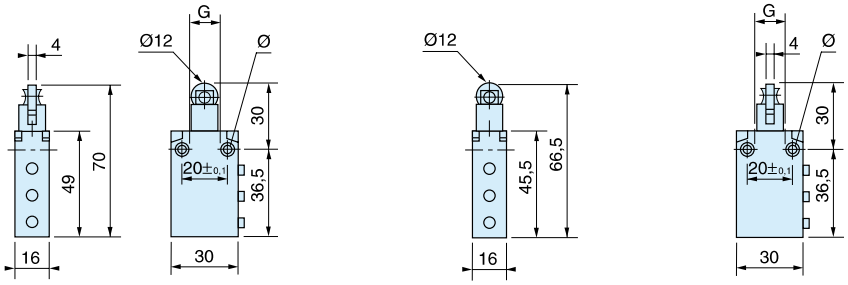


PXC-M121 - PXC-M131 **PXC-M521**

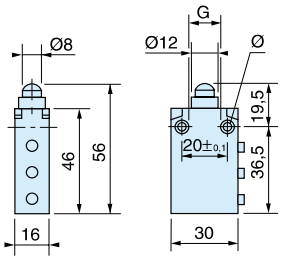


3/2 compact limit switches

PXC-M601A102 **PXC-M601A103**



PXC-M601A110



Ergonomically designed units to provide protection against accidental operation of machines. Completely sealed units prevent tampering and comply with latest European safety standards.

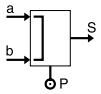
- Ergonomic design
- Robust polymer or metal enclosure
- Meets requirements for protection against accidental operation and tampering
- Metal enclosure features a wrist-rest bar which helps prevent illness due to repetitive actions
- Conforms to EN574 and EN954-1 requirements

Operating information

Working pressure	3 to 8 bar
Working temperature	-5 °C to +60 °C

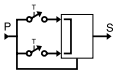
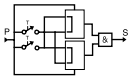
For more information see www.parker.com/euro_pneumatic

Control module only

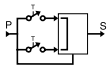
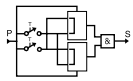
Symbol	Connections	Order code
	Ø4 mm Push-in	**PXP-A11**

Complete units

Polymer enclosure, with two Ø40 mm push button with protective guards and control module

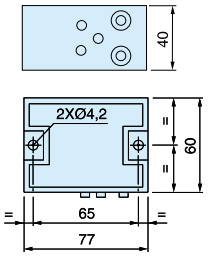
Symbol	Connections	Number of control modules	Order code
	Ø4 mm Push-in	1	**PXP-C111**
	Ø4 mm Push-in	2	**PXP-D121**

Metal enclosure, with two Ø60 push buttons, wrist restbar, built in protective guard and control module

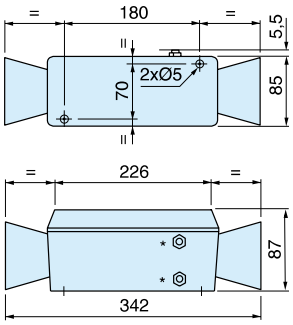
Symbol	Connections	Number of control modules	Order code
	Push-in Ø6 mm for supply Ø4 mm for output	1	**PXP-S111**
	Push-in Ø6 mm for supply Ø4 mm for output	2	**PXP-S121**

Dimensions

PXP-A11

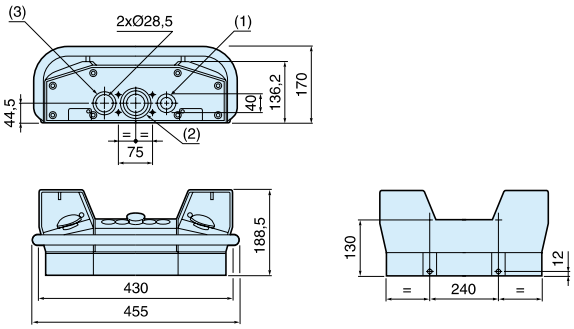


PXP-C111 and PXP-D121



* Ø4 mm push-in connections
** Ø6 mm push-in connections

PXP-S111 and PXP-S121



- 12 mm solenoids sub-base mounting type
- Instant push-in fittings for inlet (Ø 8 mm) and outlets (Ø 4 mm)
- Brass silencer
- Quick response time
- Multi-functional manual override

Operating Information

Working pressure	0,9 to 8 bar
Power DC	1 W
Voltage	24 VDC
Voltage tolerance	+/- 10 %
Electrical connection	M8
Flow rate at 6 bar input, 1 bar pressure drop	15Nl/min
Valve function	3/2 NC
Response time	5 ms
Frequency	200 cycles/min

Materials

Manifold complete :	Polyamide	Aluminium
Armature tube:	Brass	Stainless steel
Plunger & core:	Corrosion resistant	Cr-Ni steel
Seals:	FKM (Viton™)	Low temp FKM
Screws:	Zinc plated	Stainless steel

Coil

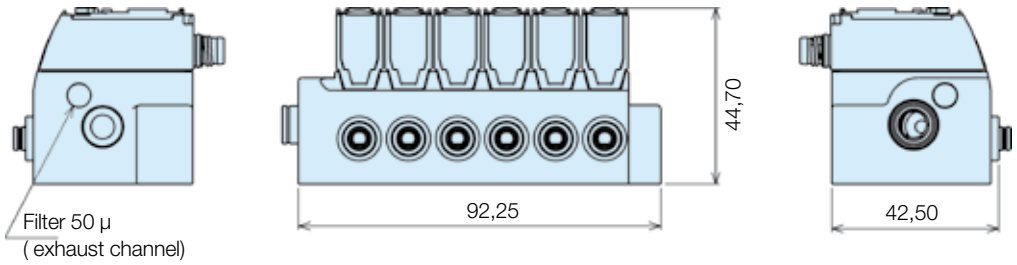
Encapsualtion material:	Thermoplastic as standard thermoset resin for M12 connection

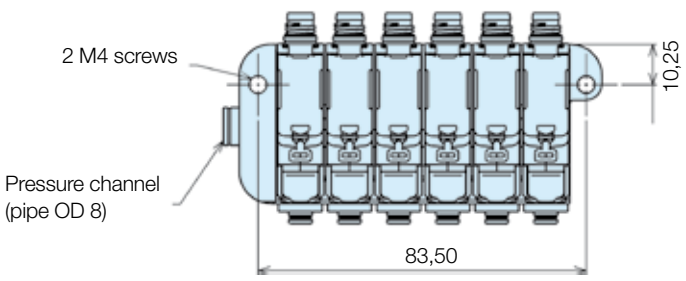
Order codes

Designation		Weight (kg)	Order code
5 stations manifold complete		0,130	**P2DFIX5PC**
6 stations manifold complete		0,155	**P2DFIX6PC**
Electrical connector *	2 m	-	**P8LS08L226C**
	5 m	-	**P8LS08L526C**
	9 m	-	**P8LS08L926C**

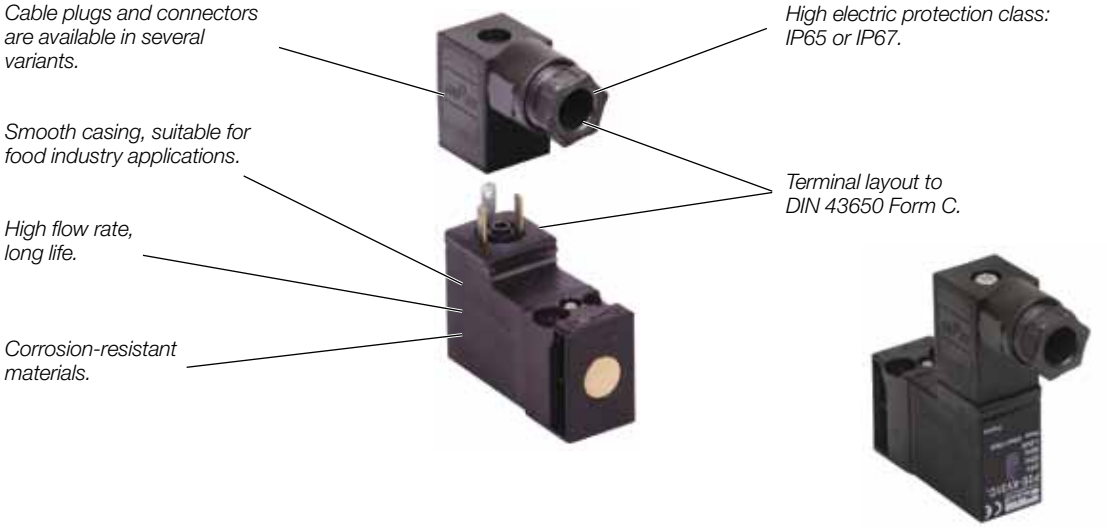
* Clip-on individual electrical connector, for each solenoid pilot, IP67 protected,including LED, voltage surge protection and flying lead cable

Dimensions (mm)





Solenoid operators - 15 mm



The P2E- •V solenoid operator range

The P2E-•V range of operators are normally closed (NC) 3/2 solenoid valves, with exceedingly compact dimensions in relation to their capacity.

International standard

The port connection pattern complies with a new French CNOMO standard (in process of drafting), with cable plug connections in accordance with DIN 43650 Form C.

Compact design

Overall dimensions of the P2E-•V operators are substantially less than those of earlier generations of solenoid operators.

High flow capacity

High flow capacity relative to the electrical operating power as a result of optimised internal flow paths.

Corrosion-resistant design

The valve is made of thermoplastic material and stainless steel, with Viton™ and nitrile rubber seals for excellent corrosion resistance.

Clean lines suitable for food industry applications, P2E-QV

The valve has been designed in conjunction with several machine manufacturers and organisations in the food processing industry, with corrosion-resistant materials and smooth lines being important starting points. The valve and its accessories have been designed so that there are no gaps or crevices in which dirt could collect.

High reliability

Few moving parts result in high reliability, rapid changeover and very long life.

Low power demand

The solenoids have a power demand of 1.2 W at 24 VDC and 1.6 VA at 24 VAC, 115 V AC and 230 VAC.

High protection class

The protection class is IP 67 when connected using the cable plug with a moulded cable. When using the standard cable plug for fitting by the user, the protection class is IP65, the valve, with Fast-on connectors, has an encapsulation class of IP 20.

Insensitive to dirty air

The use of generously sized flow paths (1.0 mm diameter) means that the valve can be used in normal industrial environments without problems of blocking.

Manual override as option

The operators can be supplied with our without manual override. The manual override device is available as a screwdriver groove or with a control arm, and is either spring return (blue) or lockable (yellow).

Order key, solenoid operators (15mm)

P 2 E - Q V 3 2 C 3

	Valve family
P2E	Solenoid operator

	Subfamily
	Solenoid operator, 15 mm wide Electric connection acc. to ISO 15217 Form C El/supply connection on opposite side
K	Standard version
M	Mobile version
Q	Food industry version
H	Hight flow

	Valve type / Function
3	3/2 valve,normally closed (NC)
1	3/2 valve,normally opened (NO)

	Type of current
1	AC 50 Hz
2	DC
4	AC 50/60 Hz
5	Mobile and wide band only

	Voltage
B	12 V
C	24 V
D	48 V
F	115 V*
J	230 V*
W	37,5 V**
T	72 V**
Y	78 V**
V	96 V**
E	110 V**

	Overriders
0	Without
1	Non locking (blue)
2	Locking (yellow)
3	Extended non locking (blue)
4	Extended locking (yellow)

* For standard and food type only
** For mobile "M" version only

Technical data

	NC, Standard	NC, Food[1]	NC, Mobile[2]	NC, Hight flow
Working pressure	0 to10 bar	0 to 10 bar	0 to 10 bar	0 to 10 bar
Working temperature	-15 °C to +60 °C	-15 °C to +60 °C	-40 °C to +70 °C	-15 °C to +50 °C
Orifice	1,0 mm	1,0 mm	1,0 mm	1,4 mm
Flow Qmax	33 Nl/min	33 Nl/min	22 Nl/min	50 Nl/min
Power, hold	DC 1,2 W / AC 1,6 VA *	DC 1,2 W / AC 1,6 VA *	DC 1,4 W	DC 1,8 W / AC 2,4 VA
Power, surge	DC 1,2 W / AC 3,5 VA *	DC 1,2 W / AC 3,5 VA *	DC 1,4 W	DC 1,8 W / AC 5,5 VA
Connection time	100%	100%	100%	100%
Voltage tolerance	+10%/–15%	+10%/–15%	+25%/–30%	+10%/–15%
Electric connection:	DIN 43650 Form C			
Port pattern:	To future CNOMO standard			
Protection:	IP 65			
Approval:	Standard solenoids are UL 429 recognized and marked with the following symbol			
Working media:	All neutral media, such as compressed air, water, hydraulic oil and many gases.			
1) Design:	Completely smooth exterior, suitable for food industry.			
2) Mobile standard	According to European standard EN 50 155.			

* Power , hold for 230VAC 2.4VA
Power, surge for 230VAC 5.5VA

Transients

Interrupting the current through the solenoid coil produces momentary voltage peaks which, under unfavourable conditions, can amount to several hundred times the rated operating voltage. Normally, these transients do not cause problems, but to achieve the maximum life of relays in the circuit (and particularly of transistors, thyristors and integrated circuits) it is desirable to provide protection by means of voltage-dependent resistors (varistors). All cable plugs with a yellow LED also incorporate such protection.

Service life

With compressed air at 6 bar, 20 °C and complying with the requirements for compressed air quality as set out in ISO8573-1 norm (class 4 for dry and class 5 for filtered air), the valves should have a life of at least 50 million cycles.

Materials

Operator

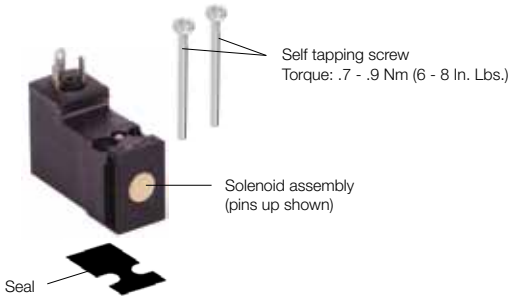
Body, coil casing	Thermoplastic
Internal metal parts	Steel
Screws	Stainless steel
Bottom plug	Thermoplastic
Sealing materials	FPM (Viton™) and nitrile rubber

Cable head

Sheath	Thermoplastic
Retaining screw	Stainless steel, zinc-plated steel

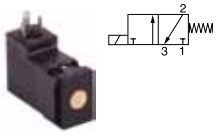
Solenoid Operators - 15 mm

Electrical connection EN175301-803 C/ISO15217 (Ex DIN 43650C)



Solenoids 15 mm NC, standard

(Note! Mounting screws included in basic valve)

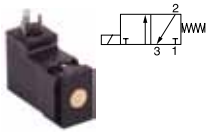


Voltage	Weight kg	Order code Without manual override	Weight kg	Order code Override, blue, non locking flush	Weight kg	Order code Override, yellow, locking flush
12 VDC	0,038	**P2E-KV32B0**	0,038	**P2E-KV32B1**	0,038	**P2E-KV32B2**
24 VDC	0,038	**P2E-KV32C0**	0,038	**P2E-KV32C1**	0,038	**P2E-KV32C2**
48 VDC	0,038	**P2E-KV32D0**	0,038	**P2E-KV32D1**	0,038	**P2E-KV32D2**
24 VAC 50Hz	0,038	**P2E-KV31C0**	0,038	**P2E-KV31C1**	0,038	**P2E-KV31C2**
48 VAC 50/60Hz	0,038	**P2E-KV34D0**	0,038	**P2E-KV34D1**	0,038	**P2E-KV34D2**
115 VAC 50Hz/ 120 VAC 60Hz	0,038	**P2E-KV31F0**	0,038	**P2E-KV31F1**	0,038	**P2E-KV31F2**
230 VAC 50Hz/ 240 VAC 60Hz	0,038	**P2E-KV31J0**	0,038	**P2E-KV31J1**	0,038	**P2E-KV31J2**

Voltage	Weight kg	Order code Override extended, blue, non locking flush	Weight kg	Order code Override extended, yellow, locking flush
24 VDC	0,038	**P2E-KV32C3**	0,038	**P2E-KV32C4**
24 VAC 50Hz	0,038	**P2E-KV31C3**	0,038	**P2E-KV31C4**

Solenoids 15 mm NC, mobile

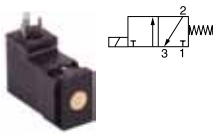
(Note! Mounting screws included in basic valve)



Voltage	Weight kg	Order code Without manual override	Weight kg	Order code Override, blue, non locking flush
12 VDC	0,038	**P2E-MV35B0**	0,038	**P2E-MV35B1**
24 VDC	0,038	**P2E-MV35C0**	0,038	**P2E-MV35C1**
37,5 VDC	0,038	**P2E-MV35W0**	0,038	**P2E-MV35W1**
48 VDC	0,038	**P2E-MV35D0**	0,038	**P2E-MV35D1**
72 VDC	0,038	**P2E-MV35T0**	0,038	**P2E-MV35T1**
78 VDC	0,038	**P2E-MV35Y0**	0,038	**P2E-MV35Y1**
96 VDC	0,038	**P2E-MV35V0**	0,038	**P2E-MV35V1**
110 VDC	0,038	**P2E-MV35E0**	0,038	**P2E-MV35E1**

Solenoids 15 mm NC, food industry version

(Note! Mounting screws included in basic valve)



Voltage	Weight kg	Order code Without manual override	Weight kg	Order code Override, blue, non locking flush	Weight kg	Order code Override, yellow, locking flush
24 VDC	0,038	**P2E-QV32C0**	0,038	**P2E-QV32C1**	0,038	**P2E-QV32C2**
48 VDC	0,038	**P2E-QV32D0**	0,038	**P2E-QV32D1**	0,038	**P2E-QV32D2**
24 VAC 50Hz	0,038	**P2E-QV31C0**	0,038	**P2E-QV31C1**	0,038	**P2E-QV31C2**
48 VAC 50/60Hz	0,038	**P2E-QV34D0**	0,038	**P2E-QV34D1**	0,038	**P2E-QV34D2**
115 V 50Hz/ 120 V 60Hz	0,038	**P2E-QV31F0**	0,038	**P2E-QV31F1**	0,038	**P2E-QV31F2**
230 VAC 50Hz/ 240 VAC 60Hz	0,038	**P2E-QV31J0**	0,038	**P2E-QV31J1**	0,038	**P2E-QV31J2**

Voltage	Weight kg	Order code Override extended, blue, non locking flush	Weight kg	Order code Override extended, yellow, locking flush
24 VDC	0,038	**P2E-QV32C3**	0,038	**P2E-QV32C4**
24 VAC 50Hz	0,038	**P2E-QV31C3**	0,038	**P2E-QV31C4**
115 VAC 50 Hz	0,038	**P2E-QV31F3**	0,038	**P2E-QV31F4**
230 VAC 50 Hz	0,038	**P2E-QV31J3**	0,038	**P2E-QV31J4**

In accordance with the EU Machine Directive, EN 983, solenoid valves with manual override should have spring-return operating arms for safety.

2/2-Way Direct Operated Valve

General application valves for dry or lubricated air, neutral gases and liquids

Description:
- 2/2-Way Direct Operated Valve - Normally Closed.
- Coil IP65 for 2 P + E plug according to DIN 43650 type A
- Power Consumption 8W (AC), 9W (DC).

Applications:
- Shut-off and control (On-Off) of water, air, light oils, steam and inert gases
- Humidifiers, welding systems, industrial washing machines, automatic dispensers, diesel oil burners, sterilizers, compressors.

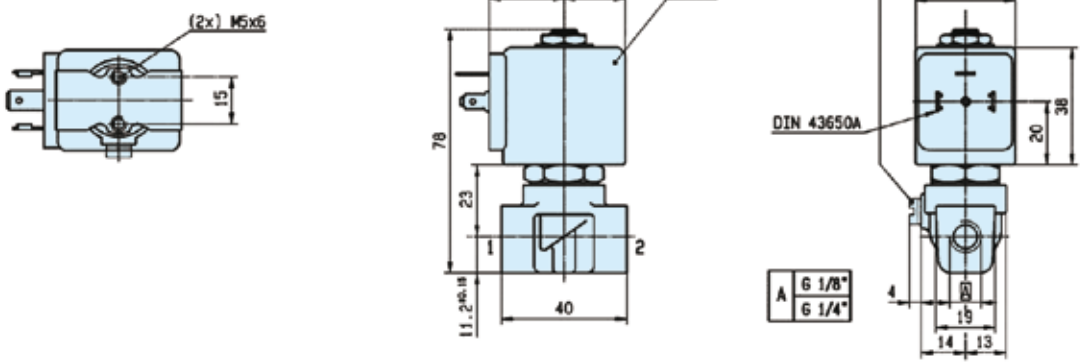
Temperature Range:
- Min: -10°C | Max: see table

Seals Material:
- See table

Advantages:
- Versatile product for many 2/2 NC valve requiring applications, robust design.

Port size	Orifice	K_v	Admissible differential pressure (bar)			Fluid Temp.	Seal Material	Reference number			Options
G	mm	l/min	Min.	Max. DC	Max. AC		C°	Valve	Housing	Coil	
2/2-Way Direct Operated Valve											Normally CLOSED
1/8”	2.5	3.50	0	10.0	28.0	100°C	Ruby	E121K23	2995	481865	-
1/8”	3.0	4.50	0	7.0	10.0	100°C	FKM	121K1302	2995	481865	-
1/4”	1.2	0.85	0	36.0	80.0	100°C	Ruby	E121K65	2995	481865	-
1/4”	1.5	1.50	0	25.0	60.0	75°C	PCTFE	E121K04	2995	481865	-
1/4”	1.5	1.50	0	25.0	60.0	100°C	Ruby	E121K67	2995	481865	-
1/4”	1.5	1.50	0	20.0	20.0	100°C	FKM	E121K0402	2995	481865	-
1/4”	2.5	3.50	0	10.0	28.0	75°C	PCTFE	E121K07	2995	481865	-
1/4”	2.5	3.50	0	7.0	14.0	100°C	FKM	121K0706	2995	481865	-
1/4”	2.5	3.50	0	10.0	28.0	100°C	Ruby	E121K63	2995	481865	-
1/4”	3.0	4.50	0	7.0	20.0	75°C	PCTFE	E121K03	2995	481865	-
1/4”	3.0	4.50	0	7.0	10.0	100°C	FKM	E121K0302	2995	481865	-
1/4”	3.0	4.50	0	7.0	10.0	100°C	EPDM	121K0323	2995	481865	-
1/4”	3.0	4.50	0	7.0	10.0	100°C	FKM	E121K0352	2995	481865	**
1/4”	3.0	4.50	0	7.0	20.0	100°C	Ruby	E121K64	2995	481865	-
1/4”	4.0	7.50	0	4.0	10.0	100°C	FKM	121K02	2995	481865	-
1/4”	4.0	7.50	0	4.0	10.0	100°C	FKM	121K0250	2995	481865	**
1/4”	5.0	11.00	0	2.0	7.0	100°C	FKM	121K01	2995	481865	-
1/4”	5.0	11.00	0	2.0	7.0	100°C	EPDM	121K0103	2995	481865	-
1/4”	5.0	11.00	0	2.0	7.0	100°C	FKM	121K0150	2995	481865	**
1/4”	5.0	11.00	0	2.0	7.0	100°C	FKM	121K3106	2995	481865	-
3/8”	4.0	7.50	0	4.0	10.0	100°C	FKM	121K3206	2995	481865	-
3/8”	6.0	12.00	0	1.1	5.0	100°C	FKM	121K3303	2995	481865	-
3/8”	6.0	12.00	0	1.1	5.0	100°C	FKM	121K3306	2995	481865	-
1/2”	8.5	25.00	0	0.5	1.1	100°C	FKM	E121K46	2995	481865	-
1/2”	11.0	36.00	0	0.3	0.7	100°C	FKM	E121K45	2995	481865	-

** Manual override standard



2/2 & 3/2 Solenoid Valves for High Pressure pneumatic applications - 40 bar

Product offering:

- 2/2 valves and 3/2 way valves - pilot operated
- Pipe mounting (G 1/2- 3/4) or sub-base mounting
- 1.5 (2) - 40 bar
- Normally open or closed
- Internal or external pilot pressure supply

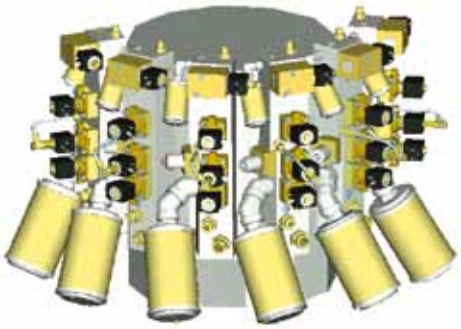
Customer Value Proposition:

- Safety of operation
- Reliability
- Response time stability
- Repeatability
- No leakage
- Integrated non return valve (421version)

The use of high pressure gases became a necessity in the new technologies developed during the last years.

The control of these fluids can be done through the solenoid valves specially designed by Parker Lucifer for high pressure applications (maximum 50 bar).

The **life expectancy of several millions** of cycles, with **response time of few milliseconds**, allows the use of these valves on intensive applications and on high technology machines, as the plastic bottle blowing machines, or the laser cutting machines.



Parker Lucifer also develops special valves or adapted blocks upon specific customers needs. Please contact your agent for more information.

Application Example

Main Technical Specifications

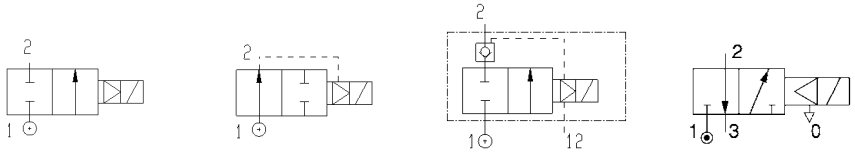
Function

2/2 pilot operated: Normally closed (with internal pilot pressure) 321H/F type
Normally closed (with external pilot pressure) 421H/F type
Normally open (with internal pilot pressure) 322H/F type

3/2 pilot operated: normally closed (with internal pressure) 331B type

ISO diagram

321H/F 322H/F 421H/F 331B



Mounting

- For direct pipe mounting G 1/2" or 3/4" (2/2 Valve type H); G 1/4 (3/2 Valve type B)
- For sub-base mounting (type F)

Nominal diameter

15 mm (type H), 14 mm (type F)

Pressures

For the version with external pilot pressure, the pilot pressure must always be higher than the controlled pressure

External Leakage

0 Ncc/min.

Internal Leakage

< 20 Ncc/min.

Fluids

Dry lubricated or non lubricated air, Argon, Nitrogen.
Oxygen on request

Proof pressure

200 bar

Filtration

< 1 µm

Life expectancy

> 2 10^6 cycles (dry and clean air)
> 8 10^6 cycles (lubricated air)

Temperatures

Ambient / fluid mini: -10 °C
Ambient / fluid maxi: +50 °C

Materials specifications

Body/cover:	2/2 Valves: Brass - 3/2 Valves: Aluminium
Pilot seals :	PUR
Main seals :	FKM (Viton®) with isolating diaphragm from PUR
Tube and plunger :	Stainless steel
Coil :	Encapsulation from PA66 + 30% fiber glass

Options

Δp maxi 50 bar on request

Response Time

Depends on application

Mounting Position

Indifferent

Specials

Parker Lucifer also develops special valves or adapted blocks upon specific customers needs.
Please contact your agent for more information.

Port size	Orifice	Flow Factor (l/min)	Admissible differential pressure (bar)			Fluid Temp.	Seal Material (C°)	Reference number				Dim. Ref. N°
G	mm	Gaz Qn	Min.	Max. DC	Max. AC	Gaz Max.		Global Ref. No.	Valve	Housing	Coil	
2/2 Valves - Direct Pipe Mounting												Normally CLOSED
1/2”	15	3150	1.5	40	40	50	FKM	-	321H35	2995	see table	1
3/4”	15	3550	1.5	40	40	50	FKM	-	321H36	2995	see table	1
2/2 Valves - Direct Pipe Mounting												Normally OPEN
1/2”	15	3150	1.5	40	40	50	FKM	-	322H35	2995	see table	2
3/4”	15	3550	1.5	40	40	50	FKM	-	322H36	2995	see table	2
2/2 Valves - Direct Pipe Mounting							External Pilot					Normally CLOSED
1/2”	15	3150	2	40	40	50	FKM	-	421H35	2995	see table	3
3/4”	15	3550	2	40	40	50	FKM	-	421H36	2995	see table	3
2/2 Valves - Sub-base Mounting												Normally CLOSED
-	14	2100	1.5	40	40	50	FKM	-	321F35	2995	see table	4
-	22	7000	5	40	40	50	FKM	-	321F37	2995	see table	-
2/2 Valves - Sub-base Mounting												Normally OPEN
-	14	2100	1.5	40	40	50	FKM	-	322F35	2995	see table	5
-	22	7000	1.5	40	40	50	FKM	-	322F37	2995	see table	-
2/2 Valves - Sub-base Mounting							External Pilot					Normally CLOSED
-	14	2100	2	40	40	50	FKM	-	421F35	2995	see table	6
3/2 Valves - Direct Pipe Mounting												Normally CLOSED
1/4”	8	750	1	40	40	50	PUR	-	331B31	2995	see table	7
3/2 Valves - Sub-base Mounting												Normally CLOSED
-	8	750	1	40	40	50	PUR	-	331F31	2995	see table	-

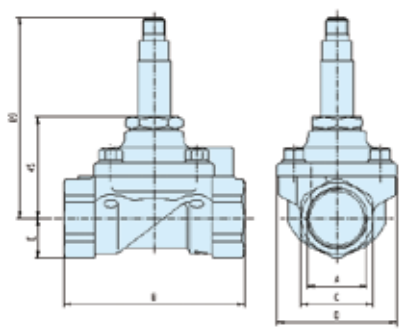
Available electrical parts:

You will find standard available coil details on the next pages. Due to the innovative sleeve design it is also possible to use all listed Parker valves with special solutions, like water tight (IP67) or explosion proof designs.

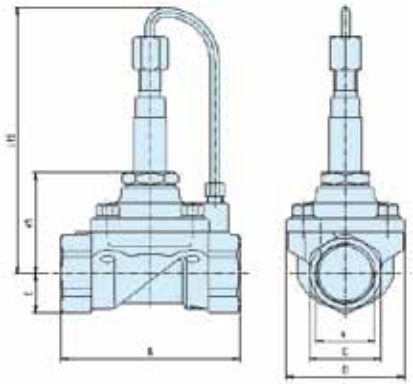
Please consult your local agent for more details.

Dimensions

Dimensions Reference N° 1

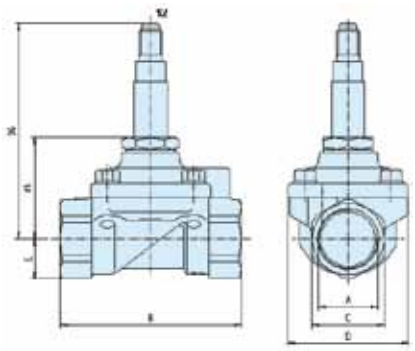


Dimensions Reference N° 2

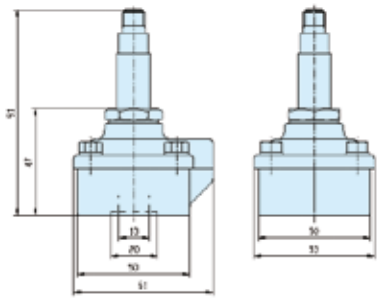


A	B	C	D	E
G3/4"	80	32	53	17.5
G1/2"	75	27	53	13.5

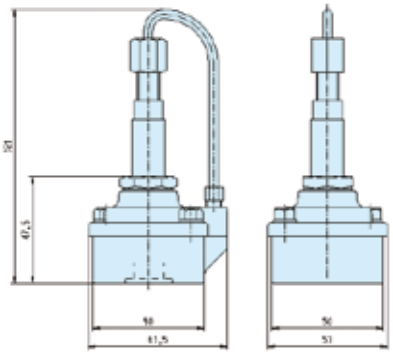
Dimensions Reference N° 3



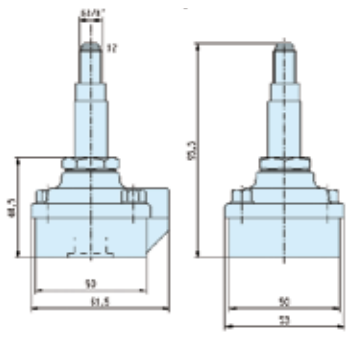
Dimensions Reference N° 4



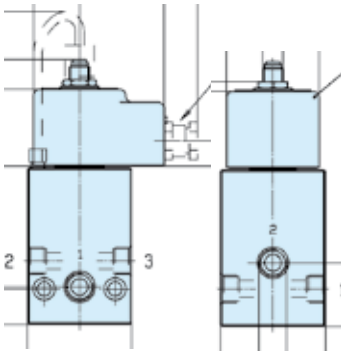
Dimensions Reference N° 5



Dimensions Reference N° 6



Dimensions Reference N° 7



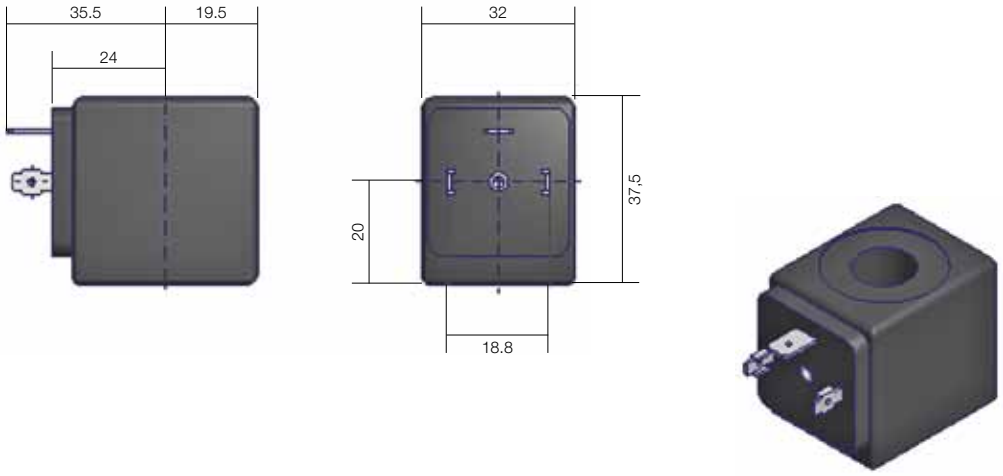
Electrical Parts Availability

32 mm Electrical Parts Availability

481865 Series - Standard Coil Mono-Frequency, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only. This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage V	Power Consumption	Reference	Approvals	Ambient Temperature	Class of insulation	Dimensional Drawing
24/50	8 W	**481865A2**	-	-40°C to +50°C	F Class 155°C	8
48/50	8 W	**481865A4**	-	-40°C to +50°C	F Class 155°C	8
110/50	8 W	**481865A5**	-	-40°C to +50°C	F Class 155°C	8
220-230/50	8 W	**4818653D**	-	-40°C to +50°C	F Class 155°C	8
380/50	8 W	**481865A9**	-	-40°C to +50°C	F Class 155°C	8
24/60	8 W	**481865B2**	-	-40°C to +50°C	F Class 155°C	8
230/60	8 W	**481865J3**	-	-40°C to +50°C	F Class 155°C	8
115/60	8 W	**481865K8**	-	-40°C to +50°C	F Class 155°C	8
12 DC	9 W	**481865C1**	-	-40°C to +50°C	F Class 155°C	8
24 DC	9 W	**481865C2**	-	-40°C to +50°C	F Class 155°C	8
48 DC	9 W	**481865C4**	-	-40°C to +50°C	F Class 155°C	8
110V DC	9 W	**481865C5**	-	-40°C to +50°C	F Class 155°C	8



All dimensions are in mm

Dimensional Drawing N° 8

32 mm Electrical Parts Availability

483510 Series - Standard Bi-Frequency Coil, F Class, IP65

Encapsulated in synthetic material, connector for 2P+E DIN 43650 A Plug, IP65 insulation class to be considered with connector plug only.

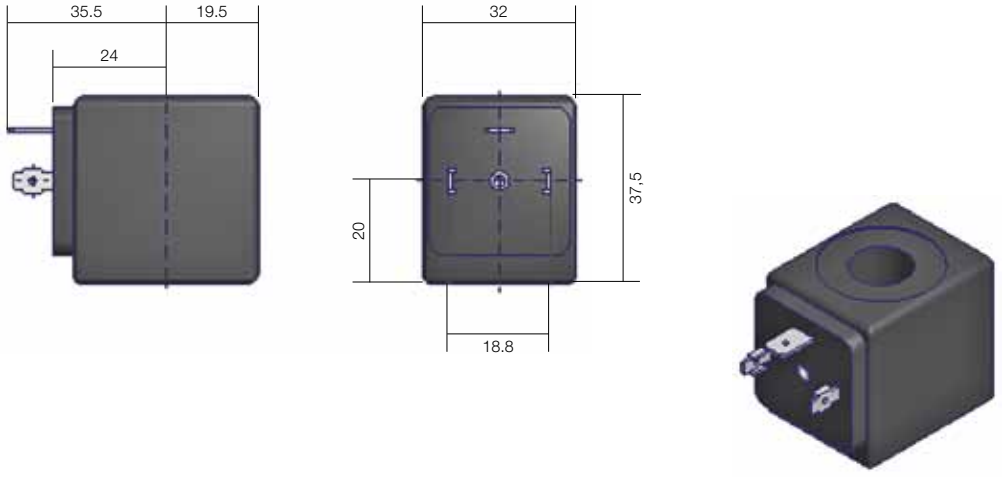
This coil conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive 73/23/EC.

Voltage V	Power Consumption	Reference	Approvals	Ambient Temperature	Class of insulation	Dimensional Drawing
12/50-60	9 W	**4835101W**	-	-40°C to +50°C	F Class 155°C	8
24/50-60	9 W	**483510P0**	-	-40°C to +50°C	F Class 155°C	8
48/50-60	9 W	**483510S4**	-	-40°C to +50°C	F Class 155°C	8
110-115/50 120/60	9 W	**483510S5**	-	-40°C to +50°C	F Class 155°C	8
220-240/50 240/60	9 W	**483510S6**	-	-40°C to +50°C	F Class 155°C	8

Voltage Tolerances: -10% to +10% of the nominal voltage (AC), -5% to +10% of the nominal voltage (DC)

Duty Continuous duty coil (100%ED)

Weight: 130 g (without plug)



All dimensions are in mm

Dimensional Drawing N° 8

Technical Data

Function:	2/2 solenoid valve closed when de-energized.
Design:	Pilot operated poppet valve with magnalift.
Mounting:	For direct pipe mounting or with the help of M5x6 mm screw (see dimensions).
Mounting position:	Indifferent.
Material specifications:	Forged brass body. Internal parts in stainless steel. Sealing material in PUR.
Range of admissible pressure drop:	Δp min. = 0 bar Δp max. = 7 bar
Response time (see p. 2):	Conditions: voltage 24 VDC nominal, flow 34 Nm^3/h. Reference pressure dynamic (orifice 2): 4.5 bar. Response times are increasing above starting from 300 millions cycles.
Switching on:	TE on: 9.5 - 12 ms Electrical response time until the plunger is in fully attracted position. T on: 10-14 ms Filling time until the pressure has reached 50% of output pressure P2 (own volume of the valve, outlet port plugged.)
Switching off:	TD off: 4 - 8 ms Closing time until the plunger is in the rest position. T off: 5,5 - 9,5 ms Emptying time until the pressure has dropped to 50% of P2 pressure. This response time is depending on user at the outlet port.
Cycling rate:	Up to 30 Hz.
Life expectancy:	> 500 millions cycles Conditions: Instrumentation dryed and filtered air at 20 µm, (dew point +2°C). P max. 5 bar nominal voltage 24 VDC vibrations 5 to 500 Hz.
Media:	Instrumentation air (dryed and unlubricated) filtered at 20 µm.
Fluid temperature:	Min. 0°C. Max. + 40°C.
Ambient temperature:	0°C to +50°C.
Vibrations:	Up to 1500 Hz, max. shocks 10 g. At max. vibration rating, life expectancy will decrease.
Electrical part:	32 mm coil 483816 (14W DC) encapsulated in synthetic material. Connection with 3 pin DIN 43650 type A plug connector, degree of protection IP 65.
Solenoid duty:	Relative duty time: 80% max. for cycle 30 Hz (33ms). 70% max. for cycle 20 Hz (50ms). 55% max. for cycle 10 Hz (100ms). 25% max. for cycle 1 hour (this valve can not work at ED 100%). x % = Energized time ÷ 100 Cycle time
Housing:	3 possibilities 2994/2995/299560.
Voltage:	24 V DC.
Voltage tolerance:	±10%.
Class of insulation material:	Class F (155 °C).
Part kit:	Nothing available
Port Size:	G3/8
Orifice:	8 mm
Qmax:	40 Nm^3/h
Admissible differential pressure:	0 bar min. 7 bar max.
Maximum admissible fluid temperature:	40 °C

References N°:				
	Valve	221 J 3311		
	Housing	2994	2995	299560
	Coil	483816		

Power consumption:	14 W
Weight:	360 g

2 Way Solenoid Valves High Flow

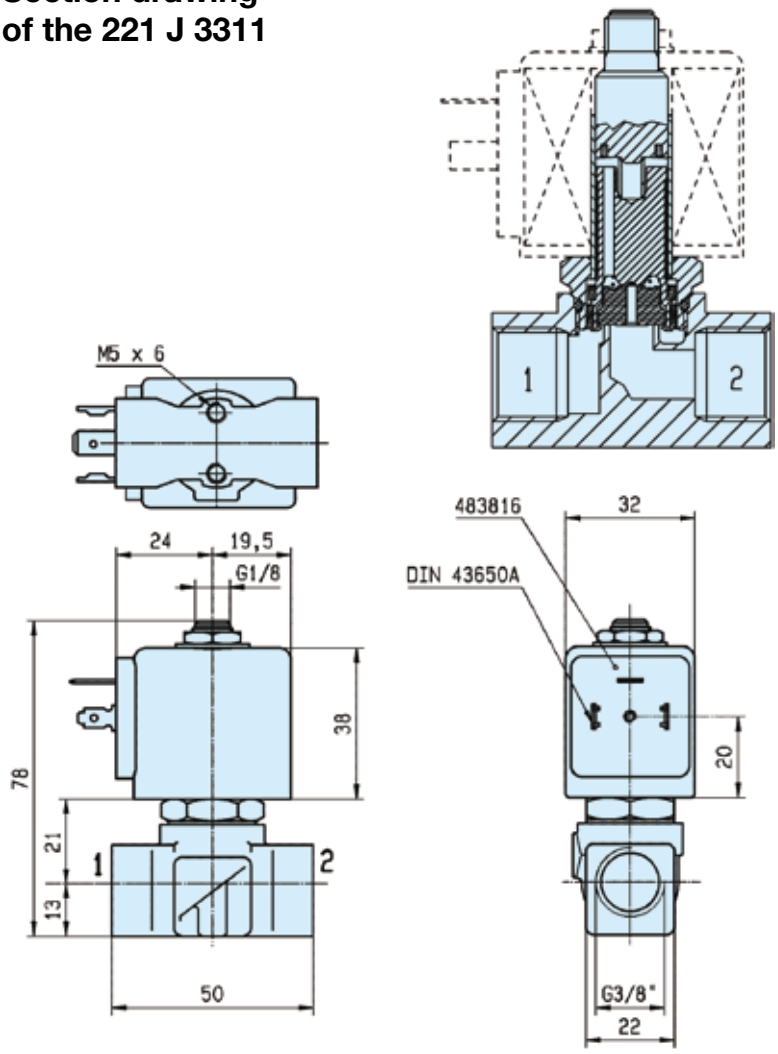
Fast Switching

2/2 magnalift solenoid valve used for air control or air pulsing in all applications where extremely short response time and/or long life expectancy are required.
Flow rate up to 40 Nm³/h (subsonic flow only) like: textile weaving looms, printing machines, sorting machines, bank note counting machines.

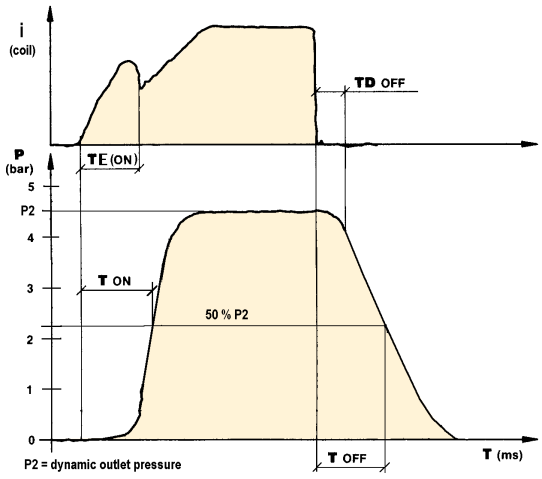
Features

- 2P+E DIN 43650A plug connection
- Degree of protection IP65
- Guide rings assure high life expectancy
- High performance plunger with low residual magnetic effect and long life
- Shock absorber improves life expectamcy of the valve
- PUR seat disc provides magnalift effect

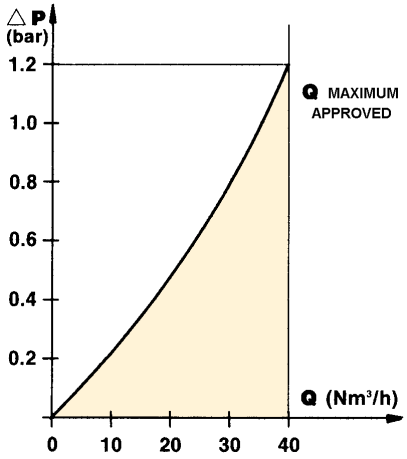
Section drawing of the 221 J 3311



Typical reponse times
At 20 Hz (40% on)



Flow rate (valve on 100%)



3-Way Solenoid Valve - Direct Acting

General application valves for dry or lubricated air, neutral gases and liquids

Description:
- 3-Way Solenoid Valve - Direct Acting - Normally Closed.
- Coil IP65 for 2 P + E plug according to DIN 43650 type A
- Power Consumption 8W (AC), 9W (DC).

Applications:
- This series is used in applications which require actuation and automatic discharge of moving systems.
- Typical applications can be found in: sterilizers, Cylinder actuation, air compressors, Diesel oil burners, pilot valves, water treatment installations.

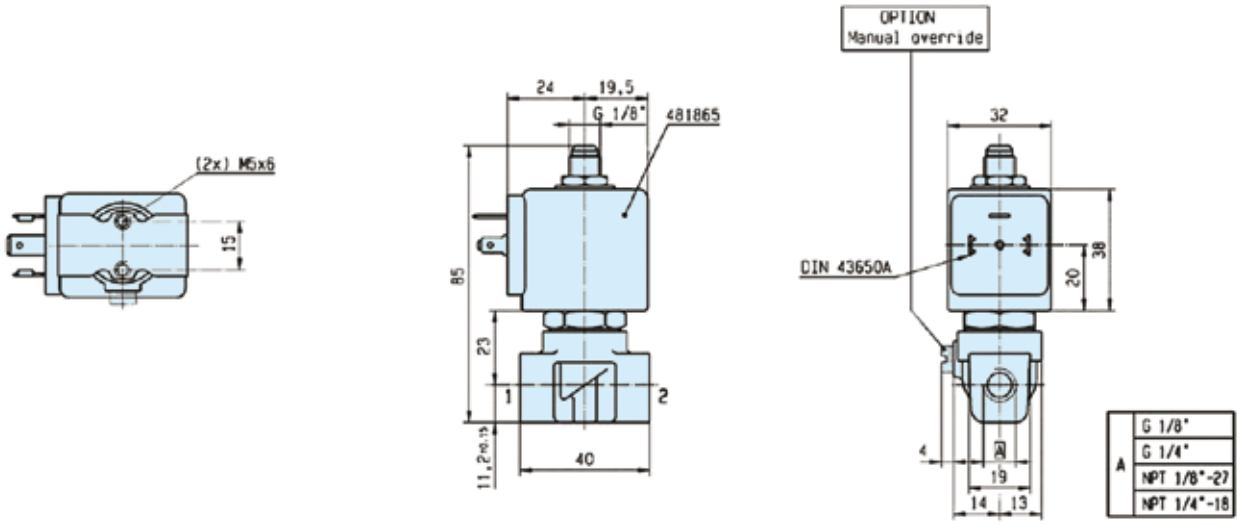
Temperature Range:
- Min: -10°C I Max: see table

Seals Material:
- FKM, PCTFE

Advantages:
- Versatile product for many 2/2 NC v alve requiring applications, robust design.

Port size	Orifice	K_v	Admissible differential pressure (bar)		Fluid Temp.	Seal Material	Reference number			Options
G	mm	l/min	Min.	Max.	C°		Valve	Housing	Coil	
3-Way Solenoid Valve - Direct Acting - Normally Closed										Normally CLOSED
1/8”	1.5	1.5	0	15	100°C	FKM	E131K14	2995	481865	-
1/8”	2.0	2.5 (3.5)*	0	10	100°C	FKM	131K16	2995	481865	-
1/8”	2.0	2.5 (3.5)*	0	10	100°C	FKM	131K1650	2995	481865	**
1/8”	2.5	3.5	0	7	100°C	FKM	E131K13	2995	481865	-
1/4”	0.8	0.3	0	40	75°C	PCTFE	131K05	2995	481865	-
1/4”	1.5	1.5	0	15	100°C	FKM	E131K04	2995	481865	-
1/4”	1.5	1.5	0	15	100°C	FKM	E131K0450	2995	481865	**
1/4”	2.0	2.5 (3.5)*	0	10	100°C	FKM	E131K06	2995	481865	-
1/4”	2.0	2.5 (3.5)*	0	10	100°C	FKM	E131K0650	2995	481865	**
1/4”	2.5	3.5	0	7	100°C	FKM	E131K03	2995	481865	-
1/4”	2.5	3.5	0	7	100°C	FKM	E131K0350	2995	481865	**

* Kv for Exhaust side
** Manual override standard



Please consult the "How to Order" part at the end of each coil chapter.

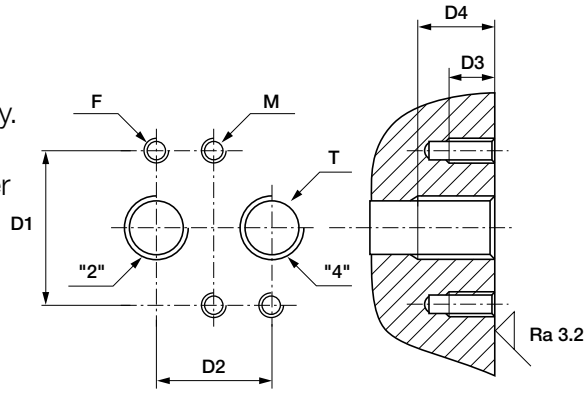
Valves for Pneumatic Actuator Control

NAMUR Interfaces 1/4" & 1/2"

NAMUR + piped versions in safe or dangerous areas.

The interface design conforms to the NAMUR standard and to the VDI/VDE 3845 recommendations of the actuator industry. It allows a compact design of the actuator/valve unit.
In case of a 3/2 function, the air of the actuator spring chamber also flows through the pilot valve (re-breather function). This prevents corrosion of the actuator springs.

F	T	D1 mm	D2 mm	D3 mm	D4 min. mm	M mm
M5	1/4	32	24	8	12	M5
M6	1/2	45	40	10	16	M6



F: 2 mounting holes - **T:** 2 actuators control port - **M:** 2 holes for dowel pins

- High flow: 1.250 l/min (1/4"), 3.000 l/min (1/2")
- Compact design
- Long life expectancy
- N3x & P3x Series compatible with any Parker Lucifer coil (ATEX or not) of electrical group 2 (8/9 W coils)
- Fail safe standard
- Reduced inventory (3/2 & 5/2 functions with the same
- valve on 341Nx5 series)
- Mechanical part of the valve ATEX certified according standard EN 13463-1 & -5

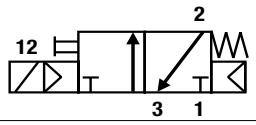
General Information

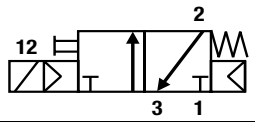
Function:	3/2, 5/2, 3/2 <=> 5/2 and 5/3 valves.
Manual override:	Standard on all versions.
Design:	Nxx & Pxx Series: Solenoid operated spool valve with combined spring and air return & external air pressure operated versions. B0x Series: Solenoid direct acting valve with spring return.
Mounting:	Nxx Series: For direct mounting on NAMUR interface 1/4" & 1/2" Pxx Series: Piped valves G1/4" & G1/2" Bxx Series: Equiped with a banjo bolt G1/8" or G1/4"
Mounting position:	Indifferent.
Material specifications:	Aluminium body. Internal parts of stainless steel. Sealing material from NBR.
Range of admissible pressure drop:	Δp min. = see table. Δp max. = 10 bar.
Media:	Dry or lubricated air.
Fluid temperature:	Min. 0°C Max. + 50°C
Ambient temperature:	-20°C to +50°C
Electrical part:	N0x / P0x / Bxx Series are compatible with 22 mm coil 496131 / 496482 / 496637 size N3x / P3x Series are compatible with 32/37/40 mm coils part of electrical group 2 (8/9W), including 481865 / 495870 / 495905 Series / N3x90 Series are compatible with coils from electrical group 6,7,8 including coil 495900,495910,483580.
Solenoid duty:	100% ED.
Voltage:	481865 coil: 12 VDC , 24 VDC , 48 VDC , 110VDC, 24 V / 50 AC, 48 V / 50 AC, 110 V / 50 AC, 220-230V/50 AC, 115 V / 60 Hz AC, 230 V / 60 AC.
Voltage tolerance:	± 10% of nominal for 481865 coil.
Class of insulation material:	Class F for 481865 coil.
Standards:	Mechanical ATEX conform to EN 13463-1 & -5.

Banjo Valves - G1/4" & G1/8" Series

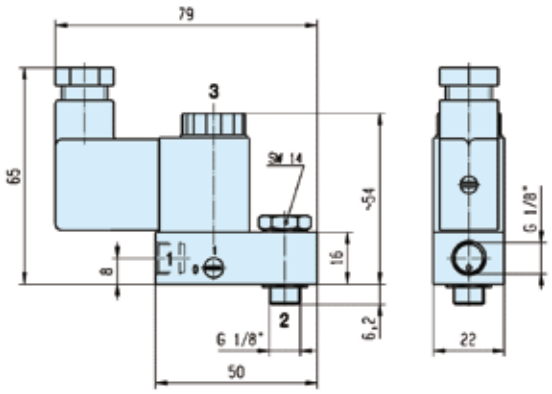
Solenoid Operated Versions
B14-B04 Versions with 22 mm Coil

Port size	Orifice	Q_N		Admissible differential pressure (bar)		Max. admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Dimensions Reference
				max.		min. = 0°C								
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC		
3/2 Solenoid operated - Spring return (monostable)														
1/8	1.2	50	0	10	10	50	NBR	**131B14**	-	**496131**	3	3	140	26
1/8	1.2	50	0	10	10	50	NBR	**131B14**	-	**496482**	3	3	140	26
1/8	1.2	50	0	10	10	50	NBR	**131B14**	-	**496637**	3	3	140	26
3/2 Solenoid operated - Spring return (monostable)														
1/4	1.2	50	0	10	10	50	NBR	**131B04**	-	**496131**	3	3	160	27
1/4	1.2	50	0	10	10	50	NBR	**131B04**	-	**496482**	3	3	160	27
1/4	1.2	50	0	10	10	50	NBR	**131B04**	-	**496637**	3	3	160	27

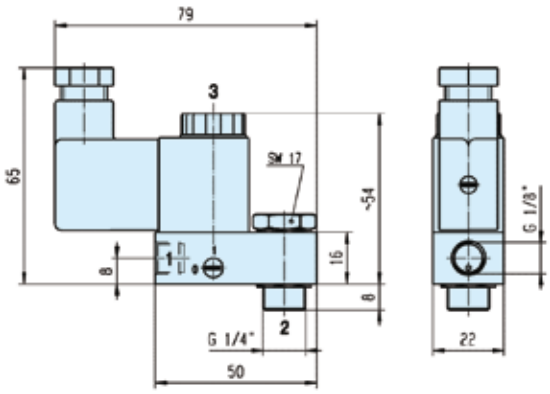




Dimensions Reference 26



Dimensions Reference 27



Please consult the "How to Order" part at the end of each coil chapter.

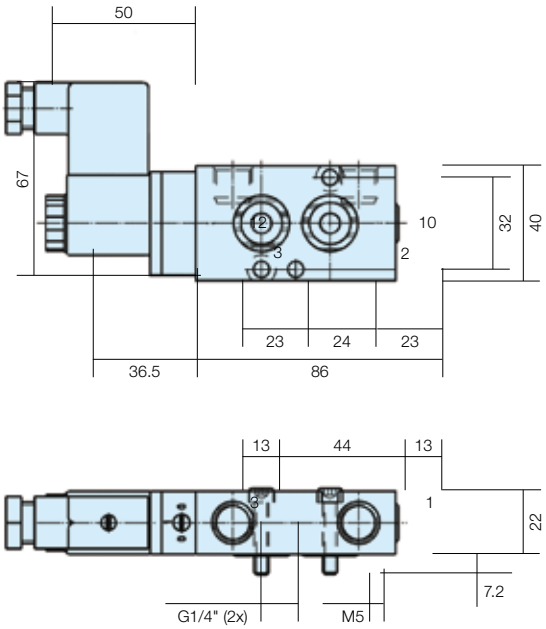
NAMUR Valves G1/4" Series

Solenoid Operated Versions
N03-N05 Series with 22 mm Coil

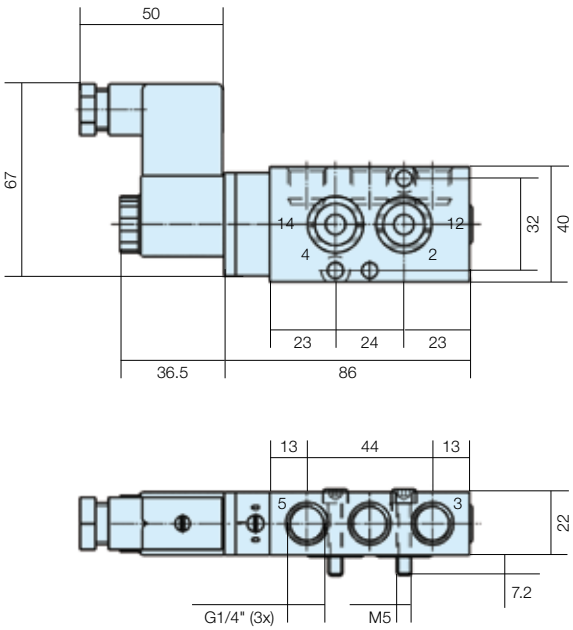
Port size	Orifice	Q_N		Admissible differential pressure (bar)		Max. admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Dimensions Reference
				max.		min. = 0°C								
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC		
3/2 Solenoid operated - Combined spring & air return (monostable)														
1/4	7	1250	2.5	10	10	50	NBR	**331N03**	-	**496131**	3	3	300	1
1/4	7	1250	2.5	10	10	50	NBR	**331N03**	-	**496482**	3	3	300	1
1/4	7	1250	2.5	10	10	50	NBR	**331N03**	-	**496637**	3	3	300	1
5/2 Solenoid operated - Combined spring & air return (monostable)														
1/4	7	1250	2.5	10	10	50	NBR	**341N03**	-	**496131**	3	3	300	2
1/4	7	1250	2.5	10	10	50	NBR	**341N03**	-	**496482**	3	3	300	2
1/4	7	1250	2.5	10	10	50	NBR	**341N03**	-	**496637**	3	3	300	2
3/2 <=> 5/2 with conversion plate - Solenoid operated Combined spring & air return (monostable)														
1/4	7	1250	2.5	10	10	50	NBR	**341N05**	-	**496131**	3	3	310	3
1/4	7	1250	2.5	10	10	50	NBR	**341N05**	-	**496482**	3	3	310	3
1/4	7	1250	2.5	10	10	50	NBR	**341N05**	-	**496637**	3	3	310	3
1/4	7	1250	2.5	10	10	50	NBR	**341N0502***	-	**496131**	3	3	310	3
1/4	7	1250	2.5	10	10	50	NBR	**341N0502***	-	**496482**	3	3	310	3
1/4	7	1250	2.5	10	10	50	NBR	**341N0502***	-	**496637**	3	3	310	3
5/2 Solenoid operated and return (bistable)														
1/4	7	1250	2.5	10	10	50	NBR	**347N03**	-	**496131**	3	3	430	4
1/4	7	1250	2.5	10	10	50	NBR	**347N03**	-	**496482**	3	3	430	4
1/4	7	1250	2.5	10	10	50	NBR	**347N03**	-	**496637**	3	3	430	4
5/3 W1 closed in center position - Solenoid operated and return														
1/4	7	1250	2.5	10	10	50	NBR	**342N03**	-	**496131**	3	3	430	4
1/4	7	1250	2.5	10	10	50	NBR	**342N03**	-	**496482**	3	3	430	4
1/4	7	1250	2.5	10	10	50	NBR	**342N03**	-	**496637**	3	3	430	4
5/3 W3 exhausted in center position Solenoid operated and return														
1/4	7	1250	2.5	10	10	50	NBR	**343N03**	-	**496131**	3	3	430	4

Please consult the "How to Order" part at the end of each coil chapter.

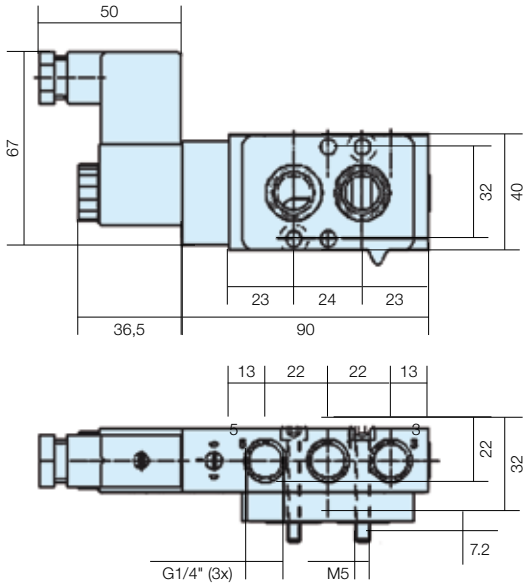
Dimensions Reference 1



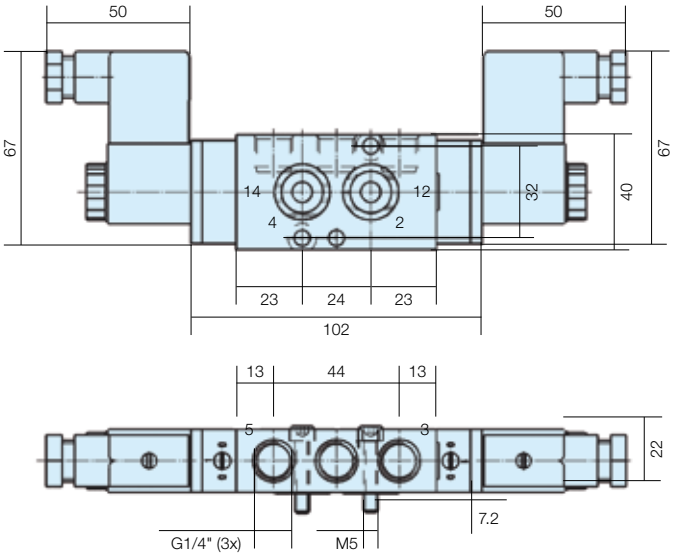
Dimensions Reference 2

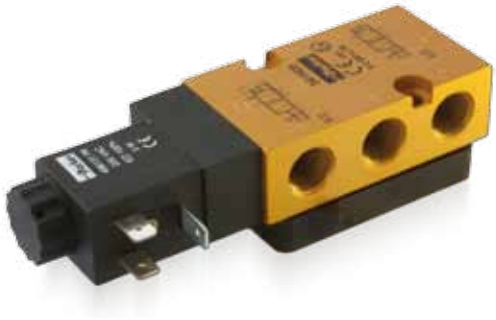


Dimensions Reference 3



Dimensions Reference 4





Please consult the "How to Order" part at the end of each coil chapter.

NAMUR Valves G1/4" Series

Solenoid Operated Versions
N33-N35 Series with 32 / 37 / 40 mm Coil

Port size	Orifice	Q_N	Admissible differential pressure (bar) maximum			Maximum admissible fluid temperature (°C) minimum = 0°C	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			
3/2 <=> 5/2 with conversion plate - Solenoid operated Combined spring & air return (monostable)															
1/4	7	1250	2.5	10	10	50	NBR	**341N35**	**2995**	481865	9	8	480	2	5
1/4	7	1250	2.5	10	10	50	NBR	**341N35**	**2995**	495870	9	8	700	2	-
1/4	7	1250	2.5	10	10	50	NBR	**341N35**	-	495905	8	8	740	2	-
1/4	7	1250	2.5	10	10	50	NBR	**341N3502***	**2995**	481865	9	8	480	2	5
1/4	7	1250	2.5	10	10	50	NBR	**341N3502***	**2995**	495870	9	8	700	2	-
1/4	7	1250	2.5	10	10	50	NBR	**341N3502***	-	495905	8	8	740	2	-
1/4	7	1250	2.5	10	10	50	NBR	**341N3590***	**-**	483580	0.5-3	-	560	7	5
1/4	7	1250	2.5	10	10	50	NBR	**341N3590***	**-**	495910	0.3-3	-	920	8	-
1/4	7	1250	2.5	10	10	50	NBR	**341N3590***	-	495900	2	2,5	920	6	-

* Valves without manual override

5/2 Solenoid operated and return

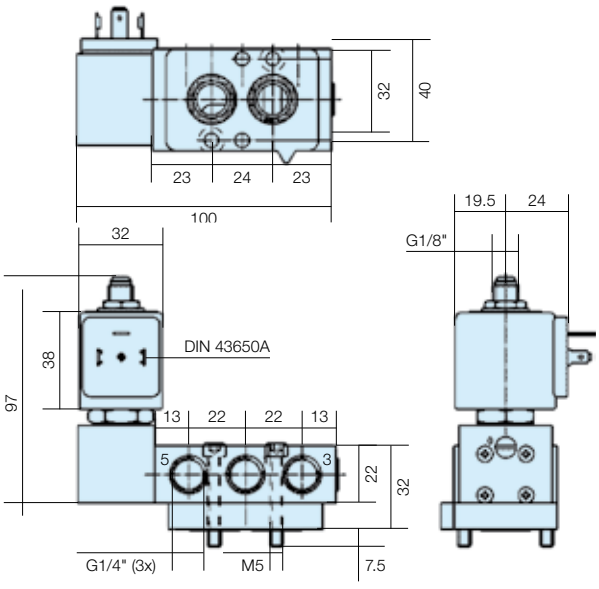
1/4	7	1250	2.5	10	10	50	NBR	**347N33**	**2995**	481865	9	8	750	2	6
1/4	7	1250	2.5	10	10	50	NBR	**347N33**	**2995**	495870	9	8	1190	2	-
1/4	7	1250	2.5	10	10	50	NBR	**347N33**	-	495905	8	8	1270	2	-
1/4	7	1250	2.5	10	10	50	NBR	**347N3390***	**-**	483580	0.5-3	-	700	7	6
1/4	7	1250	2.5	10	10	50	NBR	**347N3390***	**-**	495910	0.3-3	-	1420	8	-
1/4	7	1250	2.5	10	10	50	NBR	**347N3390***	-	495900	2	2,5	1420	6	-

* Valves without manual override

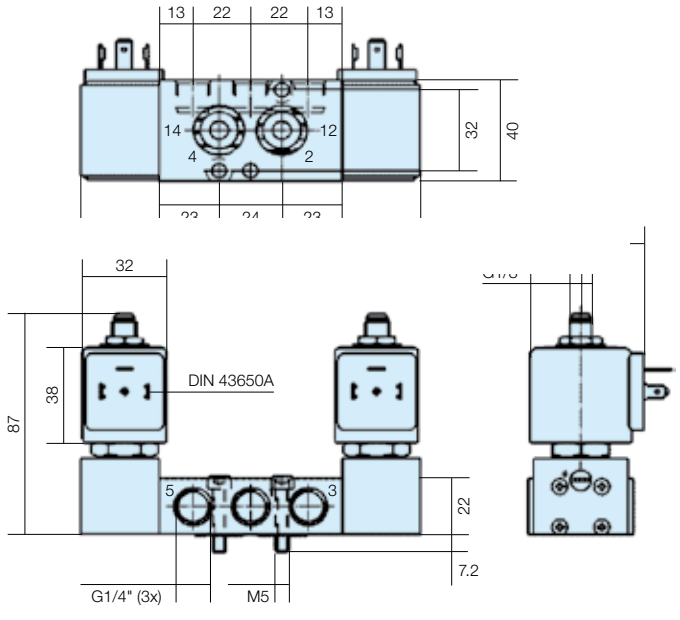
5/3 W1 Closed in center position Solenoid operated and return

1/4	7	1250	2.5	10	10	50	NBR	**342N33**	**2995**	481865	9	8	750	2	6
1/4	7	1250	2.5	10	10	50	NBR	**342N33**	**2995**	495870	9	8	1190	2	-
1/4	7	1250	2.5	10	10	50	NBR	**342N33**	-	495905	8	8	1270	2	-

Dimensions Reference 5



Dimensions Reference 6



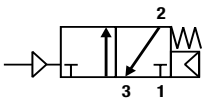
Parker Hannifin Corporation
Pneumatic Division - Europe

NAMUR Valves G1/4" Series

External Pressure Air Operated Series
5xx N03 Series

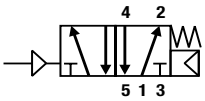
Port size	Orifice	Q_N	Admissible differential pressure (bar) maximum			Maximum admissible fluid temperature (°C) minimum = 0°C	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			

3/2 External pressure air operated
Combined spring & air return (monostable)
External pressure supply 2.5 to 10 bar



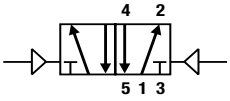
1/4	7	1250	2.5	10	10	50	NBR	**531N03**	-	w/o	-	-	210	-	7

5/2 External pressure air operated
Combined spring & air return (monostable)
External pressure supply 2.5 to 10 bar



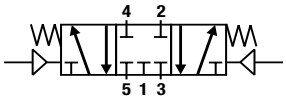
1/4	7	1250	2.5	10	10	50	NBR	**541N03**	-	w/o	-	-	210	-	8

5/2 External pressure air operated
External pressure air return (bistable)
External pressure supply 2.5 to 10 bar



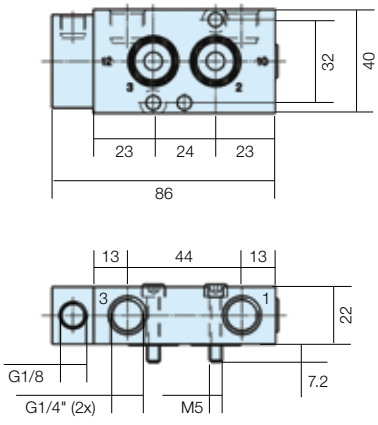
1/4	7	1250	2.5	10	10	50	NBR	**547N03**	-	w/o	-	-	240	-	9

5/3 W1 closed in center position - External pressure air operated
External pressure air return
External pressure supply 2.5 to 10 bar

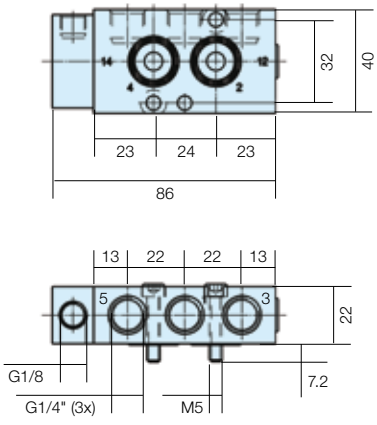


1/4	7	1250	2.5	10	10	50	NBR	**542N03**	-	w/o	-	-	240	-	9

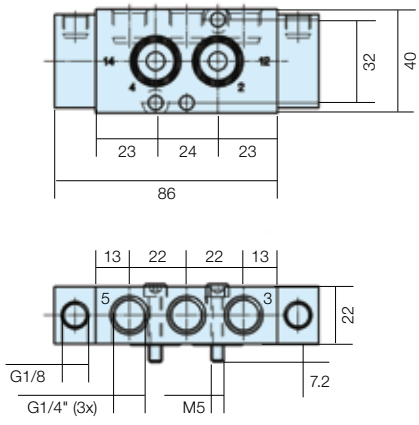
Dimensions Reference 7



Dimensions Reference 8



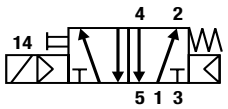
Dimensions Reference 9



NAMUR Valves G1/2" Series

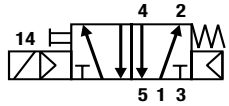
Solenoid Operated Versions
N04 Versions with 22 mm Coil

Port size	Orifice	Q_N	Admissible differential pressure (bar)			Maximum admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
			maximum			minimum = 0°C									
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			
3/2 Solenoid operated Combined spring & air return (monostable)															
1/2	12	3000	2.5	10	10	50	NBR	**331N04**	-	496131	3	3	910	-	10
1/2	12	3000	2.5	10	10	50	NBR	**331N04**	-	496482	3	3	925	-	10
1/2	12	3000	2.5	10	10	50	NBR	**331N04**	-	496637	3	3	925	-	10
1/2	12	3000	2.5	10	10	50	NBR	**331N0402***	-	496131	3	3	910	-	10
1/2	12	3000	2.5	10	10	50	NBR	**331N0402***	-	496482	3	3	925	-	10
1/2	12	3000	2.5	10	10	50	NBR	**331N0402***	-	496637	3	3	925	-	10

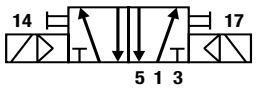


* Valves without manual override

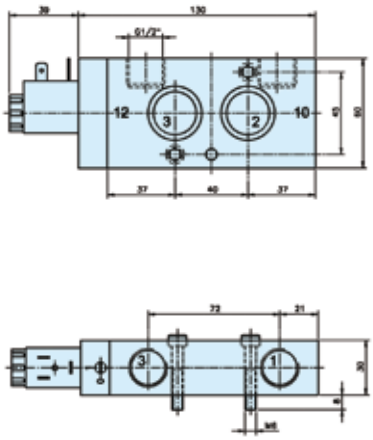
5/2 Solenoid operated Combined spring & air return (monostable)															
1/2	12	3000	2.5	10	10	50	NBR	**341N04**	-	496131	3	3	910	-	11
1/2	12	3000	2.5	10	10	50	NBR	**341N04**	-	496482	3	3	925	-	11
1/2	12	3000	2.5	10	10	50	NBR	**341N04**	-	496637	3	3	925	-	11



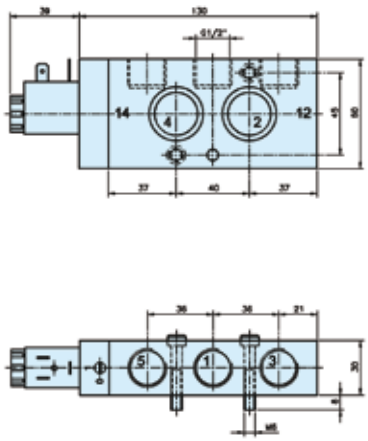
5/2 Solenoid operated and return (bistable)															
1/2	12	3000	2.5	10	10	50	NBR	**347N04**	-	496131	3	3	1240	-	12
1/2	12	3000	2.5	10	10	50	NBR	**347N04**	-	496482	3	3	1255	-	12
1/2	12	3000	2.5	10	10	50	NBR	**347N04**	-	496637	3	3	1255	-	12



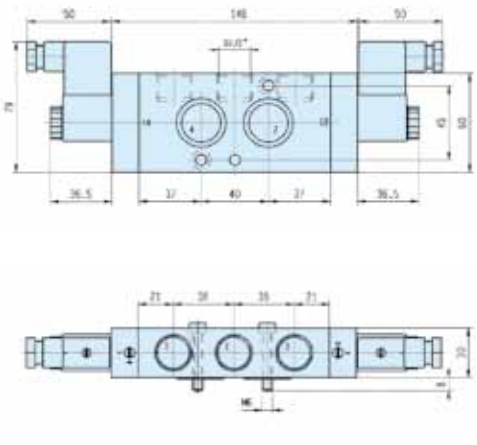
Dimensions Reference 10



Dimensions Reference 11



Dimensions Reference 12

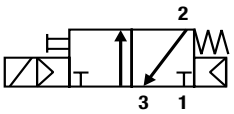


Please consult the "How to Order" part at the end of each coil chapter.

NAMUR Valves G1/2" Series

Solenoid Operated Versions
N34 Series with 32 / 37 / 40 mm Coil

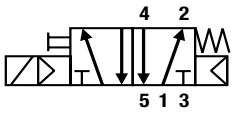
3/2 Solenoid operated
Combined spring & air return (monostable)



Port size	Orifice	Q_N	Admissible differential pressure (bar) maximum			Maximum admissible fluid temperature (°C) minimum = 0°C	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			
1/2	12	3000	2.5	10	10	50	NBR	**331N34**	**2995**	481865	9	8	810	2	13
1/2	12	3000	2.5	10	10	50	NBR	**331N34**	**2995**	495870	9	8	830	2	-
1/2	12	3000	2.5	10	10	50	NBR	**331N34**	-	495905	8	8	1150	2	-
1/2	12	3000	2.5	10	10	50	NBR	**331N3402***	**2995**	481865	9	8	810	2	13
1/2	12	3000	2.5	10	10	50	NBR	**331N3402***	**2995**	495870	9	8	830	2	-
1/2	12	3000	2.5	10	10	50	NBR	**331N3402***	-	495905	8	8	1150	2	-

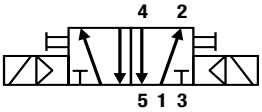
* Valves without manual override

5/2 Solenoid operated
Combined spring & air return (monostable)



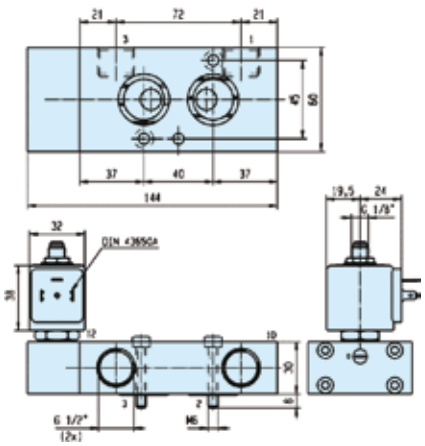
1/2	12	3000	2.5	10	10	50	NBR	**341N34**	**2995**	481865	9	8	800	2	14
1/2	12	3000	2.5	10	10	50	NBR	**341N34**	**2995**	495870	9	8	820	2	-
1/2	12	3000	2.5	10	10	50	NBR	**341N34**	-	495905	8	8	1140	2	-

5/2 Solenoid operated and return (bistable)

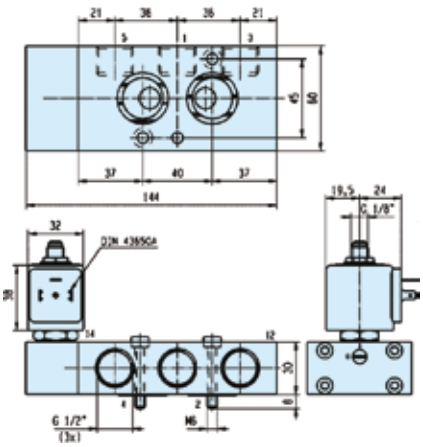


1/2	12	3000	2.5	10	10	50	NBR	**347N34**	**2995**	481865	9	8	960	2	15
1/2	12	3000	2.5	10	10	50	NBR	**347N34**	**2995**	495870	9	8	1000	2	-
1/2	12	3000	2.5	10	10	50	NBR	**347N34**	-	495905	8	8	1640	2	-

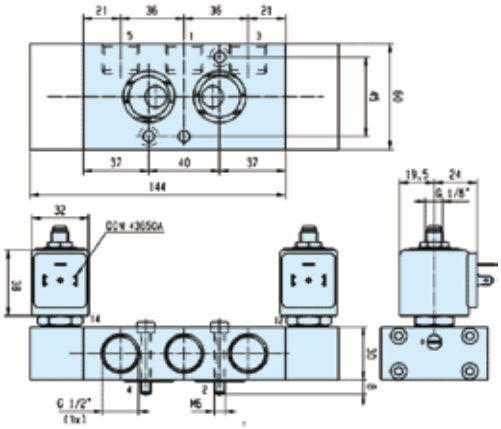
Dimensions Reference 13



Dimensions Reference 14



Dimensions Reference 15



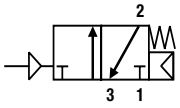
Please consult the "How to Order" part at the end of each coil chapter.

NAMUR Valves G1/2" Series

External Pressure Air Operated Series
5 xx N04 Series

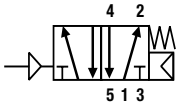
Port size	Orifice	Q_N	Admissible differential pressure (bar) maximum			Maximum admissible fluid temperature (°C) minimum = 0°C	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			

3/2 External pressure air operated
Combined spring & air return (monostable)
External pressure supply 2.5 to 10 bar



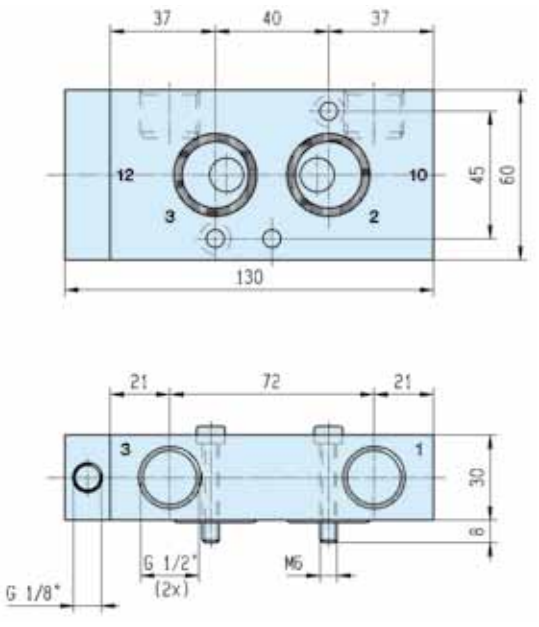
1/2	12	3000	2.5	10	10	50	NBR	**531N04**	-	w/o	-	-	620	-	16

5/2 External pressure air operated
Combined spring & air return (monostable)
External pressure supply 2.5 to 10 bar

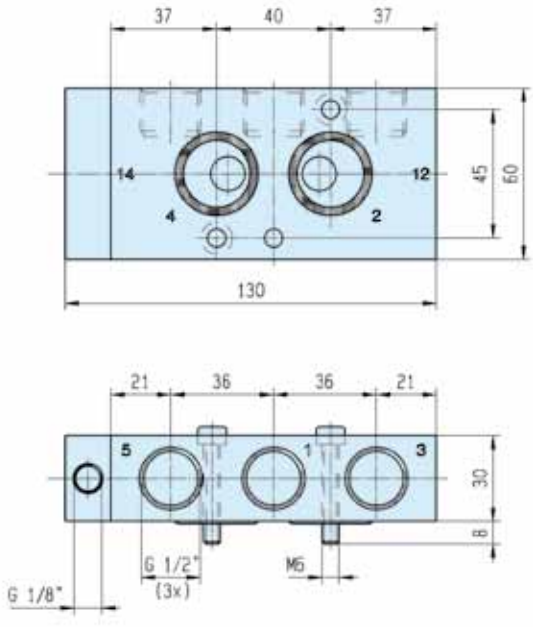


1/2	12	3000	2.5	10	10	50	NBR	**541N04**	-	w/o	-	-	600	-	17

Dimensions Reference 16



Dimensions Reference 17

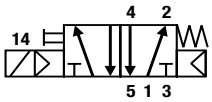


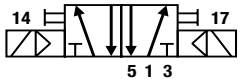
Please consult the "How to Order" part at the end of each coil chapter.

Piped Valves - G1/4" Series

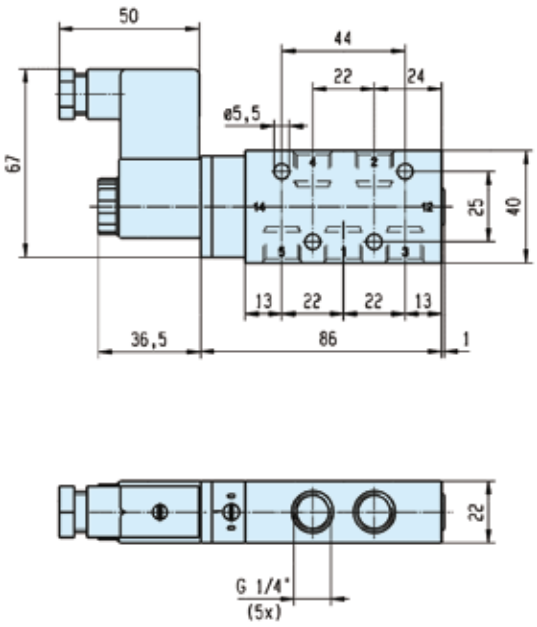
Solenoid Operated Versions
P03 Versions with 22 mm Coil

Port size	Orifice	Q_N	Admissible differential pressure (bar)			Maximum admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
			maximum			minimum = 0°C									
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			
5/2 Solenoid operated **Combined spring & air return** (monostable)															
1/4	7	1250	2.5	10	10	50	NBR	**341P03**	-	496131	3	3	250	-	18
1/4	7	1250	2.5	10	10	50	NBR	**341P03**	-	496482	3	3	250	-	18
1/4	7	1250	2.5	10	10	50	NBR	**341P03**	-	496637	3	3	250	-	18
5/2 Solenoid operated and return (bistable)															
1/4	7	1250	2.5	10	10	50	NBR	**347P03**	-	496131	3	3	350	-	19
1/4	7	1250	2.5	10	10	50	NBR	**347P03**	-	496482	3	3	350	-	19
1/4	7	1250	2.5	10	10	50	NBR	**347P03**	-	496637	3	3	350	-	19

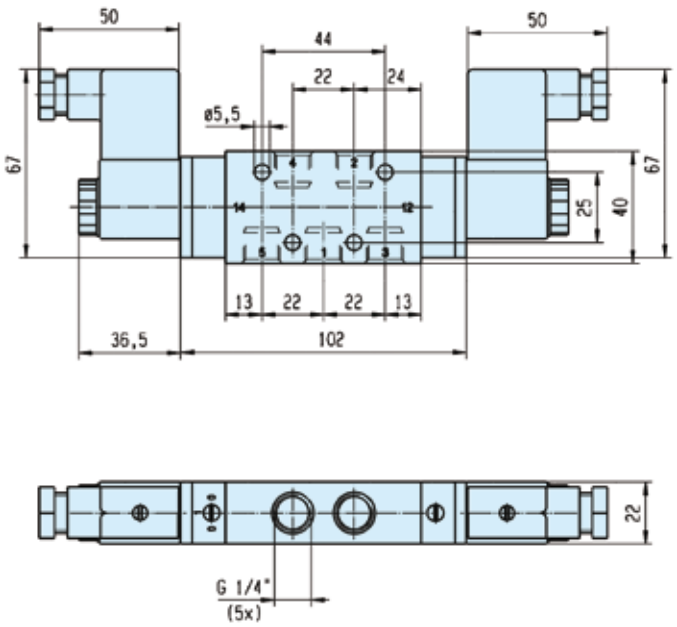




Dimensions Reference 18



Dimensions Reference 19



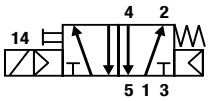
Please consult the "How to Order" part at the end of each coil chapter.

Piped Valves - G1/4" Series

Solenoid Operated Versions
P33 Versions with 32-37-40 mm Coil

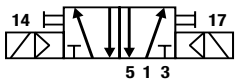
Port size	Orifice	Q_N	Admissible differential pressure (bar)			Maximum admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
			maximum			minimum = 0°C									
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			

5/2 Solenoid operated
Combined spring & air return (monostable)



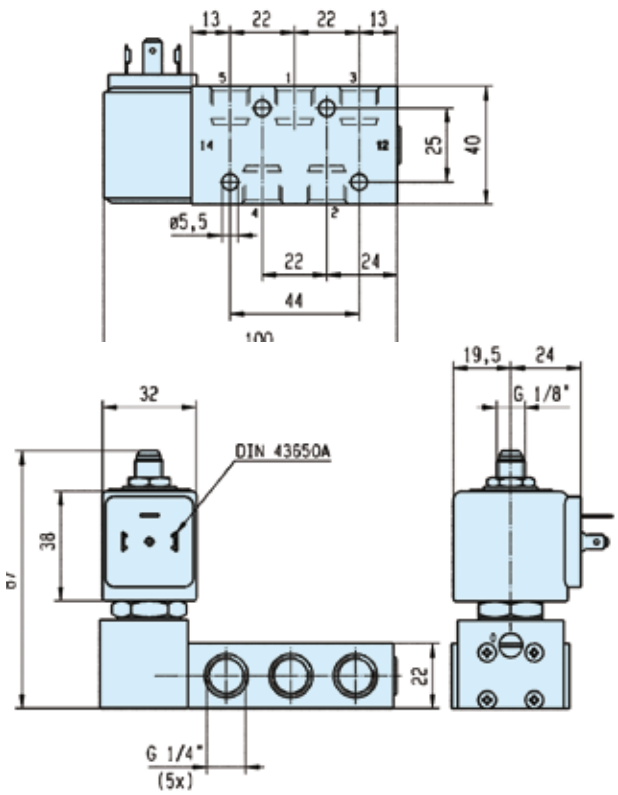
1/4	7	1250	2.5	10	10	50	NBR	**341P33**	**2995**	481865	9	8	470	2	20
1/4	7	1250	2.5	10	10	50	NBR	**341P33**	**2995**	495870	9	8	490	2	-
1/4	7	1250	2.5	10	10	50	NBR	**341P33**	-	495905	8	8	810	2	-

5/2 Solenoid operated and return (bistable)

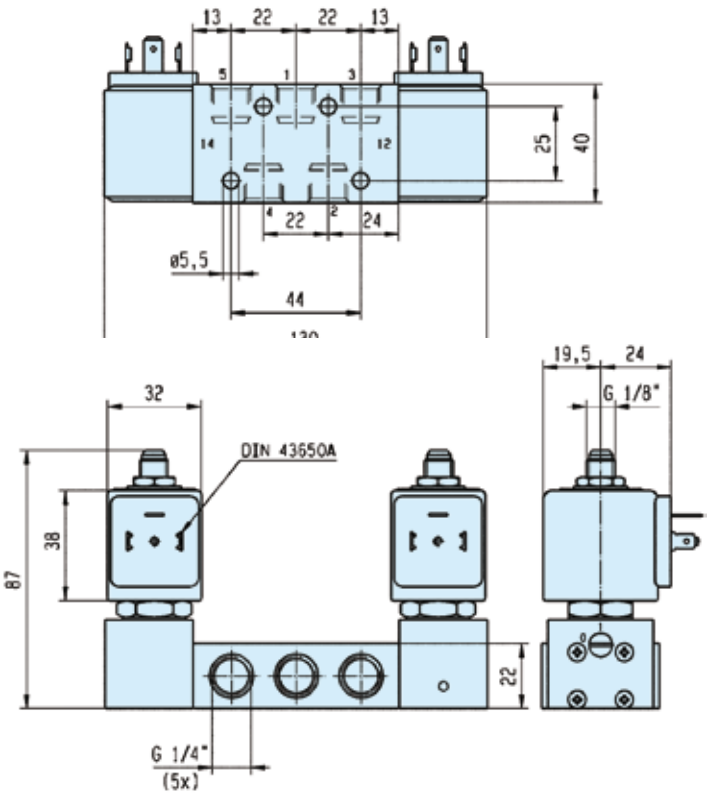


1/4	7	1250	2.5	10	10	50	NBR	**347P33**	**2995**	481865	9	8	620	2	21
1/4	7	1250	2.5	10	10	50	NBR	**347P33**	**2995**	495870	9	8	640	2	-
1/4	7	1250	2.5	10	10	50	NBR	**347P33**	-	495905	8	8	960	2	-

Dimensions Reference 20



Dimensions Reference 21

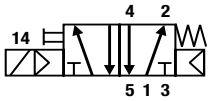


Piped Valves - G1/2" Series

Solenoid Operated Versions
P04 Versions with 22 mm Coil

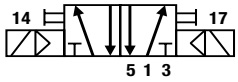
Port size	Orifice	Q_N	Admissible differential pressure (bar)			Maximum admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
			maximum			minimum = 0°C									
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			

5/2 Solenoid operated
Combined spring & air return (monostable)



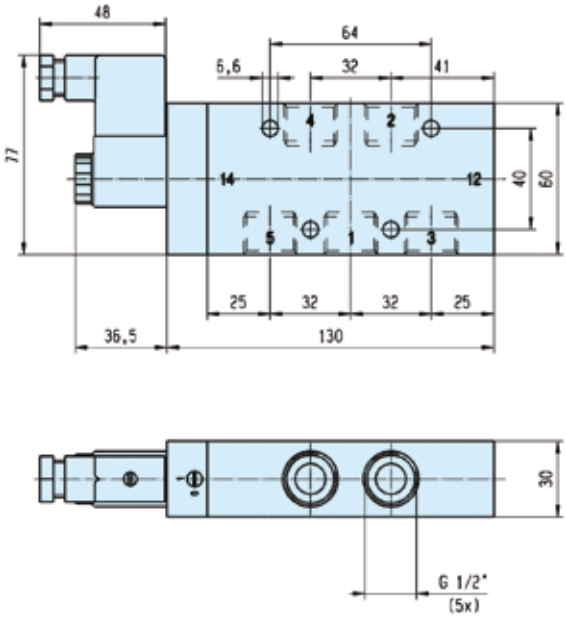
1/2	12	3000	2.5	10	10	50	NBR	**341P04**	-	496131	3	3	670	-	22
1/2	12	3000	2.5	10	10	50	NBR	**341P04**	-	496482	3	3	670	-	22
1/2	12	3000	2.5	10	10	50	NBR	**341P04**	-	496637	3	3	670	-	22

5/2 Solenoid operated and return (bistable)

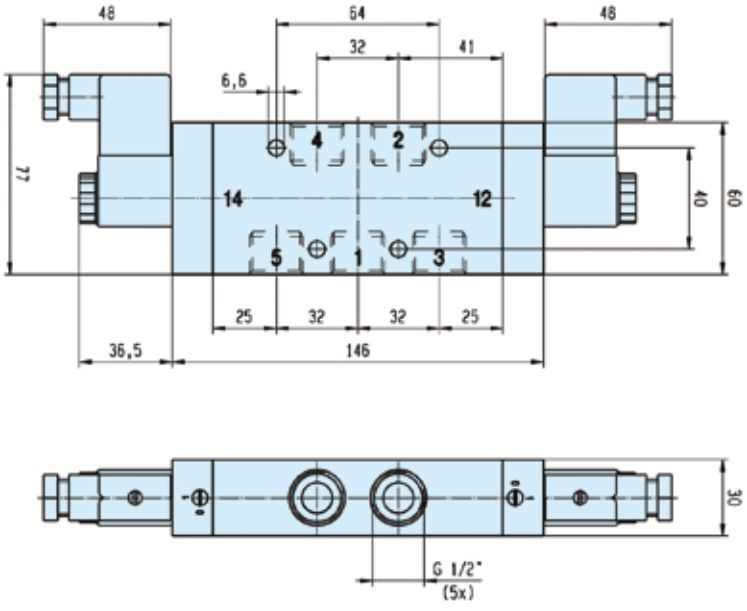


1/2	12	3000	2.5	10	10	50	NBR	**347P04**	-	496131	3	3	840	-	23
1/2	12	3000	2.5	10	10	50	NBR	**347P04**	-	496482	3	3	840	-	23
1/2	12	3000	2.5	10	10	50	NBR	**347P04**	-	496637	3	3	840	-	23

Dimensions Reference 22



Dimensions Reference 23



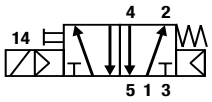
Please consult the "How to Order" part at the end of each coil chapter.

Piped Valves - G1/2" Series

Solenoid Operated Versions
P34 Versions with 32/37/40 mm Coil

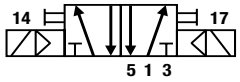
Port size	Orifice	Q_N	Admissible differential pressure (bar)			Maximum admissible fluid temperature (°C)	Seat disc	Reference number			Consumption Power (Watt)		Weight (g)	Elect. Group	Dim. Ref.
			maximum			minimum = 0°C									
G	mm	l/min	min	DC=	AC~	Air & Neutral gases		Valve	Housing	Coil	DC	AC			

5/2 Solenoid operated
Combined spring & air return (monostable)



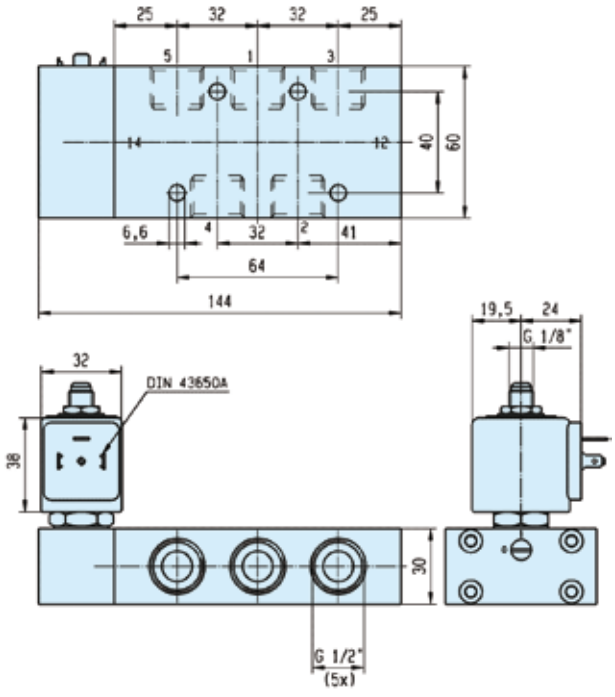
1/2	12	3000	2.5	10	10	50	NBR	**341P34**	**2995**	481865	9	8	900	2	24
1/2	12	3000	2.5	10	10	50	NBR	**341P34**	**2995**	495870	9	8	920	2	-
1/2	12	3000	2.5	10	10	50	NBR	**341P34**	-	495905	8	8	1240	2	-

5/2 Solenoid operated and return (bistable)

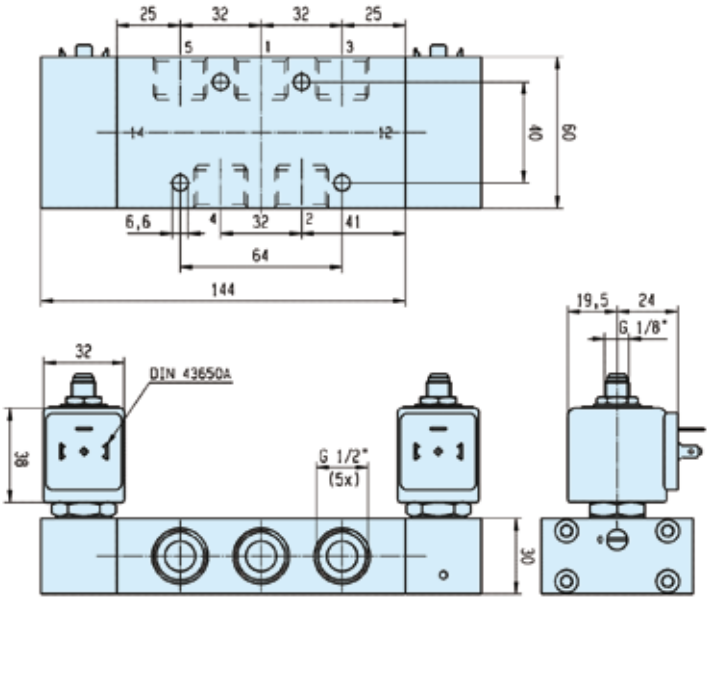


1/2	12	3000	2.5	10	10	50	NBR	**347P34**	**2995**	481865	9	8	1240	2	25
1/2	12	3000	2.5	10	10	50	NBR	**347P34**	**2995**	495870	9	8	1280	2	-
1/2	12	3000	2.5	10	10	50	NBR	**347P34**	-	495905	8	8	2080	2	-

Dimensions Reference 24



Dimensions Reference 25



Please consult the "How to Order" part at the end of each coil chapter.

Coils and Spare Parts Informations

Coils 22 mm for N03-N05 Series
Safe Area & ATEX Zone 22 — Ref. 496131 / 496482 / 496637

These coils with connection for 2 P+G DIN 43650 B plug are encapsulated in synthetic material, conform to the IEC/CENELEC safety standards and comply with European low voltage directive 73/23/EC .

- Power: 3W
- Insulation Class: F (155°C)
- Degree of Protection: IP65 (with plug)
- Duty Cycle: 100% ED
- Ambient Temperature: -10°C to 50°C

3 different types are available:

- Ref. 496131 for a safe area without plug
- Ref. 496482 for a safe area with plug
- Ref. 496637 for an ATEX area Zone 22

496637 coil series with connection 2P + G when mounted together with the supplied Pg9 plug (delivered with the coil) are suitable for use in dangerous areas (dust Zone 22) according to the European directive ATEX 94/9/C. Protection mode: Ex tD A22 IP65 - T95°C

Available Voltages	Safe area without DIN plug Order Code	Safe area with DIN plug Order Code	ATEX Zone 22 EX II 3D Order Code
12 VDC	**496131 C1**	**496482 C1**	**496637 C1**
24 VDC	**496131 C2**	**496482 C2**	**496637 C2**
48 VDC	**496131 C4**	**496482 C4**	**496637 C4**
110 VDC	**496131 C5**	**496482 C5**	**496637 C5**
24/50-60 VAC	**496131 P0**	**496482 P0**	**496637 P0**
48/50-60 VAC	**496131 S4**	**496482 S4**	**496637 S4**
110/50-60 VAC	**496131 P2**	**496482 P2**	**496637 P2**
115/60 VAC	**496131 K8**	**496482 K8**	**496637 K8**
230/50-60 VAC	**496131 P9**	**496482 P9**	**496637 P9**

How to Order

The housing kit is already included into the coil reference, so it's not needed to add it with the order code:

Valve Reference Number - Coil Reference - Voltage code = Order code

Example: 341N03 - 496131 C2

Valves and coils may be ordered also separately.

Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

Safe Area — Ref. 481865

These coils can be mounted with every Parker solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages. This is an encapsulated assembly comprising a coil, integral magnetic iron path and snap-on plug connection.

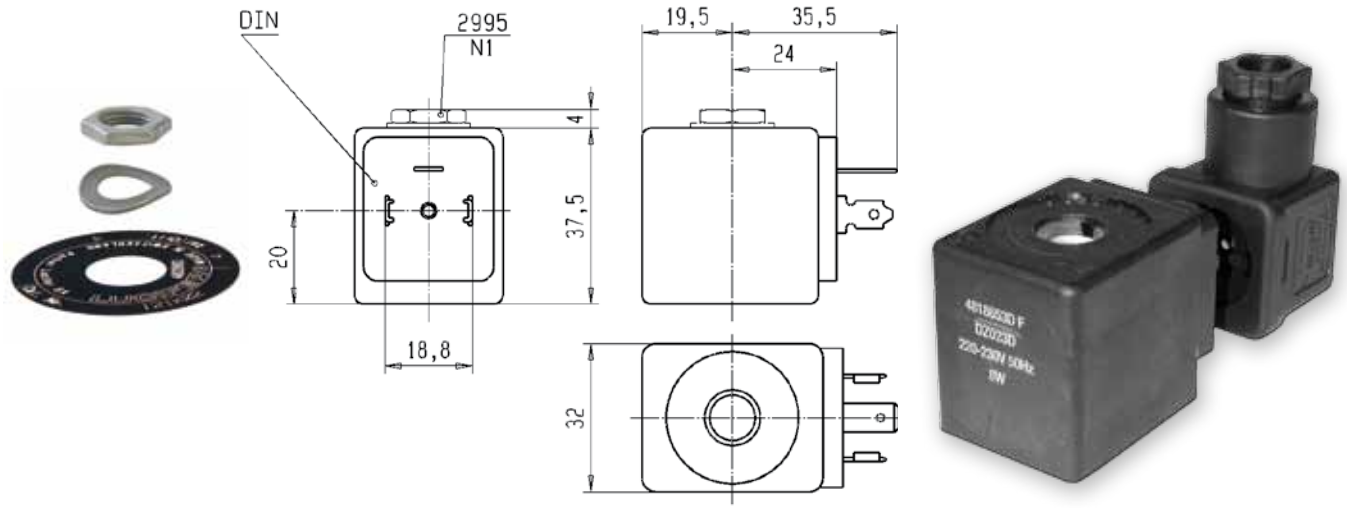
The synthetic material encapsulation provides an effective compact housing, offering full protection against dust, oil, water, etc. Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc.

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Standard		Double frequency	
Ref. (without DIN plug) **Ref. (with DIN plug)**			**481865** **482725**		**483510** **482635**	
Coil Group			**2.0 / 2.1**			
Degree of protection			**IP65** according to IEC / EN 60529 standards (with DIN plug).			
Class of insulation			F 155°C			
Electrical connection			The coil is connected with a 2 P + E plug according to EN 175301-803 type A			
Ambient temperature			-40°C to +50°C - The application is limited also by the temperature range of the valve.			
Elect. Power	**DC**	**Pn** (hot)	9 W		-	
		P (cold) 20°C	12 W		-	
	AC	**Pn** (holding)	8 W		9 W	
		Attraction cold	26 VA (9 W)		32 VA (10 W)	
Weight			130 g (without plug)			
Voltages "Un"			**VAC/Hz**	**Code**	**VDC**	**Code**
-10% to +10% of the Un			24/50 48/50 110/50 220-230/50	A2 A4 A5 3D	24 48 110	C2 C4 C5

VAC/Hz	**Code**
24/50, 24/60	P0
48/50, 48/60	S4
110-115/50, 120/60	S5
220-240/50, 240/60	S6

These coils must be used with suitable housings, see example below:
The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage). It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



How to Order

To Order a Coil choose Coil Ref + Voltage Code
Example: **481865 for 24VDC = 481865C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

To Order a Valve + Coil Combination:
Example: **341N35-2995-481865C2**

Coils and Spare Parts Informations

Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

Safe Area Coil 481000 Series with 4538 Watertight and dust proof housing IP67

Ref. 481000

These coils can be mounted with every Parker Solenoid Valves corresponding to the specified Coil Group.

See column "Coil Group" within valve pages. They can be mounted with all metal housings.

The coil winding is completely encapsulated in synthetic material. Easy mounting in confined spaces. Electrical connection with screw terminals for wire up to 1.5 mm².

Coils conform to the IEC/CENELEC safety standards and complies with European low-voltage directive.

Specification			Standard				Double Frequency	
Reference			**481000**				**483520**	
Coil Group			**2.0 / 2.1**					
Class of insulation			F 155°C					
Ambient temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.					
Elect. Power	**DC**	**Pn** (hot)	8W				-	
		P (cold) 20°C	9W				-	
	AC	**Pn** (holding)	8W				9W	
		Attraction cold	32 VA (9 W)				36 VA (10 W)	
Weight			130 g				130 g	
Voltages "Un"			**VAC/Hz**	**Code**	**VDC**	**Code**	**VAC/Hz**	**Code**
-10% to +10% of the Un (-15 % to +5 % for double-frequency coil with voltage code S6 if 240 V/50/ Hz is used).			24/50 48/50 110/50-115/50 220/50-230/50	A2 A4 0A 3D	24 48 110	C2 C4 C5	24/50-60 48/50-60 110-115/50-120/60 220-240/50-240/60	P0 S4 S5 S6

These coils must be used with suitable housings, see examples below:

How to Order

To Order a Coil choose Coil Ref + Voltage Code
Example: **481000 for 24VDC = 481000C2**
More voltage possibilities can be found in the table of voltage codes at the end of the coil section.

To Order a Valve + Coil Combination:
Example: **341N35-4538-481000C2**

Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

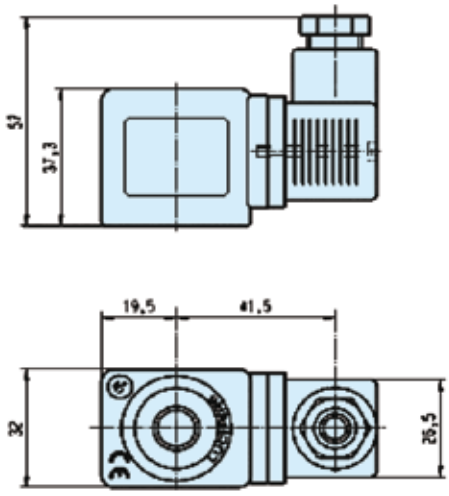
ATEX Zone 2-22 — REF. 495870

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group. See column "Coil Group" within valve pages.
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex nc AC IIC T3 to T6 is required.
Ease of mounting in confined space - offers shock and corrosion protection - simplifies conversion of existing equipment to other requirements, etc. Coils conforms to the IEC/CENELEC safety standards and complies with European low-voltage directive.
Small size for ease of mounting in confined spaces.

Reference			**495870**	**496110**
Certificate			**LCIE 05 ATEX 6003 X**	
Coil Group			**2.0 / 2.1**	
Type of protection		**Gas**	II 3 G - Ex nc AC IIC T3 / T4	II 3 G - Ex nc AC IIC T3 / T4
		Dust	II 3 D - Ex tc IIIC - T195°C / T130°C	II 3 D - Ex tc IIIC - T195°C / T130°C
Degree of protection			IP65 (with plug) according to IEC/EN 60529	
Insulation Class			F (155°C)	
Duty cycle			100%	
Ambiant temperature			-40°C to +50°C The application is limited also by the temperature range of the valve.	
Elect. Power	**DC**	**Pn (hot)**	9 W	-
		P (cold) 20°C	12 W	-
	AC	**Pn** (holding)	8 W	9 W
		Attraction cold	26 VA (9 W)	32 VA (10 W)
Weight			150 g	

Voltages "Un" -10% to +10% of the Un	**VAC/Hz**	**Code**	**VDC**	**Code**	**VAC/Hz**	**Code**
	24/50	A2	24	C2	24/50-60	P0
	48/50	A4	48	C4	48/50-60	S4
	110/50	A5	110	C5	110/50-60	S5
	220-230/50	3D			220/50-60	S6

These coils must be used with suitable housings, see example below:
The coil assembly kit **Ref. 2995** corresponds to the "housing" of Lucifer® valve numbering system (Valve - housing - coil - voltage). It is composed of a nameplate giving details of the valve type, a round washer and a nut to ensure the fixing between 32 mm coil and the valve.



How to Order

To Order a Coil choose Coil Ref + Voltage Code
Example: **495870 for 24VDC = 495870C2**

To Order a Valve + Coil Combination:
Example: **341N35-2995-495870C2**

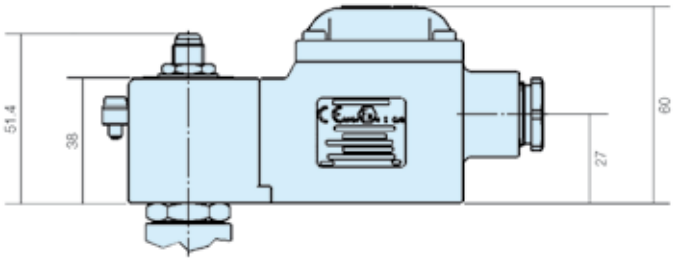
Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

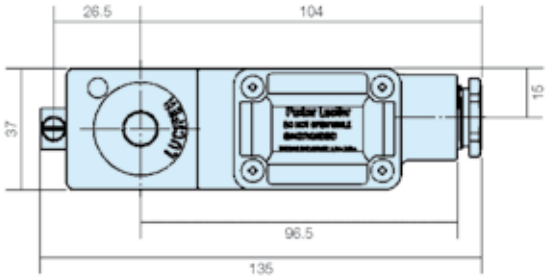
ATEX Zone 1-21 — Ref. 495905

These coils can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex db mb IIC T4 is required.
Benefits: Rotatable 360° fibreglass-reinforced plastic housing (class H). Solenoid coil, rectifier (silicium diodes), fuses and varistor protection are completely encapsulated into the coil housing by epoxy resin for shock and corrosion protection.
The plastic housing is delivered with M20 x 1.5 cable gland certified for use "db" protection.
Small size for ease of mounting in confined space.

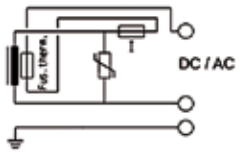
Reference			495905	495905.05
Certificate			LCIE 03 ATEX 6451 X - IECEx LCI 06.0004 X	
Coil Group			2.0 / 2.1	
Type of protection		Gas	II 2 G - Ex db mb IIC T4	
		Dust	II 2 D - Ex tb IIIC - 130°C	
Degree of protection			IP67	
Ambient temperature			-40°C to +65°C The application is limited also by the temperature range of the valve.	
Class of insulation			H (180 °)	
Electrical connection			Electric connection is done in the connection box on an easily accessible connector terminals. The introduction of the cable (Ø min 5 mm, Ømax. 11 mm, section max. 2.5 mm²) in the connection box passes by the built in M20 x 1.5 cable gland.	
Elect. Power	DC	Pn (hot)	8 W	
		P (cold) 20°C	9 W	
	AC	Pn (holding)	8 W	
		Attraction cold	9 W	

Voltages "Un"	VAC/Hz	Code	VDC	Code
-10% to +10% of Un for AC - 10 % to + 10 % for Un DC.	24/50 48/50 115/50 230/50	A2 A4 E5 F4	24 48 110	C2 C4 C5

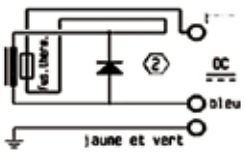




495905



***495905.05**



How to Order

To Order a Coil choose Coil Ref + Voltage Code
Example: **495905 for 24VDC = 495905C2**

To Order a Valve + Coil Combination:
Example: **341N35-495905C2**

Coils 32 mm / 37 mm / 40 mm for N33-N34-N35 Series

ATEX Solutions Zone 1-21 — Ref. 483371 & 494040

This coil can be mounted with every Parker ATEX solenoid valves corresponding to the specified Coil Group.
See column "Coil Group" within valve pages.
Application: Control of solenoid valves in dangerous areas where explosion-proof protection Ex eb II T3 orT4 is required.
Benefits: Rotatable housing 360°, galvanized steel with internal and external screw terminals for earth connection.
Small size for ease of mounting in confined space. Simplifies conversion of existing equipment to hazardous area requirements.

Reference			483371	494040
Certificate			LCIE 02 ATEX 6011 X	LCIE 02 ATEX 6013 X
Coil Group			2.0 / 2.1	
Type of protection	Gas		II 2 G - Ex eb IIC T4	II 2 G - Ex eb IIC T3 / T4
	Dust		II 2 D - Ex tb IIIC - T130°C	II 2 D - Ex tb IIIC - T195°C / T130 °C
Degree of protection			IP67	
Ambiant temperature			-40°C to +65°C	-40°C to +90°C / to +65°C
			The application is limited also by the temperature range of the valve.	
Class of insulation			F 155°C	F (180°)
Electrical connection			By special cable gland or M20 x 1.5 "Ex eb" on screw terminals for wires up to 1.5 mm². Cables with outside diameter 6.5 mm to 13.5 mm can be simply sealed using the ru bber gland with resilient sealing rings supplied.	
Elect. Power	DC	Pn (hot)	8 W	8 W
		P (cold) 20°C	9 W	9 W
	AC	Pn (holding)	8 W	8 W
		Attraction cold	32 VA (9 W)	32 VA (9 W)
Weight			320 g	

Voltages "Un"	VAC/Hz	Code	VDC	Code	VAC/Hz	Code	VDC	Code
-10% to +10% of the Un	24/50 48/50 110-115/50 220-230/50	A2 A4 OA 3D	24 48 110	C2 C4 C5	220-230/50	3D	24	C2

Fuses:
Both electrical parts have to be connected in series with a safety fuse according to IEC 60127-3.

483371:

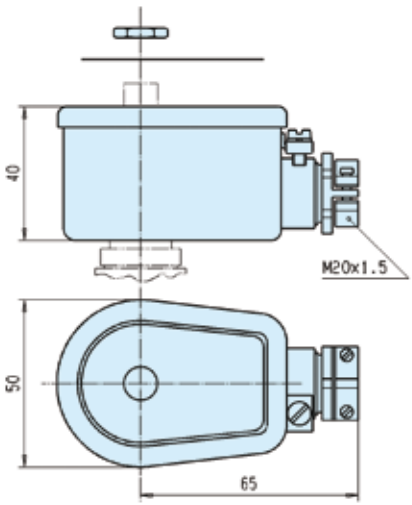
DC: 24 V, 400 mA - 48V, 250 mA
110 V, 100 mA

AC 50HZ: 24 V, 630 mA - 48V, 315 mA
110 V, 160 mA - 220/230 V, 80 mA

494040:

DC: 12 V, 400 mA - 24V, 200 mA
48 V, 100 mA - 110V, 50 mA

AC 50HZ: 24 V, 250 mA - 48V, 125 mA
110/115 V, 63 mA - 220/230 V, 32 mA



How to Order

To Order a Coil choose Coil Ref + Voltage Code
Example: **483371 for 24VDC = 483371C2**

To Order a Valve + Coil Combination:
Example: **341N35-483371C2**

Spare Parts Mounting Kit and Accessories

Kit for G1/4" Models without conversion plate (N x 3 Series)

Kit includes the 2 mounting screws M5 x 25 A2, the dowel pin M5 x 10 A2, the 2 O-rings NBR 15 x 2.5
Order code: 496132

Kit for G1/4" Models with conversion plate (N x 5 Series)

Kit includes the 2 mounting screws M5 x 35 A2, the dowel pin M5 x 20 A2, the conversion plate equipped with its seals
Order code: 496742 (equipped plate)
Order code: 496852 (screws + pin)

Kit for G1/2" Models (N x 4 Series)

Kit includes the 2 mounting screws M6 x 35 A2, the dowel pin M6 x 12 A2, the 2 O-rings NBR 24 x 3
Order code: 496133

Exhaust Flow Regulators

Material Body:	Brass	Filter element:	Sintered bronze
Spring:	Stainless Steel	Seal:	NBR

G1/8" Order code: 496551 **G1/4" Order code: 496552** **G1/2" Order code: 496553**

Connector for 22 mm Coil

Connector DIN43650 AB Pg9 2P+E
Order code: 481043

Housing for 22 mm Coil

Plastic nut with O-ring
Order code: 3125

Connector for 32 mm Coil

Connector DIN43650 AA Pg9 2P+E
Order code: 486586

Ex Bus Manifold

for pneumatic actuator control

Parkers EExPress™ bus manifold package has been designed for the control of pneumatic actuators in the Process Industry where hazardous environments Zone 1, 21 and or Zone 2, 22 are present.

EExPress™ is a stackable system that includes Gateway - Input sensor modules - Solenoid valve modules.

NAMUR Standard ON/OFF Where the (NPN) sensor can be directly connected on the input sensor module.

The Ex manifold uses the Profibus DP protocol.

Increased Process Productivity

- When plant installation's are simplified, the engineering study, component package's and man hour costs are reduced, this results in a quicker production start-up.
- Through more efficient process control, quality and quantity of production is improved.
- EExPress™ bus manifold replaces a lot of proprietary components, thus reducing cost of installation.
- EExPress™ bus manifold simplifies commissioning time resulting in quicker plant start up time.
- EExPress™ bus manifold reduces overall product life cost through reduction in maintenance costs.

Certified Management System SQS ISO 9001/14001
Reg. No. 10440

A User Friendly Product

- EExPress™ uses the well known profibus DP protocol.
- It as been designed to aproach a "plug and play" usage.
- At a glance at the LED the user knows immediately the current production Process status.
- Authorised users may re-adress the 5/2 valves directly from the manifold.

Plant installation simplification

- EExPress™ significantly reduces the need of electronic components such as couplers, repeaters, safety barriers, PLC, etc.
- It significantly reduces the need of mechanical components such as pressurised cabinet's, pneumatic piping, electrical wiring, connectors, etc.
- One bus address can operate and control up to 32 x solenoid valves on one manifold (or combination of sensor modules and solenoid valves).
- Integrated solution with high flow valves and sensor signal inputs.

Better process & personnel safety

- With separated wiring, the bus communication* is maintained "ON" even if the coil voltage supply is cut.
  * Solenoid valve status + inputs sensor status + safety pressure status, etc.
- The diagnostic capabilities offer permanently a real reliable Process Control.
- Ex px [ia] [ib] ib mb IIC T5 Ex tD A21 IP65 T100°C protection as well as the patented coil connection eliminate risks associated with bad handling.
  eg.: disconnection of bus or sensor connectors in presence of gases.
- It provides more efficient Process Control due to centralised mounting close to actuators.

IECEx

IECEx LCI 07.0027 X

CE 0081 Ex II 2/(1) G D

LCIE 01 ATEX 6013 X

Ex px [ia] [ib] ib mb IIC T5
Ex tD A21 IP65 T100°C

Proven achievement through innovative fluid control.

G1/8 - 4/3 Way Flat Slide Valves Series DRS

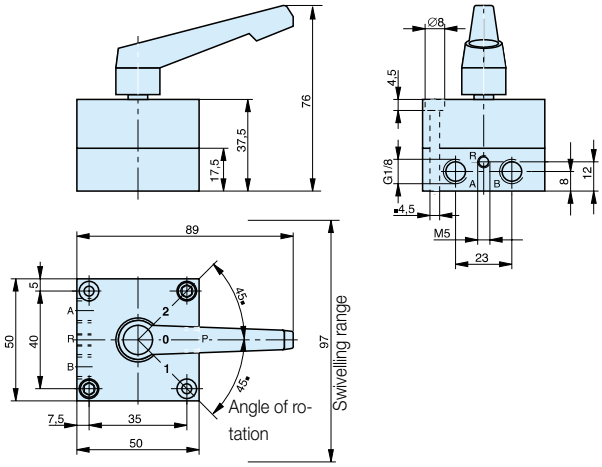
Actuation System:

- Rotary lever
- Rotary switch

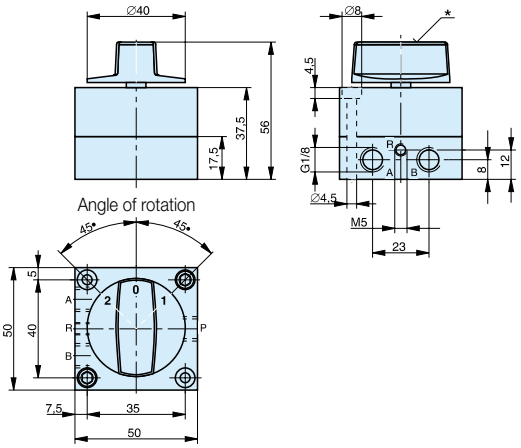
Operating information

System	Flat slide valve without automatic return to neutral position	
Mounting	2 Screws M4	
Tube connection	Thread	
Port size	Port P, A, B: G1/8 Port R: M5	
Weight (mass)	0.500 kg	
Installation	In any position	
Ambient temperature range	-10 °C to +55 °C	Note: Please consult us for operating temperatures below 0° C
Medium temperature range	-10 °C to +60 °C	
Medium	Filtered compressed air	
Lubrication	Oil mist lubrication compatible with Buna N	
Pneumatic Characteristics		
Nominal pressure	6 bar	
Operating pressure range	0 – 10 bar	
Nominal flow	350 l/min	
Actuation		
Manual control	Direct	
Actuation force	ca. 6 N	

Rotary Lever – Type: DRS 412 .-1/8



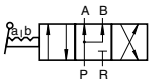
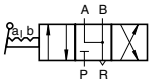
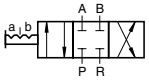
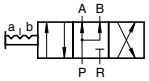
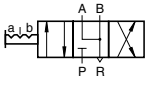
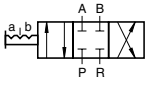
Rotary Switch – Type: DRS 417 .-1/8



Port identification:
A = 4 Outlet
B = 2 Outlet
R = 5 Exhaust
P = 1 Pressure supply

* After removing the cover and loosening the mounting screws, the rotary switch is infinitely variable.

Order Instructions – 4/3 Way Flat Slide Valves, Series DRS

Actuation	Symbol	Order Instructions	
		Type	**Order code**
Rotary lever Middle position pressurized		DRS 412 B-1/8	**PA 10267**
Rotary lever Middle position vented		DRS 412 E-1/8	**PA 10266**
Rotary lever Middle position closed		DRS 412G-1/8	**PA 10268**
Rotary switch Middle position pressurized		DRS 417 B-1/8	**PA 10264**
Rotary switch Middle position vented		DRS 417 E-1/8	**PA 10263**
Rotary switch Middle position closed		DRS 417 G-1/8	**PA 10265**

G1/4 - 3/2 and 5/2 Way Valves Pedal Actuated - Series F

Actuation System:
- Pedal

Connections for
3/2 way version:

Version
„Normally closed“: P, B, S
„Normally open“: P, A, R

* Only for version “both switch positions indexed“
– return is only effected after actuating the locking pedal.

Mounting Instruction:
Use only screw connections with max. wrench size across flats of 15.

Connection designation:
A = 4 Outlet
B = 2 Outlet
R = 5 Exhaust
P = 1 Air supply
S = 3 Exhaust

Operating information

Type	Poppet Valve
Mounting	4 Screws M8 (1
Tube connection	Thread
Port size	G1/4
Weight (mass)	1.5 kg
Installation	In any position
Ambient temperature range (3	-10 °C to +55 °C
Medium temperature range (3	-10 °C to +60 °C
Medium	Filtered and oiled or filtered, unoiled compressed air
Lubrication (2	Oil mist lubrication compatible with Buna N

Pneumatic Characteristics

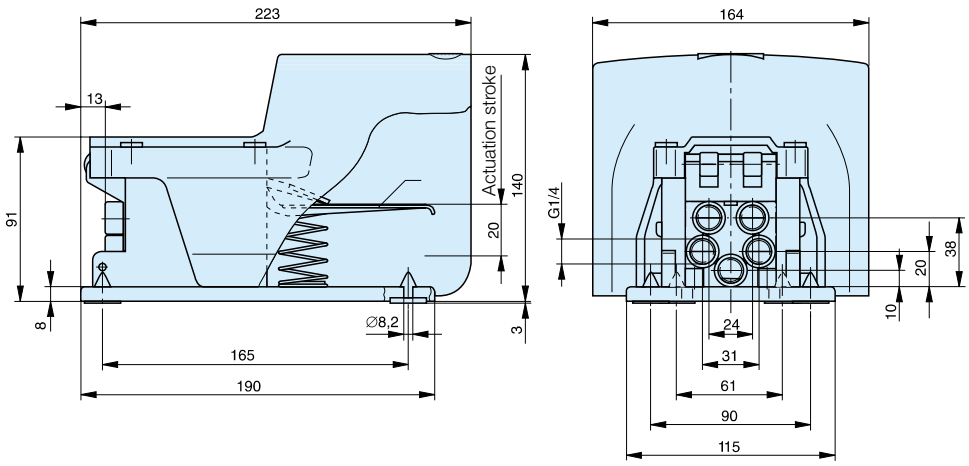
Nominal pressure	6 bar
Operating pressure range	0 – 10 bar
Nominal flow	1400 l/min

Actuation

Manual control	Direct
Stroke	2 mm
Actuation force	ca. 30 N

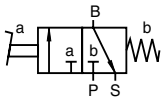
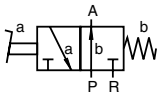
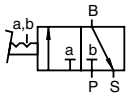
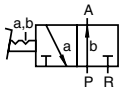
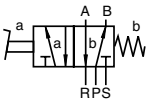
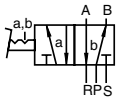
(1 After removing the rubber footing
(2 We recommend the use of mineral oil type VG 32 to ISO 3448
(3 Note: Please consult us for operating temperatures below 0° C

Pedal actuated – Type: F331..-08.., F531..-08



Dimensions in mm

Order Instructions – 3/2 and 5/2 Way Valves

Actuation	Symbol	Order Instructions	
		Type	**Order code**
Pedal with spring return		F 331RF-08NG*	**KZ 4410**
		F 331RF-08NO*	**KZ 4411**
Pedal without reset		F 331-08NG*	**KZ 4408**
		F 331-08NO*	**KZ 4409**
Pedal with spring return		F 531RF-08	**KZ 4413**
Pedal both switch positions indexed		F 531-08	**KZ 4412**

* NC – Version normally closed
NO – Version normally open

G1/2 to G2 - 2/2-Way Stop Valves Series ARKV

Actuation System:

- Pneumatic

Operating information

Description	2/2 Way Valve
Type	Poppet valve normally closed
Mounting	Direct in piping
Tube connection	Thread
Port size	G1/2 G3/4 G1 G1 1/2 G2
Weight (mass) Kg	0.745 1.115 1.365 2.695 4.290
Installation	In any position
Ambient temperature range	-20 °C to +80 °C
Medium temperature range	0 °C to +80 °C

Note: Please consult us for operating temperatures below 0° C

Medium	Compressed air, neutral gases, presswater (for low flow- und valve closingspeed only)
Actuating medium	filtered compressed air

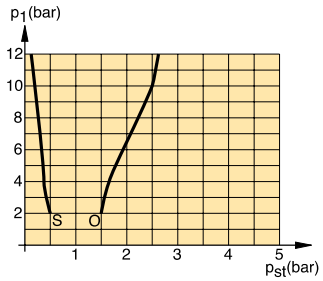
Pneumatic characteristics

Nominal pressure	6.3 bar
Operating pressure range	0 – 10 bar
Nominal flow (l/min)	2200 5000 6900 22000 40000

Actuation

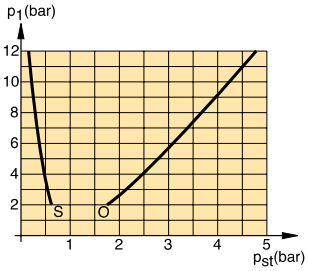
Pneumatic	Direct

Actuating Pressure – Type: ARKV-15



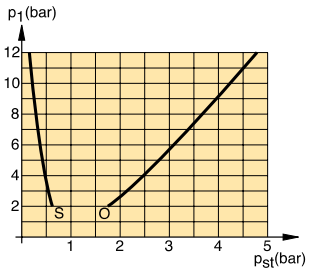
O = $p_{st\ min}$ to open
S = $p_{st\ max}$ to close

Actuating Pressure – Type: ARKV-20



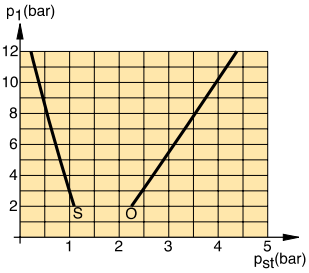
O = $p_{st\ min}$ to open
S = $p_{st\ max}$ to close

Actuating Pressure – Type: ARKV-25



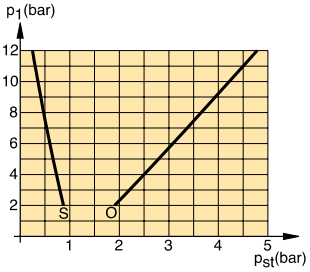
O = $p_{st\ min}$ to open
S = $p_{st\ max}$ to close

Actuating Pressure – Type: ARKV-40



O = $p_{st\ min}$ to open
S = $p_{st\ max}$ to close

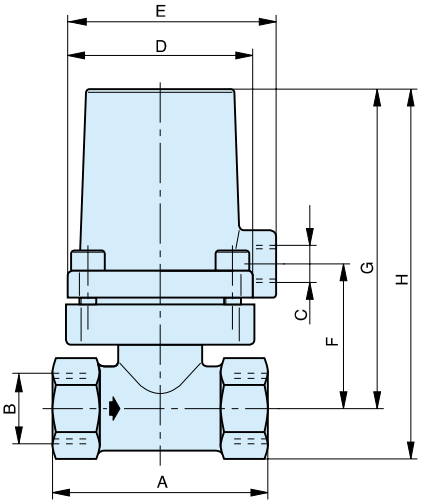
Actuating Pressure – Type: ARKV-50



O = $p_{st\ min}$ to open
S = $p_{st\ max}$ to close

Dimensions in mm

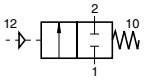
Pneumatically actuated – Type: ARKV-..



Dimensions

Type	A	B	C	D	E	F	G	H
ARKV-15 NC	65	G1/2	G1/8	55	61	41.5	95	109.5
ARKV-20 NC	76	G3/4	G1/4	65	75	50	112	129
ARKV-25 NC	91	G1	G1/4	65	75	57	119	139
ARKV-40 NC	123	G11/2	G1/4	110	112	67	137	167.5
ARKV-50 NC	150	G2	G1/4	130	134	75	153	190

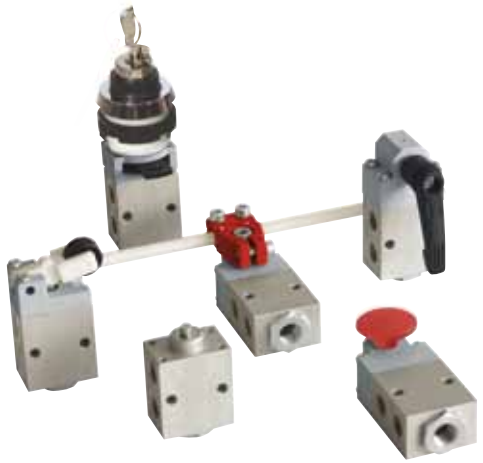
Order Instructions

Actuation System	Symbol	Order data	
		Type	**Order code**
Pneumatic		ARKV-15 NC	**PD 07334**
		ARKV-20 NC	**PD 07580**
		ARKV-25 NC	**PD 07581**
		ARKV-40 NC	**PD 07757**
		ARKV-50 NC	**PD 07765**

G1/8 - 3/2-Way Valves - Series K9

Actuation:

- Rotary lever, indexed
- Rotary lever, spring return
- Rotary lever, indexed, secured in two positons
- Pushbutton
- Cam operation
- Toggle cam operation
- Plunger operated
- Cam operated, free cam left or free cam right
- Pivoted lever
- Pedal
- Actuators for panel mounting



Operating information

System	Poppet Valve	
Mounting	2 Screws M4	
Tube connection	Thread	
Port size	G1/8	
Installation	In any position	
Ambient temperature range	-10 °C to +55 °C	Note: Please consult us for operating temperatures below 0° C
Medium temperature range	+5 °C* to +60 °C	
Medium	Filtered and lubricated or filtered and unlubricated air	
Lubrication	None or oil mist lubrication	

Pneumatic Characteristics

Nominal pressure	6 bar
Operating pressure range	0 – 10 bar
Nominal flow	220 l/min
Flow direction	1 → 2 normally closed 3 → 2 normally open
Actuation	
Actuation	Manual, mechanical and pedal actuated
Stroke	1.5 – 3 mm

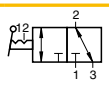
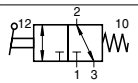
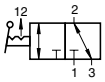
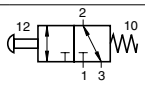
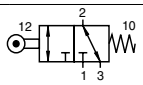
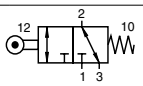
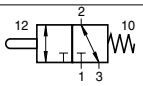
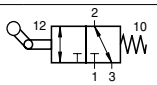
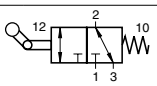
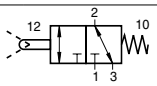
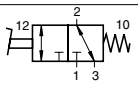
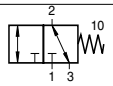
* -10°C when using dry compressed air

Actuation Forces, Rotation Angles and Weight

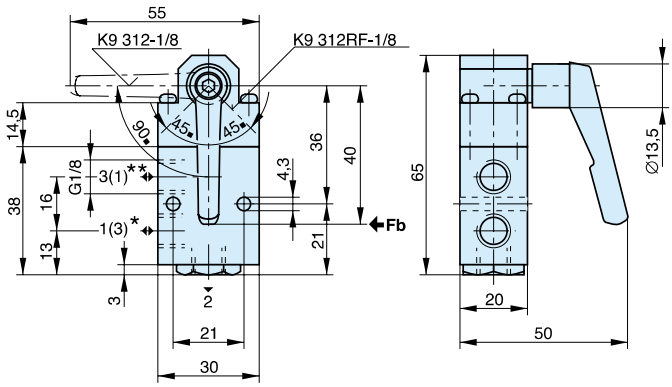
Description	Type	Actuation force (N)	Rotation angle	Weight mass (kg)
Rotary lever, indexed	K9 312-1/8	4.5	±45°, 90°	0.110
Rotary lever, spring return	K9 312RF-1/8	4.5	±45°, 90°	0.110
Rotary lever, indexed secured in both positions	K9 312S-1/8	4.5	±45°, 90°	0.110
Pushbutton	K9 314RF-1/8	25	–	0.075
Cam operation	K9 321RF-1/8	11	–	0.070
Toggle cam operation	K9 324RF-1/8	5	±40°	0.120
Plunger operated	K9 323RF-1/8	32	–	0.050
Cam operated free cam left	K9 325RF-1/8	5	±40°	0.120
Cam operated free cam right	K9 326RF-1/8	5	±40°	0.120
Pivoted lever	K9 329RF-1/8	2*	±40°	0.115
Pedal	K9 331RF-1/8	12	–	0.800
Basic valve for panel mounting actuators	K9 390RF-1/8	35	–	0.060

* at a distance of 100 mm from fulcrum

Order Instructions – 3/2 Way Poppet Valves, Series K9

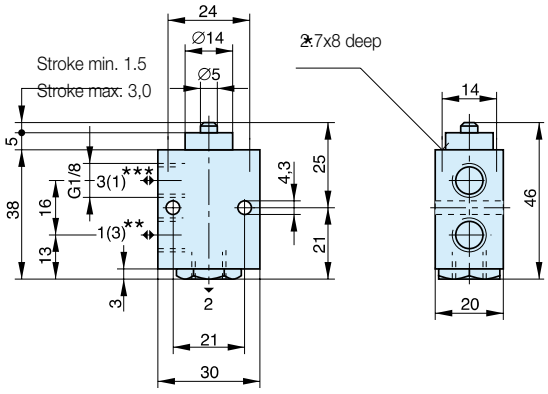
Actuation	Symbol	Mounting Ø (mm)	Order Instructions Type	**Order code**
Rotary lever, indexed			K9 312-1/8	**PA 10269**
Rotary lever, spring return			K9 312RF-1/8	**PA 10270**
Rotary lever, indexed secured in both positions			K9 312S-1/8	**PA 10349**
Pushbutton			K9 314RF-1/8	**PA 10271**
Cam operation			K9 321RF-1/8	**PA 10272**
Toggle cam operation			K9 324RF-1/8	**PA 10273**
Plunger operated			K9 323RF-1/8	**PA 10235**
Cam operated free cam left			K9 325RF-1/8	**PA 10274**
Cam operated free cam right			K9 326RF-1/8	**PA 10275**
Pivoted lever			K9 329RF-1/8	**PA 10276**
Pedal			K9 331RF-1/8	**PA 10277**
Panel mounting valve with adaptor for interchangeable actuation			K9 390RF-1/8	**PA 10278**
Rotary lever, indexed		22 30	12T-22 12T-30	**KX 9355** **KX 9314**
Rotary lever, spring return		22 30	12T-RF-22 12T-RF-30	**KX 9356** **KX 9315**
Pushbutton		22 30	13T-RF-22 13T-RF-30	**KX 9357** **KX 9316**
Mushroom pushbutton		22 30	15T-RF-22 15T-RF-30	**KX 9358** **KX 9317**
Locking switch		22 30	16T-22 16T-30	**KX 9359** **KX 9318**
Rotary switch		22 30	17T-22 17T-30	**KX 9360** **KX 9319**
Mushroom switch Emergency Shutdown		22 30	18T-22 18T-30	**KX 9361** **KX 9320**

Rotary Lever – Type: K9 312..-1/8



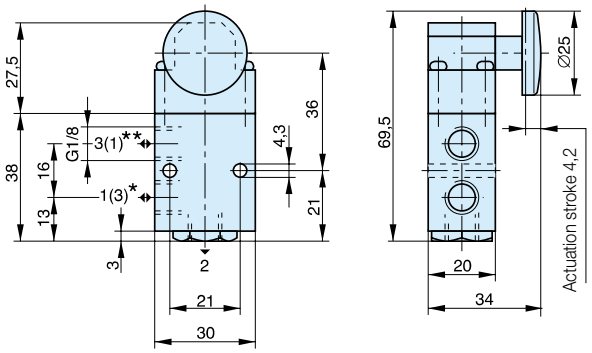
* = P when used as “normally closed“
** = P when used as “normally open“

Plunger Operated – Type: K9 323RF-1/8



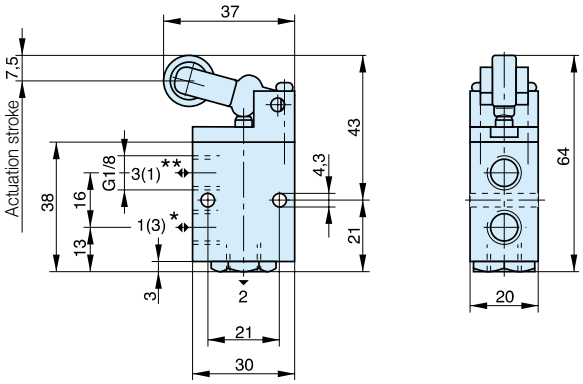
* Self tapping screws CM 3x.. DIN 7500 to be used
** = P when used as “normally closed“
*** = P when used as “normally open“

Pushbutton – Type: K9 314RF-1/8



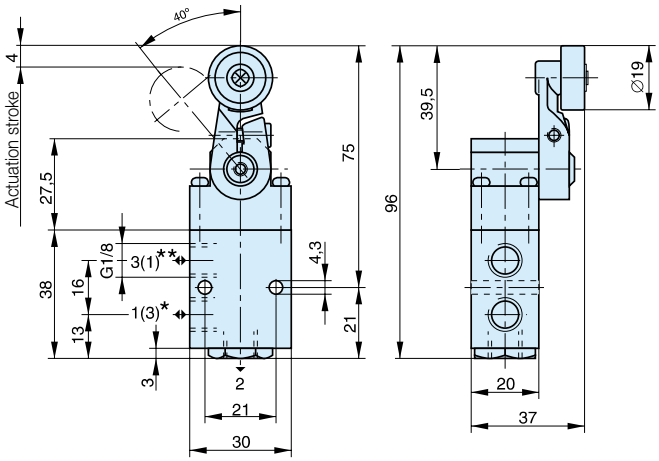
* = P when used as “normally closed“
** = P when used as “normally open“

Cam operation– Type: K9 321RF-1/8



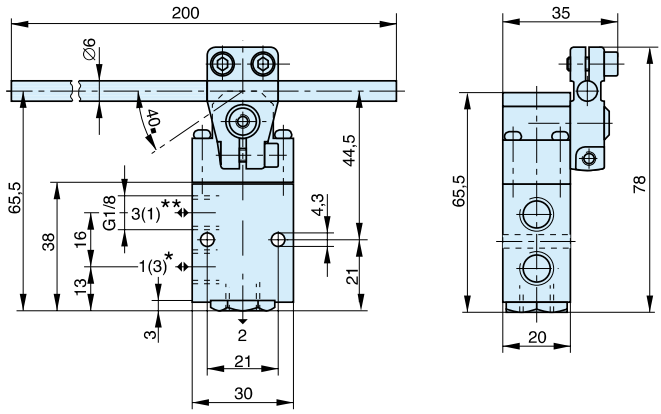
* = P when used as “normally closed“
** = P when used as “normally open“

Toggle Cam Operation – Type: K9 324RF-1/8



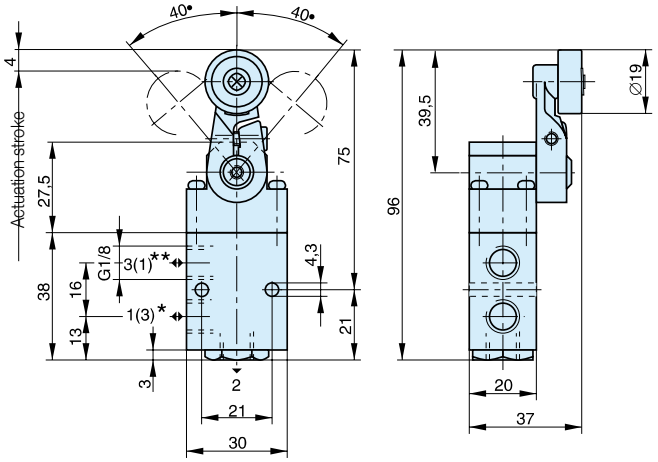
* = P when used as “normally closed“
** = P when used as “normally open“

Pivoted Lever – Type: K9 329RF-1/8



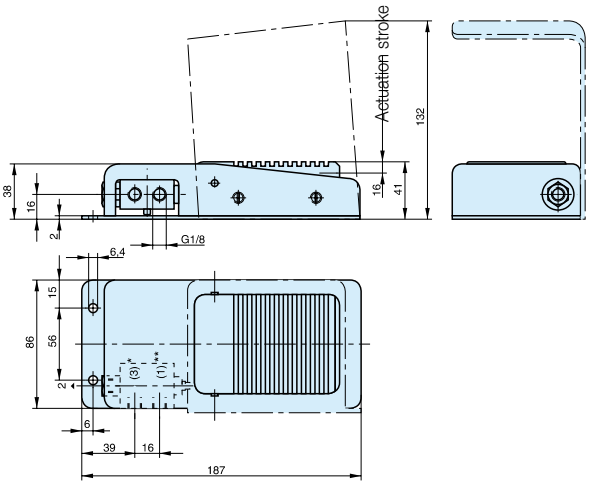
* = P when used as “normally closed“
** = P when used as “normally open“

Cam Operated free cam left / right Type: K9 325RF-1/8, K9 326RF-1/8



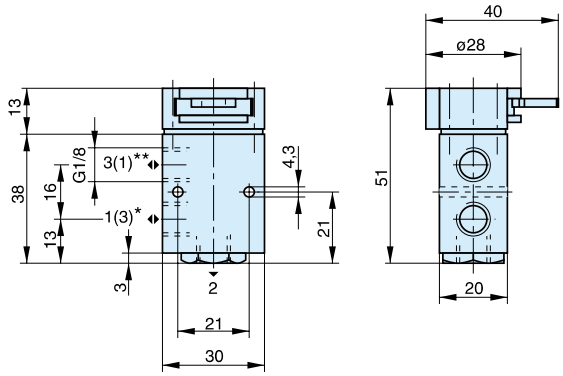
* = P when used as “normally closed“
** = P when used as “normally open“

Pedal – Type: K9 331RF-1/8



* = P when used as “normally closed“
** = P when used as “normally open“

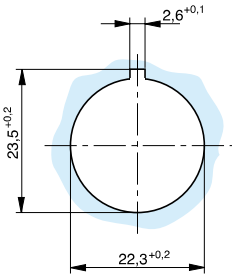
Basic Valve with adaptor for panel mounting Type: K9 390RF-1/8



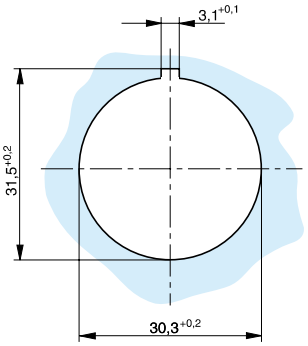
* = P when used as “normally closed“
** = P when used as “normally open“

Mounting holes for mounting diameters 22 and 30 mm

Mounting diameter Ø22 mm

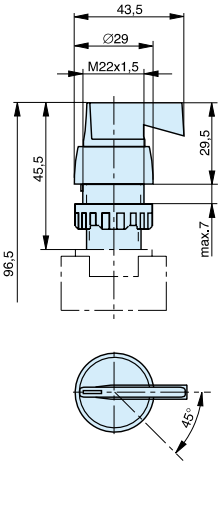


Mounting diameter Ø30 mm

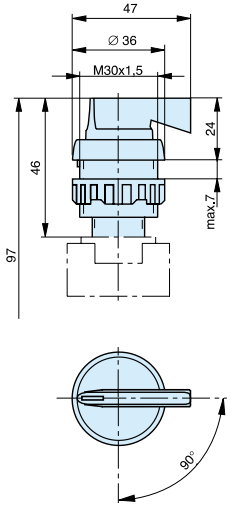


Rotary Lever, indexed – Type: 12T-22, 12T-30

Mounting diameter Ø22 mm

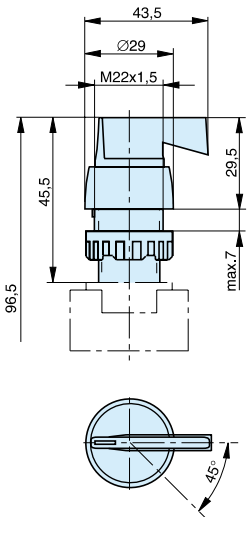


Mounting diameter Ø30 mm

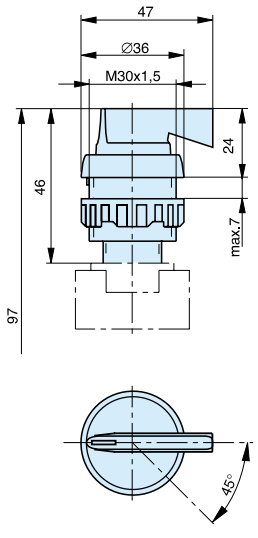


Rotary Lever with spring return Type: 12T-RF-22, 12T-RF-30

Mounting diameter Ø22 mm

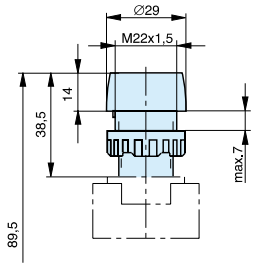


Mounting diameter Ø30 mm

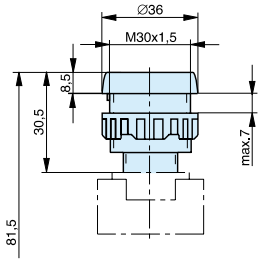


Pushbutton
Type: 13T-RF-22, 13T-RF-30

Mounting diameter Ø22 mm

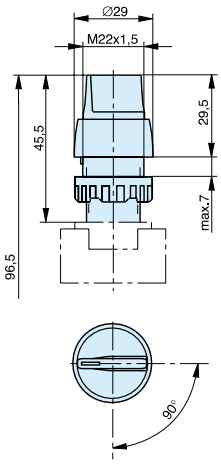


Mounting diameter Ø30 mm

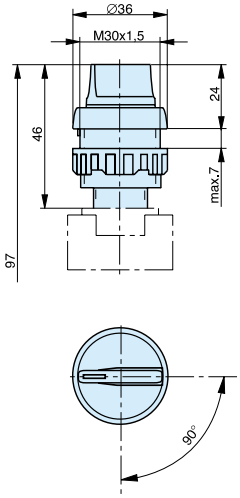


Rotary Switch
Type: 17T-22, 17T-30

Mounting diameter Ø22 mm

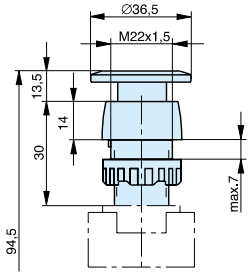


Mounting diameter Ø30 mm

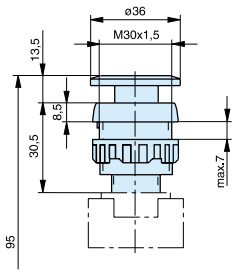


Mushroom Pushbutton
Type: 15T-RF-22, 15T-RF-30

Mounting diameter Ø22 mm

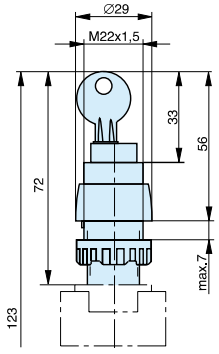


Mounting diameter Ø30 mm

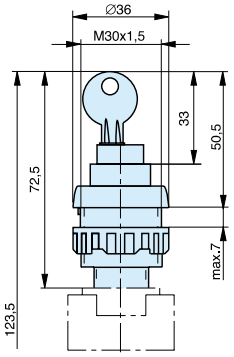


Locking Switch
Type: 16T-22, 16T-30

Mounting diameter Ø22 mm

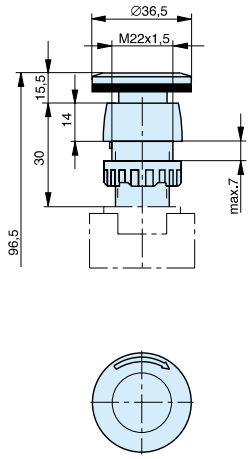


Mounting diameter Ø30 mm

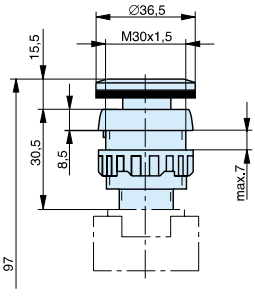


Mushroom Switch (Emergency Shutdown)
Type: 18T-22, 18T-30

Mounting diameter Ø22 mm



Mounting diameter Ø30 mm



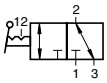
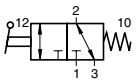
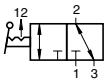
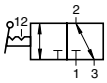
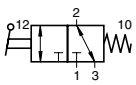
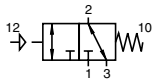
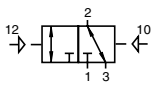
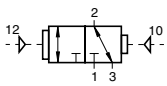
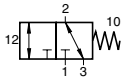
S9 Series Directional Control Valves

Actuation:
- Hand lever
- Pneumatic
- Electrical pilot operated
- Electrical pilot operated with external pilot air
- Panel mounting actuators for mounting diameter to DIN 43696

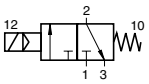
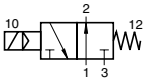
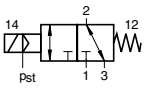
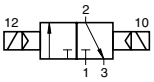
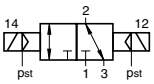
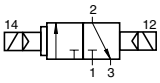
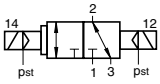
Versions:
- Normally closed
- Normally open
- With external pilot air
- With biased position
- Version to ATEX Standard

Note: The “normally open“ valve S9 381S-RF-1/8 cannot be used on a P-supply manifold.

3/2 Way Valves – Standard versions

Actuation System	Symbol	Mounting Ø (mm)	Order Instructions Type	Order No.
Hand lever, indexed			S9 311-1/8	**PA 10293**
			S9 311-1/4	**PA 12708**
			S9 311-1/2	**PA 16404**
Hand lever, spring return			S9 311RF-1/8	**PA 10294**
			S9 311RF-1/4	**PA 12709**
			S9 311RF-1/2	**PA 16405**
Hand lever secured in 2 switching positions			S9 311S-1/4	**PA 12710**
			S9 311S-1/2	**PA 16406**
Rotary lever, indexed			S9 312-1/4	**PA 12711**
			S9 312-1/2	**PA 16407**
Rotary lever, spring return			S9 312RF-1/4	**PA 12712**
			S9 312RF-1/2	**PA 16408**
Pneumatic, by permanent signal			S9 361RF-1/8	**PA 10295**
			S9 361RF-1/4	**PA 12713**
			S9 361RF-1/2	**PA 16409**
Pneumatic, by impulse			S9 361-1/8	**PA 10296**
			S9 361-1/4	**PA 12714**
			S9 361-1/2	**PA 16410**
Pneumatic, by impulse, with biased position			S9 362-1/4	**PA 12715**
			S9 362-1/2	**PA 16411**
Basic valve for panel mounting			S9 390RF-1/8	**PA 10307**

3/2 Way Valves – Standard versions

Actuation System	Symbol	Mounting Ø (mm)	Order Instructions Type	Order No.
Rotary lever, indexed		22	12T-22	**KX 9355**
		30	12T-30	**KX 9314**
Rotary lever, spring return		22	12T-RF-22	**KX 9356**
		30	12T-RF-30	**KX 9315**
Pushbutton		22	13T-RF-22	**KX 9357**
		30	13T-RF-30	**KX 9316**
Mushroom pushbutton		22	15T-RF-22	**KX 9358**
		30	15T-RF-30	**KX 9317**
Locking switch		22	16T-22	**KX 9359**
		30	16T-30	**KX 9318**
Rotary switch		22	17T-22	**KX 9360**
		30	17T-30	**KX 9319**
Mushroom pushbutton emergency-0ff		22	18T-22	**KX 9361**
		30	18T-30	**KX 9320**
Electrical by permanent signal			S9 381RF-1/8-NC-..	**PA 10297-..33**
			S9 381RF-1/4-NC-..	**PA 12716-..33**
			S9 381RF-1/2-NC-..	**PA 16412-..33**
			S9 381RF-1/8-NO-..	**PA 10298-..33**
			S9 381RF-1/4-NO-..	**PA 12717-..33**
			S9 381RF-1/2-NO-..	**PA 16413-..33**
with external pilot air			S9 381S-RF-1/8-..	**PA 10300-..33**
			S9 381S-RF-1/4-..	**PA 12719-..33**
			S9 381S-RF-1/2-..	**PA 16415-..33**
Electrical by impulse			S9 381-1/8-..	**PA 10299-..33**
			S9 381-1/4-..	**PA 12718-..33**
			S9 381-1/2-..	**PA 16414-..33**
Electrical, by impulse, with external pilot air			S9 381S-1/8-..	**PA 10301-..33**
			S9 381S-1/4-..	**PA 12720-..33**
			S9 381S-1/2-..	**PA 16417-..33**
Electrical by impulse, with biased position				
			S9 382-1/4-..	**PA 12721-..33**
			S9 382-1/2-..	**PA 16418-..33**
with external pilot air				
			S9 382S-1/4-..	**PA 12722-..33**
			S9 382S-1/2-..	**PA 16419-..33**

Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Standard version	230V 50/60Hz	110 V =	61	–
	24V =	60V 50/60Hz	02	–
Low wattage version	24V =		13	–
	230V 50/60Hz		69	–

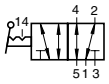
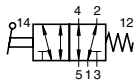
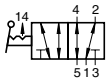
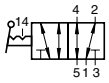
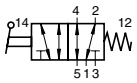
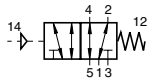
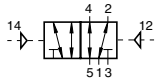
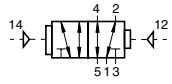
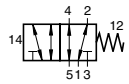
EX Area versions to ATEX Standard
Category, type of ignition protection

Single valve: ⟨Ex⟩ II 2G c T4 T135°C -10°C≤Ta≤+60°C
Solenoid/individual use: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+50°C
Solenoid/manifold mounting: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+40°C

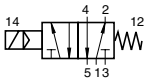
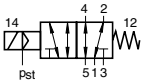
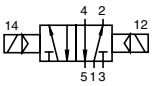
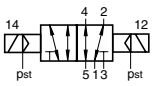
Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Solenoid – with cable 1.2 m	24V =		48	ATEX
– with cable 3 m	24V =		45	ATEX
– with cable 5 m	24V =		46	ATEX
– with cable 10 m	24V =		47	ATEX
– with cable 1.2 m	24V 50/60Hz		99	ATEX
– with cable 1.2 m	110V 50/60Hz		97	ATEX
– with cable 1.2 m	230V 50/60Hz		98	ATEX

Example for valves in ATEX-Version:
– for valves Series S9-G1/8, S9-G1/4, S9-G1/2
Please add behind the Standard Order No. “ATEX“
Type: S9 381RF-1/8-NC-4633
Order No. PA10297-4633ATEX

Order Instructions – 5/2 Way Valves – Standard versions

Actuation System	Symbol	Mounting Ø (mm)	Order Instructions Type	Order No.
Hand lever, indexed			S9 511-1/8	**PA 10308**
			S9 511-1/4	**PA 12671**
			S9 511-1/2	**PA 16367**
Hand lever, spring return			S9 511RF-1/8	**PA 10309**
			S9 511RF-1/4	**PA 12672**
			S9 511RF-1/2	**PA 16366**
Hand lever secured in 2 switching positions			S9 511S-1/8	**PA 10368**
			S9 511S-1/4	**PA 12673**
			S9 511S-1/2	**PA 16368**
Rotary lever, indexed				
			S9 512-1/4	**PA 12674**
			S9 512-1/2	**PA 16378**
Rotary lever, spring return				
			S9 512RF-1/4	**PA 12675**
			S9 512RF-1/2	**PA 16379**
Pneumatic, by permanent signal			S9 561RF-1/8	**PA 10310**
			S9 561RF-1/4	**PA 12676**
			S9 561RF-1/2	**PA 16165**
Pneumatic, by impulse			S9 561-1/8	**PA 10311**
			S9 561-1/4	**PA 12677**
			S9 561-1/2	**PA 16166**
Pneumatic, by impulse, with biased position				
			S9 562-1/4	**PA 12678**
			S9 562-1/2	**PA 16167**
Basic valve for panel mounting			S9 590RF-1/8	**PA 10320**
Rotary lever, indexed		22	12T-22	**KX 9355**
		30	12T-30	**KX 9314**
Rotary lever, spring return		22	12T-RF-22	**KX 9356**
		30	12T-RF-30	**KX 9315**
Pushbutton		22	13T-RF-22	**KX 9357**
		30	13T-RF-30	**KX 9316**
Mushroom pushbutton		22	15T-RF-22	**KX 9358**
		30	15T-RF-30	**KX 9317**
Locking switch		22	16T-22	**KX 9359**
		30	16T-30	**KX 9318**

Order Instructions - 5/2 Way Valves - Standard Versions

Actuation System	Symbol	Mounting Ø (mm)	Order Instructions Type	Order No.
Rotary switch		22	17T-22	**KX 9360**
		30	17T-30	**KX 9319**
Mushroom pushbutton Emergency-Off		22	18T-22	**KX 9361**
		30	18T-30	**KX 9320**
Electrical, by permanent signal			S9 581RF-1/8-..	**PA 10312-..33**
			S9 581RF-1/4-..	**PA 12679-..33**
			S9 581RF-1/2-..	**PA 16171-..33**
with external pilot air			S9 581S-RF-1/8-..	**PA 10314-..33**
			S9 581S-RF-1/4-..	**PA 12681-..33**
			S9 581S-RF-1/2-..	**PA 16174-..33**
Electrical, by impulse			S9 581-1/8-..	**PA 10313-..33**
			S9 581-1/4-..	**PA 12680-..33**
			S9 581-1/2-..	**PA 16172-..33**
with external pilot air			S9 581S-1/8-..	**PA 10315-..33**
			S9 581S-1/4-..	**PA 12682-..33**
			S9 581S-1/2-..	**PA 16175-..33**

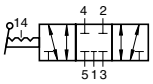
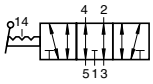
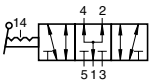
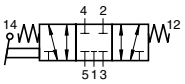
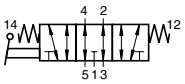
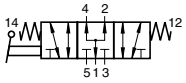
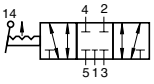
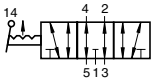
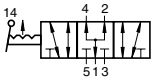
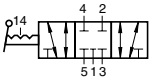
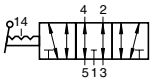
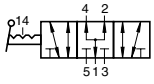
Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Standard version	230V 50/60Hz	110 V =	61	–
	24V =	60V 50/60Hz	02	–
Low wattage version	24V =		13	–
	230V 50/60Hz		69	–

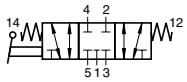
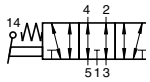
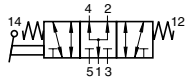
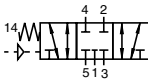
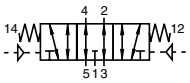
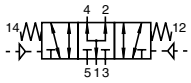
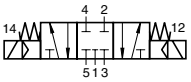
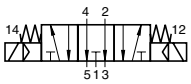
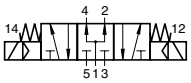
EX Area versions to ATEX Standard
Category, type of ignition protection
Single valve: ⟨Ex⟩ II 2G c T4 T135°C -10°C≤Ta≤+60°C
Solenoid/individual use: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+50°C
Solenoid/manifold mounting: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+40°C

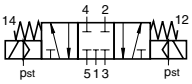
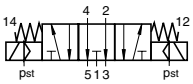
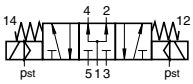
Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Solenoid – with cable 1.2 m	24V =		48	ATEX
– with cable 3 m	24V =		45	ATEX
– with cable 5 m	24V =		46	ATEX
– with cable 10 m	24V =		47	ATEX
– with cable 1.2 m	24V 50/60Hz		99	ATEX
– with cable 1.2 m	110V 50/60Hz		97	ATEX
– with cable 1.2 m	230V 50/60Hz		98	ATEX

Example for valves in ATEX-Version:
– for valves Series S9-G1/8, S9-G1/4, S9-G1/2
Please add behind the Standard Order No. “ATEX“
Type: S9 381RF-1/8-NC-4633
Order No. PA10297-4633ATEX

Order Instructions – 5/3 Way Valves – Standard versions

Actuation System	Symbol	Order Instructions Type	Order No.
Hand lever, secured in 3 operating positions		S9 511G-1/8	**PA 10321**
		S9 511G-1/4	**PA 12687**
		S9 511G-1/2	**PA 16369**
		S9 511E-1/8	**PA 10322**
		S9 511E-1/4	**PA 12688**
		S9 511E-1/2	**PA 16370**
		S9 511B-1/8	**PA 10323**
		S9 511B-1/4	**PA 12689**
		S9 511B-1/2	**PA 16371**
Hand lever, spring return to middle position		S9 511RFG-1/8	**PA 10324**
		S9 511RFG-1/4	**PA 12690**
		S9 511RFG-1/2	**PA 16372**
		S9 511RFE-1/8	**PA 10325**
		S9 511RFE-1/4	**PA 12691**
		S9 511RFE-1/2	**PA 16373**
		S9 511RFB-1/8	**PA 10326**
		S9 511RFB-1/4	**PA 12692**
		S9 511RFB-1/2	**PA 16374**
Hand lever, secured in 3 operating positions		S9 511SG-1/8	**PA 10327**
		S9 511SG-1/4	**PA 12693**
		S9 511SG-1/2	**PA 16375**
		S9 511SE-1/8	**PA 10328**
		S9 511SE-1/4	**PA 12694**
		S9 511SE-1/2	**PA 16376**
		S9 511SB-1/8	**PA 10329**
		S9 511SB-1/4	**PA 12695**
		S9 511SB-1/2	**PA 16377**
Rotary lever, indexed in 3 operating positions		S9 512G-1/4	**PA 12696**
		S9 512G-1/2	**PA 16380**
		S9 512E-1/4	**PA 12697**
		S9 512E-1/2	**PA 16381**
		S9 512B-1/4	**PA 12698**
		S9 512B-1/2	**PA 16382**

Actuation System	Symbol	Order Instructions Type	Order No.
Rotary lever, spring return to middle position		S9 512RFG-1/4	**PA 12699**
		S9 512RFG-1/2	**PA 16383**
		S9 512RFE-1/4	**PA 12700**
		S9 512RFE-1/2	**PA 16384**
		S9 512RFB-1/4	**PA 12701**
		S9 512RFB-1/2	**PA 16385**
Pneumatic, by permanent signal		S9 561RFG-1/8	**PA 10330**
		S9 561RFG-1/4	**PA 12702**
		S9 561RFG-1/2	**PA 16168**
spring return to middle position		S9 561RFE-1/8	**PA 10331**
		S9 561RFE-1/4	**PA 12703**
		S9 561RFE-1/2	**PA 16169**
		S9 561RFB-1/8	**PA 10332**
		S9 561RFB-1/4	**PA 12704**
		S9 561RFB-1/2	**PA 16170**
Electrical by permanent signal		S9 581RFG-1/8-..	**PA 10333-..33**
		S9 581RFG-1/4-..	**PA 12705-..33**
		S9 581RFG-1/2-..	**PA 16176-..33**
spring return to middle position		S9 581RFE-1/8-..	**PA 10334-..33**
		S9 581RFE-1/4-..	**PA 12706-..33**
		S9 581RFE-1/2-..	**PA 16177-..33**
		S9 581RFB-1/8-..	**PA 10335-..33**
		S9 581RFB-1/4-..	**PA 12707-..33**
		S9 581RFB-1/2-..	**PA 16178-..33**

Actuation System	Symbol	Order Instructions Type	Order No.
Electrical by permanent signal		S9 581S-RFG-1/8-.. S9 581S-RFG-1/4-..	**PA 10377-..33** **PA 12925-..33**
spring return to middle position		S9 581S-RFE-1/8-.. S9 581-RFE-1/4-..	**PA 10379-..33** **PA 12923-..33**
with external pilot air		S9 581S-RFB-1/8-.. S9 581S-RFB-1/4-..	**PA 10378-..33** **PA 12924-..33**

Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Standard version	230V 50/60Hz	110 V =	61	–
	24V =	60V 50/60Hz	02	–
Low wattage version	24V =		13	–
	230V 50/60Hz		69	–

Single valve: ⟨Ex⟩ II 2G c T4 T135°C -10°C≤Ta≤+60°C
Solenoid/individual use: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+50°C
Solenoid/manifold mounting: ⟨Ex⟩ II 2G EEx m II T5 -20°C≤Ta≤+40°C

Solenoid version	Nominal voltage	Applicable for	Key code	ATEX Type additon
Solenoid – with cable 1.2 m	24V =		48	ATEX
– with cable 3 m	24V =		45	ATEX
– with cable 5 m	24V =		46	ATEX
– with cable 10 m	24V =		47	ATEX
– with cable 1.2 m	24V 50/60Hz		99	ATEX
– with cable 1.2 m	110V 50/60Hz		97	ATEX
– with cable 1.2 m	230V 50/60Hz		98	ATEX

Example for valves in ATEX-Version:
– for valves Series S9-G1/8, S9-G1/4, S9-G1/2
Please add behind the Standard Order No. “ATEX“
Type: S9 381RF-1/8-NC-4633
Order No. PA10297-4633ATEX

3/2, 5/2 and 5/3 Directional Control Valves
Series S9-G1/8 / G1/4 / G1/2

Characteristics	**Series S9 G1/8**			**Series S9 G1/4**			**Series S9 G1/2**		
Actuation	Manual control	pneumatic	electrical	Manual control	pneumatic	electrical	Manual control	pneumatic	electrical
General Features									
Type	Spool valve			Spool valve			Spool valve		
Mounting	2 Screws M5			2 Screws M6			2 Screws M6		
Tube connection	Thread			Thread			Thread		
Thread	G1/8 – 7.4 deep			G1/4 – 11 deep			G1/2 – 16 deep		
Installation	In any position			In any position			In any position		
Ambient temperature range ([1]	-10 °C to +60 °C *			-10 °C to +60 °C*			-10 °C to +60 °C*		
Medium temperature range ([1]	-10 °C to +60 °C *			-10 °C to +60 °C*			-10 °C to +60 °C*		
Medium	Filtered compressed air								
Lubrication	With or without oil mist lubrication (We recommend the use of mineral oil type VG 32 to ISO 3448)								
Pneumatic Characteristics									
Nominal pressure (bar)	6			6			6		
Operating pressure range (bar)	0–10 ([10	–	–	0–10	–	–	0–10	–	–
– permanent signal version (bar)	–	0–10	2–10	–	0–10	2–10	–	0–10	2.2–10
– impulse version (bar)	–	0–10	2–10	–	0–10	2–10	–	0–10	2.2–10
– with external pilot air (bar)	–	–	0–10	–	–	0–10	–	–	0–10
Nominal flow	500 l/min (450 bei 3/2 Way Valve)			1300 l/min([7			3500 l/min([8		
Actuation									
Manual control	Direct			Direct			Direct		
Stroke	4.5 mm			6.5 mm			9.4 mm		
Actuation force (N)	7 ([2] 10 ([3]			10 ([2] 15 ([3]			15 ([2] 40 ([3]		
Pneumatic	Direct			Direct			Direct		
Actuation pressure range									
– permanent signal version (bar)	–	2–10	2–10	2–10	2–10	2–10	–	2.2–10([9]	2.2–10
– impulse version (bar)	–	1.5–10	1.5–10	1.5–10	1.5–10([4]	1.5–10([4]	–	1.5–10([5]	1.5–10([4]
Electrical	Electrical pilot operated						Electrical pilot operated		
Voltage type	Alternating current (50/60Hz)			Direct current			Alternating current (50/60Hz)		
Nominal voltage									
– Standard version	230 V ±10%			24 V ±10%			Other voltages on request		
– Low wattage version	230 V ±10%			24 V ±10%			230 V ±10%		
Initial power consumption	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2
– Standard version (VA)	8.5	8.5	11.0	2.5	2.5	4.8	8.5	8.5	11.0
– Low wattage version (VA)	6.6	6.6	7.8	2.1	2.1	2.7	6.6	6.6	7.8
Continuous consumption	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2	G1/8	G1/4	G1/2
– Standard version (VA)	6.0	6.0	8.5	2.5	2.5	4.8	6.0	6.0	8.5
– Low wattage version (VA)	3.9	4.9	4.9	2.1	2.1	2.7	3.9	4.9	4.9
Duty cycle	100%			100%			100%		
Electrical protection	IP65 to DIN 40050 (applise only to solenoid with plug)								
Connection	Plug to DIN EN 175301-803 form B – industrial standard ([6								

* Valve Manifold Assemblies with electrically actuated valves -10 to +50°C
([1 Note: For use below freezing point please contact us
([2 Actuation force for valves without spring return, actuation with rotary lever: 5N
([3 Actuation force for valves with spring return, Actuation with rotary lever:15N
([4 Only for version with biased position 2 – 10 bar, pneumatically actuated 2 – 10 bar, electrically actuated 2.5 – 10 bar
([5 Version with biased position 2.5 – 10 bar
([6 Low wattage version: Plug to DIN EN 175301-803 form A
([7 Version “middle position vented“ 1000 l/min
([8 Version “middle position vented“ 3300 l/min Version “middle position pressured“ 3600 l/min
([9 5/3 Way Valve 2.5 – 10 bar
([10 Valves with panel mounting actuators 2 – 10 bar

3/2, 5/2 and 5/3 Way Valves for use in EX areas
Series S9-G1/8 / G1/4 / G1/2

Characteristics	Series S9 G1/8			Series S9 G1/4			Series S9 G1/2		
Actuation	Manual Control	pneumatic	electrical	Manual Control	pneumatic	electrical	Manual Control	pneumatic	electrical
General Features									
Type	Spool valve			Spool valve			Spool valve		
Mounting	2 screws M5			2 Screws M6			2 Screws M6		
Tube connection	Thread			Thread			Thread		
Thread	G1/8 – 7.4 deep			G1/4 – 11 deep			G1/2 – 16 deep		
Installation	In any position			In any position			In any position		
Ambient temperature range ([1]	-10 °C to +60 °C *			-10 °C to +60 °C *			-10 °C to +60 °C *		
Medium temperature range ([1]	-10 °C to +60 °C *			-10 °C to +60 °C *			-10 °C to +60 °C *		
Medium	Filtered, unlibricated compressed air – free from water and dirt to ISO8573-1			Solids: Class 7 particle size <40 µm for gas Water content: pressure dew point + 3°C, Class 4, but at least 5°C below minimum operating temperature			Solids: Class 7 particle size <40 µm for gas Water content: pressure dew point + 3°C, Class 4, but at least 5°C below minimum o perating temperature		
Pneumatic Characteristics									
Nominal pressure (bar)	6			6			6		
Operating pressure range (bar)	0–8 ([10	–	–	0–8	–	–	0–8	–	–
– permanent signal version (bar)	–	0–8	2–8	–	0–8	2–8	–	0–8	2.2–8
– impulse version (bar)	–	0–8	1.5–8([4	–	0–8	1.5–8([4	–	0–8	1.5–8([4
– with external pilot air (bar)	–	–	0–8	–	–	0–8	–	–	0–8
Nominal flow	500 l/min (450 bei 3/2 Way Valve)			1300 l/min ([7			3500 l/min ([8		
Actuation									
Manual control	Direct			Direct			Direct		
Stroke	4.5 mm			6.5 mm			9.4 mm		
Actuation force (N)	7 ([2 10 ([3			10 ([2 15 ([3			15 ([2 40 ([3		
Pneumatic	Direct			Direct			Direct		
Actuation pressure range									
– permanent signal version (bar)	–	2–8	2–8	2–8	2–8	2–8	–	2.2–8([9	2.2–8
– impulse version (bar)	–	1.5–8	1.5–8([4	1.5–8	1.5–8([4	1.5–8([4	–	1.5–8([5	1.5–8([4
Electrical	Electrical pilot operated								
Certification	EC Type Test Certificate for single valve: not required for mechanical units in II 2G			EC Type Test Certificate for solenoid: PTB-No. 03 Ex IEC 2019X and PTB 03 ATEX 2018X toT5			EC Type Test Certificate for solenoid: PTB-No. 03 Ex IEC 2019X and PTB 03 ATEX 2018X toT5		
Category, type of ignition protection	Single valve II 2G c T4T135°C-10°C≤Ta≤+60°C			Solenoid/individual use: II 2G EEx m II T5 -20°C≤Ta≤+50°C Solenoid/manifold mounting: II 2G EEx m II T5 -20°C≤Ta≤+40°C			Solenoid/individual use: II 2G EEx m II T5 -20°C≤Ta≤+50°C Solenoid/manifold mounting: II 2G EEx m II T5 -20°C≤Ta≤+40°C		
Voltage type	Alternating current (50/60Hz)			Direct current					
Nominal voltage	230 V ±10%			24 V ±10%			Other voltages on request		
	110 V ±10%								
	24 V ±10%								
Power rating at U_N	G1/8, G1/4, G1/2			G1/8, G1/4, G1/2					
	3.1 VA (230V)			3.3 VA (24V)					
	3.0 VA (110V)								
	2.5 VA (24V)								
Max. power at Un ([6	G1/8, G1/4, G1/2			G1/8, G1/4, G1/2					
	2.9 VA (230V)			3.0 VA (24V)					
	2.8 VA (110V)								
	2.4 VA (24V)								
Electrical protection	IP65 (applise only to solenoid with cable)								
Connection	Cable – cable lengths see Order Instructions								

* Valve Manifold Assemblies with electrically actuated valves -10 to +50°C
([1 Note: For use below freezing point please contact us
([2 Actuation force for valves without spring return, Actuation with rotary lever: 5N
([3 Actuation force for valves with spring return, actuation with rotary lever: 15N
([4 Only for version with biased position pneumatically actuated 2 – 8 bar, electrically actuated 2.5 – 8 bar
([5 Version with biased position 2.5 – 8 bar
([6 Maximum power if warmed up to termal load limit
([7 Version “middle position vented“ 1000 l/min
([8 Version “middle position vented“ 3300 l/min, Version “middle position pressured“ 3600 l/min
([9 5/3 Way Valve 2.5 – 8 bar
([10 Valves with panel mounting actuators 2 – 8 bar

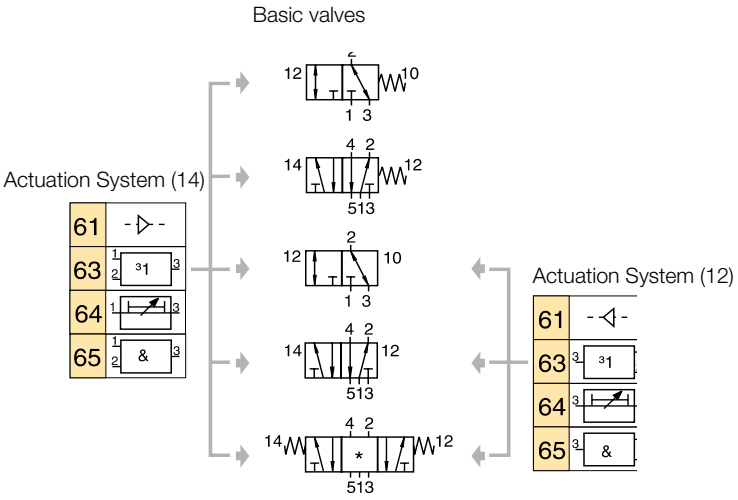
Valve Combinations with Logic Elements
3/2, 5/2 and 5/3 Way Valves

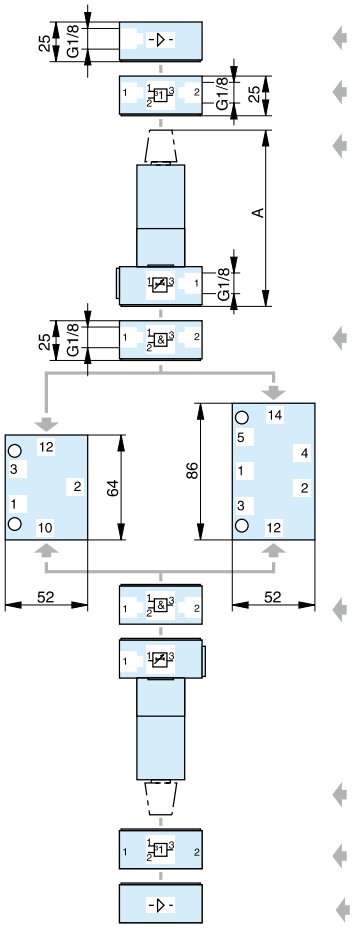
Actuation Systems:
Pneumatic
AND
OR
TIMER
- Electrical pilot operated

Versions:
- Freely selectable types
- See Order information
- All Timer-Versions on request

Possible combinations:

* RFG = middle position closed
RFE = middle position exhausted
RFB = middle position pressurized





Pneumatic Actuation 61
OR Actuation 63
Timer Actuation 64
Standard version: Countersunk adjustment screw
On request: Rotary knob version
AND Actuation 65

Dimension Table and adjustment ranges	
Adjustment range [s]	Dimension A [mm]
0.1 to 15	103 (133*)
0.1 to 30	117 (147*)
0.1 to 60	150 (180*)

* Version with rotary knob (optional)

3/2 Way Valve

5/2 and 5/3 Way Valves

AND Actuation 65
Timer Actuation 64
Standard version: Countersunk adjustment screw
On request: Rotary knob version
OR Actuation System 63
Pneumatic Actuation 61

Dimension Table and adjustment ranges	
Adjustment range [s]	Dimension A [mm]
0.1 to 15	103 (133*)
0.1 to 30	117 (147*)
0.1 to 60	150 (180*)

* Version with rotary knob (optional)

Valve Combinations with Logic Elements
3/2, 5/2 and 5/3 Way Valves

Order Instructions

S9	5	63	/	65	–	RFG	–	1/4

Version	
3	3 Way Valve
5	5 Way Valve

Actuation System (14)	
61	Pneumatic
63	OR
64	Timer* – all Timer-Versions on request
65	AND

* only with connection size G1/4

Connection size	
1/8	G1/8
1/4	G1/4

Mid position function (only with 5/3 Way Valves)	
RFG	closed
RFE	vented
RFB	pressurized

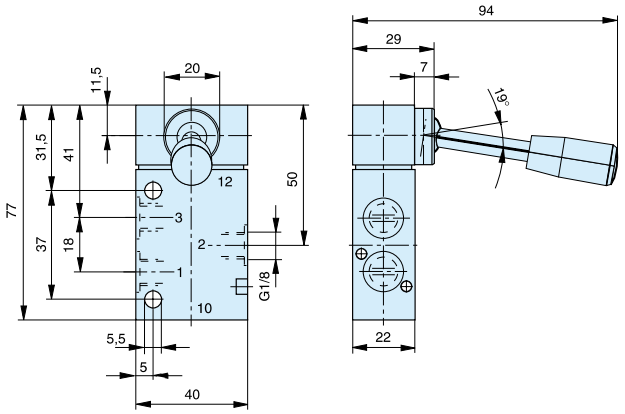
Actuation System (14)	
RF	spring return
61	pneumatic
63	OR
64	Timer* – all Timer-Versions on request
65	AND

* only with Connection size G1/4

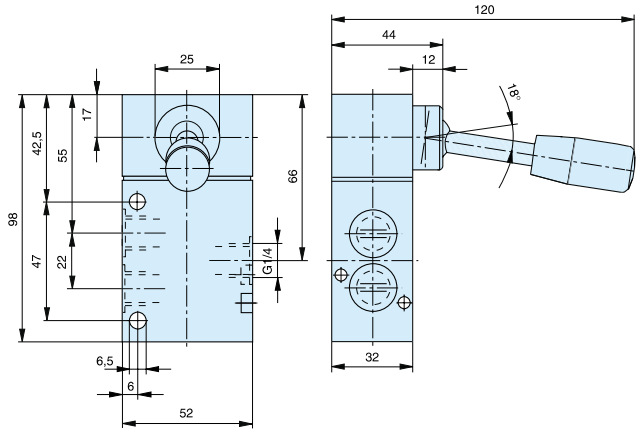
Dimensions in mm

3/2 Way Lever Operated Valves

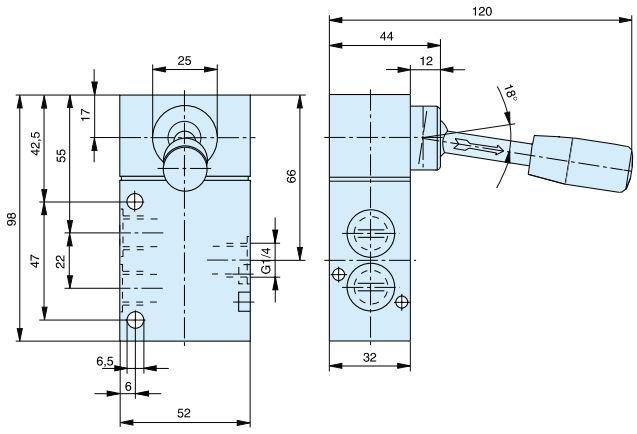
G1/8 Hand lever actuated
Type: S9 311-1/8, S9 311RF-1/8



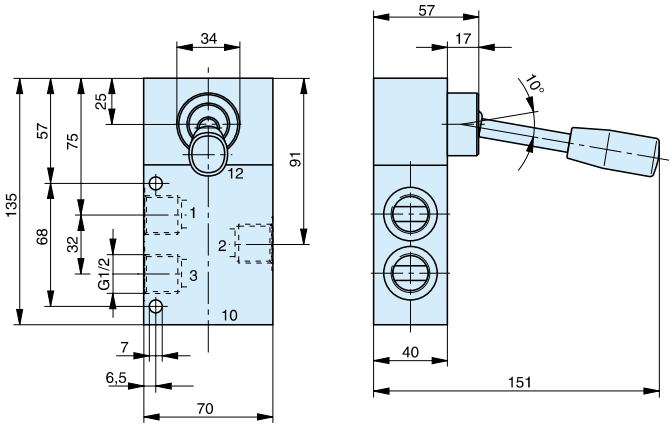
G1/4 Hand lever actuated
Type: S9 311-1/4, S9 311RF-1/4



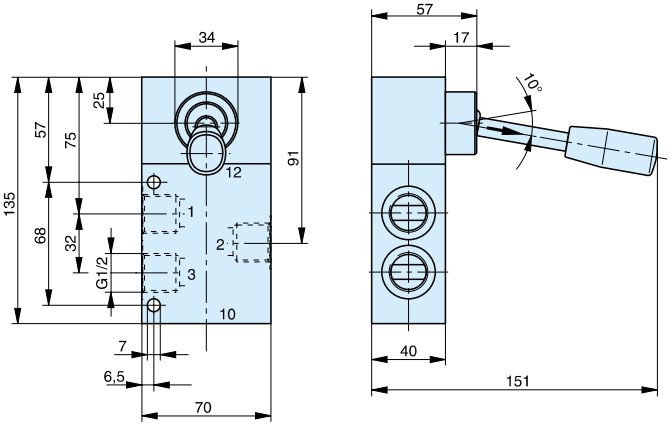
G1/4 Safety hand lever actuated
Type: S9 311S-1/4



G1/2 Hand lever actuated
Type: S9 311-1/2, S9 311RF-1/2

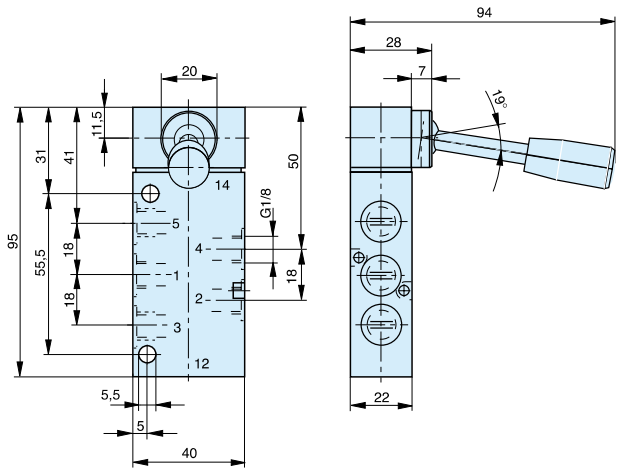


G1/2 Safety hand lever actuated
Type: S9 311S-1/2

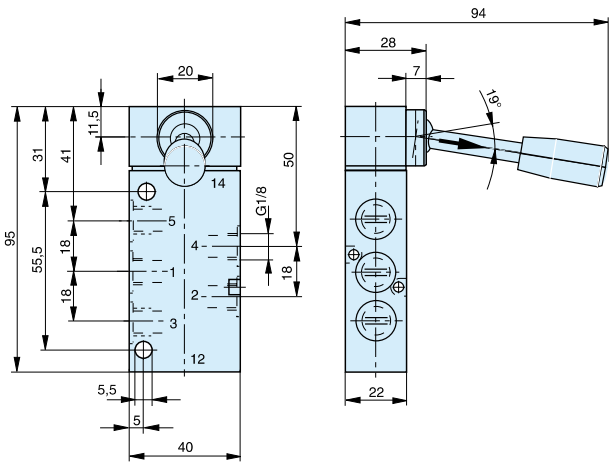


5/2 Way Lever Operated Valves

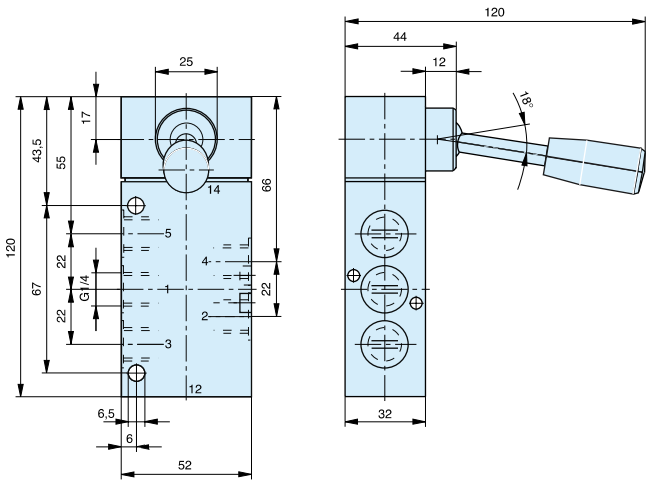
G1/8 Hand lever actuated
Type: S9 511-1/8, S9 511RF-1/8



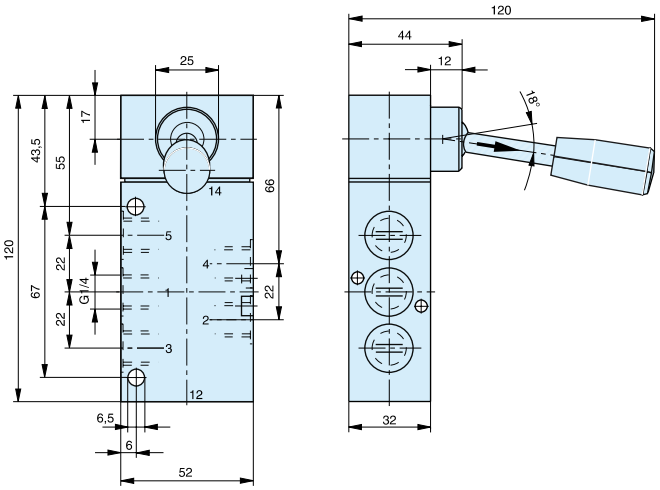
G1/8 Safety Hand lever actuated
Type: S9 511S.-1/8



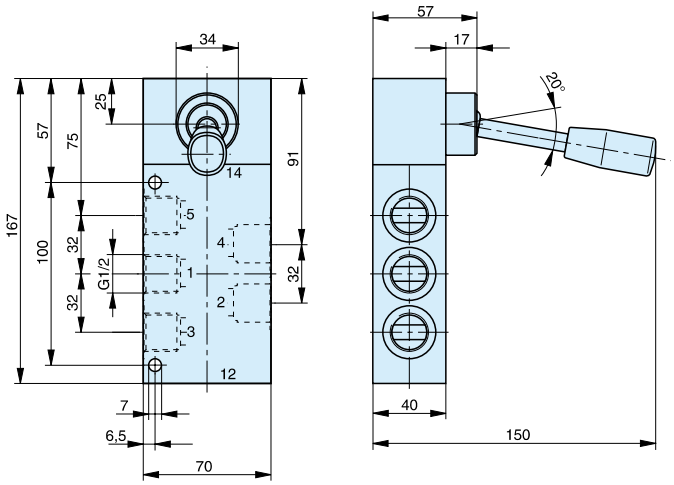
G1/4 Hand lever actuated
Type: S9 511-1/4, S9 511RF-1/4



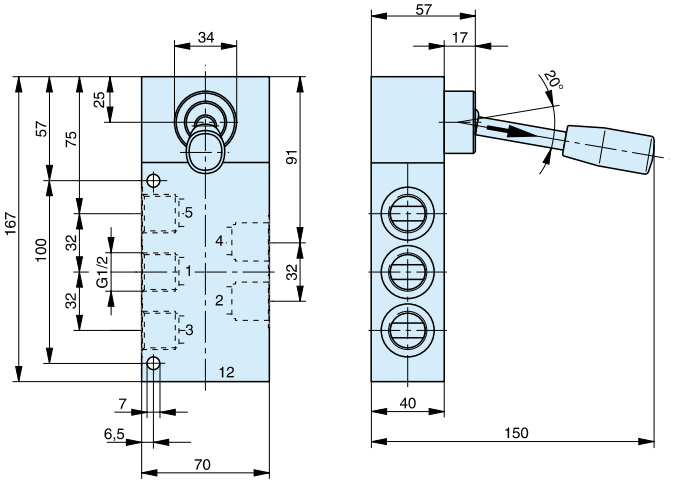
G1/4 Safety hand lever actuated
Type: S9 511S-1/4



G1/2 Hand lever actuated
Type: S9 511-1/2, S9 511RF-1/2

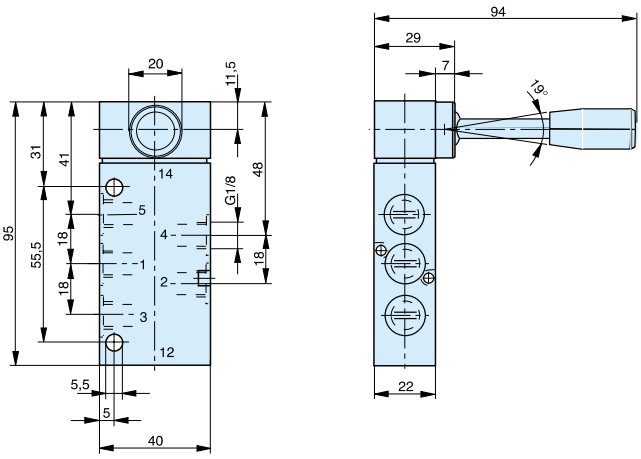


G1/2 Safety hand lever actuated
Type: S9 511S-1/2

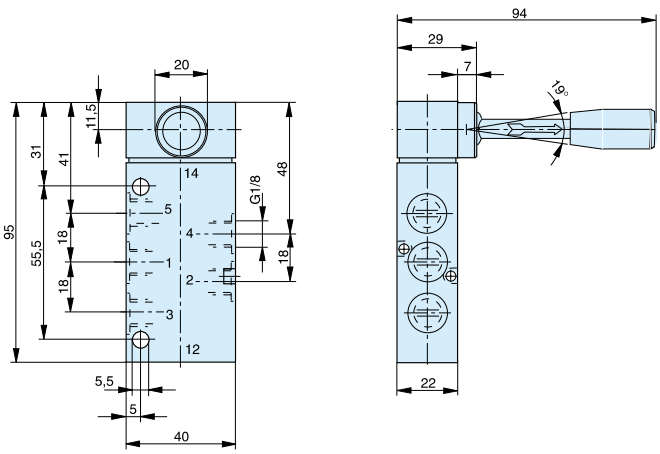


5/3 Way Lever Operated Valves

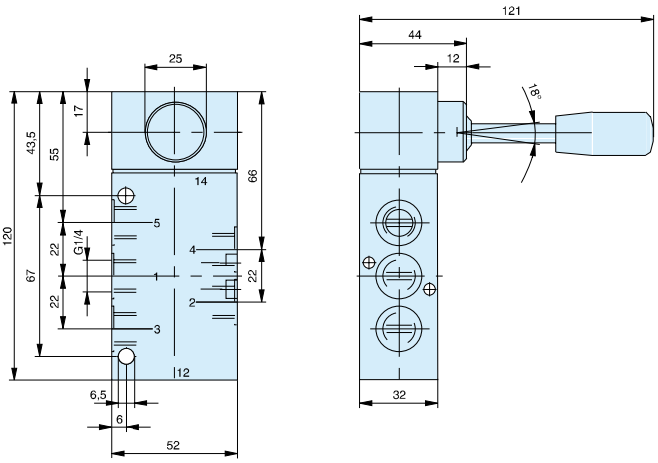
G1/8 Hand lever actuated
Type: S9 511.-1/8, S9 511RF.-1/8



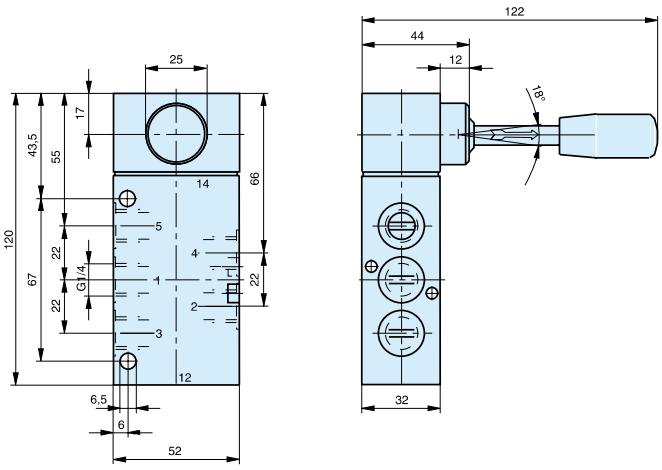
G1/8 Safety Hand lever actuated
Type: S9 511S.-1/8



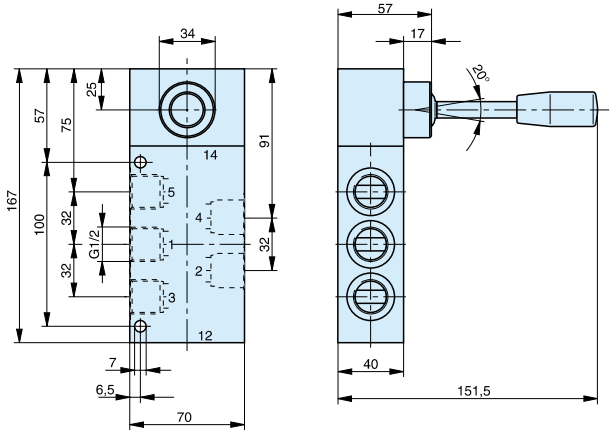
G1/4 Hand lever actuated
Type: S9 511.-1/4, S9 511RF.-1/4



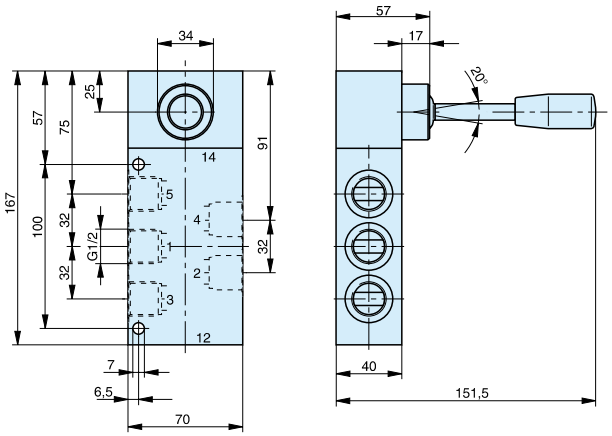
G1/4 Safety hand lever actuated
Type: S9 511S.-1/4



G1/2 Hand lever actuated
Type: S9 511.-1/2, S9 511RF.-1/2

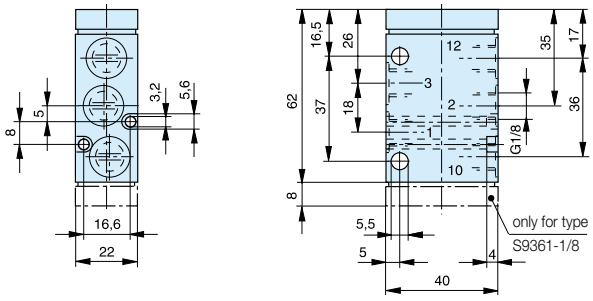


G1/2 Safety hand lever actuated
Type: S9 511S.-1/2

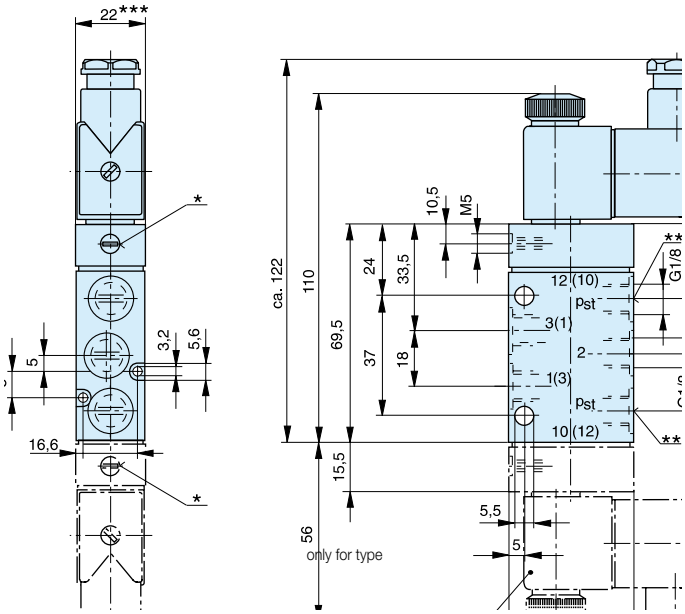


G1/8 - 3/2 Way Valves

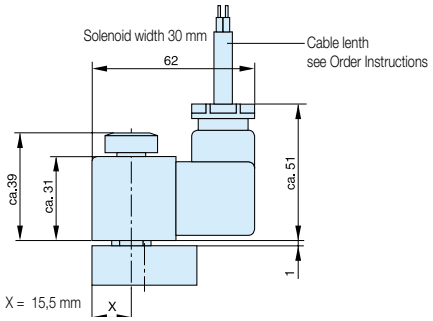
Pneumatically actuated
Type: S9 361-1/8, S9 361RF-1/8



Electrically actuated
Type: S9 381(S)-1/8, S9 381(S)RF-1/8



Solenoid for use in EX areas – Dimensions

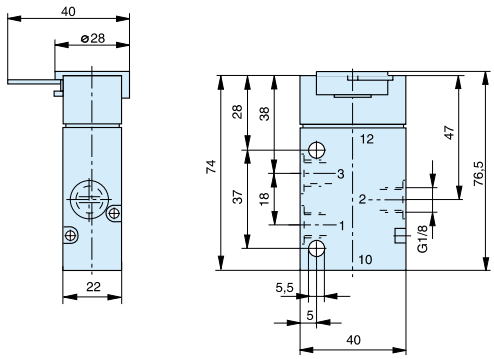


* Manual override
** Operating pressure supply p_{st} only for type S9 381S
*** Solenoid width = 30 mm on low wattage coil version

Dimensions in mm

G1/8 - 3/2 Way Valves

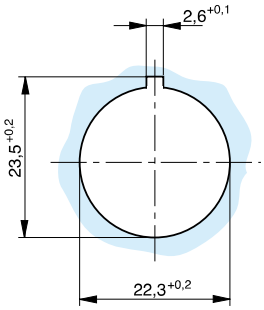
Basic valve for panel mounting actuatos Type: S9 390RF-1/8



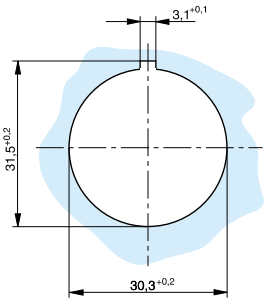
The actuators for these valves are interchangeable and can be mounted with 180° displacement on the basic valve.
The actuators are not mounted upon delivery.

Mounting diameter

Mounting diameter Ø22 mm

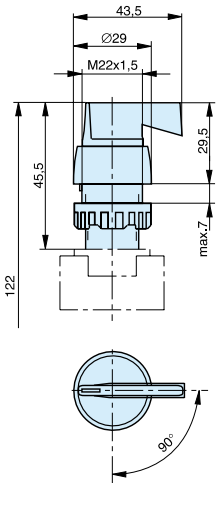


Mounting diameter Ø30 mm

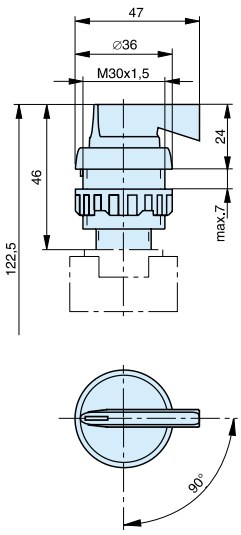


Rotary lever, indexed – Type: 12T-22, 12T-30,

Mounting diameter Ø22 mm

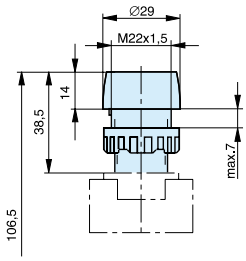


Mounting diameter Ø30 mm

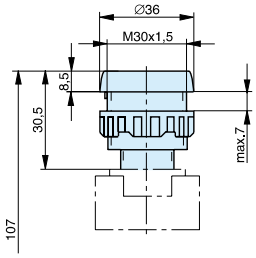


Pushbutton – Type: 13T-RF-22, 13T-RF-30

Mounting diameter Ø22 mm



Mounting diameter Ø30 mm

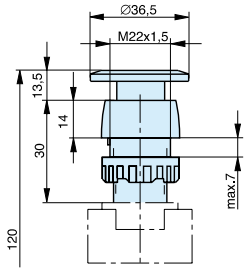


Dimensions in mm

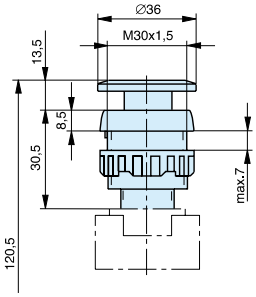
G1/8 - 3/2 Way Valves

Mushroom pushbutton
Type: 15T-RF-22, 15T-RF-30

Mounting diameter Ø22 mm

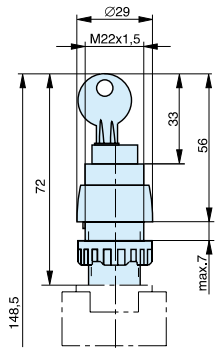


Mounting diameter Ø30 mm

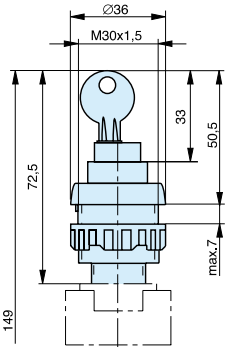


Locking switch
Type: 16T-22, 16T-30

Mounting diameter Ø22 mm

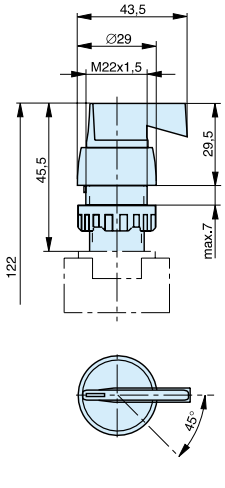


Mounting diameter Ø30 mm

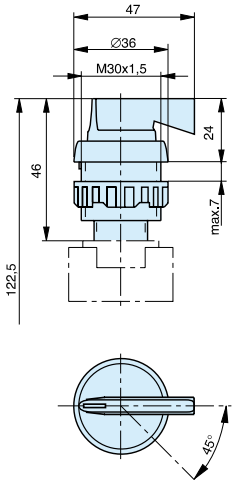


Rotary lever with spring return
Type: 12T-RF-22, 12T-RF-30

Mounting diameter Ø22 mm

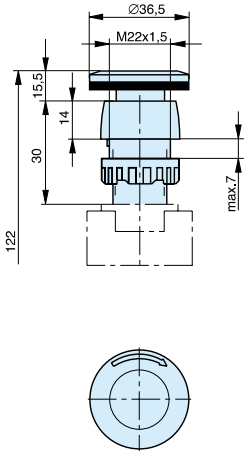


Mounting diameter Ø30 mm

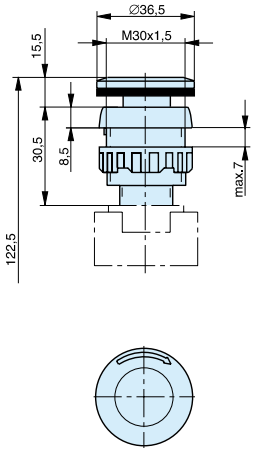


Mushroom pushbutton emergency-0ff
Type: 18T-22, 18T-30

Mounting diameter Ø22 mm

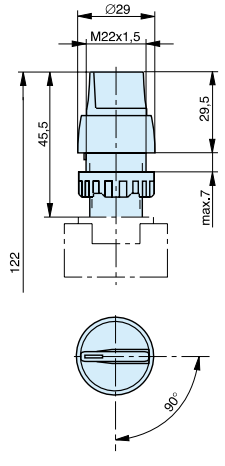


Mounting diameter Ø30 mm

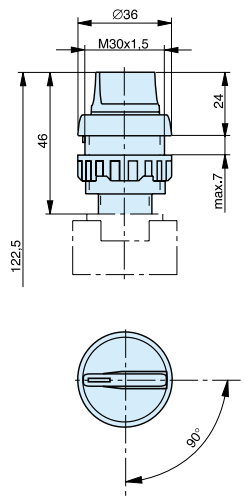


Rotary switch – Type: 17T-22, 17T-30

Mounting diameter Ø22 mm



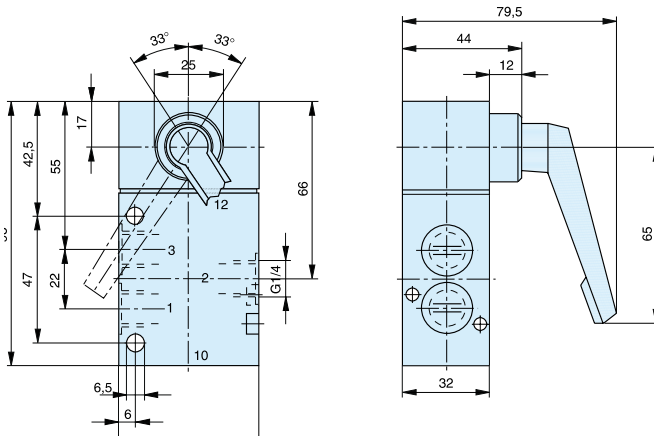
Mounting diameter Ø30 mm



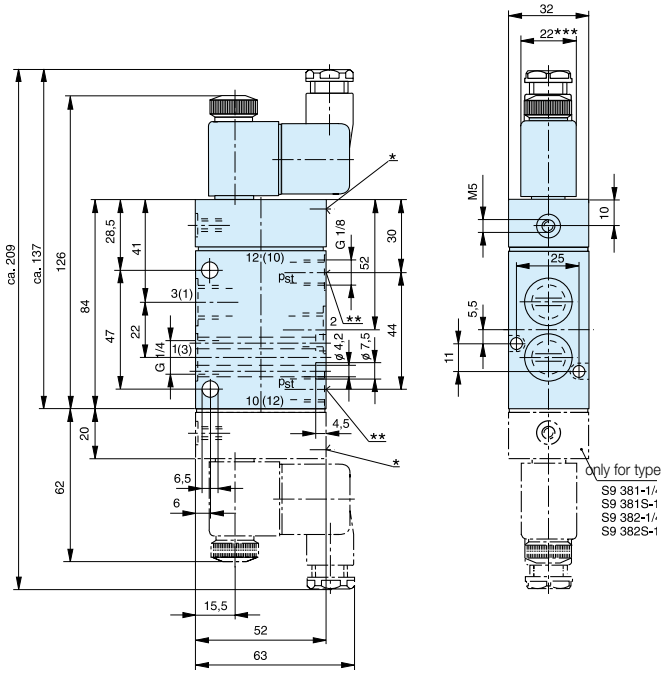
Dimensions in mm

G1/4 - 3/2 Way Valves

Rotary lever actuated
Type: S9 312-1/4, S9 312RF-1/4



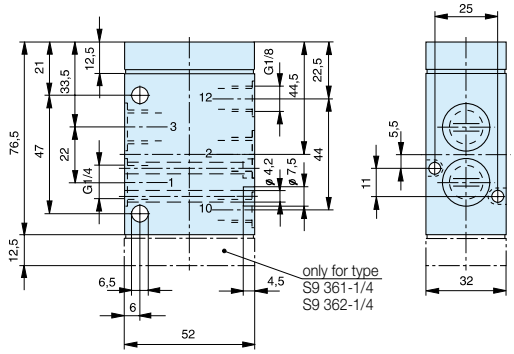
Electrically actuated
– Type: S9 381(S)-1/4, S9 382(S)-1/4, S9 381(S)RF-1/4



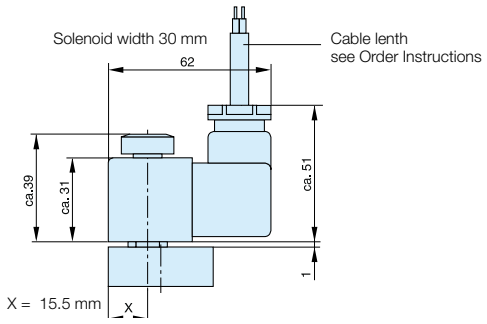
* Manual override
** Operating pressure supply p_{st} only for type S9 381S
*** Solenoid width = 30 mm
on low wattage coil version

Note:
The “normally open“ valve S9 381S-RF-1/4 cannot be used on a P-supply manifold.

Pneumatically actuated
Type: S9 361-1/4, S9 362-1/4, S9 361RF-1/4



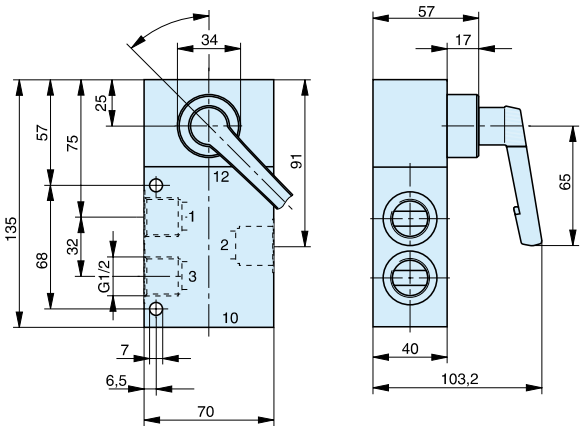
Solenoid for use in EX areas
Dimensions



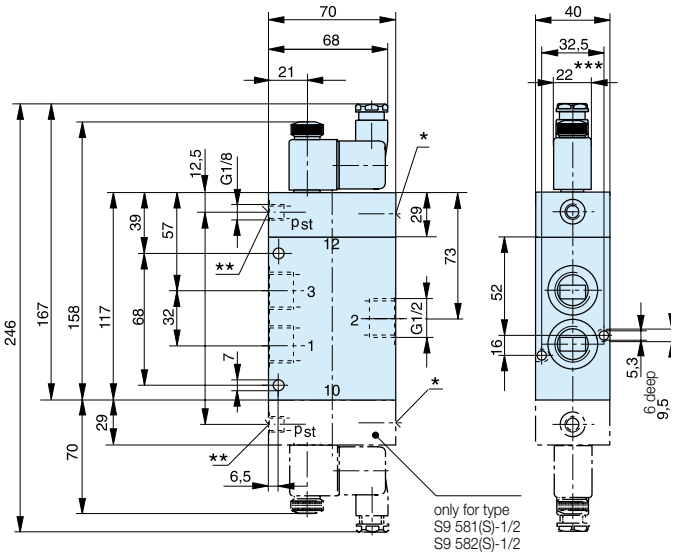
Dimensions in mm

G1/2 - 3/2 Way Valves

Rotary lever actuated
Type: S9 312-1/2, S9 312RF-1/2



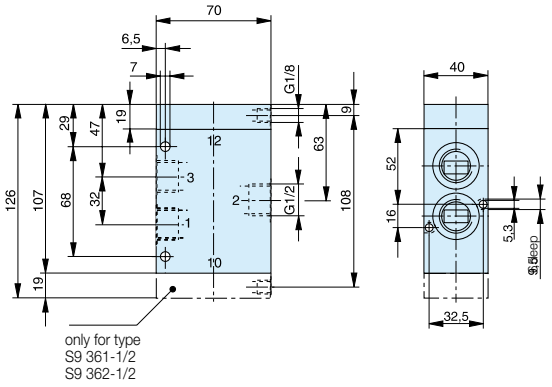
Electrically actuated
Type: S9 381(S)-1/2, S9 382(S)-1/2, S9 381(S)RF-1/2



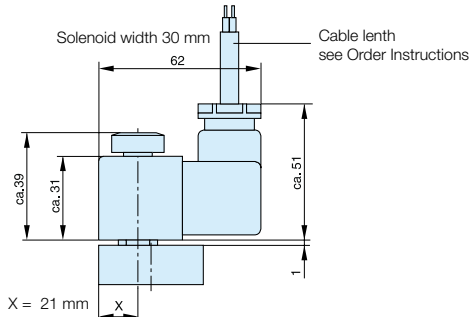
* Manual override
** Operating pressure supply p_{st} only for type S9 381S
*** Solenoid width = 30 mm on low wattage coil version

Note:
The “normally open“ valve S9 381S-RF-1/2 cannot be used on a P-supply manifold.

Pneumatically actuated
Type: S9 361-1/2, S9 361RF-1/2



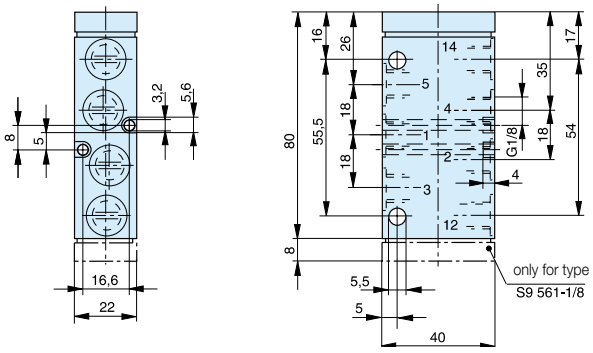
Solenoid for use in EX areas
Dimensions



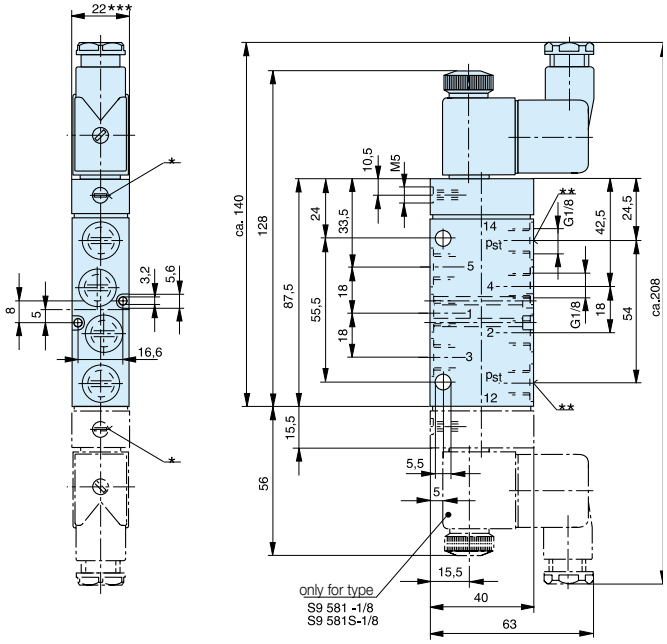
Dimensions in mm

G1/8 - 5/2 Way Valves

Pneumatically actuated
Type: S9 561-1/8, S9 561RF-1/8

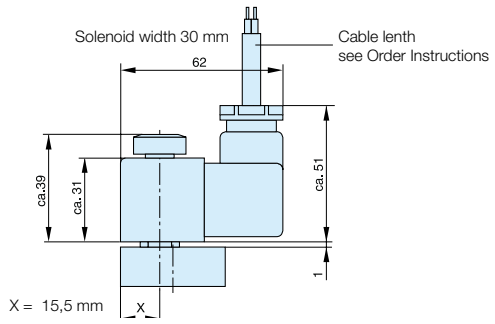


Electrically actuated
Type: S9 581(S)-1/8, S9 581(S)RF-1/8, S9 582-1/8



* Manual override
** Operating pressure supply p_{st} only for type S9 581S
*** Solenoid width = 30 mm on low wattage coil version

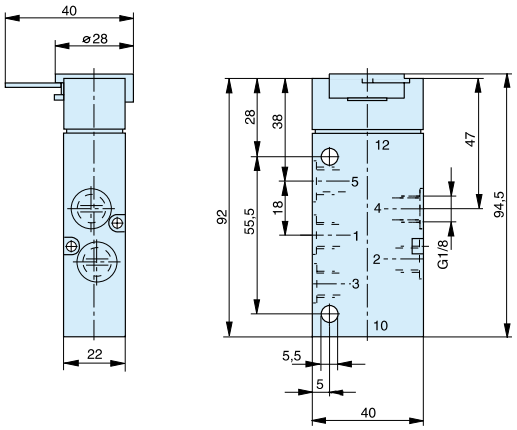
Solenoid for use in EX areas
Dimensions



Dimensions in mm

G1/8 - 5/2 Way Valves

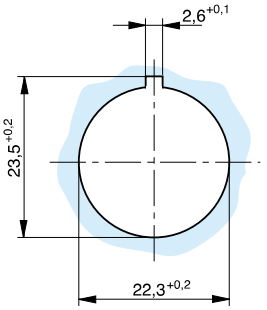
Basic valve for panel mounting actuatos
Type: S9 590RF-1/8



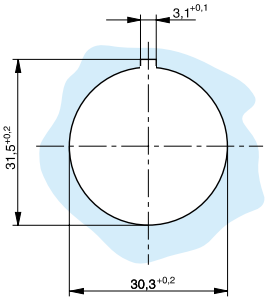
The actuators for these valves are interchangeable and can be mounted with 180° displacement on the basic valve.
The actuators are not mounted upon delivery.

Mounting diameter

Mounting diameter Ø22 mm

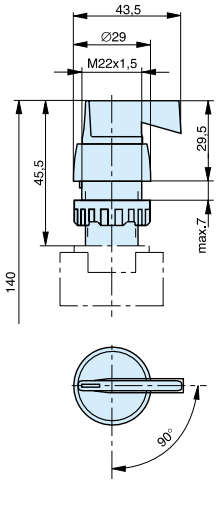


Mounting diameter Ø30 mm

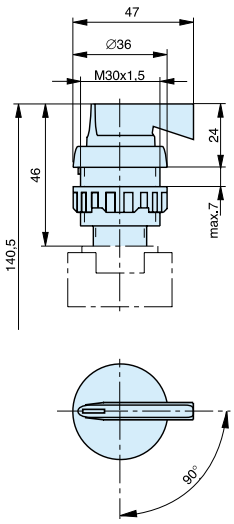


Rotary lever, indexed
Type: 12T-22, 12T-30

Mounting diameter Ø22 mm

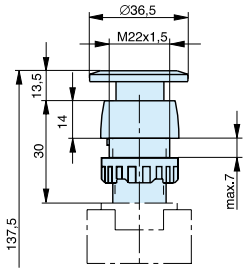


Mounting diameter Ø30 mm

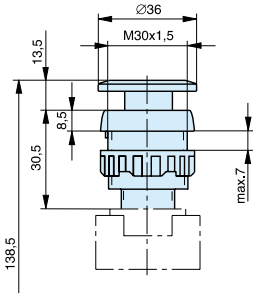


Mushroom pushbutton
Type: 15T-RF-22, 15T-RF-30

Mounting diameter Ø22 mm

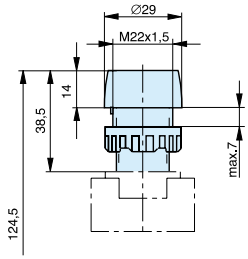


Mounting diameter Ø30 mm

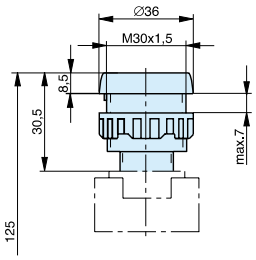


Pushbutton – Type: 13T-RF-22, 13T-RF-30

Mounting diameter Ø22 mm



Mounting diameter Ø30 mm

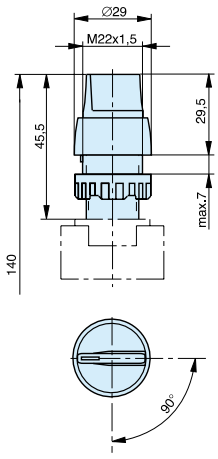


Dimensions in mm

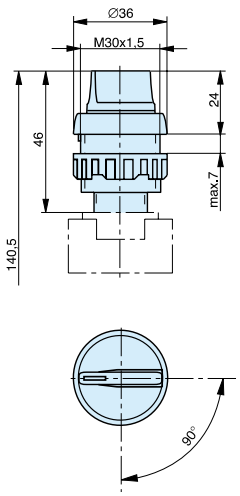
G1/8 - 5/2 Way Valves

Rotary switch
Type: 17T-22, 17T-30

Mounting diameter Ø22 mm

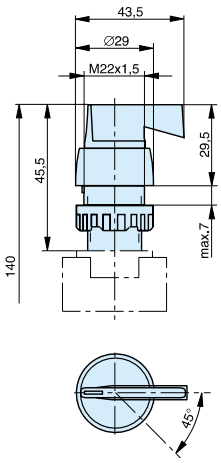


Mounting diameter Ø30 mm

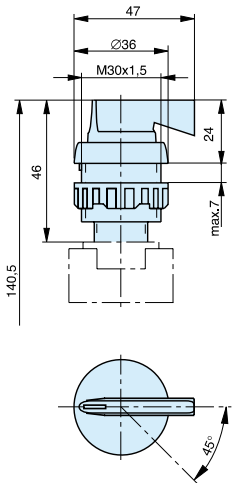


Rotary lever with spring return
Type: 12T-RF-22, 12T-RF-30

Mounting diameter Ø22 mm

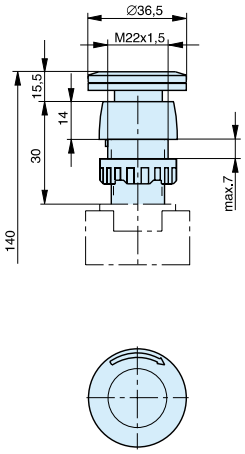


Mounting diameter Ø30 mm

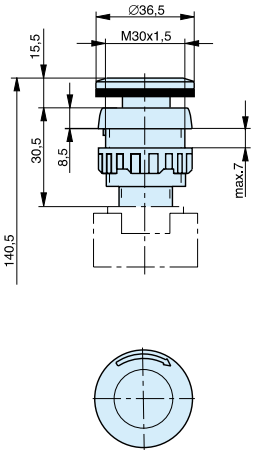


Mushroom pushbutton emergency-0ff
Type: 18T-22, 18T-30

Mounting diameter Ø22 mm

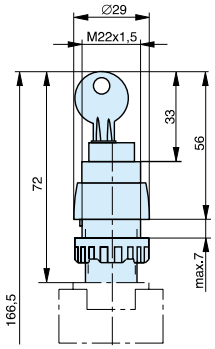


Mounting diameter Ø30 mm

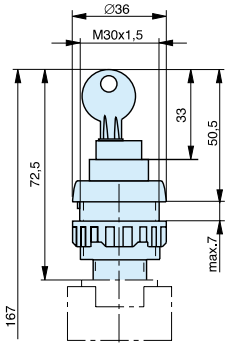


Locking switch
Type: 16T-22, 16T-30

Mounting diameter Ø22 mm



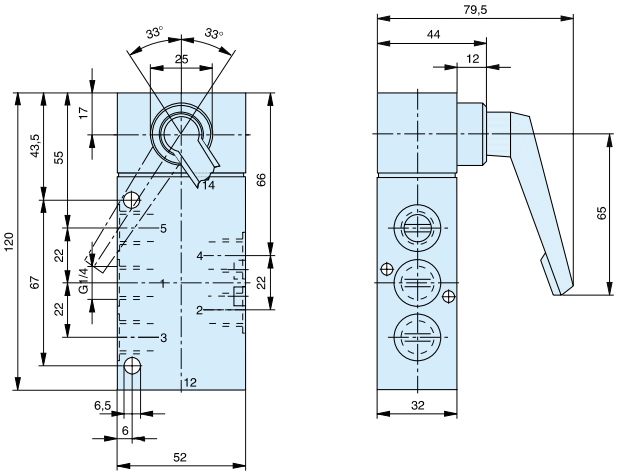
Mounting diameter Ø30 mm



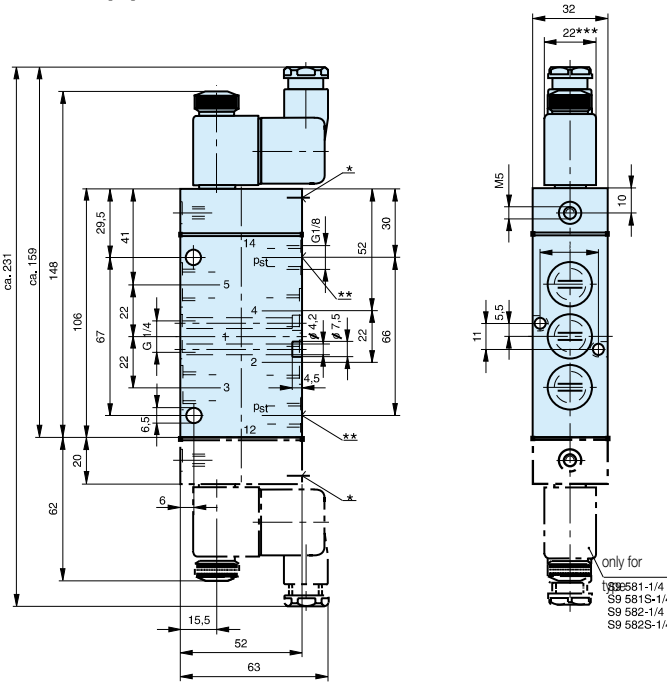
Dimensions in mm

G1/4 - 5/2 Way Valves

Rotary lever actuated
Type: S9 512-1/4, S9 512RF-1/4

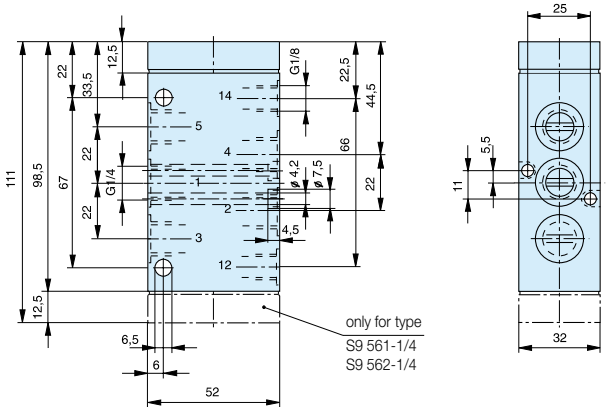


Electrically actuated
Type: S9 581(S)-1/4, S9 582(S)-1/4, S9 581(S)RF-1/4

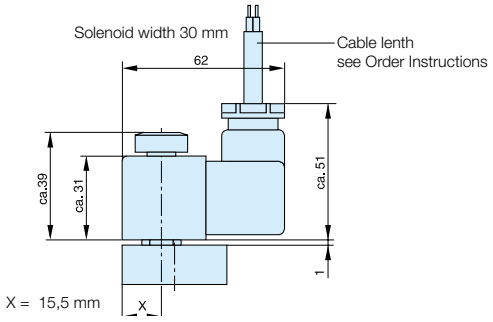


* Manual override
** Operating pressure supply p_{st} only for type S9 581S
*** Solenoid width = 30 mm on low wattage coil version

Pneumatically actuated
Type: S9 561-1/4, S9 562-1/4, S9 561RF-1/4



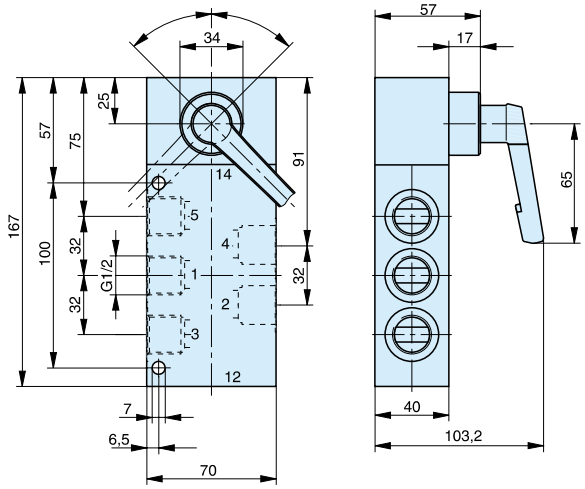
Solenoid for use in EX areas
Dimensions



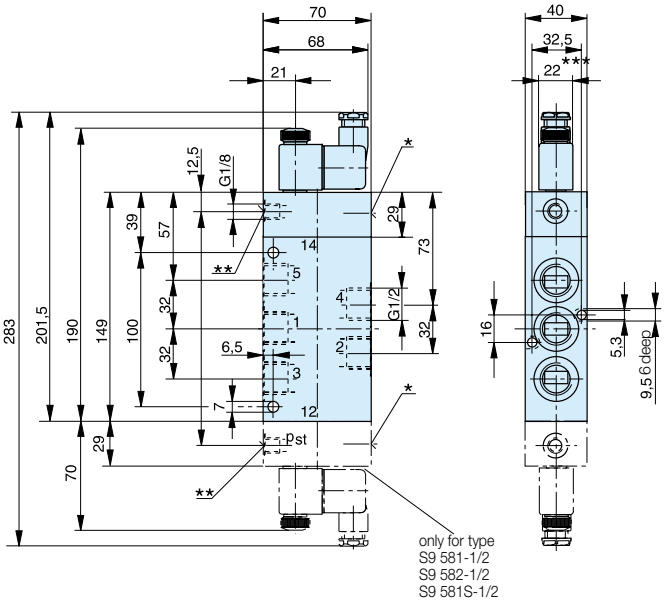
Dimensions in mm

G1/2 - 5/2 Way Valves

Rotary lever actuated
Type: S9 512-1/2, S9 512RF-1/2

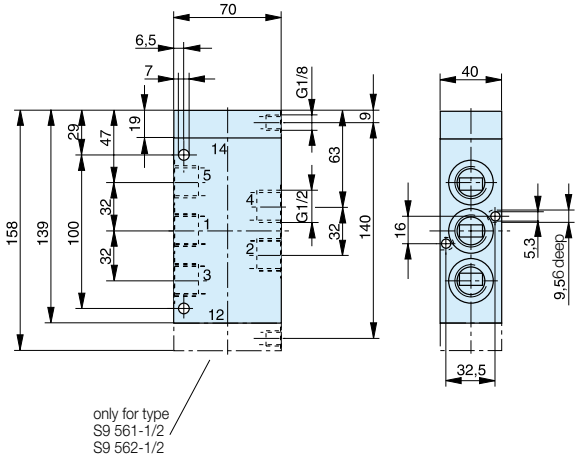


Electrically actuated
Type: S9 581(S)-1/2, S9 582-1/2, S9 581(S)RF-1/2

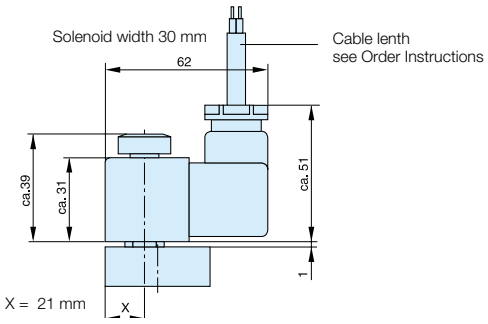


* Manual override
** Operating pressure supply p_{st} only for type S9 581S
*** Solenoid width is 30 mm on low wattage coil version

Pneumatically actuated
Type: S9 561-1/2, S9 561RF-1/2, S9 562-1/2



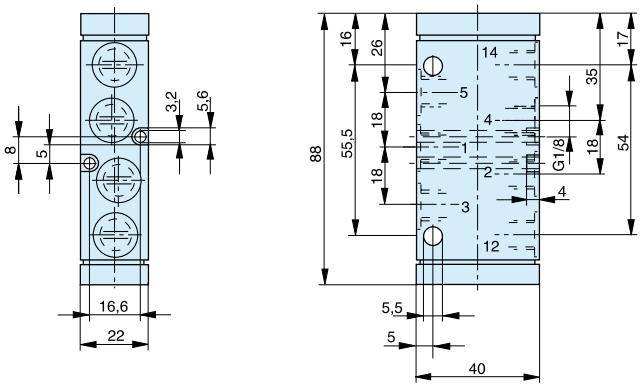
Solenoid for use in EX areas
Dimensions



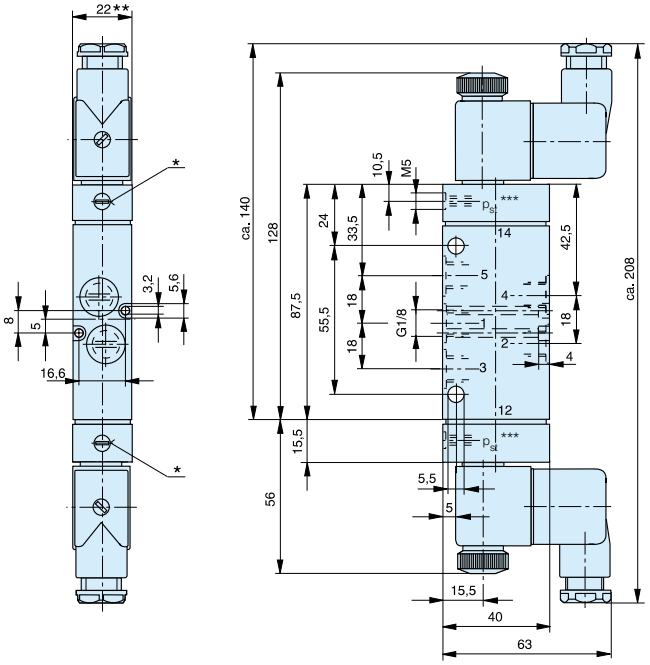
Dimensions in mm

G1/8 - 5/3 Way Valves

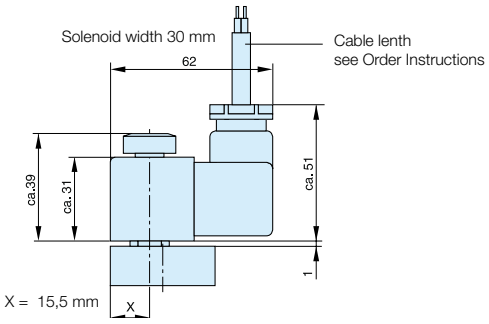
Pneumatically actuated
Type: S9 561RF.-1/8



Electrically actuated
Type: S9 581(S-)RF.-1/8



Solenoid for use in EX areas
Dimensions

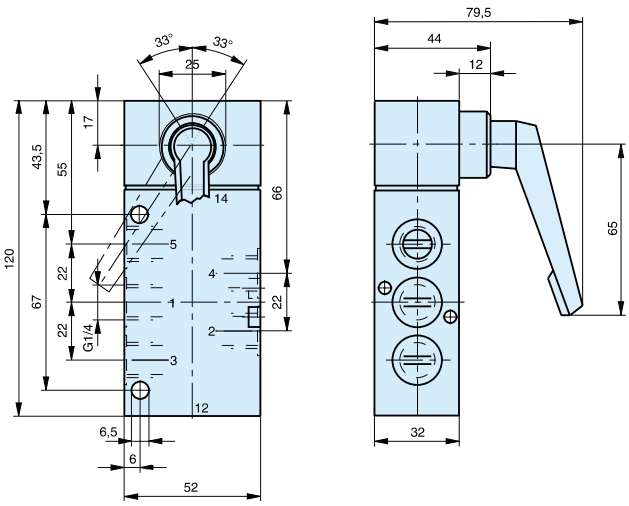


* Manual override
** Solenoid width = 30 mm on low wattage coil version
*** Operating pressure supply p_{st} only for type S9 581S

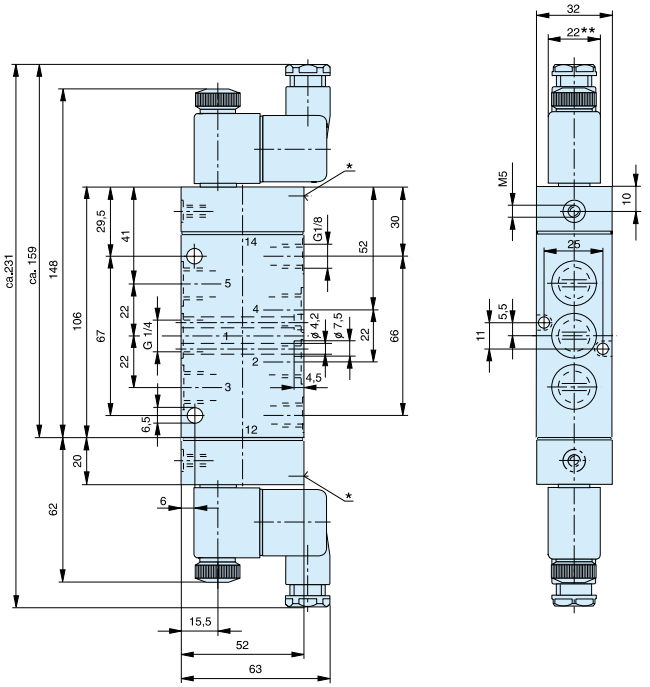
Dimensions in mm

G1/4 - 5/3 Way Valves

Rotary lever actuated
Type: S9 512.-1/4, S9 512RF.-1/4

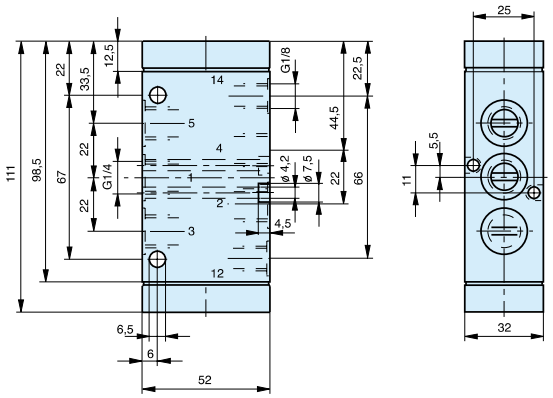


Electrically actuated
Type: S9 581RF.-1/4

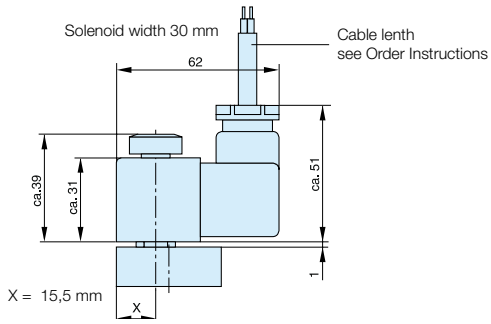


* Manual override
** Solenoid width is 30 mm on low wattage coil version

Pneumatically actuated
Type: S9 561RF.-1/4



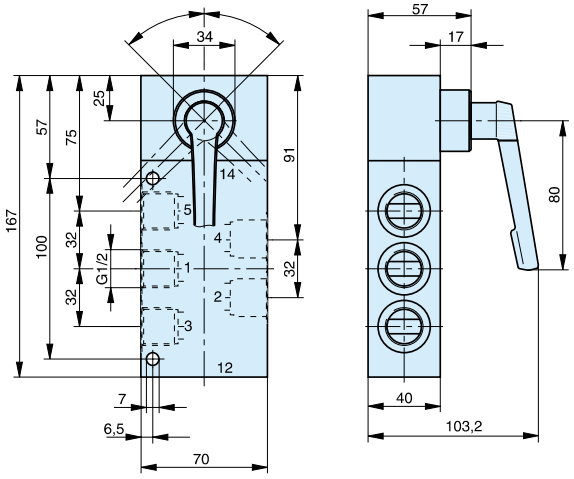
Solenoid for use in EX areas
Dimensions



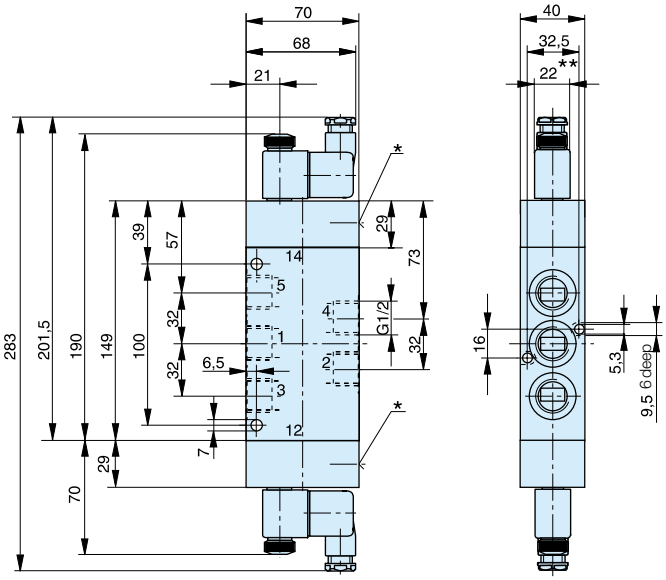
Dimensions in mm

G1/2 - 5/3 Way Valves

Rotary lever actuated
Type: S9 512.-1/2, S9 512RF.-1/2

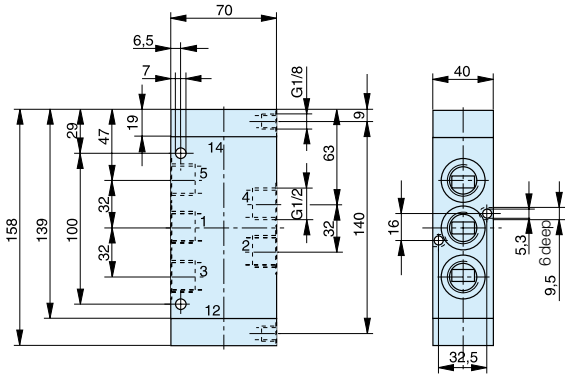


Electrically actuated
Type: S9 581RF.-1/2

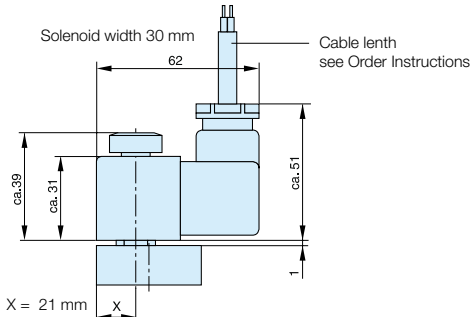


* Manual override
** Solenoid width is 30 mm on low wattage coil version

Pneumatically actuated
Type: S9 561RF.-1/2



Solenoid for use in EX areas
Dimensions



Dimensions in mm

5/2-Way Oscillating Valves

The oscillating valve generates oscillating movements such as e.g. shaking, hammering, plunging, feed motions etc.

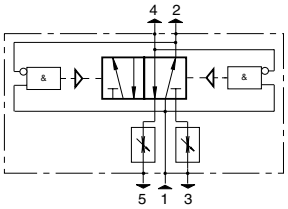
Function:
If compressed air is intro-ducesed into inlet port 1, the outlet ports 4 and 2 are alternately supplied with compressed air.

The speed of the operated cylinder and also the stroke frequency are adjusted with two exhaust air throttles.

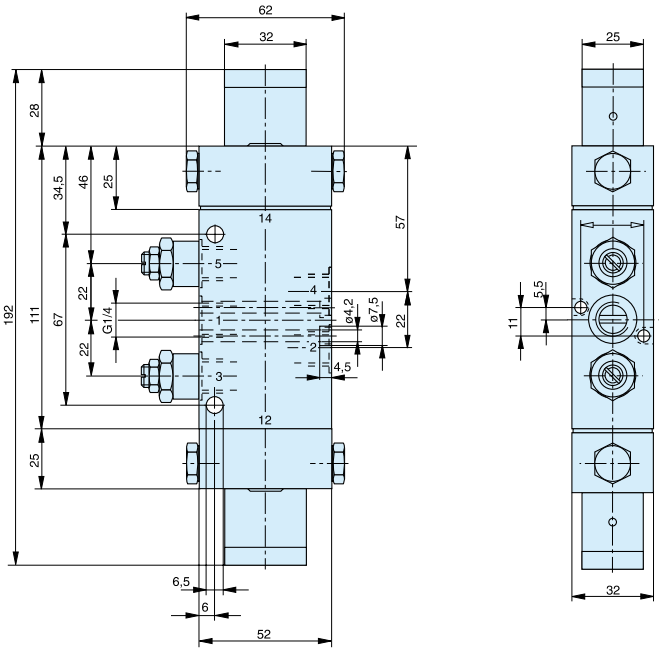
Operating information

Type	Spool valve	Lubrication *	None or oil mist lubrication
Mounting	2 Screws M6 (M4)	Pneumatic Characteristics	
Tube connection	Thread	Nominal pressure	6 bar
Connection size	G1/4, 11 deep	Operating pressure range	3 – 8 bar
Weight (mass)	0.65 kg	Nominal flow	1300 l/min
Installation	In any position	Actuation	
Ambient temperature range **	-10 °C to +60 °C	Pneumatic	Direct
		Actuation pressure range	3 – 8 bar
Medium temperature range **	-10 °C to +60 °C		
Medium	Filtered and oiled or filtered, unoiled compressed air		

* We recommend the use of mineral oil type VG 32 to ISO 3448
** Note: Please consult us for operating temperatures below 0° C

Symbol	Type	Order Code
	S9 568/68-1/4-SO	**PD 34796**

Pneumatic oscillating – Type: S9 568/68-1/4-SO



Dimensions in mm

Parker Hannifin Corporation
Pneumatic Division - Europe

3/2-Way Screw-In Valve Series EV

Operating information

Actuation	Electrical directly operated
Type	Poppet valve, normally closed
Mounting	Screws into thread G1/8
Tube connection	Thread
Port size	Port 1: M5, port 2: G1/8
Weight	0.1 kg
Nominal diameter	1 mm
Installation	in any position
Ambient temperature range	-10 °C to +60 °C
Medium temperature range	-10 °C to +60 °C
	Note : Please consult us for operating temperatures below 0° C
Medium	Filtered compressed air (30µ)
Lubrication	With or without oil mist lubrication (We recommend the use of mineral oil type VG 32 to ISO 3448)

Pneumatic Characteristics

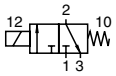
Nominal pressure	6 bar
Operating pressure range	0 – 10 bar
Nominal flow	30 l/min

Actuation

Electrical	Direct	
Voltage type	Alternating current (50/60Hz)	Direct current
Nominal voltage (1		
– Standard version **	230 ±10%	24 ±10%
– Low wattage version	230 ±10%	24 ±10%
Initial power consumption		
– Standard version (VA)	11	4.8
– Low wattage version (VA)	7.8	2.7
Continuous consumption		
– Standard version (VA)	8.5	4.8
– Low wattage version (VA)	4.9	2.7
Duty cycle	100%	
Electrical protection	IP 65 to DIN 40050 (applise only to solenoid with plug)	
Connection	Plug to DIN EN 175301-803 form B – industrial standard, Low wattage version form A	

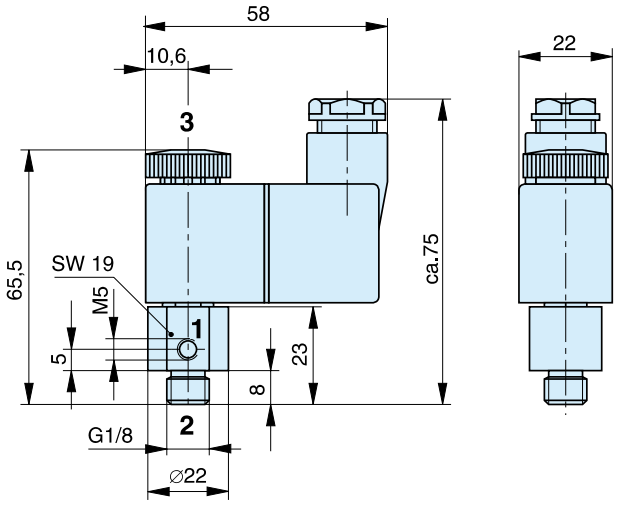
(1 see Order Instructions
** other voltages on request

Order Instructions – 3/2 Way Screw-In Valve – Series EV

Actuation	Symbol	Order Instructions	
		Type	**Order code**
Electrical, by permanent signal		EV 381RF-M5-..	**PD25076-..33**

Solenoid version	Nominal voltage	Key code
Cast encapsulated housing	24V =	02
	230V 50/60Hz	61
	Other voltages on request	

3/2 Way Valve – Type: EV 381RF-M5



Dimensions in mm

3/2-Way Valve Series V9

NW 1.3 and 2.5

Actuation System:

- Electrically actuated, directly actuated

Versions:

Threaded version

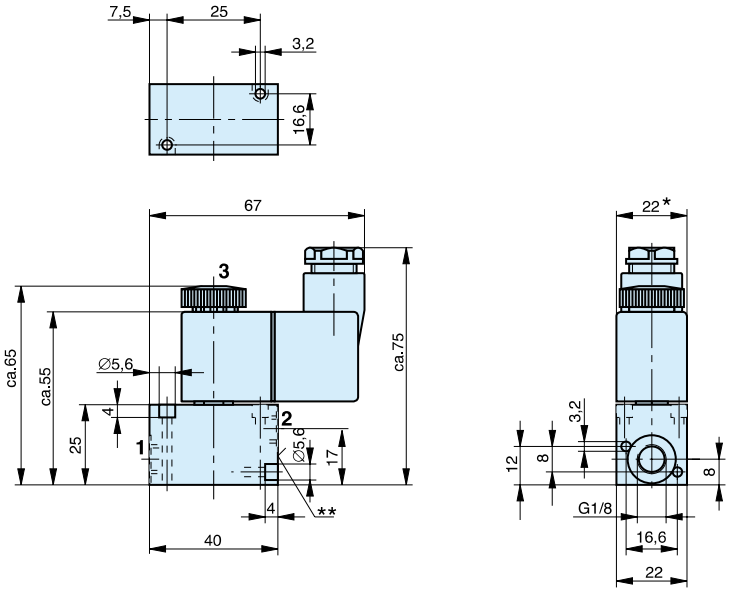
- Normally closed
- Normally open
- With manual override

Operating information

Type	Poppet valve		
Mounting	2 Screws M3 (NW 2.5: 2 x M4)		
Tube connection	Thread		
Thread	G1/8 – 8 deep		
Weight	NW 1.3: 0.140 kg NW 2.5: 0.320 kg		
Installation	In any position		
Ambient temperature range (1	-10 °C to +60 °C	Note : Please consult us for operating temperatures below 0° C	
Medium temperature range (1	-10 °C to +70 °C		
Medium	Filtered compressed air		
Lubrication	With or without oil mist lubrication (We recommend the use of mineral oil type VG 32 to ISO 3448)		
Pneumatic Characteristics			
Nominal pressure	6 bar		
Operating pressure range	NW 1.3: 0–10 bar NW 2.5: 0-7 bar		
Nominal flow	NW 1.3: 37 l/min NW 2.5: 150 l/min		
Actuation			
Electrical	Direct		
Voltage type	Alternating current (50/60Hz)	Direct current	
Nominal voltage			
– Standard version	230 V ±10%	24 V ±10%	other voltages on request
– Low wattage version	230 V ±10% (not for V9-NW 2.5)	24 V ±10% (not for V9-NW 2.5)	
Initial power consumption			
– Standard version	NW 1.3: 11 VA NW 2.5: 11.5 VA	NW 1.3: 4.8 VA NW 2.5: 10 VA	
– Low wattage version	7.8 VA	2.7 VA	
Continuous consumption			
– Standard version	NW 1.3: 8.5 VA NW 2.5: 7.5 VA	NW 1.3: 4.8 VA NW 2.5: 7.5 VA	
– Low wattage version	4.9 VA	2.7 VA	
Duty cycle	100%		
Electrical protection	IP 65 to DIN 40050 (applise only to solenoid with connector)		
Connection	NW 1.3: connector to DIN EN 175301-803 form B – industrial standard NW 2.5: connector to DIN EN 175301-803 form A – industrial standard		

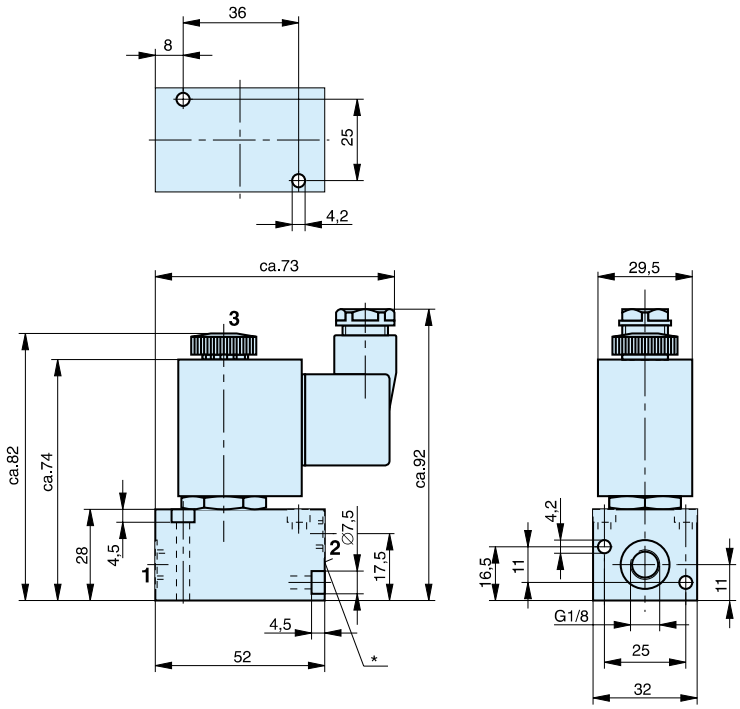
Type: V9 381RF-1/8NG (NO(1))– NW 1.3
Type: V9 381H-RF-1/8NG (NO(1))– NW 1.3

(1 not suitable for P-supply manifold mounting



* Low wattage version is 30 mm wide:
– therefore to mount these on a P-Supply Manifold, special measures are needed.
** Manual override

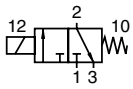
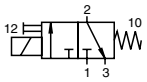
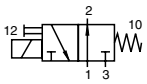
Type: V9 381RF-1/8NG – NW 2.5
Type: V9 381H-RF-1/8NG – NW 2.5



* Manual override

Dimensions in mm

Order Instructions – 3/2 Way Valves – Series V9

Actuation System	Symbol	Nominal Size (mm)	Order Instructions Type	**Order code**
Electrical, by permanent signal		NW 1.3	V9 381RF-1/8-NC-..	**PA 10362-..33**
		NW 2.5	V9 381RF-1/8-NC-..	**PA 10369-..33**
		NW 1.3	V9 381H-RF-1/8-NC-..	**PA 10363-..33**
		NW 2.5	V9 381H-RF-1/8-NC-..	**PA 10370-..33**
		NW 1.3	V9 381H-RF-1/8-NO-..	**PA 10367-..33**

Solenoid version	Nominal voltage	Applicable for	Key code
Standard version	230V 50/60Hz	110 V =	61
	24V =	48V 50/60Hz	02
Low wattage version	24V =		13
	230V 50/60Hz		69

Other voltages on request

Order Instructions – Accessories for P-Supply Manifold Mounting

Description	for NW	Order No.
P-Manifold PL-1/8-..	1.3	PD32763-....*
P-Manifold PLK-1/8-..	1.3	PD37174-....*
P-Manifold PL-1/4-..	2.5	PD32765-....*
P-Manifold PLK-1/4-..	2.5	PD32175-....*

* Complete order no. with no. of valve

The delivery includes:

P-Manifold complete incl. mounting kit

Air Preparation & Airline Accessories

Parker Global Air Preparation System

Global.
Economical.
Modular.

Performance you need,
wherever *you need it.*

The comprehensive Global Air Preparation System is available in three body sizes with either BSPP or NPT to accommodate thread type requirements.

Full featured filters, regulators, filter/regulators, and lubricators are available with a wide range of standard options to meet air preparation needs.

Individual units can easily be assembled into various combinations, utilizing patented modular lightweight body connectors.

www.parker.com/globalfrl

Validated for transport applications

As you would expect from a member of the Rail Industry Association, the Global FRL meets the test specification standards enabling the Global FRL to be used as a validated product in a variety of rail applications.

RAILWAY INDUSTRY ASSOCIATION

CEI/ICE 61373 1999-1 Category 2 (BS EN 61373:1999)

Application Guide

FRL to Valve: The chart below contains recommendations for the correct selection of Global Air Preparation units to suit the number and size of valves in a typical application.

	P31 Mini Series	P32 Compact Series	P33 Standard Series

	Number of valves that would actuate at once															
	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16
Moduflex 1																
Isys Micro																
HB / Viking Xtreme																
Moduflex 2																
HA / Global ISO																
							See Larger Parker FRL Offering									

Actuator to FRL: The chart below contains recommendations for the correct selection of Global Air Preparation units suitable for each cylinder size. If you have a tube length over 2 m, choose one tube size larger than the chart. The table is based on a maximum cylinder speed of 0.5m/s

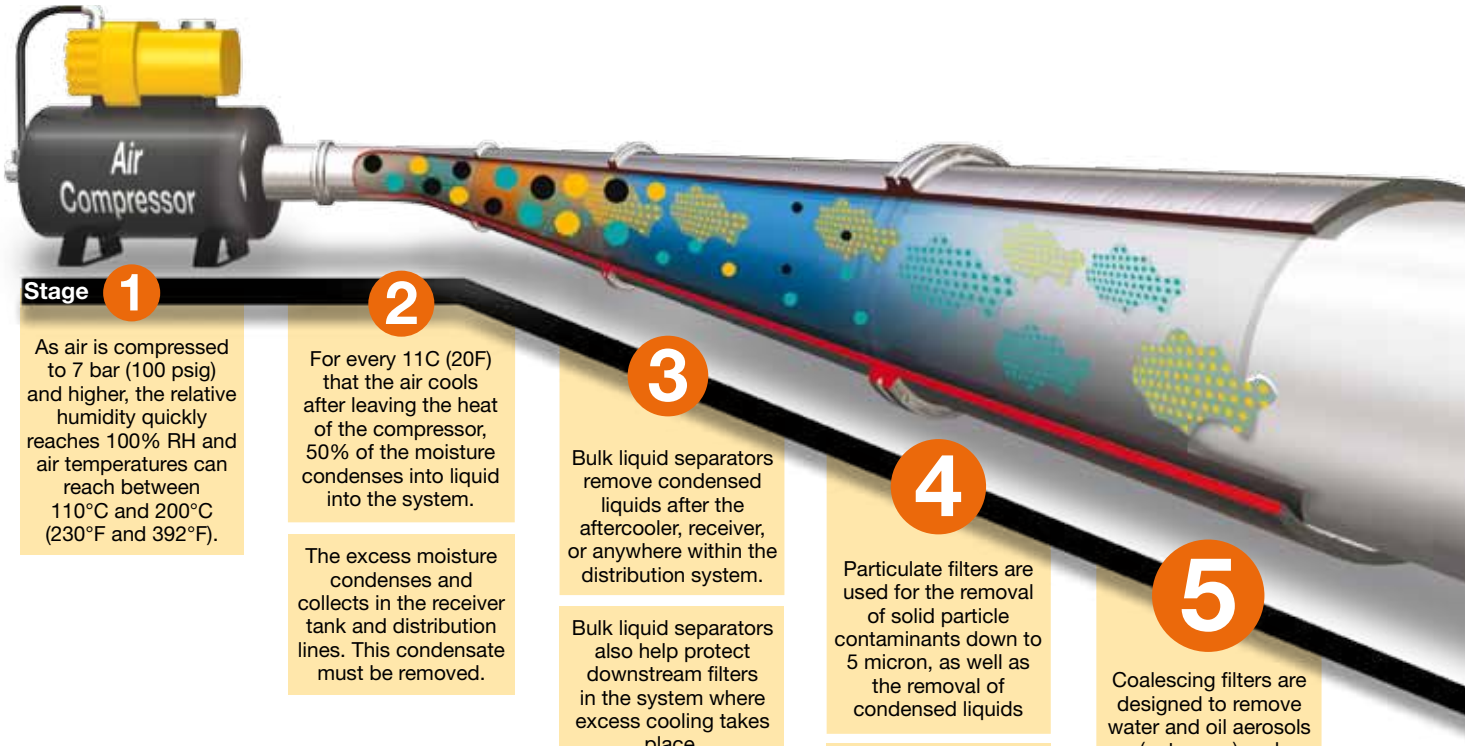
Cyl Ø mm / Cyl Ø inches		Cylinder bore size													
		5 (5/16)	10 (7/16)	16 (9/16)	20 (3/4)	25 (1)	28 (1-1/8)	32 (1-1/4)	40 (1-1/2)	45 (1-3/4)	50 (2)	63 (2-1/2)	75 (3)	80 (3-1/4)	100 (4)
Tube Ø mm / Tube Ø inches		Tube diameter external													
		4 (5/32)	4 (5/32)	4 (5/32)	6 (1/4)	6 (1/4)	6 (1/4)	6 (1/4)	8 (5/16)	8 (5/16)	8 (5/16)	10 (3/8)	10 (3/8)	12 (1/2)	12 (1/2)
Number of cylinders actuating at once	1														
	2														
	3														
	4														
	5														
	6														
	7														
	8														
	9														
	10														
		P31 Mini Series					P32 Compact Series			P33 Standard Series			See Larger Parker FRL Offering		

Note: Data listed above is simply a guideline for a typical application only. Proper sizing and correct flow requirements must be taken into account.

Together we can power your application with clean, dry air

Fast cycle times, high product quality, and low downtime all require a clean, dry pneumatic system to function properly. Parker has what it takes to make sure pneumatic systems perform at their best.

Clean, dry pneumatic systems with Parker Global Air Preparation



Stage 1

As air is compressed to 7 bar (100 psig) and higher, the relative humidity quickly reaches 100% RH and air temperatures can reach between 110°C and 200°C (230°F and 392°F).

2

For every 11C (20F) that the air cools after leaving the heat of the compressor, 50% of the moisture condenses into liquid into the system.

The excess moisture condenses and collects in the receiver tank and distribution lines. This condensate must be removed.

3

Bulk liquid separators remove condensed liquids after the aftercooler, receiver, or anywhere within the distribution system.

Bulk liquid separators also help protect downstream filters in the system where excess cooling takes place.

4

Particulate filters are used for the removal of solid particle contaminants down to 5 micron, as well as the removal of condensed liquids

Note: Water and oil, in vapor form, pass through general purpose particulate filters.

This type of filter should be used as a prefilter for the coalescing (oil removal) filter.

5

Coalescing filters are designed to remove water and oil aerosols (not vapor) and particulate from air streams down to 0.01 micron in size.

Installed in pairs, Particulate and Coalescing filters ensure a continuous supply of high quality air.

Key

- **Particulate**
- **Oil**
- **Water**
- **Oil Vapor**
- **Water Vapor**

Stages	1 2	3	4	5	6	7
Function	**Air Compressor**	**Bulk Liquid Removal**	**Particulate Filtration**	**Coalescing Filtration**	**Air Dryers**	**Hydrocarbon Removal**
Application	All pneumatic systems	Basic pneumatic systems	Basic pneumatic systems	Systems requiring highest quality air.	Systems requiring air with reduced moisture content	Systems requiring highest quality air for critical applications
Description	Air leaving the compressor room at 93ºC (200ºF) releases 95% of its moisture into the piping system when it cools to 38ºC (100ºF)	Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping	Removes solid particulates down to 5 micron, and the separation of bulk contaminants.	Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron.	Removes water vapor from air stream. Dew point reduced down to -40'C membrane and -70'C desiccant.	Removal of odors and trace vapors for critical applications.
Parker Global Air Preparation Solution	Customer supplied	P3TF Bulk Liquid Separator	P31, P32, P33 Particulate Filter	P31, P32, P33 Coalescing Filter	P3XJ Membrane Dryer P3TJ Regenerative Desiccant Dryer	P31, P32, P33 Activated Carbon (Adsorber) Filter

Clean Dry Air

6

Refrigeration, membrane and desiccant dryers lower the air's dew point by removing water vapor, providing appropriately dry air for the downstream application.

7

Hydrocarbon and oil vapors are removed using filters utilizing activated carbon. These airborne hydrocarbons are often left over from the compressor oils.

DECLARATION

We **Parker Hannifin Manufacturing Ltd**
Pneumatic Division
The Collins Centre
Lichfield South
Lichfield
WS14 0QP
UK

Product	Series	Category
Filter*	P31FA, P32FA, P33FA	for zone 1, 21
Regulator	P31RA, P32RA, P33RA	for zone 1, 21
Filter regulator*	P31EA, P32EA, P33EA	for zone 1, 21
Lubricator*	P31LA, P32LA, P33LA	for zone 1, 21
Ball Valve & Slide Valve	P31VA, P32VA, P33VA	for zone 1, 21
Manifold	P31MA, P32MA, P33MA	for zone 1, 21
For non-fitted solenoid product		
Soft Start & Dump Valve	P31TA, P32TA	for zone 1, 21
Soft Start Valve	P31SA, P32SA	for zone 1, 21
Dump Valve	P31DA, P32DA	for zone 1, 21

*Filter, Filter Regulator and Lubricator – This evaluation applies to products fitted with metal bowls only.

Following Ignition Hazard Assessments performed on the non-electrical products listed above, in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.
  Refer to technical file for surface areas of plastics.
  The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis.
  Refer to technical file for chemicals known to be incompatible.
  Product cleaning must be undertaken using a method complying with the specification of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**
  Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**
  Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

A. MacGuire
Engineering Manager – Air Preparation EMEA

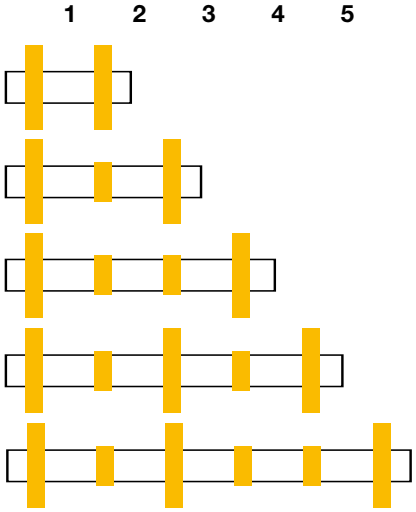
Validated for transport applications

As you would expect from a member of the Rail Industry Association, Global air preparation meets the test specification standards enabling the Global series to be used as a validated product in a variety of rail applications.

Railway Industry Association

CEI/ICE 61373 1999-1 Category 2 (BS EN 61373:1999)

Position of T-Brackets for multiple units



Recommended mounting / fixation method for use in transportation applications.

- The use of a port block kit and T-bracket should be used at all times (angle / L-brackets should not be used in rail applications)
- Additional security is recomended with the use of 'vibration proof adhesive' on the wall mounting screws to the port / connector block
- Inlet (P1) and Outlet (P2) ports should always have a T-Bracket fixation to eliminate product canterlever stress
- 'L' brackets should not be used in the use for rail service

For illustration purposes only

- High flow modular air-preparation series
- Space saving integral gauge (P31 size only)
- Manifold style regulators available
- OSHA compliant shut-off valves

Operating information

Working pressure :

Plastic bowl:	10 bar max
Metal bowl:	17 bar max

Working temperature :

* Plastic bowl:	-10°C to +52°C
* Metal bowl:	-10°C to +65.5°C

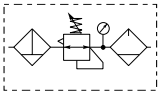
* Refer to Technical Catalogue for individual unit temperatures

Flow characteristics

40mm body width 1/4" Ported		60mm body width 1/4", 3/8", & 1/2" Ported		73mm body width 1/2" & 3/4" Ported	
Flow	**dm³/s**	**Flow**	**dm³/s**	**Flow**	**dm³/s**
Filter	12	Filter	38	Filter	48
Coalescing Filter	2	Coalescing Filter	11	Coalescing Filter	20
Regulator	30	Regulator	67	Regulator	100
Filter Regulator	14	Filter Regulator	64	Filter Regulator	98
Lubricator	13	Lubricator	47	Lubricator	68

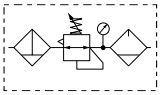
Popular Combinations - P31 Series

Filter + Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.



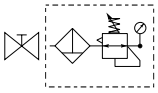
Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Pulse Drain	Weight
1/4"	13	27	**P31CB12GEMNTLNW**	0.46 kg	**P31CB12GEBNTLNW**	0.46 kg

Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.



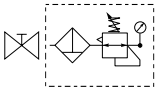
Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Pulse Drain	Weight
1/4"	14	28	**P31CA12GEMNTLNW**	0.35 kg	**P31CA12GEBNTLNW**	0.35 kg

Slide Valve + Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.



Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Pulse Drain	Weight
1/4"	14	28	**P31YA12GEMNTLNW**	0.54 kg	**P31YA12GEBNTLNW**	0.54 kg

Slide Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.



Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Pulse Drain	Weight
1/4"	14	28	**P31YN12GEMNTW**	0.4 kg	**P31YN12GEBNTW**	0.4 kg

P 3 1 [ ] [ ] [ ] [ ] [ ] **E** [ ] **N** [ ] **L N** **W**

Combination	
Combination	**C**
Shut off + Combi [1]	**Y**

Thread type	
BSPP	**1**
NPT	**9**

Port size	
1/4	**2**

Drain type	
Manual drain	**M**
Pulse drain	**B**

Adjustment range	
With square gauge	
2 bar *	**V**
4 bar	**S**
8 bar **	**T**

Add only for options with Lubricator

Combination type	
F/R+L	**A**
F+R+L	**B**
F/R	**N**

Bowl type	
Poly bowl with bowl guard	**G**
Metal bowl without sight glass	**M**

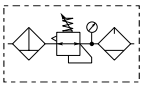
Note: All bowl types are the same for each component
Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.

* Unit comes with 0-4 bar, gauge respectively

** Unit comes with 0-10 bar, gauge respectively

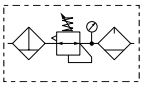
[1] Option not available with F+R+L

Popular Combinations - P32 Series



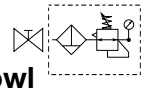
Filter + Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/4"	20	42	**P32CB12GEMNGLNW**	1.29 kg	**P32CB12GEANGLNW**	1.29 kg
3/8"	32	68	**P32CB13GEMNGLNW**	1.29 kg	**P32CB13GEANGLNW**	1.29 kg
1/2"	40	85	**P32CB14GEMNGLNW**	1.29 kg	**P32CB14GEANGLNW**	1.29 kg



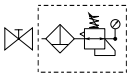
Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/4"	22	45	**P32CA12GEMNGLNW**	1.03 kg	**P32CA12GEANGLNW**	1.03 kg
3/8"	33	70	**P32CA13GEMNGLNW**	1.03 kg	**P32CA13GEANGLNW**	1.03 kg
1/2"	43	90	**P32CA14GEMNGLNW**	1.03 kg	**P32CA14GEANGLNW**	1.03 kg



Slide Valve + Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/4"	22	45	**P32YA12GEMNGLNW**	1.5 kg	**P32YA12GEANGLNW**	1.5 kg
3/8"	33	70	**P32YA13GEMNGLNW**	1.5 kg	**P32YA13GEANGLNW**	1.5 kg
1/2"	43	90	**P32YA14GEMNGLNW**	1.5 kg	**P32YA14GEANGLNW**	1.5 kg



Slide Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/4"	22	45	**P32YN12GEMNGW**	1.1 kg	**P32YN12GEANGW**	1.1 kg
3/8"	33	70	**P32YN13GEMNGW**	1.1 kg	**P32YN13GEANGW**	1.1 kg
1/2"	43	90	**P32YN14GEMNGW**	1.1 kg	**P32YN14GEANGW**	1.1 kg

P 3 2 | | | | | **E** | | **N** | | **L N** | **W**

Combination	
Combination	**C**
Shut off + Combination [1]	**Y**

[1] Option not available with F+R+L

Thread type	
BSPP	**1**
NPT	**9**

Port size	
1/4	**2**
3/8	**3**
1/2	**4**

Drain type	
Auto drain	**A**
Manual drain	**M**

Adjustment range	
With round gauge	
0-2 bar; 0-30 psi; 0.2 MPa	**Z**
4 bar; 60 psi; 0.4 MPa	**M**
8 bar; 125 psi; 0.8 MPa	**G**
17 bar; 250 psi; 1.7 MPa [2]	**J**

Add only for options with Lubricator

Combination type	
F/R+L	**A**
F+R+L	**B**
F/R	**N**

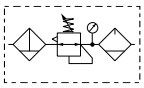
Bowl type	
Poly bowl with bowl guard	**G**
Metal bowl with sight glass	**S**

Note: All bowl types are the same for each component

Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.

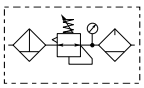
[2] Only available with metal bowl option

Popular Combinations - P33 Series



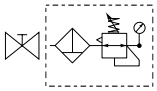
Filter + Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.6 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/2"	43	90	**P33CB14GEMNGLNW**	1.84 kg (4.06 lbs)	**P33CB14GEANGLNW**	1.84 kg (4.06 lbs)
3/4"	52	110	**P33CB16GEMNGLNW**	1.84 kg (4.06 lbs)	**P33CB16GEANGLNW**	1.84 kg (4.06 lbs)



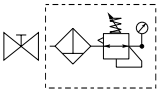
Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/2"	52	110	**P33CA14GEMNGLNW**	1.51 kg (3.33 lbs)	**P33CA14GEANGLNW**	1.51 kg (3.33 lbs)
3/4"	71	150	**P33CA16GEMNGLNW**	1.51 kg (3.33 lbs)	**P33CA16GEANGLNW**	1.51 kg (3.33 lbs)



Slide Valve + Filter/Regulator + Lubricator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/2"	52	110	**P33YA14GEMNGLNW**	2.35 kg (5.2 lbs)	**P33YA14GEANGLNW**	2.35 kg (5.2 lbs)
3/4"	71	150	**P33YA16GEMNGLNW**	2.35 kg (5.2 lbs)	**P33YA16GEANGLNW**	2.35 kg (5.2 lbs)



Slide Valve + Filter/Regulator Combinations + Poly bowl
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets
Inlet pressure 10 bar, Secondary pressure 6.3 bar, 1 bar pressure drop.

Port size	Flow dm³/s	Flow (scfm)	Manual Drain	Weight	Auto Drain	Weight
1/2"	52	110	**P33YN14GEMNGW**	1.7 kg (3.75 lbs)	**P33YN14GEANGW**	1.7 kg (3.75 lbs)
3/4"	71	150	**P33YN16GEMNGW**	1.7 kg (3.75 lbs)	**P33YN16GEANGW**	1.7 kg (3.75 lbs)

P33					E		N		LN	W

Combination	
Combination	C
Shut off + Combination [1]	Y

[1] Option not available with F+R+L

Thread type	
BSPP	1
NPT	9

Port size	
1/2	4
3/4	6

Drain type	
Auto drain	A
Manual drain	M

Adjustment range	
With round gauge	
0-2 bar; 0-30 psi; 0.2 MPa	Z
4 bar; 60 psi; 0.4 MPa	M
8 bar; 125 psi; 0.8 MPa	G
17 bar; 250 psi; 1.7 MPa [2]	J

Add only for options with Lubricator

Combination type	
F/R+L	A
F+R+L	B
F/R	N

Bowl type	
Poly bowl with bowl guard	G
Metal bowl with sight glass	S

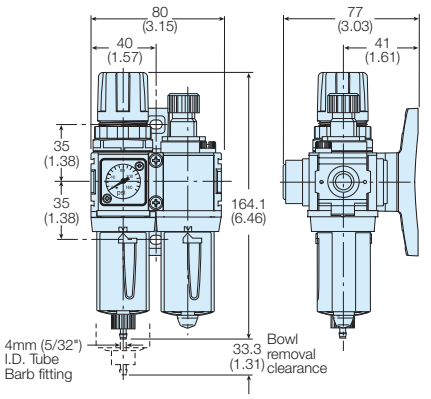
Note: All bowl types are the same for each component

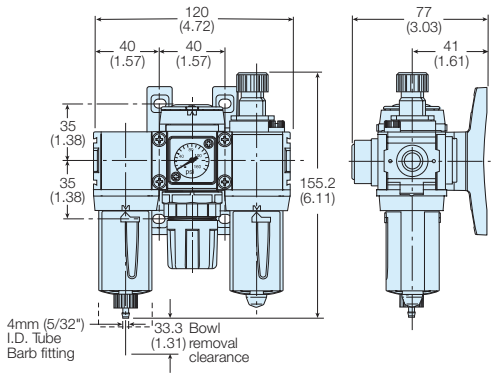
Example: If a "G" is specified for a F+L, both units would get a poly bowl with bowl guard.

[2] Only available with metal bowl option

Popular Combination Dimensions - mm (inches)

P31





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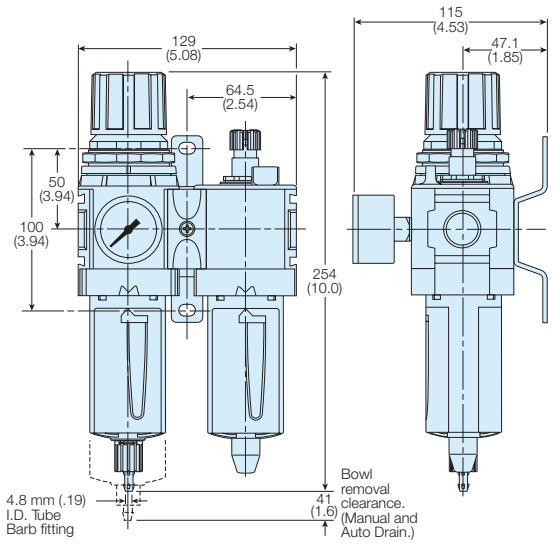

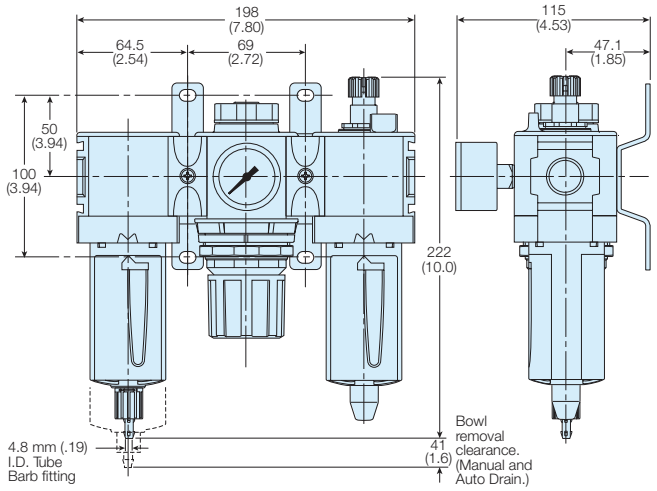

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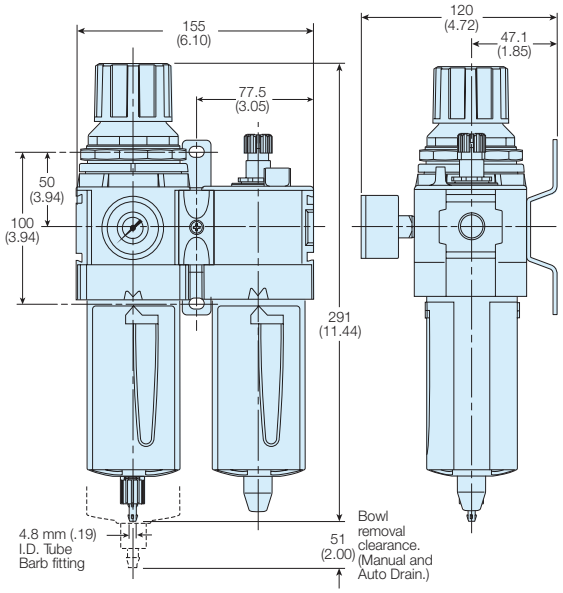
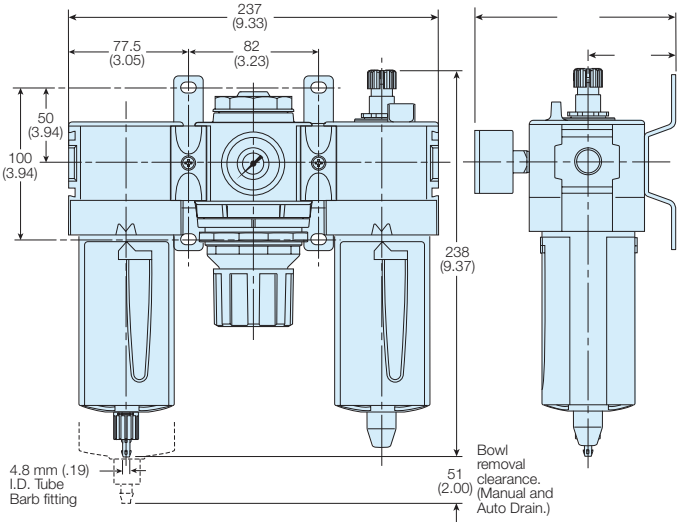




Filters - 5 µm

Port	Description	Order code
1/4”	Poly bowl - Manual drain	**P31FA12EGMN**
1/4”	Poly bowl - Pulse drain	**P31FA12EGBN**
1/4”	Metal bowl - Manual drain	**P31FA12EMMN**
1/4”	Metal bowl - Pulse drain	**P31FA12EMBN**
1/4	Poly bowl - Manual drain	**P32FA12EGMN**
1/4	Poly bowl - Auto drain	**P32FA12EGAN**
1/4	Metal bowl sight glass - Manual drain	**P32FA12ESMN**
1/4	Metal bowl sight glass - Auto drain	**P32FA12ESAN**
3/8	Poly bowl - Manual drain	**P32FA13EGMN**
3/8	Poly bowl - Auto drain	**P32FA13EGAN**
3/8	Metal bowl sight glass - Manual drain	**P32FA13ESMN**
3/8	Metal bowl sight glass - Auto drain	**P32FA13ESAN**
1/2	Poly bowl - Manual drain	**P32FA14EGMN**
1/2	Poly bowl - Auto drain	**P32FA14EGAN**
1/2	Metal bowl sight glass - Manual drain	**P32FA14ESMN**
1/2	Metal bowl sight glass - Auto drain	**P32FA14ESAN**
1/2”	Poly bowl - Manual drain	**P33FA14EGMN**
1/2”	Poly bowl - Auto drain	**P33FA14EGAN**
1/2”	Metal bowl sight glass - Manual drain	**P33FA14ESMN**
1/2”	Metal bowl sight glass - Auto drain	**P33FA14ESAN**
3/4”	Poly bowl - Manual drain	**P33FA16EGMN**
3/4”	Poly bowl - Auto drain	**P33FA16EGAN**
3/4”	Metal bowl sight glass - Manual drain	**P33FA16ESMN**
3/4”	Metal bowl sight glass - Auto drain	**P33FA16ESAN**

Regulators

Port	Description	Order code
1/4”	8 bar relieving	**P31RA12BNNP**
1/4”	8 bar relieving + gauge	**P31RA12BNTP**
1/4”	8 bar (125 psi) Relieving	**P32RA12BNNP**
1/4”	8 bar (125 psi) Relieving + Gauge	**P32RA12BNGP**
3/8”	8 bar (125 psi) Relieving	**P32RA13BNNP**
3/8”	8 bar (125 psi) Relieving + Gauge	**P32RA13BNGP**
1/2”	8 bar (125 psi) Relieving	**P32RA14BNNP**
1/2”	8 bar (125 psi) Relieving + Gauge	**P32RA14BNGP**
1/2”	8 bar (125 psi) Relieving	**P33RA14BNNP**
1/2”	8 bar (125 psi) Relieving + Gauge	**P33RA14BNGP**
3/4”	8 bar (125 psi) Relieving	**P33RA16BNNP**
3/4”	8 bar (125 psi) Relieving + Gauge	**P33RA16BNGP**

Coalescing Filters + Absorbers - 0,01 µm

Port	Description	Order code
1/4”	Poly bowl - 0.01 µ - Manual drain	**P31FA12CGMN**
1/4”	Poly bowl - 0.01 µ - Pulse drain	**P31FA12CGBN**
1/4”	Metal bowl - 0.01 µ - Manual drain	**P31FA12CMMN**
1/4”	Metal bowl - 0.01 µ - Pulse drain	**P31FA12CMBN**
1/4”	Poly bowl - Adsorber	**P31FA12AGMN**
1/4”	Metal bowl - Adsorber	**P31FA12AMMN**
1/4”	Poly bowl - 0.01 µ, Manual drain	**P32FA12DGMN**
1/4”	Poly bowl - 0.01 µ, Auto drain	**P32FA12DGAN**
1/4”	Metal bowl sight glass - 0.01 µ, Man. drain	**P32FA12DSMN**
1/4”	Metal bowl sight glass - 0.01 µ, Auto drain	**P32FA12DSAN**
3/8”	Poly bowl - 0.01 µ, Manual drain	**P32FA13DGMN**
3/8”	Poly bowl - 0.01 µ, Auto drain	**P32FA13DGAN**
3/8”	Metal bowl sight glass - 0.01 µ, Man. drain	**P32FA13DSMN**
3/8”	Metal bowl sight glass - 0.01 µ, Auto drain	**P32FA13DSAN**
1/2”	Poly bowl - 0.01 µ, Manual drain	**P32FA14DGMN**
1/2”	Poly bowl - 0.01 µ, Auto drain	**P32FA14DGAN**
1/2”	Metal bowl sight glass - 0.01 µ, Man. drain	**P32FA14DSMN**
1/2”	Metal bowl sight glass - 0.01 µ, Auto drain	**P32FA14DSAN**
1/4”	Poly bowl - Adsorber	**P32FA12AGMN**
1/4”	Metal bowl sight glass - Adsorber	**P32FA12ASMN**
3/8”	Poly bowl - Adsorber	**P32FA13AGMN**
3/8”	Metal bowl sight glass - Adsorber	**P32FA13ASMN**
1/2”	Poly bowl - Adsorber	**P32FA14AGMN**
1/2”	Metal bowl sight glass - Adsorber	**P32FA14ASMN**
1/2”	Poly bowl - 0.01 µ, Manual drain	**P33FA14DGMN**
1/2”	Poly bowl - 0.01 µ, Auto drain	**P33FA14DGAN**
1/2”	Metal bowl sight glass - 0.01 µ, Man. drain	**P33FA14DSMN**
1/2”	Metal bowl sight glass - 0.01 µ, Auto drain	**P33FA14DSAN**
3/4”	Poly bowl - 0.01 µ, Manual drain	**P33FA16DGMN**
3/4”	Poly bowl - 0.01 µ, Auto drain	**P33FA16DGAN**
3/4”	Metal bowl sight glass - 0.01 µ, Man. drain	**P33FA16DSMN**
3/4”	Metal bowl sight glass - 0.01 µ, Auto drain	**P33FA16DSAN**
1/2”	Poly bowl - Adsorber	**P33FA14AGMN**
1/2”	Metal bowl sight glass - Adsorber	**P33FA14ASMN**
3/4”	Poly bowl - Adsorber	**P33FA16AGMN**
3/4”	Metal bowl sight glass - Adsorber	**P33FA16ASMN**

Filter Regulators - (P31) pressures 2 & 4 bar (P32/P33) pressures 2,4 & 17 bar available.

Port	Description	Order code
1/4”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P31EA12EGMBNTP**
1/4”	8 bar (125 psi) Relieving - Poly bowl - Pulse drain	**P31EA12EGBBNTP**
1/4”	8 bar (125 psi) Relieving - Metal bowl - Manual drain	**P31EA12EMMBNTP**
1/4”	8 bar (125 psi) Relieving - Metal bowl - Pulse drain	**P31EA12EMBBNTP**
1/4”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P32EA12EGMBNGP**
1/4”	8 bar (125 psi) Relieving - Poly bowl - Auto drain	**P32EA12EGABNGP**
1/4”	8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain	**P32EA12ESMBNGP**
1/4”	8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain	**P32EA12ESABNGP**
3/8”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P32EA13EGMBNGP**
3/8”	8 bar (125 psi) Relieving - Poly bowl - Auto drain	**P32EA13EGABNGP**
3/8”	8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain	**P32EA13ESMBNGP**
3/8”	8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain	**P32EA13ESABNGP**
1/2”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P32EA14EGMBNGP**
1/2”	8 bar (125 psi) Relieving - Poly bowl - Auto drain	**P32EA14EGABNGP**
1/2”	8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain	**P32EA14ESMBNGP**
1/2”	8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain	**P32EA14ESABNGP**
1/2”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P33EA14EGMBNGP**
1/2”	8 bar (125 psi) Relieving - Poly bowl - Auto drain	**P33EA14EGABNGP**
1/2”	8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain	**P33EA14ESMBNGP**
1/2”	8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain	**P33EA14ESABNGP**
3/4”	8 bar (125 psi) Relieving - Poly bowl - Manual drain	**P33EA16EGMBNGP**
3/4”	8 bar (125 psi) Relieving - Poly bowl - Auto drain	**P33EA16EGABNGP**
3/4”	8 bar (125 psi) Relieving - Metal bowl sight glass - Manual drain	**P33EA16ESMBNGP**
3/4”	8 bar (125 psi) Relieving - Metal bowl sight glass - Auto drain	**P33EA16ESABNGP**

Lubricators

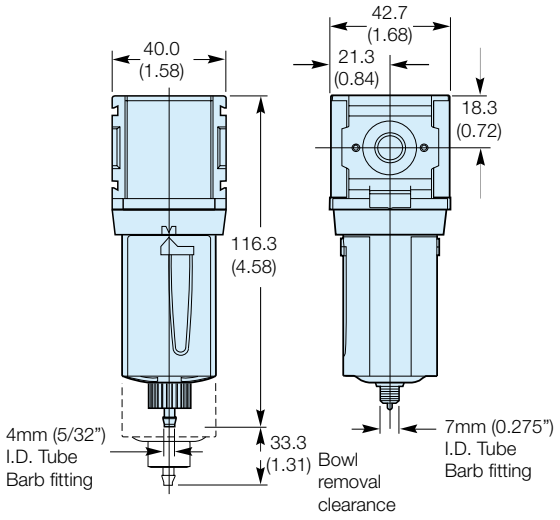
Port	Description	Order code
1/4”	Poly bowl - No drain	**P31LA12LGNN**
1/4”	Metal bowl - No drain	**P31LA12LMNN**
1/4”	Poly bowl - No drain	**P32LA12LGNN**
1/4”	Metal bowl - No drain	**P32LA12LSNN**
3/8”	Poly bowl - No drain	**P32LA13LGNN**
3/8”	Metal bowl - No drain	**P32LA13LSNN**
1/2”	Poly bowl - No drain	**P32LA14LGNN**
1/2”	Metal bowl - No drain	**P32LA14LSNN**
1/2”	Poly bowl - No drain	**P33LA14LGNN**
1/2”	Metal bowl - No drain	**P33LA14LSNN**
3/4”	Poly bowl - No drain	**P33LA16LGNN**
3/4”	Metal bowl - No drain	**P33LA16LSNN**

Gauges

Port	Description			Order code
P31	Square Flush Mounting Gauge Kit	0-4 bar 0-10 bar		**K4511SCR04B** **K4511SCR11B**
P31	40mm Round Gauge	0-30 psi / 0-2 bar 0-60 psi / 0-4.1 bar 0-160 psi / 0-10 bar	1/8” 1/8” 1/8”	**P3D-KAB1AYN** **P3D-KAB1ALN** **P3D-KAB1ANN**
P32 / P33	50mm Round Gauge	0-60 psi / 0-4.1 bar 0-160 psi / 0-10 bar 0-300 psi / 0-20 bar	1/4” 1/4” 1/4”	**P6G-ERB2040** **P6G-ERB2110** **P6G-ERB2200**

Filter Dimensions - mm (inches)

P31



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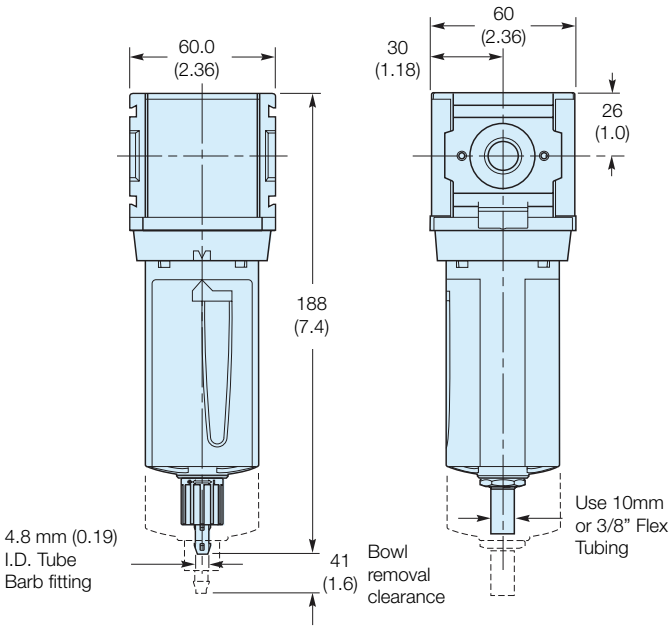
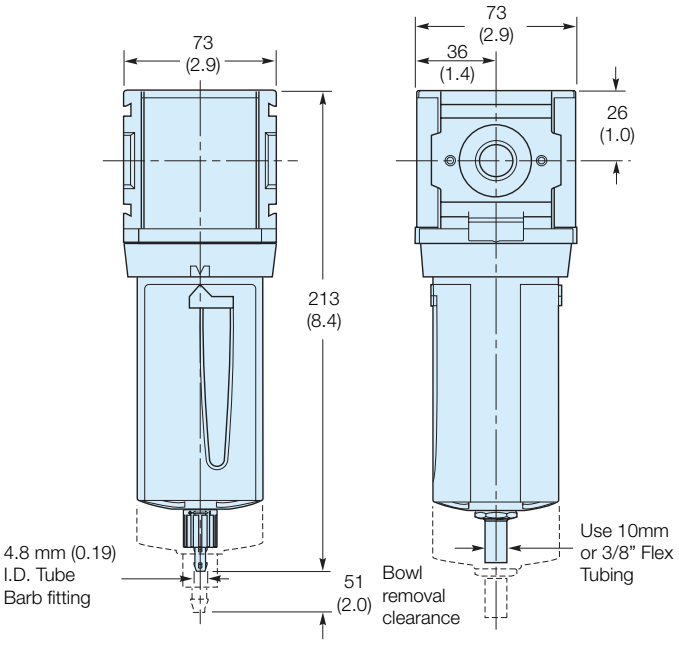


Manual Drain **Automatic Drain**

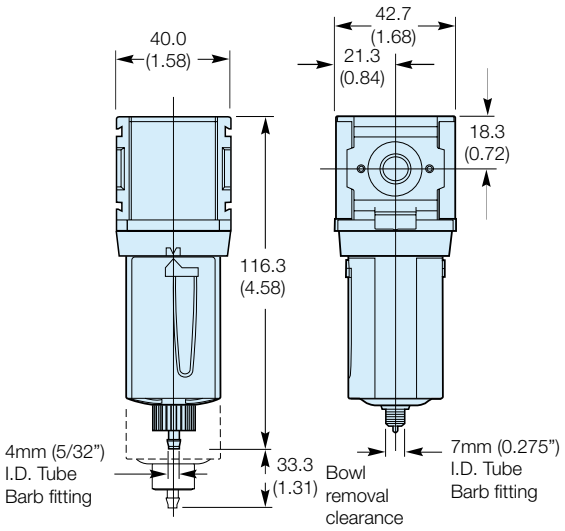
P33



Manual Drain **Automatic Drain**

Coalescing / Adsorber Filter Dimensions - mm (inches)

P31



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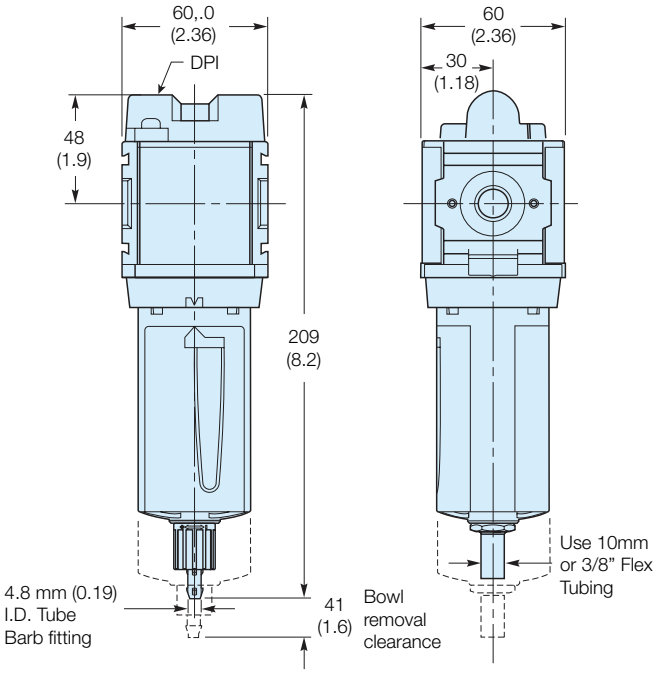
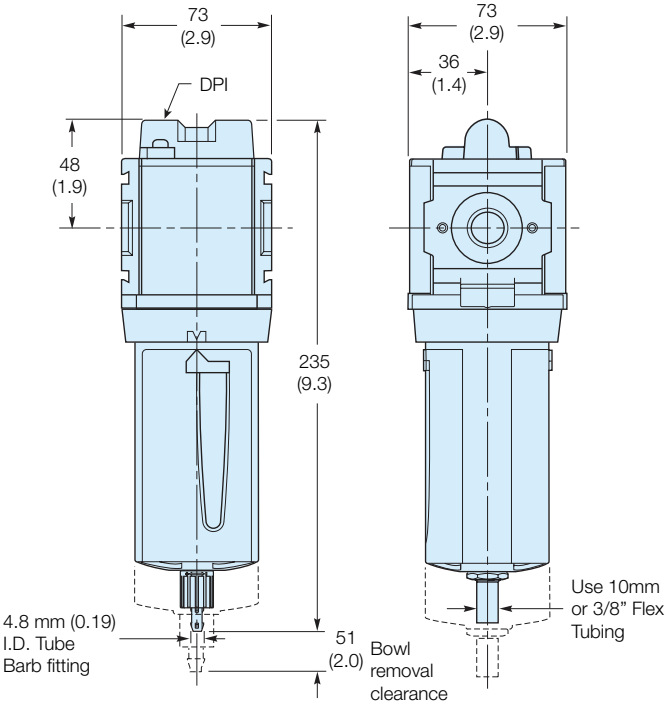


Manual Drain **Automatic Drain**

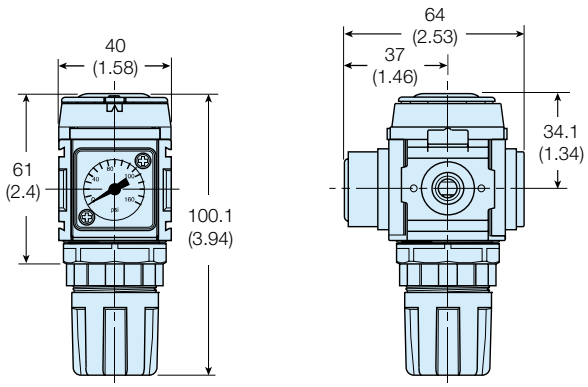
P33



Manual Drain **Automatic Drain**

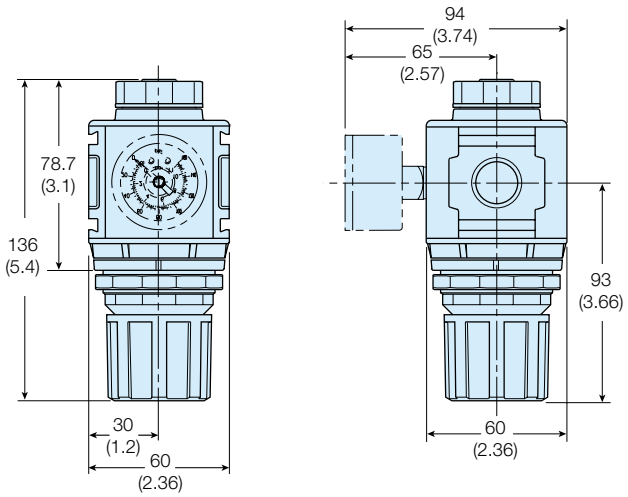
Regulator Dimensions - mm (inches)

P31



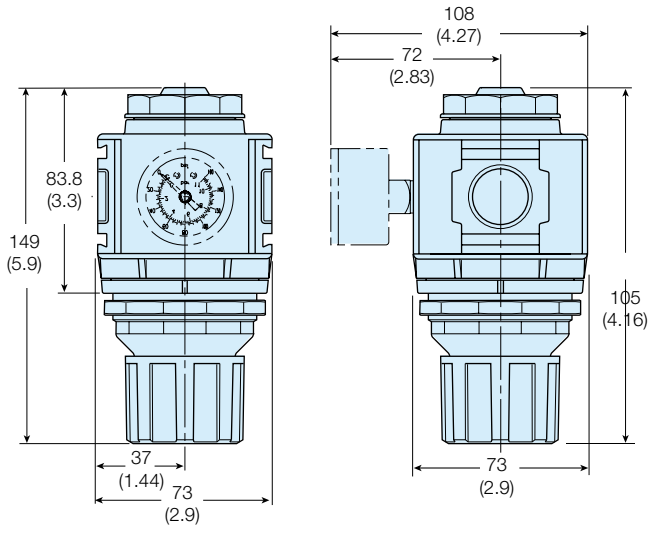
NOTE: Ø 30 mm hole required for panel nut mounting.

P32



NOTE: Ø 47 mm hole required for panel nut mounting.

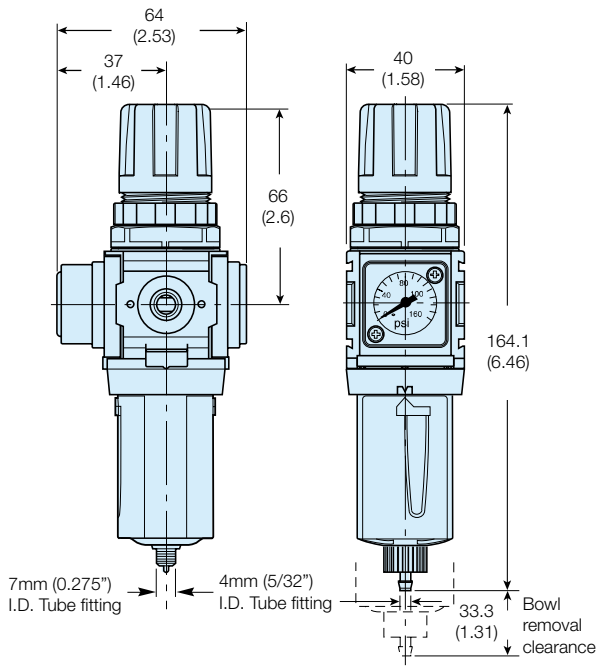
P33



NOTE: Ø 60 mm hole required for panel nut mounting.

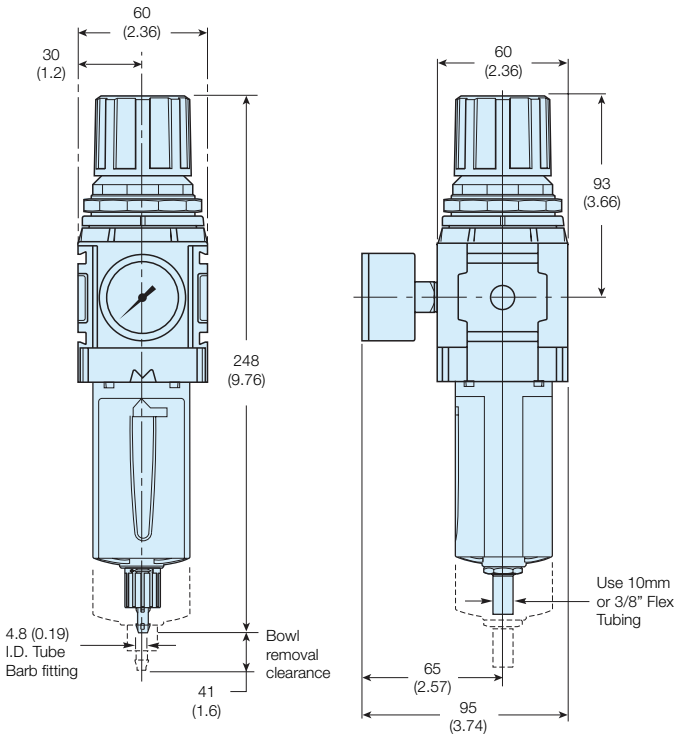
Filter Regulator Dimensions - mm (inches)

P31



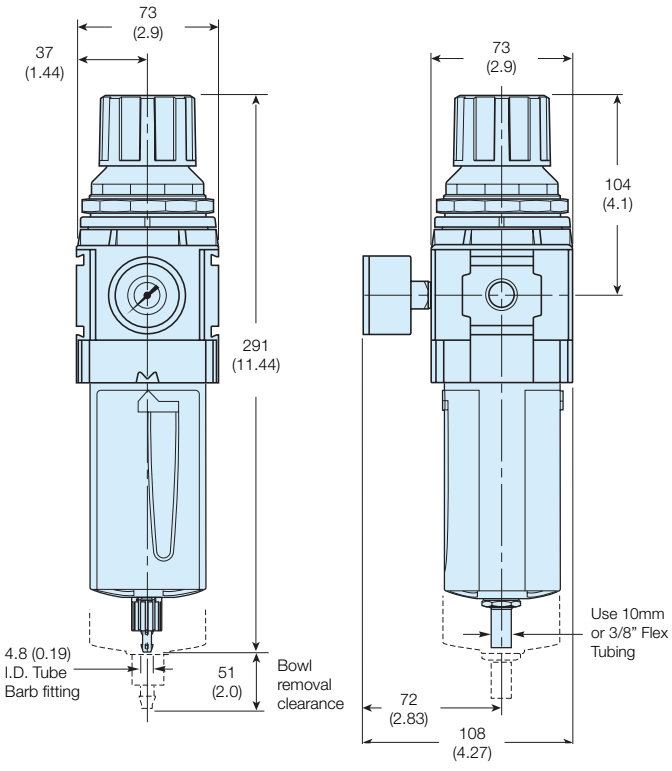
Note:
Flush-mounted gauge kits will not fit units originally purchased with threaded gauge ports.

P32



Manual Drain **Automatic Drain**

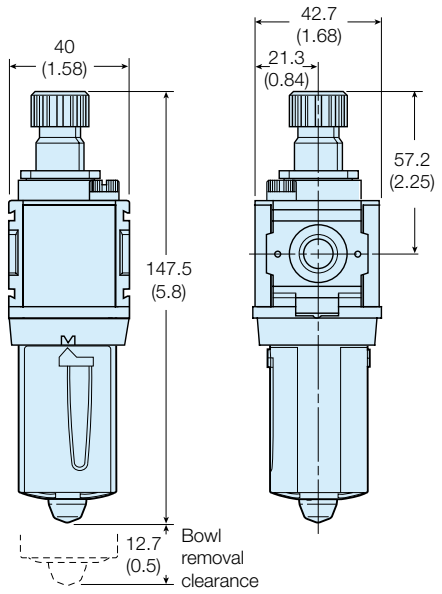
P33



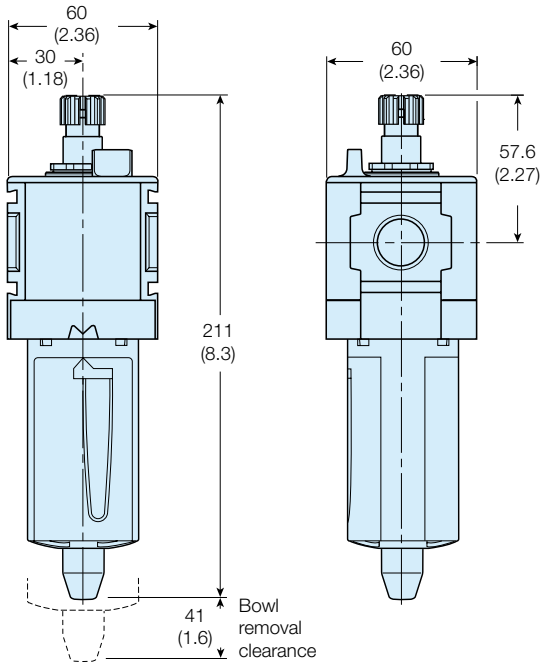
Manual Drain **Automatic Drain**

Lubricator Dimensions - mm (inches)

P31



P32



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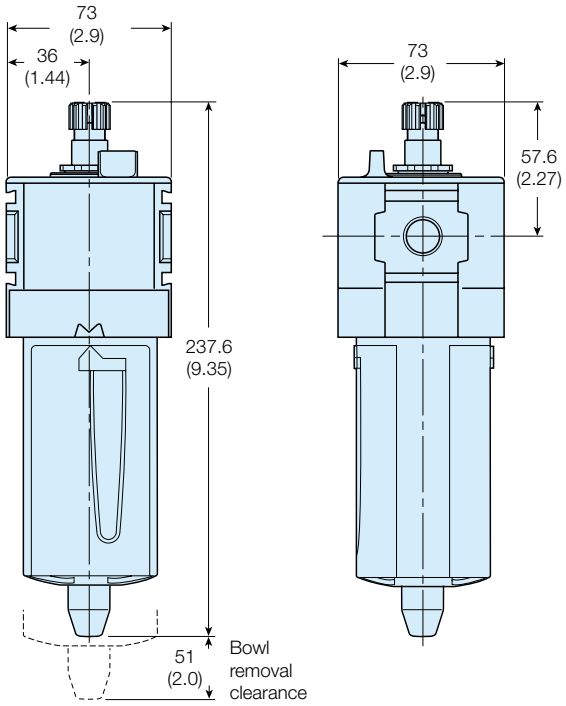
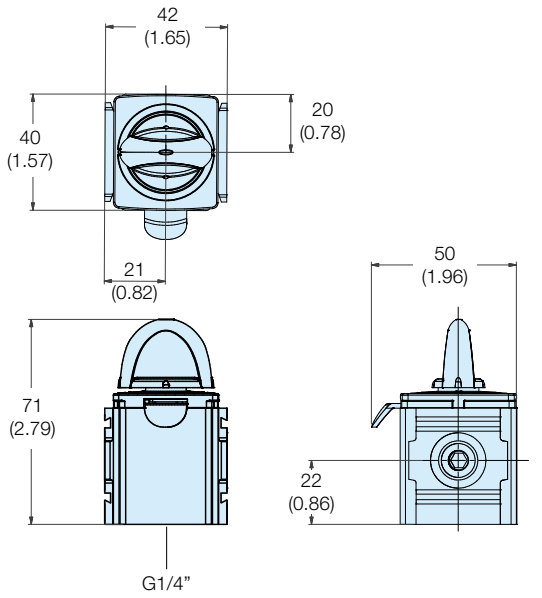


Modular Ball Valve Dimensions - mm (inches)

P31



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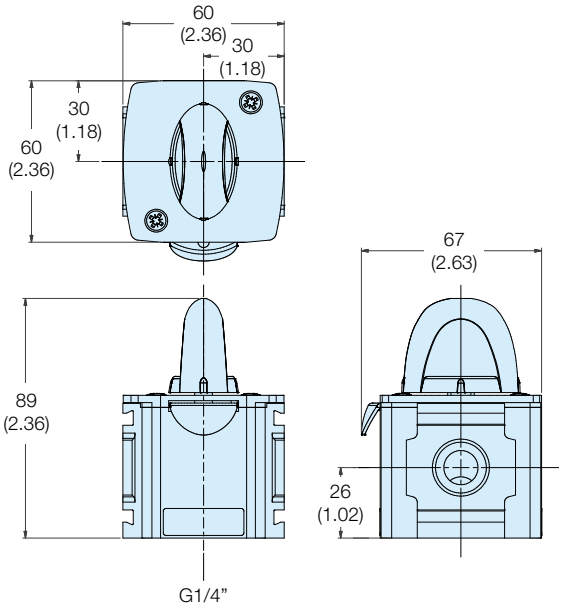

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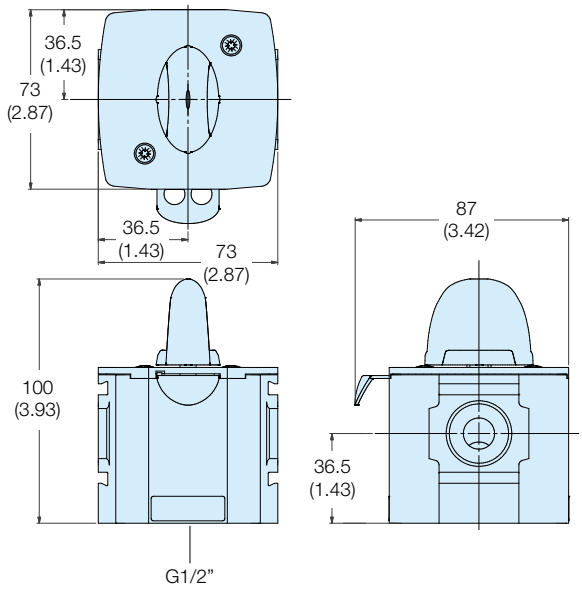
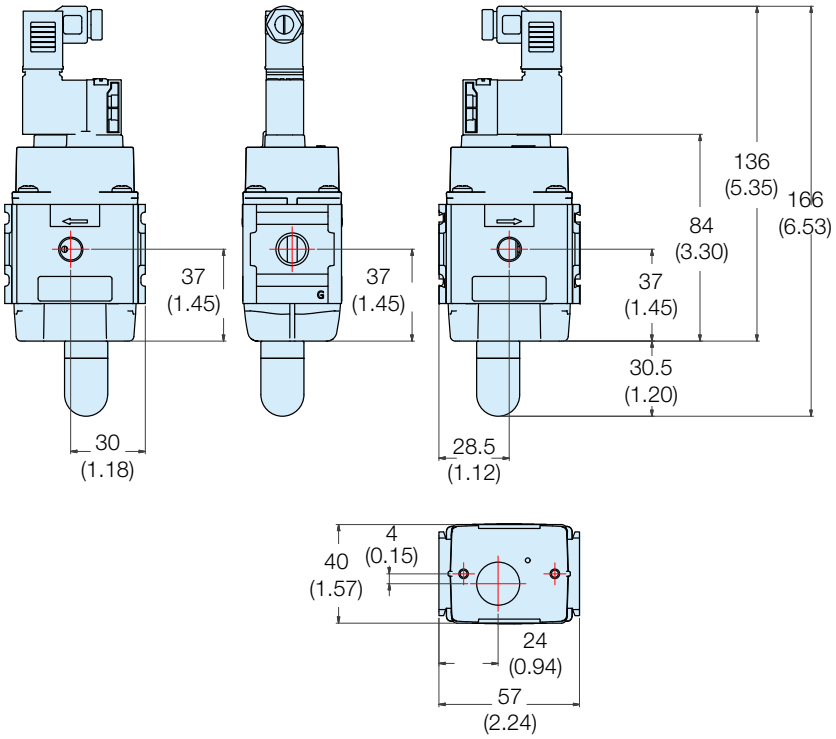
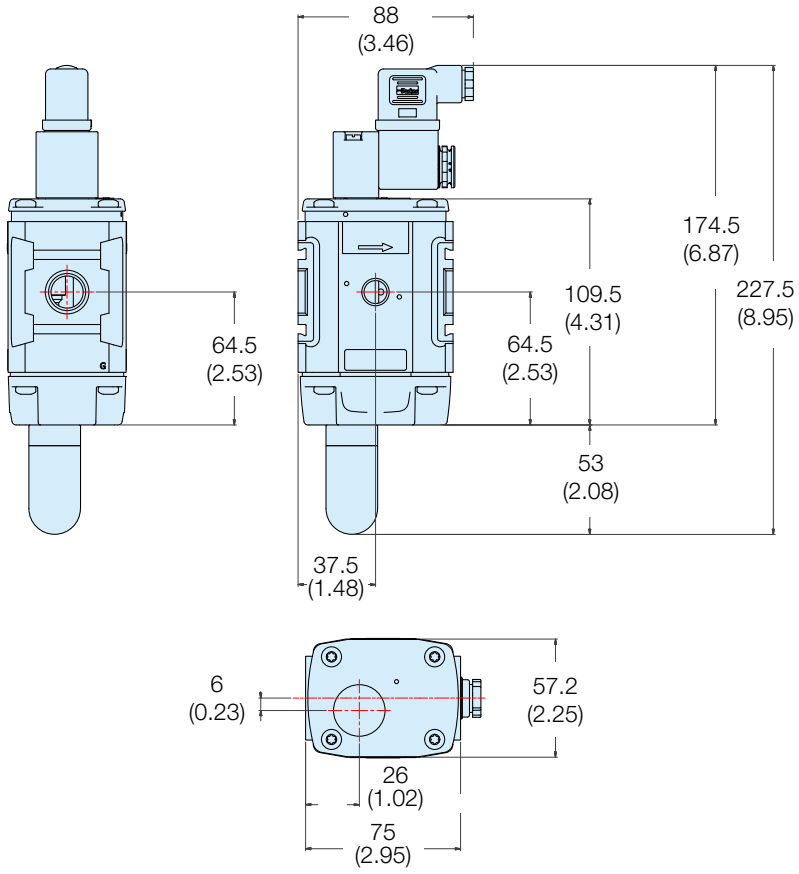


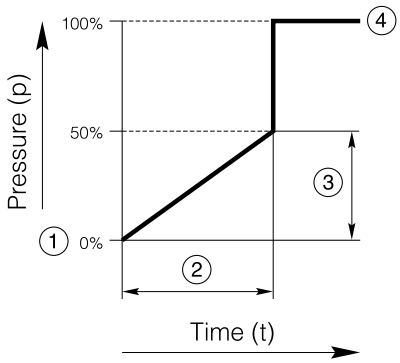
Combined Soft Start Dump Valve and Remote Operated Dump Valve Dimensions - mm (inches)

P31



P32





① Start signal
② Switching time delay
③ Gradual pressure build up
④ Operating pressure p^2 (=p^1)

Combined Soft Start Dump Valve and Remote Operated Dump Valve

Port	Description	Order code
1/4	Solenoid operated (not included)	**P31TA12SGN0000**
1/4	24VDC Solenoid & cable plug	**P31TA12SGNC2CN**
1/4	Air pilot operated	**P31TA12PPN**
1/2	Solenoid operated (not included)	**P32TA14SCN0000**
1/2	24VDC 30mm coil & cable plug incl.	**P32TA14SCNA2CN**
1/2	Air pilot operated	**P32TA14PPN**
1/2	Solenoid operated (not included) Category 2 - Machine Directive Valve Contact - Sales Office for further details.	**P32TA14SC20000**

Modular Ball Valve / Lockout Valve

Model type	Port size	Thread type	Flow dm^3/s (scfm)	Modular Ball Valve Flow from left to right
P31	1/4"	BSPP	20 (42.4)	**P31VB12LBNN**
P32	3/8"	BSPP	90 (190.7)	**P32VB13LBNN**
	1/2"	BSPP	122 (258.5)	**P32VB14LBNN**
P33	1/2"	BSPP	122 (258.5)	**P33VB14LBNN**
	3/4"	BSPP	122 (258.5)	**P33VB16LBNN**

For thread type: BSPP **1**
NPT **9**

Soft Start Valve

Port	Description	Order code
1/4	Solenoid operated (not included)	**P31SA12SGN0000**
1/4	24VDC Solenoid & cable plug	**P31SA12SGNC2CN**
1/4	External air pilot (1/8 threaded)	**P31SA12PPN**
1/2	Solenoid operated (not included)	**P32SA14SCN0000**
1/2	24VDC 30mm coil & cable plug	**P32SA14SCNA2CN**
1/2	Internal air pilot operated	**P32SA14Y0N**
1/2	External air pilot (1/8 threaded)	**P32SA14PPN**

Manifold Blocks

Model Type	In / Out Port Size	Auxiliary Port Size Top	Auxilliary Port Size Bottom	Thread Type	Order Code
P31	1/4"	1/4"	1/4"	BSPP	**P31MA12022N**
P32	1/2"	1/4"	1/2"	BSPP	**P32MA14024N**
P33	3/4"	1/4"	1/2"	BSPP	**P33MA16024N**

For thread type: BSPP **1**
NPT **9**

Remote Operated Dump Valve

Port	Description	Order code
1/4	Solenoid operated (not included)	**P31DA12SGN0000**
1/4	24VDC Solenoid & cable plug	**P31DA12SGNC2CN**
1/4	Air pilot operated	**P31DA12PPN**
1/2	Solenoid operated (not included)	**P32DA14SCN0000**
1/2	24VDC 30mm coil & cable plug incl.	**P32DA14SCNA2CN**
1/2	Air pilot operated	**P32DA14PPN**
1/2	Solenoid operated (not included) Category 2 - Machine Directive Valve Contact - Sales Office for further details.	**P32DA14SC20000**

Branch Manifold

P32	1/2"	1/4"	1/4"	BSPP	**P32MD14022N**
P32	1/4"	1/4"	1/4"	BSPP	**P32MD12022N**
Seal kit for square gauge mtg on P32MD					**P32KA00RX**

C-Bracket
(Fits to filter and lubricator body)

P31
P31KA00MW

T-Bracket
(Fits to body connector or port block)

	P32	P33
	P32KA00MB	**P32KA00MB**

T-Bracket w / Body Connector

P31	P32	P33
P31KA00MT	**P32KA00MT**	**P32KA00MT**

L-Bracket
(Fits to filter and lubricator body)

	P32	P33
	P32KA00ML	**P33KA00ML**

Angle Bracket
(Fits to regulator and filter/regulator)

P31	P32	P33
P31KA00MR	**P32KA00MR**	**P32KA00MR**

Panel mounting nut
(Aluminium)

P31	P32	P33
P31KA00MM	**P32KA00MM**	**P33KA00MM**

Body Connector 'O' ring kit -
Pack of 5

P31	P32
P31KA00CY	**P32KA00CY**

Body Connector

P31	P32	P33
P31KA00CB	**P32KA00CB**	**P32KA00CB**

Accessories Kits

Series	Description	Order Code	
P31 P32 P33	Panel Mount Nut (Plastic)	**P31KA00MP** **P32KA00MP** **P33KA00MP**	
P31 P32 P33	Panel Mount Nut (Aluminium)	**P31KA00MM** **P32KA00MM** **P33KA00MM**	
P31 P32 P33	5µ Element Kit	**P31KA00ESE** **P32KA00ESE** **P33KA00ESE**	
P31 P32 P33	40µ Element Kit	**P31KA00ESG** **P32KA00ESG** **P33KA00ESG**	
P31 P32 P33	1µ Element Kit	**P31KA00ES9** **P32KA00ES9** **P33KA00ES9**	
P31 P32 P33	0.01µ Element Kit	**P31KA00ESC** **P32KA00ESC** **P33KA00ESC**	
P31 P32 P33	Adsorber Element Kit	**P31KA00ESA** **P32KA00ESA** **P33KA00ESA**	
P32 / P33	Auto Drain Kit	**P32KA00DA**	
P32 / P33	Differential Pressure Indicator Kit	**P32KA00RQ**	
P31 P32 / P33	Fill Plug Kit	**P31KA00PL** **P32KA00PL**	
P31 / P32 / P33	Drip Control Assembly Kit	**P32KA00PG**	

Accessories Kits

Series	Description	Order Code	
P31 P32 P33	Plastic Bowl with Bowl Guard & Manual Drain	**P31KA00BGM** **P32KA00BGM** **P33KA00BGM**	
P31	Plastic Bowl with Bowl Guard & Pulse Drain	**P31KA00BGB**	
P32 P33	Plastic Bowl with Bowl Guard & Auto Drain	**P32KA00BGA** **P33KA00BGA**	
P31	Metal Bowl without Sight Gauge & Pulse Drain	**P31KA00BMB**	
P32 P33	Metal Bowl with Sight Gauge & Manual Drain	**P32KA00BSM** **P33KA00BSM**	
P32 P33	Metal Bowl with Sight Gauge & Auto Drain	**P32KA00BSA** **P33KA00BSA**	
P31 P32 P33	Lubricator - Plastic Bowl with Bowl Guard & Close End	**P31KA00BGN** **P32KA00BGN** **P33KA00BGN**	
P31 P32 P33	Lubricator - Metal Bowl Without Sight Gauge, No Drain Lubricator - Metal Bowl With Sight Gauge, No Drain Lubricator - Metal Bowl With Sight Gauge, No Drain	**P31KA00BMN** **P32KA00BSN** **P33KA00BSN**	

- Compact body ported units.
- Port size G1/4
- Unique deflector plate ensuring maximum water and particulate removal.
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.
- Tamperproof options available.

Operating information

Working pressure:	Max 10 bar
Working temperature:	-10 °C to +52 °C

Flow characteristics

Flow dm^3/s	1/4
Filter	30.5
Coalescing Filter	5.9
Adsorber Filter	5.9
Regulator	12.9
Regulator - Brass	9.8
Filter Regulator	9.2
Lubricator	23.3

Filters

Port size	Description	Order Code
G1/4	Poly bowl - Manual drain - 5µ	**P3LFA12EPPN**
G1/4	Poly bowl - Pulse drain - 5µ	**P3LFA12EPSN**
G1/4	Poly bowl - Manual drain - 40µ	**P3LFA12GPPN**
G1/4	Poly bowl - Pulse drain - 40µ	**P3LFA12GPSN**
Individual mounting bracket - P3LFA / P3LLA		**P3LKA00MW**

Regulators - 2 & 4 bar - relieving type & non relieving type

Port size	Description	Order Code
G1/4	8 bar relieving	**P3LRA12BNNP**
G1/4	8 bar relieving + gauge	**P3LRA12BNGP**
G1/4	8 bar relieving + Tamperproof	**P3LRA12BANP**
G1/4	8 bar relieving + gauge - Tamperproof	**P3LRA12BAGP**

Regulators (Brass) - 2, 4 &16 bar-relieving type & non relieving type

Port size	Description	Order Code
G1/4	8 bar relieving	**P3LRX12BNNP**
G1/4	8 bar relieving + gauge	**P3LRX12BNGP**
G1/4	16 bar relieving	**P3LRX12BNHP**
G1/4	8 bar relieving + Tamperproof	**P3LRX12BANP**
G1/4	8 bar relieving + gauge - Tamperproof	**P3LRX12BAGP**
G1/4	16 bar relieving + Tamperproof	**P3LRX12BAHP**

Pressure Gauges

40mm (1 1/2") Round 1/8" center back mount

		Order Code
0-30 PSIG / 0-2 bar	(2)	**KZ8810-00**
0-58 PSIG / 0-4 bar	(4)	**KZ8811-00**
0-160 PSIG / 0-10 bar	(10)	**KZ8813-00**

Coalescing Filters - 0.01µ element

Port size	Description	Order Code
G1/4	Poly bowl - Manual drain - 0.01µ	**P3LFA12CPPN**
Individual mounting bracket - P3LFA / P3LLA		**P3LKA00MW**

Adsorber Filters

Port size	Description	Order Code
G1/4	Poly bowl - Adsorber	**P3LFA12APPN**

Filter/Regulators - 2 & 4 bar pressure, 40µ available

Port size	Description	Order Code
G1/4	8 bar relieving - Poly bowl Manual drain - 5µ	**P3LEA12EPPBNNP**
G1/4	8 bar relieving - Poly bowl Semi auto-drain - 5µ	**P3LEA12EPSBNNP**
G1/4	8 bar relieving - Poly bowl Manual drain + Gauge - 5µ	**P3LEA12EPPBNGP**
G1/4	8 bar relieving - Poly bowl Semi auto-drain + Gauge - 5µ	**P3LEA12EPSBNGP**

Lubricators

Port size	Description	Order Code
G1/4	Poly bowl - No drain	**P3LLA12LPNN**
	Lubricator OIL VG32-1 Litre	**P3YKA00PPBB**

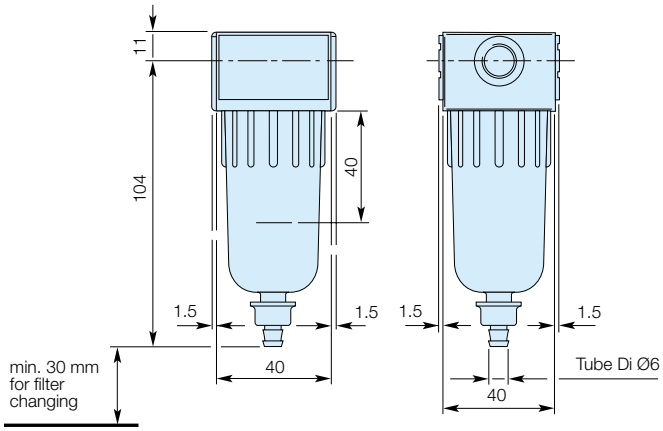
Filter/Regulator + Lubricator Combination

Available in boxed quantities of 25

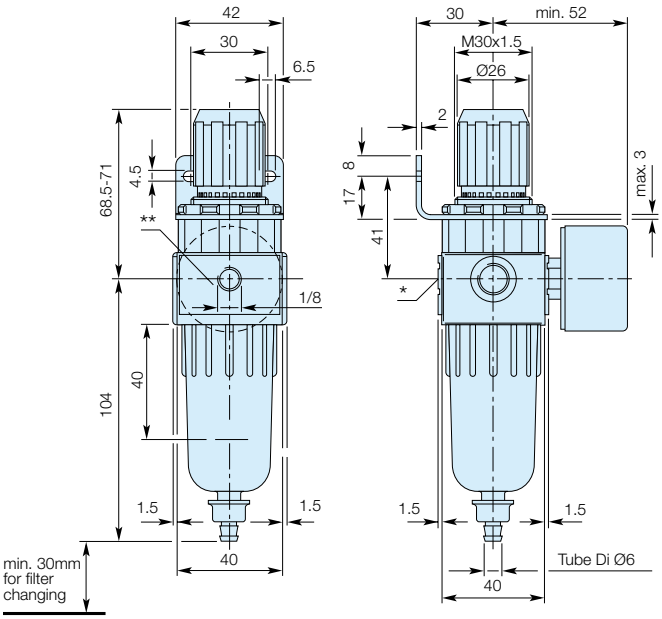
Port size	Description	Order Code
G1/4	Manual push drain	**P3LCA12PEPNGLNWQ25**
G1/4	Semi auto drain	**P3LCA12PESNGLNWQ25**

Dimensions (mm)

Filters

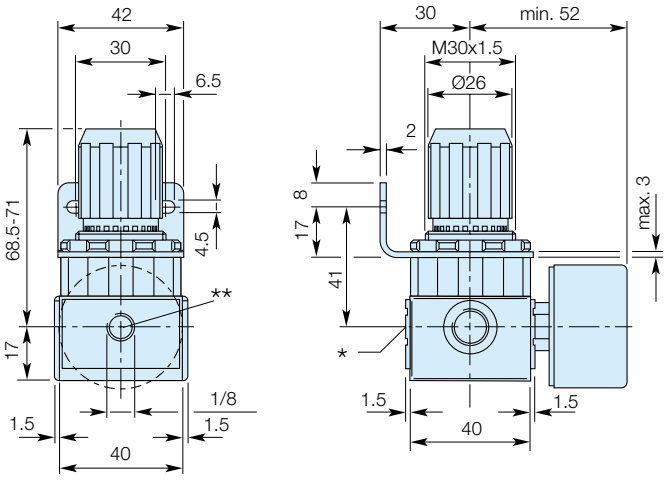


Filter/Regulators



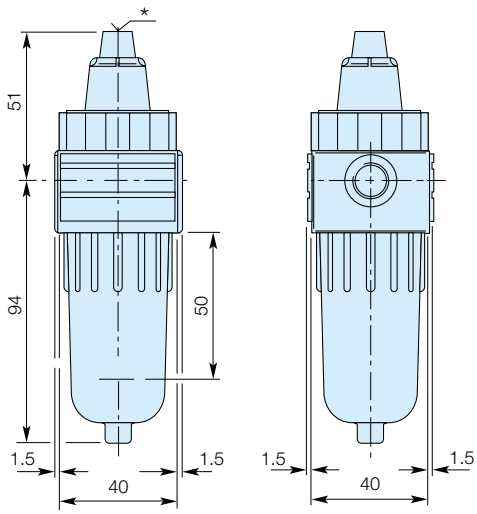
* On delivery the screw plug is not assembled
** Two opposite gauge ports 1/8”

Regulators



* On delivery the screw plug is not assembled
** Two opposite gauge ports 1/8”

Lubricators



* Oil adjustment screw

Service kits

Description	Order code
Plastic bowl / manual push drain	**P3LKA00BPP**
Plastic bowl / semi-auto drain	**P3LKA00BPS**
Plastic bowl - no drain	**P3LKA00BPN**
5µ particle filter element	**P3LKA00ESE**
40µ Element Kit	**P3LKA00ESG**
0.01µ coalescing filter element	**P3LKA00ESC**
Activated carbon adsorber filter element	**P3LKA00ESA**

Accessories

Description	Order code
Connector kit (E/R + L/F)	**P3LKA00CB1**
Connector kit (E/R + M + L)	**P3LKA00CB2**
Connector kit (E/R + F + F)	**P3LKA00CB3**
Connector kit (F + L/F)	**P3LKA00CB4**
Manifold block	**P3LMA12020C**
Mounting bracket (F/L)	**P3LKA00MW**
Panel mount nut - Aluminium	**P3LKA00MM**
Panel mount nut - Plastic	**P3LKA00MP**
Angle Bracket (uses panel mount threads)	**P3LKA00MR**

Nano Mist

Simple. Convincing in the Details

There are innovations that bring selective improvements.
And then there are real innovations.
*Innovations that set **new** standards.*
*Like the **new Parker Moduflex Lite** series.*

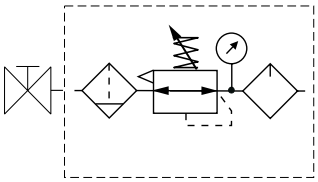
New Nano Mist Technology, New Lubricator Concept. Self-Adjusting.

With conventional lubricators, only the oil volume per time unit can be adjusted. If the demand changes, the quantity dispensed still remains constant.

The Moduflex Lite lubricator concept sets new benchmarks here. For the first time, the oil volume is automatically adjusted to the flow rate.

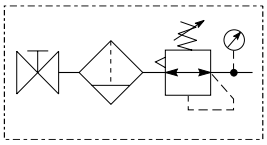
This ensures that there is neither too little nor too much oil in the system, which leads to clear economic and ecological advantages. In addition, with conventional systems, the distance between the lubricator and the equipment has to be less than 8 meters. With larger distances, the dispensed oil is deposited as a wall flow.
The new lubricator principle of the Moduflex Lite allows for distances of up to 40 meters. This opens up new scope for the design of even more efficient production systems.

Popular Combinations



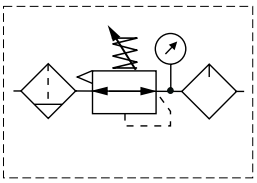
Slide Valve + Filter/Regulator + Lubricator Combinations (50mg/m³)
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Combined Manual/Semi-Auto Drain	Flow dm³/s	Weight (g)	Auto Drain	Flow dm³/s	Weight (g)
G1/2	**P3XAA14GECNGPNW**	76	1300	**P3XAA14GEANGPNW**	76	1300
G3/4	**P3XAA16GECNGPNW**	77	1300	**P3XAA16GEANGPNW**	77	1300



Slide Valve + Filter/Regulator Combinations
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Combined Manual/Semi-Auto Drain	Flow dm³/s	Weight (g)	Auto Drain	Flow dm³/s	Weight (g)
G1/2	**P3XAN14GECNGW**	105	950	**P3XAN14GEANGW**	105	950
G3/4	**P3XAN16GECNGW**	106	950	**P3XAN16GEANGW**	106	950



Filter/Regulator + Lubricator Combinations (50mg/m³)
5 micron element, 8 bar Regulator + Gauge and Wall Mounting Brackets

Port size	Combined Manual/Semi-Auto Drain	Flow dm³/s	Weight (g)	Auto Drain	Flow dm³/s	Weight (g)
G1/2	**P3XCA14GECNGPNW**	76	1000	**P3XCA14GEANGPNW**	76	1000
G3/4	**P3XCA16GECNGPNW**	77	1000	**P3XCA16GEANGPNW**	77	1000

Options:

P 3 X [ ] [ ] [ ] **G E** [ ] [ ] [ ] [ ] **W**

Filter/Reg + Lubricator	**CA**
Slide valve + Filter/Reg	**AN**
Slide valve + Filter/Reg + Lubricator	**AA**

BSPP (G)	**1**
NPT *	**9**

Combined Manual/Semi Auto Drain	**C**
Auto Drain	**A**

0 - 8 bar with gauge	**G**
0 - 16 bar with gauge	**J**

1/2	**4**
3/4	**6**

Non rise - Standard	**N**
Tamperproof - Lockable	**A**

(50mg/m³)	**PN**	Add only for options with lubricator
(5mg/m³)	**SN**	

* NPT ports on request 1/2" size only

- Integral 1/2 or 3/4 ports
- High efficiency 5 micron element as standard
- Excellent water removal efficiency
- Secondary pressure ranges 4, 8 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Low temperature -40'C with Regulators/Filters and Filter Regulators using combined manual/semi auto drain as standard without pressure gauge.

Operating information

Working pressure:	Max 16 bar
Working temperature:	-40 °C to +60 °C

Flow characteristics

Flow dm^3/s	1/2	3/4
Filter	55	57
Coalescing Filter	24	24
Adsorber Filter	18	18
Regulator	122	134
Filter Regulator	111	113
Lubricator	78	78

Filters - 5 micron element

Port size	Description	Order Code
G1/2	Manual drain/Semi auto	**P3XFA14EGCN**
G1/2	Auto drain	**P3XFA14EGAN**
G3/4	Manual drain / Semi auto	**P3XFA16EGCN**
G3/4	Auto drain	**P3XFA16EGAN**
	Mounting bracket	**P3XKA00MW**

Regulators - 4 & 8 bar - non relieving options available

Port size	Description	Order Code
G1/2	8 bar relieving	**P3XRA14BNNN**
G1/2	8 bar relieving + gauge	**P3XRA14BNGN**
G3/4	8 bar relieving	**P3XRA16BNNN**
G3/4	8 bar relieving + gauge	**P3XRA16BNGN**
G1/2	8 bar relieving, tamperproof	**P3XRA14BANN**
G1/2	8 bar relieving, tamperproof + gauge	**P3XRA14BAGN**
G3/4	8 bar relieving, tamperproof	**P3XRA16BANN**
G3/4	8 bar relieving, tamperproof + gauge	**P3XRA16BAGN**
G1/2	Air-pilot regulator	**P3XRA14BPPN**
G3/4	Air-pilot regulator	**P3XRA16BPPN**

Lubricators

Port size	Description	Order Code
G1/2	Oil mist, fill under pressure (50mg/m^3)	**P3XLA14PGNN**
G3/4	Oil mist, fill under pressure (50mg/m^3)	**P3XLA16PGNN**
G1/2	Oil mist, fill under pressure (5mg/m^3)	**P3XLA14SGNN**
G3/4	Oil mist, fill under pressure (5mg/m^3)	**P3XLA16SGNN**
	Lubricator OIL VG15:ISO3448 - 100ml	**P3XKA00PPA**
	Lubricator OIL VG32-1 Litre	**P3YKA00PPBB**

Coalescing Filters - 0.01 micron element

Port size	Description	Order Code
G1/2	Coalescing 0.01µm, manual/semi auto drain	**P3XFA14DGCN**
G1/2	Coalescing Filter 0.01µm, auto drain	**P3XFA14DGAN**
G3/4	Coalescing 0.01µm, manual/semi auto drain	**P3XFA16DGCN**
G3/4	Coalescing Filter 0.01µm, auto drain	**P3XFA16DGAN**

Adsorber Filters

Port size	Description	Order Code
G1/2	Adsorber, manual/semi auto drain	**P3XFA14AGCN**
G3/4	Adsorber, manual/semi auto drain	**P3XFA16AGCN**

Filter/Regulators

4 and 16 bar, non relieving options available

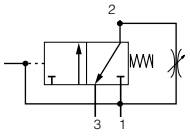
Port size	Description	Order Code
G1/2	8 bar, relieving manual/semi auto drain	**P3XEA14EGCBNNN**
G1/2	8 bar, relieving auto drain	**P3XEA14EGABNNN**
G1/2	8 bar, relieving manual/semi auto + gauge	**P3XEA14EGCBNGN**
G1/2	8 bar, relieving auto drain + gauge	**P3XEA14EGABNGN**
G3/4	8 bar, relieving manual/semi auto drain	**P3XEA16EGCBNNN**
G3/4	8 bar, relieving auto drain	**P3XEA16EGABNNN**
G3/4	8 bar, relieving manual/semi auto + gauge	**P3XEA16EGCBNGN**
G3/4	8 bar, relieving auto drain + gauge	**P3XEA16EGABNGN**

Pressure Gauges

	Order Code
0 - 10 bar	**KG8012-00**
0 - 16 bar	**KG8013-00**

Dump Valve & Combined Soft Start Dump Valve

Symbols



- Modular design with 1/2” & 3/4” integral ports (BSPP or NPT)
- Provides for the safe introduction of pressure
- Automatically dumps downstream pressure on the loss of pilot signal
- Adjustable slow start
- Solenoid or air pilot options
- High flow & exhaust capability

P3X Series Combined Soft Start/Dump Valves, provide for the safe introduction of pressure to machines or systems. Soft Start/Dump Valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Options:

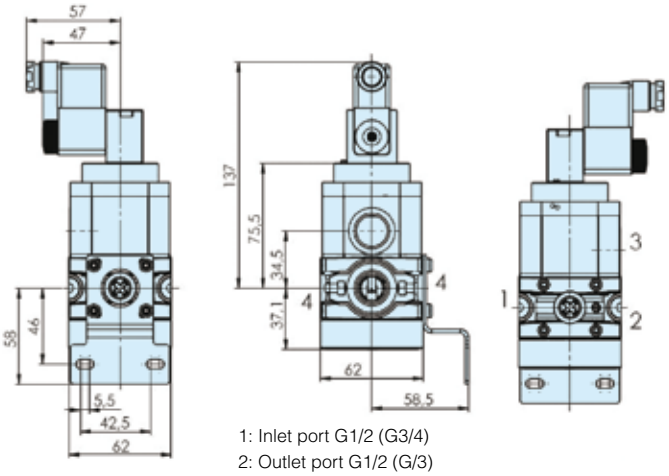
P 3 X		A					N		Solenoid type only		
Combined soft start dump valve	T	BSPP (G)	1	1/2	4	External air pilot	P	30mm operator	C	None (operator is fitted to valve)	0	Solenoid / coil not fitted	000
Dump valve	D	NPT *	9	3/4	6	Solenoid pilot	S	Threaded air pilot	P	30mm CNOMO coil (Form connection)	A	24V DC	2CN
										22mm coil (Form connection)	B		
										30mm CNOMO coil (M12 connection)	D		
										22mm coil (M12 connection)	E		

* NPT Ports on request 1/2” size only

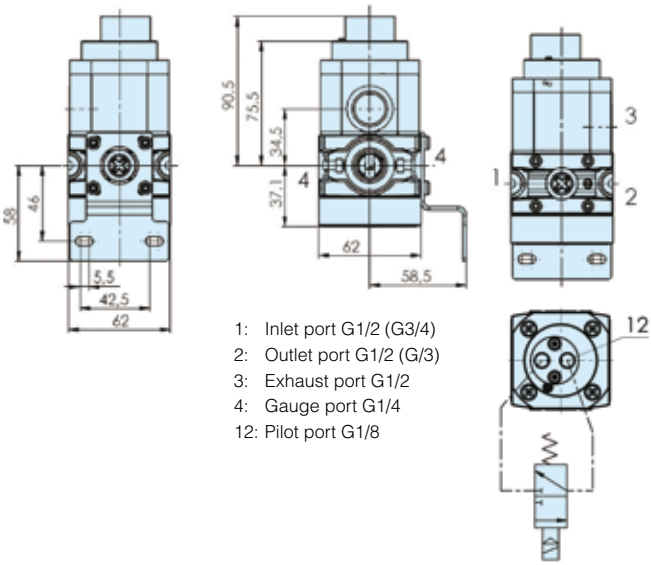
Combined soft start dump valve

Port size	Description	Order Code	Flow dm^3/s	Max bar	Min temp °C	Max temp °C	Height mm	Width mm	Depth mm	Weight kg
1/2	Solenoid operated (not included)	**P3XTA14SCN0000**	80	16	-10	60	144	62	62	0.75
1/2	24VDC 22mm coil	**P3XTA14SCNB2CN**	80	10	-10	60	174	88	62	0.75
1/2	24VDC 30mm coil	**P3XTA14SCNA2CN**	80	16	-10	60	174	88	62	0.75
1/2	Air pilot operated	**P3XTA14PPN**	80	16	-10	60	127.5	62	62	0.75
3/4	Solenoid operated (not included)	**P3XTA16SCN0000**	88	16	-10	60	144	62	62	0.75
3/4	24VDC 22mm coil	**P3XTA16SCNB2CN**	88	10	-10	60	174	88	62	0.75
3/4	24VDC 30mm coil	**P3XTA16SCNA2CN**	88	16	-10	60	174	88	62	0.75
3/4	Air pilot operated	**P3XTA16PPN**	88	16	-10	60	127.5	62	62	0.75

Dimensions (mm)



1: Inlet port G1/2 (G3/4)
2: Outlet port G1/2 (G/3)
3: Exhaust port G1/2
4: Gauge port G1/4

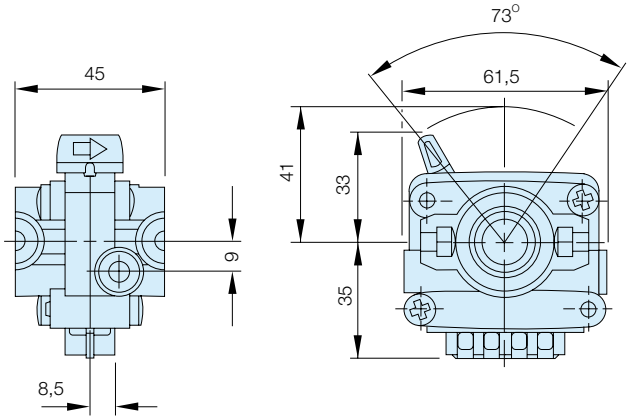


1: Inlet port G1/2 (G3/4)
2: Outlet port G1/2 (G/3)
3: Exhaust port G1/2
4: Gauge port G1/4
12: Pilot port G1/8

Modular Slide Valve

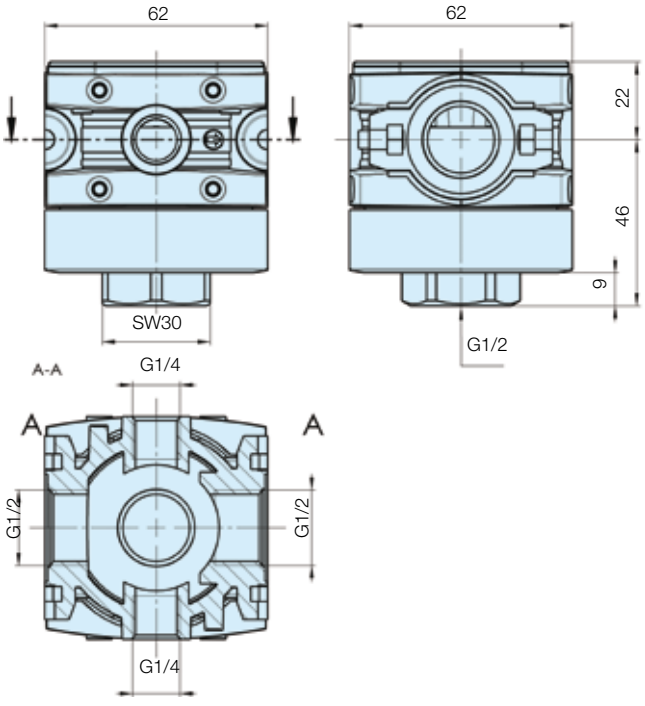
P 3 X	V A			L S N
	BSPP (G) **1**		G1/2 **4**	
	NPT * **9**		G3/4 **6**	

* NPT ports on request (1/2" size only)



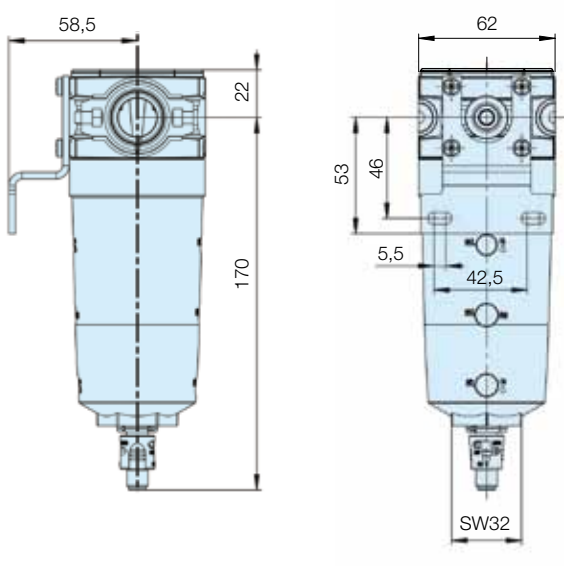
Modular Manifold

Description	Order code BSPP	Order code NPT	Weight (g)
G1/2"	**P3XMA1V0N**	**P3XMA9V0N**	170
G3/4"	**P3XMA160N**		170

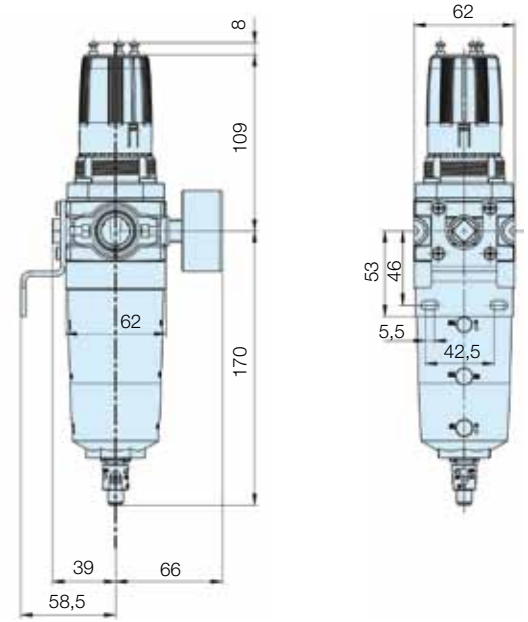


Dimensions (mm)

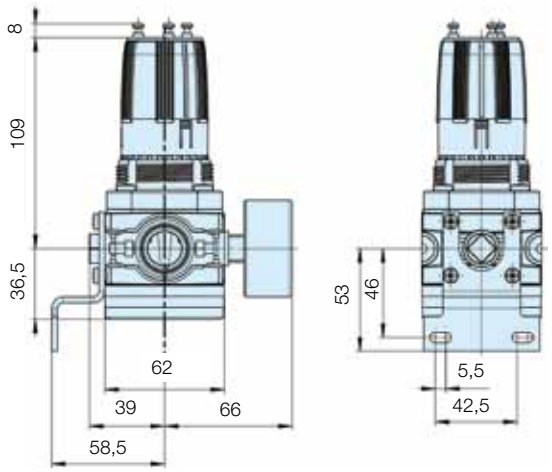
Filters



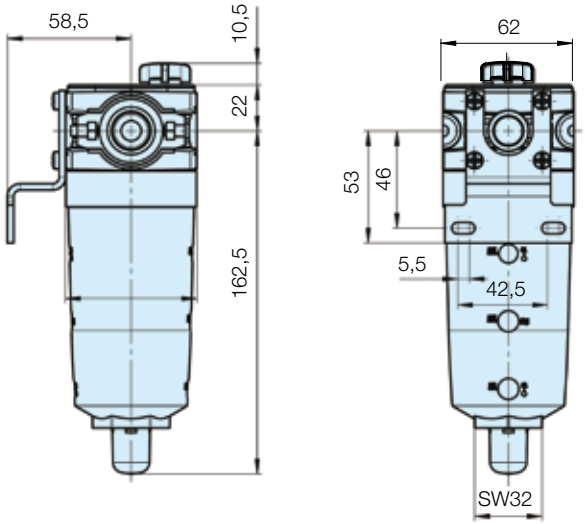
Filter/Regulators



Regulators



Lubricators



Service kits

Description	Order code
Adsorber element kit	**P3XKA00ESA**
0.01 micron element kit	**P3XKA00ESC**
1 micron element kit	**P3XKA00ES9**
5 micron element kit	**P3XKA00ESE**
40 micron element kit	**P3XKA00ESG**
Bowl kit with combined manual/semi auto drain	**P3XKA00BSC**
Bowl kit with auto drain	**P3XKA00BSA**
Diaphragm kit (relieving type)	**P3XKA00RR**
Diaphragm kit (non-relieving type)	**P3XKA00RN**
Connecting kit	**P3XKA00CB**

Accessories

Description	Order code
Connector kit	**P3XKA00CB**
Connector O'ring kit (5)	**P3XKA04CY**
Tamper-proof knob kit (keylock)	**P3XKA00AS**
Wall bracket kit	**P3XKA00MW**
Panel mount nut	**P3XKA00MM**

- Removes water vapour & lowers the PDP
- Compact design
- No electrical connections necessary
- Suitable for hazardous environments
- No moving parts
- Maintenance & wear free
- No change in air consumption
- Low pressure drop less than 0.1 bar
- Minimal purge air consumption
- Modular design - compatible with the P3X air prep series

Operating information

Operating pressure range:	5 to 16 bar
Temperature range:	2 °C to 60 °C
Pressure drop:	0.1 bar
Purge air (at 20K PDP reduction):	10%
Max Flow at inlet (size 50):	2800 l/m

Note:
For optimum system performance and maintenance free conditions, Parker recommend the dryer is preceeded with a 5 micron and 0.01 coalescer filter from the P3X series.

Membrane dryer

Port size	Size	Description	Order Code
G1/2	10	Membrane dryer with return tube - size 10	**P3XJA14CA1N**
G1/2	15	Membrane dryer with return tube - size 15	**P3XJA14CB1N**
G1/2	20	Membrane dryer with return tube - size 20	**P3XJA14CC1N**
G1/2	25	Membrane dryer with return tube - size 25	**P3XJA14CD1N**
G1/2	35	Membrane dryer serial type - size 35	**P3XJA14CE1N**
G1/2	50	Membrane dryer serial type - size 50	**P3XJA14CF1N**

Note: For NPT threaded connections replace the 6th digit from a 1 to 9 ie: **P3XJA94CA1N**

Wall mounting bracket kit

Order Code
P3XKA00MWD

Note:
For optimum system performance and maintenance free conditions, Parker recommend the dryer is proceeded with a 5 micron and 0.01 coalecer filter from the P3X series.

Complete Filter / Dryer System combinations available on request

F + Fc + MD

F + Fc + MD + R

F + Fc + MD + R + Fa

Selection Criteria

To correctly slect the dryer best suited for your application, the following information is required to ensure optimum performance and trouble free operation.

- Maximum inlet pressure dew point (^{O}C)
- Outlet PDP (^{O}C)
- Working pressure (bar)
- Maximum inlet flow rate (m^3/h)

Conversion factor for calculation of corrected flow rate

Operating pressure range p (bar)	5	6	7	8	9	10	11	12	13	14	15	16
Conversion factor f_p	0.57	0.78	1.0	1.21	1.42	1.64	1.85	2.06	2.28	2.49	2.70	2.92

Working Example:

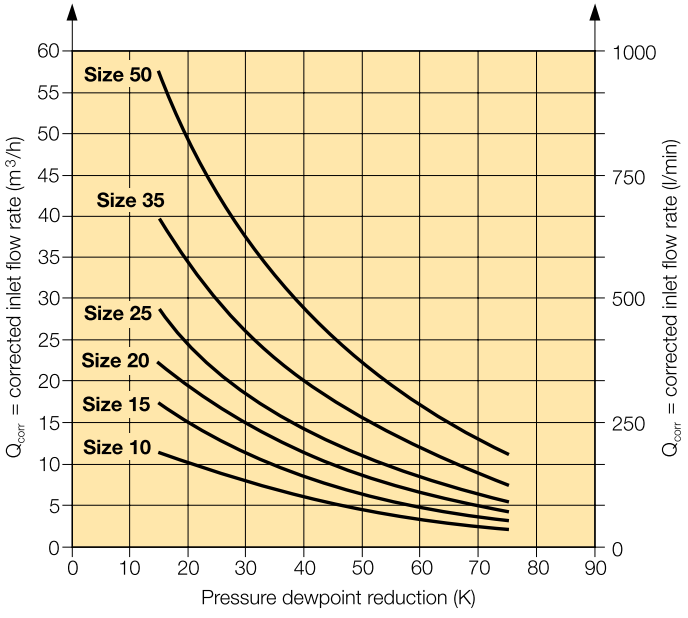
Selecting a dryer with an inlet pressure dew point of 35^{O}C, a PDP reduction of 35K with a working / operating pressure of 6 bar and an inlet flow of 11 m^3/h.

Step 1
From the correction factor table select the required pressure (6 bar) and read below the corrected factor value (0.78)

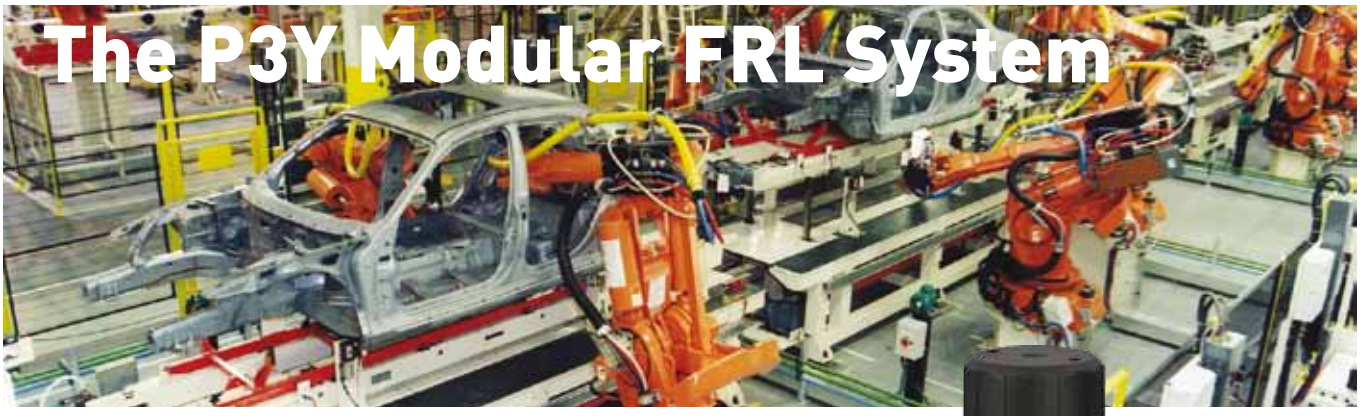
Step 2
To adjust the flow for your application, divide the required flow by the 0.78 correction factor

$$\text{Sizing capacity} = \frac{\text{Actual flow}}{\text{Correction factor}} \qquad \frac{11\ \text{m}^3/\text{h}}{0.78} \qquad = \qquad 14.1\ \text{m}^3/\text{h}$$

Step 3
Plot the values on the selection graph (below). Where the dew point reduction value of 35K intersects with the corrected flow value of 14.1 m^3/h, select the dryer flow curve which is equal or above the intersection point. For example: the optimum dryer would be **size 25 (P3XJA14CD1N)**



For the most demanding hi-flow industrial applications



The P3Y system allows units to be connected together, without the use of pipe connectors, saving space; providing constant mounting centres; whilst maintaining a modern aesthetically pleasing appearance.

The P3Y Filters are specially designed to efficiently filter out rust, dirt, moisture and other impurities from compressed air lines. Operation is fully automatic with a minimum of pressure drop. Coalescing filters and adsorber filters for high purity air are also included in the P3Y series.

The P3Y Regulators are designed to provide quick response and accurate pressure regulation for the most demanding hi-flow industrial applications. The rolling diaphragm was designed for long trouble-free operation and will not rupture or tear under high cycle or other demanding applications.

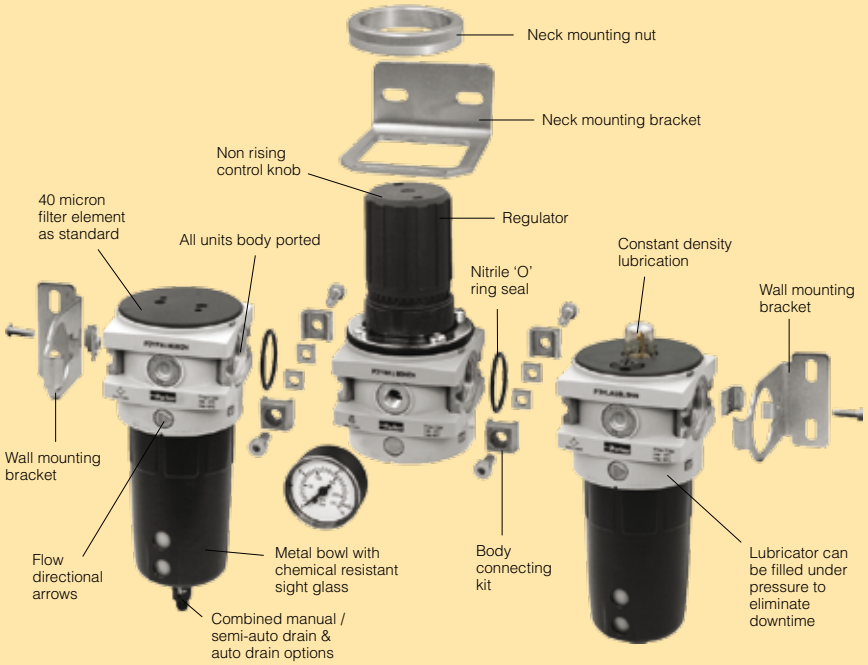
Selection of Filters

Standard Filter

Coalescing Filter

Adsorber Filter

Dust Filter



DECLARATION

We **Parker Hannifin Manufacturing Austria GmbH**
Pneumatic Division
Dr. Alexander Schärfstrasse 12
2700 Wiener Neustadt
Austria

Product	**Series**	**Category**
Filter	P3YFA	for zone 1, 21
Regulator	P3YRA	for zone 1, 21
Filter regulator	P3YEA	for zone 1, 21
Lubricator	P3YLA	for zone 1, 21
Ball Valve	P3YVA	for zone 1, 21
Manifold	P3YMA	for zone 1, 21
For non-fitted solenoid product		
Soft Start & Dump Valve	P3YTA	for zone 1, 21
Soft Start Valve	P3YSA	for zone 1, 21
Dump Valve	P3YDA	for zone 1, 21

Following Ignition Hazard Assessments performed on the non-electrical products listed above, in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.
  Refer to technical file for surface areas of plastics.
  The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis.
  Refer to technical file for chemicals known to be incompatible.
  Product cleaning must be undertaken using a method complying with the specification of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**
  Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**
  Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

E. Bauregger (Location Engineering Manager)

- Integral 3/4 or 1” ports (BSPP or NPT)
- High efficiency element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminium construction
- Secondary pressure ranges 12 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation.
- Low temperature -40’C with Regulators/Filters and Filter Regulators using combined manual/semi auto drain as standard without pressure gauge.

Operating information

Working pressure:	Max 17.5 bar
Working temperature:	-40 °C to +60 °C

Flow characteristics

Flow dm^3/s	3/4	1”
Filter	116	119
Dust Filter	137	145
Coalescing Filter	49	59
Adsorber Filter	47	50
Regulator	155	321
Filter Regulator	190	237
Lubricator	162	184

Filters - 40 micron element

Port size	Description	Order Code
G3/4	Manual drain/Semi auto	**P3YFA16GSCN**
G3/4	Auto drain	**P3YFA16GSAN**
G1”	Manual drain / Semi auto	**P3YFA18GSCN**
G1”	Auto drain	**P3YFA18GSAN**
	Mounting bracket	**P3YKA00CW**

Dust Filters - 1 micron element

Port size	Description	Order Code
G3/4	Manual drain/Semi auto	**P3YFA162SCN**
G3/4	Auto drain	**P3YFA162SAN**
G1”	Manual drain / Semi auto	**P3YFA182SCN**
G1”	Auto drain	**P3YFA182SAN**

Regulators - relieving type - non relieving options available

Port size	Description	Order Code
G3/4	12 bar relieving	**P3YRA16BNEN**
G3/4	12 bar relieving + gauge	**P3YRA16BNFN**
G1”	12 bar relieving	**P3YRA18BNEN**
G1”	12 bar relieving + gauge	**P3YRA18BNFN**
G3/4	12 bar relieving, lockable	**P3YRA16BAEN**
G3/4	12 bar relieving, lockable + gauge	**P3YRA16BAFN**
G1”	12 bar relieving, lockable	**P3YRA18BAEN**
G1”	12 bar relieving, lockable + gauge	**P3YRA18BAFN**

Pressure Gauges

	Order Code
0 - 10 bar	**KG8012-00**
0 - 16 bar	**KG8013-00**

Coalescing Filters - 0.01 micron element

Port size	Description	Order Code
G3/4	Coalescing 0.01µm, manual/semi auto drain	**P3YFA16DSCN**
G3/4	Coalescing Filter 0.01µm, auto drain	**P3YFA16DSAN**
G1”	Coalescing 0.01µm, manual/semi auto drain	**P3YFA18DSCN**
G1”	Coalescing Filter 0.01µm, auto drain	**P3YFA18DSAN**

Adsorber Filters

Port size	Description	Order Code
G3/4	Adsorber, manual drain	**P3YFA16ASCN**
G1”	Adsorber, manual drain	**P3YFA18ASCN**

Lubricators

Port size	Description	Order Code
G3/4	Oil mist, fill under pressure	**P3YLA16LSNN**
G1”	Oil mist, fill under pressure	**P3YLA18LSNN**

Filter/Regulators - relieving type - non relieving options available

Port size	Description	Order Code
G3/4	12 bar, relieving manual/semi auto drain	**P3YEA16GSCBNEN**
G3/4	12 bar, relieving auto drain	**P3YEA16GSABNEN**
G3/4	12 bar, relieving manual/semi auto + gauge	**P3YEA16GSCBNFN**
G3/4	12 bar, relieving auto drain + gauge	**P3YEA16GSABNFN**
G1”	12 bar, relieving manual/semi auto drain	**P3YEA18GSCBNEN**
G1”	12 bar, relieving auto drain	**P3YEA18GSABNEN**
G1”	12 bar, relieving manual/semi auto + gauge	**P3YEA18GSCBNFN**
G1”	12 bar, relieving auto drain + gauge	**P3YEA18GSABNFN**

Combined Soft Start Dump Valve and Remote Operated Dump Valve

Port size	Description	Order Code
G3/4	Solenoid operated (not included)	**P3YTA16SCN0000**
G3/4	24VDC 22mm coil	**P3YTA16SCNB2CN**
G3/4	Air pilot operated	**P3YTA16PPN**
G1"	Solenoid operated (not included)	**P3YTA18SCN0000**
G1"	24VDC 22mm coil	**P3YTA18SCNB2CN**
G1"	Air pilot operated	**P3YTA18PPN**

Soft Start Valve

Port size	Description	Order Code
G3/4	Soft start valve	**P3YSA16Y0N**
G1"	Soft start valve	**P3YSA18Y0N**

Neck mounting bracket kit

Description	Order Code
Neck mounting bracket kit	**P3YKA00MS**

Wall mounting brackets

Description	Order Code
Wall mounting brackets	**P3YKA00CW**

Pilot Operated Regulator

Port size	Description	Order Code
G3/4	Pilot operated regulator	**P3YRA16BPPN**
G1"	Pilot operated regulator	**P3YRA18BPPN**

Modular Ball Valve

Port size	Description	Order Code
G3/4	Modular Ball Valve	**P3YVA16LBN**
G1"	Modular Ball Valve	**P3YVA18LBN**

Modular Manifold

Port size	Description	Width	Order Code
G3/4	Modular Manifold	(80 mm)	**P3YMA1V0N**
G1"	Modular Manifold	(80 mm)	**P3YMA9V0N**
G3/4	Modular Manifold	(35 mm)	**P3YMA16024N**

Optional Port Block Kits

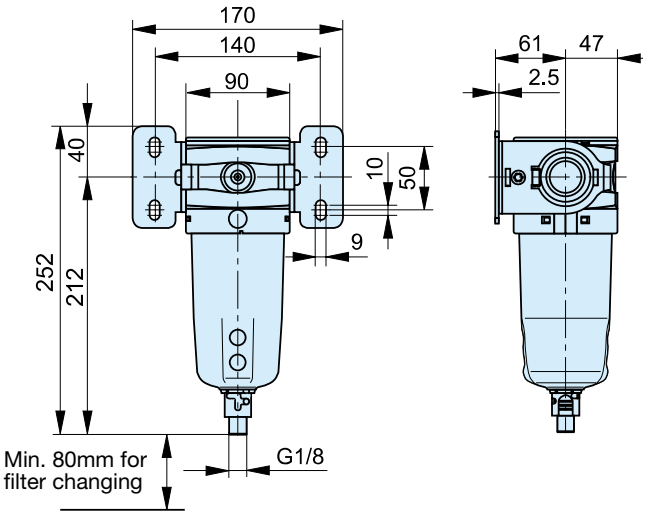
Port size	Description	Order Code
G1 1/4"	Port block kit - BSPP	**P3YKA1ACP**
G1 1/2"	Port block kit - BSPP	**P3YKA1BCP**
G3/4"	Port block kit - BSPP	**P3YKA16CP**
G1"	Port block kit - BSPP	**P3YKA18CP**

Connector kit

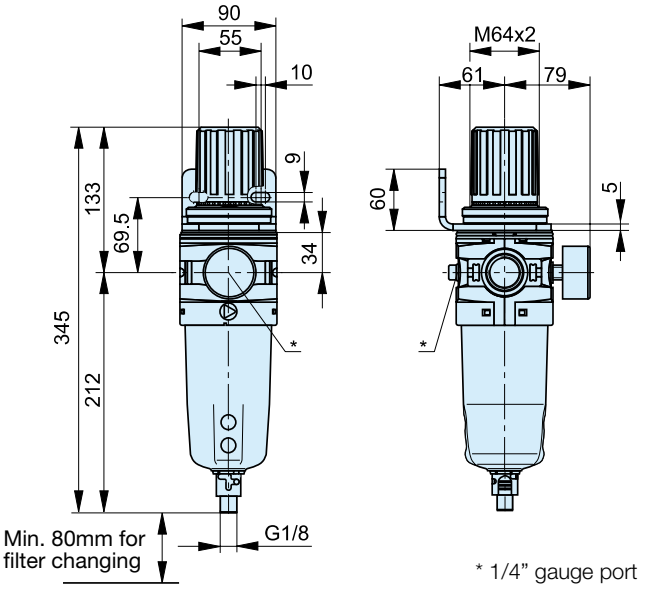
Description	Order Code
Connector kit	**P3YKA00CB**

Dimensions (mm)

Filters

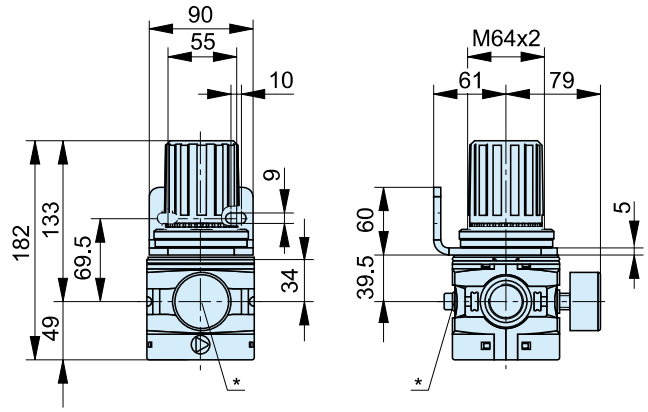


Filter/Regulators



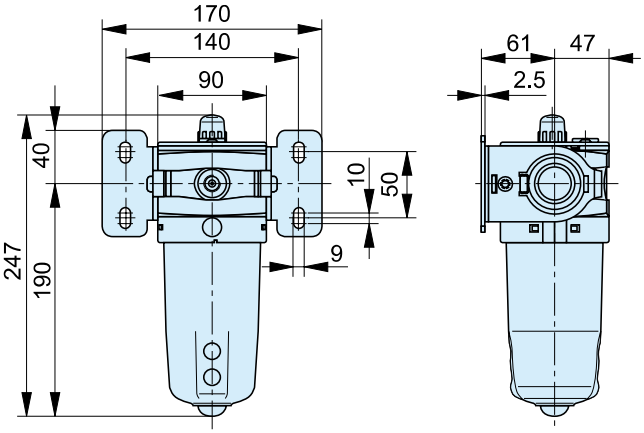
* 1/4" gauge port

Regulators



* 1/4" gauge port

Lubricators



Service kits

Description	Order code
5 micron element kit	**P3YKA00ESE**
40 micron element kit	**P3YKA00ESG**
Bowl kit with combined manual/semi auto drain	**P3YKA00BSC**
Bowl kit with auto drain	**P3YKA00BSA**
Key Lock Kit	**P3XKA00AS**
Diaphragm kit (relieving type)	**P3YKA00RR**
Diaphragm kit (non-relieving type)	**P3YKA00RN**
Angle bracket + metal lock ring	**P3YKA00MS**
Panel mount nut	**P3YKA00MM**

DECLARATION

We **Parker Hannifin Manufacturing Austria GmbH**
Pneumatic Division
Dr. Alexander Schärfstrasse 12
2700 Wiener Neustadt
Austria

Product	**Series**	**Category**
Filter	P3ZFA	for zone 1, 21
Regulator	P3ZRA	for zone 1, 21
Lubricator	P3ZLA	for zone 1, 21
Manifold	P3ZMA	for zone 1, 21
For non-fitted solenoid product		
Soft Start & Dump Valve	P3ZTA	for zone 1, 21
Soft Start Valve	P3ZSA	for zone 1, 21
Dump Valve	P3ZDA	for zone 1, 21

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- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness.
  Refer to technical file for surface areas of plastics.
  The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis.
  Refer to technical file for chemicals known to be incompatible.
  Product cleaning must be undertaken using a method complying with the specification of the ATEX zone, preferably by using mild soap and water or antistatic products.
- **Regulators, Filter Regulators:**
  Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator/Filter Regulator unit.
- **Solenoid Operated Valves:**
  Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

Approved by:

E. Bauregger (Location Engineering Manager)

The all metal P3Z Series FRLs are ideal for most medium sized ring main installations.

- Self relieving feature plus balanced poppet provides quick response and accurate pressure regulation.
- Threaded port flange available to G1-1/2" and G2"
- Proportional oil delivery over a wide range of air flows.

Operating information

Working pressure:	0 - 17.5 bar
Working temperature:	0 °C to +60 °C

Flow characteristics

Flow	Filter	>666,6 dm^3/s
	Regulator	>666,6 dm^3/s
	Lubricator	>666,6 dm^3/s

For more information see www.parker.com/euro_pneumatic

Filters

Port size	Description	Order Code
-	40µ auto drain without flange SAE	**P3ZFA00HMAN**
G1.1/2"	40µ auto drain flange fitted to SAE	**P3ZFA1BHMAN**
G2"	40µ auto drain flange fitted to SAE	**P3ZFA1CHMAN**

Coalescing Filters

Port size	Description	Order Code
-	0.01 micron, auto drain	**P3ZFA00DMAN**
G1.1/2"	0.01 micron, auto drain, flange fitted to SAE	**P3ZFA1BDMAN**
G2"	0.01 micron, auto drain, flange fitted to SAE	**P3ZFA1CDMAN**

Dust Filters

Port size	Description	Order Code
-	1µ auto drain (pressure relief) without flange SAE	**P3ZFA00MMAN**
G1.1/2"	1µ auto drain (pressure relief) flange fitted to SAE	**P3ZFA1BMMAN**
G2"	1µ auto drain (pressure relief) flange fitted to SAE	**P3ZFA1CMMAN**

Adsorber Filters

Port size	Description	Order Code
-	Adsorber, auto drain	**P3ZFA00BMAN**
G1.1/2"	Adsorber, auto drain	**P3ZFA1BBMAN**
G2"	Adsorber, auto drain	**P3ZFA1CBMAN**

Regulators

Port size	Description	Order Code
-	8 bar, relieving + gauge, without flange SAE	**P3ZRA00BNGN**
G1.1/2”	8 bar, relieving + gauge	**P3ZRA1BBNGN**
G2”	8 bar, relieving + gauge	**P3ZRA1CBNGN**
-	16 bar relieving + gauge, without flange SAE	**P3ZRA00BNJN**
G1.1/2”	16 bar, relieving + gauge	**P3ZRA1BBNJN**
G2”	16 bar, relieving + gauge	**P3ZRA1CBNJN**

Regulators Pilot Control

Port size	Description	Order Code
-	16 bar, air pilot	**P3ZRA00BPPN**
G1.1/2”	16 bar, relieving + gauge	**P3ZRA1BBPPN**
G2”	16 bar, relieving + gauge	**P3ZRA1CBPPN**

Combined Soft Start Dump Valve and Remote Operated Dump Valve

Port size	Description	Order Code
-	Solenoid operated (not included)	**P3ZTA00SCN0000**
-	24VDC 22mm coil	**P3ZTA00SCNB2CN**
G1.1/2”	Solenoid operated (not included)	**P3ZTA1BSCN0000**
G1.1/2”	24VDC 22mm coil	**P3ZTA1BSCNB2CN**
G2”	Solenoid operated (not included)	**P3ZTA1CSCN0000**
G2”	24VDC 22mm coil	**P3ZTA1CSCNB2CN**

Soft Start Valve

Port size	Description	Order Code
-	Internal air pilot operated	**P3ZSA00Y0N**
G1.1/2”	Internal air pilot operated	**P3ZSA1BY0N**
G2”	Internal air pilot operated	**P3ZSA1CY0N**

Lubricators

Port size	Description	Order Code
-	Lubricator, without flange SAE	**P3ZLA00LSMN**
G1.1/2”	Lubricator	**P3ZLA1BLSMN**
G2”	Lubricator	**P3ZLA1CLSMN**
G2”	Central airline lubricator with electrical oil level control	**P3ZLA1CEMMW**
G2”	Central airline lubricator with aluminium bowl	**P3ZLA1CMMMW**
	Lubricator OIL - VG32 - 1 Litre	**P3YKA00PPBB**

Options & Accessories

Port size	Description	Order Code
G1.1/2”	Connection flange kit	**P3ZKA1BCP**
G2”	Connection flange kit	**P3ZKA1CCP**
-	Wall mounting kit	**P3ZKA00MW**
-	Coupling kit	**P3ZKA00CB**
-	Coupling ‘O’ ring kit (5 off)	**P3ZKA0CCY**
-	Porting block kit (1”, 1/8” & 2 x 1/4” take off)	**P3ZMA1V0N**

- Very fast response times
- Accurate output pressure
- Micro parameter settings
- Selectable I/O parameters
- Quick, full flow exhaust
- LED display indicates output pressure
- No air consumption in steady state
- Multiple mounting options
- Protection to IP65
- P31P flows to 19 dm^3/s (40 scfm)
- P32P flows to 57 dm^3/s (120 scfm)

P31PA Series
Bottom exhaust

P32PA Series
Bottom exhaust

Order Key

P 3 ☐ P A ☐ ☐ ☐ ☐ 2 ☐ ☐ 1 A

Port size	
Global Mini (1/4")	**1**
Global Compact (1/2")	**2**

Thread type	
BSPP	**1**
NPT	**9**

Port size	
Global Mini (1/4")	**2**
Global Compact (1/2")	**4**

Version	
Bottom ported exhaust NC	**A**
Bottom ported forced exhaust (NO) *	**E**

Pressure Range	
0 - 2 bar	**Z**
0 - 7 bar	**S**
0 - 10 bar	**D**

Power supply	
24 volts	**2**

Control Signal	
0-10 V	**V**
4-20 mA	**A**

Output Signal		
Digital, PNP	1)	**D**
PNP or 0-10V	2)	**P**
NPN or 0-10V	3)	**N**
4-20mA fixed	4)	**M**

Input connector	
M12 (4 pin)	**1**

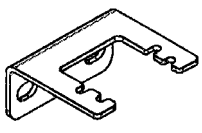
*** When the supply voltage is lost the unit will automaticaly exhaust the regulated pressure to 0 bar (atmospheric pressure)**

1) **Digital PNP output only, no analogue output selectable**
2) **Digital PNP and analogue 0-10V outputs selectable, by means of parameter 6. (Factory default 0-10V)**
3) **Digital NPN and analogue 0-10 V outputs selectable by means of parameter 6. (Factory default 0-10V)**
4) **Analogue 4-20mA output only.**

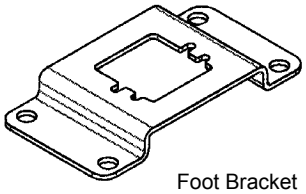
Note: On all analogue outputs the F.S. value can be adjusted by means of parameter 8

P31P Mounting brackets

Order Code	Description
P3HKA00ML	L-Bracket mounting kit
P3HKA00MC	Foot bracket mounting kit



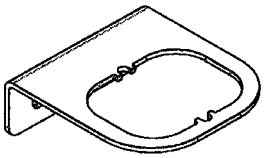
L-Bracket



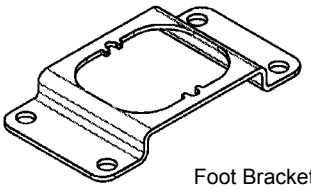
Foot Bracket

P32P Mounting brackets

Order Code	Description
P3KKA00ML	L-Bracket mounting kit
P3KKA00MC	Foot bracket mounting kit



L-Bracket



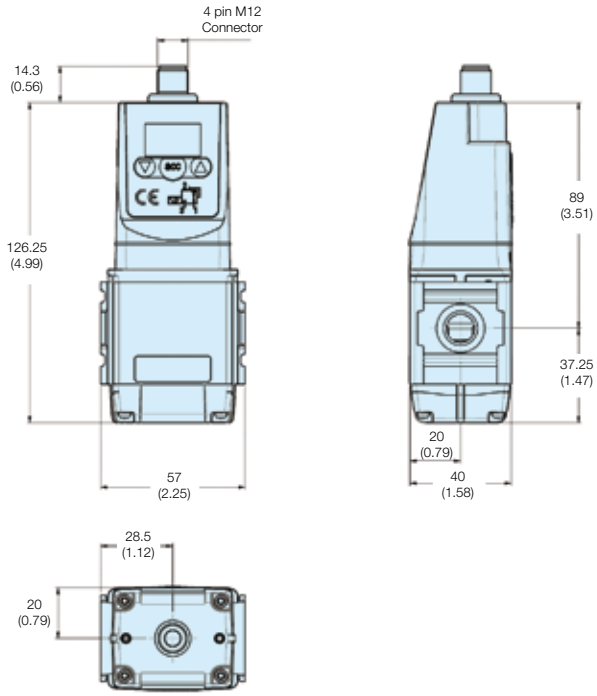
Foot Bracket

Cables

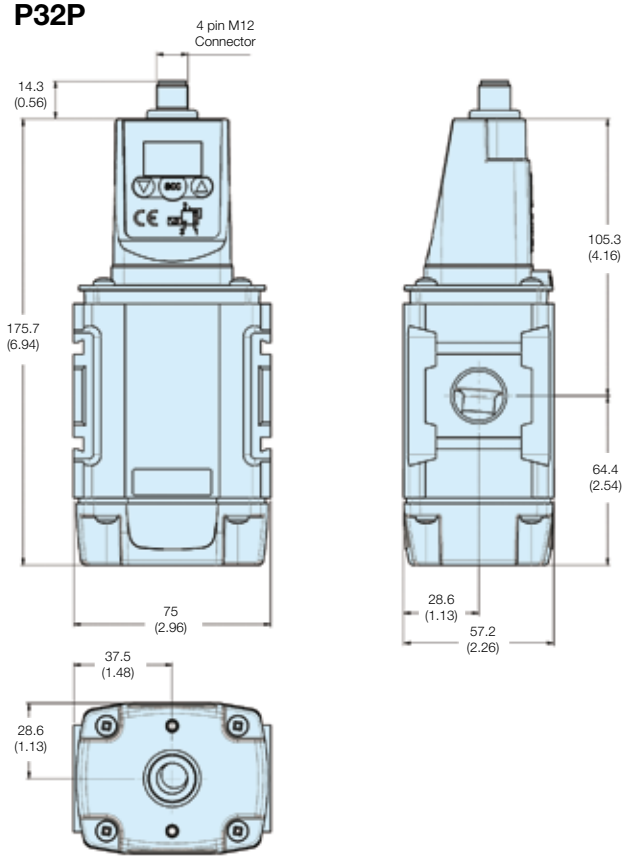
Order Code	Description
P8L-MC04A2A-M12	2 mtr. cable with moulded straight M12x1 connector
P8L-MC04R2A-M12	2 mtr. cable with moulded 90 degree M12x1 connector.

Note:
These brackets fit both Proportional Regulators and Combined Soft Start & Dump Valves.

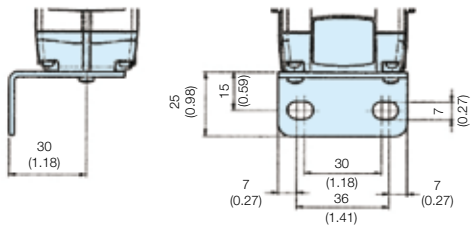
P31P



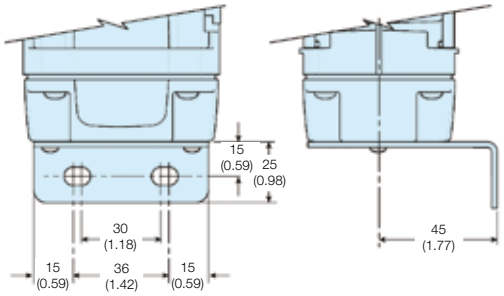
P32P



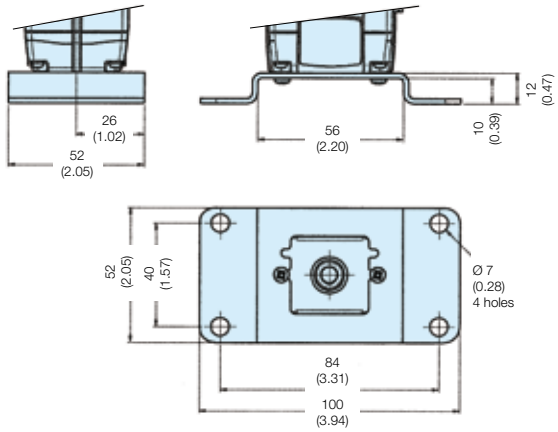
L-Bracket



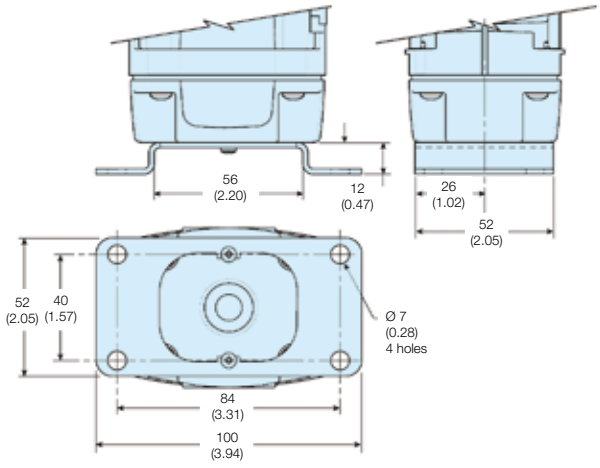
L-Bracket



Foot Bracket



Foot Bracket

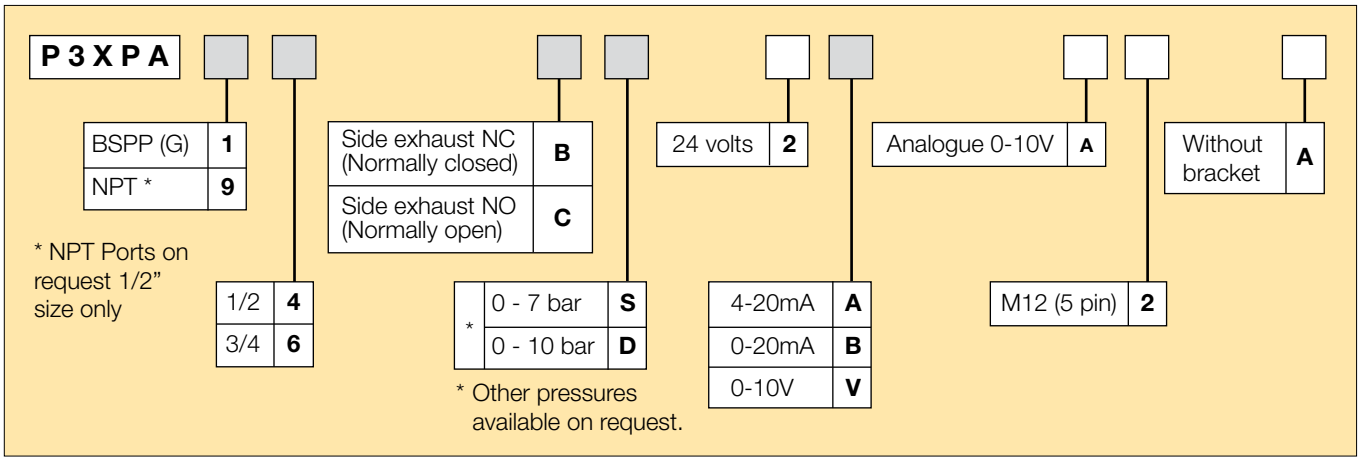


Dimensions are in mm (Inches)

P3X Proportional Pressure Regulator

- Integral 1/2” or 3/4” ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust but lightweight design.

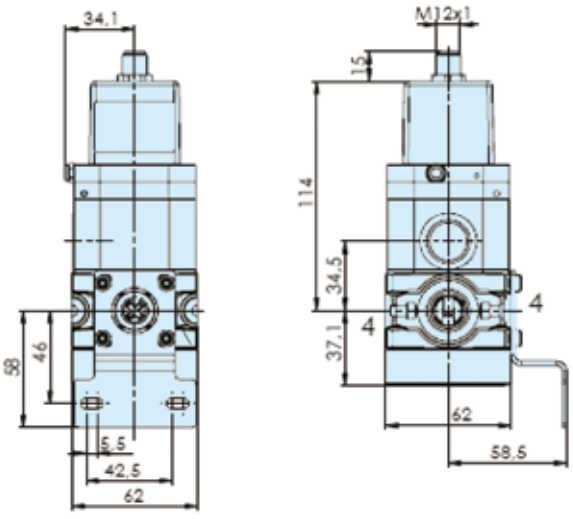
Options:



Popular options:

Port size	Description	Order Code	Control signal	Output signal	Output pressure	Weight kg
1/2	Normally closed	**P3XPA14BD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	0.75
3/4	Normally closed	**P3XPA16BD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	0.75

Dimensions (mm)

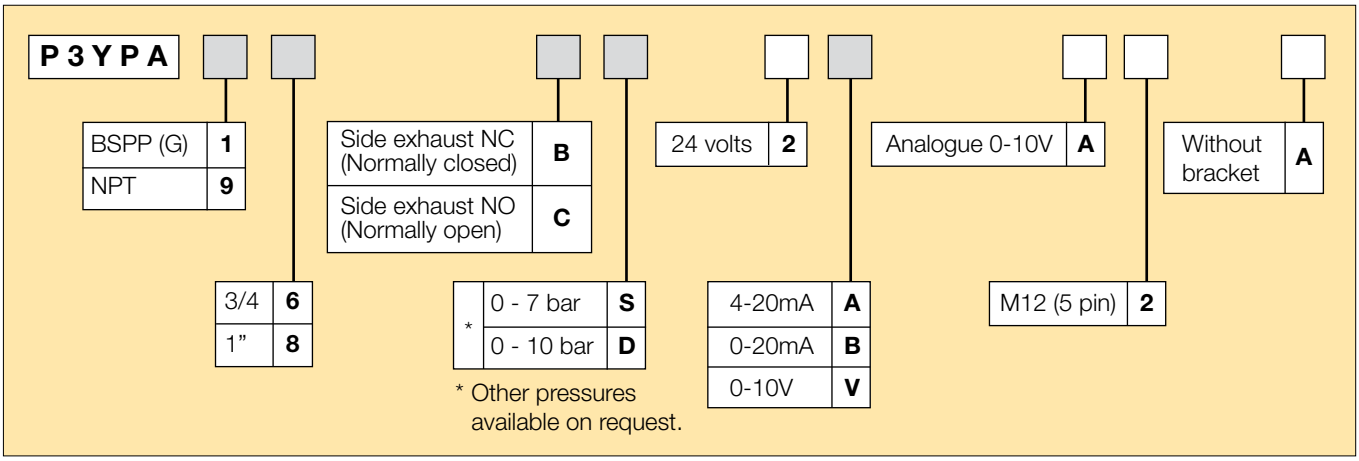


* Two opposite gauge ports G1/4, plug screw mounted
** Connection for 5-pin plug M12 x 1
*** Exhaust port 1/2”

P3Y Proportional Pressure Regulator

- Integral 3/4 or 1” ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust but lightweight design.

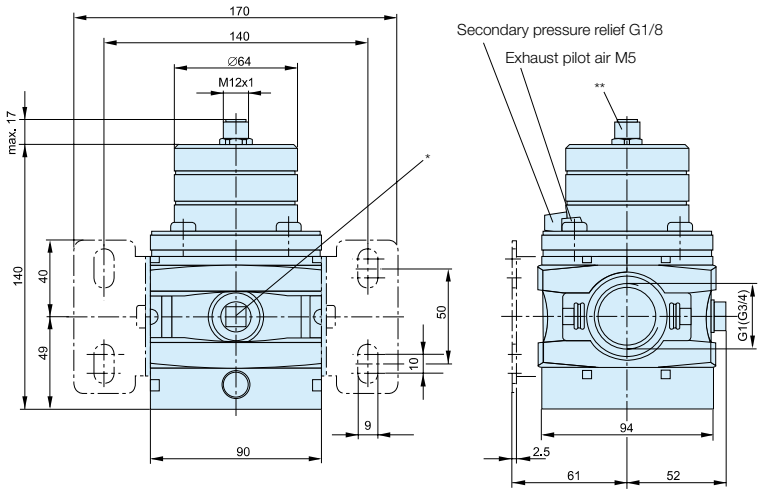
Options:



Popular options:

Port size	Description	Order Code	Control signal	Output signal	Output pressure	Weight kg
3/4	Normally closed	**P3YPA16BD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	1.2
1”	Normally closed	**P3YPA18BD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	1.2

Dimensions (mm)

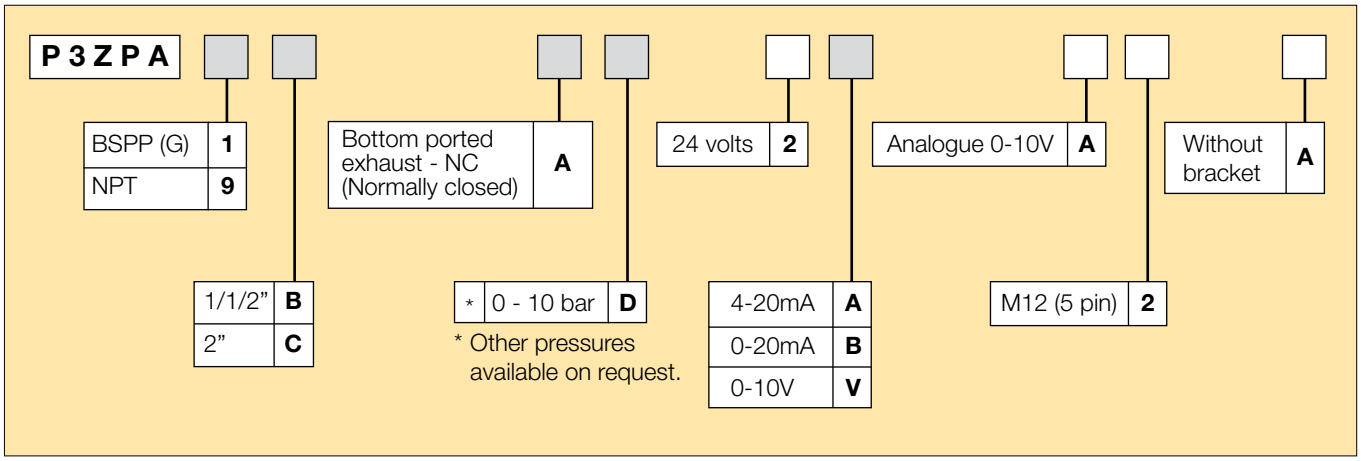


* Two opposite gauge ports G1/4, plug screw mounted
** Connection for 5-pin plug M12 x 1

P3Z Proportional Pressure Regulator

- Flanged 1-1/2” or 2” ports (BSPP & NPT)
- Accurate output pressure
- Very fast response times
- Robust die-cast aluminium construction

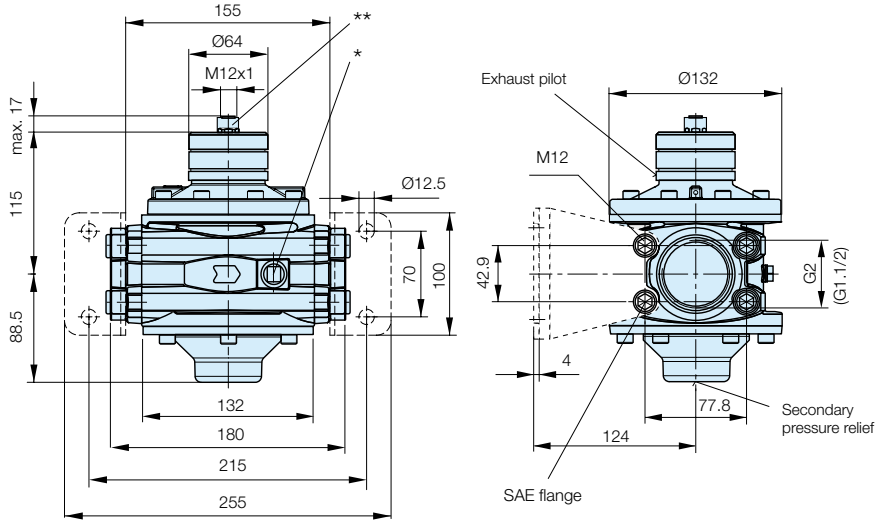
Options:



Popular options:

Port size	Description	Order Code	Control signal	Output signal	Output pressure	Weight kg
1-1/2”	Normally closed	**P3ZPA1BAD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	1.2
2”	Normally closed	**P3ZPA1CAD2VA2A**	0 - 10 V	0 - 10 V	0 - 10 bar	1.2

Dimensions (mm)

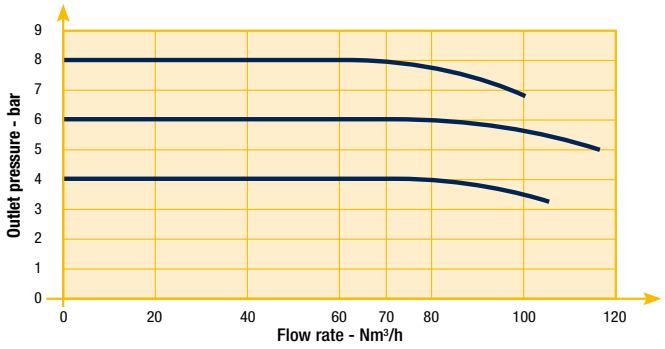


* Two opposite gauge ports G1/4, plug screw mounted

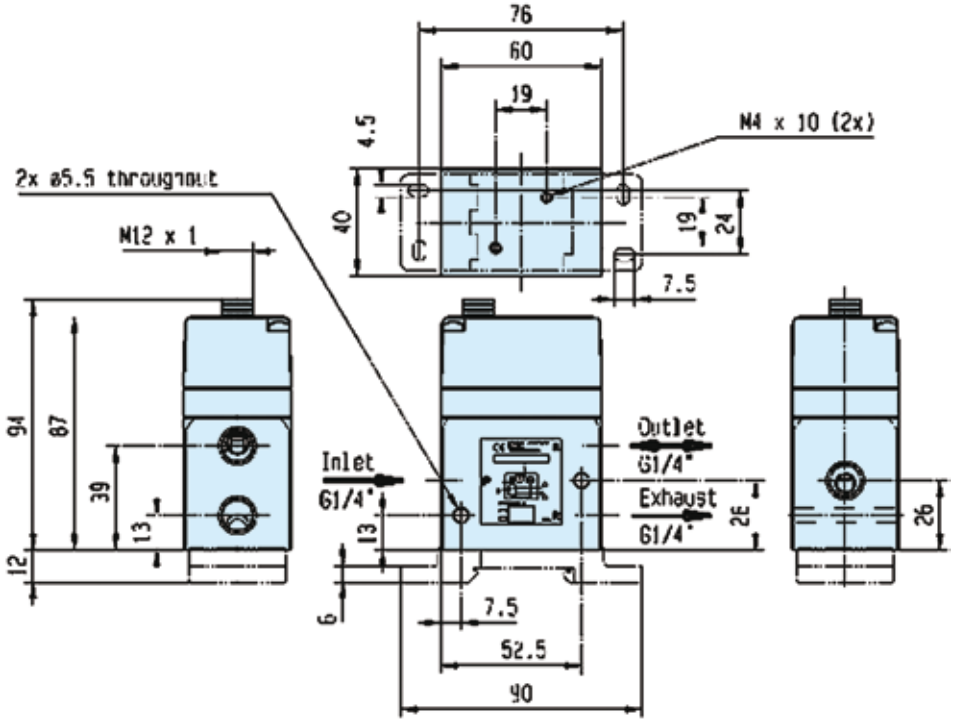
** Connection for 5-pin plug M12 x 1

EPP4 Pressure Regulator Basic G 1/4"

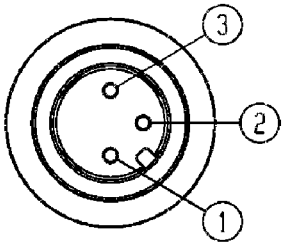
Flow Curve 1/4"



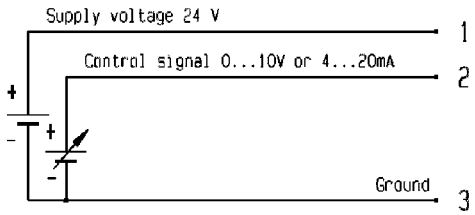
Dimensions



The male connector adopted on the EPP4 is a standard 4 pole M12, without the pin number 4:



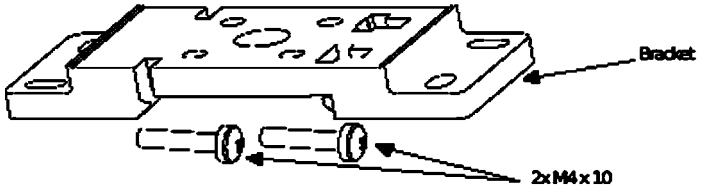
ELECTRICAL CONNECTION



The female connector to mount is the 4 pole M12 connector (IEC 61076-2-101 model LF) where the pin number 4 is not connected.

Accessories

Mounting bracket
(automatically supplied with each EPP4)



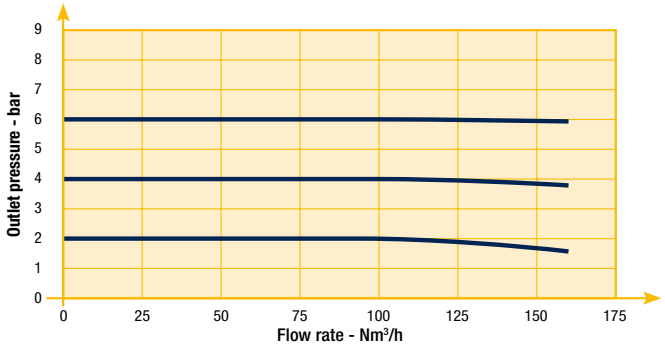
Lucifer® EPP4 Basic and Comfort 1/4" and 1/2" Technical Data

	Basic 1/4"	Basic 1/2"
Fluids:	Lubricated or non lubricated air and neutral gases Recommended filtration: 50 µm	
Temperature range:	Ambient: 0°C to +50 °C Fluid: 0°C to +50 °C	
Inlet pressure range: The inlet pressure must always be at least 1 bar above the regulated pressure.	1 to 12 bar	1 to 12 bar
Outlet pressure range:	0.05 to 10 bar	
Hysteresis:	± 50 mbar (factory set up)	
Air consumption at constant control signal:	0	
Supply voltage:	24 V DC ± 15 % (Max. ripple 1 V)	
Power consumption:	Max. 2.8 W with 24 V DC and constant changes of the control signal < 1.5 W without change of control signal	
Control signal:	Analog 0 - 10 V Analog 4 - 20 mA	
Max. flow: Indicative response time: With a volume of 300 cm^3 at the outlet of the regulator	70 m^3/h	150 m^3/h
Filling 2 to 4 bar: Filling 2 to 8 bar: Emptying 4 to 2 bar: Emptying 8 to 2 bar:	50 msec 100 msec 70 msc 130 msc	60 msec 120 msec 90 msec 190 msc
Safety position:	In case of control signal failure or if it is less than 50mV, the regulated pressure drops automatically to 0 bar (atmospheric pressure). In case of voltage supply failure, the regulated pressure will be kept constant.	
Electrical connection:	M12 - 4 pin; 4 x 0.34 mm^2	
Life expectancy:	> 50 Million changes of control signal steps	
Mounting position:	Indifferent (recommended position: upright; electronic part on top)	
Resistance to vibrations:	30 g in all directions	
Degree of protection:	IP 65	
Assembly:	Silicone free	
Electromagnetic compatibility: In accordance with:	EN 61000-6-1: 2001 EN 61000-6-2: 2001 EN 61000-6-3: 2001 EN 61000-6-4: 2001	
Installation and setting instructions:	See our "Notice 408038, 408014" and appendix supplied with the product.	

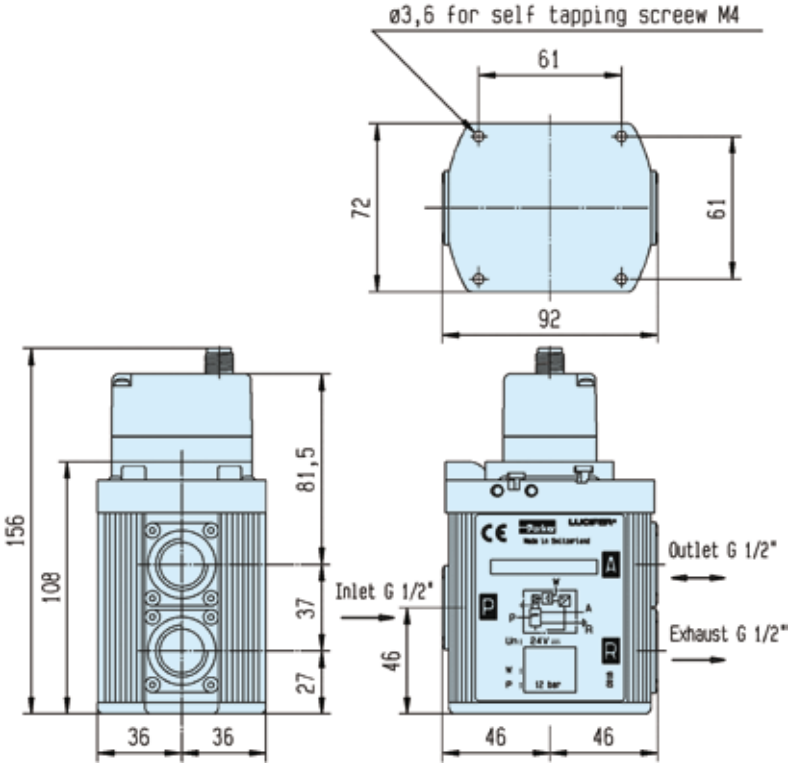
Note: Parker reserves the right to change specifications without notification.

EPP4 Pressure Regulator Basic G 1/2"

Flow Curve 1/2"



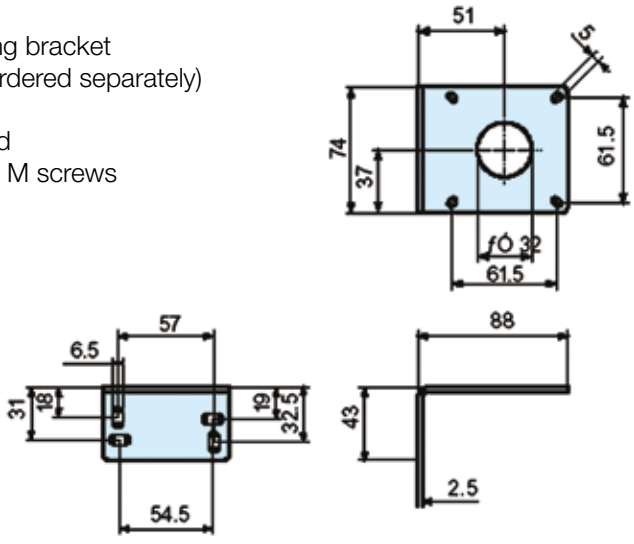
Dimensions



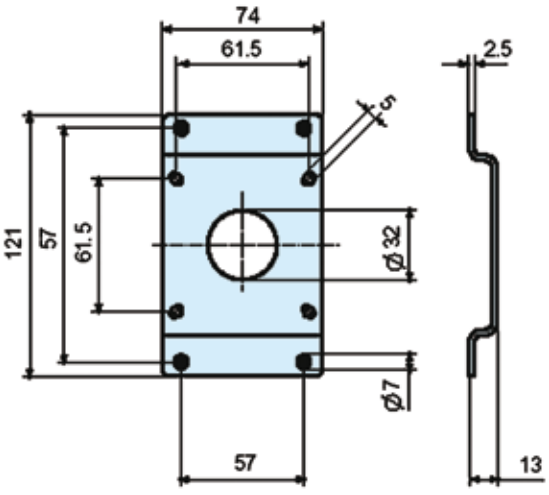
Accessories

Mounting bracket
(to be ordered separately)

Supplied
with 4 x M screws



491367



491366

EPP4 Pressure Regulator Basic
G 1/4" and G 1/2"

Order code	Pipe	Pressure Range (bar)		Control Signal (see options)
P4BG2001A001	G 1/4”	0	4 bar	4 - 20 mA
P4BG2001A002	G 1/4"	0	10 bar	0 - 10 V
P4BG2001A003	G 1/4"	0	10 bar	4 - 20 mA
P4BG2001A004	G 1/4"	0	6 bar	0 - 10 V
P4BG2001A005	G 1/4"	0	6 bar	4 - 20 mA
P4BG2001A006	G 1/4"	0	5 bar	0 - 10 V
P4BG2001A007	G 1/4"	0	5 bar	4 - 20 mA
P4BG2001A008	G 1/4"	0	7 bar	0 - 10 V
P4BG2001A009	G 1/4"	0	7 bar	4 - 20 mA
P4BG2003A002 *	G 1/4”	0	10 bar	0 - 10 V
P4BG2003A003 *	G 1/4”	0	10 bar	4 - 20 mA
P4BG4001A002	G 1/2"	0	10 bar	0 - 10 V
P4BG4001A003	G 1/2"	0	10 bar	4 - 20 mA
P4BG4001A004	G 1/2"	0	6 bar	0 - 10 V
P4BG4001A005	G 1/2"	0	6 bar	4 - 20 mA
P4BG4001A006	G 1/2”	0	5 bar	0 - 10 V
P4BG4001A007	G 1/2”	0	5 bar	4 - 20 mA
P4BG4001A008	G 1/2"	0	7 bar	0 - 10 V
P4BG4001A009	G 1/2"	0	7 bar	4 - 20 mA
P4BG4004A010 * **	G 1/2”	0	4 bar	0 - 10 V
**P4BG4051A002 ** **	G 1/2”	0	10 bar	4 - 20 mA
P4BN2001A002	NPT 1/4”	0	10 bar	4 - 20 mA
P4BN2001A003	NPT 1/4”	0	10 bar	0 - 10 V
P4BN4001A002	NPT 1/2”	0	10 bar	4 - 20 mA
P4BN4001A003	NPT 1/2”	0	10 bar	0 - 10 V

* Integrated pilot exhaust
** O2
*** External pressure supply

Lucifer® EPP4 Comfort 1/4" and 1/2"

References

Order code	Pipe	Pressure Range (bar)		Control Signal (see options)	Display
P4CG2001C001	G 1/4	0	10	0-10 V	-
P4CG2001C002	G 1/4	0	10	4-20 mA	-
P4CG2001C005	G 1/4	0	7	0-10 V	-
P4CG2001C006	G 1/4	0	7	4-20 mA	-
P4CG2002C001	G 1/4	0	10	0-10 V	included
P4CG2002C002	G 1/4	0	10	4-20 mA	included
P4CG2003C001 *	G 1/4	0	10	0-10 V	-
P4CG2003C002 *	G 1/4	0	10	4-20 mA	-
P4CG2002C007	G 1/4	0	7	0-10 V	included
P4CG2002C008	G 1/4	0	7	4-20 mA	included
P4CN2001C001	1/4 NPT	0	10	0-10 V	-
P4CN2001C002	1/4 NPT	0	10	4-20 mA	-
P4CN2002C001	1/4 NPT	0	10	0-10 V	included
P4CN2002C002	1/4 NPT	0	10	4-20 mA	included
P4CG4001C001	G 1/2	0	10	0-10 V	-
P4CG4001C002	G 1/2	0	10	4-20 mA	-
P4CG4001C005	G 1/2	0	7	0-10 V	-
P4CG4001C006	G 1/2	0	7	4-20 mA	-
P4CG4002C001	G 1/2	0	10	0-10 V	included
P4CG4002C002	G 1/2	0	10	4-20 mA	included
P4CG4002C005	G 1/2	0	7	0-10 V	included
P4CG4002C006	G 1/2	0	7	4-20 mA	included
P4CG4051C001 **	G 1/2	0	10	0-10 V	-
P4CG4051C002 **	G 1/2	0	10	4-20 mA	-
P4CN4001C001	1/2 NPT	0	10	0-10 V	-
P4CN4001C002	1/2 NPT	0	10	4-20 mA	-
P4CN4002C001	1/2 NPT	0	10	0-10 V	included
P4CN4002C002	1/2 NPT	0	10	4-20 mA	included

* Integrated pilot exhaust
** O2

Lucifer® EPP4 Comfort 1/2" High Pressure, 1"and 2" Technical Data

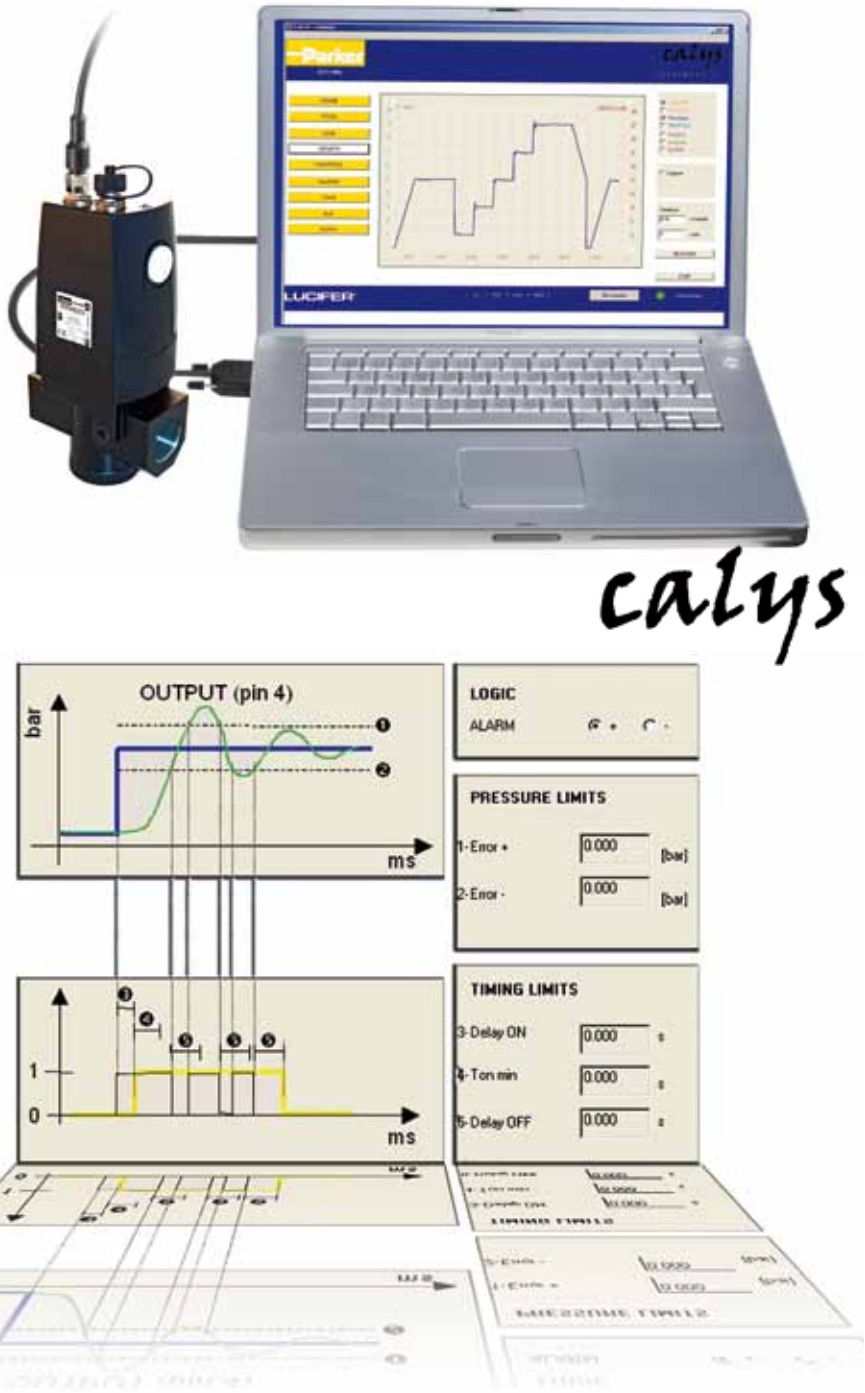
	Comfort 1/2" HP	Comfort 1"	Comfort 2"
Fluids:	Lubricated or non lubricated air and neutral gases - Recommended filtration: 50 µm		
Temperature range:	Ambient: 0°C to +50°C Fluid: 0°C to +50°C		
Inlet pressure range: The inlet pressure must always be at least 1 bar above the regulated pressure.	1 to 21 bar	1 to 21 bar	1 to 12 bar
Outlet pressure range:	0.05 to 20 bar	0.05 to 20 bar	0.05 to 10 bar
Hysteresis:	≤ 100 mbar if P inlet ≤ 10 bar ≤ 200 mbar if P inlet > 10 bar		
Air consumption at constant control signal:	0		
Supply voltage:	24V DC ± 15%		
Power consumption:	Max. 6 W with 24 V DC and constant changes of thecontrol signal < 2 W without change of control signal		
Control signal:	Analog 0 - 10 V Analog 4 - 20 mA		
Outlet sensor signal:	Analog 0 - 10 V Standard for 0 - 10 bar; Adjustable Analog 4 - 20 mA Standard for 0 - 10 bar; Adjustable	Digital 0/24 V for alarm features: Adjustable pressure error (+/-) Adjustable delay ON Adjustable delay OFF Adjustable logic (+/-)	
Max. flow:	150 m^3/h	1 000 m^3/h	2 700 m^3/h
Indicative response time:	With a volume of 330 cm^3 at the outlet of the regulator		
Filling 2 to 8 bar: Emptying 8 to 2 bar:	120 msec 190 msc	250 msec 400 msc	250 msec 400 msc
Safety position:	In case of control signal failure or if it is less than 50 mV, the regulated pressure drops automatically to 0 bar atmospheric pressure (for pressure ranges from 0-10 bar, 100 mV for pressure range over 10 bar). In case of voltage supply failure, the regulated pressure will be kept constant.		
Electrical connection:	M12 - 8 pin; male connector power supply/control signal M12 - 5 pin; male connector communication		
Life expectancy:	> 20 Million changes of control signal steps		
Mounting position:	Indifferent (recommended position: upright; electronic part on top)		
Resistance to vibrations:	30 g in all directions		
Degree of protection:	IP 65		
Assembly:	Silicone free		
Electromagnetic compatibility: In accordance with:	EN 61000-6-1: 2001 EN 61000-6-2: 2001 EN 61000-6-3: 2001 + A11 2004 edition (01/07/07) EN 61000-6-4: 2001		
Installation and setting instructions:	See our "408 193" and appendix supplied with the product.		

Note: Parker reserves the right to change specifications without notification.

Lucifer® EPP4 Comfort Options

Calys Software

Calys is a unique software in house developed to configurate all the parameters of the EPP4 Comfort range. Calys is an option of the EPP4. A specific cable is needed for the communication between the EPP4 and a PC.



Calys offers the following features:

- Live monitoring (control signal, regulated pressure, supply voltage,…)
- Recording of the main parameters (control signal, regulated pressure, supply voltage,…) in an Excel file
- Free calibration for the inputs and outputs
- Adjustable alarm (positive-negative, pressure limits, delays)
- Configuration files easy to duplicate
- Complete and interactive help file

- Data in 4 different pressure units
- Menus in 4 languages (English, German, French and Italian)

Specific communication cable PC-EPP4 with RS232 and USB connection

Order Reference 496449

To download free Calys software click on **www.parker.com/FCDE/Support**

Lucifer® EPP4 Comfort 1/2" HP, 1" and 2"

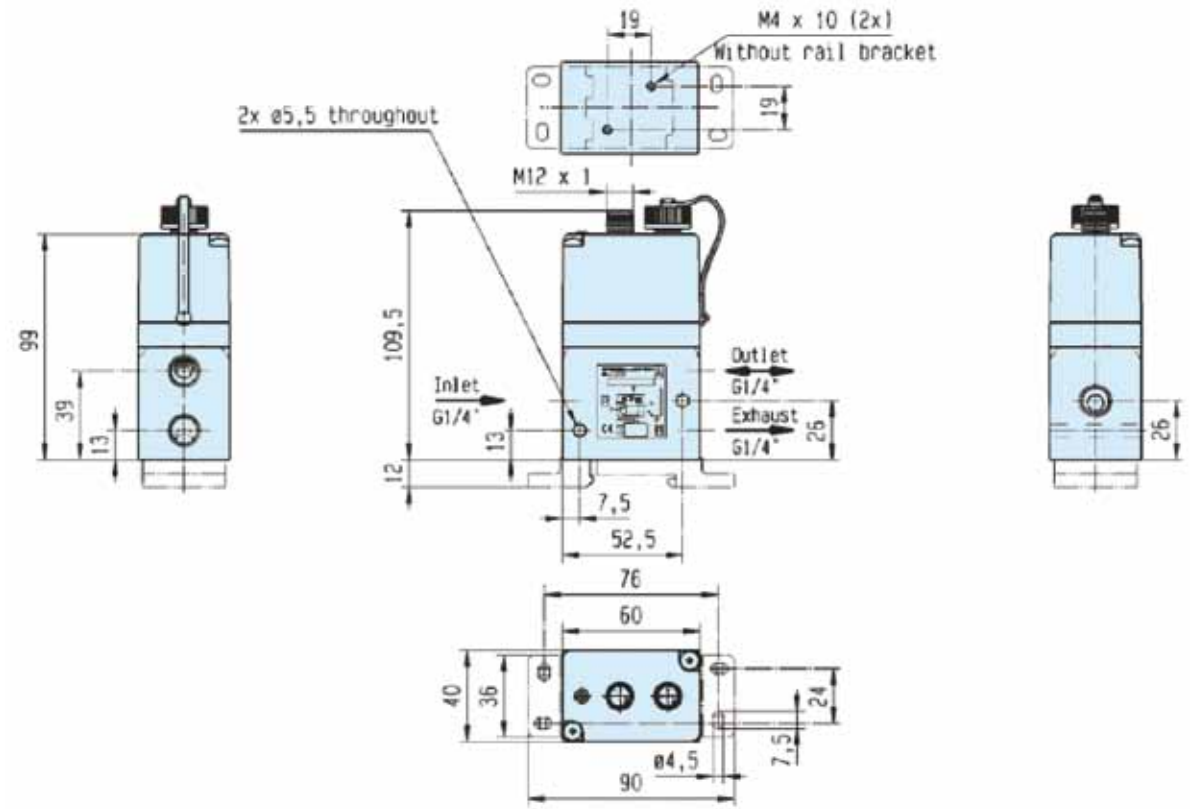
References

Order code	Pipe	Max inlet pressure (bar)	Pressure range (bar)		Control signal (see options)
P4CG4101D001	G1/2	15	0	12	0-10 V
P4CG4201D005	G1/2	21	0	16	0-10 V
P4CG4201D003	G1/2	21	0	20	0-10 V
P4CG4201D004	G1/2	21	0	20	4-20 mA
P4CG6101C009	G1	12	0	3.5	4-20 mA
P4CG6101C011	G1	12	0	5.0	0-10 V
P4CG6101C010	G1	12	0	6.0	4-20 mA
P4CG6101C001	G1	12	0	10	0-10 V
P4CG6101C002	G1	12	0	10	4-20 mA
P4CG6201D001	G1	21	0	12	-
P4CG6201D003	G1	21	0	20	0-10 V
P4CG9101C012	G2	12	0	4.0	4-20 mA
P4CG9101C010	G2	12	0	6.0	4-20 mA
P4CG9101C001	G2	12	0	10	0-10 V
P4CG9101C002	G2	12	0	10	4-20 mA

Other specific settings or specialties are available, please contact us.

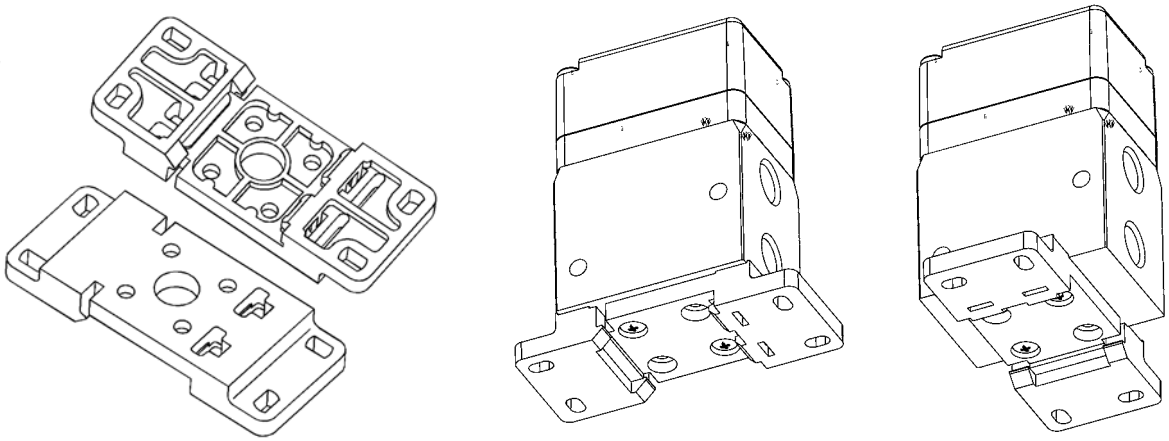
Lucifer® EPP4 Comfort Range 1/4"

Dimensions



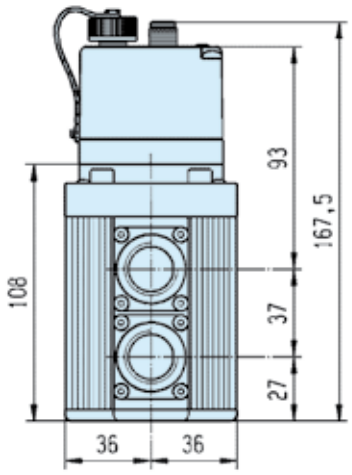
Accessories

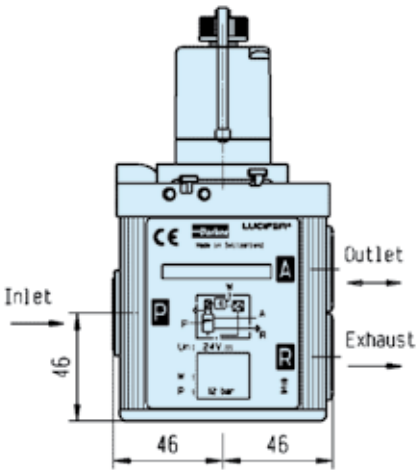
Mounting bracket
(supplied as a standard with each Lucifer® EPP4 1/4")

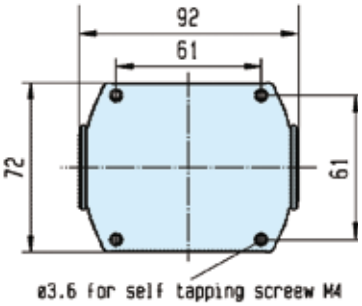


Lucifer® EPP4 Comfort Range 1/2"

Dimensions

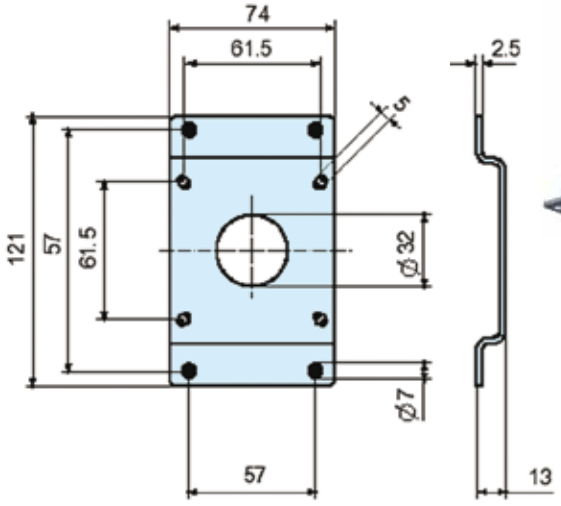


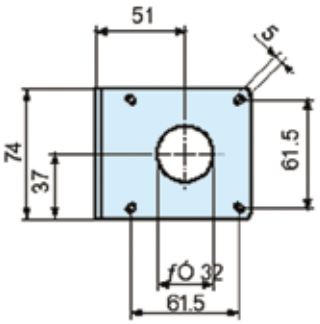


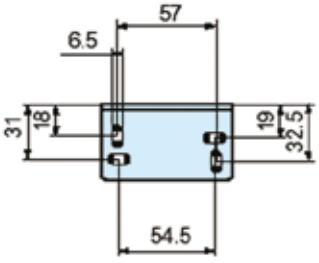


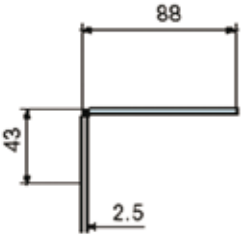
Accessories

Mounting brackets to be ordered separately







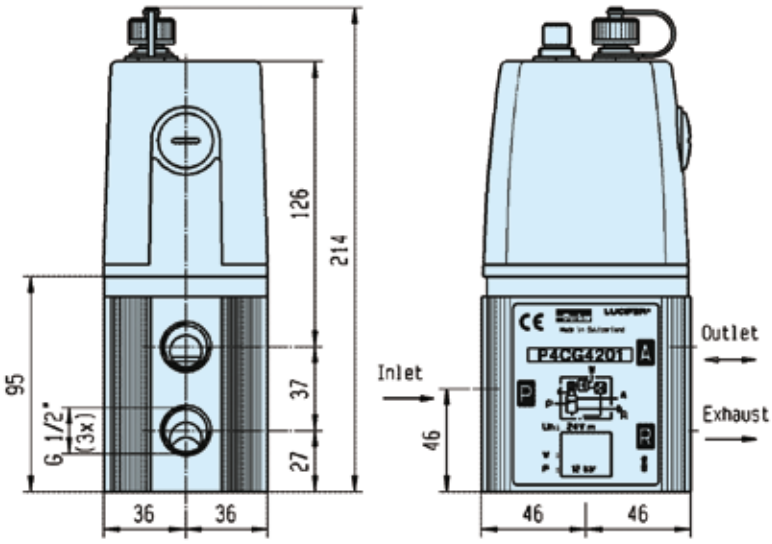


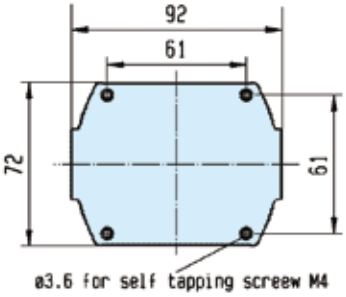
Order reference 491366

Order reference 491367

Lucifer® EPP4 Comfort Range 1/2"
High Pressure 21 bar

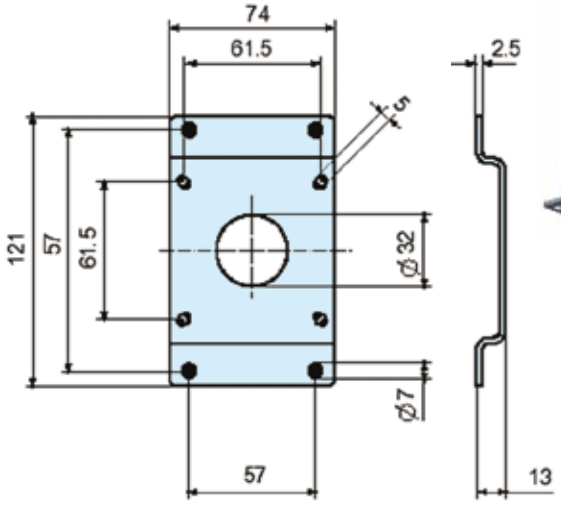
Dimensions

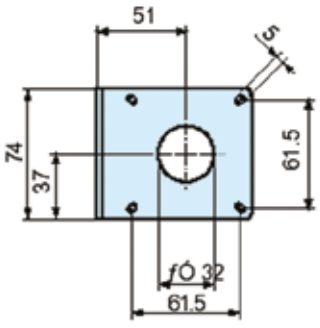


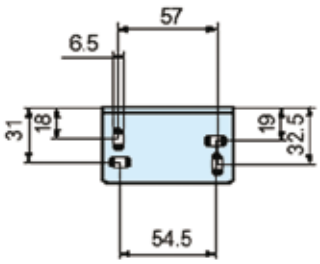


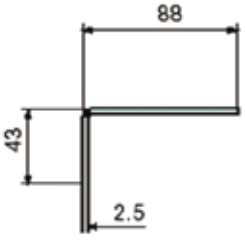
Accessories

Mounting brackets to be ordered separately







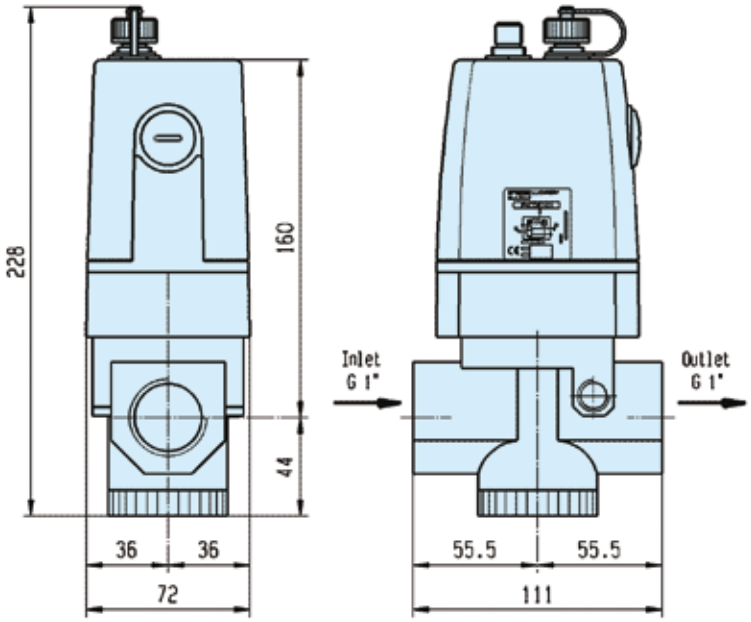


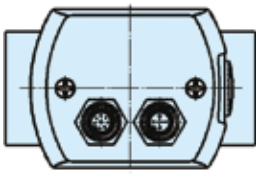
Order reference 491366

Order reference 491367

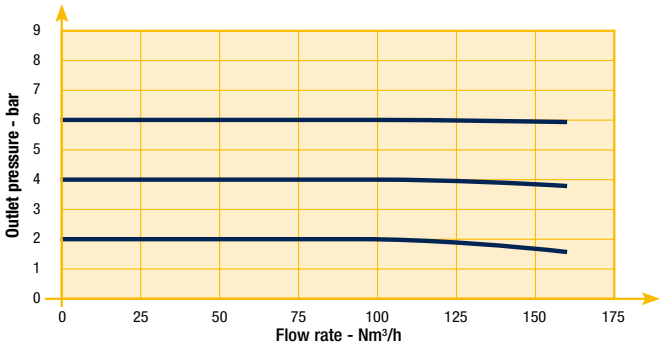
Lucifer® EPP4 Comfort Range 1"

Dimensions

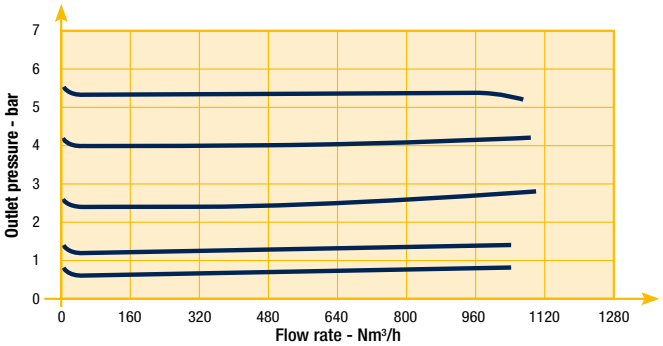




Flow Curve 1/2"

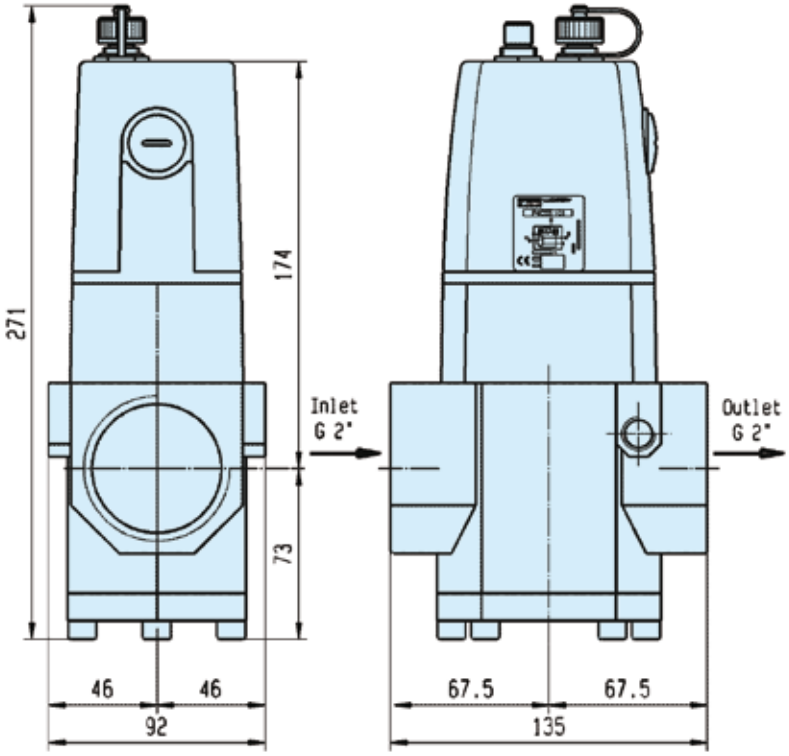


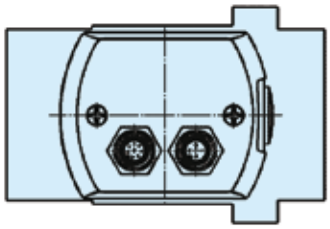
Flow Curve 1"



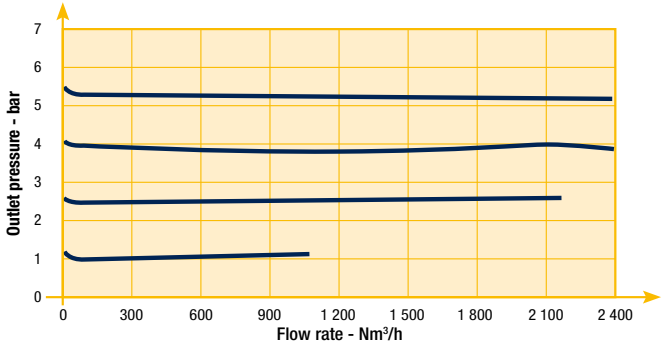
Lucifer® EPP4 Comfort Range 2"

Dimensions





Flow Curve 2"

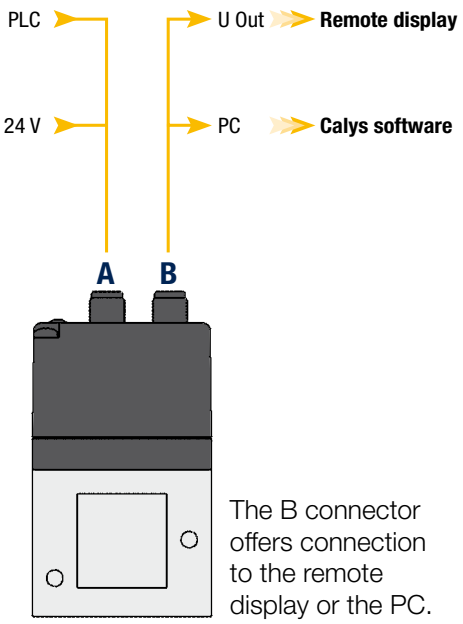


Lucifer® EPP4 Comfort Options

Additional Features

The EPP4 Comfort offers two main options - a remote display and a software to easily set the regulator's parameters.

These are the key feature options for a comfortable use.



The B connector offers connection to the remote display or the PC.

- A remote display connected to the pressure regulator offers flexible monitoring.
- A panel mounting kit is available to install the remote display.
- Calys is an easy-to-use software package designed to allow the user to match their regulators performance directly to their specific application.
- A power supply and control signal cable.

Lucifer® EPP4 Comfort Options

Remote Display

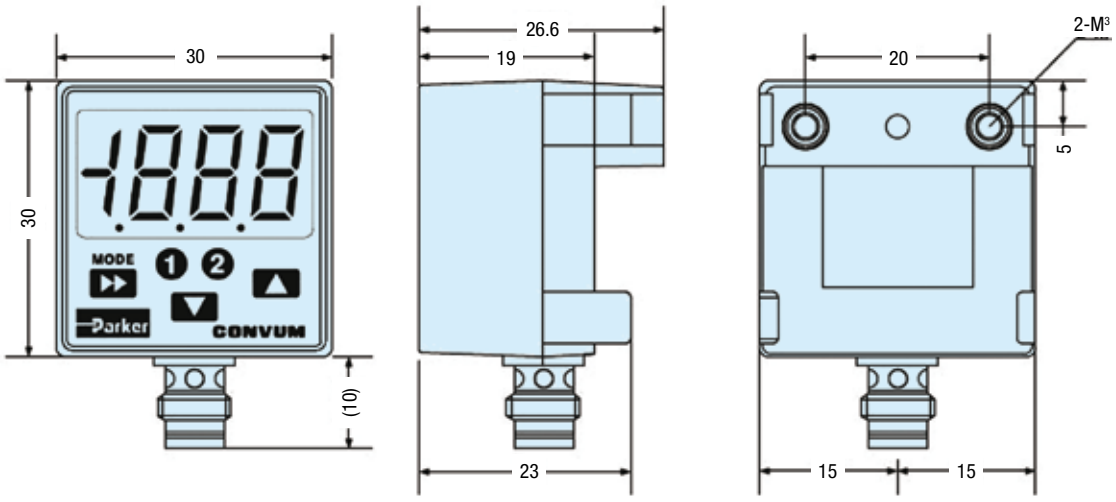
This option includes the Remote Display and 1.5 meter connecting cable. Connected to the pressure regulator, it offers flexible monitoring.

Compact and highly readable remote LED display:

- Bar and PSI scales
- Security lock
- 1.5 m cable
- Mounting brackets

Order the Remote Display under reference 496190

Panel Mounting Kit



Order the Panel Mounting Kit under reference 496610

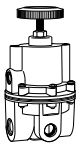
Highly accurate units, suitable for applications such as instrumentation where precision regulation is required.

- High repeatability
- High relief capacity on R220 model
- High flow capacity on R230 model

Operating information

Max operating pressure	10 bar
Max operating temperature	66°C
Repeatability:	R210 model 0.3 mbar
	R220 model 0.3 mbar
	R230 model 0.6 mbar

For more information see www.parker.com/euro_pneumatic

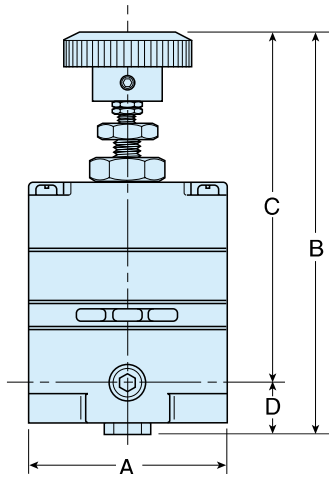
	Port size	Reduced Pressure range	Flow l/min	Relief capacity l/min	**Order code**
	G1/4	0.13 - 2.7	396	57	**R210G02A**
	G1/4	0.13 - 8.1	396	57	**R210G02C**
	G1/4	0.13 - 8.1	396	282	**R220G02C**
	G1/4	0 - 0.13	2280	114	**R230G02E**
	G1/4	0 - 2	2280	114	**R230G02B**
	G1/4	0.13 - 4	2280	114	**R230G02C**
	G1/4	0.13 - 10	2280	114	**R230G02D**

Mounting brackets

Series	**Order code**
R210 / R220	**446-707-045**
R230	**446-707-025**

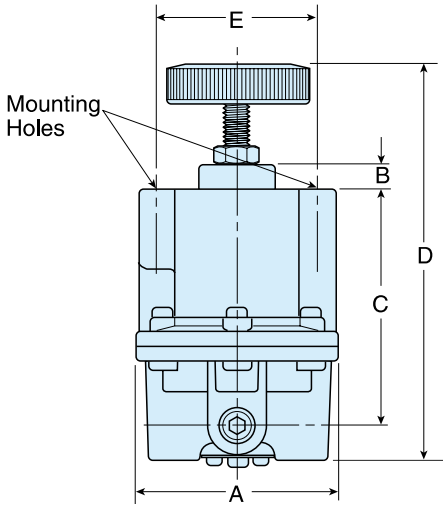
Dimensions (mm)

R210 / 220 High Precision Regulator



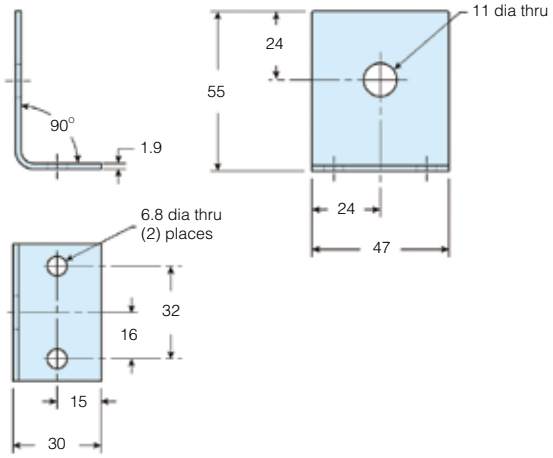
A	C	D	E
52mm	110mm	97mm	13.5mm

R230 High Flow Precision Regulator

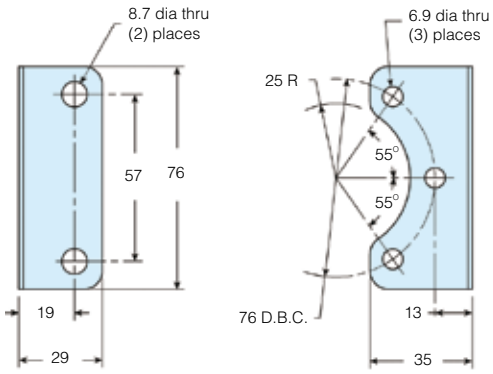


A	B	C	D	E
76mm	10mm	86mm	154mm	57mm

Mounting bracket - 446-707-045



Mounting bracket - 446-707-025



- Compact body ported units
- Port sizes G1/8 and G1/4
- Unique deflector plate ensuring maximum water and particulate removal
- Solid control piston with lip seal for extended life.
- Proportional oil delivery over a wide range of air flows.

Operating information

Working pressure:	Max 10 bar
Working temperature:	0 °C to +52 °C

Flow characteristics

Flow	Filter	11 l/s
	Regulator	9,3 l/s
	Filter Regulator	9,3 l/s
	Lubricator	10 l/s

For more information see www.parker.com/euro_pneumatic

Filters - 5 micron element, transparent bowl

Port size	Description	Order Code
G1/8	Manual drain	**14F01BB1**
G1/8	Auto drain	**14F05BB1**
G1/4	Manual drain	**14F11BB1**
G1/4	Auto drain	**14F15BB1**
	Mounting bracket	**PS417BP**

Regulators - relieving type - non relieving options available

Port size	Description	Order Code
G1/8	2 bar	**14R010FC1**
G1/8	4 bar	**14R011FC1**
G1/8	8 bar	**14R013FC1**
G1/4	2 bar	**14R110FC1**
G1/4	4 bar	**14R111FC1**
G1/4	8 bar	**14R113FC1**
	Mounting bracket (Includes panel mounting nut)	**PS417BP**

Lubricators - transparent bowl

Port size	Order Code
G1/8	**04L00GB1**
G1/4	**04L10GB1**
Mounting bracket	**PS419**

Pressure Gauges

	Order Code
0 - 2 bar	**P3D-KAB1AYN**
0 - 4 bar	**P3D-KAB1ALN**
0 - 8 bar	**P3D-KAB1ANN**

Coalescing Filters - 0.01 micron element

Port size	Description	Order Code
Poly bowl		
G1/8	Manual drain	**10F01ED1**
G1/8	Auto drain	**10F05ED1**
G1/4	Manual drain	**10F11ED1**
G1/4	Auto drain	**10F15ED1**
	Mounting bracket	**PS417BP**

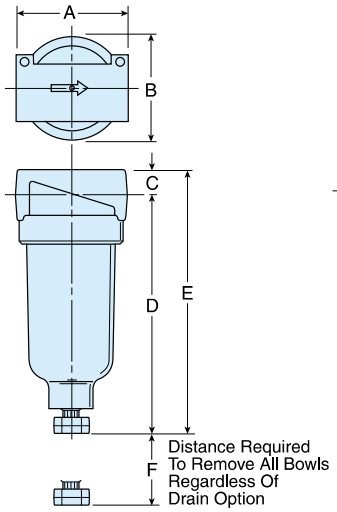
Filter/Regulators

- transparent bowl - 2 and 4 bar and non relieving options available

Port size	Description	Order Code
G1/8	2 bar, manual drain	**14E01B10FC1**
G1/8	2 bar, auto drain	**14E05B10FC1**
G1/4	2 bar, manual drain	**14E11B10FC1**
G1/4	2 bar, auto drain	**14E15B10FC1**
G1/8	4 bar, manual drain	**14E01B11FC1**
G1/8	4 bar, auto drain	**14E05B11FC1**
G1/4	4 bar, manual drain	**14E11B11FC1**
G1/4	4 bar, auto drain	**14E15B11FC1**
G1/8	8 bar, manual drain	**14E01B13FC1**
G1/8	8 bar, auto drain	**14E05B13FC1**
G1/4	8 bar, manual drain	**14E11B13FC1**
G1/4	8 bar, auto drain	**14E15B13FC1**
	Mounting bracket (Includes panel mounting nut)	**PS417BP**

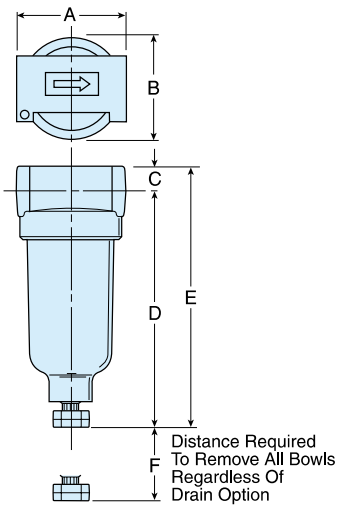
Dimensions (mm)

Filters



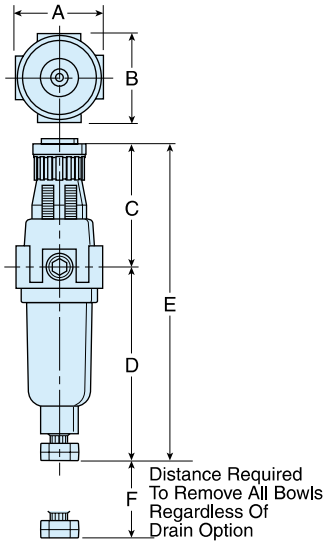
A	B	C	D	D†	E	E†	F
43	39	10	97	99	107	108	41

Coalescing Filters



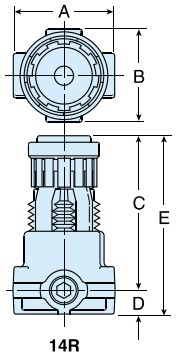
A	B	C	D	D†	E	E†	F
43	39,6	10	97	93	107	103	41

Filter/Regulators



A	B	C	D	D†	E	E†	F
41	40	61	96	92	158	154	41

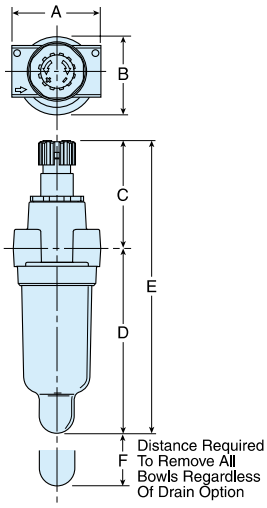
Regulators



14R

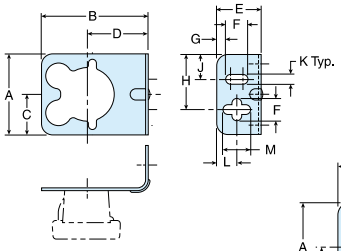
14R	**A**	**B**	**C**	**D**	**E**				
	42	40	63,5	10	731				
14RL***	**A**	**B**	**C**	**D**	**E**				
	42	40	57,9	10	68				
14RM	**A**	**B**	**C**	**D**	**E**	**F**	**G**	**H**	**J**
	38	38	60	13	73	30	15	8	18

Lubricators

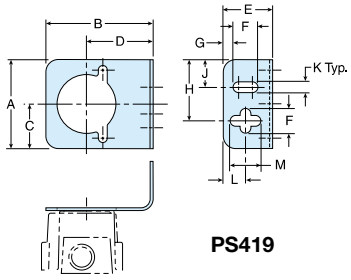


A	B	C	D	D†	E	E†	F
44	40	55	92	96	147	151	41

Mounting Bracket Kits



PS417BP
(Includes Panel Mount Nut)



PS419

PS417BP - 10F, 14F, 14R, 14E

A	B	C	D	E	F	G	H	J	K	L	M
46	60	23	34	25	13	5	31	14	6	11	16

PS419 - 04L

A	B	C	D	E	F	G	H	J	K	L	M
46	55	23	34	25	13	5	31	14	6	11	16

Service kits

Description	Order Code
5 micron particulate element	**PS403P**
0.01 micron coalescing element	**PS446P**
Poly bowl with manual drain	**PS404P**
Poly bowl with pulse drain	**PS408BP**
Lubricator bowl	**PS421P**
Regulator	
Relieving type	**PS422P**
Non-relieving type	**PS428P**

The range of Stainless Steel FRLs are ideal for use in the food industry, the petrochemical or process industries or any application in a particularly harsh or aggressive environment.

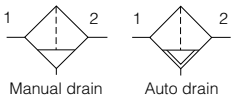
- Suitable for Marine & Offshore applications
- Chemical / Petroleum and process industries
- Coalescing filters are designed for removing oil and water aerosols down to 0.01µ
- Suitable for food industry applications

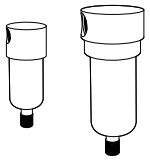
Operating information

Max operating pressure	20 bar 12 bar when fitted with auto-drain	
Max operating temperature	Regulator Filter + Regulator	65°C 80°C,
50°C when fitted with auto-drain		

For more information see www.parker.com/euro_pneumatic

Particulate Filter

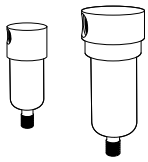




Port size	Flow l/min @ 7 bar	Filter element	Order code with manual drain	Order code with auto drain
G1/4	660	20µ	**PF504G02DHSS**	
G1/2	1800	40µ	**PF10G04DJSS**	**PF10G04DJRSS**

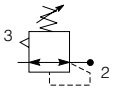
* For 5µ filter element substitute **H** or **J** with **G**

Coalescing Filter



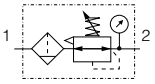
Port size	Flow l/min @ 7 bar	Filter element	Order code with manual drain	Order code with auto drain
G1/4	240	0.3µ	**PF501G02DHSS**	
G1/2	480	0.01µ	**PF11G04DJSS**	**PF11G04DJRSS**

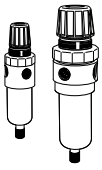
Regulator



Port size	Flow l/min @ 7 bar	Order code fitted with 0-8.5 bar spring
G1/4 Plastic bonnet/knob Full S/S version	450	**PR364G02CSS** **PR354G02CSS**
G1/2 Plastic bonnet/knob Full S/S version	2820	**PR10G04CSS** **PR11G04CSS**

Filter/Regulator

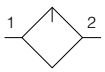


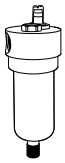


Port size	Flow l/min @ 7 bar	Order code fitted with 0-8.5 bar spring
G1/4 Plastic bonnet/knob Full S/S version	450	**PB548G02DHCSS** **PB558G02DHCSS**
G1/2 Plastic bonnet/knob Full S/S version	1800	**PB11G04DJCSS** **PB12G04DJCSS**

Panel mounting nut for G1/4: **PR05X51SS**
G1/2: **PR10X51SS**

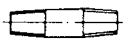
Lubricator





Port size	Flow l/min @ 7 bar	Order code
G1/2	3000	**PL10G04DSS**

Connectors

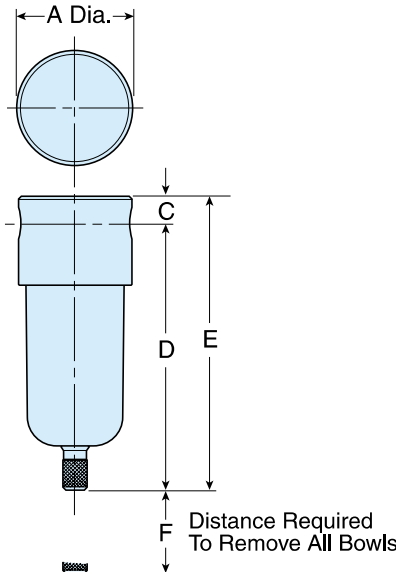


Port size	Order code
G1/4	**AC-2SS**
G1/2	**AC-4SS**

Stainless steel pressure gauge	**M1/4G40S-10 (0 to 10 bar)**

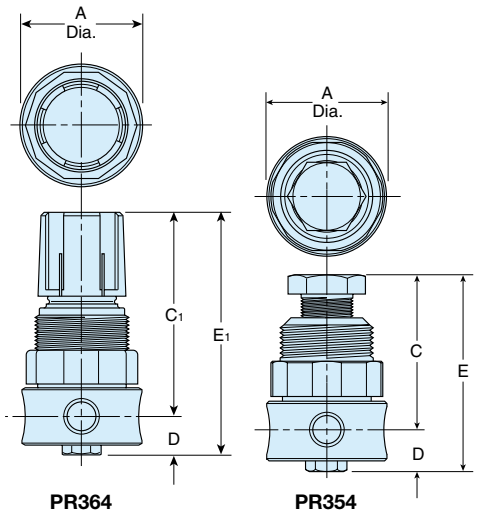
Dimensions (mm) - 1/4"

Filters
Coalescing Filters



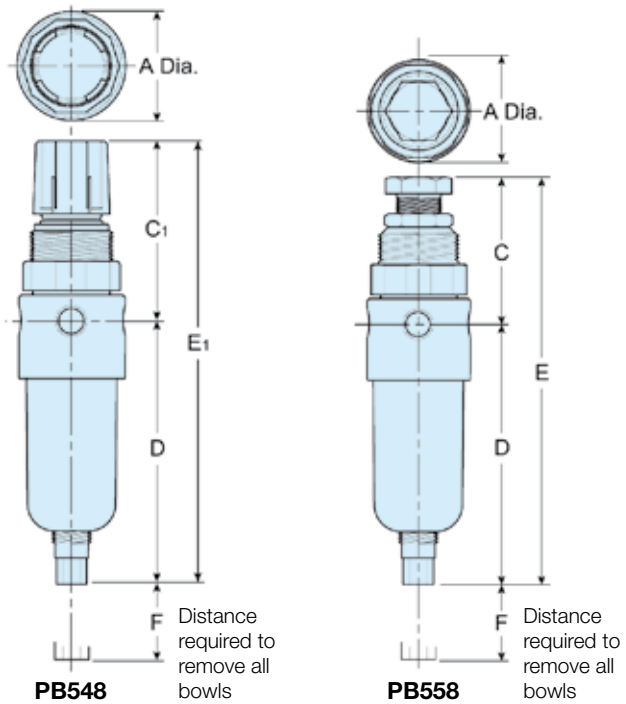
A	C	D	E	F
40mm	8mm	94mm	102mm	40mm

Regulators



A	C	C_1	D	E	E_1
40mm	51mm	65mm	13mm	64mm	78mm

Filter/Regulators



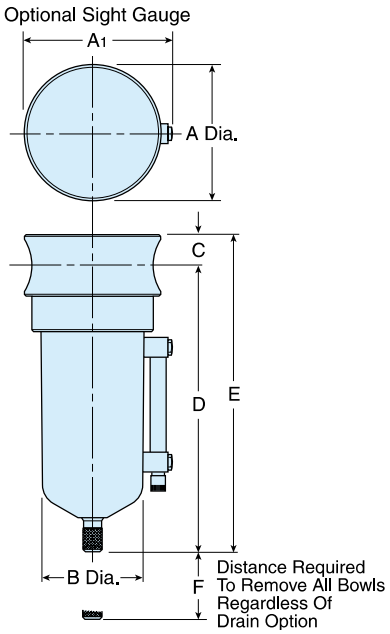
A	C	C_1	D	E	E_1	F
40mm	55mm	67mm	92mm	78mm	147mm	40mm

Service kits

Port size	Description	Order Code
Filter		
1/4	20 micron particulate element	**EK504Y**
1/4	5 micron particulate element	**EK504VY**
1/2	40 micron particulate element	**EK55J**
1/2	5 micron particulate element	**EK55G**
Coalescing Filter		
1/4	0.3 micron coalescing element	**EKF501H**
1/2	0.01 micron coalescing element	**EKF71**
Regulator		
1/4	Relieving type	**RKR364YSS**
1/4	Non-relieving type	**RKR36KYSS**
1/2	Relieving type	**RKR10YSS**
1/2	Non-relieving type	**RKR10KYSS**
Filter/Regulator		
1/4	20 micron particulate element	**EK504Y**
1/4	5 micron particulate element	**EK504VY**
1/2	40 micron particulate element	**EKF10Y**
1/2	5 micron particulate element	**EKF10VY**
Lubricator		
	Sight dome kit	**RKL10SS**

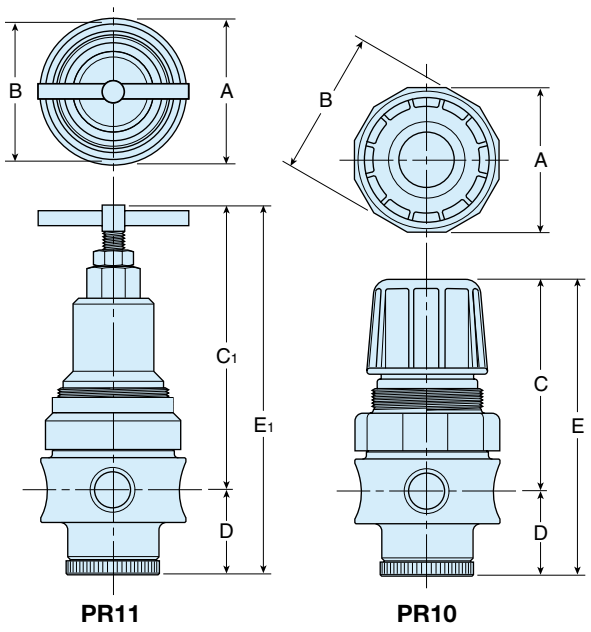
Dimensions (mm) - 1/2"

Filters
Coalescing Filters



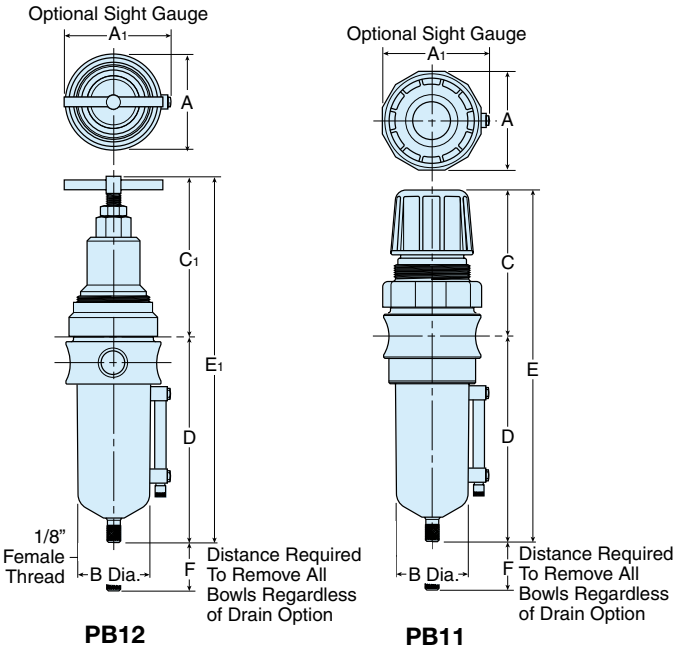
A	A1	B	C	D	E	F
60mm	64mm	44mm	14mm	127mm	141mm	54mm

Regulators



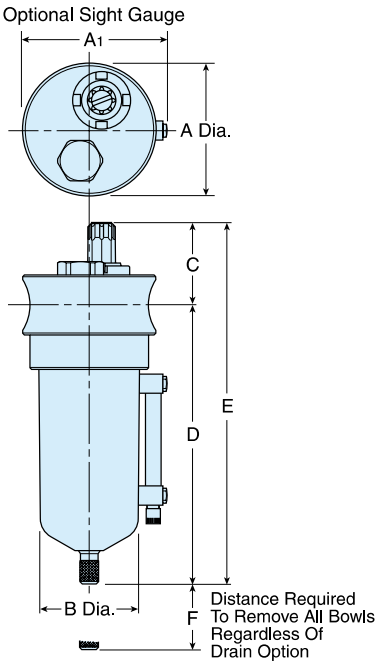
A	B	C	C1	D	E	E1
60mm	62mm	91mm	119mm	35mm	126mm	154mm

Filter/Regulators



A	A1	B	C	C1	D	E	E1	F
60mm	64mm	44mm	91mm	119mm	127mm	218mm	246mm	54mm

Lubricators



A	A1	B	C	D	E	F
60mm	64mm	44mm	46mm	127mm	173mm	89mm

High Efficiency 0.01 µm Filtration

Fitration Grade

Filtration type	Coalescing
Particle removal (inc water & oil aerosols)	Down to 0.01 micron
Max remaining oil content at 21°C	0.01 mg/m³ 0.01 ppm(w)
Filter efficiency	99.9999%
Test methods used	ISO 8573.2 ISO 8573.4 ISO 12500-1
ISO 12500-1 Inlet Challenge concentration	10 mg/m³
Initial dry differential pressure	<140 mbar (2psi)
Initial saturated differential pressure	<200 mbar (3psi)
Change element every	12 months
Precede with filtration grade	1 micron Moduflex Coalescer

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size BSPT	Part Number	dm³/s	m3/hr	cfm	0.01 µm Replacement Element Kit
1/4"	**P3TFA22CAAN**	10	36	21	**P3TKA00ESCA**
3/8"	**P3TFA23CBAN**	20	72	42	**P3TKA00ESCB**
1/2"	**P3TFA24CCAN**	30	108	64	**P3TKA00ESCC**
3/4"	**P3TFA26CDAN**	60	216	127	**P3TKA00ESCD**
1 "	**P3TFA28CEAN**	110	396	233	**P3TKA00ESCE**
1.1/4"	**P3TFA2ACEAN**	110	396	233	**P3TKA00ESCE**
1.1/2"	**P3TFA2BCFAN**	160	576	339	**P3TKA00ESCF**
1.1/2"	**P3TFA2BCGAN**	220	792	466	**P3TKA00ESCG**
2"	**P3TFA2CCHAN**	330	1188	699	**P3TKA00ESCH**
2.1/2"	**P3TFA2DCJAN**	430	1548	911	**P3TKA00ESCJ**
3"	**P3TFA2ECJAN**	430	1548	911	**P3TKA00ESCJ**
2.1/2"	**P3TFA2DCKAN**	620	2232	1314	**P3TKA00ESCK**
3"	**P3TFA2ECKAN**	620	2232	1314	**P3TKA00ESCK**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2CCHAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CCHAN

High Efficiency 0.01 µm Filtration

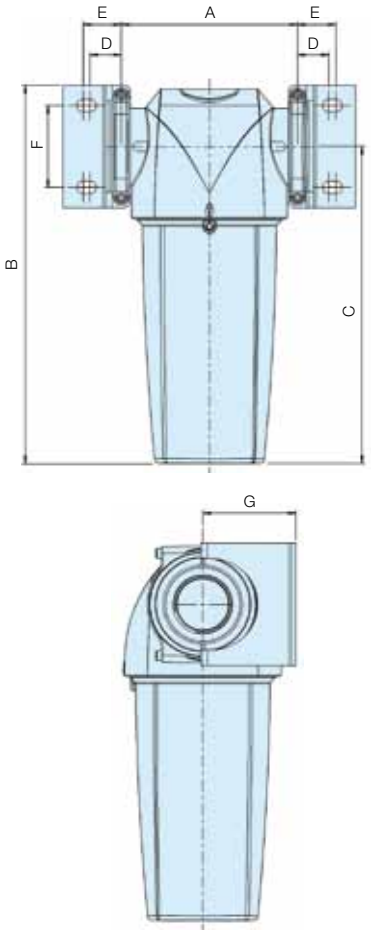
Technical data

Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
0.01 micron	Auto	16	232	80°C	176°F	1.5°C	35°F

Weights and dimensions

Port Size BSPT	Part Number	A		B		C		D		E		F		G		Weight		Modular Connection Kit	Wall Mounting Bracket Kit
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs		
1/4"	**P3TFA22CAAN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA23CBAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA24CCAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA26CDAN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA28CEAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2ACEAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2BCFAN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2BCGAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2CCHAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2DCJAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2ECJAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2DCKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2ECKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**

Optional Accessories



DPI Kit

P3TKA00RQ

Incident Monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.

Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

1 µm Filtration

Fitration Grade

Filtration type	Coalescing
Particle removal (inc water & oil aerosols)	Down to 1 micron
Max remaining oil content at 21°C	0.06 mg/m³ 0.05 ppm(w)
Filter efficiency	99.925%
Test methods used	ISO 8573.2 ISO 8573.4 ISO 12500-1
ISO 12500-1 Inlet Challenge concentration	40 mg/m³
Initial dry differential pressure	<70 mbar (2psi)
Initial saturated differential pressure	<140 mbar (3psi)
Change element every	12 months
Precede with filtration grade	1 micron Moduflex Coalescer

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size BSPT	Part Number	dm³/s	m3/hr	cfm	1 µm Replacement Element Kit
1/4"	**P3TFA229AAN**	10	36	21	**P3TKA00ES9A**
3/8"	**P3TFA239BAN**	20	72	42	**P3TKA00ES9B**
1/2"	**P3TFA249CAN**	30	108	64	**P3TKA00ES9C**
3/4"	**P3TFA269DAN**	60	216	127	**P3TKA00ES9D**
1 "	**P3TFA289EAN**	110	396	233	**P3TKA00ES9E**
1.1/4"	**P3TFA2A9EAN**	110	396	233	**P3TKA00ES9E**
1.1/2"	**P3TFA2B9FAN**	160	576	339	**P3TKA00ES9F**
1.1/2"	**P3TFA2B9GAN**	220	792	466	**P3TKA00ES9G**
2"	**P3TFA2C9HAN**	330	1188	699	**P3TKA00ES9H**
2.1/2"	**P3TFA2D9JAN**	430	1548	911	**P3TKA00ES9J**
3"	**P3TFA2E9JAN**	430	1548	911	**P3TKA00ES9J**
2.1/2"	**P3TFA2D9KAN**	620	2232	1314	**P3TKA00ES9K**
3"	**P3TFA2E9KAN**	620	2232	1314	**P3TKA00ES9K**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2C9HAN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2C9HAN

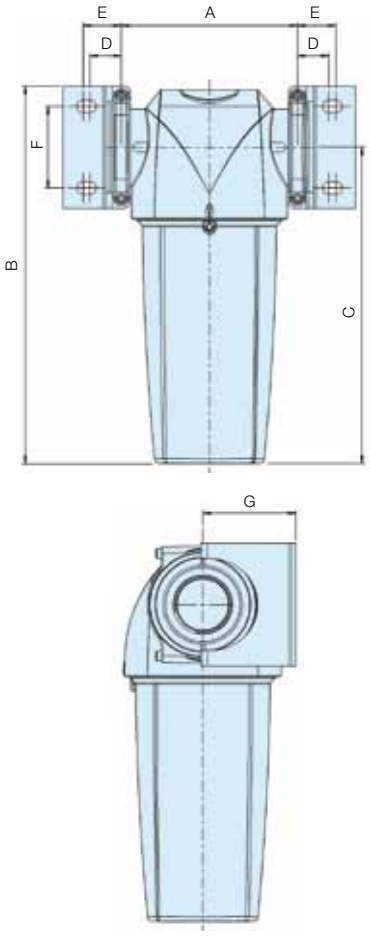
1 µm Filtration

Technical data

Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
1 micron	Auto	16	232	80°C	176°F	1.5°C	35°F

Weights and dimensions

Port Size BSPT	Part Number	A		B		C		D		E		F		G		Weight		Modular Connection Kit	Wall Mounting Bracket Kit
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs		
1/4"	**P3TFA229AAN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA239BAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA249CAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA269DAN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA289EAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2A9EAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2B9FAN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2B9GAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2C9HAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2D9JAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2E9JAN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2D9KAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2E9KAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**



Optional Accessories

DPI Kit

P3TKA00RQ

Incident Monitor

Used to indicate premature high differential pressure. Indicator can be retrofitted to existing housings without depressurising the system.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

Oil Vapour Removal Filter

Fitration Grade

Filtration type	Oil vapour removal
Particle removal (inc water & oil aerosols)	N/A
Max remaining oil content at 21°C	0.003 mg/m³ 0.003 ppm(w)
Filter efficiency	N/A
Test methods used	ISO
8573.5 **ISO 12500-1 Inlet Challenge concentration**	N/A
Initial dry differential pressure	<200 mbar (3psi)
Initial saturated differential pressure	N/A
Change element every	When oil vapour is detected
Precede with filtration grade	0.01 micron Moduflex Coalescer filter

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure. For flows at other pressures apply the correction factors shown.

Port Size BSPT	Part Number	dm³/s	m3/hr	cfm	Oil vapour removal Replacement Element Kit
1/4"	**P3TFA22AAMN**	10	36	21	**P3TKA00ESAA**
3/8"	**P3TFA23ABMN**	20	72	42	**P3TKA00ESAB**
1/2"	**P3TFA24ACMN**	30	108	64	**P3TKA00ESAC**
3/4"	**P3TFA26ADMN**	60	216	127	**P3TKA00ESAD**
1 "	**P3TFA28AEMN**	110	396	233	**P3TKA00ESAE**
1.1/4"	**P3TFA2AAEMN**	110	396	233	**P3TKA00ESAE**
1.1/2"	**P3TFA2BAFMN**	160	576	339	**P3TKA00ESAF**
1.1/2"	**P3TFA2BAGMN**	220	792	466	**P3TKA00ESAG**
2"	**P3TFA2CAHMN**	330	1188	699	**P3TKA00ESAH**
2.1/2"	**P3TFA2DAJMN**	430	1548	911	**P3TKA00ESAJ**
3"	**P3TFA2EAJMN**	430	1548	911	**P3TKA00ESAJ**
2.1/2"	**P3TFA2DAKMN**	620	2232	1314	**P3TKA00ESAK**
3"	**P3TFA2EAKMN**	620	2232	1314	**P3TKA00ESAK**

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.38
2	29	0.53
3	44	0.65
4	58	0.76
5	73	0.85
6	87	0.93
7	100	1.00
8	116	1.07
9	131	1.13
10	145	1.19
11	160	1.25
12	174	1.31
13	189	1.36
14	203	1.41
15	218	1.46
16	232	1.51
17	247	1.56
18	261	1.60
19	275	1.65
20	290	1.70

To find the correction factor for 8.5 bar g (122psi g) =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8.5 \text{ bar g}}{7 \text{ bar g}}} = 1.10$$

Filter selection example

Selecting a filter model to match a system flow rate and pressure.
Example: System flow 1050 m³/hr at a pressure of 8.5 bar g

1. Obtain pressure correction factor from table or calculate factor using method shown. Correction factor for 8.5 bar g = 1.10
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g 1050m³/hr ÷ 1.10 = 955 m³/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 955 m³/hr. Filter model selected : P3TFA2CAHMN
4. Select pipe connection & Thread type System uses 2" piping and BSP threads: Model P3TFA2CAHMN

Oil Vapour Removal Filter

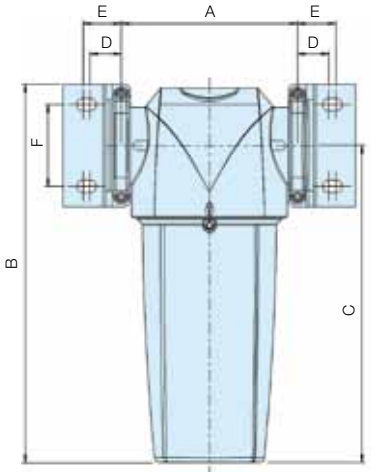
Technical data

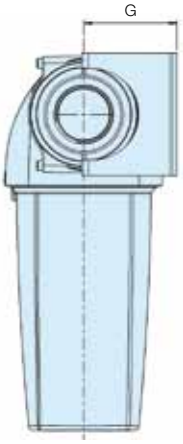
Filter Grade	Drain type	Max operating pressure bar g	Max operating pressure psi g	Max recommended operating temp.		Min recommended operating temp.	
Oil vapour removal	Manual	20	290	100°C	212°F	1.5°C	35°F

Weights and dimensions

Optional Accessories

Port Size BSPT	Part Number	A mm	A ins	B mm	B ins	C mm	C ins	D mm	D ins	E mm	E ins	F mm	F ins	G mm	G ins	Weight kg	Weight lbs	Modular Connection Kit	Wall Mounting Bracket Kit
1/4"	**P3TFA22AAMN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8"	**P3TFA23ABMN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2"	**P3TFA24ACMN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4"	**P3TFA26ADMN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 "	**P3TFA28AEMN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4"	**P3TFA2AAEMN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/2"	**P3TFA2BAFMN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2"	**P3TFA2BAGMN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2"	**P3TFA2CAHMN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2"	**P3TFA2DAJMN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2EAJMN**	205.0	8.1	641.5	25.3	581.5	22.9	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	10.0	22.0	**P3TKA00CBJ**	**P3TKA00MWJ**
2.1/2"	**P3TFA2DAKMN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3"	**P3TFA2EAKMN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**





Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Drain Kits

Auto drain	**P3TKA00DA**
Manual drain	**P3TKA00DM**

High Efficiency Bulk Liquid Removal

- Tested in accordance with ISO 8573.9
- Performance independently verified by Lloyds Register
- High liquid removal efficiencies at all flow conditions
- Low pressure losses for low operational costs
- Multiple port sizes for a given flow rate provides increased flexibility during installation
- Suitable for variable flow compressors
- Works with all types of compressor and compressor condensate
- Low maintenance
- 10 Year Housing Guarantee

Typical Applications

- Bulk liquid removal at any point in a compressed air system
- Protection of refrigeration and adsorption dryer pre-filtration
- Liquid removal from compressor inter-coolers / after-coolers
- Liquid separation within refrigeration dryers

Product selection

Stated flows are for operation at 7 bar (g) with reference to 20°C, 1 bar (a), 0% relative water vapour pressure.

Port Size	Part Number	dm^3/s	m3/hr	cfm	Max operating pressure		Max Operating temperature		Min Operating temperature	
					bar g	psi g				
1/4"	**P3TFA22WAAN**	10	36	21	16	232	80 C	176 F	1.5 C	35 F
3/8"	**P3TFA23WBAN**	40	144	85	16	232	80 C	176 F	1.5 C	35 F
1/2"	**P3TFA24WCAN**	40	144	85	16	232	80 C	176 F	1.5 C	35 F
3/4"	**P3TFA26WDAN**	110	396	233	16	232	80 C	176 F	1.5 C	35 F
1"	**P3TFA28WEAN**	110	396	233	16	232	80 C	176 F	1.5 C	35 F
1.1/4"	**P3TFA2AWFAN**	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
1.1/2"	**P3TFA2BWGAN**	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
2"	**P3TFA2CWHAN**	350	1260	742	16	232	80 C	176 F	1.5 C	35 F
2.1/2"	**P3TFA2DWKAN**	800	2880	1695	16	232	80 C	176 F	1.5 C	35 F
3"	**P3TFA2EWKAN**	800	2880	1695	16	232	80 C	176 F	1.5 C	35 F

Correction factors

Line pressure bar g	Line pressure psi g	Correction factor
1	15	0.25
2	29	0.38
3	40	0.50
4	58	0.63
5	73	0.75
6	87	0.88
7	100	1.00
8	116	1.06
9	131	1.12
10	145	1.17
11	160	1.22
12	174	1.27
13	189	1.32
14	203	1.37
15	218	1.41
16	232	1.46

To find the correction factor for 8 bar g =

$$\sqrt{\frac{\text{System Operating Pressure}}{\text{Nominal Pressure}}}$$

$$= \sqrt{\frac{8 \text{ bar g}}{7 \text{ bar g}}} = 1.06$$

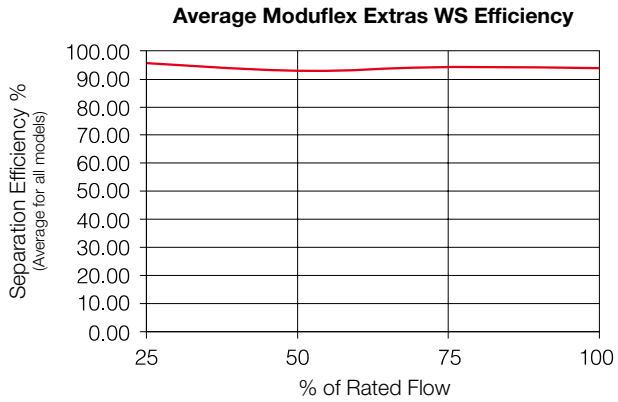
Filter selection example

Selecting a Water Separator model to match a system flow rate and pressure.
Example: System flow 1050 m^3/hr at a pressure of 8 bar g

1. Obtain pressure correction factor from table.
Correction factor for 8 bar g = 1.06
2. Divide system flow by correction factor to give equivalent flow rate at 7 bar g
1050m^3/hr ÷ 1.06 = 984 m^3/hr (at 7 bar g)
3. Select a filter model from the above table with a flow rate above or equal to 984 m^3/hr. Suitable Water Separator models : P3TFA2AWFAN
P3TFA2AWGAN
P3TFA2AWHAN
4. Select pipe connection & Thread type
System uses 1.1/2" piping and BSP threads: Model P3TFA2BWGAN

High Efficiency Bulk Liquid Removal

Separation Efficiency

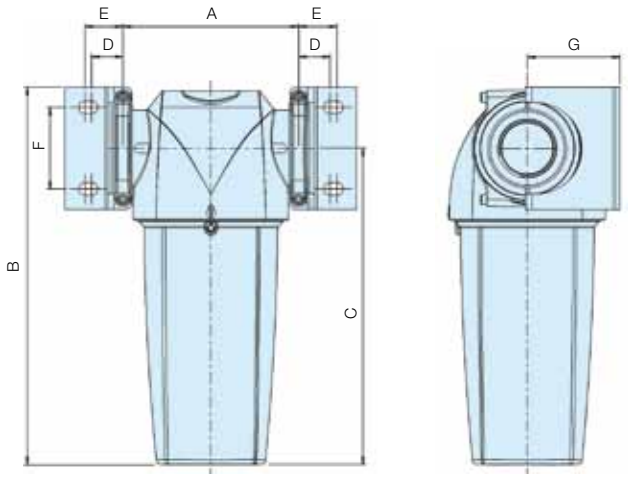


Tested with an inlet challenge concentration of 33ml/m3hr and in accordance with ISO 8573.9.
Performance shown is an average for all models in range. Individual model performance available on request.

Weights and dimensions

Optional Accessories

Port Size BSPT	Part Number	A		B		C		D		E		F		G		Weight		Modular Connection Kit	Wall Mounting Bracket Kit
		mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	mm	ins	kg	lbs		
1/4”	**P3TFA22WAAN**	76.0	3.0	181.5	7.2	153.0	6.0	18.0	0.71	24.5	0.96	30.0	1.18	52.0	2.05	0.4	0.9	**P3TKA00CBA**	**P3TKA00MWA**
3/8”	**P3TFA23WBAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
1/2”	**P3TFA24WCAN**	97.5	3.8	235.0	9.3	201.0	7.9	20.5	0.81	25.5	1.00	40.0	1.57	60.0	2.36	1.0	2.2	**P3TKA00CBB**	**P3TKA00MWB**
3/4”	**P3TFA26WDAN**	129.0	5.1	275.0	10.8	232.5	9.2	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.2	4.8	**P3TKA00CBD**	**P3TKA00MWD**
1 “	**P3TFA28WEAN**	129.0	5.1	364.5	14.3	322.0	12.7	23.0	0.91	28.0	1.10	60.0	2.36	68.0	2.68	2.6	5.7	**P3TKA00CBD**	**P3TKA00MWD**
1.1/4”	**P3TFA2BWFAN**	170.0	6.7	432.5	17.0	382.5	15.1	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	4.5	9.9	**P3TKA00CBF**	**P3TKA00MWF**
1.1/2”	**P3TFA2BWGAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2”	**P3TFA2CWHAN**	170.0	6.7	524.5	20.6	474.5	18.7	32.0	1.26	39.0	1.54	84.0	3.31	92.0	3.62	5.3	11.6	**P3TKA00CBF**	**P3TKA00MWF**
2.1/2”	**P3TFA2DWKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**
3”	**P3TFA2EWKAN**	205.0	8.1	832.0	32.8	772.0	30.4	35.5	1.40	42.5	1.67	100.0	3.94	135.0	5.31	12.0	26.4	**P3TKA00CBJ**	**P3TKA00MWJ**



Modular Connection Kit

Fixing clamp allows quick and simple connection of multiple filter housings.

Wall Mounting Bracket Kit

Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.

Selection Criteria

To correctly select the dryer best suited for your application, the following details are required to ensure optimum performance and trouble free operation.

- **Maximum Inlet Flow.**
- **Minimum Inlet Pressure.**
- **Maximum Inlet Temperature.**

Once these operating parameters have been established, you can select the most economical Dry Air System for your application.

Technical Specifications

Flow Range:		85 L/min to 567 L/min at 7 bar
Minimum Operating Pressure:		4 bar
Maximum Operating Pressure:		12 bar
Minimum Operating Temperature:		1.5°C
Maximum Inlet Temperature:		50°C
Noise Level (Average):		≤ 70dB(A)
Pressure Dewpoint	**(Standard):**	-40°C pdp
	(Optional):	-70°C pdp
Standard Electrical Supply:		230/1ph/50Hz (Tolerance +/- 10%)
		115/1ph/60Hz (Tolerance +/- 10%)
Controls:		Electronic Control Timer
Inlet Connections:		G3/8
Outlet Connections:		G3/8

Ordering Information

P3	T	J	A		3	A			N

Thread type	
1	BSPP
9	NPT

Size
1
2
3
4
5
6
7

Supply Voltage	
A	(230 V AC)
C	(24 V AC)
J	(110 V AC)

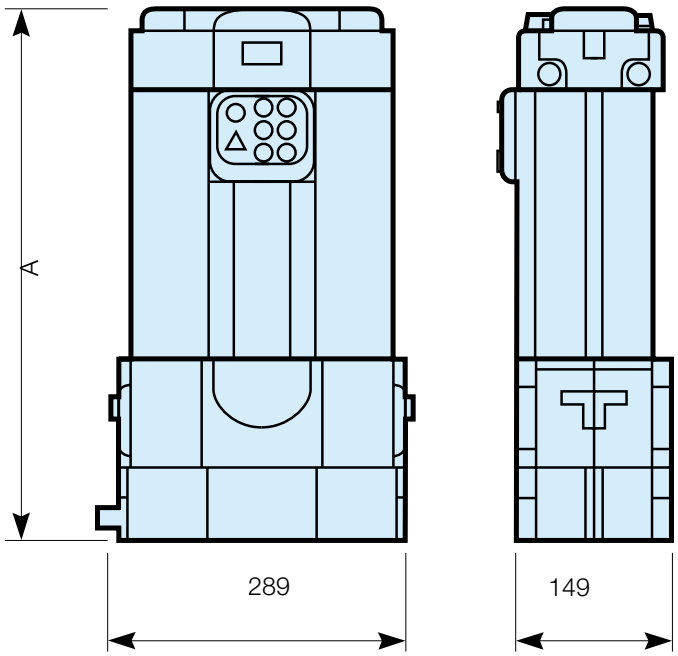
Note: Bold options are standard

Standard nominal flow rate qnN (NL/min) at pressure dew point -40°C

Model	Port Size	Max inlet temperature	Inlet Pressure (bar)								
			4	5	6	7	8	9	10	11	12
	3/8”	20°C	53	63	75	85	82	92	100	110	118
	3/8”	35°C	33	47	66	85	80	99	118	142	165
P3TJA13A1AN	3/8”	40°C	32	46	64	82	77	97	114	138	160
	3/8”	45°C	29	42	58	75	70	87	104	125	145
	3/8”	50°C	24	35	48	62	58	73	86	103	142
	3/8”	20°C	90	107	125	142	137	153	167	183	198
	3/8”	35°C	57	80	110	142	133	165	197	236	277
P3TJA13A2AN	3/8”	40°C	55	78	106	138	129	161	190	229	269
	3/8”	45°C	50	71	96	125	116	145	174	209	244
	3/8”	50°C	41	59	80	104	97	121	144	172	238
	3/8”	20°C	143	170	200	277	220	245	267	292	317
	3/8”	35°C	90	128	176	227	213	265	315	377	444
P3TJA13A3AN	3/8”	40°C	87	124	170	220	207	257	304	365	431
	3/8”	45°C	79	112	154	200	187	233	278	333	390
	3/8”	50°C	66	94	128	166	156	194	230	274	380
	3/8”	20°C	178	213	250	283	275	307	335	365	397
	3/8”	35°C	112	160	220	283	267	332	395	471	556
P3TJA13A4AN	3/8”	40°C	109	155	213	275	259	322	382	456	540
	3/8”	45°C	98	141	193	249	234	292	348	416	488
	3/8”	50°C	82	117	160	207	195	243	288	343	476
	3/8”	20°C	232	277	323	368	357	398	435	475	515
	3/8”	35°C	146	208	284	368	346	430	513	613	721
P3TJA13A5AN	3/8”	40°C	142	202	275	357	336	418	496	594	700
	3/8”	45°C	128	183	249	324	303	378	452	542	633
	3/8”	50°C	107	152	207	269	253	314	374	447	618
	3/8”	20°C	268	318	373	425	412	458	502	548	595
	3/8”	35°C	169	239	328	425	400	495	592	707	833
P3TJA13A6AN	3/8”	40°C	163	232	317	412	387	481	572	685	809
	3/8”	45°C	147	210	287	374	350	435	522	625	732
	3/8”	50°C	123	175	239	310	293	362	432	515	714
	3/8”	20°C	357	425	498	567	550	612	668	732	793
	3/8”	35°C	225	319	438	567	534	661	788	944	1110
P3TJA13A7AN	3/8”	40°C	218	310	423	550	517	643	762	915	1078
	3/8”	45°C	196	281	383	499	468	581	695	834	975
	3/8”	50°C	164	234	319	414	391	483	574	688	952

Weights and Dimensions

Model	Dimensions mm (ins) A	Weight kg (lbs)
P3TJA13A1AN	422 (16.6)	11 (24.2)
P3TJA13A2AN	500 (19.7)	13 (28.7)
P3TJA13A3AN	616 (24.2)	16 (35.3)
P3TJA13A4AN	692 (27.2)	18 (39.7)
P3TJA13A5AN	847 (33.3)	20 (44.1)
P3TJA13A6AN	906 (35.7)	23 (50.7)
P3TJA13A7AN	1098 (43.2)	28 (61.7)



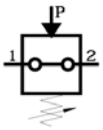
Service Kits

Model	Service Kit
P3TJA13A1AN	**P3TKA00JA1**
P3TJA13A2AN	**P3TKA00JA2**
P3TJA13A3AN	**P3TKA00JA3**
P3TJA13A4AN	**P3TKA00JA4**
P3TJA13A5AN	**P3TKA00JA5**
P3TJA13A6AN	**P3TKA00JA6**
P3TJA13A7AN	**P3TKA00JA7**

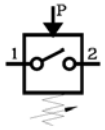
Mounting Kits

Description	Kit
Fixed Wall Mounting Bracket	**P3TKA00MJ**
45° Tilt Wall Mounting Bracket	**P3TKA00MK**

Pressure Switches G1/8”, G1/4”



Break contact



Make contact

Characteristics

Safety pressure relief P_{max}	300 bar
Port size	G1/8, G1/4
Weight (mass)	0.090 kg
Medium and ambient T_{max} temperature range	+100 °C
Switch back difference	Max. 5 - 15%
Voltage	Max. 48 V
Current	0.5 A
Electrical connection	Plug contacts, plug
Degree of protection	IP 65 with plug
Switching frequency	Max. 200 s/min

Material

Housing	Passivated steel
Diaphragm	Buna N

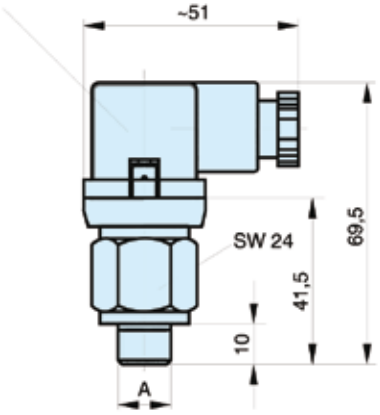
Switching function

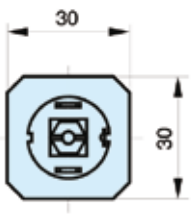
Make contact	Closes the circuit when the set pressure is reached
Break contact	Interrupts the circuit when the set pressure is reached

Dimensions and order instructions

Order instructions	Port size (bar)	Function	Setting range	**Order code**	Type	A
PR / 0.1-1 NC ST 1/4 48	G1/4	Break contact	0.1-1	**KL3439**		
PR / 0.1-1 NO ST 1/4 48	G1/4	Make contact	0.1-1	**KL3440**		
PR / 1-10 NC ST 1/8 48	G1/8	Break contact	1-10	**KL3437**		
PR / 1-10 NC ST 1/4 48	G1/4	Break contact	1-10	**KL3436**		
PR / 1-10 NO ST 1/8 48	G1/8	Make contact	1-10	**KL3438**		
PR / 1-10 NO ST 1/4 48	G1/4	Make contact	1-10	**KL3435**		

Plug can be turned 90°

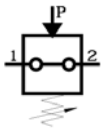




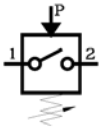
View A
without plug

Dimensions in mm

Pressure Switches G1/8”, G1/4”



Break contact



Make contact

Characteristics

Safety pressure relief P_{max}	300 bar
Port size	G1/8, G1/4
Weight (mass)	0.075 kg
Medium and ambient T_{max} temperature range	+100 °C
Switch back difference	Max. 5 - 15%
Voltage	Max. 48 V
Current	0.5 A
Electrical connection	Flat pin plug. protective cap
Degree of protection	IP 65 with protective cap
Switching frequency	200 s/min

Material

Housing	Passivated steel
Diaphragm	Buna N

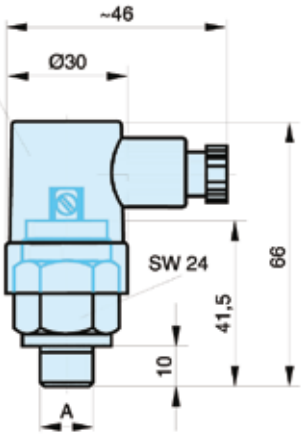
Switching function

Make contact	Closes the circuit when the set pressure is reached
Break contact	Interrupts the circuit when the set pressure is reached

Dimensions and order instructions

Order instructions	Port size (bar)	Function	Setting range	**Order code**	Type	A
PR / 0.2-1 NO SR 1/4 48	G1/4	Make contact	0.2-1	**KL3445**		
PR / 0.1-1 NC SR 1/4 48	G1/4	Break contact	0.1-1	**KL3454**		
PR / 0.1-1 NO SR 1/4 48	G1/4	Make contact	0.1-1	**KL3455**		
PR / 1-10 NC SR 1/8 48	G1/8	Break contact	1-10	**KL3452**		
PR / 1-10 NC SR 1/4 48	G1/4	Break contact	1-10	**KL3451**		
PR / 1-10 NO SR 1/8 48	G1/8	Make contact	1-10	**KL3453**		
PR / 1-10 NO SR 1/4 48	G1/4	Make contact	1-10	**KL3450**		

Protective cap can be turned 6 x 60°



View A
without protective cap

Dimensions in mm

Pressure Switches G1/8", G1/4" Series G1/4-..I / ..P

- Suited for intrinsically safe operation
- Especially compact design
- High switching frequency
- Attractive design
- Shock proof up to 30 g

Characteristics

Type - thread version	G1/4-0I*	G1/4-2I	G1/4-8I	G1/4-16I
Type - flange version	G1/4-0P*	G1/4-2P	G1/4-8P	G1/4-16P
Setting range $P_{min/max}$ (bar)	-1 to 0	0.2-2	0.5-8	1-16
Safety pressure relief P_{max}	80	80	80	80
Port size	Type I: G1/4 internal thread, Type P: flange			
Mounting	2 through holes Ø 5.2			
Installation	In any position			
Weight (mass)	0.275 kg			
Medium	Filtered compressed air (10µm), lubricated or unlubricated			
Medium and ambient T_{min}	-10 °C			
temperature range T_{max}	+80 °C			
Consistency	±2 in relation to end-of-range value			
Hysteresis, vaccum version	<15%			
Vibration resistance	10 g (10 ... 2000 Hz)			
Shock resistance	30 g			
Voltage	Max. 250 V			

Voltage type	AC and DC
Operating current and	AC12 to VDE0660 4A at 250 VAC AC14 to VDE0660 1A at 250 VAC DC12 to VDE0660 3A at 28 VDC DC13 to VDE0660 1A at 28 VDC
CE marking	To EC Directive 73/23/EWG
Electrical connection	Plug to DIN EN 175301-803, Form A, ISO4400 or M12x1 - 4-pin
Degree of protection	IP65
Switching element	Pole changing switch with catch spring as switching element, with self-cleaning contacts
Switching frequency	Max. 200 s/min

* for vacuum operation

Material

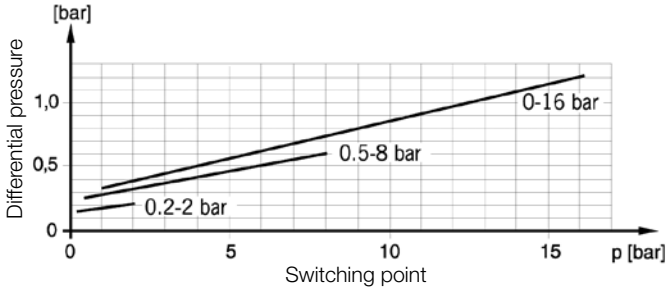
Housing powder coated	Special aluminium die casting,
Diaphragm, seals	Buna N

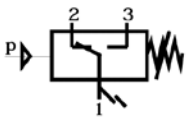
Selection and Mounting:

Range selection:
Selection is optimal when the switching points are in the middle of the switching range.

Electrical connection:
Wiring according to VDE regulations.
Tightening torque for plug: 0.7 ± 0.1 Nm
Outdoor use only with sufficient pretection against critical environmental conditions (e.g. aggressive atmosphere, salty environments, high temperature changes).

Switch back difference





Pin 1 - 3:
Rising pressure makes contact.

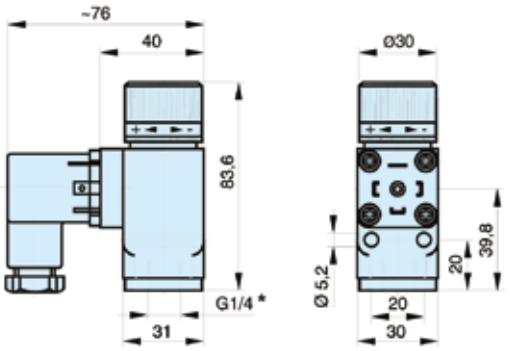
Pin 1 - 2:
Rising pressure breaks contact.

Delivery includes:
The flange version (surface roughness of flange surface 12µm) is supplied with an O-ring 5 x 1.5mm and 2 screws 5 x 35 DIN 912. Minimum thread length to be used: 4mm.

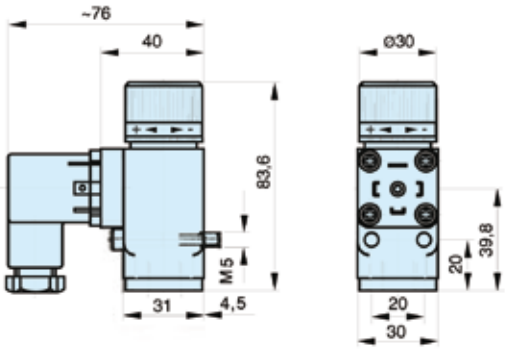
Max. diameter of the pressure opening 3mm.

Dimensions (mm)

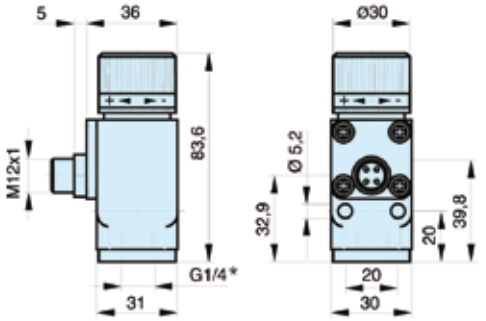
Version with internal thread and plug



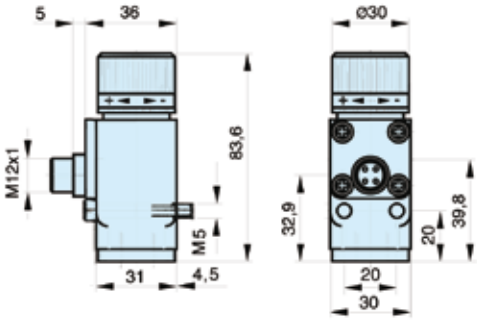
Flange version and plug



with M12 connector



with M12 connector



* Thread 11mm deep

Setting range (bar)	Type	Order code
-1 to 0	G1/4-0I-DIN	**KL3200**
-1 to 0	G1/4-0I-M12	**KL3208**
0.2 to 2	G1/4-2I-DIN	**KL3201**
0.2 to 2	G1/4-2I-M12	**KL3209**
0.5 to 8	G1/4-8I-DIN	**KL3202**
0.5 to 8	G1/4-8I-M12	**KL3210**
1.0 to 16	G1/4-16I-DIN	**KL3203**
1.0 to 16	G1/4-16I-M12	**KL3211**

Setting range (bar)	Type	Order code
-1 to 0	G1/4-0P-DIN	**KL3204**
-1 to 0	G1/4-0P-M12	**KL3212**
0.2 to 2	G1/4-2P-DIN	**KL3205**
0.2 to 2	G1/4-2P-M12	**KL3213**
0.5 to 8	G1/4-8P-DIN	**KL3206**
0.5 to 8	G1/4-8P-M12	**KL3214**
1.0 to 16	G1/4-16P-DIN	**KL3207**
1.0 to 16	G1/4-16P-M12	**KL3215**

Plugs to DIN EN 175301-803, Form A, ISO 4400

Standard version

Version with LEDs

Plugs to DIN EN 175301-803, Form A, ISO 4400

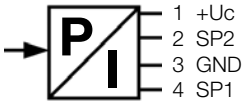
Description	Type	Order code
Standard version	GSD-30DS	**KL3349**
Version with LEDs 24 V	GSD-30DSL24V	**KL3350**
Version with LEDs 230 V	GSD-30DSL230V	**KL3351**

Pressure Switches Electronic Series EDP

The EDP electronically actuated pressure switches are used to convert pneumatic signals into electrical signals. The pressure range 0-16 bar can be adjusted individually, in either bar or psi.
The pressure switches can be used as threshold value comparators with one hysteresis or as window comparators with two hystereses.
A robust ceramic measuring cell acts as a measured value transducer.

- Simple, menu-driven programming via 3 membrane keys
- 3-digit red LED display (pressure gauge function)
- Electronic locking
- Versions for specific applications on request

Symbol



Characteristics

Type - flange version	EDP-V	EDP
Setting range $P_{min/max}$ (bar)	-1 to 0	0-16
Safety pressure relief P_{max}	100 bar	100 bar
Port size	Flange connection	
Display	3 digit, red 7-Segment LED-Display, programmable $0^{o}/180^{o}$	
Display for operating status	LED red/green	
Linearity %	<± 0.2 to 1.5 p_N	
TK zero point %	<± 0.2 p_N	
Installation	In any position	
Weight (mass)	0.100 kg	
Medium	Filtered compressed air, lubricated or unlubricated, weakly acidic or weakly alkaline fluids	
Ambient T_{min}	-20 °C	
temperature range T_{max}	+70 °C	
Medium T_{min}	-20 °C	
temperature range T_{max}	+70 °C	

Voltage	18 - 32 V
Voltage type	Direct current
Power consumption	< 80 mA without switching outlet
Switching current	SP1 max. 1.3 A (PIN4) SP2 / ERROR max. 0.3A (PIN2)
Switching logic	NO / NC programmable
Switching outlet	Short circuit proof
Electrical connection	Plug M12x1
Degree of protection	IP67 to EN 60529

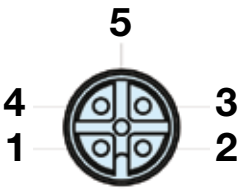
Material

Housing	PA, part in contact with medium: Al
Measuring cell	Ceramic
Seals	Buna N, part in contact with medium: FKM

Applications

- Pneumatic control systems
- Pressing technology
- Welding technology
- Packing machines and filling systems
- Test systems
- Clamping systems
- Plastic blow-moulding machinery
- Robotics and handling industry

Connection diagram

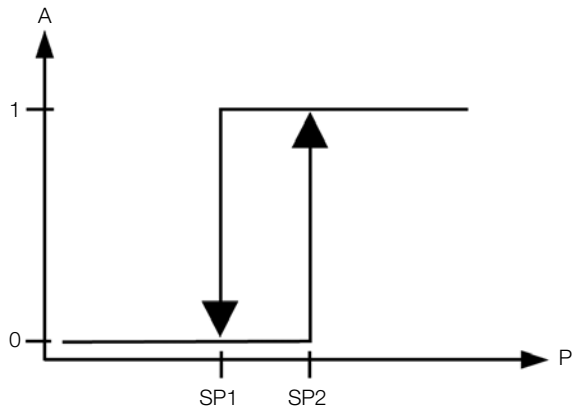


Electrical connection

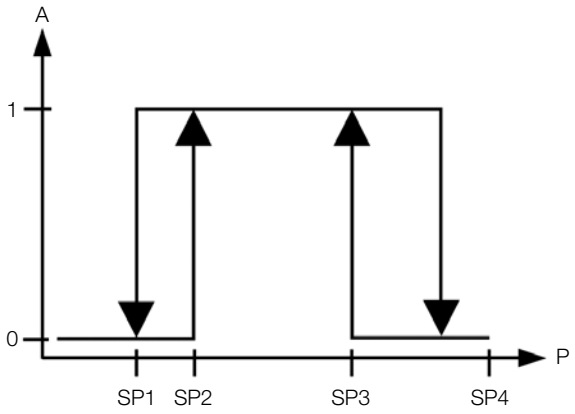
1 = bn (brown)	**+Uc**
2 = ws (white)	**SP2**
3 = bl (blue)	**GND**
4 = sw (black)	**SP1**

Threshold value comparator / window value comparator functions

Threshold value comparator with hysteresis

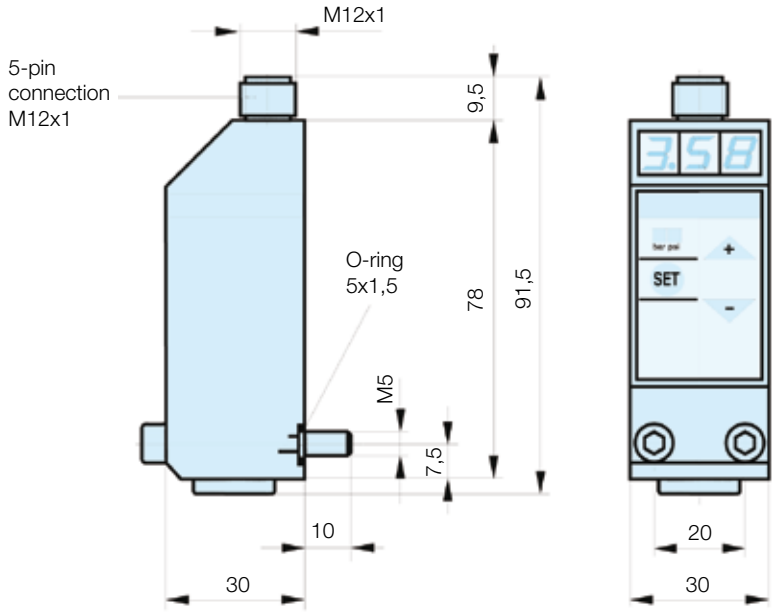


Window comparator with 2 hystereses



The illustrations show the NO (normally open) presetting.
For the NC (normally closed) presetting, the diagrams are horizontally mirror-imaged, so that the start value is at 1.

Dimensions - Flange version with M12x1 connector



Setting range (bar)	Type	**Order code**
-1 to 1	EDP-V	**KL3385**
0 to 16	EDP	**KL3384**

Dimensions in mm.

Protect your most important assets: your employees and their equipment!

The AirGuard offers simple but efficient protection to pneumatic systems in the event of a broken compressed-air hose or pipe. The air supply is immediately shut off by the AirGuard, should the volume of air exceed a set value. This "value" is factory preset and is set to allow normal air consumption when using air tools.

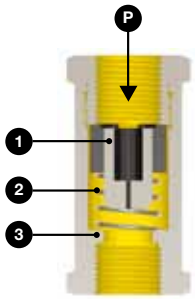
Should the air consumption exceeds the set value, e.g. the air line is severed, then the internal piston instantly shuts off the main flow. An integral bleed hole allows some air to flow though. This enables the line pressure to automatically reset the AirGuard once the main line break is repaired.

Management Responsibility:
It is the duty of management to ensure a safe working environment for their employees and that the equipment complies with **ISO 4414** or **"PUWER"** (the Provision and Use of Work Equipment Regulations)

Complies with the 2010 ISO4414 (5.4.5.11.1)
"When failure of a hose assembly or plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means. In addition, an air fuse for compressed air should be mounted."

Function:

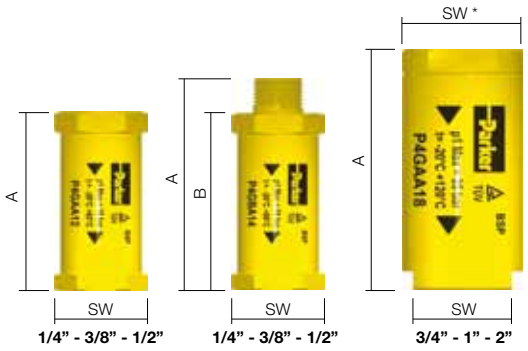
(P) is the inlet. The air flows over piston (1) and continues through seat (3). The flow of air over the piston is slowed down by several longitudinal grooves on the exterior of the piston. If the flow becomes excessive, the current of air cannot flow over the piston quickly enough.
The piston is then pressed against spring (2) beneath it, and towards the seat. If the flow is exceeded, for example, if the hose suddenly breaks, the air supply is automatically shut off.



Special Applications

Stainless Steel AirGuard available in 1/2" size

Some branches of industry with a high hazard potential, such as chemical and pharmaceutical as well as clean room and offshore technologies place extremely high demands on both the safety of their employees and the protection of their facilities. Compressed air is typically used as an energy transfer medium in these industries and is no means without its dangers: compressed air hoses can rupture or burst, as can fixed pipes. This may expose personnel working in such areas to extreme hazards as well as potential damage to expensive facilities and costly production downtime.



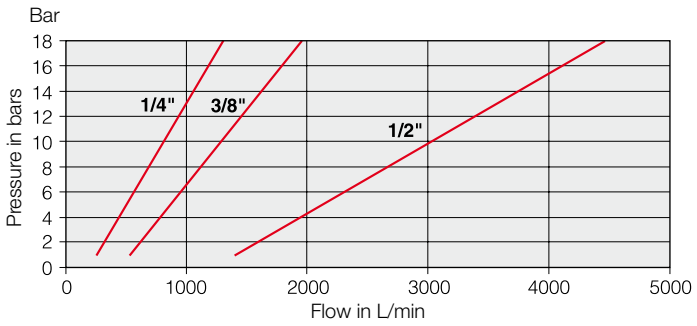
Technical Data and Ordering Information

Thread connection BSP	dimensions (mm)			Weight (g)	Maximum inlet pressure	Temperature range	Material	P1 inlet thread	P2 outlet thread	Order Code
	A	B	SW							
1/4"	48	-	22	30	18 bar (255 PSIG)	-20°C to 80°C (-4°F to 176°F)	Housing: aluminium Piston: polyoxy-methylene	female	female	**P4GAA12**
1/4"	58	49	22	36				male	female	**P4GBA12**
3/8"	59	-	27	58				female	female	**P4GAA13**
3/8"	71	59	27	62				male	female	**P4GBA13**
1/2"	65	-	30	78				female	female	**P4GAA14**
1/2"	80	65	30	85				male	female	**P4GBA14**
1/2"	62	-	28	132			Housing: stainless steel Piston: polyoxy methylene	female	female	**P4GCA14**
3/4"	76	-	30 / 36*	107	35 bar (500 PSIG)	-20°C to 120°C (-4°F to 248°F)	Housing: aluminium Piston: aluminium	female	female	**P4GAA16**
1"	100	-	41 / 50*	300				female	female	**P4GAA18**
2"	130	-	70 / 80*	775				female	female	**P4GAA1C**

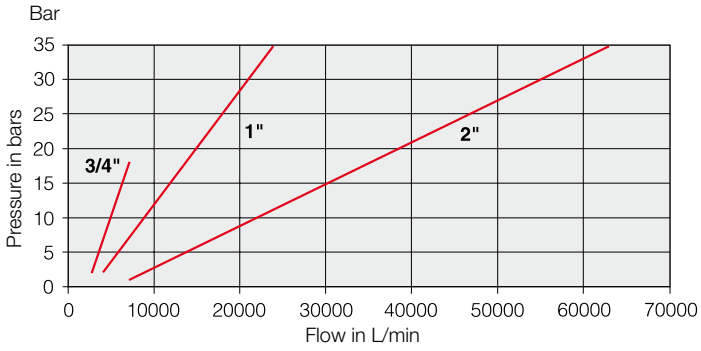
Note: NPT version available on request - 1/4" high flow version available on request.

Closing Flow Graphs

1/4", 3/8" and 1/2" flow rates



3/4", 1" and 2" flow rates



Dimensioning of compressed air hoses and equipment

Connection Size	Hose length 0 to 10 meters			Hose length 10 to 20 meters		
	Inner diameter Minimum mm	Minimum pressure bar	Flow at 6 bar l/min	Inner diameter minimum	Minimum pressure bar	Flow at 6 bar l/min
1/4"	7	4	480	8	4	480
3/8"	10	4	1100	12	4	1100
1/2"	12	4	2000	14	4	2000
3/4"	18	4	3800	20	4	3800
1"	24	4	6500	26	4	6500
2"	45	4	16000	50	4	16000

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

To select the correct size AirGuard, the pneumatic tool or equipment must have a maximum flow requirement to the left of the red line.

e.g.: 15 bar @20000 L/m = 2" size AirGuard
8 bar @1000 L/m = 3/8" size AirGuard

TÜV Approval: 01-02-0145

ATEX

These products are out of scope of the ATEX Directive 94/9/EC; however they can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Maximum working temperature to be as stated on product label.
- Product cleaning must be undertaken using a method complying with the specification of the ATEX Zone, preferably by aspiration and/or utilization of Antistatic Products.
- Deposits of dust on the product must not exceed 5mm thickness.
- Installation and Maintenance of the product must be done by a qualified personnel.
- Do not mount products in an area where Impact may occur.

AirGuard - P4G for zone 1, 21

Complies with: ISO 4414 5.4.5.11

Failure of hose assemblies and plastic piping 5.4.5.11.1

"When failure of a hose assembly of plastic piping constitutes a whiplash hazard, it shall be restrained or shielded by suitable means. In addition, **an air fuse for compressed air should be mounted"**

Table 1: Dimensioning of compressed air hoses and equipment

Thread	Hose length 0 to 10 meters			Hose length 10 to 20 meters		
	Inner diameter Minimum mm	Minimum pressure bar	Flow at 6 bar l/min	Inner diameter minimum	Minimum pressure bar	Flow at 6 bar l/min
1/4"	7	4	480	8	4	480
3/8"	10	4	1100	12	4	1100
1/2"	12	4	2000	14	4	2000
3/4"	18	4	3800	20	4	3800
1"	24	4	6500	26	4	6500
2"	45	4	16000	50	4	16000

If the pressure is lower than stated in the table, a hose with a larger internal diameter must be used.

A range of speed controls, flow controls and back pressure sensors designed to be mounted directly onto the cylinder in the optimum position for maximum performance.

- "Push-in" or threaded connection
- Multifunction options
- Fit directly to cylinder ports
- Swivelling pilot banjo
- Pneumatic, Electric or Electronic back pressure sensor

For ATEX specific products contact Sales Office

Operating information

Working pressure;

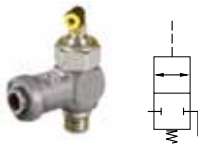
PWR-L, PWR-H, PWR-A, PWR-B	1-10 bar
PWB-A, PWS-M, PWS-E, PWS-P	0-10 bar
PWA-L	0,2-10 bar
Working temperature	: -15°C to +60°C
PWR-L	-15°C to +70°C

Pilot pressure at 6 bar supply;

PWB-A and PWR-HB	(1/8", 1/4" versions)	: 4 bar
	(1/2" and 3/8" versions)	: 2,9 bar
PWS-P111		: 4,4 bar
PWS-M1012		: 1,5 bar
PWS-E101 and E111		: 0,7 bar

For more information see www.parker.com/euro_pneumatic

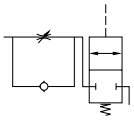
2/2 Blockers

Symbol	Connection for pilot port	Thread for cylinder connection	Connection for tube Ø, mm	Tightening torque Nm	Qmax input at 6 bar, l/min*	Order code
With push-in connection						
	**Push-in *, Ø4 mm**	**G1/8**	6	8	500	**PWB-A1468**
		G1/4	6	12	600	**PWB-A1469**
			8	12	650	**PWB-A1489**
		G3/8	8	30	1600	**PWB-A1483**
			10	30	1750	**PWB-A1493**
		G1/2	12	35	2050	**PWB-A1412**
With threaded connection						
	Push-in *, Ø4 mm	**G1/8**	G1/4	8	500	**PWB-A1898**
		G1/4	G1/4	12	650	**PWB-A1899**
		G3/8	G3/8	30	1750	**PWB-A1833**
		G1/2	G1/2	35	2050	**PWB-A1822**

* M5 without banjo

Multifunction flow control + blockers

Symbol	Connection for pilot port	Thread for cylinder connection	Connection for tube Ø, mm	Tightening torque Nm	Qmax input at 6 bar, l/min*	Order code
With push-in connection						
barrel adjustment and locknut	**Push-in, Ø4 mm**	**G1/8**	4	8	330	**PWR-HB1448**
			6	8	500	**PWR-HB1468**
		G1/4	6	12	500	**PWR-HB1469**
			8	12	600	**PWR-HB1489**
		G3/8	8	30	1200	**PWR-HB1483**
			10	30	1300	**PWR-HB1493**
		G1/2	10	35	1400	**PWR-HB1492**



* Screw closed

Compact flow regulator with push-in connection

For direct port cylinder mounting

Symbol	Thread for cylinder connection	Push-in connection Ø, mm	Order code
With push-in connection and locknut (not M5)	**M5**	4	**PTF8PB4M5**
	G1/8	4	**PTF4PB4-1/8**
		6	**PTF4PB6-1/8**
	G1/4	6	**PTF4PB6-1/4**
	G3/8	8	**PTF4PB8-3/8**
		10	**PTF4PB10-3/8**
	G1/2	12	**PTF4PB12-1/2**

Flow regulator with adjustable exhaust restriction

For direct port cylinder mounting

Symbol	Thread for cylinder connection	Push-in connection Ø, mm	Order code
With push-in connection Allen key adjustment and locknut	**M5**	4	**PTFL8PB4M5**
	G1/8	4	**PTFL4PB4-1/8**
		6	**PTFL4PB6-1/8**
		8	**PTFL4PB8-1/8**
	G1/4	6	**PTFL4PB6-1/4**
		8	**PTFL4PB8-1/4**
		10	**PTFL4PB10-1/4**
	G3/8	8	**PTFL4PB8-3/8**
		10	**PTFL4PB10-3/8**
	G1/2	12	**PTFL4PB12-1/2**

Flow control valves with by-pass

Symbol	Thread	Number of turns	Qmax input at 6 bar, l/min	Order code
	G1/8	13	240	**VQB12-Q-O-5**
	G1/4	13	1320	**VQB22-Q-O-5**
	G1/2	13	3600	**VQB42-Q-O-5**

Flow control valves with by-directional control

	Symbol	Thread	Number of turns	Qmax input at 6 bar, l/min	Order code
		G1/8	13	72	**VQB12-OX-5 ***
		G1/8	13	240	**VQB12-O-5**
		G1/4	13	1320	**VQB22-O-5**
		G1/2	13	3600	**VQB42-O-5 ****

* Extra fine adjustment
** Low operating temp -40°C

Knob and nut for panel mounting

	To suit	Order code
	VQB12	**9128177212**
	VQB22	**9128177222**
	VQB42	**9128177242**

Inline speed controls, PWR-L series

For inline mounting

With push-in connection,
knob adjustment and locknut

4	**PWR-L1444**
6	**PWR-L1466**
8	**PWR-L1488**
10	**PWR-L1499**
12	**PWR-L1411**

Plug-in sensors

For use with banjo sockets

	Sensing function	Output function	Output connection	Output characteristics	Order code
	Exhaust back pressure decay	Pneumatic	Push-in Ø 4 mm	NO valve flow rate at 6 bar 1,5 l/s	**PWS-P111**
		Electrical ~ Ie = 3 A	3 wires 0,5 mm² length 2 m	CO contact 12 to 230 V ~ / 10 VA* 12 to 48 VDC/ 5 W*	**PWS-M1012**
		Solid state	3 wires 0,1 mm² length 2m	PNP type NC 10/30 VDC** 75 mA NO	**PWS-E101** **PWS-E111**

* Suitable for low currents : 250 V ~ / 4 mA ; 24 VDC / 10 mA ** Including ripple

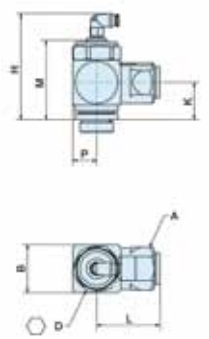
Banjo sockets for plug-in sensors

With sensor locking clip,for direct port cylinder mounting

Thread size for cylinder port	Female thread	Tool required	Order code
M5	M5	8 mm flat spanner	**PWS-B155**
G1/8	G1/8	5 mm Allen key	**PWS-B188**
G1/4	G1/4	8 mm Allen key	**PWS-B199**
G3/8	G3/8	10 mm Allen key	**PWS-B133**
G1/2	G1/2	12 mm Allen key	**PWS-B122**

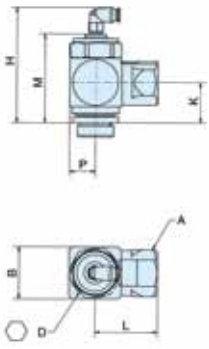
Dimensions (mm)

Blocker with push-in connection



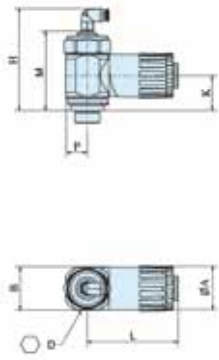
Order code	A	B	D	H	K	L	P	M
PWB-A1468	Ø 22	21	21	59,0	16,5	39	11	43
PWB-A1469	Ø 22	21	21	59,0	16,5	39	11	43
PWB-A1489	Ø 22	21	21	59,0	16,5	39	11	43
PWB-A1483	□ 27	30	27	66,5	22,5	39	15	52
PWB-A1493	□27	30	27	66,5	22,5	39	15	52
PWB-A1412	□27	30	27	66,5	22,5	39	15	52

Blocker with threaded connection



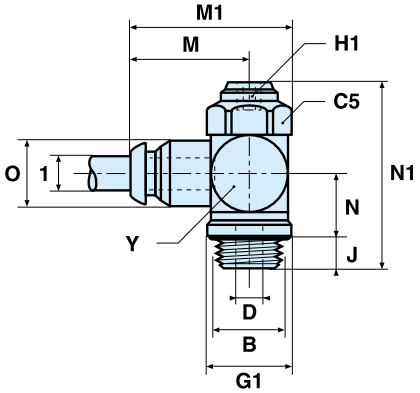
Order code	A	B	D	H	K	L	C	P	M
PWB-A1898	Ø 22	21	21	59,0	16,5	43,5	⬡24	11	43
PWB-A1899	Ø 22	21	21	59,0	16,5	43,5	⬡24	11	43
PWB-A1833	□ 27	30	27	66,5	22,5	36,0	□27	15	52
PWB-A1822	□ 27	30	27	66,5	22,5	36,0	□27	15	52

Blocker/Flow regulator



Order code	ØA	B	D	H	K	L	P
PWR-HB1448	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1468	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1469	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1489	22,5	21	21	59	16,5	47,0	12,5
PWR-HB1483	29,0	30	27	64,5	22,5	60,0	15,0
PWR-HB1493	29,0	30	27	64,5	22,5	60,0	15,0
PWR-HB1492	29,0	30	27	64,5	22,5	60,0	15,0

PTF4/8PB - Flow regulator with push-in connection

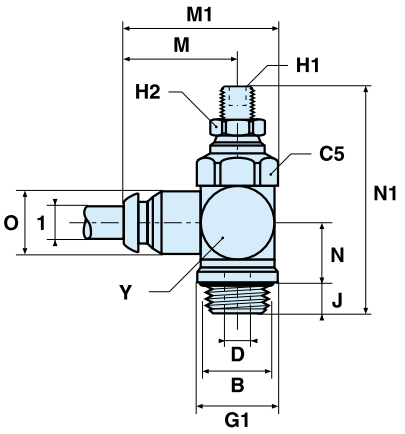


Exhaust flow control

Order code	C5	D	G1	H1	J	M	M1	N	N1	O	Y
PTF8PB4M5**	8	1,65	10,0	1,5	4	19,5	24,5	6,3	22,0	10	10
PTF4PB4-1/8	14	3,00	14,4	2,0	6	22,0	30,1	10,7	34,5	10	14
PTF4PB6-1/8	14	3,20	14,4	2,0	6	23,5	31,6	10,7	34,5	12	14
PTF4PB6-1/4	17	5,20	18,4	4,0	7	25,0	34,9	13,8	41,0	12	17
PTF4PB8-1/8	14	3,20	14,4	2,0	6	25,0	33,1	10,7	34,5	14	14
PTF4PB10-3/8	22	6,00	21,6	4,0	7	34,0	46,7	17,3	51,0	17	22
PTF4PB12-1/2	27	8,50	26,5	4,0	9	36,5	52,1	20,1	61,0	20	27

Dimensions (mm)

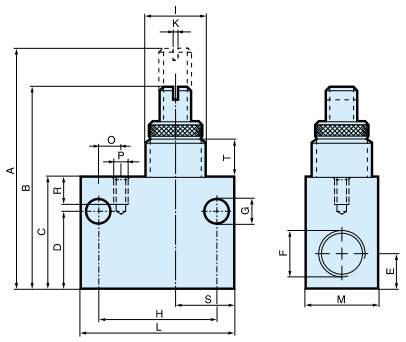
PTFL4/8PB - Flow regulator with push-in connection



Exhaust flow control

Order code	C5	D	G1	H1	H2	J	M	M1	N	N1	O	Y
PTFL8PB4M5**	8	1,65	10,0	1,5	8	4	19,5	24,5	6,3	28,5	10	10
PTFL4PB4-1/8	14	3,00	14,4	2,0	7	6	22,0	30,1	10,7	43,7	10	14
PTFL4PB6-1/8	14	3,20	14,4	2,0	7	6	23,5	31,6	10,7	43,7	12	14
PTFL4PB6-1/4	17	5,20	18,4	4,0	11	7	25,0	34,9	13,8	51,8	12	17
PTFL4PB8-1/8	14	3,20	14,4	2,0	7	6	25,0	33,1	10,7	43,7	14	14
PTFL4PB8-1/4	17	5,20	18,4	4,0	11	7	28,5	38,3	13,8	51,8	14	17
PTFL4PB8-3/8	22	6,00	21,6	4,0	11	7	29,5	42,2	17,3	63,7	14	22
PTFL4PB10-3/8	22	6,00	21,6	4,0	11	7	34,0	46,7	17,3	63,7	17	22
PTFL4PB12-1/2	27	8,50	26,5	4,0	14	9	36,5	52.,1	20,1	76,1	20	27

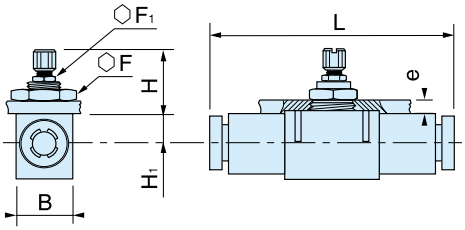
Flow Control Valves



Order code	A	B	C	D	E	F	G	H	I
VQB12-(Q)-OX-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB12-(Q)-O-5	49	42	22	15	6,5	G1/8	5,8	24	M12x1
VQB22-(Q)-O-5	64	53	30	21	8,5	G1/4	7,0	32	M16x1
VQB42-(Q)-O-5	99	85	50	36	16,5	G1/2	7,0	50	M24x1,5

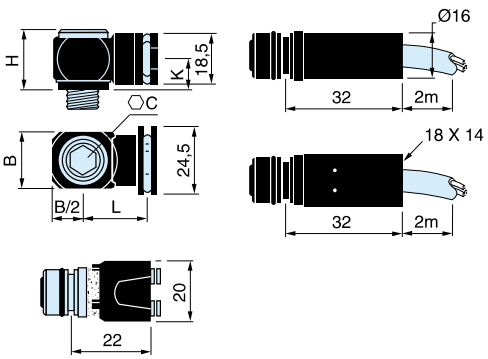
Order code	K	L	M	O	P	R	S	T
VQB12-(Q)-OX-5	1,2	32	15	-	-	-	13,5	8,8
VQB12-(Q)-O-5	1,2	32	15	-	-	-	13,5	8,8
VQB22-(Q)-O-5	1,2	42	20	6,0	M4	7	16,0	10,0
VQB42-(Q)-O-5	1,8	62	30	19,5	M4	7	20,5	15,2

Speed Controls, PWR-L Series



Order code	B	F	F1	e	H+	H-	H1	L	Q
PWR-L1444	12,0	14	*	6	25,5	21,5	6,5	39,0	10,5
PWR-L1466	17,0	19	*	7	32,5	27,5	7,5	54,0	17,0
PWR-L1488	18,5	24	11	7	34,5	28,5	9,0	60,5	19,0
PWR-L1499	24,0	30	14	7	38,5	29,5	11,5	76,0	25,0
PWR-L1411	28,0	32	14	8	42,0	32,0	12,5	86,0	28,0

Back Pressure Sensors - Modular



Order code	C	B	H	K	L
PWS-B155	8	11	16,5	10	17
PWS-B188	5	16	20,0	10	20
PWS-B199	8	21	20,0	10	22
PWS-B133	10	28	22,0	12	25
PWS-B122	12	33	26,0	14	26

- Micrometer type adjustment
- Fine control
- Non-return and needle valves

- Screw driver adjustment
- Rugged bodies
- High flow rate
- High flow by-pass
- Wide range of sizes

Operating and additional information

Micrometer flow control valves

Operating pressure:	0 to 17 bar
Operating temperature:	-40°C to +80°C
Body material:	Brass
Control knob:	Aluminium
Adjustment mode:	Knurled knob

Heavy duty Inline flow control valves

Operating pressure:	0 to 17 bar for air or oil
Operating temperature:	-18°C to +82°C
Body material:	Brass
Control knob:	Brass
Adjustment mode:	Screw driver adjustment

Flow Control with By-pass

Symbol

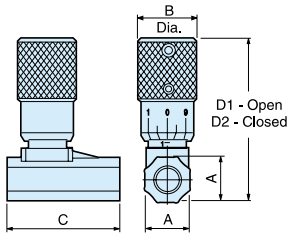
Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	5	300	76	**337A**
G1/4	6	780	134	**337B**

Flow Control with By-directional Control

Symbol

Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	5	300	78	**338A**
G1/4	6	780	132	**338B**

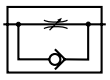
Micrometer Flow Control Valves - Dimensions



Order code	Port size	A	B	C	Dimensions (mm) D1 open	D2 closed
337A	G1/8	14,5	19	37.5	51.5	46
337B	G1/4	17,5	19	37.5	58	51
338A	G1/8	14,5	19	37.5	51.5	46
338B	G1/4	17,5	19	37.5	58	51

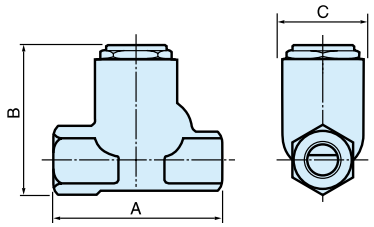
Standard type

Symbol



Thread	Number of turns	Qmax input at 6 bar, l/min	Weight g	Order code
G1/8	6	1320	114	**B3250X**
G1/4	5	2880	224	**B3250AB**
G3/8	5	6300	378	**B3250BB**
G1/2	5	7680	792	**B3250CB**
G3/4	4,5	10680	1300	**B3250DB**

Flow Control Valves, Standard Type



Order code	Port size	Dimensions (mm) A	B	C
B3250X	G1/8	44	40	21
B3250AB	G1/4	57	51	28
B3250BB	G3/8	68	64	35
***B3250CB**	G1/2	79	78	41
B3250DB	G3/4	90	92	51

* Low operating temperature -40°C @ 10 bar

Quick Exhaust Valves

- Increases piston speeds, super sensitive diaphragm.
- May be used as differential shuttle valve.

Shuttle Valves

- Allows two separate signals to be applied to the air pilot.
- 0,6 bar differential, Viton seals as standard.

Non Return Valves

- Aluminium or polymer bodies
- Compact

Operating information

Shuttle valve •••005

Working pressure	1,3 - 17 bar
Working temperature; Standard	-10 °C to +180 °C

Quick exhaust valve P4Q

Working pressure:	0,2 - 10 bar
Working temperature; Standard:	-10 °C to +80 °C

VB

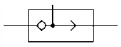
Working pressure	Max 10 bar
Working temperature	-20 °C to +70 °C

PWA-L

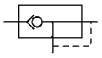
Working pressure	0,2 - 10 bar
Working temperature;	-15 °C to +60 °C

For more information see www.parker.com/euro_pneumatic

Shuttle Valves

Symbol	Port size	Order code
	M5	**M33005**
	G1/8	**B43005B**
	G1/4	**B53005A**
	G1/4	**B53005BS5** (-40°C to +80°C)

Quick Exhaust Valves P4Q Series

Symbol	Port size	Order code
	**Standard Version**	
	G1/4	**P4Q-BA12**
	G3/8	**P4Q-BA13**
	G1/2	**P4Q-CA14**
	G3/4	**P4Q-CA16**
	High Temperature Version (Flurocarbon diaphragm)	
	G3/8	**P4Q-BV13**
	G1/2	**P4Q-CV14**
	G3/4	**P4Q-CV16**

Non Return Valves

Aluminium VB Series

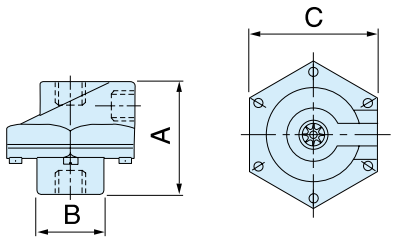
Symbol	Port size	Order code
	G1/8	**VB12-Q-NQ-5**
	G1/4	**VB22-Q-NQ-5**
	G1/2	**VB42-Q-NQ-5**
	G1/2	**VB42-S50897** (Viton - dry assembly)

Line mounted non-return valves

Symbol	Push-in connection Ø, mm	Flow rate 6 bar, l/s	Order code
	4	3,33	**PWA-L1444**
	6	11,00	**PWA-L1466**
	8	26,67	**PWA-L1488**

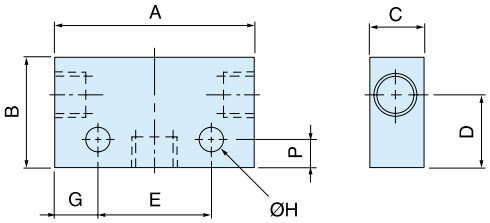
Dimensions (mm)

Quick Exhaust Valves



Order code	Port Size	A	B	C
P4Q-B*12	G1/4	52	25	62
P4Q-B*13	G3/8	52	25	62
P4Q-B*14	G1/2	73	38	86
P4Q-B*16	G3/4	73	38	86

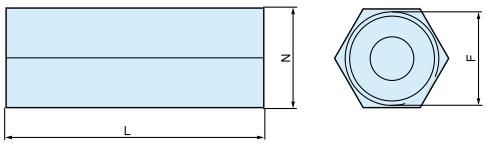
Shuttle Valves



Order code	Port Size	A	B	C	D	E	F	G	H
M33005	M5	27,5	24	15	16,0	15	6	6,3	3,2
B43005B	G1/8	44,0	24	15	16,0	25	6	9,5	4,5
* **B53005A**	G1/4	52,0	30	22	20,5	35	10	8,5	5,5

* Dimensions as **B53005BS5**

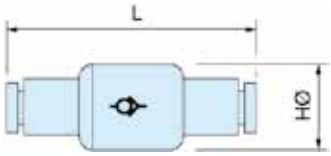
Non Return Valves - VB - Female



Order code	F	L	N
VB12-Q-NQ-5	G1/8	31	14
VQB22-Q-NQ-5	G1/4	40	17
* **VB42-Q-NQ-5**	G1/2	59	27

* Dimensions as **VB42 / S50897**

Non Return Valves - Push-in



Order code	ØH	L
PWA-L1444	11,0	43,0
PWA-L1466	13,0	49,5
PWA-L1488	13,5	55,0

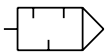
- All plastic ultra light weight versions
- Sintered metal
- All metal versions for heavy duty applications
- Versions with push-in connections
- High noise level reduction
- Low back pressure generation

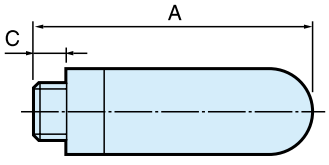
Operating and additional information

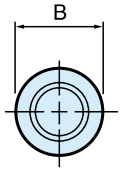
Plastic	Working temperature: Efficiency	-10°C to +80°C 92%		
Metal	Working temperature:	-10°C to +74°C	Working pressure	up to 17 bar

P6M-P Plastic Series

Symbol



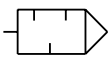




Port thread	Dimensions (mm) A	Ø B	C	Weight g	Order code
M5	23	6,5	4	0,01	**P6M-PAC5**
G1/8	29	14	6	0,02	**P6M-PAB1**
G1/4	34	17	6	0,04	**P6M-PAB2**
G3/8	60	25	9	0,06	**P6M-PAB3**
G1/2	64	25	11	0,10	**P6M-PAB4**
G3/4	140	38	14	0,50	**P6M-PAB6**
G1	160	48	20	0,62	**P6M-PAB8**

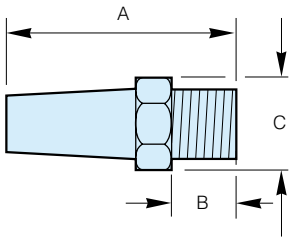
Push-in Series

Symbol



Port mm	Height on Push-in	Weight g	Order code
4	20,0	0,040	**PXC-X14**
6	35,5	0,025	**PZC-S1006**
8	34,0	0,030	**PZC-S1008**

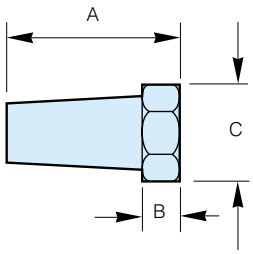
Sintered bronze Series



Symbol

Port thread	A	B	A/F C	Weight g	Order code
M5	23	6,5	4	0,003	**9721900005**
G1/8	24	10	12	0,009	**9090050700**
G1/4	32	11	16	0,019	**P6M-BAA2**
G3/8	43	13	21	0,041	**9090050900**
G1/2	60	16	24	0,068	**9090051000**
G3/4	75	10	32	0,126	**9090051100**
G1	77	12	37	0,188	**9090051500**

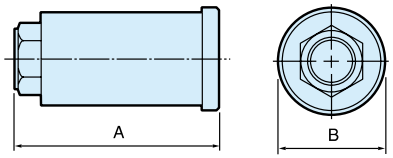
Sintered Bronze Series (female)



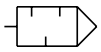
Symbol

Port mm	A	Ø B	A/F C	Weight g	Order code
G1/8	15	8	13	0,060	**9721900404**

Heavy Duty Series

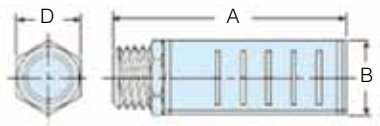


Symbol

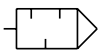


Port Female	A	Ø B	Weight g	Order code
G3/8	83	37	0,124	**P6M-MA13**
G1/2	105	51	0,362	**P6M-MA14**
G3/4	143	73	0,670	**P6M-MA16**
G1	143	73	0.666	**P6M-MA18**

Self Cleaning, 48 Series



Symbol

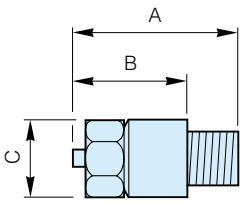


Port thread	A	Ø B	A/F E	Order code
R1/8	47	21	16 (5/8”)	**ESB12MC**
R1/4	47	21	16 (5/8”)	**ESB25MC**
R3/8	84	32	25.4 (1”)	**ESB37MC**
R1/2	84	32	25.4 (1”)	**ESB50MC**
R3/4	116	52	41.2 (1-5/8”)	**ESB75MC**
R1	116	52	41.2 (1-5/8”)	**ESB100MC**
R1-1/4	145	73.5	-	**ESB125MC**
R1-1/2	145	73.5	-	**ESB150MC**

Restrictors - Silencers

- Stainless steel or plastic versions
- Screwdriver adjustment
- Simple control of cylinder speeds
- High noise level reduction

Sintered Plastic Series



Symbol

Port thread	A	B	Ø C	Order code
G1/8	23	16	7	**9301050901**
G1/4	32	23	9	**9301050902**
G3/8	40	30	10	**9301050903**
G1/2	50	38	12	**9301050904**

Sintered Stainless Steel Series

Symbol

Port thread	Overall length	Ø	A/F	Order code
G1/8	33	16	13,0	**9126900195**
G1/4	36	20	17,0	**9126900196**

Reclassifier - Silencers Metal Series, Repairable and Disposable versions

- Removes oil mist from exhaust airs
- Efficiently silences exhaust air
- Improves working conditions

Operating and additional information

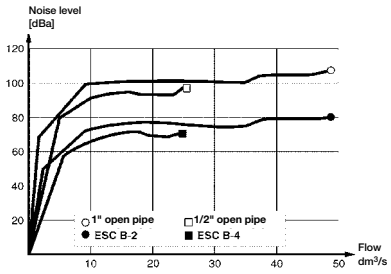
Metal repairable version

Working temperature	0 °C to 66 °C max.
Working pressure	Max 7 bar
Efficiency	Better than 99%
Maximum flow rate	G1/2, G3/4 small unit 27,8 dm³/s G3/4, G1 large unit 50 dm³/s

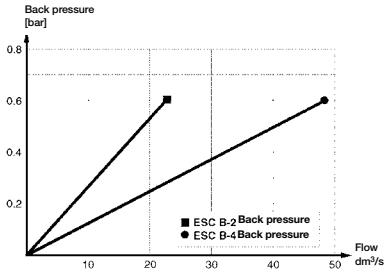
Disposable version

Working temperature	0° C to 52 °C max.
Working pressure	Max 7 bar
Efficiency Better than 99%	
Maximum flow rate	See graph

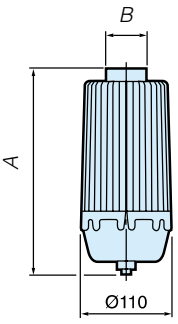
Disposable version
Flow vs. Noise level



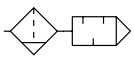
Flow vs. Back pressure



Metal Repairable Series



Symbol



Port thread	Type	A	Ø	A/F B	Weight kg	Order code
G1/2	Small	182	110	50	0,572	**3514S**
G3/4	Small	182	110	50	0,592	**3516S**
G3/4	Large	297	110	55	1,100	**3516**
G1	Large	297	110	55	1,100	**3518**

Replacement Element	Weight kg	Order code
Small	0,200	**3514S-2**
Large	0,200	**3516-2**

Manifold for Metal Repairable version

Number of ports	Weight kg	Order code
5	0,270	**M3516-5**
7	0,432	**M3516-7**
9	0,574	**M3516-9**
13	0,870	**M3516-13**

The manifold is available for G3/4 sizes only.

Fittings, tubing and couplers

LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3101 Male Stud Fitting BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3101 04 19**
4	G1/8	**3101 04 10**
4	G1/4	**3101 04 13**
6	M5 x 0.8	**3101 06 19**
6	G1/8	**3101 06 10**
6	G1/4	**3101 06 13**
6	G3/8	**3101 06 17**
8	G1/8	**3101 08 10**
8	G1/4	**3101 08 13**
8	G3/8	**3101 08 17**
10	G1/4	**3101 10 13**
10	G3/8	**3101 10 17**
10	G1/2	**3101 10 21**
12	G3/8	**3101 12 17**
12	G1/2	**3101 12 21**
14	G3/8	**3101 14 17**
14	G1/2	**3101 14 21**
16	G3/8	**3101 16 17**
16	G1/2	**3101 16 21**

New

3175 Male Stud Fitting BSPT

ØD	C	Order code
4	R1/8	**3175 04 10**
4	R1/4	**3175 04 13**
6	R1/8	**3175 06 10**
6	R1/4	**3175 06 13**
6	R3/8	**3175 06 17**
6	R1/2	**3175 06 21**
8	R1/8	**3175 08 10**
8	R1/4	**3175 08 13**
8	R3/8	**3175 08 17**
10	R1/4	**3175 10 13**
10	R3/8	**3175 10 17**
10	R1/2	**3175 10 21**
12	R3/8	**3175 12 17**
12	R1/2	**3175 12 21**
14	R3/8	**3175 14 17**
14	R1/2	**3175 14 21**
16	R3/8	**3175 16 17**
16	R1/2	**3175 16 21**

New

3114 Female Stud Fitting BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3114 04 19**
4	G1/8	**3114 04 10**
4	G1/4	**3114 04 13**
6	G1/8	**3114 06 10**
6	G1/4	**3114 06 13**
8	G1/8	**3114 08 10**
8	G1/4	**3114 08 13**
10	G1/4	**3114 10 13**
10	G3/8	**3114 10 17**
10	G1/2	**3114 10 21**
12	G3/8	**3114 12 17**
12	G1/2	**3114 12 21**
14	G3/8	**3114 14 17**
16	G1/2	**3114 16 21**

New

3199 Male Stud Elbow, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3199 04 19**
4	G1/8	**3199 04 10**
4	G1/4	**3199 04 13**
6	M5 x 0.8	**3199 06 19**
6	G1/8	**3199 06 10**
6	G1/4	**3199 06 13**
6	G3/8	**3199 06 17**
8	G1/8	**3199 08 10**
8	G1/4	**3199 08 13**
8	G3/8	**3199 08 17**
8	G1/2	**3199 08 21**
10	G1/4	**3199 10 13**
10	G3/8	**3199 10 17**
10	G1/2	**3199 10 21**
12	G1/4	**3199 12 13**
12	G3/8	**3199 12 17**
12	G1/2	**3199 12 21**
14	G3/8	**3199 14 17**
14	G1/2	**3199 14 21**
16	G3/8	**3199 16 17**
16	G1/2	**3199 16 21**

New

3169 Extended Male Stud Elbow, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3169 04 19**
4	G1/8	**3169 04 10**
4	G1/4	**3169 04 13**
6	M5 x 0.8	**3169 06 19**
6	G1/8	**3169 06 10**
6	G1/4	**3169 06 13**
8	G1/8	**3169 08 10**
8	G1/4	**3169 08 13**
8	G3/8	**3169 08 17**
10	G1/4	**3169 10 13**
10	G3/8	**3169 10 17**
10	G1/2	**3169 10 21**
12	G1/4	**3169 12 13**
12	G3/8	**3169 12 17**
12	G1/2	**3169 12 21**
14	G3/8	**3169 14 17**
14	G1/2	**3169 14 21**
16	G3/8	**3169 16 17**
16	G1/2	**3169 16 21**

New

LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3129 Extended Male Stud Elbow, BSPT

ØD	C	Order code
4	R1/8	**3129 04 10**
4	R1/4	**3129 04 13**
6	R1/8	**3129 06 10**
6	R1/4	**3129 06 13**
8	R1/8	**3129 08 10**
8	R1/4	**3129 08 13**
8	R3/8	**3129 08 17**
10	R1/4	**3129 10 13**
10	R3/8	**3129 10 17**
10	R1/2	**3129 10 21**
12	R1/4	**3129 12 13**
12	R3/8	**3129 12 17**
12	R1/2	**3129 12 21**
14	R3/8	**3129 14 17**
14	R1/2	**3129 14 21**

3109 Male Stud Elbow, BSPT

ØD	C	Order code
4	R1/8	**3109 04 10**
4	R1/4	**3109 04 13**
4	R3/8	**3109 04 17**
6	R1/8	**3109 06 10**
6	R1/4	**3109 06 13**
6	R3/8	**3109 06 17**
8	R1/8	**3109 08 10**
8	R1/4	**3109 08 13**
8	R3/8	**3109 08 17**
8	R1/2	**3109 08 21**
10	R1/8	**3109 10 10**
10	R1/4	**3109 10 13**
10	R3/8	**3109 10 17**
10	R1/2	**3109 10 21**
12	R1/4	**3109 12 13**
12	R3/8	**3109 12 17**
12	R1/2	**3109 12 21**
14	R3/8	**3109 14 17**
14	R1/2	**3109 14 21**
16	R3/8	**3109 16 17**
16	R1/2	**3109 16 21**

New

3192 Female Stud Elbow BSPP

ØD	C	Order code
4	G1/8	**3192 04 10**
4	G1/4	**3192 04 13**
6	G1/8	**3192 06 10**
6	G1/4	**3192 06 13**
8	G1/8	**3192 08 10**
8	G1/4	**3192 08 13**
8	G3/8	**3192 08 17**
10	G1/4	**3192 10 13**
10	G3/8	**3192 10 17**
10	G1/2	**3192 10 21**
12	G1/2	**3192 12 21**

3108 Male Stud Branch Tee, BSPT

ØD	C	Order code
4	R1/8	**3108 04 10**
4	R1/4	**3108 04 13**
6	R1/8	**3108 06 10**
6	R1/4	**3108 06 13**
8	R1/8	**3108 08 10**
8	R1/4	**3108 08 13**
8	R3/8	**3108 08 17**
10	R1/4	**3108 10 13**
10	R3/8	**3108 10 17**
10	R1/2	**3108 10 21**
12	R1/4	**3108 12 13**
12	R3/8	**3108 12 17**
12	R1/2	**3108 12 21**
14	R3/8	**3108 14 17**
14	R1/2	**3108 14 21**
16	R3/8	**3108 16 17**
16	R1/2	**3108 16 21**

New

3198 Male Stud Branch Tee BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3198 04 19**
4	G1/8	**3198 04 10**
4	G1/4	**3198 04 13**
6	M5 x 0.8	**3198 06 19**
6	G1/8	**3198 06 10**
6	G1/4	**3198 06 13**
8	G1/8	**3198 08 10**
8	G1/4	**3198 08 13**
8	G3/8	**3198 08 17**
10	G1/4	**3198 10 13**
10	G3/8	**3198 10 17**
10	G1/2	**3198 10 21**
12	G1/4	**3198 12 13**
12	G3/8	**3198 12 17**
12	G1/2	**3198 12 21**
14	G3/8	**3198 14 17**
14	G1/2	**3198 14 21**
16	G3/8	**3198 16 17**
16	G1/2	**3198 16 21**

New

LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3133 45° Male Elbow, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3133 04 19**
4	G1/8	**3133 04 10**
6	M5 x 0.8	**3133 06 19**
6	G1/8	**3133 06 10**
6	G1/4	**3133 06 13**
8	G1/8	**3133 08 10**
8	G1/4	**3133 08 13**
8	G3/8	**3133 08 17**
10	G1/4	**3133 10 13**
10	G3/8	**3133 10 17**
10	G1/2	**3133 10 21**
12	G1/4	**3133 12 13**
12	G3/8	**3133 12 17**
12	G1/2	**3133 12 21**

3113 45° Male Elbow, BSPT

ØD	C	Order code
4	R1/8	**3113 04 10**
6	R1/8	**3113 06 10**
6	R1/4	**3113 06 13**
8	R1/8	**3113 08 10**
8	R1/4	**3113 08 13**
8	R3/8	**3113 08 17**
10	R1/4	**3113 10 13**
10	R3/8	**3113 10 17**
10	R1/2	**3113 10 21**
12	R1/4	**3113 12 13**
12	R3/8	**3113 12 17**
12	R1/2	**3113 12 21**

3193 Male Stud Run Tee, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3193 04 19**
4	G1/8	**3193 04 10**
4	G1/4	**3193 04 13**
6	M5 x 0,8	**3193 06 19**
6	G1/8	**3193 06 10**
6	G1/4	**3193 06 13**
8	G1/8	**3193 08 10**
8	G1/4	**3193 08 13**
8	G3/8	**3193 08 17**
10	G1/4	**3193 10 13**
10	G3/8	**3193 10 17**
10	G1/2	**3193 10 21**
12	G1/4	**3193 12 13**
12	G3/8	**3193 12 17**
12	G1/2	**3193 12 21**
14	G3/8	**3193 14 17**
14	G1/2	**3193 14 21**
16	G3/8	**3193 16 17**
16	G1/2	**3193 16 21**

New

3103 Male Stud Run Tee, BSPT

ØD	C	Order code
4	R1/8	**3103 04 10**
4	R1/4	**3103 04 13**
6	R1/8	**3103 06 10**
6	R1/4	**3103 06 13**
8	R1/8	**3103 08 10**
8	R1/4	**3103 08 13**
8	R3/8	**3103 08 17**
10	R1/4	**3103 10 13**
10	R3/8	**3103 10 17**
10	R1/2	**3103 10 21**
12	R1/4	**3103 12 13**
12	R3/8	**3103 12 17**
12	R1/2	**3103 12 21**
14	R3/8	**3103 14 17**
14	R1/2	**3103 14 21**
16	R3/8	**3103 16 17**
16	R1/2	**3103 16 21**

New

3121 Male Standpipe BSPT

ØD	C	Order code
4	R1/8	**3121 04 10**
4	R1/4	**3121 04 13**
6	R1/8	**3121 06 10**
6	R1/4	**3121 06 13**
8	R1/8	**3121 08 10**
8	R1/4	**3121 08 13**
8	R3/8	**3121 08 17**
10	R1/4	**3121 10 13**
10	R3/8	**3121 10 17**
10	R1/2	**3121 10 21**
12	R3/8	**3121 12 17**
12	R1/2	**3121 12 21**
14	R1/2	**3121 14 21**

3131 Male Standpipe BSPP

ØD	C	Order code
4	M5 x 0.8	**3131 04 19**
4	G1/8	**3131 04 10**
4	G1/4	**3131 04 13**
6	G1/8	**3131 06 10**
6	G1/4	**3131 06 13**
8	G1/8	**3131 08 10**
8	G1/4	**3131 08 13**
8	G3/8	**3131 08 17**
10	G1/4	**3131 10 13**
10	G3/8	**3131 10 17**
10	G1/2	**3131 10 21**
12	G3/8	**3131 12 17**
12	G1/2	**3131 12 21**
14	G3/8	**3131 14 17**
14	G1/2	**3131 14 21**

LF 3000: Polymer Push-In Fittings - Threaded

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3158 “Y” piece, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3158 04 19**
4	G1/8	**3158 04 10**
4	G1/4	**3158 04 13**
6	M5 x 0.8	**3158 06 19**
6	G1/8	**3158 06 10**
6	G1/4	**3158 06 13**
8	G1/8	**3158 08 10**
8	G1/4	**3158 08 13**
8	G3/8	**3158 08 17**
10	G1/4	**3158 10 13**
10	G3/8	**3158 10 17**
10	G1/2	**3158 10 21**
12	G3/8	**3158 12 17**
12	G1/2	**3158 12 21**

3132 Male Double “Y” BSPP

ØD	C	Order code
4	G1/8	**3132 04 10**
4	G1/4	**3132 04 13**
6	G1/8	**3132 06 10**
6	G1/4	**3132 06 13**

3118 Single Banjo, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3118 04 19**
4	G1/8	**3118 04 10**
6	M5 x 0.8	**3118 06 19**
6	G1/8	**3118 06 10**
6	G1/4	**3118 06 13**
8	G1/8	**3118 08 10**
8	G1/4	**3118 08 13**
8	G3/8	**3118 08 17**
10	G1/4	**3118 10 13**
10	G3/8	**3118 10 17**
10	G1/2	**3118 10 21**
12	G3/8	**3118 12 17**
12	G1/2	**3118 12 21**

3149 Double Banjo, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3149 04 19**
4	G1/8	**3149 04 10**
4	G1/4	**3149 04 13**
6	G1/8	**3149 06 10**
6	G1/4	**3149 06 13**
6	G3/8	**3149 06 17**
8	G1/4	**3149 08 13**
8	G3/8	**3149 08 17**
10	G3/8	**3149 10 17**

3119 Double banjo, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3119 04 19**
4	G1/8	**3119 04 10**
6	G1/8	**3119 06 10**
6	G1/4	**3119 06 13**
8	G1/4	**3119 08 13**
8	G3/8	**3119 08 17**
10	G3/8	**3119 10 17**

3124 Single Banjo with Female, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3124 04 19**
4	G1/8	**3124 04 10**
6	G1/4	**3124 06 13**
8	G3/8	**3124 08 17**

3189 Oscillating Compact Elbow, BSPP

ØD	C	Order code
4	G1/8	**3189 04 10**
6	G1/8	**3189 06 10**
6	G1/4	**3189 06 13**
8	G1/8	**3189 08 10**
8	G1/4	**3189 08 13**
8	G3/8	**3189 08 17**
10	G1/4	**3189 10 13**
10	G3/8	**3189 10 17**
12	G1/4	**3189 12 13**
12	G3/8	**3189 12 17**

3391 Self-Sealing Male Stud Fitting, BSPP

ØD	C	Order code
4	G1/8	**3391 04 10**
6	G1/8	**3391 06 10**
8	G1/8	**3391 08 10**
8	G1/4	**3391 08 13**
10	G3/8	**3391 10 17**

LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3102 Equal Elbow

ØD	Order code
4	**3102 04 00**
6	**3102 06 00**
8	**3102 08 00**
10	**3102 10 00**
12	**3102 12 00**
14	**3102 14 00**
New 16	**3102 16 00**

3104 Tee - Equal & Unequal

ØD1	ØD2	Order code
4	4	**3104 04 00**
4	6	**3104 04 06**
6	4	**3104 06 04**
6	6	**3104 06 00**
6	8	**3104 06 08**
8	6	**3104 08 06**
8	8	**3104 08 00**
8	10	**3104 08 10**
10	8	**3104 10 08**
10	10	**3104 10 00**
10	12	**3104 10 12**
12	10	**3104 12 10**
12	12	**3104 12 00**
14	8	**3104 14 08**
14	14	**3104 14 00**
New 16	16	**3104 16 00**
New 16	12	**3104 16 12**

3106 Tube/Tube Connector - Equal & Unequal

ØD1	ØD2	Order code
4	4	**3106 04 00**
4	6	**3106 04 06**
4	8	**3106 04 08**
6	6	**3106 06 00**
6	8	**3106 06 08**
6	10	**3106 06 10**
8	8	**3106 08 00**
8	10	**3106 08 10**
8	12	**3106 08 12**
10	10	**3106 10 00**
10	12	**3106 10 12**
12	12	**3106 12 00**
12	14	**3106 12 14**
14	14	**3106 14 00**
New 16	16	**3106 16 00**
New 16	12	**3106 16 12**

3140 Single “Y” piece - Equal & Unequal

ØD1	ØD2	Order code
4	4	**3140 04 00**
4	6	**3140 04 06**
6	6	**3140 06 00**
6	8	**3140 06 08**
8	8	**3140 08 00**

3144 Multiple “Y” piece -Equal & Unequal

ØD1	ØD2	Order code
4	4	**3144 04 04**
4	6	**3144 04 06**
6	6	**3144 06 06**
6	8	**3144 06 08**

3304 Unequal Multiple Tee

ØD1	ØD2	Order code
6	4	**3304 06 04**
8	4	**3304 08 04**
8	6	**3304 08 06**
10	6	**3304 10 06**
10	8	**3304 10 08**

3306 Unequal Multiple Elbow

ØD1	ØD2	Order code
6	4	**3306 06 04**
8	4	**3306 08 04**
8	6	**3306 08 06**
10	6	**3306 10 06**
10	8	**3306 10 08**

3107 Cross - Equal & Unequal

ØD1	ØD2	Order code
4	4	**3107 04 00**
4	6	**3107 04 06**
6	6	**3107 06 00**
6	8	**3107 06 08**
8	8	**3107 08 00**

LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3310 Manifold with LF3000

ØD1	ØD2	Order code
4	G1/4	**3310 04 13**
6	G1/4	**3310 06 13**
8	G3/8	**3310 08 17**
10	G1/2	**3310 10 21**
12	G1/2	**3310 12 21**

3151 End Cap with Push-In Connection

ØD	Order code
4	**3151 04 00**
6	**3151 06 00**
8	**3151 08 00**
10	**3151 10 00**
12	**3151 12 00**

3116 Equal Bulkhead Connector

ØD	Order code
4	**3116 04 00**
6	**3116 06 00**
8	**3116 08 00**
10	**3116 10 00**
12	**3116 12 00**
14	**3116 14 00**

3136 Female Bulkhead Connector

ØD	C	Order code
4	G1/8	**3136 04 10**
4	G1/4	**3136 04 13**
6	G1/8	**3136 06 10**
6	G1/4	**3136 06 13**
6	G3/8	**3136 06 17**
8	G1/8	**3136 08 10**
8	G1/4	**3136 08 13**
10	G3/8	**3136 10 17**
12	G3/8	**3136 12 17**
12	G1/2	**3136 12 21**
16	G3/8	**3136 16 17**
16	G1/2	**3136 16 21**

New

3139 Equal Bulkhead Elbow

ØD	Order code
4	**3139 04 00**
6	**3139 06 00**
8	**3139 08 00**
10	**3139 10 00**
12	**3139 12 00**
14	**3139 14 00**

3182 Plug-In Equal Compact Elbow

ØD1	ØD2	Order code
4	4	**3182 04 00**
6	6	**3182 06 00**
8	8	**3182 08 00**
10	10	**3182 10 00**
12	12	**3182 12 00**

3188 Plug-In Equal Compact Tee

ØD1	ØD2	Order code
4	4	**3188 04 00**
6	6	**3188 06 00**
8	8	**3188 08 00**
10	10	**3188 10 00**
12	12	**3188 12 00**

3183 Plug-In Equal Run Tee

ØD1	ØD2	Order code
4	4	**3183 04 00**
6	6	**3183 06 00**
8	8	**3183 08 00**
10	10	**3183 10 00**
12	12	**3183 12 00**

3166 Reducer

ØD1	ØD2	Order code
4	6	**3166 04 06**
4	8	**3166 04 08**
4	10	**3166 04 10**
6	8	**3166 06 08**
6	10	**3166 06 10**
6	12	**3166 06 12**
6	14	**3166 06 14**
8	10	**3166 08 10**
8	12	**3166 08 12**
8	14	**3166 08 14**
10	12	**3166 10 12**
10	14	**3166 10 14**
12	14	**3166 12 14**

3168 Increaser

ØD1	ØD2	Order code
6	4	**3168 06 04**
8	6	**3168 08 06**
10	8	**3168 10 08**
12	10	**3168 12 10**

LF 3000: Polymer Push-In Fittings - Union

-20°C to +80°C
20 bar max. (vacuum 755 mmHg)

3126 Blanking Plugs

ØD	Order code
4	**3126 04 00**
6	**3126 06 00**
8	**3126 08 00**
10	**3126 10 00**
12	**3126 12 00**
14	**3126 14 00**
New 16	**3126 16 00**

Clip Strips for Tubes

ØD	Order code
4	**Clip 04 00**
6	**Clip 06 00**
8	**Clip 08 00**
10	**Clip 10 00**
12	**Clip 12 00**
14	**Clip 14 00**

3100 Carstick

ØD	Order code
4	**3100 04 00**
6	**3100 06 00**
8	**3100 08 00**
10	**3100 10 00**
12	**3100 12 00**
14	**3100 14 00**

3379 DIN Rail Connector for 2 tubes in line

ØD	Order code
4	**3379 04 00**
6	**3379 06 00**
8	**3379 08 00**

3381 DIN Rail Connector for 3 Tubes

ØD	Order code
4	**3381 04 00**
6	**3381 06 00**
8	**3381 08 00**

3320 Multi-Connector Male Screw Body

o.d. tube	Number of outlets	Order code
4	2	**3320 04 00 02**
4	4	**3320 04 00 04**
4	7	**3320 04 00 07**
4	12	**3320 04 00 12**
6	2	**3320 06 00 02**
6	4	**3320 06 00 04**
6	7	**3320 06 00 07**
8	2	**3320 08 00 02**

3321 Multi-Connector Female Screw Body

o.d. tube	Number of outlets	Order code
4	2	**3321 04 00 02**
4	4	**3321 04 00 04**
4	7	**3321 04 00 07**
4	12	**3321 04 00 12**
6	4	**3321 06 00 04**
6	7	**3321 06 00 07**
8	2	**3321 08 00 02**

3329 Multi-Connector Screw Cap

Number of outlets	Order code
2	**3329 00 01**
4 - 7	**3329 00 02**
12	**3329 00 03**

Multi-Connector Assembly Photo

Function Fittings: 3 mm Push-In Fittings

-15°C to +70°C
from 18 bar max.

3281 Male Stud Fitting, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3281 03 09**
3	M5x0.8	**3281 03 19**

3202 Equal Elbow

ØD	Order code
3	**3202 03 00**

3299 Compact Male Stud Elbow, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3299 03 09**
3	M5x0.8	**3299 03 19**

3204 Equal Tee

ØD	Order code
3	**3204 03 00**

3229 Extended Male Stud Elbow, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3229 03 09**
3	M5x0.8	**3229 03 19**

3266 4 mm to 3 mm Reducer

ØD	Order code
3	**3266 03 04**

3298 Male Stud Branch Tee, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3298 03 09**
3	M5x0.8	**3298 03 19**

3226 Blanking Plug

ØD	Order code
3	**3226 03 00**

3293 Male Stud Run Tee, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3293 03 09**
3	M5x0.8	**3293 03 19**

3218 Single Banjo, M3 and M5 Thread

ØD	C	Order code
3	M3x0.5	**3218 03 09**
3	M5x0.8	**3218 03 19**

3206 Equal Tube/Tube Connector

ØD	Order code
3	**3206 03 00**

Function Fittings: Flow Control Regulators

0°C to +70°C
from 1 to 10 bar max.

7060 Compact BSPP - exhaust (A)

ØD	C	Order code
4	G1/8	**7060 04 10**
6	G1/8	**7060 06 10**
6	G1/4	**7060 06 13**
8	G1/8	**7060 08 10**
8	G1/4	**7060 08 13**
8	G3/8	**7060 08 17**
10	G1/4	**7060 10 13**
10	G3/8	**7060 10 17**
12	G3/8	**7060 12 17**
12	G1/2	**7060 12 21**

7061 Compact BSPP - supply (B)

ØD	C	Order code
4	G1/8	**7061 04 10**
6	G1/8	**7061 06 10**
6	G1/4	**7061 06 13**
8	G1/8	**7061 08 10**
8	G1/4	**7061 08 13**
8	G3/8	**7061 08 17**
10	G1/4	**7061 10 13**
10	G3/8	**7061 10 17**
12	G1/2	**7061 12 21**

7062 Compact BSPP - bi-directional (C)

ØD	C	Order code
4	G1/8	**7062 04 10**
6	G1/8	**7062 06 10**
6	G1/4	**7062 06 13**
8	G1/8	**7062 08 10**
8	G1/4	**7062 08 13**
8	G3/8	**7062 08 17**

7660 Miniature BSPP & M5 - exhaust (A)

ØD	C	Order code
4	M5 x 0.8	**7660 04 19**
4	G1/8	**7660 04 10**
6	M5 x 0.8	**7660 06 19**
6	G1/8	**7660 06 10**
6	G1/4	**7660 06 13**
8	G1/8	**7660 08 10**
8	G1/4	**7660 08 13**
8	G3/8	**7660 08 17**

7662 Miniature BSPP & M5 - bi-directional (C)

ØD	C	Order code
4	M5 x 0,8	**7662 04 19**
4	G1/8	**7662 04 10**
6	M5 x 0,8	**7662 06 19**
6	G1/8	**7662 06 10**
6	G1/4	**7662 06 13**

7669 Miniature BSPP & M5 - supply (B)

ØD	C	Order code
4	M5 x 0.8	**7669 04 19**
4	G1/8	**7669 04 10**
6	M5 x 0.8	**7669 06 19**
6	G1/8	**7669 06 10**
6	G1/4	**7669 06 13**
8	G1/8	**7669 08 10**
8	G1/4	**7669 08 13**
8	G3/8	**7669 08 17**

7010 Recessed Adjust.Screw, BSPP & M5 - exhaust (A)

ØD	C	Order code
4	M5 x 0.8	**7010 04 19**
4	G1/8	**7010 04 10**
6	M5 x 0.8	**7010 06 19**
6	G1/8	**7010 06 10**
6	G1/4	**7010 06 13**
8	G1/8	**7010 08 10**
8	G1/4	**7010 08 13**
8	G3/8	**7010 08 17**
10	G1/4	**7010 10 13**
10	G3/8	**7010 10 17**
10	G1/2	**7010 10 21**
12	G3/8	**7010 12 17**
12	G1/2	**7010 12 21**

7011 Recessed Adjust.Screw, BSPP & M5 - supply (B)

ØD	C	Order code
4	M5 x 0.8	**7011 04 19**
4	G1/8	**7011 04 10**
6	M5 x 0.8	**7011 06 19**
6	G1/8	**7011 06 10**
6	G1/4	**7011 06 13**
8	G1/8	**7011 08 10**
8	G1/4	**7011 08 13**
8	G3/8	**7011 08 17**
10	G1/4	**7011 10 13**
10	G3/8	**7011 10 17**

7012 Recessed Adjust.Screw, BSPP & M5 - bi-directional (C)

ØD	C	Order code
4	M5 x 0,8	**7012 04 19**
4	G1/8	**7012 04 10**
6	M5 x 0,8	**7012 06 19**
6	G1/8	**7012 06 10**
6	G1/4	**7012 06 13**
8	G1/8	**7012 08 10**
8	G1/4	**7012 08 13**
8	G3/8	**7012 08 17**

Function Fittings: Flow Control Regulators

0°C to +70°C
from 1 to 10 bar max.

7040 Compact Swivel Elbow, BSPP - exhaust (A)

ØD	C	Order code
6	G1/8	**7040 06 10**
6	G1/4	**7040 06 13**
8	G1/8	**7040 08 10**
8	G1/4	**7040 08 13**
8	G3/8	**7040 08 17**
10	G1/4	**7040 10 13**
10	G3/8	**7040 10 17**
12	G3/8	**7040 12 17**
12	G1/2	**7040 12 21**

7041 Compact Swivel Elbow, BSPP - supply (B)

ØD	C	Order code
6	G1/4	**7041 06 13**
8	G1/8	**7041 08 10**
8	G1/4	**7041 08 13**

7640 Miniature BSPP & Metric - exhaust (A)

ØD	C	Order code
4	M5 x 0,8	**7640 04 19**
4	G1/8	**7640 04 10**
6	M5 x 0,8	**7640 06 19**
6	G1/8	**7640 06 10**

7649 Miniature BSPP & Metric - supply (B)

ØD	C	Order code
4	M5 x 0,8	**7649 04 19**
4	G1/8	**7649 04 10**
6	M5 x 0,8	**7649 06 19**
6	G1/8	**7649 06 10**

7770 - In-line with push-in connection, One-Way Adjust (A)

ØD	Order code
4	**7770 04 00**
6	**7770 06 00**
8	**7770 08 00**
10	**7770 10 00**
12	**7770 12 00**

7772 - In-line with push-in connection, Bi-directional (C)

ØD	Order code
4	**7772 04 00**
6	**7772 06 00**
8	**7772 08 00**

7771 In-line with Threaded Connections, BSPP, One-Way Adjust (A)

C	Order code
G1/8	**7771 10 10**
G1/4	**7771 13 13**
G3/8	**7771 17 17**
G1/2	**7771 21 21**

7776 - In-line with push-in connection, One-Way Adjust (A), Panel Mountable

ØD	Order code
4	**7776 04 00**
6	**7776 06 00**
8	**7776 08 00**
10	**7776 10 00**
12	**7776 12 00**

7100 Compact with push-in connection, BSPP - exhaust (A)

ØD	C	Order code
4	G1/8	**7100 04 10**
6	G1/8	**7100 06 10**
6	G1/4	**7100 06 13**
8	G1/8	**7100 08 10**
8	G1/4	**7100 08 13**
8	G3/8	**7100 08 17**
10	G1/4	**7100 10 13**
10	G3/8	**7100 10 17**
12	G3/8	**7100 12 17**
12	G1/2	**7100 12 21**
14	G1/2	**7100 14 21**

7101 Compact with push-in connection, BSPP - supply (B)

ØD	C	Order code
4	G1/8	**7101 04 10**
6	G1/8	**7101 06 10**
6	G1/4	**7101 06 13**
8	G1/8	**7101 08 10**
8	G1/4	**7101 08 13**
8	G3/8	**7101 08 17**

7110 Compact with Threaded Fitting, BSPP - exhaust (A)

C	Order code
G1/8	**7110 10 10**
G1/4	**7110 13 13**
G3/8	**7110 17 17**
G1/2	**7110 21 21**
G1/8	**7111 10 10**
G1/4	**7111 13 13**

Function Fittings: Flow Control Regulators

0°C to +70°C
from 1 to 10 bar max.

7111 Compact with Threaded Fitting, BSPP - supply (B)

C	Order code
G1/8	**7111 10 10**
G1/4	**7111 13 13**

7170 In-line Flow Regulator, BSPP & M5

Body in aluminium

C	Order code
M5	**7170 19 19**
G1/8	**7170 10 10**
G1/4	**7170 13 13**
G3/8	**7170 17 17**
G1/2	**7170 21 21**

7130 Recessed Adjust.Screw, BSPP & M5 - exhaust (A)

ØD	C	Order code
4	G1/8	**7130 04 10**
4	M5 x 0.8	**7130 04 19**
6	G1/8	**7130 06 10**
6	G1/4	**7130 06 13**
6	M5 x 0.8	**7130 06 19**
8	G1/8	**7130 08 10**
8	G1/4	**7130 08 13**
8	G3/8	**7130 08 17**
10	G1/4	**7130 10 13**
10	G3/8	**7130 10 17**
10	G1/2	**7130 10 21**
12	G3/8	**7130 12 17**
12	G1/2	**7130 12 21**

7140 Threaded Recessed Adjust.Screw, BSPP & M5 - exhaust (A)

C	Order code
M5 x 0.8	**7140 19 19**
G1/8	**7140 10 10**
G1/4	**7140 13 13**
G3/8	**7140 17 17**
G1/2	**7140 21 21**

7160 with Universal Brass Compression Fitting, Recessed Adjust. Screw, BSP - exhaust (A)

ØD	C	Order code
4	G1/8	**7160 04 10**
6	G1/8	**7160 06 10**
6	G1/4	**7160 06 13**
8	G1/8	**7160 08 10**
8	G1/4	**7160 08 13**
10	G1/4	**7160 10 13**
10	G3/8	**7160 10 17**
10	G1/2	**7160 10 21**
12	G3/8	**7160 12 17**
12	G1/2	**7160 12 21**

7762 with Universal Brass Compression Fitting, external adjust, BSPP - exhaust (A)

ØD	C	Order code
8	G1/8	**7762 08 10**
10	G1/4	**7762 10 13**
14	G3/8	**7762 14 17**
18	G1/2	**7762 18 21**

Function Fittings: Non-Return Valves

0°C to +70°C
from 1 to 10 bar max.

7996 Non-Return Valve with push-in connection

ØD	Order code
4	**7996 04 00**
6	**7996 06 00**
8	**7996 08 00**
10	**7996 10 00**
12	**7996 12 00**

7994 Non-Return Valve with push-in connection, BSPP & M5 -exhaust (A)

ØD	C	Order code
4	M5 x 0.8	**7994 04 19**
4	G1/8	**7994 04 10**
6	G1/8	**7994 06 10**
6	G1/4	**7994 06 13**
8	G1/8	**7994 08 10**
8	G1/4	**7994 08 13**
10	G3/8	**7994 10 17**
12	G3/8	**7994 12 17**
12	G1/2	**7994 12 21**

7984 Non-Return Valve with push-in connection, BSPP & M5 -supply (B)

ØD	C	Order code
4	M5 x 0,8	**7984 04 19**
4	G1/8	**7984 04 10**
6	G1/8	**7984 06 10**
6	G1/4	**7984 06 13**
8	G1/8	**7984 08 10**
8	G1/4	**7984 08 13**
10	G3/8	**7984 10 17**
12	G3/8	**7984 12 17**
12	G1/2	**7984 12 21**

7930 Adjustable Check Valve, Double Female and BSPP and Metric Thread

ØC	Order code
M5 X 0.8	**7930 19 19**
G1/8	**7930 10 10**
G1/4	**7930 13 13**
G3/8	**7930 17 17**
G1/2	**7930 21 21**

7931 Adjustable Check Valve Supply, Male/Female BSPP Thread

ØC	Order code
G1/8	**7931 10 10**
G1/4	**7931 13 13**
G3/8	**7931 17 17**
G1/2	**7931 21 21**

7932 Adjustable Check Valve Exhaust, Male/Female BSPP Thread

ØC	Order code
G1/8	**7932 10 10**
G1/4	**7932 13 13**
G3/8	**7932 17 17**
G1/2	**7932 21 21**

Function Fittings

from 1 to 10 bar max.

7892 Piloted Non-Return Valve, BSPP

ØD	C	Order code
6	G1/8	**7892 06 10**
6	G1/4	**7892 06 13**
8	G1/8	**7892 08 10**
8	G1/4	**7892 08 13**
8	G3/8	**7892 08 17**
10	G3/8	**7892 10 17**
10	G1/2	**7892 10 21**
12	G1/2	**7892 12 21**

7894 Piloted Non-Return Valve with Flow Regulator and Exhaust, BSPP

ØD	C	Order code
6	G1/8	**7894 06 10**
6	G1/4	**7894 06 13**
8	G1/8	**7894 08 10**
8	G1/4	**7894 08 13**
8	G3/8	**7894 08 17**
10	G3/8	**7894 10 17**
10	G1/2	**7894 10 21**
12	G1/2	**7894 12 21**

7880 Blocking Fitting, Male Thread BSPP, with push-in connection

ØD	C	Order code
6	G1/8	**7880 06 10**
6	G1/4	**7880 06 13**
8	G1/4	**7880 08 13**
8	G3/8	**7880 08 17**
10	G3/8	**7880 10 17**
12	G1/2	**7880 12 21**

7881 Blocking Fitting, Male, Threaded Port, BSPP

C1	C2	Order code
G1/8	G1/4	**7881 13 10**
G1/4	G1/4	**7881 13 13**
G3/8	G3/8	**7881 17 17**
G1/2	G1/2	**7881 21 21**

7883 Blocking Fitting, Male Thread BSPP, with push-in connection & flow regulator

ØD	C	Order code
4	G1/8	**7883 04 10**
6	G1/8	**7883 06 10**
6	G1/4	**7883 06 13**
8	G1/4	**7883 08 13**
8	G3/8	**7883 08 17**

7818 Sensor Fitting with push-in connection, pneumatic, BSPP & M5

C	Order code
M5 x 0,8	**7818 04 19**
G1/8	**7818 04 10**
G1/4	**7818 04 13**
G3/8	**7818 04 17**
G1/2	**7818 04 21**

7818 Sensor Fitting, Threaded Fittings, pneumatic, BSPP & M5

C	Order code
G1/8	**7818 19 10**
G1/4	**7818 19 13**

7828 Sensor Fitting, Pneumatic/Electric BSPP & M5

C	Order code
M5 x 0,8	**7828 00 19**
G1/8	**7828 00 10**
G1/4	**7828 00 13**
G3/8	**7828 00 17**
G1/2	**7828 00 21**

Function Fittings

from 1 to 10 bar max.

7300 Pressure Regulator Fitting with push-in connection, BSPP

ØD	C	Order code
4	G1/8	**7300 04 10**
6	G1/8	**7300 06 10**
6	G1/4	**7300 06 13**
8	G1/8	**7300 08 10**
8	G1/4	**7300 08 13**
8	G3/8	**7300 08 17**
10	G1/4	**7300 10 13**
10	G3/8	**7300 10 17**

7318 Pressure Reducer, with push-in connection, BSPP

ØD	C	Order code
6	G1/8	**7318 06 10**
6	G1/4	**7318 06 13**
8	G1/4	**7318 08 13**
10	G1/4	**7318 10 13**
10	G3/8	**7318 10 17**

7316 Pressure Reducer, In-Line with push-in connection

ØD		Order code
6		**7316 06 00**
8		**7316 08 00**
10		**7316 10 00**

7860 Soft Start Valve with push-in connection, BSPP - for System isolating valve

ØD	C	Order code
8	G1/4	**7860 08 13**
10	G1/4	**7860 10 13**
10	G3/8	**7860 10 17**
12	G3/8	**7860 12 17**
12	G1/2	**7860 12 21**

7870 Soft Start Valve with push-in connection, BSPP - for Control valve

ØD	C	Order code
8	G1/4	**7870 08 13**
10	G1/4	**7870 10 13**
10	G3/8	**7870 10 17**

7861 Soft Start Valve with Threaded Fitting, BSPP - for system isolating valve

	C	Order code
	G1/4	**7861 13 13**
	G3/8	**7861 17 17**
	G1/2	**7861 21 21**

7800 3/2 Manual Switch Operated Valve, with push-in connection BSPP & M5 (supply)

ØD	C	Order code
4	M5 x 0.8	**7800 04 19**
4	G1/8	**7800 04 10**
6	M5 x 0.8	**7800 06 19**
6	G1/8	**7800 06 10**
6	G1/4	**7800 06 13**
8	G1/8	**7800 08 10**
8	G1/4	**7800 08 13**
10	G1/4	**7800 10 13**

7801 3/2 Manual Switch Operated Valve, with push-in connection BSPP & M5 (control)

ØD	C	Order code
4	G1/8	**7801 04 10**
6	G1/8	**7801 06 10**
6	G1/4	**7801 06 13**
8	G1/8	**7801 08 10**
8	G1/4	**7801 08 13**
10	G1/4	**7801 10 13**

7970 Elbow Quick Exhaust Valve, BSPP

	C	Order code
	M5	**7970 19 19**
	G1/8	**7970 10 10**
	G1/4	**7970 13 13**
	G3/8	**7970 17 17**
	G1/2	**7970 21 21**
	G3/4	**7970 27 27**
	G1"	**7970 34 34**

7971 In-Line Quick Exhaust Valve male BSPT, female BSPP

	C	Order code
	G1/8	**7971 10 10**
	G1/4	**7971 13 13**
	G3/8	**7971 17 17**
	G1/2	**7971 21 21**

Universal Compression Fittings

-40°C to +250°C / 550 bar max.
(depending on the tubing material)

0105 Male Stud Coupling, BSPT

ØD	C	Order code
6	R1/8	**0105 06 10**
6	R1/4	**0105 06 13**
8	R1/8	**0105 08 10**
8	R1/4	**0105 08 13**
8	R3/8	**0105 08 17**
10	R1/4	**0105 10 13**
10	R3/8	**0105 10 17**
12	R3/8	**0105 12 17**
12	R1/2	**0105 12 21**
16	R1/4	**0105 16 13**
18	R1/2	**0105 18 21**

0109 Male Stud Elbow, BSPT

ØD	C	Order code
6	R1/8	**0109 06 10**
6	R1/4	**0109 06 13**
8	R1/8	**0109 08 10**
8	R1/4	**0109 08 13**
10	R1/4	**0109 10 13**
10	R3/8	**0109 10 17**
12	R1/4	**0109 12 13**
12	R1/2	**0109 12 21**
16	R1/4	**0109 16 21**

0101 Male Stud Coupling, BSPP and Metric Thread

ØD	C	Order code
6	G1/8	**0101 06 10**
6	G1/4	**0101 06 13**
8	G1/8	**0101 08 10**
8	G1/4	**0101 08 13**
10	G1/4	**0101 10 13**
10	G3/8	**0101 10 17**
12	G3/8	**0101 12 17**
16	G1/2	**0101 16 21**

0118 Single Banjo, BSPP

ØD	C	Order code
6	G1/8	**0118 06 10**
6	G1/4	**0118 06 13**
8	G1/8	**0118 08 10**
8	G1/4	**0118 08 13**
10	G1/4	**0118 10 13**
10	G3/8	**0118 10 17**
12	G3/8	**0118 12 17**
16	G1/2	**0118 16 21**

0106 Equal Straight Coupling

ØD	Order code
4	**0106 04 00**
5	**0106 05 00**
6	**0106 06 00**
8	**0106 08 00**
10	**0106 10 00**
12	**0106 12 00**
14	**0106 14 00**
16	**0106 16 00**
18	**0106 18 00**
22	**0106 22 00**

0104 Equal Tee

ØD	Order code
4	**0104 04 00**
6	**0104 06 00**
8	**0104 08 00**
10	**0104 10 00**
12	**0104 12 00**
14	**0104 14 00**
15	**0104 15 00**
16	**0104 16 00**
18	**0104 18 00**
22	**0104 22 00**

0102 Equal Elbow

ØD	Order code
6	**0102 06 00**
8	**0102 08 00**
10	**0102 10 00**
12	**0102 12 00**
14	**0102 14 00**
15	**0102 15 00**
16	**0102 16 00**
18	**0102 18 00**
20	**0102 20 00**
22	**0102 22 00**

0122 Tailpiece Adaptor for Rubber Hose

ØD1	ØD2	Order code
4	4	**0122 04 04**
5	4	**0122 05 04**
6	4	**0122 06 04**
8	6	**0122 08 06**
10	7	**0122 10 07**
12	10	**0122 12 10**
14	13	**0122 14 13**
15	13	**0122 15 13**
16	13	**0122 16 13**
18	16	**0122 18 16**

0,02 NL/h minimum flow

LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-20°C to +150°C
30 bar max.

3601 Male Stud, BSPP & M5

ØD	C	Order code
4	M5 x 0,8	**3601 04 19**
4	G1/8	**3601 04 10**
4	G1/4	**3601 04 13**
6	M5 x 0.8	**3601 06 19**
6	G1/8	**3601 06 10**
6	G1/4	**3601 06 13**
8	G1/8	**3601 08 10**
8	G1/4	**3601 08 13**
8	G3/8	**3601 08 17**
10	G1/4	**3601 10 13**
10	G3/8	**3601 10 17**
10	G1/2	**3601 10 21**
12	G1/4	**3601 12 13**
12	G3/8	**3601 12 17**
12	G1/2	**3601 12 21**
14	G3/8	**3601 14 17**
14	G1/2	**3601 14 21**

3699 Male Stud Elbow, BSPP & M5

20 bar max.

ØD	C	Order code
4	M5 x 0.8	**3699 04 19**
4	G1/8	**3699 04 10**
4	G1/4	**3699 04 13**
6	G1/8	**3699 06 10**
6	G1/4	**3699 06 13**
8	G1/8	**3699 08 10**
8	G1/4	**3699 08 13**
8	G3/8	**3699 08 17**
10	G1/4	**3699 10 13**
10	G3/8	**3699 10 17**
12	G1/4	**3699 12 13**
12	G3/8	**3699 12 17**
12	G1/2	**3699 12 21**
14	G3/8	**3699 14 17**
14	G1/2	**3699 14 21**

3675 Male Stud, BSPT

ØD	C	Order code
4	R1/8	**3675 04 10**
4	R1/4	**3675 04 13**
6	R1/8	**3675 06 10**
6	R1/4	**3675 06 13**
8	R1/8	**3675 08 10**
8	R1/4	**3675 08 13**
8	R3/8	**3675 08 17**
10	R1/4	**3675 10 13**
10	R3/8	**3675 10 17**
10	R1/2	**3675 10 21**
12	R1/4	**3675 12 13**
12	R3/8	**3675 12 17**
12	R1/2	**3675 12 21**
14	R3/8	**3675 14 17**
14	R1/2	**3675 14 21**

3609 Male Stud Elbow, BSPT

20 bar max.

ØD	C	Order code
4	R1/8	**3609 04 10**
4	R1/4	**3609 04 13**
6	R1/8	**3609 06 10**
6	R1/4	**3609 06 13**
8	R1/8	**3609 08 10**
8	R1/4	**3609 08 13**
8	R3/8	**3609 08 17**
10	R1/4	**3609 10 13**
10	R3/8	**3609 10 17**
12	R1/4	**3609 12 13**
12	R3/8	**3609 12 17**
12	R1/2	**3609 12 21**
14	R3/8	**3609 14 17**
14	R1/2	**3609 14 21**

3614 Female Stud, BSPP & Metric

ØD	C	Order code
4	M5 x 0,8	**3614 04 19**
4	G1/8	**3614 04 10**
4	G1/4	**3614 04 13**
6	G1/8	**3614 06 10**
6	G1/4	**3614 06 13**
8	G1/8	**3614 08 10**
8	G1/4	**3614 08 13**
10	G3/8	**3614 10 17**
12	G3/8	**3614 12 17**
12	G1/2	**3614 12 21**

3669 Extended Male Stud Elbow, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3669 04 19**
4	G1/8	**3669 04 10**
6	G1/8	**3669 06 10**
6	G1/4	**3669 06 13**
8	G1/8	**3669 08 10**
8	G1/4	**3669 08 13**
10	G1/4	**3669 10 13**
10	G3/8	**3669 10 17**
12	G1/4	**3669 12 13**
12	G3/8	**3669 12 17**
14	G1/2	**3669 14 21**

LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-20°C to +150°C
30 bar max.

3698 Male Stud Branch Tee, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3698 04 19**
4	G1/8	**3698 04 10**
6	G1/8	**3698 06 10**
6	G1/4	**3698 06 13**
8	G1/8	**3698 08 10**
8	G1/4	**3698 08 13**
10	G1/4	**3698 10 13**
12	G3/8	**3698 12 17**
14	G1/2	**3698 14 21**

3693 Male Stud Run Tee, BSPP & M5

ØD	C	Order code
4	M5 x 0,8	**3693 04 19**
4	G1/8	**3693 04 10**
6	G1/8	**3693 06 10**
6	G1/4	**3693 06 13**
8	G1/8	**3693 08 10**
8	G1/4	**3693 08 13**
10	G1/4	**3693 10 13**
12	G3/8	**3693 12 17**
14	G1/2	**3693 14 21**

3618 Single Banjo, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3618 04 19**
4	G1/8	**3618 04 10**
6	M5 x 0.8	**3618 06 19**
6	G1/8	**3618 06 10**
6	G1/4	**3618 06 13**
8	G1/8	**3618 08 10**
8	G1/4	**3618 08 13**
10	G3/8	**3618 10 17**

3602 Equal Elbow

ØD	Order code
4	**3602 04 00**
6	**3602 06 00**
8	**3602 08 00**
10	**3602 10 00**
12	**3602 12 00**
14	**3602 14 00**

3604 Equal Tee

ØD	Order code
4	**3604 04 00**
6	**3604 06 00**
8	**3604 08 00**
10	**3604 10 00**
12	**3604 12 00**
14	**3604 14 00**

3606 Equal Tube to Tube Connector

ØD	Order code
4	**3606 04 00**
6	**3606 06 00**
8	**3606 08 00**
10	**3606 10 00**
12	**3606 12 00**
14	**3606 14 00**

3616 Equal Bulkhead Connector

ØD	Order code
4	**3616 04 00**
6	**3616 06 00**
8	**3616 08 00**
10	**3616 10 00**
12	**3616 12 00**
14	**3616 14 00**

3636 Female Bulkhead Connector, BSPP

ØD	C	Order code
4	G1/8	**3636 04 10**
6	G1/8	**3636 06 10**
6	G1/4	**3636 06 13**
8	G1/8	**3636 08 10**
8	G1/4	**3636 08 13**
10	G3/8	**3636 10 17**
12	G3/8	**3636 12 17**
12	G1/2	**3636 12 21**

3639 Equal Bulkhead Elbow

ØD	Order code
4	**3639 04 00**
6	**3639 06 00**
8	**3639 08 00**
10	**3639 10 00**
12	**3639 12 00**
14	**3639 14 00**

LF 3600: Chemical Nickel-Plated Brass Push-In Fittings

-20°C to +150°C
30 bar max.

3666 Plug-In Reducer

ØD1	ØD2	Order code
4	6	**3666 04 06**
4	8	**3666 04 08**
6	8	**3666 06 08**
6	10	**3666 06 10**
6	12	**3666 06 12**
8	10	**3666 08 10**
8	12	**3666 08 12**
8	14	**3666 08 14**
10	12	**3666 10 12**
10	14	**3666 10 14**
12	14	**3666 12 14**

3668 Plug-In Increaser

ØD1	ØD2	Order code
6	4	**3668 06 04**

3626 Blanking Plug

ØD	Order code
4	**3626 04 00**
6	**3626 06 00**
8	**3626 08 00**
10	**3626 10 00**
12	**3626 12 00**
14	**3626 14 00**

Pneumatic Accessories in Nickel-Plated Brass

-10°C to +80°C
60 bar max.

0900 Straight Male, Unequal Adaptor, BSPT

C1	C2	Order code
R1/8	R1/8	**0900 00 10**
R1/4	R1/4	**0900 00 13**
R3/8	R3/8	**0900 00 17**
R1/2	R1/2	**0900 00 21**
R3/4	R3/4	**0900 00 27**
R1"	R1"	**0900 00 34**
R1/8	R1/4	**0900 10 13**
R1/8	R3/8	**0900 10 17**
R1/4	R3/8	**0900 13 17**
R1/4	R1/2	**0900 13 21**
R3/8	R1/2	**0900 17 21**
R1/2	R3/4	**0900 21 27**
R3/4	R1"	**0900 27 34**

0901 Equal/Unequal Adaptor, BSPP & M5

C1	C2	Order code
M5 x 0,8	M5 x 0,8	**0901 00 19**
M5 x 0,8	G1/8	**0901 19 10**

0902 Staight Female, Equal/Unequal Adaptor, BSPP & M5

C1	C2	Order code
M5 x 0.8	G1/8	**0902 19 10**
M5 x 0.8	M5 x 0.8	**0902 00 19**
G1/8	G1/8	**0902 00 10**
G1/4	G1/4	**0902 00 13**
G3/8	G3/8	**0902 00 17**
G1/2	G1/2	**0902 00 21**
G3/4	G3/4	**0902 00 27**
G1/8	G1/4	**0902 10 13**
G1/4	G3/8	**0902 13 17**

0904 Reducer Male BSPT to Female BSPP

C1	C2	Order code
R1/4	G1/8	**0904 10 13**
R3/8	G1/8	**0904 10 17**
R3/8	G1/4	**0904 13 17**
R1/2	G1/4	**0904 13 21**
R1/2	G3/8	**0904 17 21**
R3/4	G3/8	**0904 17 27**
R3/4	G1/2	**0904 21 27**

0905 Reducer Male to Female BSPP & M5

C1	C2	Order code
G1/8	M5 x 0.8	**0905 19 10**
G1/4	G1/8	**0905 10 13**
G3/8	G1/8	**0905 10 17**
G3/8	G1/4	**0905 13 17**
G1/2	G1/4	**0905 13 21**
G1/2	G3/8	**0905 17 21**
G3/4	G3/8	**0905 17 27**
G3/4	G1/2	**0905 21 27**

0906 Increaser Male to Female BSPP & M5

C1	C2	Order code
M5 x 0,8	G1/8	**0906 10 19**
G1/8	G1/4	**0906 10 13**
G1/8	G3/8	**0906 10 17**
G1/4	G3/8	**0906 13 17**
G1/4	G1/2	**0906 13 21**
G3/8	G1/2	**0906 17 21**

0907 Female Extended Adaptor Male/Female BSPP

C	Order code
G1/8	**0907 00 10**
G1/4	**0907 00 13**

0912 Equal Female Stud Elbow, BSPP & M5

C	Order code
M5 x 0.8	**0912 00 19**
G1/8	**0912 00 10**
G1/4	**0912 00 13**
G3/8	**0912 00 17**
G1/2	**0912 00 21**
G3/4	**0912 00 27**

0913 Equal Female Stud Elbow BSPP, Male BSPT

C1	C2	Order code
G1/8	R1/8	**0913 00 10**
G1/4	R1/4	**0913 00 13**
G3/8	R3/8	**0913 00 17**
G1/2	R1/2	**0913 00 21**
G3/4	R3/4	**0913 00 27**

Pneumatic Accessories in Nickel-Plated Brass

-10°C to +80°C
60 bar max.*

0914 Equal Male Stud Elbow, BSPT

C	Order code
R1/8	**0914 00 10**
R1/4	**0914 00 13**
R3/8	**0914 00 17**
R1/2	**0914 00 21**
R3/4	**0914 00 27**

0915 Equal Female Tee, BSPP & M5

C	Order code
M5 x 0.8	**0915 00 19**
G1/8	**0915 00 10**
G1/4	**0915 00 13**
G3/8	**0915 00 17**
G1/2	**0915 00 21**
G3/4	**0915 00 27**

0916 Male Stud Branch Tee, BSPP & Male BSPT — Female

C1	C2	Order code
G1/8	R1/8	**0916 00 10**
G1/4	R1/4	**0916 00 13**
G3/8	R3/8	**0916 00 17**
G1/2	R1/2	**0916 00 21**
G3/4	R3/4	**0916 00 27**

0908 Equal Female Cross, BSPP

C	Order code
G1/8	**0908 00 10**
G1/4	**0908 00 13**
G3/8	**0908 00 17**
G1/2	**0908 00 21**

0909 Equal Cross, Female BSPP, Male BSPT

C1	C2	Order code
G1/8	R1/8	**0909 00 10**
G1/4	R1/4	**0909 00 13**
G3/8	R3/8	**0909 00 17**
G1/2	R1/2	**0909 00 21**

0920 Female Bulkhead Connector - BSPP & M5

C1	C2	Order code
M5 x 0.8	M10 x 1	**0920 00 19**
G1/8	M16 x 1.5	**0920 00 10**
G1/4	M20 x 1.5	**0920 00 13**
G3/8	M26 x 1.5	**0920 00 17**
G1/2	M28 x 1.5	**0920 00 21**

0931 Tailpiece Adaptor for Rubber Hose, Male BSPP

ØD	C	Order code
6	G1/8	**0931 06 10**
6	G1/4	**0931 06 13**
7	G1/8	**0931 07 10**
7	G1/4	**0931 07 13**
7	G3/8	**0931 07 17**
8	G1/8	**0931 08 10**
8	G1/4	**0931 08 13**
8	G3/8	**0931 08 17**
10	G1/4	**0931 10 13**
10	G3/8	**0931 10 17**
10	G1/2	**0931 10 21**
15	G3/8	**0931 15 17**
15	G1/2	**0931 15 21**
18	G1/2	**0931 18 21**

0919 Internal Hexagon Head Plug , BSPP & M5

C	Order code
M5 x 0,8	**0919 00 19**
G1/8	**0919 00 10**
G1/4	**0919 00 13**
G3/8	**0919 00 17**
G1/2	**0919 00 21**
G3/4	**0919 00 27**
G1"	**0919 00 34**

0220 Brass Hexagon Headed Plug, BSPP & M5

C	Order code
M5 x 0,8	**0220 19 00**
G1/8	**0220 10 00**
G1/4	**0220 13 00**
G3/8	**0220 17 00**
G1/2	**0220 21 00**

0138 Sealing Copper Washers

ØD	C	Order code
10	G1/8	**0138 10 00**
13	G1/4	**0138 13 00**
17	G3/8	**0138 17 00**
21	G1/2	**0138 21 00**
27	G3/4	**0138 27 00**
33	G1"	**0138 33 00**

* Technical specifications of nickel-plated brass accessories

Pneumatic Accessories

Technical specifications of aluminium anodised manifolds

-10°C to +80°C
20 bar max.

0670 Threaded Silencer, BSPP

-20° to +150°C
12 bar

C	Order code
G1/8	**0670 00 10**
G1/4	**0670 00 13**
G3/8	**0670 00 17**
G1/2	**0670 00 21**
G3/4	**0670 00 27**

0673 Threaded Silencer, Male BSPP & M5

-20° to +150°C
12 bar

C	Order code
M5 x 0.8	**0673 00 19**
G1/8	**0673 00 10**
G1/4	**0673 00 13**
G3/8	**0673 00 17**
G1/2	**0673 00 21**

0672 Flow-Control Silencer, Male BSPP

-20° to +150°C
12 bar

C	Order code
G1/8	**0672 00 10**
G1/4	**0672 00 13**
G3/8	**0672 00 17**
G1/2	**0672 00 21**

0674 Threaded Silencer, Male BSPP & M5

-10° to +80°C
10 bar

C	Order code
M5 x 0.8	**0674 00 19**
G1/8	**0674 00 10**
G1/4	**0674 00 13**
G3/8	**0674 00 17**
G1/2	**0674 00 21**
G3/4	**0674 00 27**

0677 Silencer, Miniature, BSPP

-20° to +150°C
12 bar

C	Order code
G1/8	**0677 00 10**
G1/4	**0677 00 13**
G3/8	**0677 00 17**
G1/2	**0677 00 21**
G3/4	**0677 00 27**
G1"	**0677 00 34**

0605 Fluoropolymer Tape

	Order code
	0605 12 12

-250° to +260°C

3311 Female Manifold BSPP & M5

C1	C2	Number of Outlets	Order code
G1/8	M5 x 0.8	7	**3311 19 10 07**
G1/4	G1/8	2	**3311 10 13 02**
G1/4	G1/8	3	**3311 10 13 03**
G1/4	G1/8	4	**3311 10 13 04**
G1/4	G1/8	5	**3311 10 13 05**
G1/4	G1/8	6	**3311 10 13 06**
G3/8	G1/4	2	**3311 13 17 02**
G3/8	G1/4	3	**3311 13 17 03**
G3/8	G1/4	4	**3311 13 17 04**
G3/8	G1/4	5	**3311 13 17 05**
G3/8	G1/4	6	**3311 13 17 06**

3313 Double Female Manifold BSPP

C1	C2	Number of Outlets	Order code
G1/4	G1/8	2	**3313101302**
G1/4	G1/8	3	**3313101303**
G1/4	G1/8	4	**3313101304**
G1/4	G1/8	5	**3313101305**
G3/8	G1/4	2	**3313131702**
G3/8	G1/4	3	**3313131703**
G3/8	G1/4	4	**3313131704**
G3/8	G1/4	5	**3313131705**
G1/2	G1/4	3	**3313132103**
G1/2	G1/4	4	**3313132104**
G1/2	G1/4	5	**3313132105**

3312 Female Cross Manifold BSPP & M5

C	Order code
M5 x 0.8	**3312 00 19**
G1/8	**3312 00 10**
G1/4	**3312 00 13**
G3/8	**3312 00 17**
G1/2	**3312 00 21**

LF 3800: Stainless Steel Push-In Fittings

-20°C to +120°C
30 bar max.

3805 Male Stud, BSPT & M5

ØD	C	Order code
4	M5 x 0.8	**3805 04 19**
4	R1/8	**3805 04 10**
4	R1/4	**3805 04 13**
6	R1/8	**3805 06 10**
6	R1/4	**3805 06 13**
8	R1/8	**3805 08 10**
8	R1/4	**3805 08 13**
8	R3/8	**3805 08 17**
10	R1/4	**3805 10 13**
10	R3/8	**3805 10 17**
12	R1/4	**3805 12 13**
12	R3/8	**3805 12 17**
12	R1/2	**3805 12 21**

3801 Male Stud, BSPP & M5

ØD	C	Order code
4	M5 x 0.8	**3801 04 19**
4	G1/8	**3801 04 10**
6	M5 x 0.8	**3801 06 19**
6	G1/8	**3801 06 10**
6	G1/4	**3801 06 13**
8	G1/8	**3801 08 10**
8	G1/4	**3801 08 13**
8	G3/8	**3801 08 17**
10	G1/4	**3801 10 13**
10	G3/8	**3801 10 17**
12	G1/4	**3801 12 13**
14	G3/8	**3801 12 17**

3879 Male Stud Elbow, BSPP

20 bar max.

ØD	C	Order code
4	G1/8	**3879 04 10**
4	G1/4	**3879 04 13**
6	G1/8	**3879 06 10**
6	G1/4	**3879 06 13**
8	G1/8	**3879 08 10**
8	G1/4	**3879 08 13**
8	G3/8	**3879 08 17**
10	G1/4	**3879 10 13**
10	G3/8	**3879 10 17**
12	G1/4	**3879 12 13**
12	G3/8	**3879 12 17**
12	G1/2	**3879 12 21**

3816 Equal Bulkhead Union

IP51

ØD	Order code
4	**3816 04 00**
6	**3816 06 00**
8	**3816 08 00**
10	**3816 10 00**
12	**3816 12 00**

3889 Male Stud Elbow, BSPT

20 bar max.

ØD	C	Order code
4	R1/8	**3889 04 10**
4	R1/4	**3889 04 13**
6	R1/8	**3889 06 10**
6	R1/4	**3889 06 13**
8	R1/8	**3889 08 10**
8	R1/4	**3889 08 13**
8	R3/8	**3889 08 17**
10	R1/4	**3889 10 13**
10	R3/8	**3889 10 17**
12	R1/4	**3889 12 13**
12	R3/8	**3889 12 17**
12	R1/2	**3889 12 21**

3802 Equal Elbow

ØD	Order code
4	**3802 04 00**
6	**3802 06 00**
8	**3802 08 00**
10	**3802 10 00**
12	**3802 12 00**

3804 Equal Tee

ØD	Order code
4	**3804 04 00**
6	**3804 06 00**
8	**3804 08 00**
10	**3804 10 00**
12	**3804 12 00**

3806 Equal Straight Union

ØD	Order code
4	**3806 04 00**
6	**3806 06 00**
8	**3806 08 00**
10	**3806 10 00**
12	**3806 12 00**

3866 Plug-In Reducer

ØD1

ØD2

ØD1	ØD2	Order code
4	6	**3866 04 06**
4	8	**3866 04 08**
6	8	**3866 06 08**
6	10	**3866 06 10**
8	10	**3866 08 10**
8	12	**3866 08 12**
10	12	**3866 10 12**

Stainless Steel Function Fittings

7810 Flow Regulator, threaded, BSPP - exhaust (A)

0° to +70°C
1 to 10 bar

C1	Order code
M5 x 0.8	**7810 19 19**
G1/8	**7810 10 10**
G1/4	**7810 13 13**
G3/8	**7810 17 17**
G1/2	**7810 21 21**

7812 Flow Regulator, threaded, BSPP - bi-directional (C)

0° to +70°C
1 to 10 bar

C1	Order code
M5 x 0.8	**7812 19 19**
G1/8	**7812 10 10**
G1/4	**7812 13 13**
G3/8	**7812 17 17**
G1/2	**7812 21 21**

7820 Flow Regulator, In-line, threaded connections BSPP, one way adjust (A)

-15° to +120°C
1 to 16 bar

C	(DN)	Order code
G1/8	7	**7820 00 10**
G1/4	7	**7820 00 13**
G3/8	9	**7820 00 17**
G1/2	12	**7820 00 21**

7822 Flow Regulator, In-line, threaded connections BSPP, bi-directional (C)

-15° to +120°C
1 to 40 bar

C	(DN)	Order code
G1/8	7	**7822 00 10**
G1/4	7	**7822 00 13**
G3/8	9	**7822 00 17**
G1/2	12	**7822 00 21**

4890 Non-Return Valve, Female-Female, BSPP

-20° to +180°C
0,5 to 40 bar

C	(DN)	Order code
G1/8	10	**4890 10 10**
G1/4	10	**4890 13 13**
G3/8	15	**4890 17 17**
G1/2	15	**4890 21 21**
G3/4	20	**4890 27 27**
G1"	25	**4890 34 34**

7899 Quick Exhaust Valve, Double Female, BSPP

-10° to +120°C (1/8,1/4)
-20° to +80°C (3/8,1")
2 to 10 bar

C	(DN)	Order code
G1/8	7	**7899 00 10**
G1/4	7	**7899 00 13**
G3/8	9	**7899 00 17**
G1/2	12	**7899 00 21**
G3/4	18	**7899 00 27**
G1"	18	**7899 00 34**

0682 Threaded Silencer, Male BSPP

-20° to +180°C
12 bar max.

C	Order code
G1/8	**0682 00 10**
G1/4	**0682 00 13**
G3/8	**0682 00 17**
G1/2	**0682 00 21**
G3/4	**0682 00 27**

Stainless Steel Accessories

-20°C to +180°C
150 bar max.

1843 Equal Elbow, Female BSPP

C	Order code
G1/8	**1843 10 10**
G1/4	**1843 13 13**
G3/8	**1843 17 17**
G1/2	**1843 21 21**

1844 Equal Male Stud Elbow, BSPT, female BSPP

C1	C2	Order code
G1/8	R1/8	**1844 10 10**
G1/4	R1/4	**1844 13 13**
G3/8	R3/8	**1844 17 17**
G1/2	R1/2	**1844 21 21**

1845 Equal Tee, Triple Female, BSPP

C	Order code
G1/8	**1845 10 10**
G1/4	**1845 13 13**
G3/8	**1845 17 17**
G1/2	**1845 21 21**

1855 Double Female Sleeve, BSPP

C	Order code
G1/8	**1855 10 10**
G1/4	**1855 13 13**
G3/8	**1855 17 17**
G1/2	**1855 21 21**

1817 Bulkhead Adaptor, BSPP

C	Order code
G1/8	**1817 00 10**
G1/4	**1817 00 13**
G3/8	**1817 00 17**
G1/2	**1817 00 21**

1864 Male NPT to Female BSPP Adaptor

C1	C2	Order code
1/8	G1/8	**1864 11 10**
1/4	G1/4	**1864 14 13**
3/8	G3/8	**1864 18 17**
1/2	G1/2	**1864 22 21**

1867 Male BSPT to Female NPT Adaptor

C1	C2	Order code
R1/8	1/8	**1867 10 11**
R1/4	1/4	**1867 13 14**
R3/8	3/8	**1867 17 18**
R1/2	1/2	**1867 21 22**

1863 Reducer BSPT to Female BSPP

C1	C2	Order code
R1/4	G1/8	**1863 13 10**
R3/8	G1/8	**1863 17 10**
R3/8	G1/4	**1863 17 13**
R1/2	1/4	**1863 21 13**
R1/2	3/8	**1863 21 17**

1823 Tailpiece Adaptor for Rubber Hose, Male BSPT

ØD	C	Order code
7	R1/8	**1823 07 10**
7	R1/4	**1823 07 13**
10	R1/4	**1823 10 13**
10	R3/8	**1823 10 17**
13	R3/8	**1823 13 17**
16	R1/2	**1823 16 21**

0285 Plug, Internal Hexagon Headed, BSPT

C	Order code
R1/8	**0285 10 00**
R1/4	**0285 13 00**
R3/8	**0285 17 00**
R1/2	**0285 21 00**
R3/4	**0285 27 00**

Pneumatic Tubing

-40°C to +100°C
50 bar max.

1025P Semi-Rigid Polyamide Tubing, 25 m Rolls

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code
4	2.7	30	**1025P04 00 27**
4	2.7	30	**1025P04 01 27**
4	2.7	30	**1025P04 02 27**
4	2.7	30	**1025P04 03 27**
4	2.7	30	**1025P04 04 27**
4	2.7	30	**1025P04 05 27**
4	2.7	30	**1025P04 06 27**
6	4	35	**1025P06 00**
6	4	35	**1025P06 01**
6	4	35	**1025P06 02**
6	4	35	**1025P06 03**
6	4	35	**1025P06 04**
6	4	35	**1025P06 05**
6	4	35	**1025P06 06**
8	6	55	**1025P08 00**
8	6	55	**1025P08 01**
8	6	55	**1025P08 02**
8	6	55	**1025P08 03**
8	6	55	**1025P08 04**
8	6	55	**1025P08 05**
8	6	55	**1025P08 06**
10	7.5	75	**1025P10 00 75**
10	7.5	75	**1025P10 01 75**
10	7.5	75	**1025P10 04 75**
12	9	75	**1025P12 00 09**
12	9	75	**1025P12 01 09**
12	9	75	**1025P12 04 09**
14	11	100	**1025P14 00 11**
14	11	100	**1025P14 01 11**
14	11	100	**1025P14 04 11**

2005P-2010P Semi-rigid Polyamide, 500m & 1000m Reels

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code
4	2.7	30	**2010P04 00 27**
4	2.7	30	**2010P04 01 27**
4	2.7	30	**2010P04 04 27**
6	4	35	**2010P06 00**
6	4	35	**2010P06 01**
6	4	35	**2010P06 04**
8	6	55	**2005P08 00**
8	6	55	**2005P08 01**
8	6	55	**2005P08 04**
10	8	90	**2005P10 00**
10	8	90	**2005P10 01**
10	8	90	**2005P10 04**

1010P Multitube Semi-Rigid Polyamide

o.d. PVC sheath mm mm	o.d. x i.d. semi rigid nylon	R minimum bend radius at 20°C mm	Number of tubes	Order code
13.5	4 x 2.7	35	4	**1010P04 00M04**
16	4 x 2.7	45	7	**1010P04 00M07**
18.5	6 x 4	55	4	**1010P06 00M04**
22	6 x 4	60	7	**1010P06 00M07**
19.2	8 x 6	45	2	**1010P08 00M2**

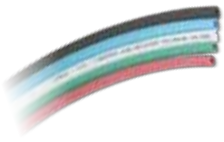
1100P Semi-Rigid Polyamide Tubing,100 m Rolls

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code
4	2.7	30	**1100P04 00 27**
4	2.7	30	**1100P04 01 27**
4	2.7	30	**1100P04 02 27**
4	2.7	30	**1100P04 03 27**
4	2.7	30	**1100P04 04 27**
4	2.7	30	**1100P04 05 27**
4	2.7	30	**1100P04 06 27**
6	4	35	**1100P06 00**
6	4	35	**1100P06 01**
6	4	35	**1100P06 02**
6	4	35	**1100P06 03**
6	4	35	**1100P06 04**
6	4	35	**1100P06 05**
6	4	35	**1100P06 06**
8	6	55	**1100P08 00**
8	6	55	**1100P08 01**
8	6	55	**1100P08 02**
8	6	55	**1100P08 03**
8	6	55	**1100P08 04**
8	6	55	**1100P08 05**
8	6	55	**1100P08 06**
10	7.5	75	**1100P10 00 75**
10	7.5	75	**1100P10 01 75**
10	7.5	75	**1100P10 04 75**
12	9	75	**1100P12 00 09**
12	9	75	**1100P12 01 09**
12	9	75	**1100P12 04 09**
14	12	100	**1100P14 00**
14	12	100	**1100P14 01**
14	12	100	**1100P14 04**

Pneumatic Tubing

-40°C to +100°C
50 bar max. (vacuum 755mHg)

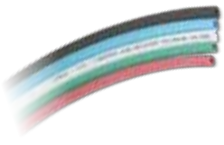
Fireproof High Resistant Polyamide Tubing



New

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code	
Length: 25 m				
4	2	17	**1025P04R00**	
4	2	17	**1025P04R01**	
4	2	17	**1025P04R02**	
4	2	17	**1025P04R03**	
4	2	17	**1025P04R04**	
6	4	29	**1025P06R00**	
6	4	29	**1025P06R01**	
6	4	29	**1025P06R02**	
6	4	29	**1025P06R03**	
6	4	29	**1025P06R04**	
8	6	40	**1025P08R00**	
8	6	40	**1025P08R01**	
8	6	40	**1025P08R02**	
8	6	40	**1025P08R03**	
8	6	40	**1025P08R04**	
10	8	77	**1025P10R00**	
10	8	77	**1025P10R01**	
10	8	77	**1025P10R02**	
10	8	77	**1025P10R03**	
10	8	77	**1025P10R04**	

Fireproof High Resistant Polyamide Tubing



New

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code	
Length: 100 m				
4	2	17	**1100P04R00**	
4	2	17	**1100P04R01**	
4	2	17	**1100P04R02**	
4	2	17	**1100P04R03**	
4	2	17	**1100P04R04**	
6	4	29	**1100P06R00**	
6	4	29	**1100P06R01**	
6	4	29	**1100P06R02**	
6	4	29	**1100P06R03**	
6	4	29	**1100P06R04**	
8	6	40	**1100P08R00**	
8	6	40	**1100P08R01**	
8	6	40	**1100P08R02**	
8	6	40	**1100P08R03**	
8	6	40	**1100P08R04**	
10	8	77	**1100P10R00**	
10	8	77	**1100P10R01**	
10	8	77	**1100P10R02**	
10	8	77	**1100P10R03**	
10	8	77	**1100P10R04**	
Length: 500 m				
8	6	40	**2005P08R00**	
8	6	40	**2005P08R01**	
8	6	40	**2005P08R02**	
8	6	40	**2005P08R03**	
8	6	40	**2005P08R04**	
10	8	77	**2005P10R00**	
10	8	77	**2005P10R01**	
10	8	77	**2005P10R02**	
10	8	77	**2005P10R03**	
10	8	77	**2005P10R04**	
Length: 1000 m				
4	2	17	**2010P04R00**	
4	2	17	**2010P04R01**	
4	2	17	**2010P04R02**	
4	2	17	**2010P04R03**	
4	2	17	**2010P04R04**	
6	4	29	**2010P06R00**	
6	4	29	**2010P06R01**	
6	4	29	**2010P06R02**	
6	4	29	**2010P06R03**	
6	4	29	**2010P06R04**	

Pneumatic Tubing

-20°C to +70°C
9 bar max.

1025U Anti-Spark Single Layer Polyurethane Tubing, 25 m Rolls

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at 20°C in mm	Order code
4	2.5	10	**1025U04K01**
6	4	15	**1025U06K01**
8	5.5	20	**1025U08K01**
10	7	25	**1025U10K01**
12	8	35	**1025U12K01**

2003U-2005U-2010U Polyurethane Tubing, 300m, 500m & 1000m Reels

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyester	Polyether	Order code
4	2.7	30		**2010U04 01**
4	2.7	30		**2010U04 04**
6	4	35		**2010U06 01**
6	4	35		**2010U06 04**
8	6		55	**2005U08R08**
8	6	55		**2005U08 01**
8	6	55		**2005U08 04**
10	8		90	**2005U10R08**
10	8	90		**2005U10 01**
10	8	90		**2005U10 04**

1025U Flexible Polyurethane Tubing, 25 m Rolls

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyester	Polyether	Order code
4	2.5	10		**1025U04 01**
4	2.5	10		**1025U04 02**
4	2.5	10		**1025U04 03**
4	2.5	10		**1025U04 04**
4	2.5	10		**1025U04 05**
4	2.5	10		**1025U04 06**
4	2.5		10	**1025U04R08**
6	4	15		**1025U06 01**
6	4	15		**1025U06 02**
6	4	15		**1025U06 03**
6	4	15		**1025U06 04**
6	4	15		**1025U06 05**
6	4	15		**1025U06 06**
6	4		20	**1025U06R08**
8	5.5	20		**1025U08 01**
8	5.5	20		**1025U08 02**
8	5.5	20		**1025U08 03**
8	5.5	20		**1025U08 04**
8	5.5	20		**1025U08 05**
8	5.5	20		**1025U08 06**
8	5.5		25	**1025U08 R08**
10	7	25		**1025U10 01**
10	7	25		**1025U10 04**
10	7		35	**1025U10 R08**
12	8	35		**1025U12 01**
12	8	35		**1025U12 04**
12	8		40	**1025U12R08**
14	9.5	45		**1025U14 01 95**
14	9.5	45		**1025U14 04 95**
14	9.5		50	**1025U14R08 95**

1100U Flexible Polyurethane Tubing, 100m Rolls

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyester	Polyether	Order code
4	2.5	10		**1100U04 01**
4	2.5	10		**1100U04 02**
4	2.5	10		**1100U04 03**
4	2.5	10		**1100U04 04**
4	2.5	10		**1100U04 05**
4	2.5	10		**1100U04 06**
4	2.5		10	**1100U04R08**
6	4	15		**1100U06 01**
6	4	15		**1100U06 02**
6	4	15		**1100U06 03**
6	4	15		**1100U06 04**
6	4	15		**1100U06 05**
6	4	15		**1100U06 06**
6	4		20	**1100U06R08**
8	5.5	20		**1100U08 01**
8	5.5	20		**1100U08 02**
8	5.5	20		**1100U08 03**
8	5.5	20		**1100U08 04**
8	5.5	20		**1100U08 05**
8	5.5	20		**1100U08 06**
8	5.5		25	**1100U08R08**
10	7	25		**1100U10 01**
10	7	25		**1100U10 04**
10	7		35	**1100U10R08**
12	8	35		**1100U12 01**
12	8	35		**1100U12 04**
12	8		40	**1100U12R08**
14	9.5	45		**1100U14 01 95**
14	9.5	45		**1100U14 04 95**
14	9.5		50	**1100U14R08 95**

Pneumatic Tubing

-40°C to +95°C
16 bar max.

1100U Anti-Static Polyurethane Tubing

Resistivity: 10^3 to 10^6 Ω

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at 20°C in mm	Order code
4	2.5	10	**1100U04A01**
6	4	15	**1100U06A01**
8	5.5	25	**1100U08A01**
10	7	35	**1100U10A01**
12	8	45	**1100U12A01**

1420U Flexible Polyurethane Twin Tubing

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at 20°C in mm	Order code
4	2.5	10	**1420U04 11**
4	2.5	10	**1420U04 44**
4	2.5	10	**1420U04 41**
6	4	15	**1420U06 11**
6	4	15	**1420U06 44**
6	4	15	**1420U06 41**
8	5.5	20	**1420U08 11**
8	5.5	20	**1420U08 44**
8	5.5	20	**1420U08 41**

1015Y..F Advanced Polyethylene (APE) Tubing

Drum 150 m

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
4	2.5	16	**1015Y04F00**
4	2.5	16	**1015Y04F01**
4	2.5	16	**1015Y04F02**
4	2.5	16	**1015Y04F03**
4	2.5	16	**1015Y04F04**
4	2.5	16	**1015Y04F05**
4	2.5	16	**1015Y04F10**
6	4	32	**1015Y06F00**
6	4	32	**1015Y06F01**
6	4	32	**1015Y06F02**
6	4	32	**1015Y06F03**
6	4	32	**1015Y06F04**
6	4	32	**1015Y06F05**
6	4	32	**1015Y06F10**
8	5.75	40	**1015Y08F00**
8	5.75	40	**1015Y08F01**
8	5.75	40	**1015Y08F02**
8	5.75	40	**1015Y08F03**
8	5.75	40	**1015Y08F04**
8	5.75	40	**1015Y08F05**
8	5.75	40	**1015Y08F10**
10	7	40	**1015Y10F00**
10	7	40	**1015Y10F01**
10	7	40	**1015Y10F02**
10	7	40	**1015Y10F03**
10	7	40	**1015Y10F04**
10	7	40	**1015Y10F05**
10	7	40	**1015Y10F10**

1030Y..F Advanced Polyethylene (APE) Tubing

Drum 300 m

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
4	2.5	16	**1030Y04F00**
4	2.5	16	**1030Y04F01**
4	2.5	16	**1030Y04F02**
4	2.5	16	**1030Y04F03**
4	2.5	16	**1030Y04F04**
4	2.5	16	**1030Y04F05**
4	2.5	16	**1030Y04F10**
6	4	32	**1030Y06F00**
6	4	32	**1030Y06F01**
6	4	32	**1030Y06F02**
6	4	32	**1030Y06F03**
6	4	32	**1030Y06F04**
6	4	32	**1030Y06F05**
6	4	32	**1030Y06F10**

1075Y..F Advanced Polyethylene (APE) Tubing

Drum 75 m

o.d. tubing mm	i.d. tubing mm	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
12	9	55	**1075Y12F00**
12	9	55	**1075Y12F01**
12	9	55	**1075Y12F02**
12	9	55	**1075Y12F03**
12	9	55	**1075Y12F04**
12	9	55	**1075Y12F05**
12	9	55	**1075Y12F10**

1096Y..F Advanced Polyethylene (APE) Tubing

Drum 250 m

o.d. tubing inch	i.d. tubing inch	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
1/2	0.375	1.96	**1096Y62F00**
1/2	0.375	1.96	**1096Y62F01**
1/2	0.375	1.96	**1096Y62F02**
1/2	0.375	1.96	**1096Y62F03**
1/2	0.375	1.96	**1096Y62F04**
1/2	0.375	1.96	**1096Y62F05**
1/2	0.375	1.96	**1096Y62F10**

1098Y..F Advanced Polyethylene (APE) Tubing

Drum 500 m

o.d. tubing inch	i.d. tubing inch	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
1/4	0.170	0.78	**1098Y56F00**
1/4	0.170	0.78	**1098Y56F01**
1/4	0.170	0.78	**1098Y56F02**
1/4	0.170	0.78	**1098Y56F03**
1/4	0.170	0.78	**1098Y56F04**
1/4	0.170	0.78	**1098Y56F05**
1/4	0.170	0.78	**1098Y56F10**
3/8	0.250	1.18	**1098Y60F00**
3/8	0.250	1.18	**1098Y60F01**
3/8	0.250	1.18	**1098Y60F02**
3/8	0.250	1.18	**1098Y60F03**
3/8	0.250	1.18	**1098Y60F04**
3/8	0.250	1.18	**1098Y60F05**
3/8	0.250	1.18	**1098Y60F10**

1099Y..F Advanced Polyethylene (APE) Tubing

Drum 1000 m

o.d. tubing inch	i.d. tubing inch	Minimum bend radius for tube at ambient temp. in mm Polyethylene	Order code
1/4	0.170	0.78	**1099Y56F00**
1/4	0.170	0.78	**1099Y56F01**
1/4	0.170	0.78	**1099Y56F02**
1/4	0.170	0.78	**1099Y56F03**
1/4	0.170	0.78	**1099Y56F04**
1/4	0.170	0.78	**1099Y56F05**
1/4	0.170	0.78	**1099Y56F10**

Pneumatic Tubing

PFA Tubing

New

-196°C to +260°C
36 bar max. (vacuum 755mHg)

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code	
Length: 10 m				
4	2	12	**1010T04P00**	
4	2	12	**1010T04A01**	
4	2	12	**1010T04P12**	
4	2	12	**1010T04P13**	
4	2	12	**1010T04P14**	
6	4	34	**1010T06P00**	
6	4	34	**1010T06A01**	
6	4	34	**1010T06P12**	
6	4	34	**1010T06P13**	
6	4	34	**1010T06P14**	
8	6	60	**1010T08P00**	
8	6	60	**1010T08A01**	
8	6	60	**1010T08P12**	
8	6	60	**1010T08P13**	
8	6	60	**1010T08P14**	
10	8	95	**1010T10P00**	
10	8	95	**1010T10A01**	
10	8	95	**1010T10P12**	
10	8	95	**1010T10P13**	
10	8	95	**1010T10P14**	
12	9	120	**1010T12P00**	
12	9	120	**1010T12A01**	
12	9	120	**1010T12P12**	
12	9	120	**1010T12P13**	
12	9	120	**1010T12P14**	
Length: 50 m				
4	2	12	**1050T04P00**	
4	2	12	**1050T04A01**	
4	2	12	**1050T04P12**	
4	2	12	**1050T04P13**	
4	2	12	**1050T04P14**	
6	4	34	**1050T06P00**	
6	4	34	**1050T06A01**	
6	4	34	**1050T06P12**	
6	4	34	**1050T06P13**	
6	4	34	**1050T06P14**	
8	6	60	**1050T08P00**	
8	6	60	**1050T08A01**	
8	6	60	**1050T08P12**	
8	6	60	**1050T08P13**	
8	6	60	**1050T08P14**	
10	8	95	**1050T10P00**	
10	8	95	**1050T10A01**	
10	8	95	**1050T10P12**	
10	8	95	**1050T10P13**	
10	8	95	**1050T10P14**	
12	9	120	**1050T12P00**	
12	9	120	**1050T12A01**	
12	9	120	**1050T12P12**	
12	9	120	**1050T12P13**	
12	9	120	**1050T12P14**	

PFA Tubing

New

Length: 100 m				
4	2	12	**1100T04P00**	
4	2	12	**1100T04A01**	
4	2	12	**1100T04P12**	
4	2	12	**1100T04P13**	
4	2	12	**1100T04P14**	
6	4	34	**1100T06P00**	
6	4	34	**1100T06A01**	
6	4	34	**1100T06P12**	
6	4	34	**1100T06P13**	
6	4	34	**1100T06P14**	
8	6	60	**1100T08P00**	
8	6	60	**1100T08A01**	
8	6	60	**1100T08P12**	
8	6	60	**1100T08P13**	
8	6	60	**1100T08P14**	
10	8	95	**1100T10P00**	
10	8	95	**1100T10A01**	
10	8	95	**1100T10P12**	
10	8	95	**1100T10P13**	
10	8	95	**1100T10P14**	
12	9	120	**1100T12P00**	
12	9	120	**1100T12A01**	
12	9	120	**1100T12P12**	
12	9	120	**1100T12P13**	
12	9	120	**1100T12P14**	

Pneumatic Tubing

-20°C to +70°C
9 bar max.

1005T Fluoropolymer FEP 140 Tubing, 5m Rolls

-40°C to +150°C
37 bars max.

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code
4	2.5	40	**1005T04 00 25**
6	4	50	**1005T06 00**
8	6	70	**1005T08 00**
10	8	120	**1005T10 00**
12	10	180	**1005T12 00**

1025T Fluoropolymer FEP 140 Tubing, 25m Rolls

-40°C to +150°C
37 bar max.

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at ambient temp. in mm	Order code
4	2.5	40	**1025T04 00 25**
6	4	50	**1025T06 00**
8	6	70	**1025T08 00**
10	8	120	**1025T10 00**
12	10	180	**1025T12 00**

1460U Polyurethane Recoil Tubing, without connectors, 2 m long

o.d. tubing mm	i.d. tubing mm	Order code
8	5	**1460U08 04**
10	7	**1460U10 04**
12	8	**1460U12 04**

1461U Polyurethane Recoil Tubing, without connectors, 4 m long

o.d. tubing mm	i.d. tubing mm	Order code
8	5	**1461U08 04**
10	7	**1461U10 04**
12	8	**1461U12 04**

1462U Polyurethane Recoil Tubing, without connectors, 6 m long

o.d. tubing mm	i.d. tubing mm	Order code
8	5	**1462U08 04**
10	7	**1462U10 04**
12	8	**1462U12 04**

0694 Instant Fitting, with protection spring, BSPP

ØD	C	Order code
8	G1/4	**0694 08 13**
10	G1/4	**0694 10 13**
12	G3/8	**0694 12 17**

1470U Polyurethane Recoil Tubing, 2 m long, with Threaded Stem BSPT Thread

o.d. tubing mm	i.d. tubing mm	BSPT thread	Order code
8	5	R1/4	**1470U08 03 13**
8	5	R1/4	**1470U08 04 13**
8	5	R1/4	**1470U08 05 13**

1471U Polyurethane Recoil Tubing, 4 m long, with Threaded Stem BSPT Thread

o.d. tubing mm	i.d. tubing mm	BSPT thread	Order code
8	5	R1/4	**1471U08 03 13**
8	5	R1/4	**1471U08 04 13**
8	5	R1/4	**1471U08 05 13**

1472U Polyurethane Recoil Tubing, 6 m long, with Threaded Stem BSPT Thread

o.d. tubing mm	i.d. tubing mm	BSPT thread	Order code
8	5	R1/4	**1472U08 03 13**
8	5	R1/4	**1472U08 04 13**
8	5	R1/4	**1472U08 05 13**

Pneumatic Tubing

1040H Self-Fastening Hose, in 40m rolls

-20°C to +100°C
16 bar max.

DN	i.d. tubing mm	R minimum bend radius at 20°C (mm)	Order code	
6	6.3	60	**1040H56 02**	
6	6.3	60	**1040H56 03**	
8	9.5	70	**1040H60 02**	
8	9.5	70	**1040H60 03**	
12	12.7	120	**1040H62 02**	
12	12.7	120	**1040H62 03**	
16	15.9	140	**1040H66 02**	
16	15.9	140	**1040H66 03**	
20	19.1	170	**1040H69 02**	
20	19.1	170	**1040H69 03**	

1080H Self-Fastening Hose, in 80m rolls

-20°C to +100°C
16 bars max.

DN	i.d. tubing mm	R minimum bend radius at 20°C (mm)	Order code	
16	15.9	140	**1080H66 02**	
16	15.9	140	**1080H66 03**	
20	19.1	170	**1080H69 02**	
20	19.1	170	**1080H69 03**	

1100H Self-Fastening Hose, in 100m rolls

-20°C to +100°C
16 bar max.

DN	i.d. tubing mm	R minimum bend radius at 20°C (mm)	Order code	
6	6.3	60	**1100H56 02**	
6	6.3	60	**1100H56 03**	
8	9.5	70	**1100H60 02**	
8	9.5	70	**1100H60 03**	
12	12.7	120	**1100H62 02**	
12	12.7	120	**1100H62 03**	

1025V Braided PVC Hose, 25 m Rolls

0° to +70°C
15 bar

o.d. tubing mm	i.d. tubing mm	R minimum bend radius for tube at 20°C in mm	Order code
8	4	10	**1025V08 00 04**
11	6	12	**1025V11 00 06**
13	7	14	**1025V13 00 07**
14	8	16	**1025V14 00 08**
16	10	25	**1025V16 00 10**
18	12	30	**1025V18 00 12**
23	15	40	**1025V23 00 15**
26	19	60	**1025V26 00 19**

3000 Tube Cutter

Order code
3000 71 00

3000 71 11 Tube Cutter

Order code
3000 71 11

Clip Strips for Tubes

ØD	Order code
4	**CLIP 04 00**
6	**CLIP 06 00**
8	**CLIP 08 00**
10	**CLIP 10 00**
12	**CLIP 12 00**
14	**CLIP 14 00**

Safety Couplers & Probes
Passage 5,5mm - ISO B6 profile

-20°C to +60°C
16 bar max.
ISO 4414

9405U Male Body, BSPP

C	Order code
R1/4	**9405U06 13**
R3/4	**9405U06 17**
R1/2	**9405U06 21**

9414U Female Body, BSPP

C	Order code
G1/4	**9414U06 13**
G3/8	**9414U06 17**
G1/2	**9414U06 21**

9421U with Hosetail

ØD	Order code
6	**9421U06 06**
8	**9421U06 08**
10	**9421U06 10**

9416U Female Body, Panel Mountable, BSPP

C	Order code
G1/4	**9416U06 13**

9410U with LF3000 Outlet & Protection Spring

ØD	Order code
8	**9410U06 08**
10	**9410U06 10**

9440U Female Y Body, BSPP

C	Order code
G3/8	**9440U06 17**

9087U Male Thread, BSPP

C	Order code
G1/4	**9087U06 13**
G1/8	**9087U06 17**
G1/2	**9087U06 21**

9086 Female Thread, BSPP

C	Order code
G1/4	**9086 23 13**
G3/8	**9086 23 17**
G1/2	**9086 23 21**

9094U with Hosetail

ØD	Order code
6	**9094U06 06**
8	**9094U06 08**
10	**9094U06 10**

9080U with LF3000 Outlet & Protection Spring

ØD	Order code
8	**9080U06 08**
10	**9080U06 10**

Safety Couplers & Probes
Passage 8mm - ISO B8 profile

-20°C to +60°C
16 bar max.
ISO 4414

9405U Male Body, BSPT

C	Order code
G1/4	**9405U08 13**
G3/4	**9405U08 17**
G1/2	**9405U08 21**

9414U Female Body, BSPP

C	Order code
G1/4	**9414U08 13**
G3/4	**9414U08 17**
G1/2	**9414U08 21**

9421U with Hosetail

ØD	Order code
8	**9421U08 08**
10	**9421U08 10**
13	**9421U08 13**

9416U Female Body, Panel Mountable, BSPP

C	Order code
G3/8	**9416U08 17**

9410U with LF3000 Outlet & Protection Spring

ØD	Order code
10	**9410U08 10**
12	**9410U08 12**

9440U Female Y Body, BSPP

C	Order code
G1/2	**9440U08 21**

9087U Male Thread, BSPP

C	Order code
G1/4	**9087U08 13**
G3/8	**9087U08 17**
G1/2	**9087U08 21**

9086 Female Thread, BSPP

C	Order code
G1/4	**9086 30 13**
G3/8	**9086 30 17**
G1/2	**9086 30 21**

9094U with Hosetail

ØD	Order code
8	**9094U08 08**
10	**9094U08 10**
13	**9094U08 13**

9080U with LF3000 Outlet & Protection Spring

ØD	Order code
10	**9080U08 10**
12	**9080U08 12**

Safety Couplers & Probes
Passage 7,2mm - EURO Interchange

-20°C to +60°C
16 bar max.
ISO 4414

9401E Male Body, BSPP

C	Order code
G1/4	**9401E07 13**
G3/8	**9401E07 17**
G1/2	**9401E07 21**

9087E Male Thread, BSPP

C	Order code
G1/4	**9087E07 13**
G3/8	**9087E07 17**
G1/2	**9087E07 21**

9414E Female Body, BSPP

C	Order code
G1/4	**9414E07 13**
G3/8	**9414E07 17**
G1/2	**9414E07 21**

9086 Female Thread, BSPP

C	Order code
G1/4	**9086 25 13**
G3/8	**9086 25 17**
G1/2	**9086 25 21**

9421E with Hosetail

ØD	Order code
8	**9421E07 08**
10	**9421E07 10**
13	**9421E07 13**

9094E with Hosetail

ØD	Order code
8	**9094E07 08**
10	**9094E07 10**
13	**9094E07 13**

9416E Female Body, Panel Mountable, BSPP

C	Order code
G3/8	**9416E07 17**

9080E with LF3000 Outlet & Protection Spring

ØD	Order code
10	**9080E07 10**
12	**9080E07 12**

9410E with LF3000 Outlet & Protection Spring

ØD	Order code
10	**9410E07 10**
12	**9410E07 12**

9440E Female Y Body, BSPP

C	Order code
G1/2	**9440E07 21**

Safety Couplers & Probes
Passage 5,5mm - ARO Interchange

-20°C to +60°C
16 bar max.
ISO 4414

9401A Male Body, BSPP

C	Order code
G1/4	**9401A06 13**
G3/8	**9401A06 17**
G1/2	**9401A06 21**

9087A Male Thread, BSPP

C	Order code
G1/4	**9087A06 13**
G3/8	**9087A06 17**
G1/2	**9087A06 21**

9414A Female Body, BSPP

C	Order code
G1/4	**9414A06 13**
G3/8	**9414A06 17**
G1/2	**9414A06 21**

9086 Female Thread, BSPP

C	Order code
G1/4	**9086 22 13**
G3/8	**9086 22 17**
G1/2	**9086 22 21**

9421A with Hosetail

ØD	Order code
6	**9421A06 06**
8	**9421A06 08**
10	**9421A06 10**

9094A with Hosetail

ØD	Order code
6	**9094A06 06**
8	**9094A06 08**
10	**9094A06 10**

9416A Female Body, Panel Mountable, BSPP

C	Order code
G1/4	**9416A 06 13**

9080A with LF3000 Outlet & Protection Spring

ØD	Order code
8	**9080A06 08**
10	**9080A06 10**

9410A with LF3000 Outlet & Protection Spring

ØD	Order code
8	**9410A06 08**
10	**9410A06 10**

9440A Female Y Body, BSPP

C	Order code
G3/8	**9440A06 17**

Blowguns & Nozzles

-15°C to +50°C
10 bar max.
OSHA & CE

0653 Flow Reducer «Energy Saving» Blowgun, lower connection

C	Order code
G1/4	**0653 66 13**

0659 Standard Blowgun, with angled nozzle, BSPP

C	Order code
G1/4	**0659 00 13**

0656 Progressive Control, lower connection, BSPP

C	Order code
G1/4	**0656 66 13**

0652 Progressive Control, lower connection, BSPP

C	Order code
G1/4	**0652 66 13**

0654 Safety Blowgun, with angled nozzle, BSPP

C	Order code
G1/4	**0654 00 13**

0657 Progressive Control, upper connection, BSPP

C	Order code
G1/4	**0657 66 13**

0655 Progressive Control, upper connection, BSPP

C	Order code
G1/4	**0655 66 13**

0690 Standard Nozzle

ØD	C	Order code
2.5	M12 x 1,25	**0690 01 00**

0690 Long Straight Tube Nozzle

ØD	C	Order code
2.5	M12 x 1,25	**0690 03 00**

0690 Air Screen Nozzle

ØD	C	Order code
2	M12 x 1,25	**0690 09 00**

0623 Lever Operated Air Gun with Removable Nozzle

ØD	C	Order code
2	G1/4	**0623 10 35**

0690 Long-Angled Tube Nozzle

ØD	C	Order code
2.5	M12 x 1,25	**0690 05 00**

0690 Coenda Effect Nozzle

	C	Order code
	M12 x 1,25	**0690 08 00**

0690 Booster Nozzle

ØD	C	Order code
2.5	M12 x 1,25	**0690 10 00**

Blowgun Kits

Includes:
- A blowgun
- Recoil tubing (4 m long), external Ø 8 mm
- G1/4" male thread connector adapted to coupler

Kits are packaged in individual plastic bags.

0631 00 01
Safety Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 01**

0631 00 07
Interchangeable Nozzle Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 07**

0631 00 08
Flow Reducer «Energy Saving» Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 08**

0631 00 05
Angled Nozzle Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 05**

0631 00 03
Short Nozzle Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 03**

0631 00 09
Standard Blowgun Kit, lower connection

C	Order code
G1/4	**0631 00 09**

Pneumatic Ball Valves & Action Valves

7913 Mini Ball Valves, 3/2 version, with vent, with push-in connection

ØD	Order code
4	**7913 04 00**
6	**7913 06 00**
8	**7913 08 00**
10	**7913 10 00**
12	**7913 12 00**

7914 Mini Ball Valves 3/2 version, with vent, with BSPP thread & push-in connection

ØD	C	Order code
6	G1/8	**7914 06 10**
8	G1/4	**7914 08 13**
10	G3/8	**7914 10 17**
12	G1/2	**7914 12 21**

7910 Mini Ball Valves, 2/2 version, with push-in connection

ØD	Order code
4	**7910 04 00**
6	**7910 06 00**
8	**7910 08 00**
10	**7910 10 00**
12	**7910 12 00**

7911 Mini Ball Valves, 2/2 Version with BSPP thread & push-in connection

ØD	C	Order code
6	G1/8	**7911 06 10**
8	G1/4	**7911 08 13**
10	G3/8	**7911 10 17**
12	G1/2	**7911 12 21**

0492 Double Female

-20° to +80°C
12 bar

C	DN	Order code
G1/4	4	**0492 04 13**
G1/4	4	**0492 04 13 64**
G3/8	7	**0492 07 17**
G1/2	10	**0492 10 21**
G3/4	13	**0492 13 27**

0491 Male & Female, BSPP

-20° to +80°C
12 bar

C	DN	Order code
G1/4	4	**0491 04 13**
G1/4	4	**0491 04 13 64**
G3/8	7	**0491 07 17**
G1/2	10	**0491 10 21**
G3/4	13	**0491 13 27**

0402 Standard In-Line Ball Valve - Double Female, BSPP

-20° to +80°C
40 bar

C	DN	Order code
G1/8	4	**0402 04 10**
G1/8	7	**0402 07 10**
G1/4	7	**0402 07 13**
G3/4	10	**0402 10 17**
G1/2	13	**0402 13 21**
G3/4	20	**0402 20 27**
G1"	23	**0402 23 34**

0401 Standard In-Line Ball Valve, Male Female BSPP

-20° to +80°C
40 bar

ØD	C	Order code
4	G1/8	**0401 04 10**
7	G1/4	**0401 07 13**
10	G3/8	**0401 10 17**
13	G1/2	**0401 13 21**
18	G3/4	**0401 18 27**
23	G1"	**0401 23 34**

4902 In-Line Ball Valves, Fluoropolymer Series, BSPP

-20° to +130°C
30 bar

C	DN	PN	Order code
G1/4	10	30	**4902 10 13**
G3/8	10	30	**4902 10 17**
G1/2	15	30	**4902 15 21**
G3/4	20	30	**4902 20 27**
G2.1/2	25	30	**4902 25 34**
G2.1/2	32	25	**4902 32 42**
G2.1/2	40	25	**4902 40 49**
G2.1/2	50	25	**4902 50 48**
G2.1/2	65	25	**4902 65 47**
G3"	80	25	**4902 80 46**
G4"	100	25	**4902 01 45**

Pneumatic Ball Valves & Action Valves

0439 Lockable Ball Valves, Double Female with vent, BSPP

-20° to +80°C
40 bar

ØD	C	Order code
4	G1/8	**0439 04 10**
7	G1/4	**0439 07 13**
10	G3/8	**0439 10 17**
13	G1/2	**0439 13 21**
18	G3/4	**0439 18 27**
23	G1"	**0439 23 34**

0448 Panel Moutable Female, BSPP, right angle porting

-20° to +80°C
40 bar

ØD	C	Order code
4	G1/8	**0448 04 10**
6	G1/4	**0448 06 13**
9	G3/8	**0448 09 17**
12	G1/2	**0448 12 21**

0438 Female, 3 port 2 way Lockable Ball Valve, BSPP

-20° to +80°C
40 bar

ØD	C	Order code
9	G3/8	**0438 09 17**
12	G1/2	**0438 12 21**
18	G3/4	**0438 18 27**
23	G1"	**0438 23 34**

0489 In-Line Vented Ball Valves, BSPP, with threaded exhaust

-20° to +80°C
40 bar

ØD	C	Order code
7	G1/4	**0489 07 13**
10	G3/8	**0489 10 17**
13	G1/2	**0489 13 21**
18	G3/4	**0489 18 27**
23	G1"	**0489 23 34**

0449 In-Line Vented Ball Valves, BSPP, panel mountable

-20° to +80°C
40 bar

ØD	C	Order code
7	G1/4	**0449 07 13**
10	G3/8	**0449 10 17**
13	G1/2	**0449 13 21**

0469 Double Female Vented Ball Valves BSPP

-20° to +80°C
40 bar

ØD	C	Order code
4	G1/8	**0469 04 10**
7	G1/4	**0469 07 13**
10	G3/8	**0469 10 17**
13	G1/2	**0469 13 21**
18	G3/4	**0469 18 27**
23	G1"	**0469 23 34**

4810 Ball Valve, Double Female BSPP

C	DN	PN	Order code
G1/4	8	64	**4810 08 13**
G3/8	10	64	**4810 10 17**
G1/2	15	64	**4810 15 21**
G3/4	20	40	**4810 20 27**
G1"	25	40	**4810 25 34**

The Ball Valves, Universal Series, can be adapted to various applications in semi-standard versions.

Axial Valves

4202 Axial Valve, normally closed, double female, BSPP, FKM Seal

-20° to +135°C
10 bar

C	DN	Order code
G3/8	10	**4202 10 17 20**
G1/2	15	**4202 15 21 20**
G3/4	20	**4202 20 27 20**
G1"	25	**4202 25 34 20**
G1"1/4	32	**4202 32 42 20**
G1"1/2	40	**4202 40 49 20**
G2"	50	**4202 50 48 20**

4212 Axial Valve, normally open, double female, BSPP, FKM Seal

-20° to +135°C
8 bar

C	DN	Order code
G3/8	10	**4212 10 17 20**
G1/2	15	**4212 15 21 20**
G3/4	20	**4212 20 27 20**
G1"	25	**4212 25 34 20**
G1"1/4	32	**4212 32 42 20**
G1"1/2	40	**4212 40 49 20**
G2"	50	**4212 50 48 20**

4222 Axial Valve, double acting, double female, BSPP, FKM Seal

-20° to +135°C
10 bar

ØD	C	Order code
10	G3/8	**4222 10 17 20**
15	G1/2	**4222 15 21 20**
20	G3/4	**4222 20 27 20**
25	G1"	**4222 25 34 20**
32	G1.1/4"	**4222 32 42 20**
40	G1.1/2"	**4222 40 49 20**
50	G2"	**4222 50 48 20**

4298 Mini-Solenoid Valve, 1W/ 1,2VA

Voltage		Order code
24V	⎓	**4298 01 01**
24V	∿	**4298 01 02**
110V	∿	**4298 02 01**
220V	∿	**4298 02 02**

4298 Namur Sub-Base for Solenoid Pilot Valve

C	Order code
M5 x 0.8	**4298 00 01**

0669 Sleeve Valve, Double Female, BSPP & M5

C	DN	Order code
M5 x 0.8	2	**0669 02 19**
G1/8	4	**0669 04 10**
G1/4	7	**0669 07 13**
G3/8	10	**0669 10 17**
G1/2	14	**0669 14 21**
G3/4	19	**0669 19 27**

- Use with plastic or metal tubing
- Positive hold by a flexible grab ring
- Ready to use fitting
- Plastic push button
- Taper thread fittings for general use
- Parallel thread fittings for use with plastic bodied valves
- Other versions available, refer to CD

Ordering information

Prestolok fittings are sold in packs. The package quantities are indicated adjacent to the part numbers.
When ordering, order by the quantity required.
For example : to obtain 20 Prestolok 2 Equal Union 4mm Tees, purchase order should state:-

Qty 20 EPB4

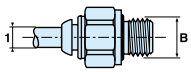
Note
Orders received for Prestolok fittings in quantities other than pack quantity multiples will be rounded up to the nearest multiple

Operating information

	Prestolok Micro
Working pressure	0,01 to 16 bar
Working temperature	-25 °C to +80 °C
	Prestolok 2
Working pressure	0,01 to 25 bar
Working temperature	-25 °C to +70 °C
	Prestolok
Working pressure	0,01 to 25 bar
Working temperature	-25 °C to +100 °C

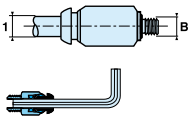
For more information see www.parker.com/euro_pneumatic

Male straight connectors - Parallel thread



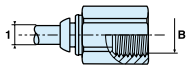
Tube Ø1	Thread B	Order code	Box Qty
4	M5x,0,8	**F8PMB4M5**	30
6	M5x,0,8	**F8PMB6M5**	20
4	1/8	**F4PMB4-1/8**	20
4	1/4	**F4PMB4-1/4**	20
6	1/8	**F4PMB6-1/8**	30
6	1/4	**F4PMB6-1/4**	30
8	1/8	**F4PB8-1/8**	40
8	1/4	**F4PB8-1/4**	30
8	3/8	**F4PB8-3/8**	20
10	1/4	**F4PB10-1/4**	20
10	3/8	**F4PB10-3/8**	20
10	1/2	**F4PB10-1/2**	10
12	1/4	**F4PB12-1/4**	10
12	3/8	**F4PB12-3/8**	10
12	1/2	**F4PB12-1/2**	10
14	3/8	**F4PB14-3/8**	10
14	1/2	**F4PB14-1/2**	10

Male straight connectors



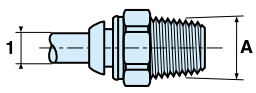
Tube Ø1	Thread B	Order code	Box Qty
4	M5x,0,8	**F28PMB4M5**	30
6	M5x,0,8	**F28PMB6M5**	20

Female connectors



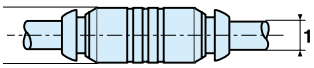
Tube Ø1	Thread B	Order code	Box Qty
4	M5x0,8	**G8PMB4M5**	10
4	1/8	**G4PMB4-1/8**	20
4	1/4	**G4PMB4-1/4**	10
6	1/8	**G4PMB6-1/8**	20
6	1/4	**G4PMB6-1/4**	10
8	1/8	**G4PB8-1/8**	10
8	1/4	**G4PB8-1/4**	10

Male Connector - BSPT



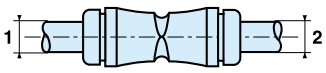
Tube Ø1	Thread A	Order code	Box Qty
4	1/8	**F3PMB4-1/8**	40
4	1/4	**F3PMB4-1/4**	30
6	1/8	**F3PMB6-1/8**	40
6	1/4	**F3PMB6-1/4**	40
8	1/8	**F3PB8-1/8**	40
8	1/4	**F3PB8-1/4**	40
8	3/8	**F3PB8-3/8**	30
10	1/4	**F3PB10-1/4**	20
10	3/8	**F3PB10-3/8**	20
10	1/2	**F3PB10-1/2**	10
12	1/4	**F3PB12-1/4**	10
12	3/8	**F3PB12-3/8**	10
12	1/2	**F3PB12-1/2**	10
14	3/8	**F3PB14-3/8**	10
14	1/2	**F3PB14-1/2**	10

Equal union



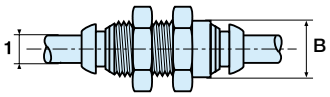
Tube Ø1	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	**HPMK4**	20	**HPB4**	30
6	**HPMK6**	30	**HPB6**	20
8	**HPK8**	30	**HPB8**	20
10	**HPK10**	20	**HPB10**	10
12	**HPK12**	10	**HPB12**	10
14	**HPK14**	10	**HPB14**	5

Unequal union



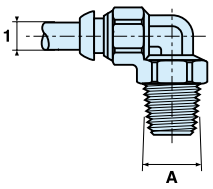
Tube Ø1	Tube Ø2	Plastic Order code	Box Qty
6	4	**HPMK6-4**	20
8	4	**HPK8-4**	20
8	6	**HPK8-6**	20
10	6	**HPK10-6**	10
10	8	**HPK10-8**	10
12	10	**HPK12-10**	10

Bulkhead equal union



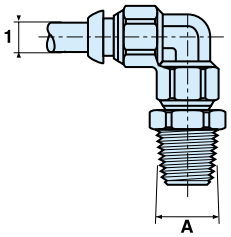
Tube Ø1	Thread B	Metal (Micro) Order code	Box Qty	Metal Order code	Box Qty
4	M11x0.75	**WPMB4**	10	**WPB4**	10
6	M13x1	**WPMB6**	10	**WPB6**	10
8	M15x1.25			**WPB8**	10
10	M18x1			**WPB10**	5
12	M23x1.5			**WPB12**	5
14	M24x1.5			**WPB14**	3

Compact elbow - BSPT



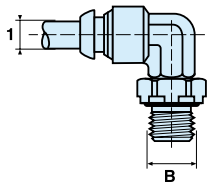
Tube Ø1	Thread A	Metal Order code	Box Qty
4	1/8	**C3PB4-1/8**	20
6	1/8	**C3PB6-1/8**	10
6	1/4	**C3PB6-1/4**	10
8	1/8	**C3PB8-1/8**	10
8	1/4	**C3PB8-1/4**	10
10	1/4	**C3PB10-1/4**	10
10	3/8	**C3PB10-3/8**	10
12	3/8	**C3PB12-3/8**	5
12	1/2	**C3PB12-1/2**	5
14	3/8	**C3PB14-3/8**	5
14	1/2	**C3PB14-1/2**	5

Adjustable male elbow - BSPT



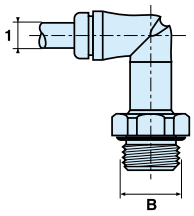
Tube Ø1	Thread A	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	1/8	**C63PMK4-1/8**	30	**C63PB4-1/8**	20
4	1/4	**C63PMK4-1/4**	20	**C63PB4-1/4**	20
6	1/8	**C63PMK6-1/8**	20	**C63PB6-1/8**	20
6	1/4	**C63PMK6-1/4**	20	**C63PB6-1/4**	20
8	1/8	**C63PK8-1/8**	20	**C63PB8-1/8**	20
8	1/4	**C63PK8-1/4**	20	**C63PB8-1/4**	10
8	3/8	**C63PK8-3/8**	10	**C63PB8-3/8**	10
10	1/4	**C63PK10-1/4**	10	**C63PB10-1/4**	10
10	3/8	**C63PK10-3/8**	10	**C63PB10-3/8**	10
10	1/2	**C63PK10-1/2**	10		
12	1/4	**C63PK12-1/4**	10	**C63PB12-1/4**	10
12	3/8	**C63PK12-3/8**	10	**C63PB12-3/8**	10
12	1/2	**C63PK12-1/2**	10	**C63PB12-1/2**	5
14	3/8	**C63PK14-3/8**	10	**C63PB14-3/8**	5
14	1/2	**C63PK14-1/2**	10	**C63PB14-1/2**	5

Compact adjustable male elbow - Parallel



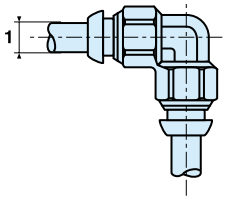
Tube Ø1	Thread B	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	M5x0,8	**C68SPK4M5**	20	**C68SPB4M5**	10
4	1/8	**C64SPK4-1/8**	20	**C64SPB4-1/8**	10
4	1/4	**C64SPK4-1/4**	20		
6	1/8	**C64SPK6-1/8**	20	**C64SPB6-1/8**	10
6	1/4	**C64SPK6-1/4**	20	**C64SPB6-1/4**	10
8	1/8	**C64SPK8-1/8**	20	**C64SPB8-1/8**	10
8	1/4	**C64SPK8-1/4**	20	**C64SPB8-1/4**	10
8	3/8	**C64SPK8-3/8**	10	**C64SPB8-3/8**	10
10	1/4			**C64SPB10-1/4**	10
10	3/8			**C64SPB10-3/8**	10
12	1/4			**C64SPB12-1/4**	10
12	3/8			**C64SPB12-3/8**	5
12	1/2			**C64SPB12-1/2**	5

Adjustable extended male elbow - Parallel



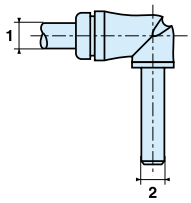
Tube Ø1	Thread B	Plastic Order code	Box Qty
4	1/8	**C64LPMK4-1/8**	10
4	1/4	**C64LPMK4-1/4**	10
6	1/8	**C64LPMK6-1/8**	10
6	1/4	**C64LPMK6-1/4**	10

Equal union elbow



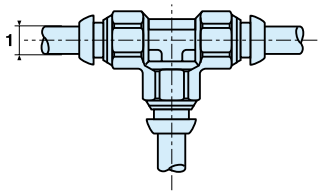
Tube Ø1	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	**EPMK4**	20	**EPB4**	20
6	**EPMK6**	20	**EPB6**	20
8	**EPK8**	20	**EPB8**	10
10	**EPK10**	10	**EPB10**	10
12	**EPK12**	10	**EPB12**	10
14	**EPK14**	10	**EPB14**	5

Compact plug in elbow



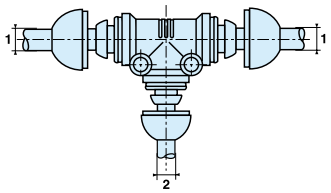
Tube Ø1	Tube Ø2	Plastic Order code	Box Qty
4	4	**T2ESPMK4**	20
6	6	**T2ESPMK6**	20
4	6	**T2ESPMK4-6**	30
8	8	**T2ESPK8**	20

Equal union tee



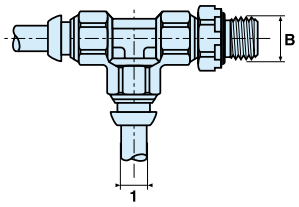
Tube Ø1	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	**JPMK4**	20	**JPB4**	10
6	**JPMK6**	20	**JPB6**	10
8	**JPK8**	10	**JPB8**	10
10	**JPK10**	10	**JPB10**	10
12	**JPK12**	10	**JPB12**	5
14	**JPK14**	5	**JPB14**	5

Unequal union tee



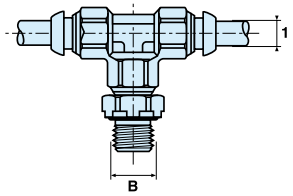
Tube Ø1	Tube Ø2	Plastic Order code	Box Qty
6	4	**JPK6-6-4**	10
8	6	**JPK8-8-6**	10
10	8	**JPK10-10-8**	10
12	10	**JPK12-12-10**	10
4	6	**JPK4-4-6**	10
6	8	**JPK6-6-8**	10
8	10	**JPK8-8-10**	10
10	12	**JPK10-10-12**	5

Adjustable male run tee - Parallel



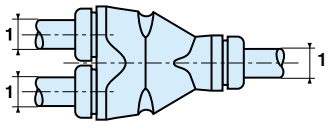
Tube Ø1	Thread B	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	M5x0.8	**R68PMK4M5**	10	**R68PB4M5**	10
6	M5x0.8	**R68PMK6M5**	10	**R68PB6M5**	10
4	1/8	**R64PMK4-1/8**	10	**R64PB4-1/8**	10
4	1/4	**R64PMK4-1/4**	10	**R64PB4-1/4**	10
6	1/8	**R64PMK6-1/8**	10	**R64PB6-1/8**	10
6	1/4	**R64PMK6-1/4**	10	**R64PB6-1/4**	10
8	1/8	**R64PK8-1/8**	10	**R64PB8-1/8**	10
8	1/4	**R64PK8-1/4**	10	**R64PB8-1/4**	10
8	3/8	**R64PK8-3/8**	10	**R64PB8-3/8**	10
10	1/4	**R64PK10-1/4**	10	**R64PB10-1/4**	5
10	3/8	**R64PK10-3/8**	5	**R64PB10-3/8**	5
12	1/4	**R64PK12-1/4**	5	**R64PB12-1/4**	5
12	3/8	**R64PK12-3/8**	5	**R64PB12-3/8**	5
14	3/8	**R64PK14-3/8**	5	**R64PB14-3/8**	3
14	1/2	**R64PK14-1/2**	5	**R64PB14-1/2**	3

Adjustable male branch tee - Parallel



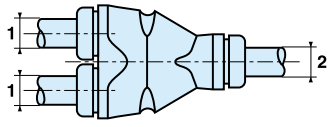
Tube Ø1	Thread B	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	M3x0.5	**S68PMK4M3**	10		
4	M5x0.8	**S68PMK4M5**	10	**S68PB4M5**	10
6	M5x0.8	**S68PMK6M5**	10	**S68PB6M5**	10
4	1/8	**S64PMK4-1/8**	10	**S64PB4-1/8**	10
4	1/4	**S64PMK4-1/4**	10	**S64PB4-1/4**	10
6	1/8	**S64PMK6-1/8**	10	**S64PB6-1/8**	10
6	1/4	**S64PMK6-1/4**	10	**S64PB6-1/4**	10
8	1/8	**S64PK8-1/8**	10	**S64PB8-1/8**	10
8	1/4	**S64PK8-1/4**	10	**S64PB8-1/4**	5
8	3/8	**S64PK8-3/8**	10	**S64PB8-3/8**	5
10	1/4	**S64PK10-1/4**	10	**S64PB10-1/4**	5
10	3/8	**S64PK10-3/8**	5	**S64PB10-3/8**	5
12	1/4	**S64PK12-1/4**	5	**S64PB12-1/4**	5
12	3/8	**S64PK12-3/8**	5	**S64PB12-3/8**	5
14	3/8	**S64PK14-3/8**	5	**S64PB14-3/8**	3
14	1/2	**S64PK14-1/2**	5	**S64PB14-1/2**	3

Equal union Y connector



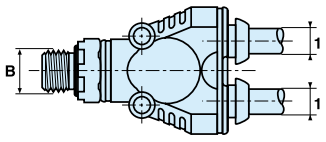
Tube Ø1	Plastic Order code	Box Qty
4	**YJPMK4**	20
6	**YJPMK6**	10
8	**YJPK8**	10
10	**YJPK10**	10

Unequal union Y connector



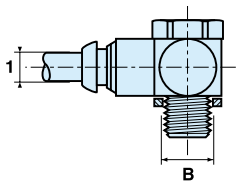
Tube Ø1	Tube Ø2	Plastic Order code	Box Qty
3	4	**YJPMK4-3**	10
3	6	**YJPMK6-3**	10
4	6	**YJPMK6-4**	10
6	8	**YJPK6-6-8**	10
8	10	**YJPK8-8-10**	5

Adjustable male Y connector - Parallel



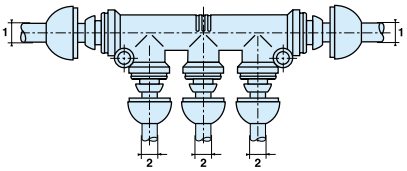
Tube Ø1	Thread B	Plastic Order code	Box Qty
4	M5x0,8	**YJ68PMK4M5**	10
6	M5x0,8	**YJ68PMK6M5**	10
4	1/8	**YJ64PK4-1/8**	10
4	1/4	**YJ64PK4-1/4**	10
6	1/8	**YJ64PK6-1/8**	10
6	1/4	**YJ64PK6-1/4**	10
8	1/8	**YJ64PK8-1/8**	5
8	1/4	**YJ64PK8-1/4**	5

Single banjo - assembled - Parallel



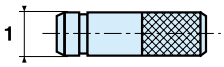
Tube Ø1	Tube Ø2	Metal Order code	Box Qty
4	M5x0,8	**COR8PB4M5**	20
4	1/8	**COR4PB4-1/8**	10
6	1/8	**COR4PB6-1/8**	20
6	1/4	**COR4PB6-1/4**	20
8	1/8	**COR4PB8-1/8**	10
8	1/4	**COR4PB8-1/4**	20
10	3/8	**COR4PB10-3/8**	10

Multiple tee - 5 connections



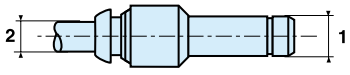
Tube Ø1	Tube Ø2	Plastic Order code	Box Qty
6	4	**J5PK6-4**	10
8	4	**J5PK8-4**	5
8	6	**J5PK8-6**	5
10	6	**J5PK10-6**	5

Plug



Tube Ø1	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	**FNPK4**	50	**FNPB4**	50
6	**FNPK6**	50	**FNPB6**	50
8	**FNPK8**	50	**FNPB8**	50
10	**FNPK10**	50	**FNPB10**	30
12	**FNPK12**	30	**FNPB12**	20
14	**FNPK14**	30	**FNPB14**	20

Tube end reducer

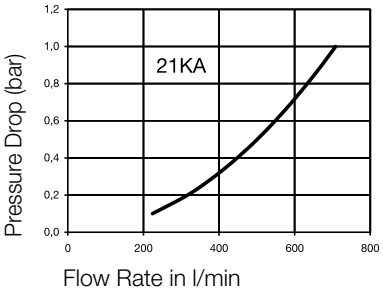


Tube Ø1	Tube Ø2	Plastic Order code	Box Qty	Metal Order code	Box Qty
4	3	**TR2PMK4-3**	20		
6	4	**TR2PK6-4**	40	**TRPB6-4**	20
8	4	**TR2PK8-4**	40	**TRPB8-4**	20
8	6	**TR2PK8-6**	30	**TRPB8-6**	10
10	4	**TR2PK10-4**	30	**TRPB10-4**	10
10	6	**TR2PK10-6**	30	**TRPB10-6**	10
10	8	**TR2PK10-8**	20	**TRPB10-8**	10
12	6	**TR2PK12-6**	20	**TRPB12-6**	10
12	8	**TR2PK12-8**	20	**TRPB12-8**	10
12	10	**TR2PK12-10**	10	**TRPB12-10**	10
14	8	**TR2PK14-8**	20	**TRPB14-8**	10
14	10	**TR2PK14-10**	10	**TRPB14-10**	10
14	12	**TR2PK14-12**	10	**TRPB14-12**	5

Rectus Series 21KA - DN 5.0

Mini industrial coupling, the world's most commonly used profile. Above average flow performance for liquid and gaseous media. Large band width in materials and valve variants.

Chart / Air



Advantages

- Single handed operation
- Small dimensions
- All versions interchangeable

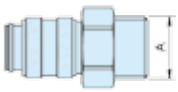
Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

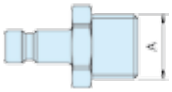
Coupling	
Back Body	Brass
Valve Body	Brass
Sleeve	Brass
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Brass

Coupling - Male Thread BSPP



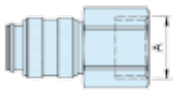
Thread A	Order code	Box Qty
1/8"	**21KAAW10MPX**	20
1/4"	**21KAAW13MPX**	20

Plug - Male Thread BSPP



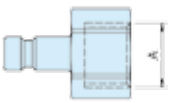
Thread A	Order code	Box Qty
1/8"	**21SFAW10MXX**	20
1/4"	**21SFAW13MXX**	20

Coupling - Female Thread BSPP



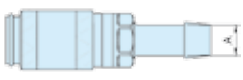
Thread A	Order code	Box Qty
1/8"	**21KAIW10MPX**	20
1/4"	**21KAIW13MPX**	20

Plug - Female Thread BSPP



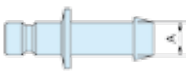
Thread A	Order code	Box Qty
1/8"	**21SFIW10MXX**	20

Coupling - Hose Barb



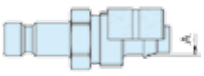
Thread A	Order code	Box Qty
6 mm	**21KATF06MPX**	20
8 mm	**21KATF08MPX**	20

Plug - Hose Barb



Thread A	Order code	Box Qty
6 mm	**21SFTF06MXX**	20
8 mm	**21SFTF08MXX**	20

Plug - Plastic Hose Connection



Thread A	Order code	Box Qty
4x6 mm	**21SFKO06MXX**	20
6x8 mm	**21SFKO08MXX**	20

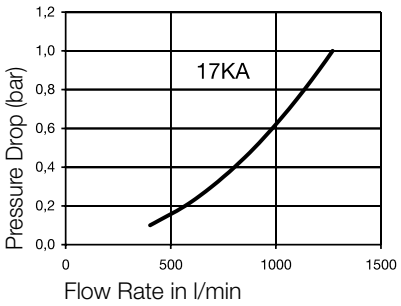
Rectus Series 17KA - DN 5.0

English profile industrial coupling. Specially suited to compressed air applications. Brass/steel design developed for industry. Schrader (DN 5.0) Interchange.

Advantages

- Single handed operation
- Small dimensions, light weight
- UltraFlo technology with high flow valve

Chart / Air



Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

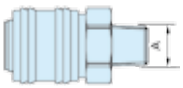
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

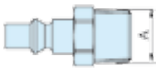
Back Body	Brass, Nickel Plated
Valve Body	Steel Hardened, Zinc Pl.
Sleeve	Steel Hardened, Nickel Pl.
Valve	Brass
Inner Sleeve	Brass
Spring Plate	Brass
Spring and Locking Ring	AISI 303
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT



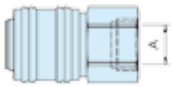
Thread A	Order code	Box Qty
1/4"	**17KAAK13SPN**	10
3/8"	**17KAAK17SPN**	10
1/2"	**17KAAK21SPN**	10

Plug - Male Thread BSPT



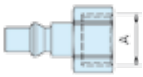
Thread A	Order code	Box Qty
1/8"	**17SFAK10SXN**	20
1/4"	**17SFAK13SXN**	20

Coupling - Female Thread BSPP



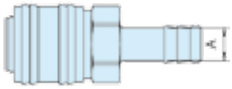
Thread A	Order code	Box Qty
1/4"	**17KAIW13SPN**	10
1/2"	**17KAIW21SPN**	10

Plug - Female Thread BSPP



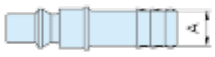
Thread A	Order code	Box Qty
1/8"	**17SFIW10SXN**	20
1/4"	**17SFIW13SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
8 mm	**17KATF08SPN**	10
10 mm	**17KATF10SPN**	10

Plug - Hose Barb

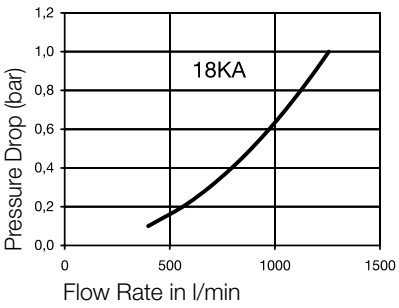


Thread A	Order code	Box Qty
8 mm	**17SFTF08SXN**	20
10 mm	**17SFTF10SXN**	20

Rectus Series 18KA - DN 5.5

ISO 6150 C industrial coupling with UltraFlo technology. Robust design. The steel sleeve counters oscillating forces. System has limited use for liquids (steel sleeve/ zinc die cast valve).

Chart / Air



Advantages

- Single handed operation
- Plug design optimised through greater insert depth
- Innovative valve technology with high flow valve

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

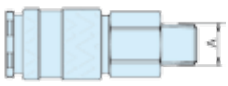
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

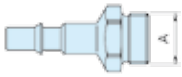
Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Steel Hardened, Nickel Pl.
Valve	Zinc Diecasting, Nickel Pl.
Inner Sleeve	Brass
Spring Plate	Brass
Spring / Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT



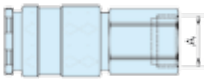
Thread A	Order code	Box Qty
1/4"	**18KAAK13MPN**	5
3/8"	**18KAAK17MPN**	5

Plug - Male Thread BSPT



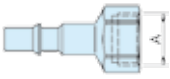
Thread A	Order code	Box Qty
1/4"	**18SFAK13SXN**	20
3/8"	**18SFAK17SXN**	5

Coupling - Female Thread BSPP



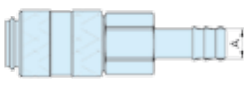
Thread A	Order code	Box Qty
1/4"	**18KAIW13MPN**	5
3/8"	**18KAIW17MPN**	5
1/2"	**18KAIW21MPN**	5

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4"	**18SFIW13SXN**	20
3/8"	**18SFIW17SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
8 mm	**18KATF08MPN**	5
10 mm	**18KATF10MPN**	5

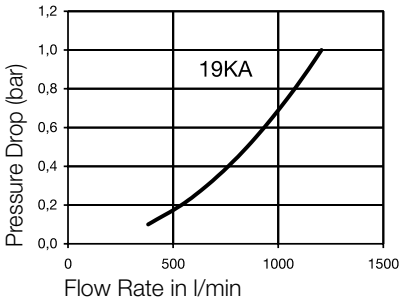
Plug - Hose Barb

Thread A	Order code	Box Qty
6 mm	**18SFTF06SXN**	20
8 mm	**18SFTF08SXN**	20
10 mm	**18SFTF10SXN**	20

Rectus Series 19KA - DN 5.5

English industrial profile with UltraFlo technology. Compact dimensions. Robust coupling for compressed air applications. The steel sleeve counters oscillating forces.

Chart / Air



Advantages

- Single handed operation
- Plug design optimised through greater insert depth
- UltraFlo technology with high flow valve

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

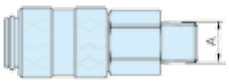
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Steel Hardened, Nickel Pl.
Valve	Zinc Diecasting, Nickel Pl.
Inner Sleeve	Brass
Spring Plate	Brass
Spring / Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT

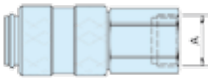


Thread A	Order code	Box Qty
1/4”	**19KAAK13MPN**	10
3/8”	**19KAAK17MPN**	10
1/2”	**19KAAK21MPN**	10

Plug - Male Thread BSPT

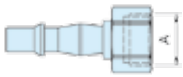
Thread A	Order code	Box Qty
1/4”	**19SFAK13SXN**	20
3/8”	**19SFAK17SXN**	20

Coupling - Female Thread BSPP



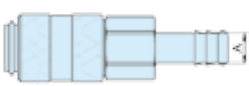
Thread A	Order code	Box Qty
1/4”	**19KAIW13MPN**	10
1/2”	**19KAIW21MPN**	10

Plug - Female Thread BSPP



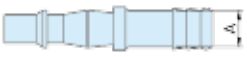
Thread A	Order code	Box Qty
1/4”	**19SFIW13SXN**	20
3/8”	**19SFIW17SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
8 mm	**19KATF08MPN**	10
10 mm	**19KATF10MPN**	10

Plug - Hose Barb

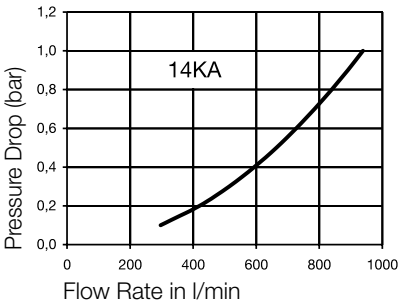


Thread A	Order code	Box Qty
6 mm	**19SFTF06SXN**	20
8 mm	**19SFTF08SXN**	20
10 mm	**19SFTF10SXN**	20

Rectus Series 14KA - DN 5.5

Robust brass coupling. Numerous connection options. Preferred application: compressed air technology and water connections. ARO 210 Interchangeable.

Chart / Air



Advantages

- Single handed operation
- Optimised plug design through greater insert depth

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

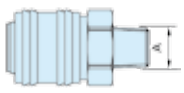
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

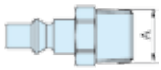
Back Body	Brass
Valve Body	Brass
Sleeve	Brass
Valve	Brass
Spring and Locking Ring	AISI 301
Pins	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Plated

Coupling - Male Thread BSPP



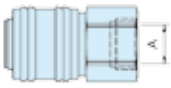
Thread A	Order code	Box Qty
1/4"	**14KAAW13MPX**	20
3/8"	**14KAAW17MPX**	20
1/2"	**14KAAW21MPX**	20

Plug - Male Thread BSPT



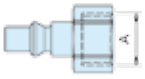
Thread A	Order code	Box Qty
1/4"	**22SFAK13SXN**	20
3/8"	**22SFAK17SXN**	20
1/2"	**22SFAK21SXN**	10

Coupling - Female Thread BSPP



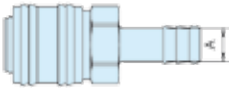
Thread A	Order code	Box Qty
1/4"	**14KAIW13MPX**	20
1/2"	**14KAIW21MPX**	20

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4"	**22SFIW13SXN**	20
3/8"	**22SFIW17SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
8 mm	**14KATF08MPX**	20
10 mm	**14KATF10MPX**	20

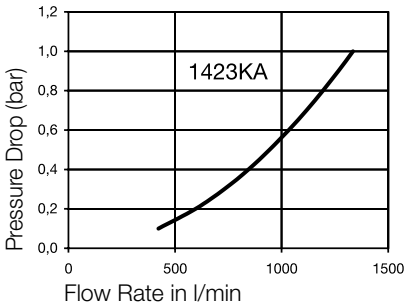
Plug - Hose Barb

Thread A	Order code	Box Qty
6 mm	**22SFTF06SXN**	20
8 mm	**22SFTF08SXN**	20
10 mm	**22SFTF10SXN**	20

Rectus Series 1423KA - DN 5.5

Rectus Tema premium 1/4" industrial coupling - the know-how from both brands combined in one system. Conforming to ISO 6150 B. High grade valve technology for optimum flow performance. Especially robust 2-component plastic sleeve.

Chart / Air



Advantages

- Single handed operation
- High flow valve
- Minimum coupling forces

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

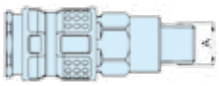
Working Temperature*
-20°C up to +40°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +40°C special seals are available on request.

Material

Coupling

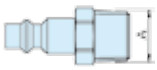
Back Body	Brass, Nickel Plated
Valve Body	Steel, QPQ treated
Sleeve	PA6 + TPE
Valve	Brass
Spring	AISI 301
Locking Ring and Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Plated

Coupling - Male Thread BSPT



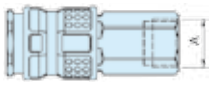
Thread A	Order code	Box Qty
3/8"	**1423KAAK17SPN**	10
1/2"	**1423KAAK21SPN**	10

Plug - Male Thread BSPT



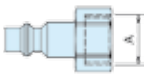
Thread A	Order code	Box Qty
1/4"	**23SFAK13SXN**	20
3/8"	**23SFAK17SXN**	20

Coupling - Female Thread BSPP



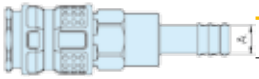
Thread A	Order code	Box Qty
1/2"	**1423KAIW21SPN**	10

Plug - Female Thread BSPP



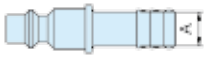
Thread A	Order code	Box Qty
1/4"	**23SFIW13SXN**	20
3/8"	**23SFIW17SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
9 mm	**1423KATF09SPN**	10
13 mm	**1423KATF13SPN**	10

Plug - Hose Barb

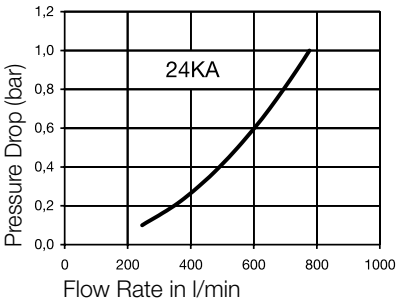


Thread A	Order code	Box Qty
6 mm	**23SFTF06SXN**	20
8 mm	**23SFTF08SXN**	20
10 mm	**23SFTF10SXN**	20

Rectus Series 24KA - DN 5.5

1/4" Industrial brass coupling conforming to ISO 6150B and US Mil. Spec 4109. Notable for brass mass design and corresponding sleeve design. Hardened steel plug counters vibrations and effects of external forces.

Chart / Air



Advantages

- Single handed operation

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

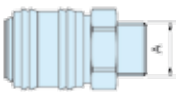
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

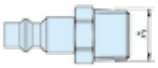
Back Body	Brass
Valve Body	Brass
Sleeve	Brass
Valve	Brass
Spring and Locking Ring	AISI 301
Pins	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Plated

Coupling - Male Thread BSPP



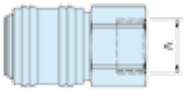
Thread A	Order code	Box Qty
1/4"	**24KAAW13MPX**	20
3/8"	**24KAAW17MPX**	20
1/2"	**24KAAW21MPX**	20

Plug - Male Thread BSPT



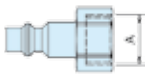
Thread A	Order code	Box Qty
1/4"	**23SFAK13SXN**	20
3/8"	**23SFAK17SXN**	20

Coupling - Female Thread BSPP



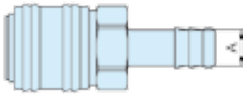
Thread A	Order code	Box Qty
1/4"	**24KAIW13MPX**	20
3/8"	**24KAIW17MPX**	20
1/2"	**24KAIW21MPX**	20

Plug - Female Thread BSPP



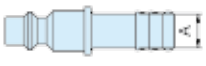
Thread A	Order code	Box Qty
1/4"	**23SFIW13SXN**	20
3/8"	**23SFIW17SXN**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
8 mm	**24KATF08MPX**	20
10 mm	**24KATF10MPX**	20

Plug - Hose Barb

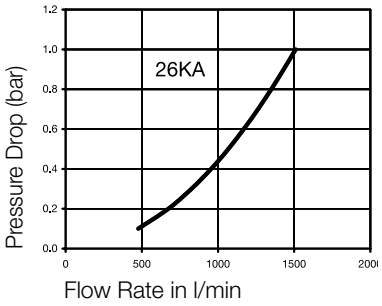


Thread A	Order code	Box Qty
6 mm	**23SFTF06SXN**	20
8 mm	**23SFTF08SXN**	20
10 mm	**23SFTF10SXN**	20

Rectus Series 26KA - DN 7.2

European standard industrial profile. Universal brass coupling. Ergonomic sleeve design prevents dirt on the valve body. Series 26 plugs in brass. Series 25 steel plugs recommended for oscillating forces.

Chart / Air



Advantages

- Single handed operation
- European standard
- Small mass size

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

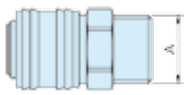
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

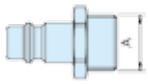
Back Body	Brass
Valve Body	Brass
Sleeve	Brass
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Pins	AISI 420
Seals	NBR
Plug	Brass

Coupling - Male Thread BSPP



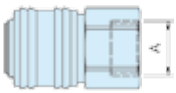
Thread A	Order code	Box Qty
1/4”	**26KAAW13MPX**	20
3/8”	**26KAAW17MPX**	20
1/2”	**26KAAW21MPX**	20

Plug - Male Thread BSPP



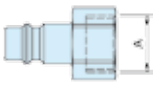
Thread A	Order code	Box Qty
1/4”	**26SFAW13MXX**	20
3/8”	**26SFAW17MXX**	20

Coupling - Female Thread BSPP



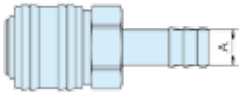
Thread A	Order code	Box Qty
1/4”	**26KAIW13MPX**	20
1/2”	**26KAIW21MPX**	20

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4”	**26SFIW13MXX**	20
3/8”	**26SFIW17MXX**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
6 mm	**26KATF06MPX**	20
8 mm	**26KATF08MPX**	20
9 mm	**26KATF09MPX**	20

Plug - Hose Barb

Thread A	Order code	Box Qty
6 mm	**26SFTF06MXX**	20
8 mm	**26SFTF08MXX**	20
9 mm	**26SFTF09MXX**	20

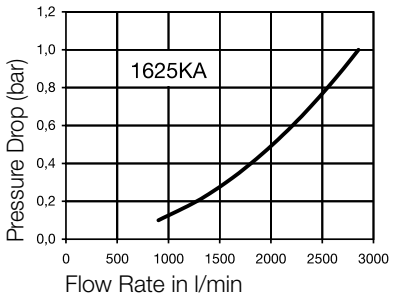
Rectus Series 1625KA - DN 7.8

Rectus Tema premium European standard industrial coupling – the know-how from both brands combined in one system. Extremely robust 2-component plastic sleeve. Suitable for compressed air applications with above average air consumption.

Advantages

- Single handed operation
- High grade valve technology with optimum flow performance
- Minimum coupling forces

Chart / Air



Working Pressure

PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*

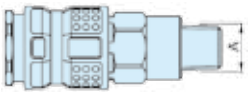
-20°C up to +40°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +40°C special seals are available on request.

Material

Coupling

Back Body	Brass, Nickel Plated
Valve Body	Steel, QPQ treated
Sleeve	PA6 + TPE
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Zinc Plated

Coupling - Male Thread BSPT

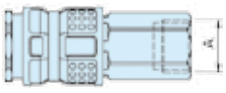


Thread A	Order code	Box Qty
3/8"	**1625KAAK17SPN**	10
1/2"	**1625KAAK21SPN**	10

Plug - Male Thread BSPT

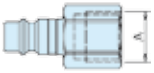
Thread A	Order code	Box Qty
1/4"	**25SFAK13SXZ**	20
3/8"	**25SFAK17SXZ**	20
1/2"	**25SFAK21SXZ**	10

Coupling - Female Thread BSPP



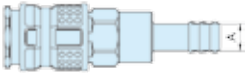
Thread A	Order code	Box Qty
1/2"	**1625KAIW21SPN**	10

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4"	**25SFIW13SXZ**	20
3/8"	**25SFIW17SXZ**	20

Coupling - Hose Barb



Thread A	Order code	Box Qty
9 mm	**1625KATF09SPN**	10
13 mm	**1625KATF13SPN**	10

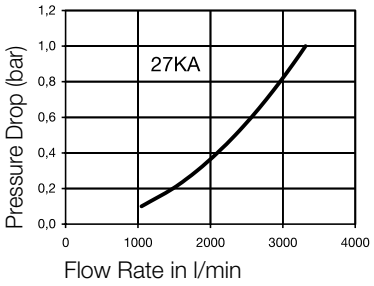
Plug - Hose Barb

Thread A	Order code	Box Qty
9 mm	**25SFTF09SXZ**	20
13 mm	**25SFTF13SXZ**	20

Rectus Series 27KA - DN 10

1/2” European industrial profile with UltraFlo technology. High flow performance. Notable for robust design with steel sleeve in use with large pneumatic consumers. Also available in brass.

Chart / Air



Advantages

- Single handed operation
- High flow valve - low pressure drop
- No damage to the valve body from binding design

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

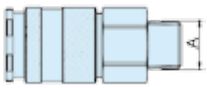
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Steel Hardened, Nickel Pl.
Valve	Brass
Inner Sleeve	Brass
Spring Plate	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT

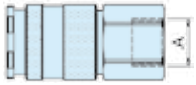


Thread A	Order code	Box Qty
3/8”	**27KAAK17MPN**	2
1/2”	**27KAAK21MPN**	2

Plug - Male Thread BSPT

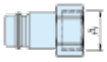
Thread A	Order code	Box Qty
1/4”	**27SFAK13SXN**	10
3/8”	**27SFAK17SXN**	10
1/2”	**27SFAK21SXN**	10

Coupling - Female Thread BSPP



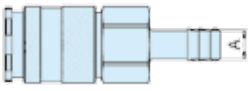
Thread A	Order code	Box Qty
3/8”	**27KAIW17MPN**	5
1/2”	**27KAIW21MPN**	5

Plug - Female Thread BSPP



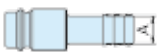
Thread A	Order code	Box Qty
3/8”	**27SFIW17SXN**	10
1/2”	**27SFIW21SXN**	10

Coupling - Hose Barb



Thread A	Order code	Box Qty
10 mm	**27KATF10MPN**	2
13 mm	**27KATF13MPN**	2

Plug - Hose Barb

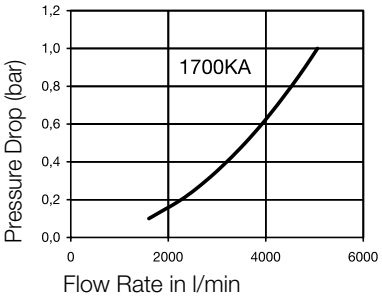


Thread A	Order code	Box Qty
8 mm	**27SFTF08SXN**	20
10 mm	**27SFTF10SXN**	20
13 mm	**27SFTF13SXN**	10

Rectus Series 1700KA - DN 10

Premium industrial coupling in nominal diameter 10 with high grade valve technology and unprecedented flow values and minimum coupling forces. Especially suited to compressed air applications with above average air consumption.

Chart / Air



Advantages

- Single handed operation
- High flow valve
- Minimum coupling forces

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

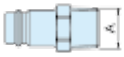
Coupling

Back Body	Brass, Nickel Plated
Valve Body	Steel, QPQ treated
Sleeve	Brass, Nickel Plated
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Zinc Plated

Coupling - Male Thread BSPT

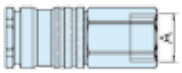
Thread A	Order code	Box Qty
3/8”	**1700KAAK17SPN**	5
1/2”	**1700KAAK21SPN**	5
3/4”	**1700KAAK26SPN**	5

Plug - Male Thread BSPT



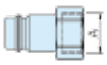
Thread A	Order code	Box Qty
1/4”	**27SFAK13SXN**	10
3/8”	**27SFAK17SXN**	10
1/2”	**27SFAK21SXN**	10

Coupling - Female Thread BSPP



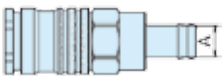
Thread A	Order code	Box Qty
3/8”	**1700KAIW17SPN**	5
1/2”	**1700KAIW21SPN**	5
3/4”	**1700KAIW26SPN**	5

Plug - Female Thread BSPP



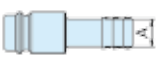
Thread A	Order code	Box Qty
3/8”	**27SFIW17SXN**	10
1/2”	**27SFIW21SXN**	10

Coupling - Hose Barb



Thread A	Order code	Box Qty
10 mm	**1700KATF10SPN**	5
13 mm	**1700KATF13SPN**	5
16 mm	**1700KATF16SPN**	5

Plug - Hose Barb

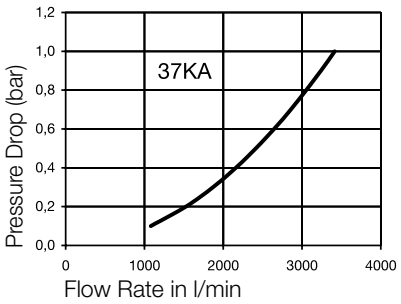


Thread A	Order code	Box Qty
8 mm	**27SFTF08SXN**	20
10 mm	**27SFTF10SXN**	20
13 mm	**27SFTF13SXN**	10

Rectus Series 37KA - DN 11

1/2” Coupling-system according to US-MIL-Spec. C-4109 made of brass. Plug design optimised through greater insert depth.

Chart / Air



Advantages

- Single handed operation
- Tough construction

Working Pressure
PB = 35 bar, maximum static working pressure with safety factor of 4 to1.

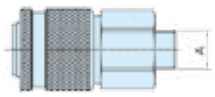
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

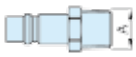
Back Body	Brass
Valve Body	Brass
Sleeve	Brass
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Plated

Coupling - Male Thread BSPP



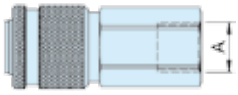
Thread A	Order code	Box Qty
3/8”	**37KAAW17MPX**	2
1/2”	**37KAAW21MPX**	2
3/4”	**37KAAW26MPX**	2

Plug - Male Thread BSPT



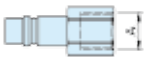
Thread A	Order code	Box Qty
1/2”	**37SFAK21SXN**	10
3/4”	**37SFAK26SXN**	5

Coupling - Female Thread BSPP



Thread A	Order code	Box Qty
3/8”	**37KAIW17MPX**	2
1/2”	**37KAIW21MPX**	2
3/4”	**37KAIW26MPX**	2

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/2”	**37SFIW21SXN**	5
3/4”	**37SFIW26SXN**	5

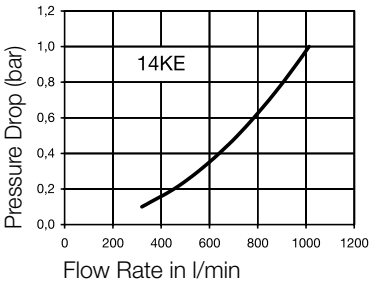
Plug - Hose Barb

Thread A	Order code	Box Qty
13 mm	**37SFTF13SXN**	10
16 mm	**37SFTF16SXN**	10
19 mm	**37SFTF19SXN**	5

Rectus Self-Venting Series 14KE - DN 5.5

The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling, designed for bleeding off trapped air, is not suitable for direct connection to compressed air tools.

Chart / Air



Advantages

The system fulfils the requirements of ISO 4414

- increased safety standards in the work place
- the plastic sleeve does not scratch working surfaces

Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Rectus plugs made of steel.

Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*

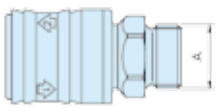
-20°C up to +60°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +60°C special seals are available on request.

Material

Coupling

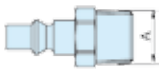
Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Thermoplastic
Valve	Brass
Spring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Pins	AISI 420
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT



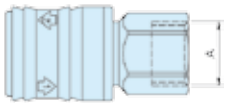
Thread A	Order code	Box Qty
1/4”	**14KEAK13MPN**	10
1/2”	**14KEAK21MPN**	10

Plug - Male Thread BSPT



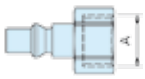
Thread A	Order code	Box Qty
1/4”	**22SFAK13SXN**	20
3/8”	**22SFAK17SXN**	20
1/2”	**22SFAK21SXN**	10

Coupling - Female Thread BSPP



Thread A	Order code	Box Qty
1/4”	**14KEIW13MPN**	10
1/2”	**14KEIW21MPN**	10

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4”	**22SFIW13SXN**	20
3/8”	**22SFIW17SXN**	20

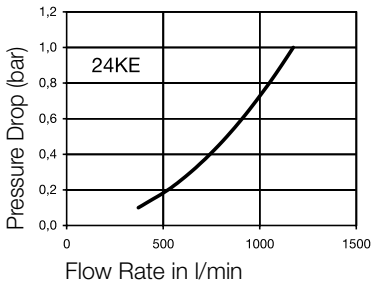
Plug - Hose Barb

Thread A	Order code	Box Qty
6 mm	**22SFTF06SXN**	20
8 mm	**22SFTF08SXN**	20
10 mm	**22SFTF10SXN**	20

Rectus Self-Venting Series 24KE - DN 5.5

The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling, designed for bleeding off trapped air, is not suitable for direct connection to compressed air tools.

Chart / Air



Advantages

The system fulfils the requirements of ISO 4414

- increased safety standards in the work place
- the plastic sleeve does not scratch working surfaces

Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Rectus plugs made of steel.

Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*

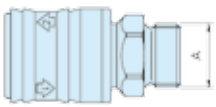
-20°C up to +60°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +60°C special seals are available on request.

Material

Coupling

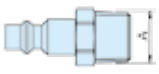
Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Thermoplastic
Valve	Brass
Spring and Locking Ring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Pins	AISI 420
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT



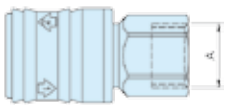
Thread A	Order code	Box Qty
1/4”	**24KEAK13MPN**	10
1/2”	**24KEAK21MPN**	10

Plug - Male Thread BSPT



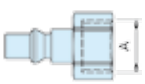
Thread A	Order code	Box Qty
1/4”	**23SFAK13SXN**	20
3/8”	**23SFAK17SXN**	20

Coupling - Female Thread BSPP



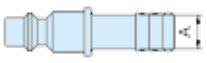
Thread A	Order code	Box Qty
1/4”	**24KEIW13MPN**	10
1/2”	**24KEIW21MPN**	10

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
3/8”	**23SFIW13SXN**	20
1/2”	**23SFIW17SXN**	20

Plug - Hose Barb



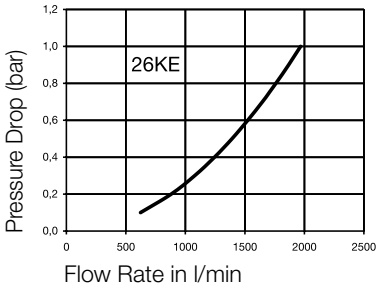
Thread A	Order code	Box Qty
6 mm	**23SFTF06SXN**	20
8 mm	**23SFTF08SXN**	20
10 mm	**23SFTF10SXN**	20

Parker Hannifin Corporation
Pneumatic Division - Europe

Rectus Self-Venting Series 26KE - DN 7.4

The connection is made the same way as with all other quick connect coupling series, by simply pushing the plug in the coupling. The audible latching when the plug is securely in place signifies that the coupling is locked. The sleeve must be pulled back to release the first locking system before it can be disconnected. This closes the coupling valve. The compressed downstream air can now escape from the plug (hose). Pulling the sleeve back a second time releases the second locking system. The connection can now be safely undone. This self-venting coupling, designed for bleeding off trapped air, is not suitable for direct connection to compressed air tools.

Chart / Air



Advantages

The system fulfils the requirements of ISO 4414

- increased safety standards in the work place
- the plastic sleeve does not scratch working surfaces

Self-Venting System

Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Rectus plugs made of steel.

Working Pressure

PB = 12 bar, maximum static working pressure with safety factor of 4 to1.

Working Temperature*

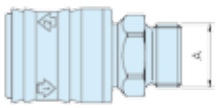
-20°C up to +60°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +60°C special seals are available on request.

Material

Coupling

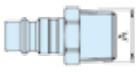
Back Body	Brass, Nickel Plated
Valve Body	Brass, Nickel Plated
Sleeve	Thermoplastic
Valve	Brass
Spring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Pin	AISI 420
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPP



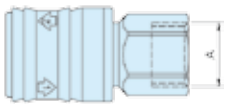
Thread A	Order code	Box Qty
1/4”	**26KEAW13MPN**	10
1/2”	**26KEAW21MPN**	10

Plug - Male Thread BSPT



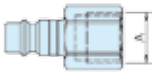
Thread A	Order code	Box Qty
1/4”	**25SFAK13SXZ**	20
3/8”	**25SFAK17SXZ**	20
1/2”	**25SFAK21SXZ**	10

Coupling - Female Thread BSPP



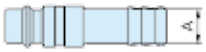
Thread A	Order code	Box Qty
1/4”	**26KEIW13MPN**	5
3/8”	**26KEIW17MPN**	5

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
1/4”	**25SFIW13SXZ**	20
3/8”	**25SFIW17SXZ**	20

Plug - Hose Barb

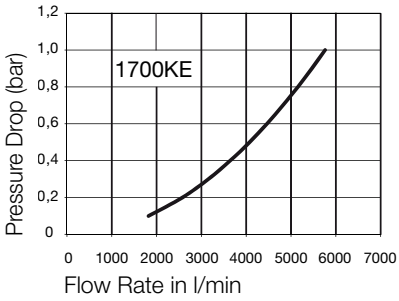


Thread A	Order code	Box Qty
9 mm	**25SFTF09SXZ**	20
13 mm	**25SFTF13SXZ**	20

Rectus Self-Venting Series 1700KE - DN 10

The 1700KE series is a safety coupling with a self-venting system. When the sleeve is pulled back, the plug is released yet remains locked in. The coupling valve closes.
The compressed air can now escape from the plug (hose). By operating the sleeve again in the direction of the plug, the second locking system is released. Only now can the connection be disengaged.

Chart / Air



Advantages

The system fulfils the requirements of ISO 4414
- increased safety standards in the work place
- robust, all-metal structure
- high-flow-valve

Caution

Not recommended for direct connection to compressed air tools. Reliable functioning can only be guaranteed in conjunction with original Parker Rectus plugs made of steel.

Working Pressure
PB = 12 bar, maximum static working pressure with safety factor of 4 to1.

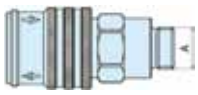
Working Temperature*
-20°C up to +100°C (NBR)
depending on the medium.
*At a temperature below -20°C and above +100°C special seals are available on request.

Material

Coupling

Back Body	Brass, Nickel Plated
Valve Body	Steel, Zinc plated, Thick-film passivated
Sleeve	Steel, Hardened, Nickel Pl.
Valve	Brass
Spring	AISI 301
Locking Balls	AISI 420
Seals	NBR
Plug	Steel Hardened, Nickel Pl.

Coupling - Male Thread BSPT

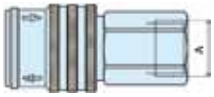


Thread A	Order code	Box Qty
3/8”	**1700KEAW17SPN**	5
1/2”	**1700KEAW21SPN**	5
3/4”	**1700KEAW26SPN**	5

Plug - Male Thread BSPT

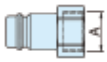
Thread A	Order code	Box Qty
1/4”	**27SFAK13SXN**	10
3/8”	**27SFAK17SXN**	10
1/2”	**27SFAK21SXN**	10

Coupling - Female Thread BSPP



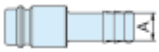
Thread A	Order code	Box Qty
3/8”	**1700KEIW17SPN**	5
1/2”	**1700KEIW21SPN**	5
3/4”	**1700KEIW26SPN**	5

Plug - Female Thread BSPP



Thread A	Order code	Box Qty
3/8”	**27SFIW17SXN**	10
1/2”	**27SFIW21SXN**	10

Plug - Hose Barb



Thread A	Order code	Box Qty
8 mm	**27SFTF08SXN**	10
10 mm	**27SFTF10SXN**	10
13 mm	**27SFTF13SXN**	10

Blow Guns

Plastic - with Aluminium Extension Nozzle

Thread	Order code	Box Qty
1/4”	**AK13**	20

Aluminium with Standard Nozzle

Thread	Order code	Box Qty
1/4”	**AA13**	20

Plastic, Aluminium Nozzle, Plug 26SF Series

Thread	Order code	Box Qty
26SF	**AK26SF**	20

Aluminium, Standard Nozzle, Plug 26SF Series

Thread	Order code	Box Qty
26SF	**AA26SF**	20

Hose Tail Barb, Brass

Male Thread

Connection	Order code	Box Qty
G 1/4, 8 mm	**GT13/08**	20
G 3/8, 13 mm	**GT17/13**	20
G 1/2, 9 mm	**GT21/09**	20
G 1/2, 13 mm	**GT21/13**	20

3 Way Manifold Assembly

Brass, with Coulings 26KA Series

Connection	Order code	Box Qty
G 1/4 i.	**DM13I**	20
G 3/8 i.	**DM17I**	20
G 1/2 i.	**DM21I**	20

PA12 Tubing

26 Series Coupling and Plug with Spring Guard

Connection /mm	Length	Order code	Box Qty
6,3 x 7,9	5,0 m	**SP08/050/K+S**	1
9,5 x 11,8	7,5 m	**SP12/075/K+S**	1

PU Tubing

with Straight Extensions 508 mm and 127 mm

Connection /mm	Length	Order code	Box Qty
6,3 x 9,5	6,0 m	**PU10/060/DV**	1
8,0 x 12,0	7,5 m	**PU12/075/DV**	1

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Key Markets
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- Business & general aviation
- Commercial transports
- Land-based weapons systems
- Military aircraft
- Missiles & launch vehicles
- Regional transports
- Unmanned aerial vehicles

Key Products
- Flight control systems & components
- Fluid conveyance systems
- Fluid metering delivery & atomization devices
- Fuel systems & components
- Hydraulic systems & components
- Inert nitrogen generating systems
- Pneumatic systems & components
- Wheels & brakes

CLIMATE CONTROL

Key Markets
- Agriculture
- Air conditioning
- Food, beverage & dairy
- Life sciences & medical
- Precision cooling
- Processing
- Transportation

Key Products
- CO^2 controls
- Electronic controllers
- Filter driers
- Hand shut-off valves
- Hose & fittings
- Pressure regulating valves
- Refrigerant distributors
- Safety relief valves
- Solenoid valves
- Thermostatic expansion valves

ELECTROMECHANICAL

Key Markets
- Aerospace
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Paper machinery
- Plastics machinery & converting
- Primary metals
- Semiconductor & electronics
- Textile
- Wire & cable

Key Products
- AC/DC drives & systems
- Electric actuators
- Controllers
- Gantry robots
- Gearheads
- Human machine interfaces
- Industrial PCs
- Inverters
- Linear motors, slides and stages
- Precision stages
- Stepper motors
- Servo motors, drives & controls
- Structural extrusions

FILTRATION

Key Markets
- Food & beverage
- Industrial machinery
- Life sciences
- Marine
- Mobile equipment
- Oil & gas
- Power generation
- Process
- Transportation

Key Products
- Analytical gas generators
- Compressed air & gas filters
- Condition monitoring
- Engine air, fuel & oil filtration & systems
- Hydraulic, lubrication & coolant filters
- Process, chemical, water & microfiltration filters
- Nitrogen, hydrogen & zero air generators

FLUID & GAS HANDLING

Key Markets
- Aerospace
- Agriculture
- Bulk chemical handling
- Construction machinery
- Food & beverage
- Fuel & gas delivery
- Industrial machinery
- Mobile
- Oil & gas
- Transportation
- Welding

Key Products
- Brass fittings & valves
- Diagnostic equipment
- Fluid conveyance systems
- Industrial hose
- PTFE & PFA hose, tubing & plastic fittings
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

HYDRAULICS

Key Markets
- Aerospace
- Aerial lift
- Agriculture
- Construction machinery
- Forestry
- Industrial machinery
- Mining
- Oil & gas
- Power generation & energy
- Truck hydraulics

Key Products
- Diagnostic equipment
- Hydraulic cylinders & accumulators
- Hydraulic motors & pumps
- Hydraulic systems
- Hydraulic valves & controls
- Power take-offs
- Rubber & thermoplastic hose & couplings
- Tube fittings & adapters
- Quick disconnects

PNEUMATICS

Key Markets
- Aerospace
- Conveyor & material handling
- Factory automation
- Food & beverage
- Life science & medical
- Machine tools
- Packaging machinery
- Transportation & automotive

Key Products
- Air preparation
- Compact cylinders
- Field bus valve systems
- Grippers
- Guided cylinders
- Manifolds
- Miniature fluidics
- Pneumatic accessories
- Pneumatic actuators & grippers
- Pneumatic valves and controls
- Rodless cylinders
- Rotary actuators
- Tie rod cylinders
- Vacuum generators, cups & sensors

PROCESS CONTROL

Key Markets
- Chemical & refining
- Food, beverage & dairy
- Medical & dental
- Microelectronics
- Oil & gas
- Power generation

Key Products
- Analytical sample conditioning products & systems
- Fluoropolymer chemical delivery fittings, valves & pumps
- High purity gas delivery fittings, valves & regulators
- Instrumentation fittings, valves & regulators
- Medium pressure fittings & valves
- Process control manifolds

SEALING & SHIELDING

Key Markets
- Aerospace
- Chemical processing
- Consumer
- Energy, oil & gas
- Fluid power
- General industrial
- Information technology
- Life sciences
- Military
- Semiconductor
- Telecommunications
- Transportation

Key Products
- Dynamic seals
- Elastomeric o-rings
- EMI shielding
- Extruded & precision-cut, fabricated elastomeric seals
- Homogeneous & inserted elastomeric shapes
- High temperature metal seals
- Metal & plastic retained composite seals
- Thermal management

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Catalogue PDE2600PNUK - V3 - March 2014

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