



IMI NORGREN®

Rail



Rail Catalogue

www.imi-precision.com

Engineering
GREAT Solutions

IMI Precision
Engineering

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Our dedicated team of experts is on hand with technical advice, support and recommendations to help you get the most effective products, in the shortest timescales, and with the best possible service.

Engineering GREAT solutions through people, products, innovation and service

IMI Precision Engineering is a world-leader in fluid and motion control. Building close, collaborative relationships with our customers, we gain a deep understanding of their engineering needs and then mobilise our resources and expertise to deliver distinctive products and solutions.

Wherever precision, speed and engineering reliability are essential, our global footprint, problem-solving capability and portfolio of high performance products enables us to deliver GREAT solutions which help customers tackle the world's most demanding engineering challenges.

> **Reliability**

We deliver and support our high quality products through our global service network.

> **High performance products**

Calling on a world-class portfolio of fluid and motion control products including IMI Norgren, IMI Buschjost, IMI FAS, IMI Herion and IMI Maxseal. We can supply these singly, or combined in powerful customised solutions to improve performance and productivity.

> **Partnership & Problem Solving**

We get closer to our customers to understand their exact challenges.





Delivering expertise, solutions and value to the rail sector

For over 35 years, IMI Precision Engineering has delivered robust, reliable and bespoke solutions to the rail sector.

Our products continue to give millions of miles of reliable service across the world's most challenging environments, from the cold of Northern China and Eastern Europe to Australian outback heat.

With a true understanding of the daily issues faced by rail operators and original equipment manufacturers, we design for the precise needs of the rail industry, at:

- > Temperatures ranging from -40°C (-40°F) to +80°C (+176°F)
- > Voltage tolerances of +/- 30%
- > EN 61373 category 1 class A and B vibration resistance
- > EN45545-2 Fire and Smoke

We talk extensively to maintenance professionals and work closely

with rail engineers to ask the questions they ask. That means we can offer customised, practical solutions to the metro, intercity, high-speed, freight and permanent-way rail industries, covering:

- > Air preparation equipment
- > Brake sub-systems and components
- > Coupling control systems
- > Door and step control systems
- > Pantograph control systems
- > Water control systems
- > Freight control and actuation
- > Suspension control equipment

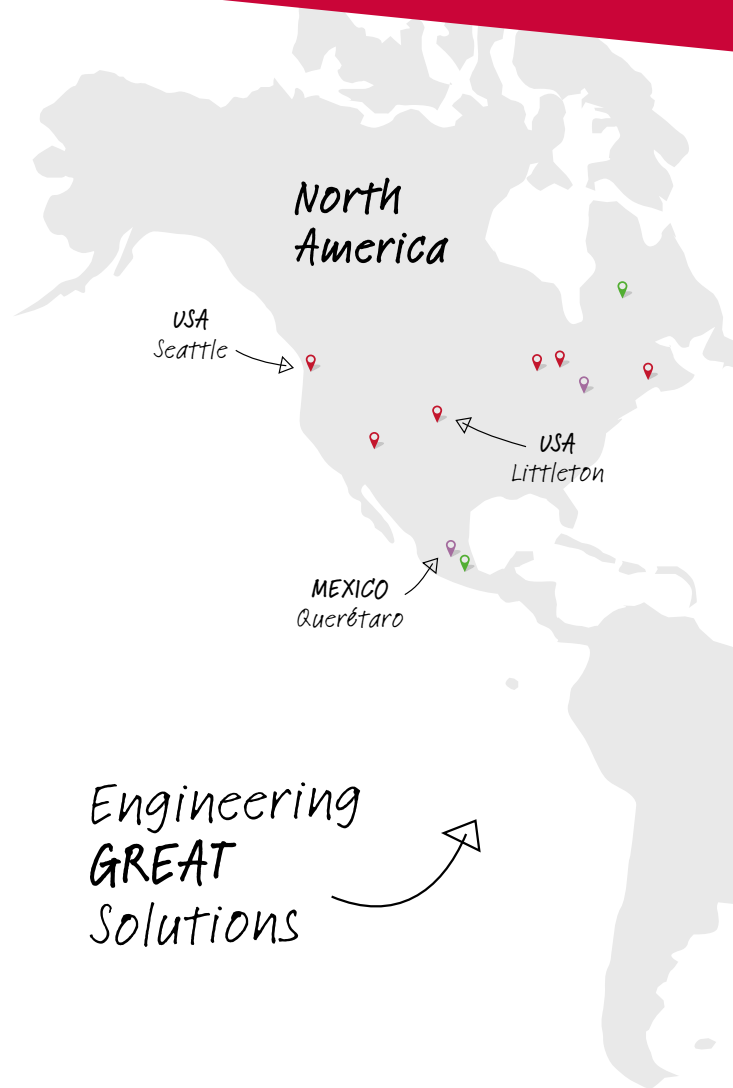
By listening and responding to your specific challenges, we help you make significant improvements and savings in terms of cost of ownership, energy efficiency, reduced maintenance and more.

A local service in 50 countries

We help you achieve your goals by working with you as a partner, not just a supplier. Our dedicated rail team is connected worldwide to ensure close, continuous support no matter what the size and extent of your organisation. We have the reach and capability to work alongside you on complex, global projects or to simply offer local spare part supply.

Sales & Service in 50 countries

- 📍 IMI Precision Engineering sales, manufacturing and technical centres
- 📍 IMI Precision Engineering sales locations
- 📍 IMI Precision Engineering manufacturing locations



Engineering
GREAT
Solutions

Global testing and validation

We help you achieve your goals by working with you as a partner, not just a supplier. Our dedicated rail team is connected worldwide to ensure close, continuous support no matter what the size and extent of your organisation. We have the reach and capability to work alongside you on complex, global projects or to simply offer local spare part supply.





We work closely with our customers to achieve tailored solutions. During development and testing, the focus is placed on designing products that can withstand anticipated loads and consistently perform their tasks. It is this thorough and detailed testing and validation in accordance with the relevant standards that reduces early failure of components. In addition, a comprehensive valuation under realistic conditions helps avoid high consequential costs caused by failures of components in the end application.

Complete product testing and valuation is done in our state-of-the-art testing centres.

The laboratories have an extensive range of test equipment, operated by a neutral expert team working independently of the development departments. Their experience and expertise enables quick implementation of tests, the design of test programs tailored to the needs of real applications and operating conditions in the various sectors, and a guarantee of the neutrality and accuracy of test results.

We have extensive experience in the field of environmental simulation, with a focus on climate, temperature, thermal shock, corrosion, vibration and mechanical shock.

Prototyping and material laboratories are additional, important resources that contribute to our targeted and rapid product development.

Flow measurement ranges: 0.05 l/h to 4000 m³/h

Test pressures: Up to 1000 bar

Volumetric flows: Up to >900 m³/h

Temperatures: -80°C to +220°C

Frequency: 5 – 3000 Hz

Max. Acceleration: Up to 100 g

CFD capability (Computational Fluid Dynamics)

Specific tests we undertake for the rail sector include:

- > EN 45545
- > EN 50155
- > EN 50121-3-2
- > DIN 5510-2
- > EN 61373
- > NFPA 130
- > EN 60068
- > EN ISO 9223

Urban transportation solutions

Decades of insight into the challenging conditions faced by rail operators in and around the cities of the world, mean the solutions we offer answer your pressing, practical need for more reliability, better performance and efficiency, and lower cost of ownership.



Horn control valves



Fire & smoke retardant Nylon tubing for ancillary applications



Pressure regulators

Pantograph foot pumps



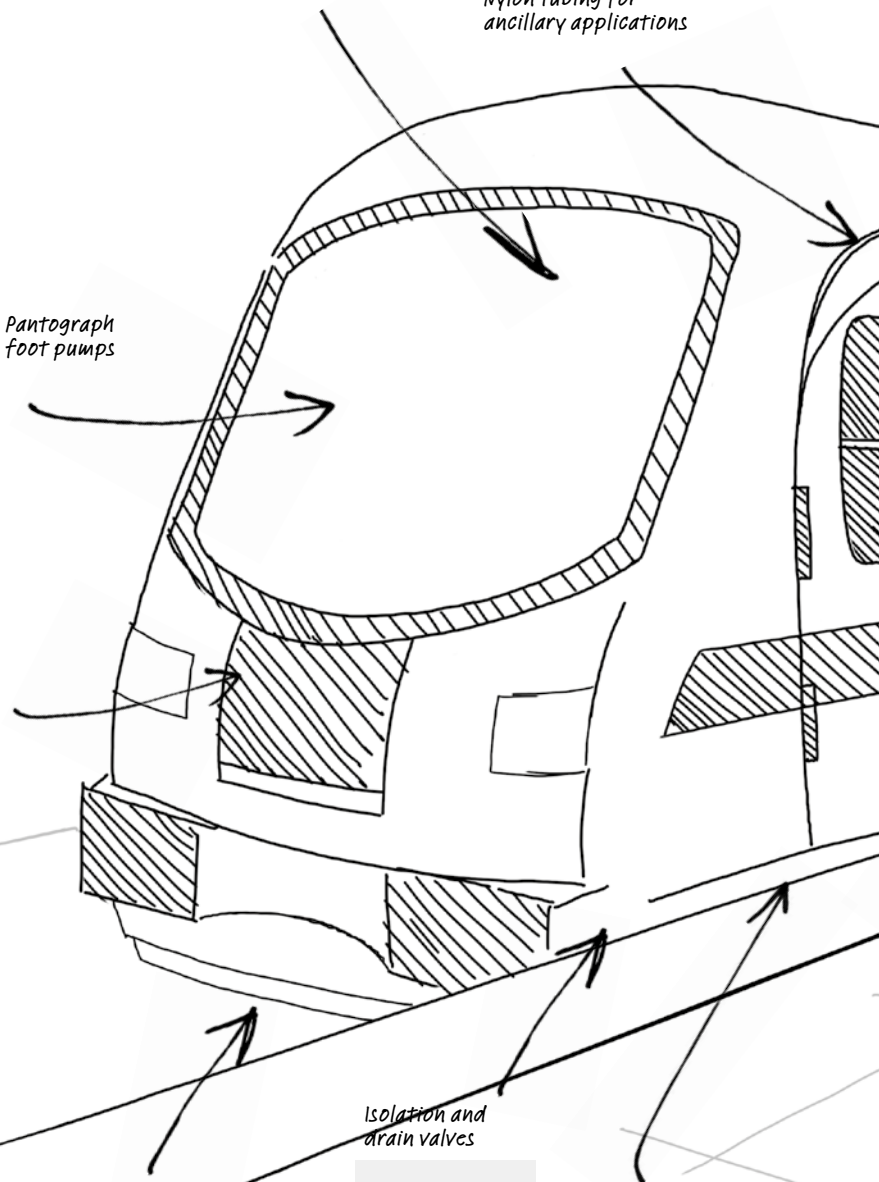
Auto coupling controls and actuators

3rd rail shoe controls and actuators



Isolation and drain valves

Secondary suspension control





Regulators



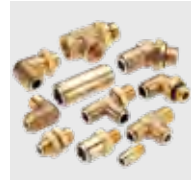
Pantograph controls and actuators



Light weight reusable compression fittings for rigid piping



Pressure switches



Brass push-in fittings for ancillary applications



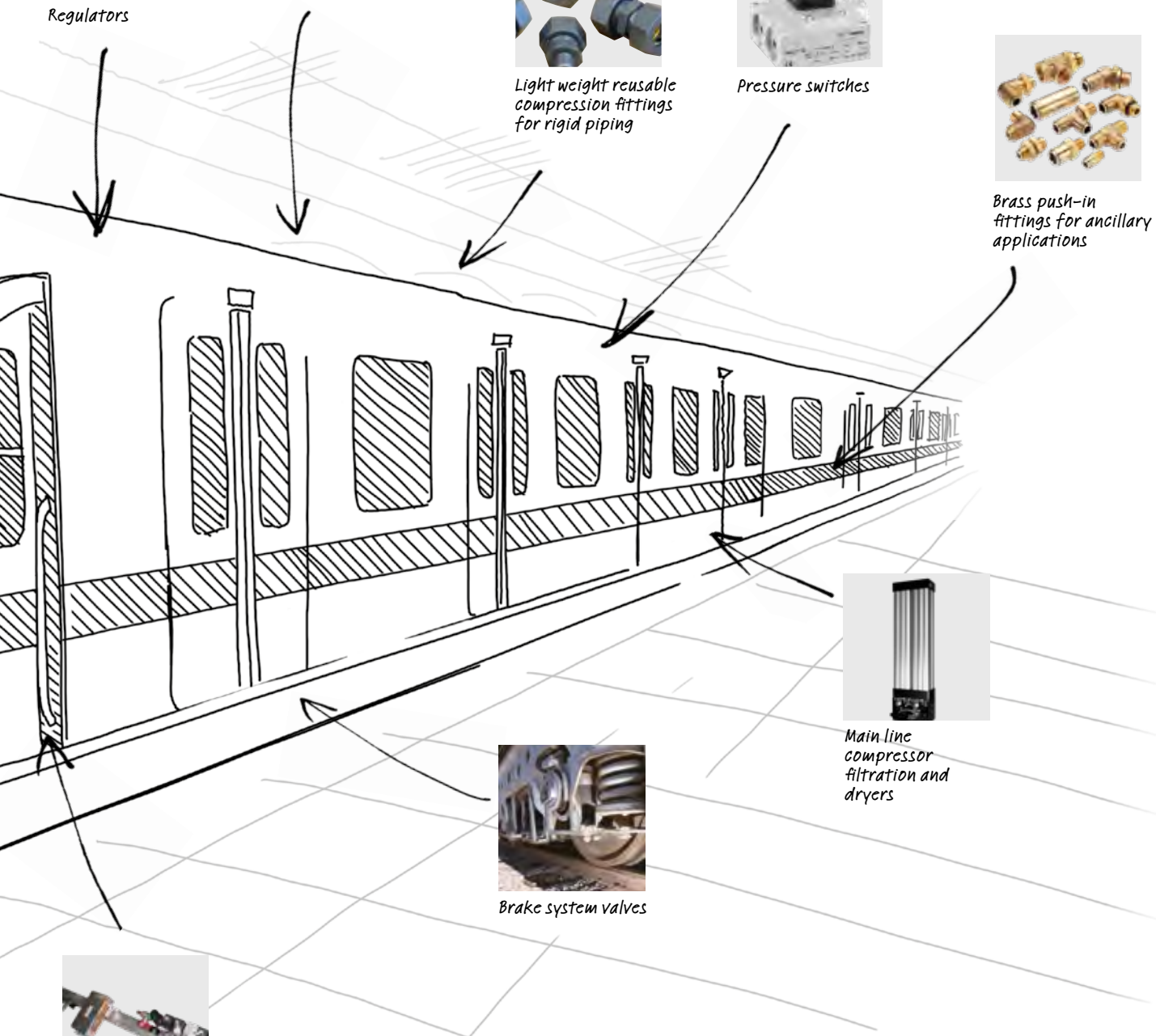
Main line compressor filtration and dryers



Brake system valves



External pneumatic door actuation & control systems



Regional & high-speed transportation solutions

All our rail products are designed to perform dependably in environmental and operational extremes meaning less revenue lost from downtime due to maintenance.



Fire & smoke retardant Nylon tubing for ancillary applications



Horn control valves



Mirror Control Systems



Pantograph foot pumps

Pressure regulators



Auto coupling controls and actuators



Secondary suspension control



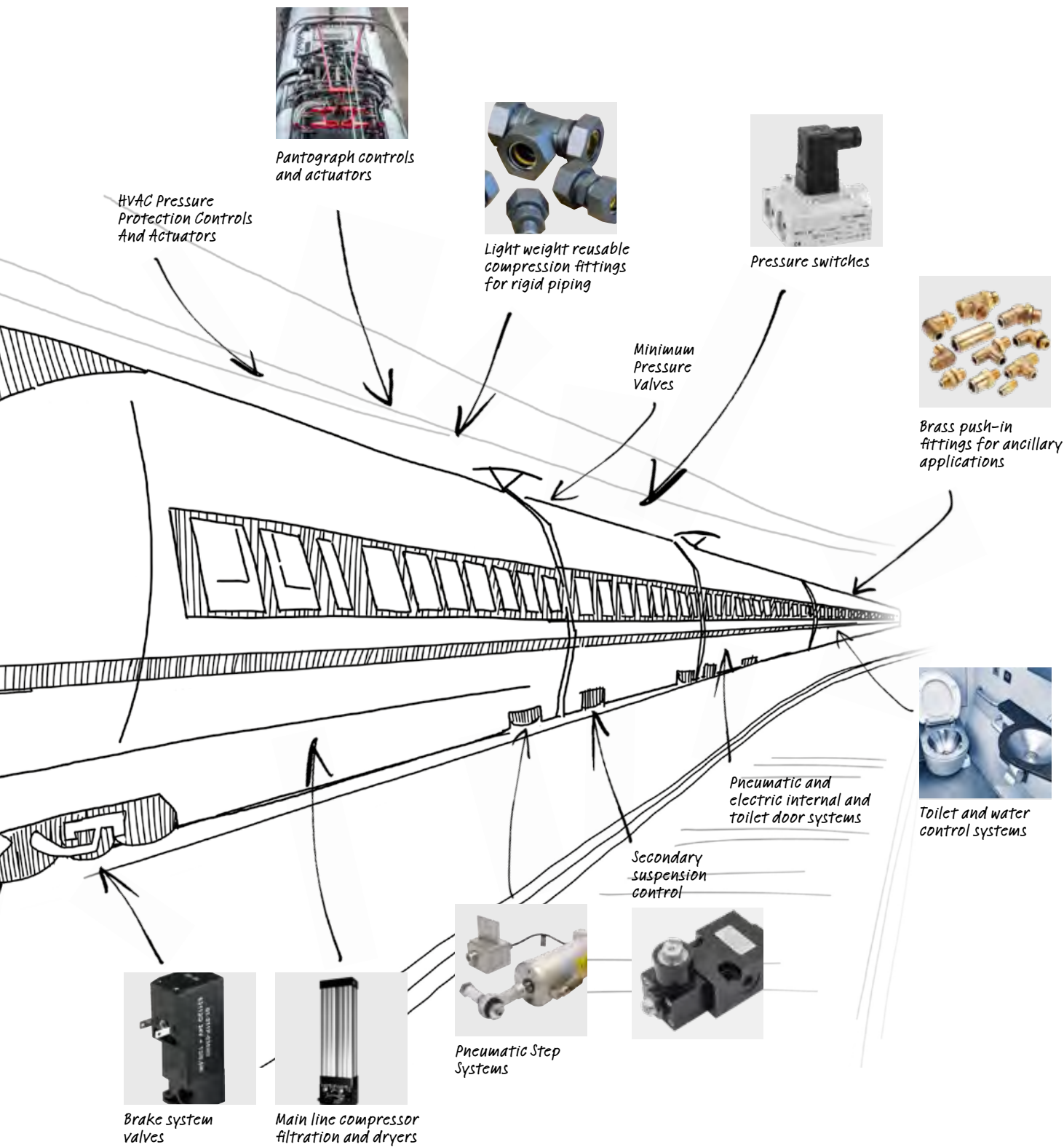
Points control - Actuators & Control



Isolation and drain valves

Sanding system components

Air accumulators for braking systems



Freight transportation solutions

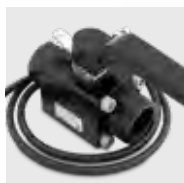
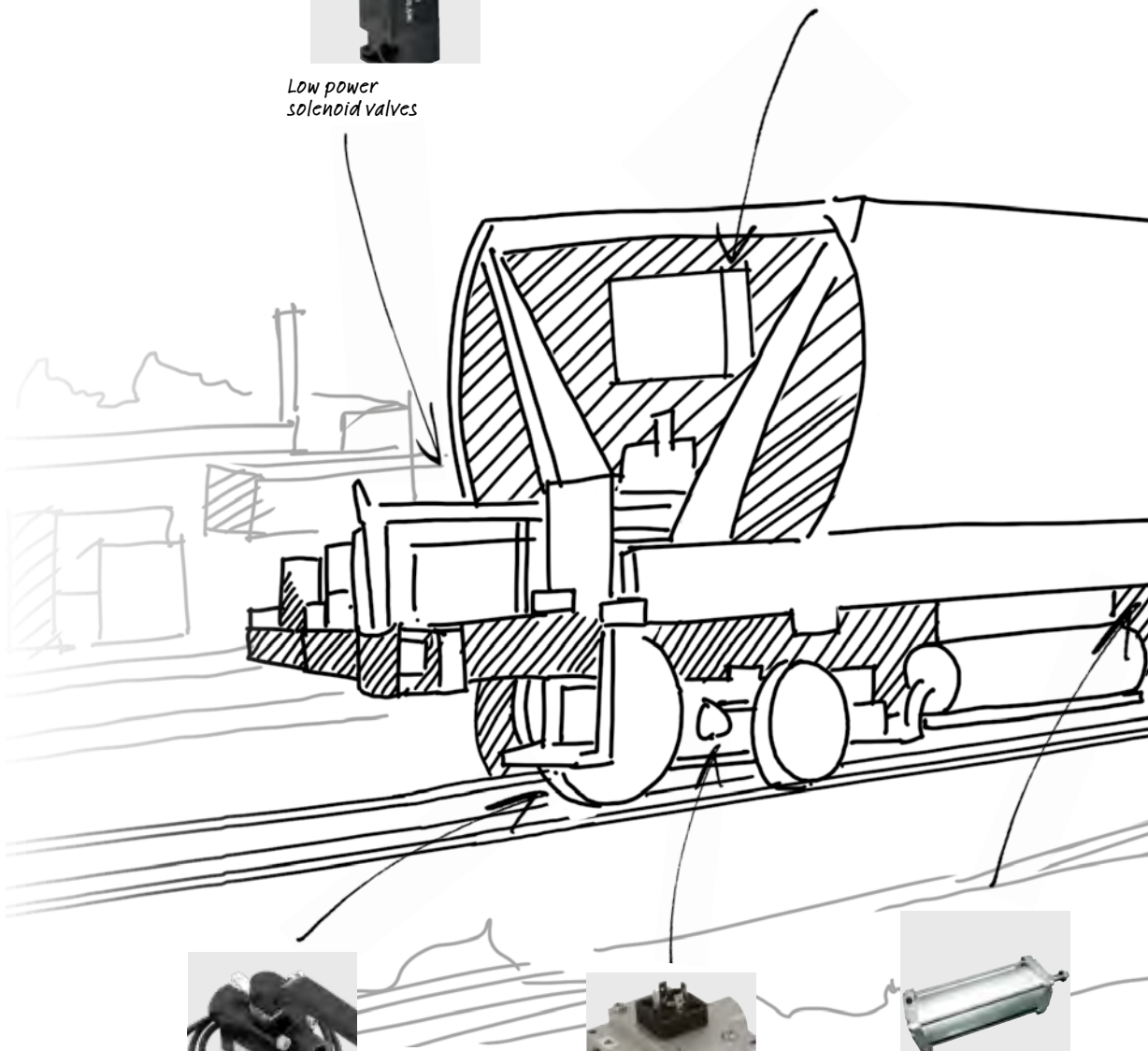
Working in partnership with customers means we can produce bespoke designs to suit your individual challenge – the solution you get is always right for you.



Low power solenoid valves



Solenoid valves



Isolation and drain valves



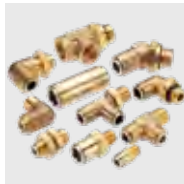
Pressure switches and regulators for ecp brake systems and remote control discharge systems



Customised actuators for bottom discharge door systems and top hatches



Pressure regulators
& minimum pressure
valves



Brass push-in fittings &
nylon tubing for ancillary



Manual and remote
control systems for
bottom discharge
door systems and top
hatches



Light weight reusable
compression fittings
for rigid piping



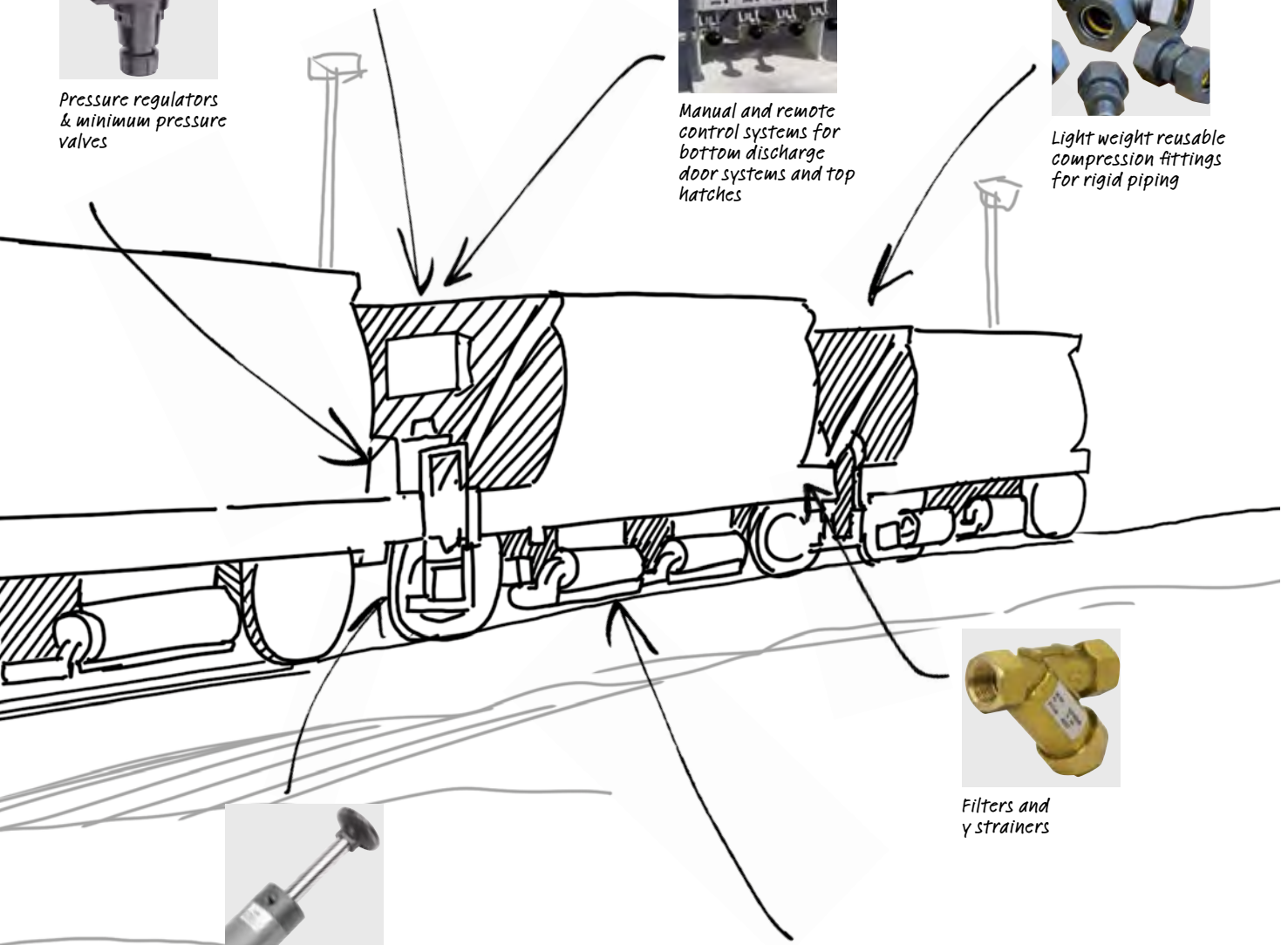
Filters and
y strainers



Retarder cylinders



Air accumulators
for braking systems





Rail door and step solutions

Customised door actuation and control.

We have delivered innovation and performance to the rail door market since 1987. We currently have over 18,500 interior door systems, and more than 24,500 exterior door actuation and control systems, installed on rail cars all over the world - from Siemens' desiro and ice fleets to Shanghai's transrapid maglev train.

Quality assurance you can rely on:

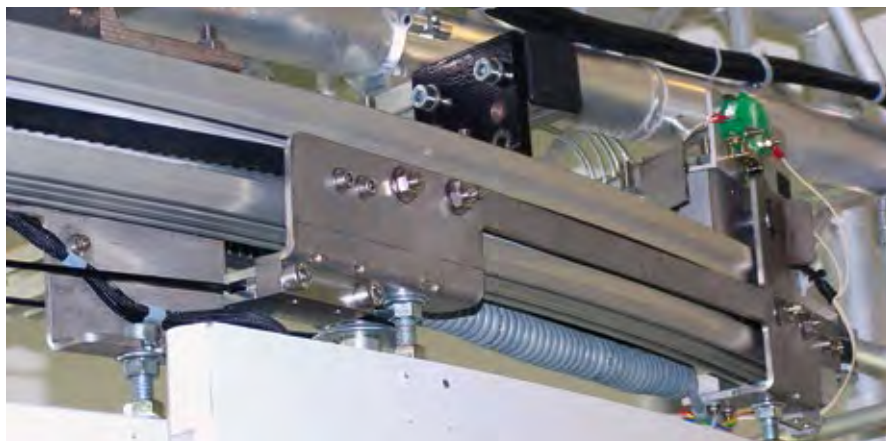
- > Wide temperature range
-40°C to +80°C
- > Environment humidity: 95%
- > System life time: >30 years
- > Shock and Vibration: EN 61373
- > Fire and smoke: DIN 5510, NF F16-101, EN 45545
- > Voltage: 24 to 110 VDC +/- 30%
- > Door closing time: 4 sec
- > Door opening time: 2 sec
- > EN 50121-3-2
- > IEC 61508
- > EN 14752
- > EN 50125-1
- > EN 50155
- > EN 50126
- > EN 50128
- > EN 50129
- > EN 60529

External door systems

- > Special pneumatic control systems
- > Safe, reliable and secure operation
- > Interlocking and feedback drive systems
- > Extended cushioning and increased side load stability
- > Entrapment protection
- > Many years of proven reliability and safety in Metro, EMU and HST applications globally

Curved door system helps operating company conform to legislation

A national train operating company needed to modernise their existing toilet door solution to ensure they complied with PRM TSI 2008/164/EC legislation regarding disabled access.



We developed an innovative curved actuation solution that provided synchronised, telescopic door operation, either electrically or pneumatically.

The solution incorporated a locking system and emergency access override, and complied with all standard rail door specifications including obstacle detection.

The result was an increased aperture when the doors were opened, allowing for better wheelchair access, with push-button operation making it easier for disabled passengers.

The application-specific solution fully met the needs of the customer, and ensured compliance with all current and future legislation regarding disabled access.

Internal door systems

- > Special manual, pneumatic & electric actuation, with integrated control system
- > Safe, reliable and secure operation
- > Interlocking and feedback drive systems
- > Fire and smoke compliant
- > Entrapment prevention
- > Smooth, quiet design, with variable speed drive
- > Solutions for new and existing train carriages to reliably fit into the same space as the previous design

Curved door systems

- > Electric and pneumatic curved actuator system
- > Curved guiding profile
- > Maximises limited space with telescopic, synchronised opening
- > Field serviceable design
- > Locking system and emergency access override
- > Robust guiding, low maintenance costs and easy replacement
- > Meets TSI PRM 2008/164/EC legislative requirements for disabled access

Door control valve systems

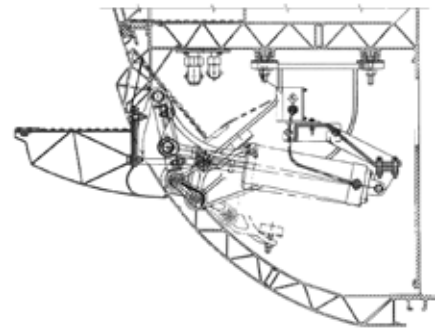
- > Modular valve assemblies
- > Easy replacement of existing systems
- > Quick installation and maintenance
- > Reduction in downtime
- > Custom designs to suit specifications



Retractable step control

We provide door step actuation systems for the world's leading companies. Our customised solutions, based on sliding and rotary actuation, ensure complete reliability, durability and safety.

- > Door step actuation for Mainline and High Speed trains
- > Special pneumatic cylinder
- > Slide and rotary actuation options catered for
- > Compact, robust construction
- > Optional integrated interlocking function
- > Resistant to harsh environments
- > Integrated with train framework



Retractable step control



Sliding step system greatly reduces safety risk on underground trains

An underground train operator faced the problem of an excessive gap between the train door and platform, which created a safety risk for passengers. What's more, the gap between the doors and platform was not consistent, and varied between stations.

The customer therefore required a variable step, which would fit the gap at any station. The solution also needed to fit within a very restricted space beneath the existing door system.

Our engineers developed a range of cushioned, telescopic cylinders that could be mounted below the existing door system. By applying a set pressure, this cylinder system would fill the gap between train and platform regardless of the gap width.

Due to the strict envelope size, our solution used only 50% of the space of a traditional step system. It included all the required standard safety features, such as obstacle detection, and was able to be fully integrated into the existing door control system.

This solution exactly matched the specific needs of the customer and provided a more reliable – and far safer – door step system for train passengers.





Freight systems

We provide standard and customised products that are purpose-built to perform in heavy duty freight applications, delivering years of reliable operation in the harshest environments.

Designed for the automated control of freight top hatch and bottom doors, our pioneering solutions provide safe, efficient filling and unloading. They provide ease of use and welcome flexibility for your rail operation, as well as helping lower the total cost of ownership.





Wagon discharge automation systems

- > Special pneumatic/electric actuation and control systems
- > Safe, reliable and secure operation
- > Interlocking and feedback drive systems
- > Extended cushioning and increased side load stability
- > Entrapment protection
- > Many years of proven reliability and safety in Metro, EMU and HST applications globally

Latching cylinders

- > Able to positively lock a cylinder in the 'in stroke' and 'out stroke' position
- > Safely and securely hold loads in place in the event of air pressure loss or failure
- > Manual override to allow manual operation if compressed air not available
- > Require only a single control valve to fulfil all functions
- > Reduced components circuitry, installation time and weight
- > Easy to install and maintain
- > Suitable for applications including freight wagon top hatch and discharge doors, 'clawlock' points control, pneumatic step control

Shutter cylinders for locomotives

- > Control the opening and closing of shutters as part of a temperature control application
- > Fits into the existing envelope
- > Easy to rebuild
- > Proven actuator technology



Freight automated control

IMI Norgren control system solutions are designed for automated control of applications including wagon top hatch and discharge doors.

- > Compact and modular control systems
- > Bespoke customer manifolds
- > Rail validated components
- > Robust and reliable operation
- > Low temperature range of -40°C
- > Shock and vibration tested to EN 61373, Category 1, class A and B
- > Global Sales and Technical support





Freight testing equipment

AUTOSCAT is a single car air tester that can be simply carried by one person to the wagon that needs to be tested. It is connected to the wagon and an air supply, and simply by pressing the start button, the tests are carried out automatically while the operator performs visual checks.

The operator gets a visual indication of test passes or failures on the front of the unit. Once complete, the unit is connected to a PC, the data downloaded, and the information for each test displayed in an easy-to-read report. This allows better understanding and diagnosis of the recorded test information for each wagon.

- > Reduce time taken to perform the overall operation
- > Reduce downtime costs incurred
- > Reduce human error
- > Increase daily test output
- > Reduce the size of the testing unit
- > Increase portability
- > Reduce manual handling
- > Improve OH&S



Circuit breaker control

IMI Norgren's range of Circuit Breaker products have been developed specifically for use with circuit breakers on electric rail vehicles. There are many many different applications depending on vehicle, including vacuum & air blast circuit breakers and motor contactor valves. All these systems require a special valve and cylinder to engage and disengage the electrical connectors.

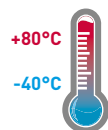
- > Provide a direct acting, fast response solenoid valve with high reliability and safety
- > Proven IMI Norgren technology and suitable for use down to -40°C
- > Customiseable mountings for fixing holes and air connections

*LPDA/18200/M
Cylinder*



LPDA/18200/M Cylinder

- > High performance, stability and reliability
- > Double acting profile cylinders
- > Cylinders and mountings conform to ISO 15552
- > Stainless steel as standard
- > Cylinder diameters from 32 to 125 mm



Wide temperature range	-40°C ... +80°C
Shock and vibration tested	EN 61373, Category 1 class A and B
Protection class	IP65
Operating pressure	0 ... 10 bar (0 ... 145 psi)
Voltage	24, 36, 72, 110 vdc
Fire & smoke compliant	EN 45545-2



VR24Z Solenoid
Valves

VR24Z Solenoid Valves

- > Provide a direct acting, fast response solenoid valve with high reliability and safety
- > Customisable mountings for fixing holes and air connections
- > Add-on manual override option
- > Global sales and technical support



Sanding Systems

IMI Norgren sanding control system solutions help to improve traction during bad weather conditions over long steep gradients.

- > Compact and modular control systems
- > Bespoke customer manifolds
- > Supplied solutions to major global customers
- > Rail validated components
- > Global Sales and Technical support



Suspension Control

Rail suspension systems are a notoriously harsh environment. Our innovative valve technology, boasting exceptional reliability and safety credentials, is resilient to extreme temperatures and designed for easy installation and maintenance.

Levelling Valve

- > Robust and reliable operation
- > Customized lever design
- > Customized mounting options
- > Light weight aluminum anodized body
- > Working temperature -40°C to +50°C
- > Compliant to EN 45545 and NF F16-101
- > Compliant to ISO 9227 1000hrs salt spray

Check Valve

- > Robust and reliable operation
- > Single or double check valve function
- > Pressure sensor feedback option
- > Pressure test points option
- > Light weight aluminum anodized body
- > Working temperature -40°C to +50°C
- > Compliant to EN 45545 and NF F16-101
- > Compliant to ISO 9227 1000hrs salt spray

Over Height Valve

- > Robust and reliable operation
- > Auto or manual unlock feature
- > Light weight aluminum anodized body
- > Working temperature -40°C to +50°C
- > Compliant to EN 45545 and NF F16-101
- > Compliant to ISO 9227 1000hrs salt spray



Rail fittings and tubing

Rigorously tested for shock and vibration, extreme temperatures and salt spray environments – and used extensively by the world's leading train builders and operators – Our fittings are proven in the field with over 30 years' unblemished service.

Able to replace traditional steel, stainless steel and brass compression fittings, our fittings and tubing are typically used for main compressed air lines, pantographs, couplings, HVAC, auxiliary systems, door controls and brakes.

Our brass and aluminium fittings come in a variety of shapes, such as straight, elbow, tee, stem adaptor and elbow connector. Special sizes and types are also available to meet your individual needs.

82 (A) and 83 (A) rail fittings

- > Quick, simple installation with no special assembly tools or heat required – typical installation time saving: 20%
- > For use in areas of vibration
- > Low torque assembly settings
- > Pre-assembled units
- > Can be used again without damage to tube
- > Copes with tube misalignment of $\pm 4^\circ$
- > Wide range of sizes available from 6 mm to 42 mm and 1/8" to 1" nominal bore (larger sizes available on request)
- > Different pipe material can be used such as stainless steel, brass, copper, aluminium, PU and nylon
- > Fittings can be used with seam welded tubing
- > Temperature: -45°C to $+200^\circ\text{C}$ (Standard seal is suitable for -45°C to $+150^\circ\text{C}$, optional Viton for -30°C to $+200^\circ\text{C}$)
- > Testing and Approvals: PED 97/23/EC, Shock & vibration tested to EN 61373, salt spray tested to ISO 9227-06
- > Corrosion resistant "AL2" alloy/brass/stainless

Pneufit fittings

- > Suitable for flexible hose
- > Suitable for door systems and auxiliary equipment
- > Comprehensive range of shapes and sizes
- > 4 mm to 14 mm / 1/8" to 1/2" tube diameters available
- > Quick, reliable and safe connection
- > Widely used in freight wagon applications



Push-on fittings

- > Ideal for fluid and vacuum applications
- > Comprehensive range of shapes and sizes
- > 4 mm to 14 mm tube diameters available
- > Reliable and safe connection

Fleetfit fittings

- > Simple tube connection and disconnection – no tools required
- > Ease of tube insertion in areas of restricted access
- > Internal tube support as standard for greater safety
- > DIN & SAE approved for commercial vehicles
- > Heavy duty brass construction

Tubing

- > Fire and smoke resistant nylon tubing
- > Tube tested and conforming to the following standard:
 - > DIN 5510
 - > NF F 16-101
 - > EN 45545
- > Suitable for use with our Fleetfit vehicle fittings



Pressure detection

21D Pressure Switch

The IMI Norgren 21D electro mechanical all-fluid pressure switch has been designed to monitor pressure levels in a variety of rail system applications, such as rail vehicle brakes, pantographs, Compressor control, shoe gear, air suspension, horn operation and many others.

The 21D is manufactured from carefully selected high-performance materials, including gold plated or silver plated switch contacts, as well as hard wearing silicone for the diaphragm – to maximise performance and component life-span.

The 21D has an IP65 rating to EN 60529 to maintain the integrity of the system against contamination or damage from fluids and solids. It also offers a high number of switching cycles, with optimum accuracy and repeatability of +/- 3% of the final pressure value which is maintained over the whole life of the product.

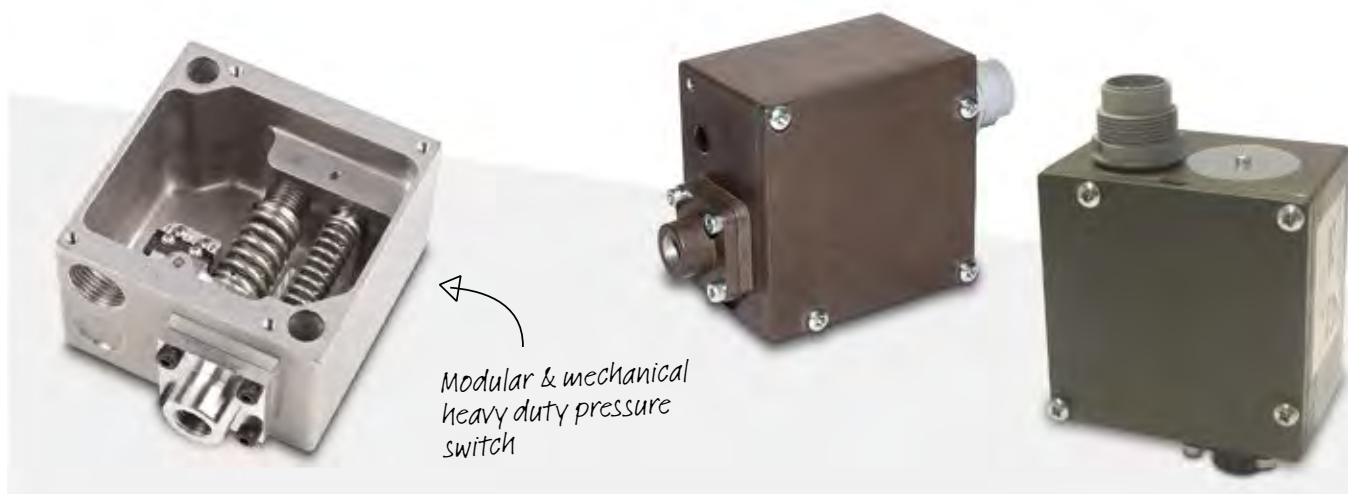
The modular design allows for different mounting options and electrical interfaces as well as a wide choice of single pole and double pole switching logics. The micro switches used provide a long life, high accuracy and have been approved by UL/CSA.

Product Highlights

- > High accuracy
- > Minimal drift over lifetime (1,000,000 cycles)
- > Easily adjustable independent upper and lower pressure settings (adjustable hysteresis)
- > Robust design
- > Ease of adjustment
- > High technology production cell
- > Designed specifically for Rail Sector
- > On request:
 - > Customised labelling
 - > Customised part numbering and serial number control
- > Factory pre-setting
- > Special adaptations
- > Direct replacement for many existing switches
- > Global sales and technical support

Technical Specification

- > Temperature Range: -40°C to +70°C
- > Pressure Range: 0.1 to 10 bar
- > Min. switching pressure difference: 0.15 bar
- > Max. switching pressure difference: 4.5 bar
- > NO/NC switching logic
- > Protection Class: IP65
- > Max. current draw: 3A at 24 VDC; 0.7A at 110 VDC
- > Min. current draw: 5mA at 5 VDC





19S Pressure Sensor

The IMI Norgren 19S all fluid pressure sensor can be used in a variety of rail system applications.

The 19S is manufactured from carefully selected high performance materials, including a stainless steel housing.

The 19S has an IP67 rating to EN 60529 to maintain the integrity of the sensor against contamination or damage from fluids and solids. It is also EMC rated to EN 61000-6-2 and EN 61000-6-3 conforming to RL 3004/108/EC

- > Robust sensor for hydraulic/fluid applications
- > Small, space saving stainless steel construction
- > Excellent long-term stability
- > M12 or MIL electrical connection
- > Global sales and technical support
- > 0 – 50 bar (Port size: G1/4)
- > Wide temperature range
- > Cold Test (DIN EN 60068-2-1:2008-01)
- > Dry heat (DIN EN 60068-2-2:2008-05)
- > Test on voltage peaks of the electrostatic discharge and the sensitivity of transient bursts (EN 50121-3-2:2007-07)
- > Shock & Vibration IEC/EN 61373: 1999, Category 2
- > Salt Spray testing 1000h (ISO 9227:2012-04)
- > Life time test (2 million switching cycles)



19S Allfluid electronic pressure sensor



AMT rail dryers

Compressed air dryers with patented amt technology.

Our revolutionary air dryers offer outstanding levels of performance and reliability – a step change in the use of compressed air applications in the rail sector.

With a life span up to 8 years without maintenance and service life of upto 8 years (24,000 hrs) – significantly more than even the best performing alternatives – our patented Adsorbent Media Tube (AMT) dryer marks a significant advance over both desiccant and membrane systems, effectively taking their best features while eliminating the flaws.

Vibration resistant and suitable for both horizontal and vertical installation, the result is a 'fit and forget' product which dries better than any current solution. This improves reliability, reduces unplanned downtime and helps drive down the cost of ownership.



↙ Twin
AMT system



Patented technology for improved performance:

- > Service life of up to 24,000 hours (eight years)
- > Compact and flexible design, horizontally or vertically mounted
- > Typical dew point suppression of 40°C
- > Superior moisture uptake
- > High energy efficiency
- > Unaffected by saturation
- > Faster regeneration
- > Resistant to vibration
- > No by-products produced

AMI dryer
media



Conventional
dryer media



Filtration systems

Robust and reliable air preparation equipment

As the inventor of the automatic airline lubricator in 1927, we have a deep insight into the air preparation problems facing many industries, especially rail.

Engine-driven air compressors used on rail vehicles are known to pass significant amounts of oil and carbon deposits into compressed air systems.

Our multi-stage filtration system – now fitted to vehicles throughout the world – has resulted in significant improvements in particulate and oil removal, leading to better durability and reliability, and significant savings for operators on installation and maintenance costs.

- > Excellent filtration performance ensures reliability of downstream components and systems
- > Modular system
- > Pre-assembled package minimises installation time
- > Optional visual or electric service life indicator
- > Manual or automatic drains for filters and condensate tanks. Automatic units can be electrically or pilot operated.
- > 40 micron and 5 micron filters for bulk water and solid particulate removal
- > Coalescing filter for oil/water aerosol removal and sub micron particulate removal
- > Carbon filter for oil vapour removal. Oil and particles removed from downstream – ISO 8573-1
- > Easy installation and maintenance
- > Cost effective over the full lifecycle

Multi stage
filtration



5 micron

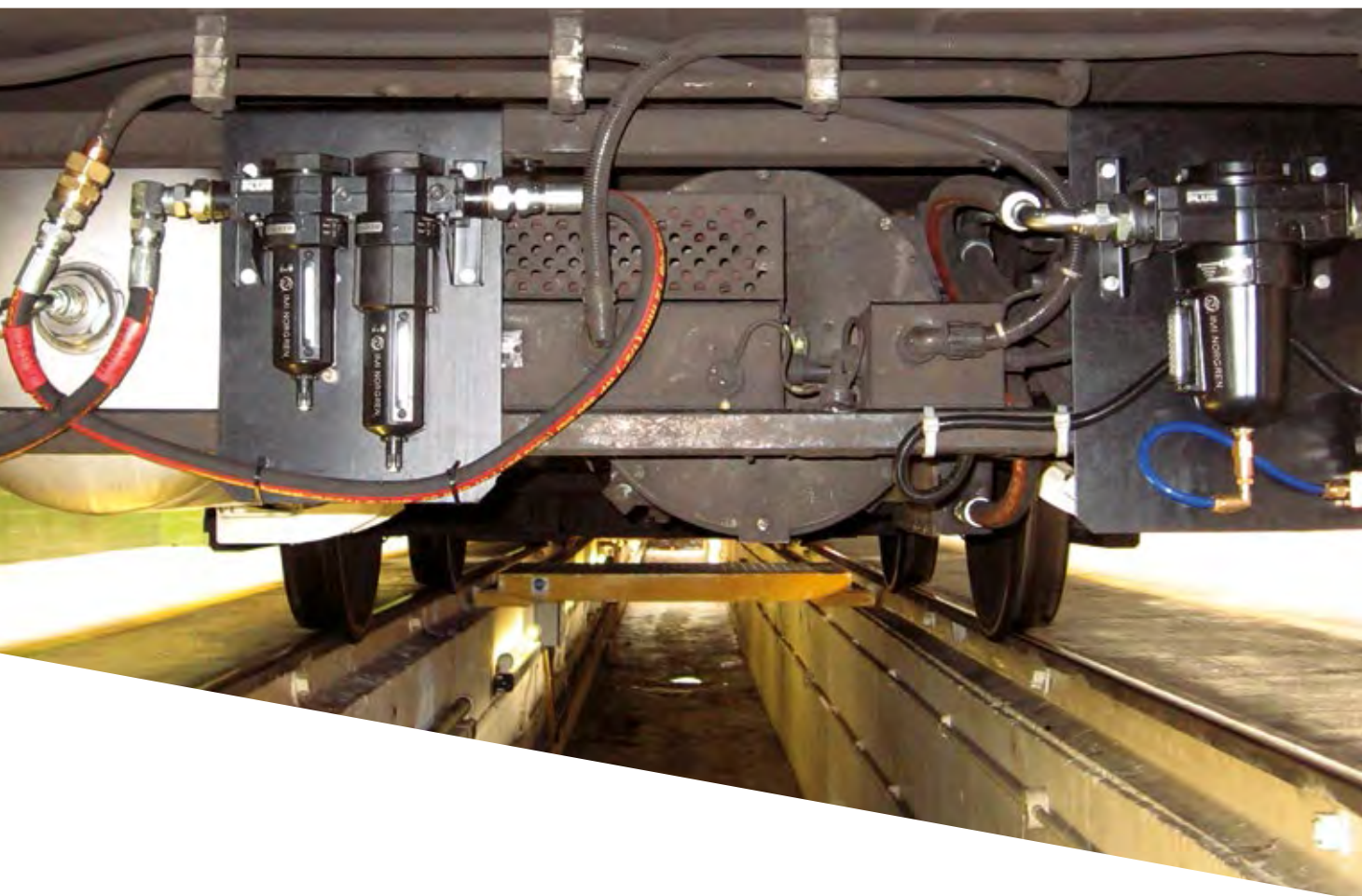


40 micron



Coalescing filter
element





Oil-free compressed air for auxiliary rail systems, brakes and door equipment

Rolling stock owners have encountered major reliability problems with their vehicles due to the engine driven compressor constantly passing oil further down the vehicle to the sub systems.

The large amounts of oil, carbon and water produced by the engine-driven compressor enter the vehicle system, causing failures that affect a train's reliability and safety.

This reliability problem has a major impact on running costs due to increased maintenance and vehicle system failures, which can range from £25 to £1,000 per minute in out-of-service costs.

In response, our UK Technical Team, together with a Rail Approval institution, developed a four-stage filtration system to remove the oil and water being carried to the vehicle sub systems.

This system has been proven to be successful and the customer has asked for it to be incorporated into its fleet of 660 vehicles.

We exceeded customer expectations by offering a bespoke solution that met budgetary costs, as well as delivering a short installation time, which resulted in vehicle trials commencing sooner.

The 'oil carry over' solution gives the customer true added value, with extended lifecycle costs, and a payback on investment within one year.

Mains Air

Drain Valves

IMI Norgren offers fully pneumatic or electrical operated drain valves to remove condensate from compressed air systems.

Electrically actuated valves

Technical Specification

- > Operating Pressure 0 to 10 bar (0 to 145 psi)
- > Medium: Compressed air, water and non aggressive viscous liquids
- > Wide temperature range from -40°C to +70°C
- > Port size/mounting: G1/4
- > Shock and vibration tested to EN 61373, Category 2
- > Fire and smoke compliance to EN 45545-2 and NF F16-101
- > Available in all common rail voltages



Pneumatic actuated valves

Technical Specification

- > Operating Pressure 0 to 12 bar (0 to 174 psi)
- > Medium: Compressed air lubricated or non-lubricated, water
- > Wide temperature range from -40°C to +70°C
- > Port size: G1/4
- > Shock and vibration tested to EN 61373, Category 2
- > Fire and smoke compliance to EN 45545-2



Manifold Systems

IMI Norgren purpose built manifold solutions are fully rail approved and can be used in many applications where a compact solution is required.

- > Compact and modular control systems
- > Purpose built customer manifolds
- > Rail validated components
- > Global sales and technical support

Flanged Mounted Products

IMI Norgren has a large selection of flanged/ interface mounted products that can be integrated into an original or new customer solution. These products all meet the required rail approvals.

- > Compact and modular components
- > Fully rail validated
- > Global sales and technical support



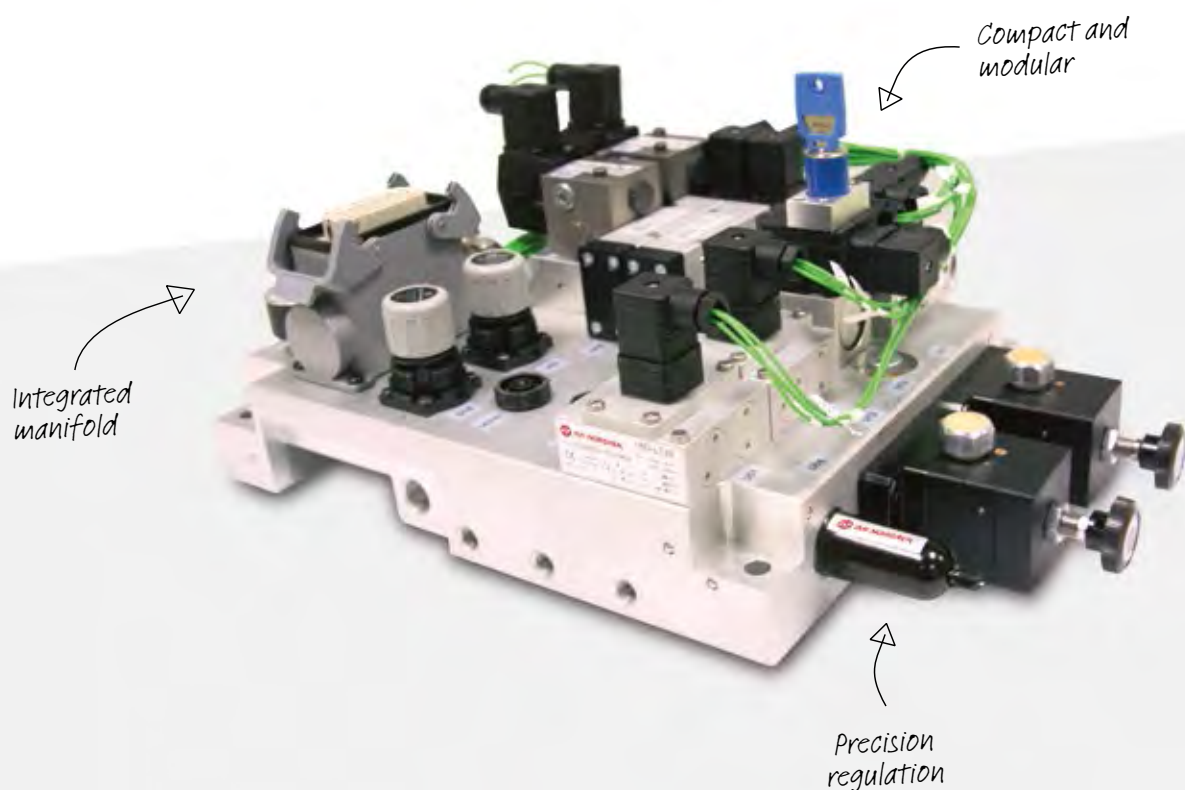
Pantograph control

Pneumatic pantograph control systems.

With high-speed trains becoming faster, pantograph systems are expected to be more responsive to height variations.

We design and manufacture pneumatic systems that attach to pantographs, and retract quickly, reliably and accurately from the overhead power cables when required.

- > Actuation and control solutions for raising and lowering the pantograph
- > Precision regulation or proportional pressure valves used to achieve constant contact
- > Use of valves, pressure switches, filters and regulators for control panels
- > Compact and modular control solutions
- > Ability to work in both high and low temperatures (-40°C to +80°C)
- > Tested for 400km/h trains to withstand external elements and constant shock and vibration
- > Optional "Auto Drop Down (ADD)" and "Over-reach" control functions
- > 1000 hours salt spray validated



High flow precision regulator for pantograph systems

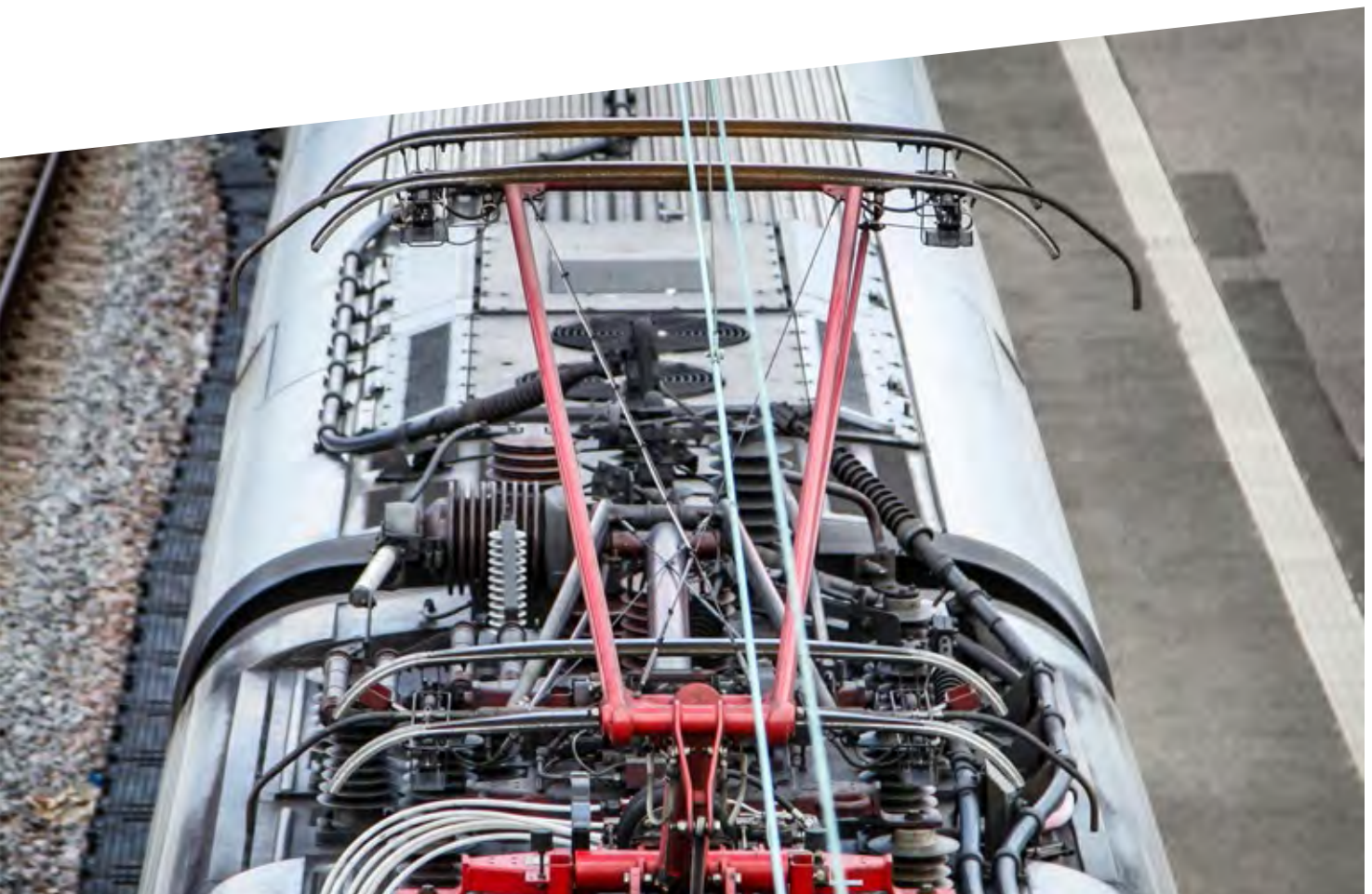
Pantograph systems are expected to work harder as train manufacturers continue to develop faster trains. If the pantograph is detached from the wire, arcing can occur, reducing the life of the wire and carbon strip.

Our LR27H high flow precision regulator is a fast response, high flow precision regulator, which enables the pantograph to respond to the height variations on electric overhead lines.

The pressure regulator is the heart of the pantograph system, as it regulates and maintains the force of the carbon strip onto the overhead wires.

As the wires are mounted between supports, the pantograph needs to extend and retract with the height variations of the wires. The faster the train, the faster the reaction time needed.

It provides unrivalled performance, with a rapid, quiet and stable operation, in a temperature range of -40°C to $+80^{\circ}\text{C}$.



Auto Drop Down Valve (ADD)

The Norgren ADD valve offers quick release for pantographs to help to avoid expensive damage to the system.

Product Highlights

- > Compact design
- > Lightweight and corrosion resistant anodised aluminium
- > Moulded TPE diaphragm with no spring for added reliability
- > High flow rate
- > Global sales and technical support

Technical Specification

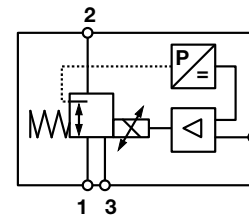
- > Operating Pressure: 0.4 to 8 bar (5.8 to 101.5 psi)
- > Port sizes : G3/4, G1, G1½, G2, G2½, G3, ¾ NPT, 1 NPT, 1½ NPT, 2 NPT, 2 ½ NPT
- > Wide temperature range: -40°C to +85°C°
- > Shock & Vibration EN 61373, Category 1, class A and B



Proportional control

IMI Norgren's proportion control products can be used in a wide range of applications including sanding control, pantograph control, suspension control and many more where a pressure can be accurately adjusted using a 4-20mA input signal.

- > Closed-loop proportional pressure control valve
- > High flow
- > Excellent performance characteristics
- > Fast response time
- > Adjustable gain and pressure range
- > Low power consumption
- > Feedback signal
- > Manifold mountable
- > Temperature range: -40°C to +80°C
- > Shock and vibration tested to EN61373
- > 24VDC
- > 4-20mA input signal
- > High life due to glandless spool technology
- > Global sales and technical support
- > 1000 hrs salt spray validated
- > Rail EMC compliant
- > EN45545-2



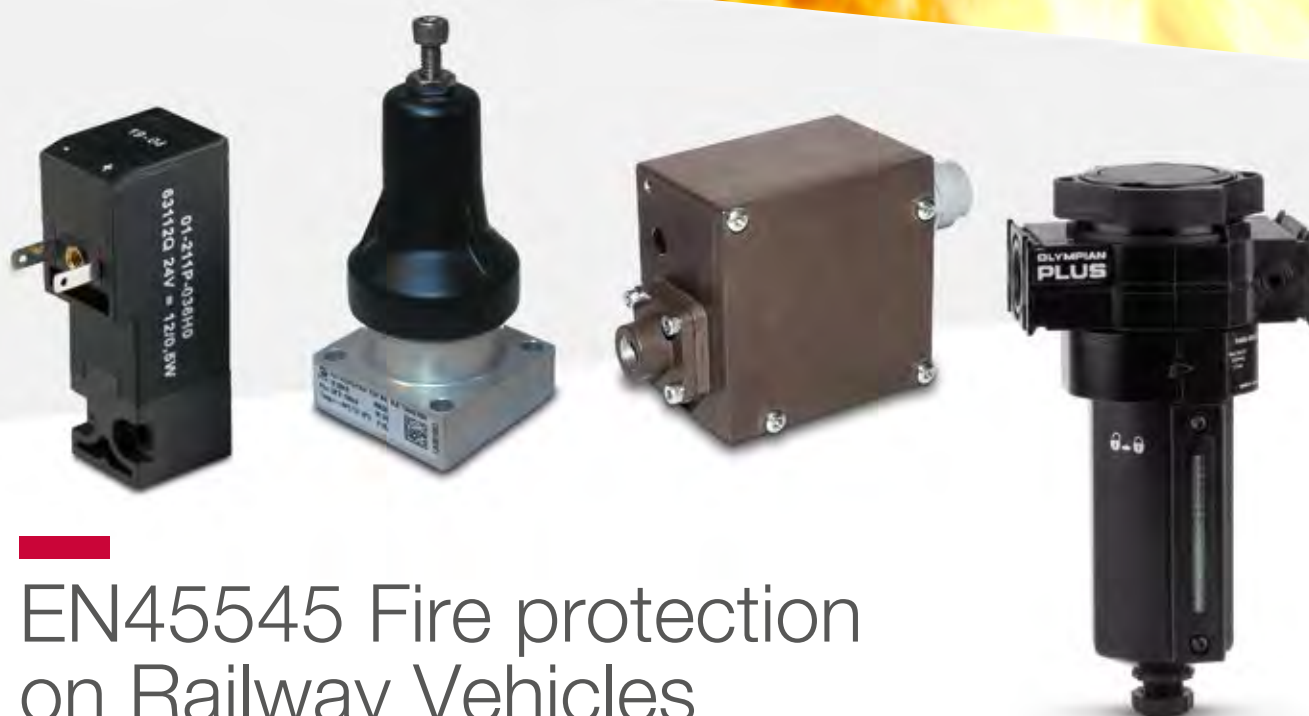
Isolating Valves

IMI Norgren's specifically designed isolating valves are fully rail approved and can be used in many applications from mains air shut off on the bogie to isolating certain parts of the compressed air circuit.

This can help to ensure a safe working environment for any maintenance work carried out on the train.



- > Designed specifically for the Rail Sector
- > Leak tight design over wide temperature range
- > Flange and In-line version
- > Different handle options available
- > Electrical monitoring options
- > Robust design
- > Easy to maintain
- > DN7 – DN32
- > IP65 Rated
- > Comprehensive validation
- > Global sales and technical support

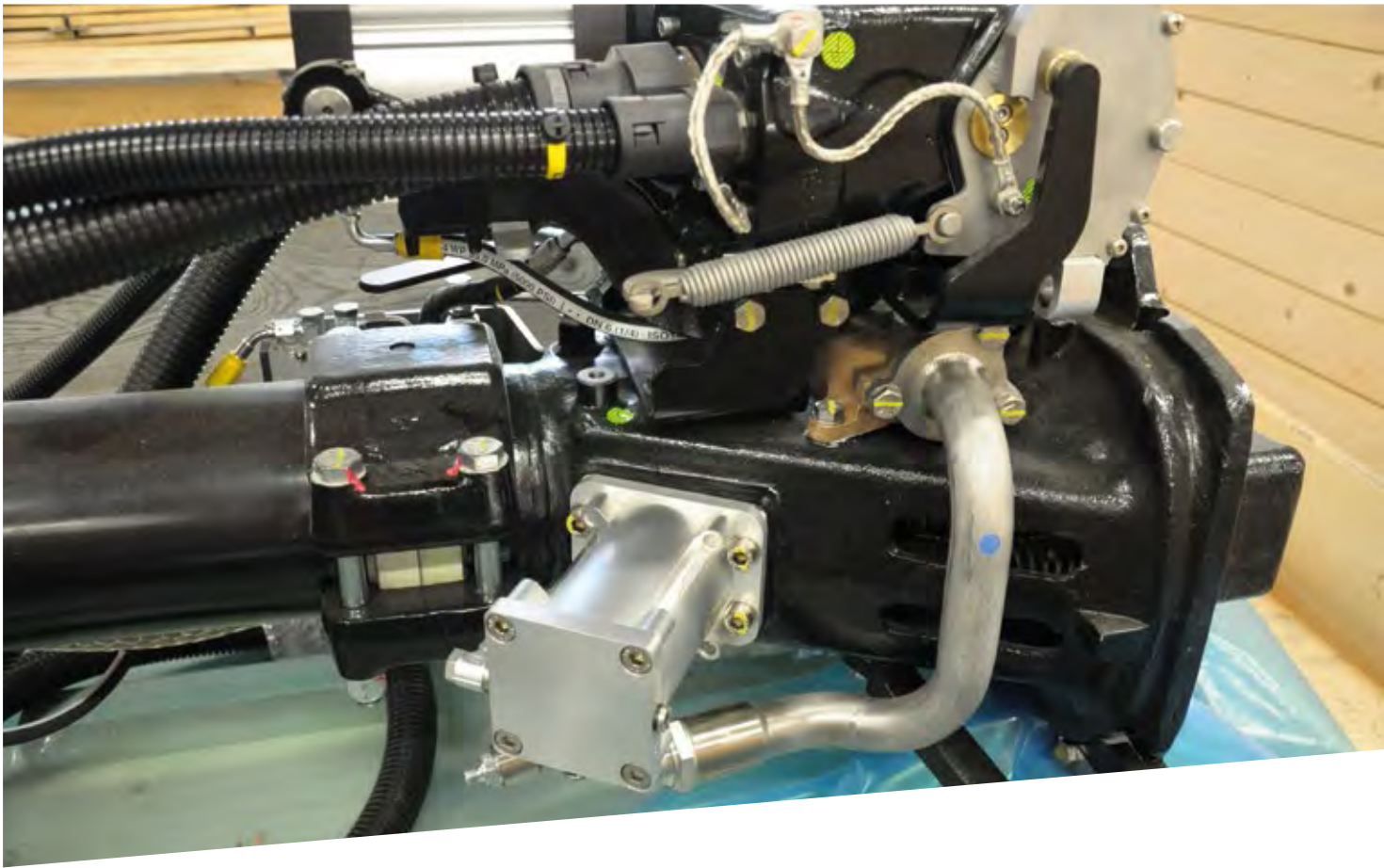


EN45545 Fire protection on Railway Vehicles

EN45545 defines a classification system that specifies requirements for fire behaviour of materials and products used in trains and became fully enforceable in Europe from June 2016.

IMI Norgren fully understands the importance of this European standard and we are continually working on making our product range compliant.

To view our current compliant products which include downloadable declarations please visit: <https://www.imi-precision.com/uk/en/expertise/rail/en45545>



Coupling and nose cones

Our special cylinders and customised control systems for carriage coupling/uncoupling are specifically designed to deliver reliable performance, reduce complexity and size, and meet low temperature needs.

Pneumatic components in nose cones

- > Opening and closing actuators
- > Special locking actuators including integrated switches and one electrical connector
- > Valves or modular control unit including filtration, pressure regulation and manual valves

Pneumatic components on couplings

- > Control manifolds and actuation for locking/unlocking function
- > Valve control and motion of the electric head
- > Valve control of telescopic coupler shank



Nose cone/coupling manifold reduces complexity and size, and meets low temperature requirements

The nose cones of high-speed trains must open for coupling or decoupling. A global designer and manufacturer of coupling systems wanted to reduce the complexity of the pneumatic circuits and the number of components required to open the nose cone.

They wanted an integrated pneumatic system that was modular, compact and effective at low temperatures.

We designed a new locking cylinder to move the doors of the nose cover. We combined existing valves, and other proven components on a custom base plate, to create a single manifold assembly that controls the entire nose cone coupling system - no need to source multiple components from various suppliers.

The compact pneumatic platform can be configured to fit into any nose cone design, with the easy-to-install integrated unit eliminating extra wiring and tubing to make installation faster.

This pneumatic assembly operates at -40°C , meeting a key high-speed rail requirement, and allowing the OEM to standardise offerings across the globe.



Mirror control

We have supplied the global rail sector with complete rear view mirror and control systems for more than 10 years.

Fitted to both sides of a train, and used to allow the driver to check movement of passengers in the train station, the mirror retracts to the train body for protection once the train reaches 20kph.height variations.

Pneumatically operated mirror

- > Fully adjustable and can be fixed in any position
- > Smooth slow opening and closing movement
- > Rail temperature and vibration tested
- > Bespoke solution to suit individual needs
- > Complete system, including the mirror and controls

Pneumatic/electric operated mirror

- > Pneumatic and electrically retractable mirror, operated from driver's dashboard
- > Complete solutions including mirror assembly with mechanism, pneumatic/electric actuation and control

Mirror control positioning

- > Special pneumatic actuator and controls
- > Force resistance at high speed
- > External speed and cushion adjustment
- > Fully integrated design
- > Wide temperature range
- > Highly reliable operation







New online services

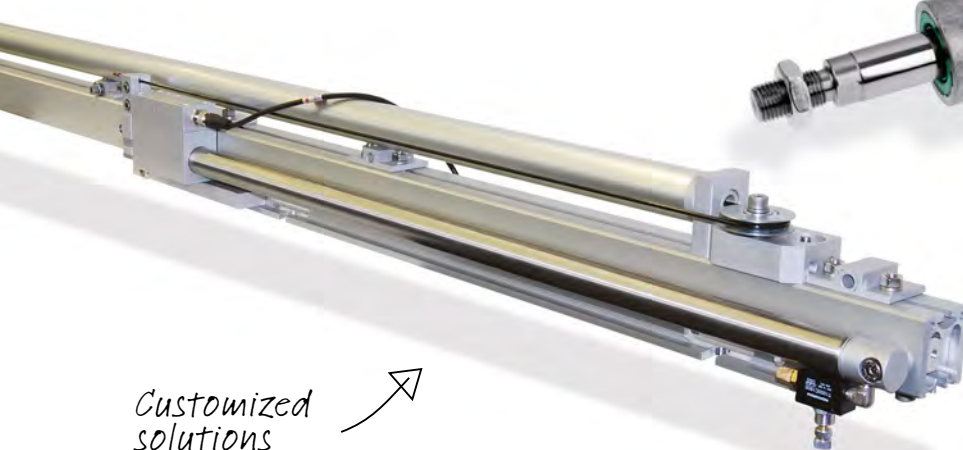
To improve your experience, we have introduced a range of web services, including a dedicated rail section where product data, EN45545 declarations, IOM's and brochures can be downloaded. We're engineering GREAT access to our products and services to help you save time and work more efficiently.

Actuators

High performance
cylinders for a wide
range of applications



Customized
solutions
door applications



Heavy duty
latching
cylinders



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering actuator range. If you can't see the option you require please contact us.

LPRA/182000/M

Double acting profile cylinders
Ø 32 ... 125 mm



Page 47

LRA/8000/M

Double acting cylinders
Ø 32 ... 200 mm



Page 51

LRM/900/M

Heavy duty cylinders
Ø 1 1/4 ... 4"



Page 59

LRM/900

Heavy duty cylinders
Ø 5 ... 14"



Page 66

NFPA

Double acting cylinders
Ø 4 ... 8"



Page 72

LRM/55401/M

Double acting
roundline cylinders
Ø 32 ... 100 mm



Page 78

M/31000

Air bellows, single acting
Ø 8 ... 14 1/2 inch



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DOUBLE ACTING PROFILE CYLINDERS

LPRA/182000/M Ø 32 ... 125 mm

- High performance, stability and reliability
- M/50 switches (solid state) can be mounted flush with the profile
- Cylinders and mountings conform to ISO 15552 (ISO 6431, VDMA 24562 and NFE 49-003-1)
- Comprehensive range of mountings
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Compressed air, filtered, lubricated or non-lubricated

Standard:
ISO 15552

Operation:
Double acting, magnetic piston, adjustable cushioning

Operating pressure:
1 ... 16 bar

Operating temperature:
-40°C ... +80°C max.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Air ports:
ISO G parallel or NPT

Cylinder diameters:
32, 40, 50, 63, 80, 100, 125 mm

Strokes:
Standard: see page below
Non-standard strokes:
Available (10 ... 3000 mm)

Materials

Profile barrel:
Anodised aluminium

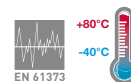
End covers: Pressure diecast aluminium

Piston rod: Stainless steel (martensitic)

Piston rod seals: Polyurethane

Piston seals: Polyurethane

O-rings: Nitrile rubber



Technical data

Cylinder Ø (mm)	32	40	50	63	80	100	125
Air ports	1/8"	1/4"	1/4"	3/8"	3/8"	1/2"	1/2"
Piston rod Ø (mm)	12	16	20	20	25	25	32
Piston rod thread	M10 x 1,25	M12 x 1,25	M16 x 1,5	M16 x 1,5	M20 x 1,5	M20 x 1,5	M27 x 2
Cushion length mm (inch)	19 (.75)	22 (.87)	24 (.94)	24 (.94)	27 (1.06)	34 (1.34)	41 (1.61)
Theoretical thrusts at 6 bar (87 psi) outstroke N (lb)	482 (108)	754 (169)	1178 (265)	1870 (420)	3016 (678)	4710 (1059)	7363 (1656)
Theoretical thrusts at 6 bar (87 psi) instroke N (lb)	414 (93)	633 (142)	990 (222)	1680 (378)	2722 (612)	4416 (993)	6882 (1547)
Air consumption at 6 bar (87 psi) outstroke l/cm (inch ³ /inch)	0,056 (8.7)	0,088 (13.7)	0,137 (21.3)	0,218 (33.9)	0,35 (54.4)	0,55 (85.5)	0,86 (133.7)
Air consumption at 6 bar (87 psi) instroke l/cm (inch ³ /inch)	0,048 (7.5)	0,074 (11.5)	0,114 (17.7)	0,195 (30.3)	0,32 (49.8)	0,51 (79.3)	0,79 (122.9)

Option selector

Piston rod material	Substitute		Strokes (mm)	
Stainless steel martensitic (standard)	R		3000 max.	
Hard chromium plated	C		Variants (magnetic piston)	Substitute
Stainless steel austenitic	S		Standard	M
Thread form (air ports only)	Substitute		Piston rod bellow	MG
ISO G parallel	A		Without cushion	MW
NPT	C		Double ended piston rod	JM
Cylinder Ø (mm)	Substitute*		Four-positon cylinder	MT
032, 040, 050, 063, 080, 100, 125			Extended piston rod	MU
			LP**/182***/MU/***/**	Extension (mm)

* Please insert the relevant diameter (3 digits).

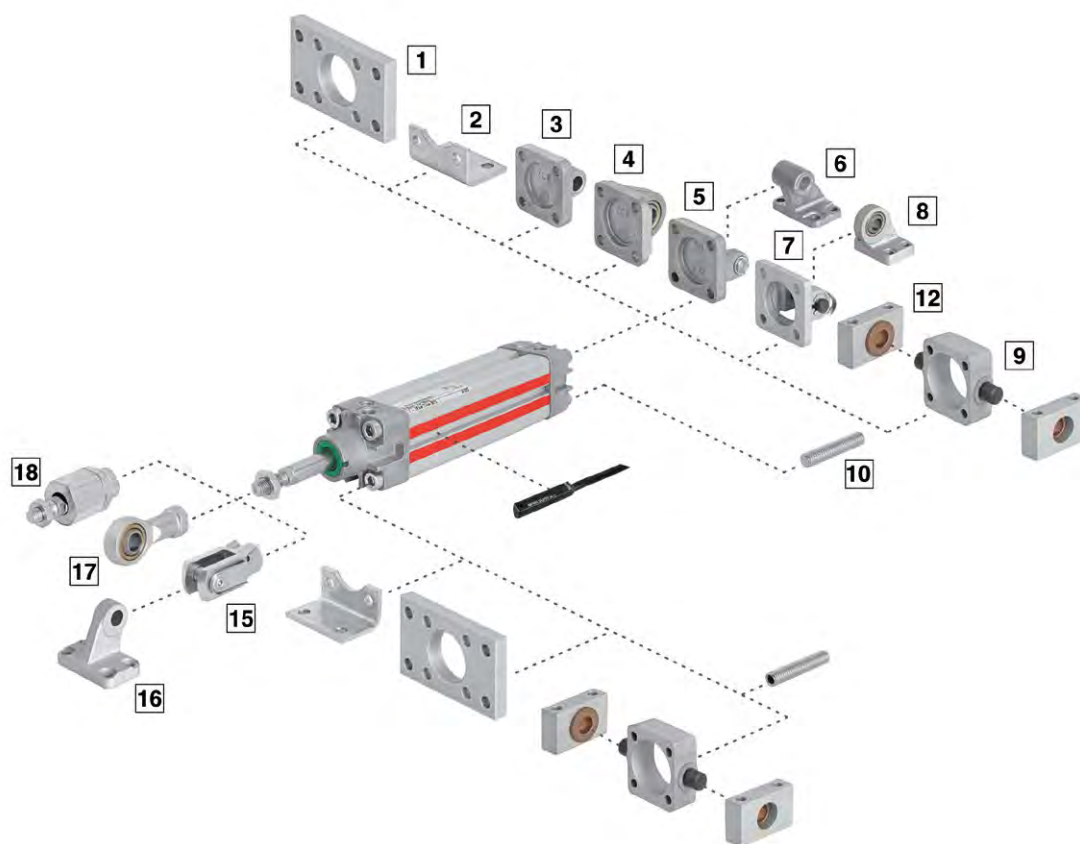
Standard strokes

Cylinder Ø (mm)	Strokes (mm)	25	50	80	100	125	160	200	250	320	400	500
32	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•	•

DOUBLE ACTING PROFILE CYLINDERS

LPRA/182000/M Ø 32 ... 125 mm

● Mountings and service kit



Model	A 10	AK 18	B, G 1	C 2	D 5	D2 7	F 15	FH 9
32	QM/8032/35	QM/8025/38	QA/8032/22	QA/8032/21	QA/8032/23	QA/8032/42	QM/8025/25	QA/8032/34
40	QM/8032/35	QM/8040/38	QA/8040/22	QA/8040/21	QA/8040/23	QA/8040/42	QM/8040/25	QA/8040/34
50	QM/8050/35	QM/8050/38	QA/8050/22	QA/8050/21	QA/8050/23	QA/8050/42	QM/8050/25	QA/8050/34
63	QM/8050/35	QM/8050/38	QA/8063/22	QA/8063/21	QA/8063/23	QA/8063/42	QM/8050/25	QA/8063/34
80	QM/8080/35	QM/8080/38	QA/8080/22	QA/8080/21	QA/8080/23	QA/8080/42	QM/8080/25	QA/8080/34
100	QM/8080/35	QM/8080/38	QA/8100/22	QA/8100/21	QA/8100/23	QA/8100/42	QM/8080/25	QA/8100/34
125	QM/8125/35	QM/8125/38	QM/8125/22	QM/8125/21	QM/8125/23	QA/8125/42	QM/8125/25	QA/8125/34
Model	R 3	S 12	SS 16	SW 6	UF 17	UR 4	US 8	Service kit
32	QA/8032/27	QA/8032/41	M/P19931	M/P19493	QM/8025/32	QA/8032/33	M/P40310	LQA/8032/00
40	QA/8040/27	QA/8040/41	M/P19932	M/P19494	QM/8040/32	QA/8040/33	M/P40311	LQA/8040/00
50	QA/8050/27	QA/8040/41	M/P19933	M/P19495	QM/8050/32	QA/8050/33	M/P40312	LQA/8050/00
63	QA/8063/27	QA/8063/41	M/P19934	M/P19496	QM/8050/32	QA/8063/33	M/P40313	LQA/8063/00
80	QA/8080/27	QA/8063/41	M/P19935	M/P19497	QM/8080/32	QA/8080/33	M/P40314	LQA/8080/00
100	QA/8100/27	QA/8100/41	M/P19936	M/P19498	QM/8080/32	QA/8100/33	M/P40315	LQA/8100/00
125	QM/8125/27	QA/8100/41	M/P19937	M/P19499	QM/8125/32	QM/8125/33	M/P71355	LQA/8125/00

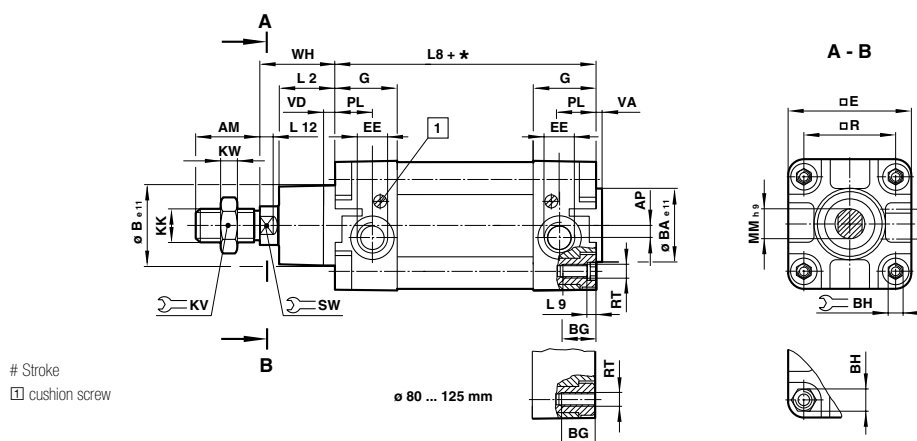
DOUBLE ACTING PROFILE CYLINDERS

LPRA/182000/M Ø 32 ... 125 mm

Switches

Voltage V d.c.	Current max.	Temperature	LED	Features	Cable length	Cable type	Protection class *1)	Model
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	PNP	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAP/*V
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	NPN	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAN/*V

Dimensions



Ø	AM	AP	Ø Be 11	Ø BAe 11	BG	BH	q E	EE	G	KK	KV	KW	L2	L8
32	22	3,5	30	30	16	6	47	1/8"	27,5	M10x1,25	17	5	20	94
40	24	4,5	35	35	16	6	53	1/4"	32	M12x1,25	19	6	22	105
50	32	6	40	40	16	8	65	1/4"	31	M16x1,5	24	8	27	106
63	32	10	45	45	16	8	75	3/8"	33	M16x1,5	24	8	29	121
80	40	8,5	45	45	17	19	95	3/8"	33	M20x1,5	30	10	33	128
100	40	9	55	55	17	19	115	1/2"	37	M20x1,5	30	10	36	138
125	54	10	60	60	20	24	140	1/2"	46	M27x2	41	13,5	45	160
Ø	L9	L12	Ø MMh 9	PL	q R	RT	SW	VA	VD	WH	at 0 mm	per 25 mm	Model (standard)	
32	4	6	12	13	32,5	M 6	10	3	6	26	0,51 kg	0,06 kg	LPR#/182032/M/*	
40	4	6,5	16	15	38	M 6	13	3,5	6	30	0,80 kg	0,08 kg	LPR#/182040/M/*	
50	5	8	20	18,5	46,5	M 8	17	3,5	6	37	1,33 kg	0,12 kg	LPR#/182050/M/*	
63	5	8	20	19	56,5	M 8	17	4	6	37	1,80 kg	0,13 kg	LPR#/182063/M/*	
80	–	10	25	19	72	M 10	22	4	6	46	3,25 kg	0,20 kg	LPR#/182080/M/*	
100	–	10	25	18	89	M 10	22	4	6	51	4,81 kg	0,23 kg	LPR#/182100/M/*	
125	–	13	32	20	110	M 12	27	6	15,5	65	8,00 kg	0,33 kg	LPR#/182125/M/*	

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.

DOUBLE ACTING PROFILE CYLINDERS

LPRA/182000/M Ø 32 ... 125 mm

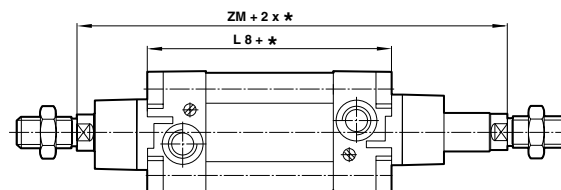
● Cylinder variants

LPR./182000/JM – Double ended piston rod

Ø	ZM	L8	Model (standard)
32	146	94	LPR#/182032/MJ/*
40	165	105	LPR#/182040/MJ/*
50	180	106	LPR#/182050/MJ/*
63	195	121	LPR#/182063/MJ/*
80	220	128	LPR#/182080/MJ/*
100	240	138	LPR#/182100/MJ/*
125	290	160	LPR#/182125/MJ/*

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.



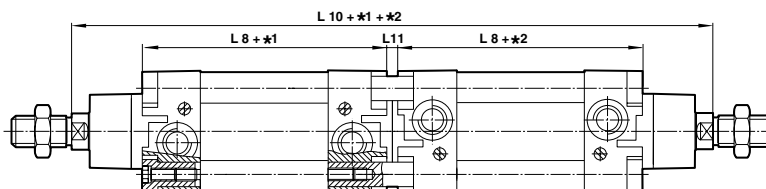
LPR./182000/MT – Four-position cylinder

Ø	L8	L10	L11	Model (standard)
32	94	247	7	LPR#/182032/MT/*/**
40	105	278	8	LPR#/182040/MT/*/**
50	106	294	8	LPR#/182050/MT/*/**
63	121	325	9	LPR#/182063/MT/*/**
80	128	357	9	LPR#/182080/MT/*/**
100	138	387	9	LPR#/182100/MT/*/**
125	160	462	12	LPR#/182125/MT/*/**

* Please insert standard stroke length.

** Please insert standard stroke length 1 and stroke length 2

Please insert 'A' for ISO G parallel or 'C' for NPT threads.



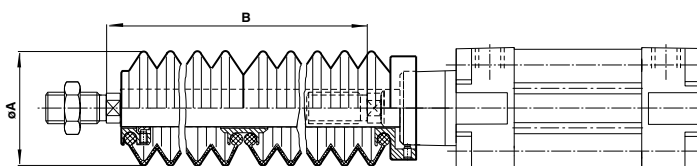
* stroke length 1 and stroke length 2

LPR./182000/MG – Piston rod bellow

Ø	Ø A	Max. stroke per bellow	Piston rod extension B		Model (standard)
			for first bellow	for further bellow	
32	40	60	30	25	LPR#/182032/MG/*
40	63	145	50	32	LPR#/182040/MG/*
50	63	145	40	32	LPR#/182050/MG/*
63	63	145	40	32	LPR#/182063/MG/*
80	80	250	50	45	LPR#/182080/MG/*
100	80	250	50	45	LPR#/182100/MG/*
125	80	250	50	45	LPR#/182125/MG/*

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.



DOUBLE ACTING CYLINDERS

LRA/8000/M Ø 32 ... 200 mm

- High performance, stability and reliability
- Cylinders and mountings conform to ISO 15552 (ISO 6431, VDMA 24562 and NFE 49-003-1)
- Comprehensive range of mountings
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Standard:

ISO 15552

Operation:

Double acting, magnetic piston, adjustable cushioning

Operating pressure:

1 ... 16 bar

Operating temperature:

-40°C ... +80°C max.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Air ports:

ISO G parallel or NPT

Cylinder diameters:

32, 40, 50, 63, 80, 100, 125, 160, 200 mm

Strokes:

Standard: see page below

Non-standard strokes:

Available (10 ... 3000 mm)

Materials

Profile barrel:

Anodised aluminium,

End covers: Pressure diecast aluminium

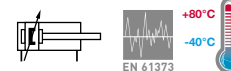
Piston rod: Stainless steel (martensitic)

Piston rod seals: Polyurethane

(Ø 125 ... 200 mm nitrile rubber)

Piston seals: Polyurethane (Ø 125 ... 200 mm nitrile rubber)

O-rings: Nitrile rubber



Technical data

Cylinder Ø (mm)	32	40	50	63	80	100	125	160	200
Air ports	1/8"	G1/4"	1/4"	3/8"	3/8"	1/2"	1/2"	3/4"	3/4"
Piston rod Ø (mm)	12	16	20	20	25	25	32	40	40
Piston rod thread	M10 x 1,25	M12 x 1,25	M16 x 1,5	M16 x 1,5	M20 x 1,5	M20 x 1,5	M27 x 2	M36 x 2	M36 x 2
Cushion length mm (inch)	19 (.75)	22 (.87)	24 (.94)	24 (.94)	27 (1.06)	34 (1.34)	41 (1.61)	45 (1.77)	45 (1.77)
Theoretical thrusts at 6 bar (87 psi) outstroke N (lb)	482 (108)	754 (169)	1178 (265)	1870 (420)	3016 (678)	4710 (1059)	7363 (1656)	12064 (2713)	18840 (4236)
Theoretical thrusts at 6 bar (87 psi) instroke N (lb)	414 (93)	633 (142)	990 (222)	1680 (378)	2722 (612)	4416 (993)	6882 (1547)	11310 (2543)	18090 (4068)
Air consumption at 6 bar (87 psi) outstroke l/cm (inch³/inch)	0,056 (8.7)	0,088 (13.7)	0,137 (21.3)	0,218 (33.9)	0,35 (54.4)	0,55 (85.5)	0,86 (133.7)	1,41 (219.3)	2,20 (342.1)
Air consumption at 6 bar (87 psi) instroke l/cm (inch³/inch)	0,048 (7.5)	0,074 (11.5)	0,114 (17.7)	0,195 (30.3)	0,32 (49.8)	0,51 (79.3)	0,79 (122.9)	1,32 (205.3)	2,10 (326.6)

Option selector

Piston rod material	Substitute	Strokes (mm)	Substitute
Stainless steel martensitic (standard)	R	3000 max.	
Hard chromium plated	C		
Stainless steel austenitic	S		
Thread form (air ports only)	Substitute	Variants (magnetic piston)	Substitute
ISO G parallel	A	Standard	M
NPT	C	Piston rod bellow	MG
		Without cushion	MW
		Double ended piston rod	JM
		Four-position cylinder	MT
		Extended piston rod	MU
		L**/8***/MU****/****	Extension (mm)

* Please insert the relevant diameter (3 digits).

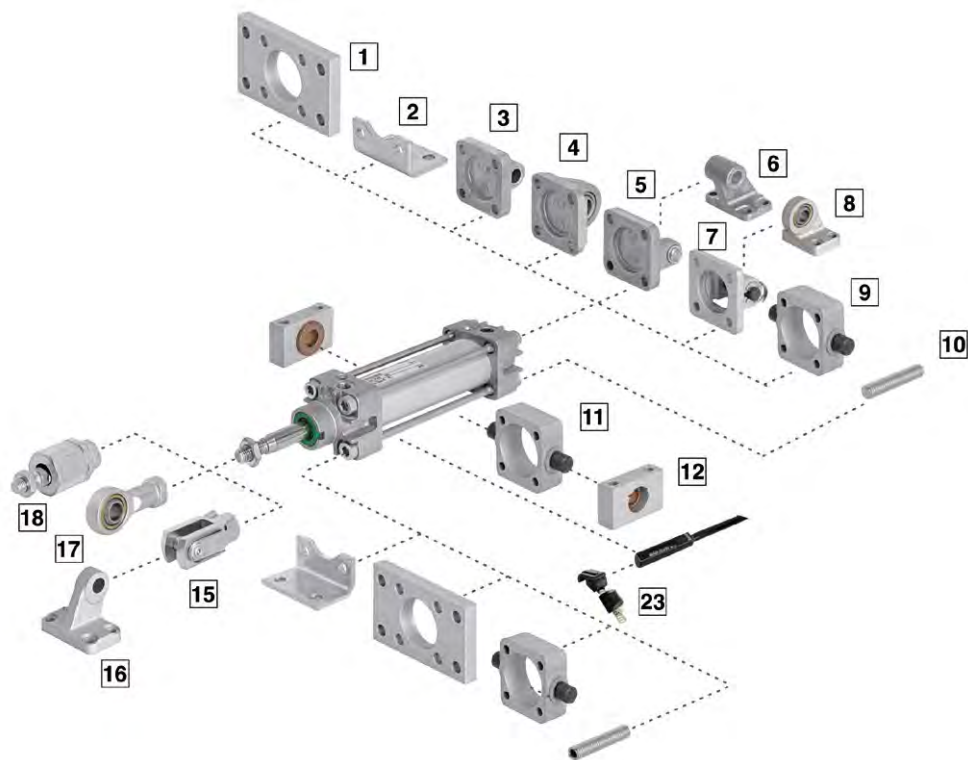
Standard strokes

Cylinder Ø (mm)	Strokes (mm)	25	50	80	100	125	160	200	250	320	400	500
32	•	•	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•	•	•
125	•	•	•	•	•	•	•	•	•	•	•	•
160	•	•	•	•	•	•	•	•	•	•	•	•
200	•	•	•	•	•	•	•	•	•	•	•	•

DOUBLE ACTING CYLINDERS

LRA/8000/M Ø 32 ... 200 mm

● Mountings and service kit



Model	A 10	AK 18	B, G 1	C 2	D 5	D2 7	F 15	FH 9	H 11
32	QM/8032/35	QM/8025/38	QA/8032/22	QA/8032/21	QA/8032/23	QA/8032/42	QM/8025/25	QA/8032/34	QA/8032/28
40	QM/8032/35	QM/8040/38	QA/8040/22	QA/8040/21	QA/8040/23	QA/8040/42	QM/8040/25	QA/8040/34	QA/8040/28
50	QM/8050/35	QM/8050/38	QA/8050/22	QA/8050/21	QA/8050/23	QA/8050/42	QM/8050/25	QA/8050/34	QA/8050/28
63	QM/8050/35	QM/8050/38	QA/8063/22	QA/8063/21	QA/8063/23	QA/8063/42	QM/8050/25	QA/8063/34	QA/8063/28
80	QM/8080/35	QM/8080/38	QA/8080/22	QA/8080/21	QA/8080/23	QA/8080/42	QM/8080/25	QA/8080/34	QA/8080/28
100	QM/8080/35	QM/8080/38	QA/8100/22	QA/8100/21	QA/8100/23	QA/8100/42	QM/8080/25	QA/8100/34	QA/8100/28
125	QM/8125/35	QM/8125/38	QM/8125/22	QM/8125/21	QM/8125/23	QA/8125/42	QM/8125/25	QA/8125/34	QA/8125/28
160	QM/8160/35	QM/8160/38	QM/8160/22	QM/8160/21	QM/8160/23	QA/8160/42	QM/8160/25	-	QA/8160/28
200	QM/8200/35	QM/8160/38	QM/8200/22	QM/8200/21	QM/8200/23	QA/8200/42	QM/8160/25	-	QA/8200/28
Model	R 3	S 12	SS 16	SW 6	UF 17	UR 4	US 8	Switch mounting 23	Service kit
32	QA/8032/27	QA/8032/41	M/P19931	M/P19493	QM/8025/32	QA/8032/33	M/P40310	QM/27/2/1	LQA/8032/00
40	QA/8040/27	QA/8040/41	M/P19932	M/P19494	QM/8040/32	QA/8040/33	M/P40311	QM/27/2/1	LQA/8040/00
50	QA/8050/27	QA/8040/41	M/P19933	M/P19495	QM/8050/32	QA/8050/33	M/P40312	QM/27/2/1	LQA/8050/00
63	QA/8063/27	QA/8063/41	M/P19934	M/P19496	QM/8050/32	QA/8063/33	M/P40313	QM/27/2/1	LQA/8063/00
80	QA/8080/27	QA/8063/41	M/P19935	M/P19497	QM/8080/32	QA/8080/33	M/P40314	QM/27/2/1	LQA/8080/00
100	QA/8100/27	QA/8100/41	M/P19936	M/P19498	QM/8080/32	QA/8100/33	M/P40315	QM/27/2/1	LQA/8100/00
125	QM/8125/27	QA/8100/41	M/P19937	M/P19499	QM/8125/32	QM/8125/33	M/P71355	QM/27/2/1	LQA/8125/00
160	QM/8160/27	QA/8160/41	M/P19938	M/P19679	QM/8160/32	QM/8160/33	M/P71356	QM/27/2/1	LQA/8160/00
200	QM/8200/27	QA/8160/41	M/P19939	M/P19683	QM/8160/32	QM/8200/33	M/P71357	QM/27/2/1	LQA/8200/00

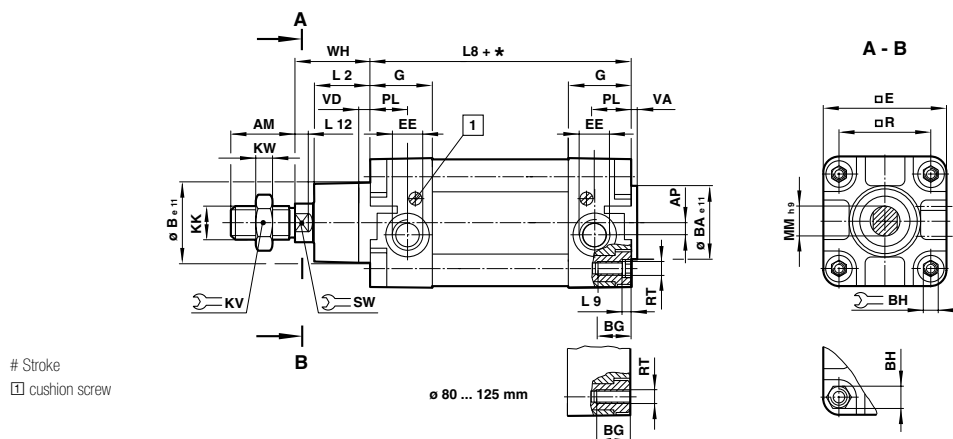
DOUBLE ACTING CYLINDERS

LRA/8000/M Ø 32 ... 200 mm

Switches

Voltage V d.c.	Current max.	Temperature	LED	Features	Cable length	Cable type	Protection class *1)	Model
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	PNP	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAP/*V
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	NPN	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAN/*V

Dimensions



Ø	AM	AP	Ø Be 11	Ø BAe 11	BG	BH	... E	EE	G	KK	KV	KW	L2	
32	22	3,5	30	30	16	6	47	1/8"	27,5	M10x1,25	17	5	20	
40	24	4,5	35	35	16	6	53	1/4"	32	M12x1,25	19	6	22	
50	32	6	40	40	16	8	65	1/4"	31	M16x1,5	24	8	27	
63	32	10	45	45	16	8	75	3/8"	33	M16x1,5	24	8	29	
80	40	8,5	45	45	17	19	95	3/8"	33	M20x1,5	30	10	33	
100	40	9	55	55	17	19	115	1/2"	37	M20x1,5	30	10	36	
125	54	10	60	60	20	24	140	1/2"	46	M27x2	41	13,5	45	
160	72	19	65	65	28,5	32	183,5	3/4"	50	M36x2	55	18	58	
200	72	19	75	75	28,5	32	224	3/4"	50	M36x2	55	18	67	
Ø	L8	L9	L12	Ø MMh 9	PL	q R	RT	SW	VA	VD	WH	at 0 mm	per 25 mm	Model
32	94	4	6	12	13	32,5	M 6	10	3	6	26	0,51 kg	0,06 kg	LPR#/182032/M/*
40	105	4	6,5	16	15	38	M 6	13	3,5	6	30	0,80 kg	0,08 kg	LPR#/182040/M/*
50	106	5	8	20	18,5	46,5	M 8	17	3,5	6	37	1,33 kg	0,12 kg	LPR#/182050/M/*
63	121	5	8	20	19	56,5	M 8	17	4	6	37	1,80 kg	0,13 kg	LPR#/182063/M/*
80	128	—	10	25	19	72	M 10	22	4	6	46	3,25 kg	0,20 kg	LPR#/182080/M/*
100	138	—	10	25	18	89	M 10	22	4	6	51	4,81 kg	0,23 kg	LPR#/182100/M/*
125	160	—	13	32	20	110	M 12	27	6	15,5	65	8,00 kg	0,33 kg	LPR#/182125/M/*
160	180	—	16	40	25	140	M 16	36	4	15	80	14,9 kg	0,55 kg	LR#/8160/M/*
200	180	—	16	40	26	175	M 16	36	5	15	95	21,7 kg	0,60 kg	LR#/8200/M/*

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.

DOUBLE ACTING CYLINDERS

LRA/8000/M Ø 32 ... 200 mm

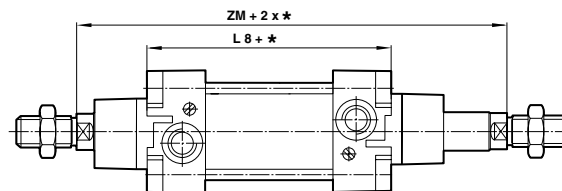
● Cylinder variants

LR./8000/JM – Double ended piston rod

Ø	ZM	L8	Model
32	146	94	LR#/8032/JM/*
40	165	105	LR#/8040/JM/*
50	180	106	LR#/8050/JM/*
63	195	121	LR#/8063/JM/*
80	220	128	LR#/8080/JM/*
100	240	138	LR#/8100/JM/*
125	290	160	LR#/8125/JM/*
160	340	180	LR#/8160/JM/*
200	370	180	LR#/8200/JM/*

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.



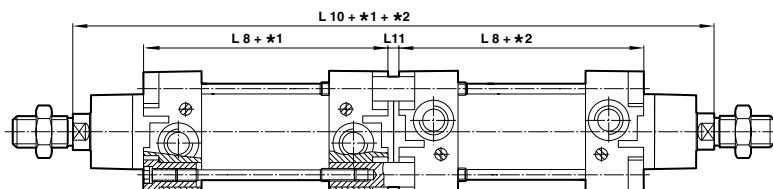
LR./8000/MT – Four-position cylinder

Ø	L8	L10	L11	Model
32	94	247	7	LR#/8032/MT/*/**
40	105	278	8	LR#/8040/MT/*/**
50	106	294	8	LR#/8050/MT/*/**
63	121	325	9	LR#/8063/MT/*/**
80	128	357	9	LR#/8080/MT/*/**
100	138	387	9	LR#/8100/MT/*/**
125	160	462	12	LR#/8125/MT/*/**
160	180	532	12	LR#/8160/MT/*/**
200	180	560	10	LR#/8200/MT/*/**

* Please insert standard stroke length.

** Please insert standard stroke length 1 and stroke length 2

Please insert 'A' for ISO G parallel or 'C' for NPT threads.



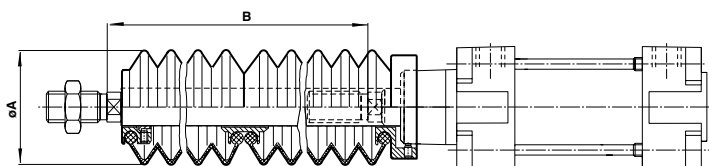
* stroke length 1 and stroke length 2

LR./8000/MG – Piston rod bellow

Ø	Ø A	Max. stroke per bellow	Piston rod extension B for first bellow	for further bellow	Model (standard)
32	40	60	30	25	LR#/8032/MG/*
40	63	145	50	32	LR#/8040/MG/*
50	63	145	40	32	LR#/8050/MG/*
63	63	145	40	32	LR#/8063/MG/*
80	80	250	50	45	LR#/8080/MG/*
100	80	250	50	45	LR#/8100/MG/*
125	80	250	50	45	LR#/8125/MG/*
160	116	350	70	60	LR#/8160/MG/*
200	116	350	70	60	LR#/8200/MG/*

* Please insert standard stroke length.

Please insert 'A' for ISO G parallel or 'C' for NPT threads.

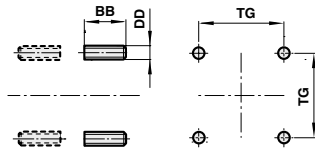


MOUNTINGS FOR DOUBLE ACTING CYLINDERS

LPRA/182000/M, LRA/8000/M Ø 32 ... 200 mm

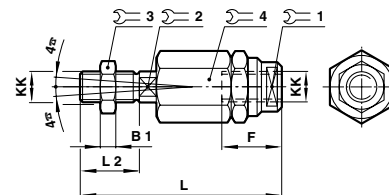
Front or rear stud mounting A

Conforms to ISO 15552, type MX1



Ø	BB	DD	TG	kg	Model (A)
32/40	17	M6	32,5/38	0,02	QM/8032/35
50/63	23	M8	46,5/56,5	0,05	QM/8050/35
80/100	28	M10	72/89	0,08	QM/8080/35
125	34	M12	110	0,14	QM/8125/35
160/200	42	M16	140/175	0,31	QM/8160/35

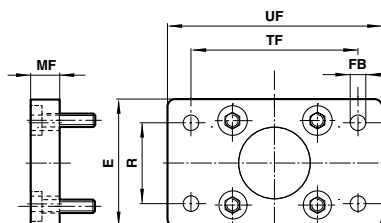
Piston rod swivel AK



Ø	KK	B1	F	L	L2	1	2	3	4	kg	Model (AK)
32	M10x1,25	5	26	73	20	19	12	17	30	0,20	QM/8025/38
40	M12x1,25	6	26	77	24	19	12	19	30	0,20	QM/8040/38
50/63	M16x1,5	8	34	106	32	30	19	24	42	0,65	QM/8050/38
80/100	M20x1,5	10	42	122	40	30	19	30	42	0,72	QM/8080/38
125	M27x2	13,5	40	147	54	40	24	41	55	1,70	QM/8125/38

Front flange B, G

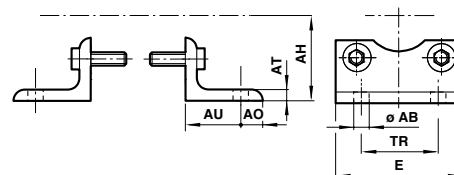
Conforms to ISO 15552, type MF1 and MF2



Ø	E	Ø FB	MF	R	TF	UF	kg	Model (B, G)
32	50	7	10	32	64	80	0,25	QA/8032/22
40	55	9	10	36	72	90	0,35	QA/8040/22
50	65	9	12	45	90	110	0,70	QA/8050/22
63	75	9	12	50	100	125	0,80	QA/8063/22
80	100	12	16	63	126	154	1,35	QA/8080/22
100	120	14	16	75	150	186	2,20	QA/8100/22
125	140	16	20	90	180	224	2,70	QM/8125/22
160	180	18	20	115	230	280	3,10	QM/8160/22
200	220	22	25	135	270	320	4,60	QM/8200/22

Foot mounting C

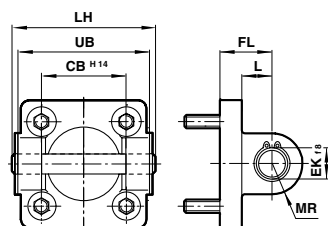
Conforms to ISO 15552, type MS1



Ø	Ø AB	AH	AO	AT	AU	E	TR	kg	Model (C)
32	7	32	8	4	24	48	32	0,15	QA/8032/21
40	10	36	9	4	28	53	36	0,18	QA/8040/21
50	10	45	10	5	32	64	45	0,30	QA/8050/21
63	10	50	12	5	32	74	50	0,39	QA/8063/21
80	12	63	19	5	41	98	63	0,80	QA/8080/21
100	14,5	71	19	5	41	115	75	0,95	QA/8100/21
125	16	90	20	9	45	140	90	2,40	QM/8125/21
160	18	115	20	8	60	180	115	3,50	QM/8160/21
200	22	135	30	9	70	220	135	5,25	QM/8200/21

Rear clevis D

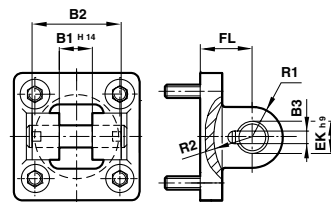
Conforms to ISO 15552, type MP2



Ø	CB H14	Ø EK f8	FL	L	LH	MR	UB	kg	Model (D)
32	26	10	22	13	52	9	45	0,11	QA/8032/23
40	28	12	25	16	60	12	52	0,16	QA/8040/23
50	32	12	27	17	68	12	60	0,22	QA/8050/23
63	40	16	32	22	79	15	70	0,34	QA/8063/23
80	50	16	36	22	99	15	90	0,54	QA/8080/23
100	60	20	41	27	119	20	110	0,90	QA/8100/23
125	70	25	50	36	140	25	130	2,70	QM/8125/23
160	90	30	55	37	182	30	170	4,30	QM/8160/23
200	90	30	60	40	182	30	170	6,10	QM/8200/23

Rear clevis D2

Conforms to ISO 15552, type AB6



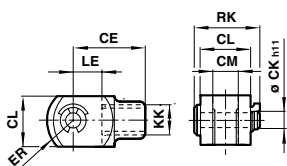
Ø	B1 H14	B2	B3	Ø EK h9	FL	R1	R2	kg	Model (D2)
32	14	34	3,3	10	22	11	17	0,20	QA/8032/42
40	16	40	4,3	12	25	12	20	0,23	QA/8040/42
50	21	45	4,3	16	27	14,5	22	0,36	QA/8050/42
63	21	51	4,3	16	32	18	25	0,55	QA/8063/42
80	25	65	4,3	20	36	22	30	0,90	QA/8080/42
100	25	75	4,3	20	41	22	32	1,45	QA/8100/42
125	37	97	6,3	30	50	30	42	2,70	QA/8125/42
160	43	122	6,3	35	55	36	46	4,30	QA/8160/42
200	43	122	6,3	35	60	38	49	6,10	QA/8200/42

MOUNTINGS FOR DOUBLE ACTING CYLINDERS

LPRA/182000/M, LRA/8000/M Ø 32 ... 200 mm

Piston rod clevis F

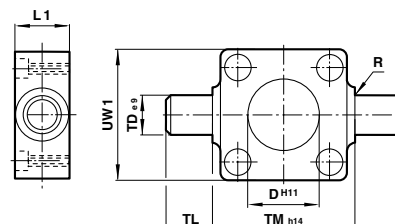
Conforms to DIN ISO 8140



Ø	KK	CE	Ø CKh11	CL	CM	ER	LE	RK	kg	Model (F)
32	M10x1,25	40	10	20	10	16	20	28	0,09	QM/8025/25
40	M12x1,25	48	12	24	12	19	24	32	0,13	QM/8040/25
50/63	M16x1,5	64	16	32	16	25	32	41,5	0,33	QM/8050/25
80/100	M20x1,5	80	20	40	20	32	40	50	0,67	QM/8080/25
125	M27x2	110	30	55	30	45	54	62	1,35	QM/8125/25
160	M36x2	144	35	70	35	57	72	95	3,00	QM/8160/25
200	M36x2	144	35	70	35	57	72	95	3,00	QM/8160/25

Front or rear detachable trunnion FH

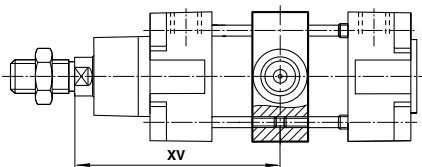
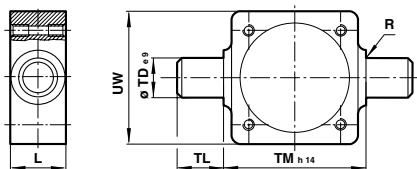
Conforms to VDMA 24562 part 2, type MT 5/6



Ø	Ø Dh11	L1	R	Ø TDe9	TL	TMh14	UW1	kg	Model (FH)
32	30	16	1	12	12	50	50	0,20	QA/8032/34
40	35	20	1,6	16	16	63	55	0,38	QA/8040/34
50	40	24	1,6	16	16	75	65	0,60	QA/8050/34
63	45	24	1,6	20	20	90	75	1,10	QA/8063/34
80	45	28	1,6	20	20	110	100	1,90	QA/8080/34
100	55	38	2	25	25	132	120	3,50	QA/8100/34
125	60	50	2	25	25	160	145	6,50	QA/8125/34

Centre trunnion H for LR/8000/M series only

Conforms to ISO 15552, type MT4



Ø	L	R	Ø TDe9	TL	TMh14	UW	XV min.	XV max.	kg	Model (H)
32	20	1	12	12	50	50	63,5	82,5	0,16	QA/8032/28
40	24	1,6	16	16	63	58	74	91	0,35	QA/8040/28
50	28	1,6	16	16	75	70	82	98	0,65	QA/8050/28
63	28	1,6	20	20	90	80	84	111	0,85	QA/8063/28
80	28	1,6	20	20	110	100	93	127	1,20	QA/8080/28
100	38	2	25	25	132	126	107	133	2,30	QA/8100/28
125	50	2	25	25	160	152	136	154	3,30	QM/8125/28
160	50	2,5	32	32	200	192	155	185	5,30	QM/8160/28
200	50	2,5	32	32	250	240	170	200	9,40	QM/8200/28

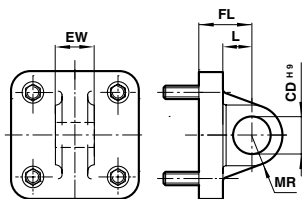
Note: Style 'H': These mountings are only supplied assembled complete with the cylinder.
Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length.
'XV' = Distance from the piston rod shoulder to the centre of the mounting.

MOUNTINGS FOR DOUBLE ACTING CYLINDERS

LPRA/182000/M, LRA/8000/M Ø 32 ... 200 mm

Rear eye R

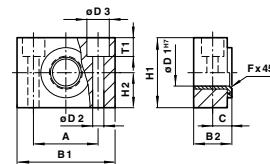
Conforms to ISO 15552, type MP4



Ø	Ø CDH9	EW	FL	L	MR	kg	Model (R)
32	10	25,8	22	13	9	0,09	QA/8032/27
40	12	27,8	25	16	12	0,11	QA/8040/27
50	12	31,7	27	17	12	0,17	QA/8050/27
63	16	39,7	32	22	15	0,24	QA/8063/27
80	16	49,7	36	22	15	0,37	QA/8080/27
100	20	59,7	41	27	20	0,59	QA/8100/27
125	25	69,7	50	33	25	3,20	QM/8125/27
160	30	89,7	55	35,5	30	6,10	QM/8160/27
200	30	89,7	60	37	30	6,80	QM/8200/27

Trunnion support S

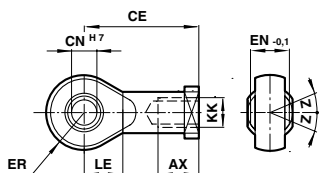
Conforms to ISO 15552, type AT4



Ø	A	B1	B2	C	Ø D1H7	Ø D2	Ø D3	Fx 45°	H1	H2	T1	kg	Model (S)
32	32	46	18	10,5	12	6,6	11	1	30	15	6,8	0,10	QA/8032/41
40/50	36	55	21	12	16	9	15	1,6	36	18	9	0,14	QA/8040/41
63/80	42	65	23	13	20	11	18	1,6	40	20	11	0,18	QA/8063/41
100/125	50	75	28,5	16	25	14	20	2	50	25	13	0,34	QA/8100/41
160/200	60	92	39	21,5	32	18	26	2,5	60	25	15,5	1,90	QA/8160/41

Universal piston rod eye UF

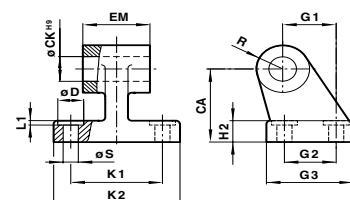
Conforms to DIN ISO 8139



Ø	Gewinde KK	AX	CE	Ø CNH7	EN-0,1	ER	LE	Z	kg	Model (UF)
32	M10x1,25	20	43	10	14	14	15	13°	0,09	QM/8025/32
40	M12x1,25	22	50	12	16	16	17	13°	0,13	QM/8040/32
50/63	M16x1,5	28	64	16	21	21	22	15°	0,33	QM/8050/32
80/100	M20x1,5	33	77	20	25	25	26	15°	0,67	QM/8080/32
125	M27x2	51	110	30	37	35	36	15°	1,35	QM/8125/32
160/200	M36x2	56	125	35	43	40	41	16°	3,00	QM/8160/32

Wide hinge SW

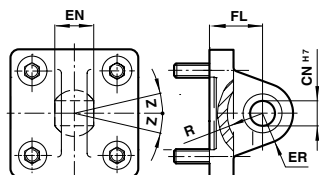
Conforms to ISO 15552, type AB7



Ø	CA	Ø CKH9	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg	Model (SW)
32	32	10	11	8	26,5	21	18	31	38	51	1,6	10	6,6	0,05	MP19493
40	36	12	11	10	28,5	24	22	35	41	54	1,6	11	6,6	0,07	MP19494
50	45	12	15	12	32,5	33	30	45	50	65	1,6	13	9	0,14	MP19495
63	50	16	15	12	40,5	37	35	50	52	67	1,6	15	9	0,18	MP19496
80	63	16	18	14	50,5	47	40	60	66	86	2,5	15	11	0,28	MP19497
100	71	20	18	15	60,5	55	50	70	76	96	2,5	19	11	0,42	MP19498
125	90	25	20	20	70,5	70	60	90	94	124	3,2	22	14	2,70	MP19499
160	115	30	20	25	89,5	97	88	126	118	156	4	31	14	6,30	MP19679
200	135	30	26	30	89,5	105	90	130	122	162	4	31	18	8,00	MP19683

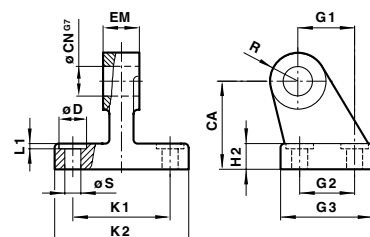
Universal rear eye UR

Conforms to ISO 15552, type MP6



Ø	Ø CNH7	EN	ER	FL	R	Z	kg	Model (UR)
32	10	14	16	22	14,5	13°	0,15	QA/8032/33
40	12	16	19	25	18	13°	0,25	QA/8040/33
50	16	21	21	27	19	13°	0,40	QA/8050/33
63	16	21	24	32	24	15°	0,55	QA/8063/33
80	20	25	28	36	24	15°	0,90	QA/8080/33
100	20	25	30	41	29	15°	1,50	QA/8100/33
125	30	37	40	50	36	15°	2,70	QM/8125/33
160	35	43	44	55	41	16°	4,6	QM/8160/33
200	35	43	48	60	42	16°	7,3	QM/8200/33

Narrow hinge SS



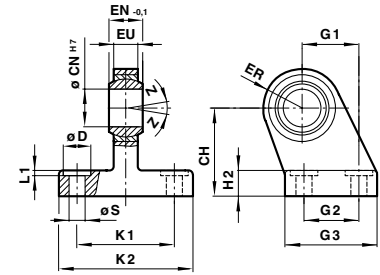
Ø	CA	Ø CNG7	Ø D	H2	EM	G1	G2	G3	K1	K2	L1	R	Ø S	kg	Model (SS)
32	32	10	11	8	10	21	18	31	38	51	1,6	10	6,6	0,15	MP19931
40	36	12	11	10	12	24	22	35	41	54	1,6	11	6,6	0,20	MP19932
50	45	10	15	12	16	33	30	45	50	65	1,6	13	9	0,48	MP19933
63	50	16	15	12	16	37	35	50	52	67	1,6	15	9	0,50	MP19934
80	63	20	18	14	20	47	40	60	66	86	2,5	15	11	0,75	MP19935
100	71	20	18	15	20	55	50	70	76	96	2,5	19	11	1,20	MP19936
125	90	25	20	20	30	70	60	90	94	124	3,2	22	14	2,50	MP19937
160	115	35	20	25	35	97	88	126	118	156	4	31	14	6,00	MP19938
200	135	35	26	30	35	105	90	130	122	162	4	31	18	7,60	MP19939

MOUNTINGS FOR DOUBLE ACTING CYLINDERS

LPRA/182000/M, LRA/8000/M Ø 32 ... 200 mm

Swivel hinge US

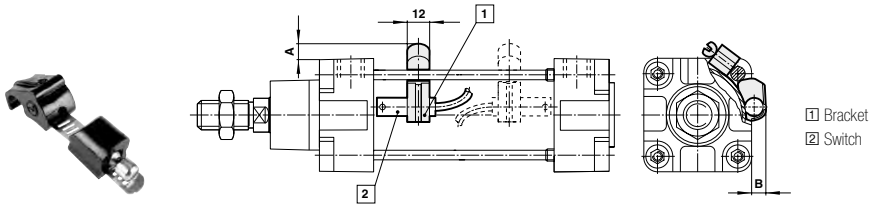
Conforms to VDMA 24562 part 2



Ø	CH	Ø CNH7	Ø D	EN -0,1	ER	EU	G1	G2	G3	H2	K1	K2	L1	Ø S	Z	kg	Model (US)
32	32	10	11	14	16	10,5	21	18	31	8	38	51	1,6	6,6	13°	0,19	M/P40310
40	36	12	11	16	19	12	24	22	35	10	41	54	1,6	6,6	13°	0,24	M/P40311
50	45	16	15	21	21	15	33	30	45	12	50	65	1,6	9	13°	0,46	M/P40312
63	50	16	15	21	24	15	37	35	50	12	52	67	1,6	9	15°	0,59	M/P40313
80	63	20	18	25	28	18	47	40	60	14	66	86	2,5	11	15°	1,03	M/P40314
100	71	20	18	25	30	18	55	50	70	15	76	96	2,5	11	15°	1,40	M/P40315
125	90	30	20	37	40	25	70	60	90	20	94	124	3,2	14	15°	3,10	M/P71355
160	115	35	20	43	44	28	97	88	126	25	118	159	4	14	15°	6,40	M/P71356
200	135	35	26	43	48	28	105	90	130	30	122	162	4	18	15°	9,10	M/P71357

Switch mounting

QM/27/2/1, switch: M/50



Cylinder Ø	A	B	Weight
32	9	7	0,010 kg
40	8	8	0,010 kg
50	7	5	0,010 kg
63	7	7	0,010 kg
80	7	4	0,010 kg
100	2	2	0,010 kg
125	- 4	- 3	0,010 kg
160	- 10	- 9	0,010 kg
200	- 17	- 14	0,010 kg

HEAVY DUTY IMPERIAL CYLINDERS

RM/900/M Ø 1 1/4 ... 4"

- Heavy duty cylinder ideal for a wide range of rail applications
- Extensive range of mountings
- Rugged, reliable long established design
- Magnetic piston as standard
- Mounting bracket for low temperature M/50 series solid state switches
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting, adjustable cushioning and magnetic piston

Operating pressure:

2 ... 10 bar

Operating temperature:

-40°C ... +80°C max.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Air ports:

ISO G parallel

Cylinder diameters:

1 1/4, 1 3/4, 2, 2 1/2, 3 and 4 inches

Stroke length:

Up to 15 times cylinder diameter

Materials

Profile barrel:

Anodised aluminium

End covers:

Diecast aluminium

Bearing housing:

Brass for 1 1/4" ... 3", aluminium alloy for 4"

Piston:

Aluminium

Piston rod and tie rods:

Stainless steel (Martensitic)

Seals and 'O'-rings:

Nitrile rubber



Technical data

Cylinder Ø (inch)	1 1/4	1 3/4	2	2 1/2	3	4
Air ports	G1/8	G1/4	G1/4	G3/8	G3/8	G3/8
Piston rod Ø (mm)	12	16	20	25	25	32
Piston rod thread	M10x1,5	M12x1,75	M16x2	M22x2,5	M22x2,5	M24x3
Cushion length mm (inch)	20 (.79)	20 (.79)	20 (.79)	21 (.83)	29 (1.14)	38 (1.5)
Theoretical thrusts at 6 bar (87 psi) outstroke N (lb)	482 (108)	933 (210)	1225 (275)	1930 (434)	2721 (612)	4902 (1102)
Theoretical thrusts at 6 bar (87 psi) instroke N (lb)	406 (91)	812 (183)	1055 (237)	1626 (366)	2417 (543)	4420 (994)
Air consumption at 6 bar (87 psi) outstroke l/cm (inch ³ /inch)	0,056 (8,7)	0,109 (16,9)	0,143 (22,2)	0,225 (35)	0,318 (49,5)	0,572 (88,9)
Air consumption at 6 bar (87 psi) instroke l/cm (inch ³ /inch)	0,047 (7,1)	0,095 (14,8)	0,124 (19,3)	0,190 (29,5)	0,282 (43,9)	0,516 (80,2)

Option selector

Piston rod material		Substitute		Strokes (mm)	
Stainless steel martensitic (standard)		R		Max. stroke = 15 x cylinder Ø	
Stainless steel austenitic		S		Variants (magnetic piston)	
Cylinder Ø (inch)		Substitute		Substitute	
1 1/4		125		Standard	
1 3/4		175		Double ended piston rod	
2		20			
2 1/2		25			
3		30			
4		40			

Standard strokes

Cylinder Ø (mm)	Strokes (mm)							
	50	75	100	150	200	225	250	300
1 1/4	•	•	•	•	•	•	•	•
1 3/4	•	•	•	•	•	•	•	•
2	•	•	•	•	•	•	•	•
2 1/2	•	•	•	•	•	•	•	•
3	•	•	•	•	•	•	•	•
4	•	•	•	•	•	•	•	•

HEAVY DUTY IMPERIAL CYLINDERS

RM/900/M Ø 1 1/4 ... 4"

● Mountings and service kit

Model	B	B+G	C	D	F	G	H	K
								
1 1/4	M/P6938	QM/819	QM/754	M/P6937	QM/402	M/P6938	M/P14001	M/P6937
1 3/4	QM/888	QM/1181	QM/753	M/P7457	QM/404	QM/986	M/P11224	M/P7457
2	QM/875	QM/1182	QM/752	M/P10228	QM/405	QM/871	M/P8635	QM/962
2 1/2	QM/876	QM/1184	QM/748	M/P10311	QM/407	QM/877	M/P8636	QM/964
3	QM/878	QM/1185	QM/983	M/P10229	QM/407	QM/984	M/P8637	QM/966
4	QM/887	QM/1187	QM/982	QM/758	QM/408	QM/987	M/P8638	QM/758
Model	L	M	N	R	UF	UR	Switch mounting	Service kit
								
1 1/4	QM/394	QM/393	M/P11716	M/P11966	QM/1141	QM/1161	QM/27/2/1	QM/9125/00
1 3/4	QM/922	QM/923	M/P7955	M/P11219	QM/1142	QM/1162	QM/27/2/1	QM/9125/00
2	QM/909	QM/908	M/P9969	M/P10349	QM/1143	QM/1163	QM/27/2/1	QM/920/00
2 1/2	QM/910	QM/901	M/P9905	M/P10351	QM/1144	QM/1164	QM/27/2/1	QM/925/00
3	QM/911	QM/901	M/P9905	M/P10353	QM/1144	QM/1165	QM/27/2/1	QM/930/00
4	QM/912	QM/902	QM/1475*	QM/763	QM/1146	QM/1166	QM/27/2/1	QM/940/00

● Switches

Voltage V d.c.	Current max.	Temperature	LED	Features	Cable length	Cable type	Protection class *1)	Model
								
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	PNP	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAP/*V
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	NPN	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAN/*V

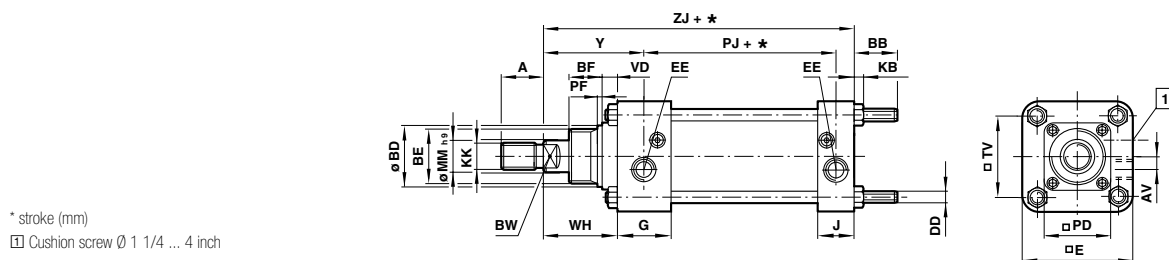
* Please insert the cable length 2, 5 or 10 m.

*1) -40°C ... +80°C protection class IP65; -20°C ... +80°C protection class IP67 and IP68

HEAVY DUTY IMPERIAL CYLINDERS

RM/900/M Ø 1 1/4 ... 4"

● Dimensions

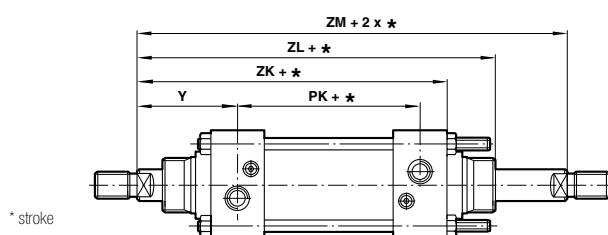


Ø inch	A	AV	BB	Ø BD	BE	BF	BW	DD	E	EE	G	J	KB	KK
1 1/4	14,5	6	22	22	M 22 x 2	19	10	M 6	45	G1/8	25	22	5	M10x1,5
1 3/4	19	8,5	26,5	27	M 27 x 2	19	12	M 8	57	G1/4	29	25	6,5	M12x1,75
2	24	7,5	25	34	M 33 x 2	20	17	M 8	63,5	G1/4	29,5	24	6,5	M16x2
2 1/2	33,5	8	25	40	M 39 x 2	25,5	22	M 8	74,5	G3/8	30	25	6,5	M22x2,5
3	33,5	7	33	40	M 39 x 2	25,5	22	M 10	91	G3/8	35	35	8	M22x2,5
4	38	12	32	-	Ø 43	-	27	M 10	114	G3/8	35	35	8	M24x3
Ø inch	Ø MMh9	PD	PF	PJ	TV	VD	WH	Y	ZJ	at 0 mm	per 25 mm	Model		
1 1/4	12	-	-	69	30,5	8	37	49,5	125,5	0,47 kg	0,06 kg			RM/9125/M/*
1 3/4	16	-	-	70	43	8	37	52	132,5	0,91 kg	0,10 kg			RM/9175/M/*
2	20	-	3	67	47,5	9,5	46	60,5	137	1,15 kg	0,13 kg			RM/920/M/*
2 1/2	25	-	3	73	55,5	8	53	68,5	152,5	1,93 kg	0,17 kg			RM/925/M/*
3	25	59	3	95	66,5	13	56,5	71	179,5	3,02 kg	0,20 kg			RM/930/M/*
4	32	63,5	-	97	89	13	64	77,5	187,5	4,01 kg	0,26 kg			RM/940/M/*

* Please insert standard stroke length (mm).

● Cylinder variants

RM/900/JM – Double ended piston rod



Ø inch	PK	ZK	ZL	ZM	Y	at 0 mm	per 25 mm	Model
1 1/4	66,5	128,5	155,5	165,5	49,5	0,65 kg	0,08 kg	RM/9125/JM/*
1 3/4	69,5	136,5	163,5	173,5	52	1,21 kg	0,13 kg	RM/9175/JM/*
2	67	142,5	172	187,5	60,5	1,66 kg	0,19 kg	RM/920/JM/*
2 1/2	72,5	157	190,5	210	68,5	2,82 kg	0,27 kg	RM/925/JM/*
3	95	179,5	218	237	71	3,86 kg	0,30 kg	RM/930/JM/*
4	96,5	187,5	232	251,5	77,5	5,31 kg	0,41 kg	RM/940/JM/*

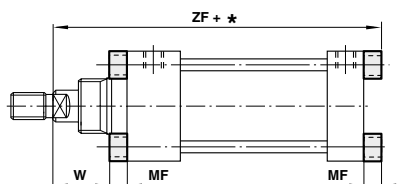
* Please insert standard stroke length (mm).

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

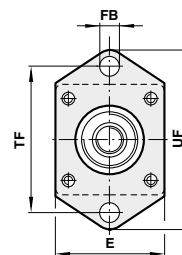
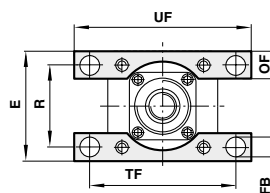
RM/900/M Ø 1 1/4 ... 4"

Front flange B or rear flange G
Front and rear flange BG

For 9125 cylinder only

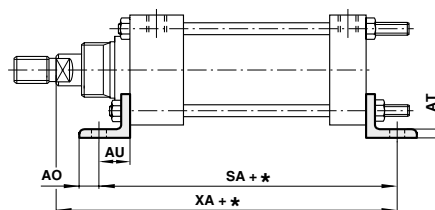


* stroke

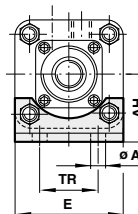


Ø inch	E	FB	MF	OF	R	TF	UF	W	ZF	Weight	Model B	Model BG	Model G
1 1/4	45	8	9,5	-	-	63,5	79	27,5	135	0,15 kg	M/P6938	QM/819	M/P6938
1 3/4	59	9	10	16	43	81	98,5	27	142,5	0,20 kg	QM/888	QM/1181	QM/986
2	64	9	10	16	47,5	85,5	105	35,5	147	0,20 kg	QM/875	QM/1182	QM/871
2 1/2	75,5	9	10	20	55,5	93,5	113	43	162,5	0,25 kg	QM/876	QM/1184	QM/877
3	88,5	11,5	16	22	66,5	111	133,5	41,5	195,5	0,45 kg	QM/878	QM/1185	QM/984

Foot mounting C

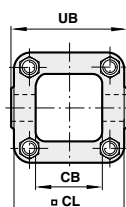


* stroke

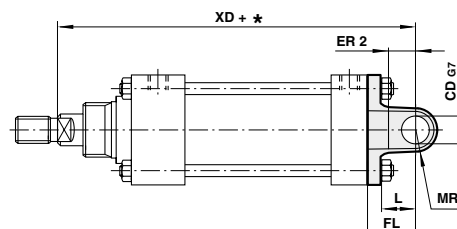


Ø inch	Ø AB	AH	AO	AT	AU	E	SA	TR	XA	Weight	Model
1 1/4	6,8	24	6,5	6,5	14,5	45	117	-	139,5	0,06 kg	QM/754
1 3/4	10,5	37,5	11	5	19	57	133,5	-	151,5	0,20 kg	QM/753
2	13	40	11	5	19	63	129,5	-	156	0,20 kg	QM/752
2 1/2	13	46,5	11	5	19	74	137,5	30	171,5	0,25 kg	QM/748
3	13	52,5	11	5	19	91	160	28,5	198,5	0,30 kg	QM/983
4	13,5	70	24,5	8	25,5	114	174	51	212,5	0,65 kg	QM/982

Rear clevis D



* stroke

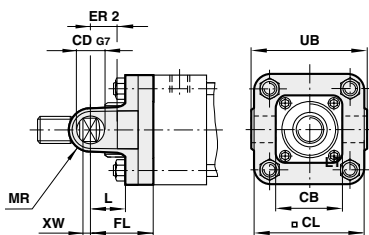


Ø inch	CB	Ø CDG7	CL	ER 2	FL	L	MR	UB	XD	Weight	Model
1 1/4	25,4	6	44,5	9,5	14,5	9,5	6,5	-	139,5	0,08 kg	M/P6937
1 3/4	34,9	12	57	14,5	19	14,5	10	-	151,5	0,15 kg	M/P7457
2	34,9	16	62,5	20,5	28,5	20,5	13	-	165,5	0,25 kg	M/P10228
2 1/2	42,9	16	74	20,5	28,5	20,5	13	-	181	0,25 kg	M/P10311
3	44,5	20	88	25,5	35	25,5	14	-	214,5	0,75 kg	M/P10229
4	69,9	22	114,5	36,5	57	38	19	122,5	244,5	1,25 kg	QM/758

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

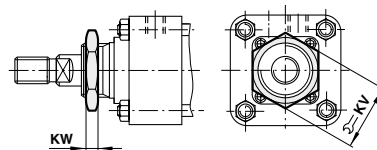
RM/900/M Ø 1 1/4 ... 4"

Front clevis K



Ø inch	CB	Ø CDG7	CL	ER 2	FL	L	MR	UB	XW	Weight	Model
1 1/4	25,4	6	44,5	9,5	14,5	9,5	6,5	-	22,5	0,08 kg	MP6937
1 3/4	34,9	12	57	14,5	19	14,5	10	-	18	0,15 kg	MP7457
2	34,9	16	62,5	20,5	28,5	20,5	13	-	7,5	0,25 kg	QM/962
2 1/2	42,9	16	74	20,5	28,5	20,5	13	-	16,5	0,25 kg	QM/964
3	44,5	20	88	25,5	35	25,5	14	-	6,5	0,75 kg	QM/966
4	69,9	22	114,5	36,5	57	38	19	122,5	7	1,25 kg	QM/758

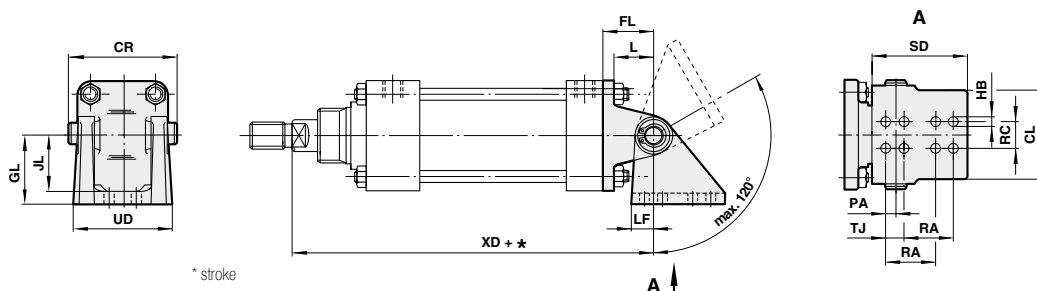
Nose mounting N



Ø inch	KV	KW	Weight	Model
1 1/4	28	6,5	0,02 kg	MP11716
1 3/4	38	8	0,04 kg	MP7955
2	43	8	0,04 kg	MP9969
2 1/2	48	8	0,04 kg	MP9905
3	48	8	0,04 kg	MP9905
4	57	8	0,06 kg	QM/1475*

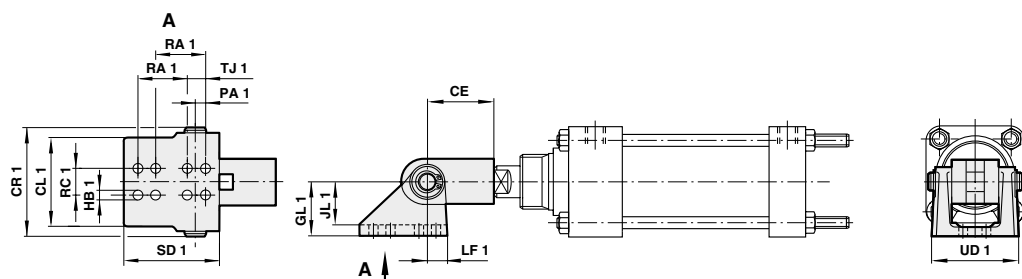
* These cannot be supplied separately. If a spare Nose Mounting is required, specify basic cylinder reference with 'Q' prefix and -/06 suffix, e.g. QM/940/N/06.

Rear hinge mounting L



Ø inch	CL	CR	FL	GL	Ø HB	JL	L	LF	PA	RA	RC	SD	TJ	UD	XD	Weight	Model
1 1/4	31	39,5	25,5	28,5	7,2	20,5	19	9,5	1,5	25,5	-	41,5	-	-	151	0,25 kg	QM/394
1 3/4	32	44,5	32	32	8,7	25,5	24	13	5	32	-	47,5	-	-	164,5	1,10 kg	QM/922
2	60	73	35	47,5	8,5	39,5	25,5	15,5	6,5	47,5	19	66,5	-	68,5	172	1,20 kg	QM/909
2 1/2	60	73	35	47,5	8,5	39,5	25,5	15,5	6,5	47,5	19	66,5	-	68,5	187,5	1,25 kg	QM/910
3	60	73	35	47,5	8,5	39,5	25,5	15,5	6,5	47,5	19	66,5	-	68,5	214,5	1,50 kg	QM/911
4	70	82,5	51	74,5	12	65	30	23,5	11	76	22	101,5	-	82,5	238	3,50 kg	QM/912

Rear hinge mounting M

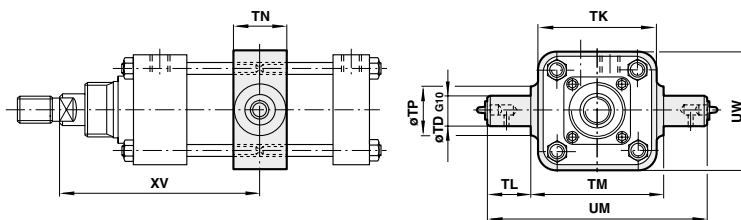


Ø inch	CE	CL 1	CR 1	GL 1	Ø HB 1	JL 1	LF 1	PA 1	RA 1	RC 1	SD 1	TJ 1	UD 1	Weight	Model
1 1/4	25,5	31	39,5	28,5	7,2	20,5	9,5	1,5	25,5	-	41,5	-	-	0,17 kg	QM/393
1 3/4	33,5	32	44,5	32	8,7	25,5	13	5	32	-	47,5	-	-	0,30 kg	QM/923
2	41,5	43	54	32	8,5	24	14	5	32	-	51	-	49	0,40 kg	QM/908
2 1/2	58,5	60	73	47,5	8,5	39,5	16	6,5	47,5	19	67	-	68,5	1,00 kg	QM/901
3	58,5	60	73	47,5	8,5	39,5	16	6,5	47,5	19	67	-	68,5	1,00 kg	QM/901
4	66,5	70	82,5	74,5	12	65	24	11	76	22	102	-	82,5	2,00 kg	QM/902

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

RM/900/M Ø 1 1/4 ... 4"

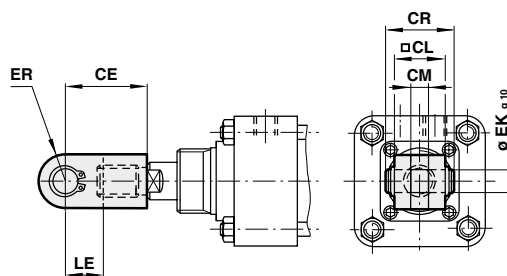
Centre trunnion H



Ø inch	Ø TDg10	TK	TL	TM	TN	Ø TP	UM	UW	XV min	XV max	Weight	Model
1 1/4	12	45	17,5	50,5	20,5	18	85,5	45	72,5	93	0,16 kg	M/P14001
1 3/4	16	65	24	73	25,5	22	120,5	65	79	94,5	0,50 kg	M/P11224
2	18	70	25,5	79,5	32	29	130	70	90,5	97	0,60 kg	M/P8635
2 1/2	22	81	32	90,5	38	35	154	81	102	108,5	0,90 kg	M/P8636
3	25	95	38	108	38	38	184	95	111,5	125,5	1,25 kg	M/P8637
4	32	127	41,5	139,5	44,5	44,5	222,5	127	121,5	130	2,50 kg	M/P8638

Note: These mountings are only supplied assembled complete with the cylinder. Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length. Grease nipple supplied as standard on cylinders 9175 to 940.

Piston rod clevis F

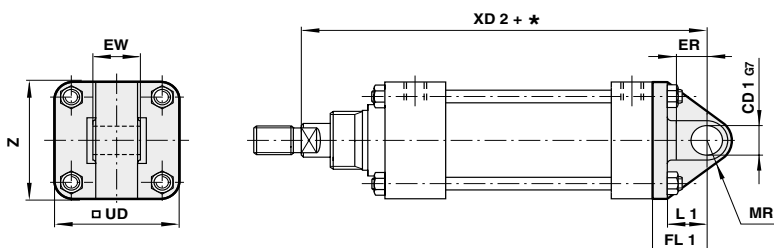


Ø inch	CE	CL	CM	CR	Ø EKg10	ER	LE	Weight	Model
1 1/4	25,5	12,5	6,4	18	6	6,5	11	0,03 kg	QM/402
1 3/4	33,5	19	10	26	10	10	12,5	0,05 kg	QM/404
2	41,5	25,5	11	33	12	13	19	0,10 kg	QM/405
2 1/2	58,5	38	14	47	16	19	25,5	0,40 kg	QM/407
3	58,5	38	14	47	16	19	25,5	0,40 kg	QM/407
4	66,5	44,5	16	53	18	22	28,5	0,90 kg	QM/408

Rear eye R



* stroke

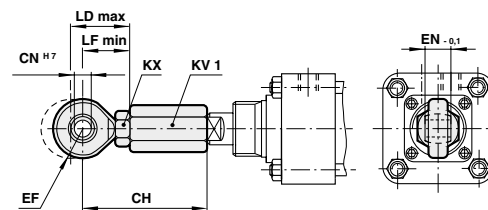


Ø inch	Ø CD 1g7	ER	EW	FL 1	L 1	MR 1	UD	XD 2	Weight	Model
1 1/4	6	19	19	25,5	19	9	45	151	0,10 kg	M/P11966
1 3/4	10	14,5	19	32	24	10	57	164,5	0,26 kg	M/P11219
2	16	19	38,1	35	25,5	14	62	172	0,55 kg	M/P10349
2 1/2	16	19	38,1	35	25,5	14	74	187,5	0,80 kg	M/P10351
3	16	19	38,1	35	25,5	16	87,5	214,5	0,90 kg	M/P10353
4	18	25,5	44,5	51	30	21	112,5	238	2,60 kg	QM/763

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

RM/900/M Ø 1 1/4 ... 4"

Universal piston rod eye UF

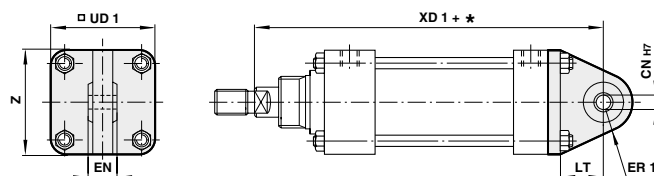


Ø inch	CH	Ø CNH7	EF	EN-0,1	KV 1	KX	LD max.	LF min.	Z	Weight	Model
1 1/4	59	8	13	12	14	13	30	24	17°	0,07 kg	QM/1141
1 3/4	74	10	15	14	17	17	33	28	16°	0,13 kg	QM/1142
2	74	10	15	14	22	17	33	28	16°	0,17 kg	QM/1143
2 1/2	96,5	14	19	19	32	22	39	36	18°	0,43 kg	QM/1144
3	96,5	14	19	19	32	22	39	36	18°	0,43 kg	QM/1144
4	101	14	19	19	32	22	39	36	18°	0,44 kg	QM/1146

Universal rear eye UR

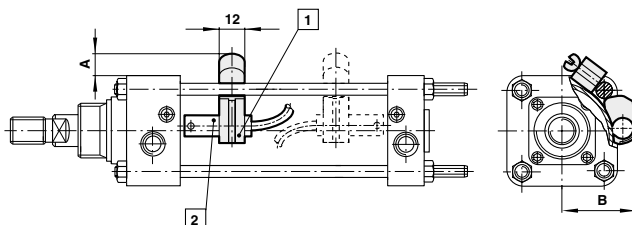


* stroke



Ø inch	Ø CNH7	EN	ER 1	LT	UD 1	XD 1	Z	Weight	Model
1 1/4	8	12	16	19	44,5	151,5	13°	0,18 kg	QM/1161
1 3/4	10	14	18	26	56,5	166,5	12°	0,30 kg	QM/1162
2	10	14	18	27	63	172	12°	0,43 kg	QM/1163
2 1/2	14	19	26	26	73	187,5	12°	0,60 kg	QM/1164
3	14	19	26	26	87,5	214,5	12°	0,75 kg	QM/1165
4	14	19	26	30	114	238	12°	2,40 kg	QM/1166
5	25	31	36	36	138	279	12°	2,70 kg	QM/950/33
6	30	37	43	39	176	290	12°	4,60 kg	QM/960/33
8	30	37	48	42	216	337	12°	7,30 kg	QM/980/33

Switch mounting QM/27/2/1



□ Bracket
■ Switch

Cylinder Ø	A	B	Weight
1 1/4	9	30,5	0,010 kg
1 3/4	8	35,5	0,010 kg
2	7	38	0,010 kg
2 1/2	7	44,5	0,010 kg
3	4	49,5	0,010 kg
4	2	59	0,010 kg

HEAVY DUTY IMPERIAL CYLINDERS

LRM/900 Ø 5" ... 14"

- Ideal for a wide range of Rail applications
- Extensive range of mountings
- Rugged, reliable long established design
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting, adjustable cushioning

Operating pressure:

2 ... 10 bar

Operating temperature:

-40°C ... +80°C max.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Cylinder diameters:

5, 6, 8, 10, 12 and 14 inches

Stroke length:

Up to 15 times cylinder diameter

Air ports:

ISO G parallel

Materials

Barrel: Anodized aluminium, except Ø 14 inches which is steel

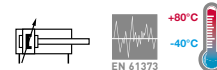
End covers: Diecast aluminium

Bearing housing: Aluminium

Piston: Aluminium

Piston rod and tie rods: Stainless steel (Martensitic)

Seals and 'O'-rings: Nitrile rubber



Technical data

Cylinder Ø (inch)	5	6	8	10	12	14
Air ports	G1/2	G1/2	G3/4	G1	G1	G1
Piston rod Ø (mm)	1 1/2	1 1/2	1 3/4	2 1/4	2 1/4	2 1/4
Piston rod thread	M30x3,5	M30x3,5	M36x4	M48x5	M48x5	M48x5
Cushion length mm (inch)	29 (1.14)	32 (1.26)	44 (1.73)	50 (1.97)	50 (1.97)	50 (1.97)
Theoretical thrusts at 6 bar (87 psi) outstroke N (lb)	7600 (1708)	10887 (2447)	19419 (4366)	30402 (6835)	43837 (9855)	59723 (13426)
Theoretical thrusts at 6 bar (87 psi) instroke N (lb)	6920 (1555)	10207 (2295)	18486 (4156)	28871 (6490)	42306 (9511)	58192 (13082)
Air consumption at 6 bar (87 psi) outstroke l/cm (inch ³ /inch)	0,887 (137.9)	1,27 (197.5)	2,266 (352.4)	3,547 (551.6)	5,114 (795.3)	6,968 (1083.7)
Air consumption at 6 bar (87 psi) instroke l/cm (inch ³ /inch)	0,807 (125.5)	1,191 (185.2)	2,157 (335.5)	3,368 (523.8)	4,936 (767.7)	6,789 (1055.8)

Option selector

Piston rod material		Substitute		Strokes (mm)	
Stainless steel martensitic (standard)		R		Max. stroke = 15 x cylinder Ø	
Stainless steel austenitic		S			
Cylinder Ø (inch)		Substitute		Variants (magnetic piston)	
5		50		Standard	None
6		60		Double ended piston rod	J
8		80			
10		100			
12		120			
14		140			

HEAVY DUTY IMPERIAL CYLINDERS

LRM/900 Ø 5" ... 14"

● Standard strokes

Cylinder Ø (mm)	Strokes (mm) 50	75	100	150	200	225	250	300
5	•	•	•	•	•	•	•	•
6	•	•	•	•	•	•	•	•
8	•	•	•	•	•	•	•	•
10	•	•	•	•	•	•	•	•
12	•	•	•	•	•	•	•	•
14	•	•	•	•	•	•	•	•

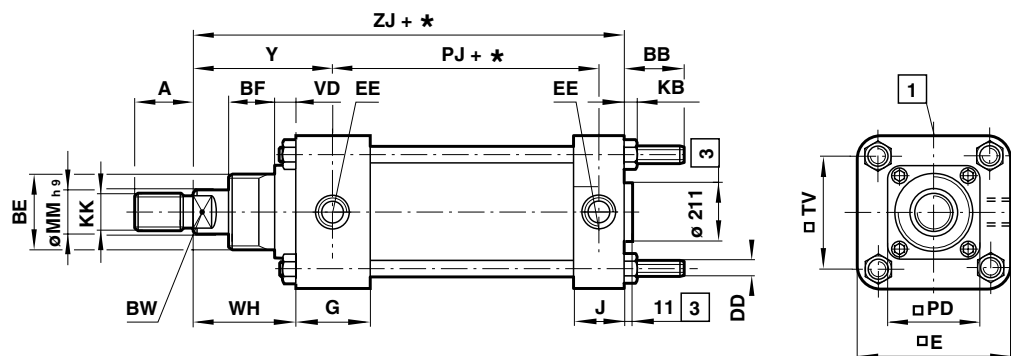
● Mountings and service kit

Model	B	B+G	C	D	F	G	H
							
5	QM/886	QM/1188	QM/981	QM/759	QM/409	QM/988	M/P8639
6	QM/884	QM/1189	QM/826	QM/761	QM/409	QM/884	M/P8640
8	QM/883	QM/1190	QM/825	QM/762	QM/410	QM/883	M/P8645
10	QM/882	–	QM/824	–	QM/411	QM/882	M/P8667
12	QM/889	–	QM/756	–	QM/411	QM/889	M/P8670
14	QM/741	–	QM/755	–	QM/411	QM/741	M/P11819
Model	K	L	M	N	R	UR	Service kit
							
5	QM/759	QM/913	QM/903	QM/997*	QM/764	QM/950/33	LQM/9100/00
6	QM/761	QM/914	QM/903	QM/997*	QM/765	QM/960/33	LQM/960/00
8	QM/762	QM/915	QM/904	–	QM/766	QM/980/33	LQM/980/00
10	–	QM/917	QM/919	–	QM/767	–	LQM/9100/00
12	–	QM/918	QM/919	–	QM/768	–	LQM/9120/00
14	–	QM/924	QM/919	–	QM/769	–	LQM/9140/00

HEAVY DUTY IMPERIAL CYLINDERS

LRM/900 Ø 5" ... 14"

● Dimensions



* stroke (mm)
 [1] Cushion screw Ø 5 ... 14 inch
 [3] For Ø 14 inch only

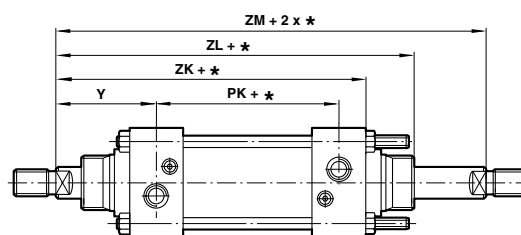
Ø inch	A	BB	BE	BW	DD	E	EE	G	J	KB	KK
5	47,5	48	Ø 58,5	Ø 10	M 12	140	G1/2	41	41	10	M30x3,5
6	47,5	49,5	Ø 58,5	Ø 10	M 16	167	G1/2	41	41	13	M30x3,5
8	57	53,5	Ø 63,5	Ø 10	M 18	219	G3/4	52	52	15	M36x4
10	76	70,5	Ø 77	Ø 10	M 24	270	G1	60	60	19	M48x5
12	76	70,5	Ø 77	Ø 10	M 24	321	G1	60	60	19	M48x5
14	76	93	Ø 89	Ø 10	M 30	375	G1	60	60	24	M48x5

Ø inch	Ø MMh9	PD	PJ	TV	VD	WH	Y	ZJ	at 0 mm	per 25 mm	Model
5	1 1/2 inch	82,5	109	108	18	83	101	228,5	9,10 kg	0,55 kg	LRM/950/*
6	1 1/2 inch	82,5	115,5	128,5	18	83	101	235	12,80 kg	0,80 kg	LRM/960/*
8	1 3/4 inch	89	145,5	168,5	19	86	108,5	276	23,00 kg	1,00 kg	LRM/980/*
10	2 1/4 inch	111	173,5	209,5	22	109	139,5	343	73,40 kg	1,90 kg	LRM/9100/*
12	2 1/4 inch	111	173,5	246	22	109	139,5	343	98,60 kg	2,10 kg	LRM/9120/*
14	2 1/4 inch	-	187,5	292	32	128	153,5	366,5	99,80 kg	3,00 kg	LRM/9140/*

*Please insert stroke length (mm)

Cylinder variants

LRM/900/J – with double ended piston rod



* stroke

Ø inch	PK	ZK	ZL	ZM	Y	at 0 mm	per 25 mm	Model
5	109	228,5	292	311,5	101	11,85 kg	0,77 kg	LRM/950/J/*
6	115,5	235	298,5	318	101	15,60 kg	1,20 kg	LRM/960/J/*
8	145,5	276	339,5	362	108,5	26,91 kg	1,30 kg	LRM/980/J/*
10	173,5	343	419	452	139,5	81,10 kg	2,39 kg	LRM/9100/J/*
12	173,5	343	419	452	139,5	105,30 kg	2,59 kg	LRM/9120/J/*
14	187,5	366,5	462	494,5	153,5	109,00 kg	3,30 kg	LRM/9140/J/*

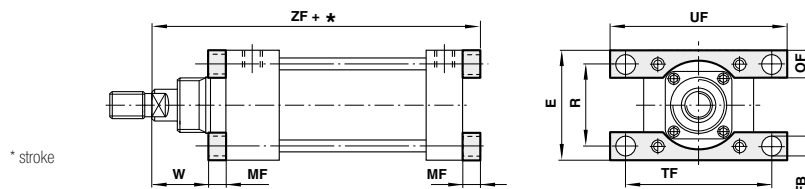
* Please insert stroke length (mm)

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

LRM/900 Ø 5" ... 14"

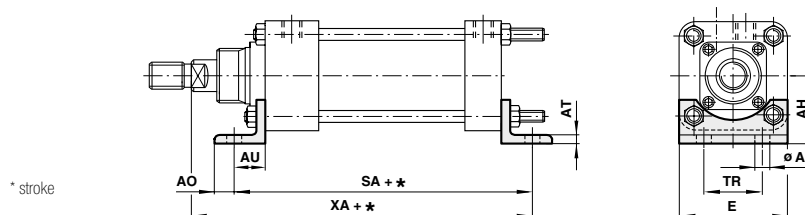
Front flange B or rear flange G

Front and rear flange BG



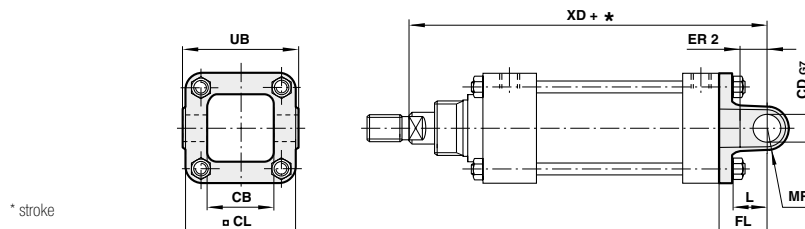
Ø inch	E	FB	MF	OF	R	TF	UF	W	ZF	Weight	Model B	Model BG	Model G
5	148	14,5	20	40	108	171,5	203	63	248,5	1,50 kg	QM/886	QM/1188	QM/988
6	168,5	18	20	40	128,5	205	243	63	255	2,40 kg	QM/884	QM/1189	QM/884
8	218,5	22	25	50	168	263,5	314,5	61	301	5,50 kg	QM/883	QM/1190	QM/883
10	274,5	26	30	65	209,5	333,5	397	79	373	12,00 kg	QM/882	—	QM/882
12	311	26	30	65	246	384	448	79	373	14,00 kg	QM/889	—	QM/889
14	368	33	38	76	292	457	533	90	405	23,00 kg	QM/741	—	QM/741

Foot mounting C



Ø inch	Ø AB	AH	AO	AT	AU	E	SA	TR	XA	Weight	Model
5	17,5	82,5	21,5	8	28,5	140	202,5	57	257	1,00 kg	QM/981
6	17,5	99,5	25	10	35	167	222	70	270	2,50 kg	QM/826
8	17,5	122	22	10	38	219	266	82,5	314	3,50 kg	QM/825
10	26	159	46	15	54	270	341,5	114,5	397	8,00 kg	QM/824
12	26	177	46	15	54	320	341,5	139,5	397	9,50 kg	QM/756
14	33,5	212,5	33,5	15	66,5	375	372	159	433,5	20,50 kg	QM/755

Rear clevis D

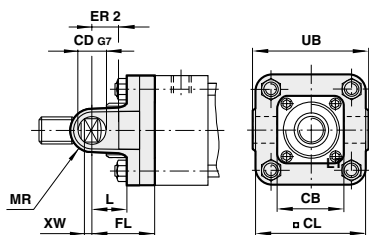


Ø inch	CB	Ø CDG7	CL	ER 2	FL	L	MR	UB	XD	Weight	Model
5	92,1	25	139,5	32	70	44,5	24	152,5	298,5	2,50 kg	QM/759
6	106,4	32	166,5	35	76	49	29	181	311	3,50 kg	QM/761
8	122,2	38	217,5	38	85,5	57	38	237	362	7,00 kg	QM/762

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

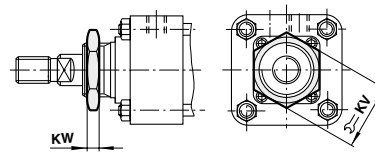
LRM/900 Ø 5" ... 14"

Front clevis K



Ø inch	CB	Ø CDG7	CL	ER 2	FL	L	MR	UB	XW	Weight	Model
5	92,1	25	139,5	32	70	44,5	24	152,5	13	2,50 kg	QM/759
6	106,4	32	166,5	35	76	49	29	181	6,5	3,50 kg	QM/761
8	122,2	38	217,5	38	85,5	57	38	237	0	7,00 kg	QM/762

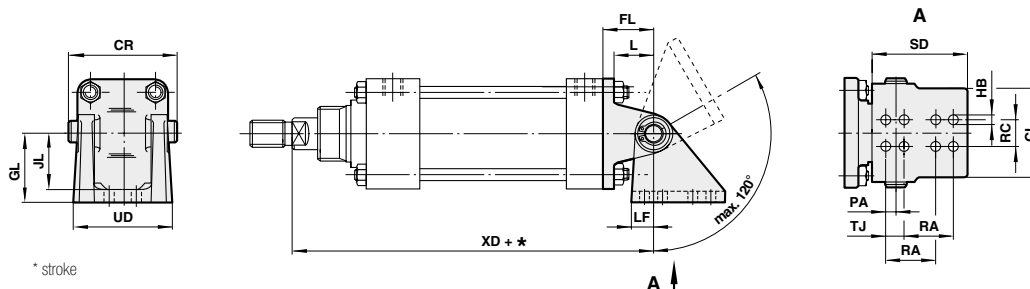
Nose mounting N



Ø inch	KV	KW	Weight	Model
5	70	12,5	0,18 kg	QM/997*
6	70	12,5	0,18 kg	QM/997*

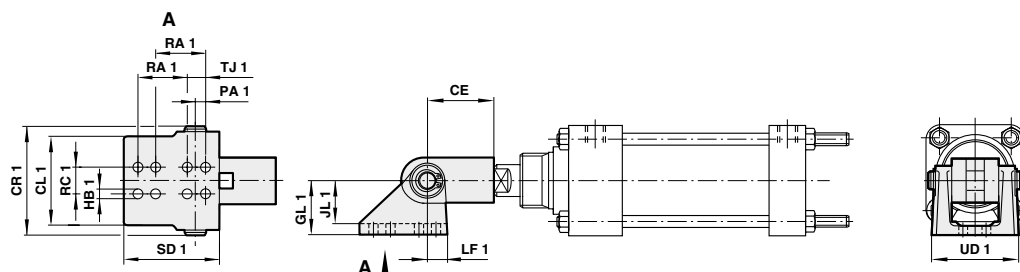
* These cannot be supplied separately. If a spare Nose Mounting is required, specify basic cylinder reference with 'Q' prefix and -/06 suffix, e.g. QM/950/N/06.

Rear hinge mounting L



Ø inch	CL	CR	FL	GL	Ø HB	JL	L	LF	PA	RA	RC	SD	TJ	UD	XD	Weight	Model
5	70	82,5	57	74,5	12	65	33,5	23,5	11	76	22	101,5	—	82,5	285,5	5,00 kg	QM/913
6	98,5	114,5	70	89	13,5	76	43	28	12,5	101,5	32	165	32	108	305	11,00 kg	QM/914
8	100	114,5	79,5	116	16,7	100	47,5	31,5	16	114,5	32	184	38	117,5	355,5	17,50 kg	QM/915
10	151	178	95,5	171,5	27	151	57	44,5	16	133,5	51	247,5	57	159	438	25,00 kg	QM/917
12	151	178	95,5	171,5	27	151	57	44,5	16	133,5	51	247,5	57	159	438	30,00 kg	QM/918
14	210	239	120,5	232	27	209,5	73	63,5	28,5	139,5	63,5	279,5	70	210	487,5	61,00 kg	QM/924

Rear hinge mounting M

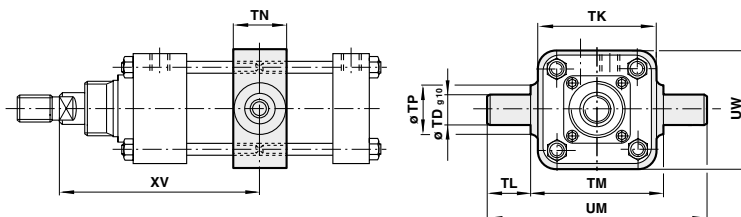


Ø inch	CE	CL 1	CR 1	GL 1	Ø HB 1	JL 1	LF 1	PA 1	RA 1	RC 1	SD 1	TJ 1	UD 1	Weight	Model
5	79,5	79,5	92	89	10,3	79,5	28,5	16	89	22	114,5	—	—	3,00 kg	QM/903
6	79,5	79,5	92	89	10,3	79,5	28,5	16	89	22	114,5	32	—	3,00 kg	QM/903
8	95,5	98,5	114,5	89	13,5	76	28,5	12,5	102	32	165	32	108	6,00 kg	QM/904
10	120,5	124	139,5	116	20	100	35	12,5	120,5	38	206,5	41,5	—	9,00 kg	QM/919
12	120,5	124	139,5	116	20	100	35	12,5	120,5	38	206,5	41,5	—	9,00 kg	QM/919
14	120,5	124	139,5	116	20	100	35	12,5	120,5	38	206,5	41,5	—	10,50 kg	QM/919

MOUNTINGS FOR HEAVY DUTY IMPERIAL CYLINDERS

LRM/900 Ø 5" ... 14"

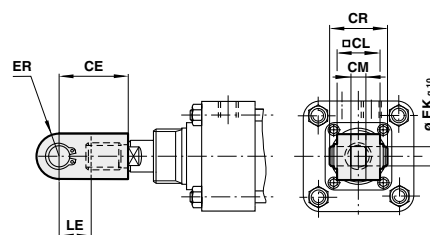
Centre trunnion H



Ø inch	Ø TDg10	TK	TL	TM	TN	Ø TP	UM	UW	XV min	XV max	Weight	Model
5	38	152	51	165	51	51	266,5	152	149,5	162	3,50 kg	M/P8639
6	38	187	51	192	51	51	293,5	187	149,5	168,5	5,00 kg	M/P8640
8	45	241,5	54	247,5	70	64	355,5	245	173	189	10,00 kg	M/P8645
10	65	330	76	330	76	114	482,5	318	207	245	25,00 kg	M/P8667
12	75	381	76	381	89	127	533,5	368	213,5	238,5	35,00 kg	M/P8670
14	90	457	101,5	457	101,5	140	660,5	432	239	255,5	51,50 kg	M/P11819

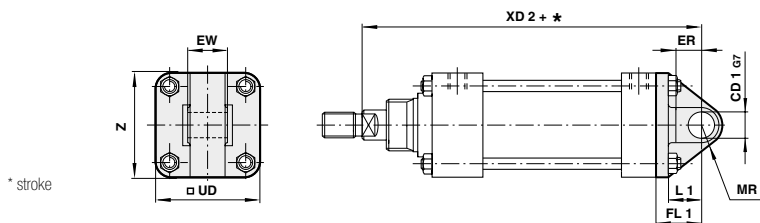
Note: These mountings are only supplied assembled complete with the cylinder. Unless otherwise specified, units will be supplied with dimension 'XV' plus half the stroke length.

Piston rod clevis F



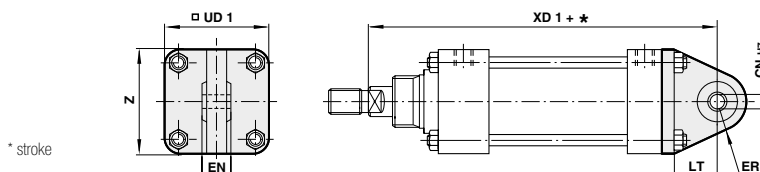
Ø inch	CE	CL	CM	CR	Ø EKg10	ER	LE	Weight	Model
5	79,5	51	20	60	22	25	32	1,25 kg	QM/409
6	79,5	51	20	60	22	25	32	1,25 kg	QM/409
8	95,5	63,5	25	74	25	32	38	1,70 kg	QM/410
10	120,5	76	32	87	32	38	44,5	2,75 kg	QM/411
12	120,5	76	32	87	32	38	44,5	2,75 kg	QM/411
14	120,5	76	32	87	32	38	44,5	4,50 kg	QM/411

Rear eye R



Ø inch	Ø CD 1g7	ER	EW	FL 1	L 1	MR 1	UD	XD 2	Weight	Model
5	18	28,5	44,5	57	33,5	21	138	285,5	3,60 kg	QM/764
6	25	28,5	63,5	70	43	25,5	165	305	6,20 kg	QM/765
8	25	32	63,5	79,5	47,5	25,5	217,5	355,5	11,50 kg	QM/766
10	38	44,5	101,6	95,5	57	41	268,5	438	12,60 kg	QM/767
12	38	44,5	101,6	95,5	57	41	319	438	17,30 kg	QM/768
14	57	73	127	120,5	73	54	375	487,5	32,80 kg	QM/769

Universal rear eye UR



Ø inch	Ø CNH7	EN	ER 1	LT	UD 1	XD 1	Z	Weight	Model
5	25	31	36	36	138	279	12°	2,70 kg	QM/950/33
6	30	37	43	39	176	290	12°	4,60 kg	QM/960/33
8	30	37	48	42	216	337	12°	7,30 kg	QM/980/33

DOUBLE ACTING IMPERIAL CYLINDERS

NFPA Ø 4" ... 8"

- Adjustable captive cushion needle
- Constructed of the finest materials
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B
- Magnetic piston standard

Technical Features

Medium:

Filtered compressed air
lubricated or non lubricated

Operation:

Double acting, adjustable
cushioning and magnetic piston

Bore sizes:

4", 5", 6", 8",

Operating pressure:

250 psi (17 bar)

Operating temperature:

-40°C ... +80°C max.

Air supply must be dry enough to avoid ice
formation at temperatures below +2°C

Strokes:

Made to order, available 2 ... 120 inches

Materials

Head and end caps: Black
anodized aluminum alloy

Tube: Aluminum alloy, clear anodized
O.D., hard coat anodized I.D.

Piston: Machined high-strength
aluminum alloy

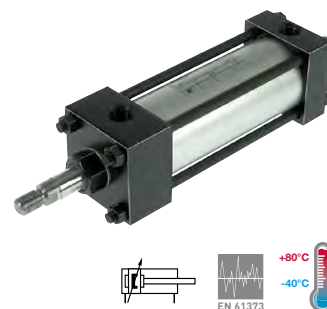
Piston rod: Hard chrome plated steel

Rod bearing: Oil impregnated
sintered iron

Seals: Nitrile rod seal, urethane
rod wiper, nitrile piston seals,
nitrile tube end seals

Tie rods: High-tensile strength steel

*Consult factory for alternative materials



● Technical data

Cylinder Ø (inch)	4	5	6	8
Air ports	1/2 NPT	1/2 NPT	3/4 NPT	3/4 NPT
Piston rod diameter (inch)	1	1	1 3/8	1 3/8
Cushion length (inch)	0.95	0.95	1.15	1.15
Theoretical thrusts at 80 psi (6 bar) outstroke	1005 lb (4473 N)	1571 lb (6988 N)	2262 lb (10061 N)	4020 lb (17881 N)
Theoretical thrusts at 80 psi (6 bar) instroke	942 lb (4193 N)	1508 lb (6708 N)	2143 lb (9532 N)	3901 lb (17352 N)

● Option selector

A★★77★1-LT-PS-★★-★X★★		Stroke in inch	
Mounting options	Substitute	Bore in inch	
Head Rectangular Flange (MF1)	03	Additional options	
Head Square (ME3) – 8" bore	03	Standard	None
Side Lugs (MS2)	09	Metal rod scraper	MS
Cap trunnion (MT2)	8R	Cushion location	N(33)*
Cap fixed clevis (MP1)	12	Piston rod boot over	RB
Cap fixed eye (MP3)	32	Piston rod extension	RX
Piston rod diameters	Substitute	Stainless steel piston rod	SS
1" for 4" and 5" cylinders	B		
1 3/8" for 6" and 8" cylinders	C		

* Option required for MT2 mounting style.

DOUBLE ACTING IMPERIAL CYLINDERS

NFPA Ø 4" ... 8"

Mountings and service kit

Model	Removable cap trunnion (MT2)	Cap fixed clevis (MP1)	Cap fixed eye (MP3)	Head rectangular flange mount (MF1)	Head square mount (ME3)	Side lug mount (MS2)
4	A8R77B1-LT-N(33)-PS-4"x*	A1277B1-LT-PS-4"x*	A3277B1-LT-PS-4"x*	A0377B1-LT-PS-4"x*		A0977B1-LT-PS-4"x*
5	A8R77B1-LT-N(33)-PS-5"x*	A1277B1-LT-PS-5"x*	A3277B1-LT-PS-5"x*	A0377B1-LT-PS-5"x*		A0977B1-LT-PS-5"x*
6	A8R77C1-LT-N(33)-PS-6"x*	A1277C1-LT-PS-6"x*	A3277C1-LT-PS-6"x*	A0377C1-LT-PS-6"x*		A0977C1-LT-PS-6"x*
8	A8R77C1-LT-N(33)-PS-8"x*	A1277C1-LT-PS-8"x*	A3277C1-LT-PS-8"x*		A0377C1-LT-PS-8"x*	A0977C1-LT-PS-8"x*
Model	NFPA rod clevis	Norgren clevis bracket	NFPA eye bracket	Switch mounting bracket for M/50	Service kit	
4	49030A	49023A	49020A	QM/27/2/1	LTRK-25-400	
5	49030A	49023A	49020A	QM/27/2/1	LTRK-25-500	
6	49032A	49024A	49019A	QM/27/2/1	LTRK-35-600	
8	49032A	49024A	49019A	QM/27/2/1	LTRK-35-800	

* Please insert the stroke length in inches

Switches

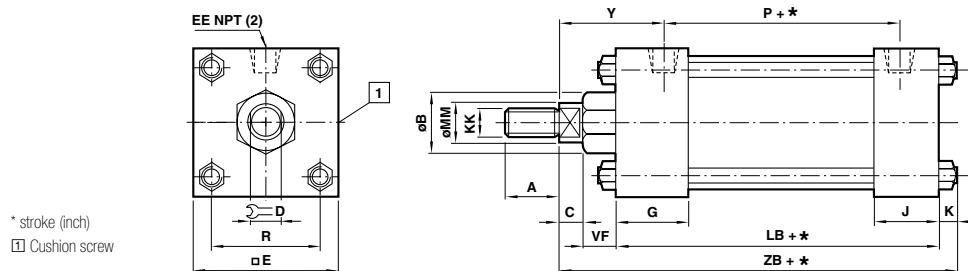
Voltage V d.c.	Current max.	Temperature	LED	Features	Cable length	Cable type	Protection class *1)	Model
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	PNP	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAP/*V
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	NPN	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAN/*V

* Please insert the cable length 2, 5 or 10 m

DOUBLE ACTING IMPERIAL CYLINDERS

NFPA Ø 4" ... 8"

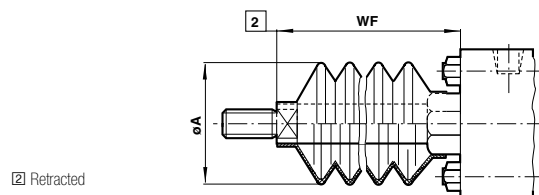
● Dimensions



Bore	Ø MM	A	B +.000 -.002	C	D	E	EE	G	J	K	KK	LB	P	R	VF	Y	ZB	Weight lb	Add per inch of stroke lb
4"	1"	1.125	1.499	.500	.813	4.500	.500	1.750	1.250	.375	3/4 - 16	4.250	2.690	3.323	.875	2.380	6.000	9.8 (4.45 kg)	0.45 (.20 kg)
5"	1"	1.125	1.499	.500	.813	5.500	.500	1.750	1.250	.438	3/4 - 16	4.500	2.940	4.101	.875	2.380	6.313	15.1 (6.85 kg)	0.51 (.23 kg)
6"	1-3/8"	1.625	1.999	.625	1.125	6.500	.750	2.000	1.500	.438	1 - 14	5.000	3.125	4.870	1.000	2.813	7.063	23.5 (16.19 kg)	0.77 (.35 kg)
8"	1-3/8"	1.625	1.999	.625	1.125	8.500	.750	2.000	1.500	.563	1 - 14	5.125	3.250	6.442	1.000	2.813	7.313	40.0 (18.14 kg)	1.06 (.48 kg)

Piston rod boot over

Apiston rod extension RX () is required when applying a rod boot to a cylinder.
See below for required rod extension per bore size and stroke.



Ø inch	Ø A	Piston rod extension required - RX ()	WF retracted
4	3.00	0.089 x stroke + 0.547 = RX value	1.375 + RX value
5	3.00	0.089 x stroke + 0.547 = RX value	1.375 + RX value
6	3.50	0.081 x stroke + 0.547 = RX value	1.625 + RX value
8	3.50	0.081 x stroke + 0.547 = RX value	1.625 + RX value

Example: A1277B1-LT-PB-RB-RX(??)4X5
 $0.089 \times 5 + 0.547 = 0.992$ = piston rod extension
 A1277B1-LT-PS-RB-RX(0.992)4x5
 WF = 2.367"

DOUBLE ACTING IMPERIAL CYLINDERS

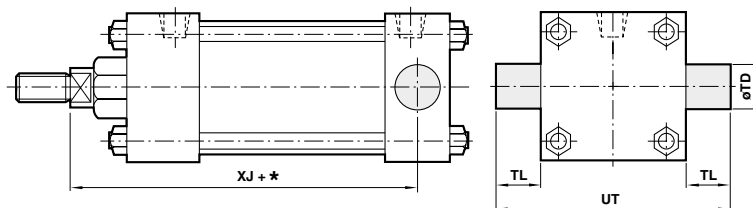
NFPA Ø 4" ... 8"

● Cylinder with mounting

Removable cap trunnion (MT2)



* stroke



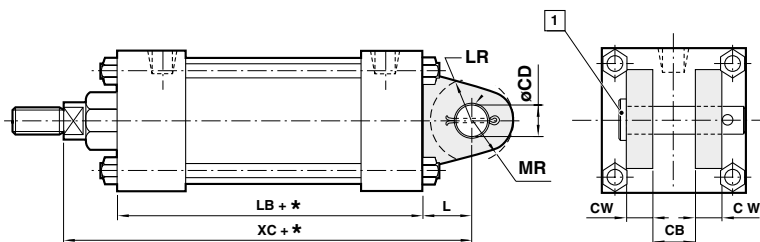
Bore	TD +.000 -.001	TL	UT	XJ	Weight lb	Add per inch of stroke lb	Model
4"	1.000	1.000	6.500	5.000	11.5 (5.22 kg)	0.45 (0.20 kg)	A8R77B1-LT-N(33)-PS-4"x*
5"	1.000	1.000	7.500	5.250	18.7 (8.48 kg)	0.51 (0.23 kg)	A8R77B1-LT-N(33)-PS-5"x*
6"	1.375	1.375	9.250	5.875	27.3 (12.38 kg)	0.77 (0.35 kg)	A8R77C1-LT-N(33)-PS-6"x*
8"	1.375	1.375	11.250	6.000	41.4 (18.78 kg)	1.06 (0.48 kg)	A8R77C1-LT-N(33)-PS-8"x*

* Please insert the stroke length in inches

Cap fixed clevis (MP1)



* stroke



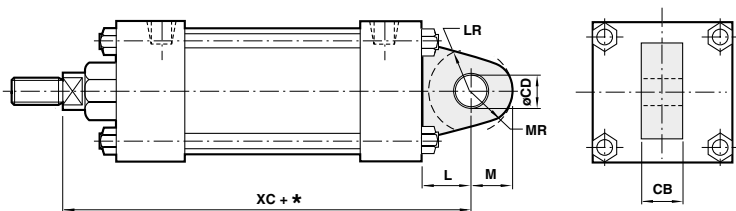
Bore	CB	CD	CW	L	LB	LR	MR	XC	Weight lb	Add per inch of stroke lb	Model
4"	1.250	.750	.625	1.250	4.250	1.250	.938	6.875	14.8 (6.71 kg)	0.45 (0.20 kg)	A1277B1-LT-PS-4"x*
5"	1.250	.750	.625	1.250	4.500	1.250	.938	7.125	22.2 (10.07 kg)	0.51 (0.23 kg)	A1277B1-LT-PS-5"x*
6"	1.500	1.000	.750	1.500	5.000	1.500	1.188	8.125	35.7 (10.66 kg)	0.77 (0.35 kg)	A1277C1-LT-PS-6"x*
8"	1.500	1.000	.750	1.500	5.125	1.500	1.188	8.250	43.0 (19.50 kg)	1.06 (0.48 kg)	A1277C1-LT-PS-8"x*

* Please insert the stroke length in inches

Cap fixed eye (MP3)



* stroke



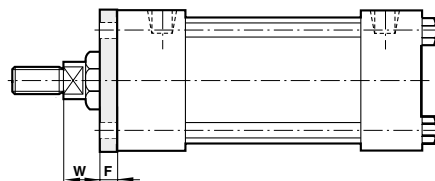
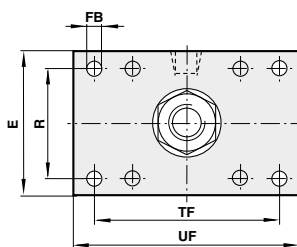
Bore	CB	CD	L	LR	M	MR	XC	Weight lb	Add per inch of stroke lb	Model
4"	1.250	.750	1.250	1.250	.750	.938	6.875	15.5 (7.03 kg)	0.45 (0.20 kg)	A3277B1-LT-PS-4"x*
5"	1.250	.750	1.250	1.250	.750	.938	7.125	22.8 (10.34 kg)	0.51 (0.23 kg)	A3277B1-LT-PS-5"x*
6"	1.500	1.000	1.500	1.500	1.000	1.188	8.125	37.0 (16.78 kg)	0.77 (0.35 kg)	A3277C1-LT-PS-6"x*
8"	1.500	1.000	1.500	1.500	1.000	1.188	8.250	60.5 (27.44 kg)	1.06 (0.48 kg)	A3277C1-LT-PS-8"x*

* Please insert the stroke length in inches

DOUBLE ACTING IMPERIAL CYLINDERS

NFPA Ø 4" ... 8"

Head rectangular flange mount (MF1) *1)

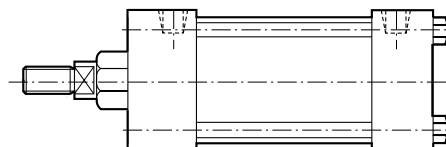
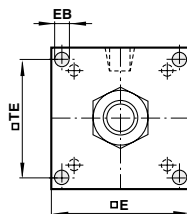


Bore	E	F	FB	R	TF	UF	W (Std.)	Weight lb	Add per inch of stroke lb	Model
4"	4.500	.625	.438	3.323	5.438	6.250	.750	14.8 (6,71 kg)	0.45 (0,21 kg)	A0377B1-LT-PS-4"x*
5"	5.500	.625	.563	4.101	6.625	7.625	.750	22.7 (10,30 kg)	0.51 (0,23 kg)	A0377B1-LT-PS-5"x*
6"	6.500	.750	.563	4.879	7.625	8.625	.875	35.6 (16,15 kg)	0.77 (0,35 kg)	A0377C1-LT-PS-6"x*

* Please insert the stroke length in inches

*1) Test results pending - consult Norgren Technical for more information.

Head square mount (ME3) *1)



Bore	E	EB	TE	Weight lb	Add per inch of stroke lb	Model
8"	8.500	.688	7.570	40.00 (18,15 kg)	1.06 (0,48 kg)	A0377C1-LT-PS-8"x*

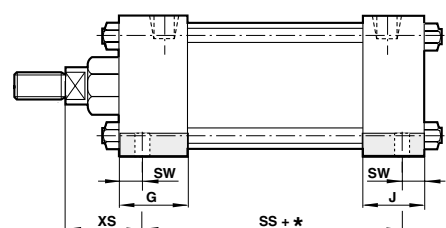
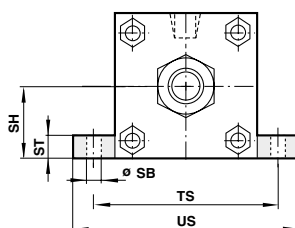
* Please insert the stroke length in inches

*1) Test results pending - consult Norgren Technical for more information.

Side lug mount (MS2) *1)



* stroke



Bore	G	J	SB	SH	SS	ST	SW	TS	US	XS (Std.)	Weight lb	Add per inch of stroke lb	Model
4"	1.750	1.250	.563	2.250	3.250	.750	.500	5.500	6.500	1.875	11.5 (5,22 kg)	0.45 (0,21 kg)	A0977B1-LT-PS-4"x*
5"	1.750	1.250	.813	2.750	3.125	1.000	.688	6.875	8.250	2.062	18.7 (8,48 kg)	0.51 (0,23 kg)	A0977B1-LT-PS-5"x*
6"	2.000	1.500	.813	3.250	3.625	1.000	.688	7.875	9.250	2.313	27.3 (12,38 kg)	0.77 (0,35 kg)	A0977C1-LT-PS-6"x*
8"	2.000	1.500	.813	4.250	3.750	1.000	.688	9.875	11.250	2.313	41.4 (18,78 kg)	1.06 (0,48 kg)	A0977C1-LT-PS-8"x*

* Please insert the stroke length in inches

*1) Test results pending - consult Norgren Technical for more information.

DOUBLE ACTING IMPERIAL CYLINDERS

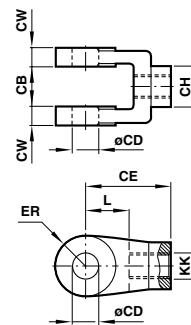
NFPA Ø 4" ... 8"

NFPA rod clevis



For cyl. Ø	KK	CB	CD	CE		CW	ER	L	Weight lb	Model (Std.)	Model (Assy.)
4" & 5"	3/4 - 16	1.250	.750	2.375	1.250	.625	.750	1.250	3.75 (1,7 kg)	49030	49030A
6" & 8"	1 - 14	1.500	1.000	3.125	1.500	.750	1.000	1.500	7.94 (3,6 kg)	49032	49032A

Note: Rod Clevis Assembly 49102A and 49103A are supplied with NFPA Pin. All others are with Standard Pin

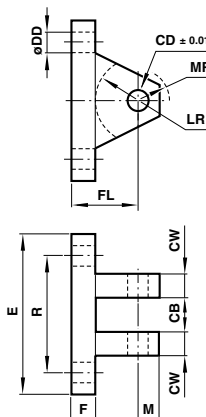


IMI Norgren clevis bracket



For cyl. Ø	CB	CD	CW	DD	E	F	FL	LR	M	MR	R	Weight lb	Model (Std.)	Model (Assy.)
4" & 5"	1.250	.750	.625	.531	5.000	.625	1.875	1.188	.750	.906	3.828	9.81 (4,45 kg)	49023	49023A
6" & 8"	1.500	1.000	.750	.656	6.500	.750	2.250	1.500	1.000	1.250	4.953	25.25 (11,45 kg)	49024	49024A

Note: IMI Norgren Clevis Bracket Assembly is supplied with Standard Pin.

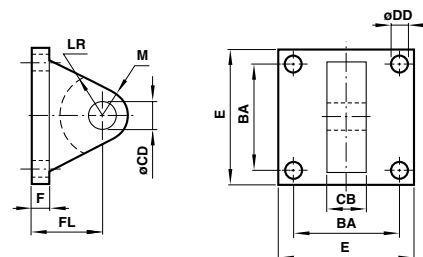


NFPA eye bracket



For cyl. Ø	BA	CB	CD	DD	E	F	FL	LR	M	Weight lb	Model (Std.)	Model (Assy.)
4" & 5"	2.563	1.250	.750	.531	3.500	.625	1.875	1.250	.750	9.15 (4,15 kg)	49020	49020A
6" & 8"	3.250	1.500	1.000	.656	4.500	.750	2.250	1.500	1.000	13.45 (6,10 kg)	49019	49019A

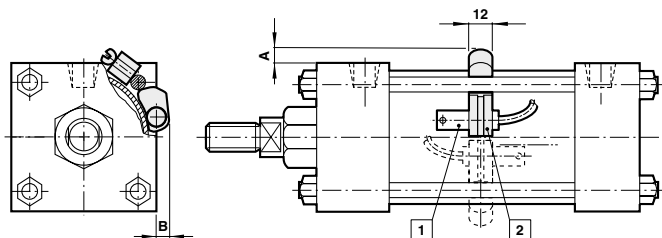
Note: NFPA Eye bracket assembly is supplied with standard pin.



● Switch mounting

QM/27/2/1, switch: M/50

Cylinder Ø	A	B	Weight lb
4"	.13	.06	0.02 (0,01 kg)
5"	.10	.00	0.02 (0,01 kg)
6"	.00	.00	0.02 (0,01 kg)
8"	.00	.00	0.02 (0,01 kg)



DOUBLE ACTING ROUNDLINE CYLINDERS

LRM/55401/M Ø 32 ... 100 mm

- Clean line design
- Low friction, long life seals
- Standard magnetic piston for full control system versatility
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated or non-lubricated

Operation:

Double acting, magnetic piston, adjustable cushioning

Operating pressure:

1 ... 10 bar

Operating temperature:

-40°C ... +80°C max.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Standard Strokes:

See below

Non-standard strokes:

Available (10 ... 3000 mm)

Materials

Barrel and end covers:

Anodized aluminium

Piston rods: Stainless steel (martensitic)

Piston and piston rod seals:

Polyurethane

'O'-rings: Nitrile rubber



Technical data

Cylinder Ø mm	32	40	50	63	80	100
Air ports	G1/8	G1/4	G1/4	G3/8	G3/8	G1/2
Piston rod Ø mm	12	16	20	20	25	25
Piston rod thread mm	M10x1,25	M12x1,25	M16x1,5	M16x1,5	M20x1,5	M20x1,5
Cushion length mm (inch)	19 (.75)	22 (.87)	24 (.94)	24 (.94)	27 (1.06)	34 (1.34)
Theoretical thrusts at 6 bar (87 psi) outstroke N (lb)	482 (108)	754 (169)	1178 (265)	1870 (420)	3016 (678)	4710 (1059)
Theoretical thrusts at 6 bar (87 psi) instroke N (lb)	414 (93)	633 (142)	990 (222)	1680 (378)	2722 (612)	4416 (993)
Air consumption at 6 bar (87 psi) outstroke l/cm (inch ³ /inch)	0,056 (8.7)	0,088 (13.7)	0,137 (21.3)	0,218 (33.9)	0,35 (54.4)	0,55 (85.5)
Air consumption at 6 bar (87 psi) instroke l/cm (inch ³ /inch)	0,048 (7.5)	0,074 (11.5)	0,114 (17.7)	0,195 (30.3)	0,32 (49.8)	0,51 (79.3)

Option selector

L★M/554★/★/★/★/★

Piston rod material	Substitute
Stainless steel martensitic (standard)	R
Hard chromium plated	C
Stainless steel austenitic	S
Cylinder Ø (mm)	Substitute
32	33
40	41
50	51
63	64
80	81
100	11

Strokes (mm)	
3000 max.	
Variants (magnetic piston)	Substitute
Standard	M
Double ended piston rod	JM
Extended piston rod	MU
L*M/554**/MU***/**	Extension (mm)

Standard strokes

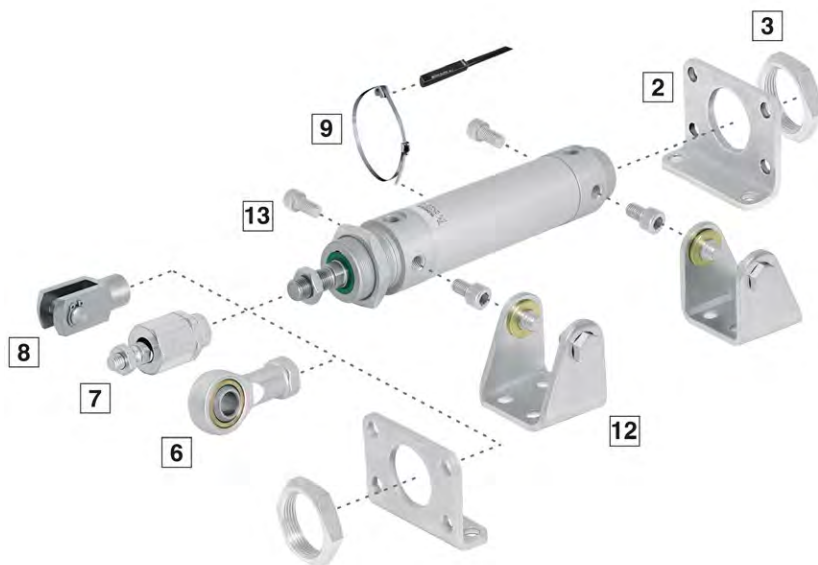
Cylinder Ø (mm)	Strokes (mm)	25	50	80	100	125	160	200	250	300
32	•	•	•	•	•	•	•	•	•	•
40	•	•	•	•	•	•	•	•	•	•
50	•	•	•	•	•	•	•	•	•	•
63	•	•	•	•	•	•	•	•	•	•
80	•	•	•	•	•	•	•	•	•	•
100	•	•	•	•	•	•	•	•	•	•

DOUBLE ACTING ROUNDLINE CYLINDERS

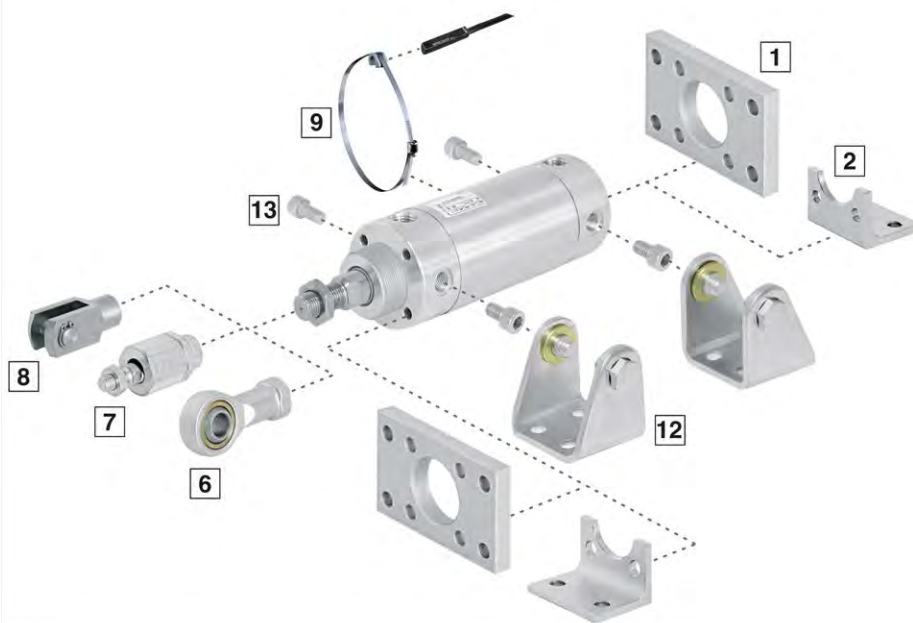
LRM/55401/M Ø 32 ... 100 mm

Mountings

Ø 32 ... 63 mm



Ø 80 ... 100 mm



Model	AK 7	B, G 1	C 2	F 8	H 13	L 12	N 3	UF 6	Switch mounting 9	Service kit
32	QM/8025/38	QM/55232/22	QM/55232/21	QM/8025/25	QM/55232/28	QM/55232/24	M/P29254	QM/8025/32	QM/50/432/23	LQA/8032/00
40	QM/8040/38	QM/55240/22	QM/55240/21	QM/8040/25	QM/55240/28	QM/55240/24	M/P29255	QM/8040/32	QM/50/440/23	LQA/8040/00
50	QM/8050/38	QM/55250/22	QM/55250/21	QM/8050/25	QM/55250/28	QM/55250/24	M/P29256	QM/8050/32	QM/50/450/23	LQA/8050/00
63	QM/8050/38	QM/55263/22	QM/55263/21	QM/8050/25	QM/55263/28	QM/55263/24	M/P29256	QM/8050/32	QM/50/463/23	LQA/8063/00
80	QM/8080/38	QM/55480/22	QM/55480/21	QM/8080/25	QM/55480/28	QM/55480/24	M/P34806	QM/8080/32	QM/50/480/23	LQA/8080/00
100	QM/8080/38	QM/55410/22	QM/55410/21	QM/8080/25	QM/55410/28	QM/55410/24	M/P34806	QM/8080/32	QM/50/410/23	LQA/8100/00

DOUBLE ACTING ROUNDLINE CYLINDERS

LRM/55401/M Ø 32 ... 100 mm

Switches

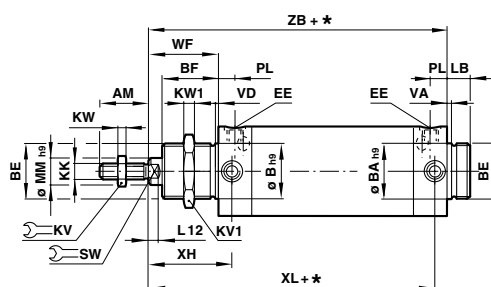
Voltage V d.c.	Current max.	Temperature	LED	Features	Cable length	Cable type	Protection class *1)	Model
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	PNP	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAP/*V
10 ... 30	150 mA	-40 ... +80°C (-40 ... 176°F)	•	NPN	2, 5, 10 m	PVC 3 x 0,25	IP65	M/50/EAN/*V

* Please insert the cable length 2, 5 or 10 m.

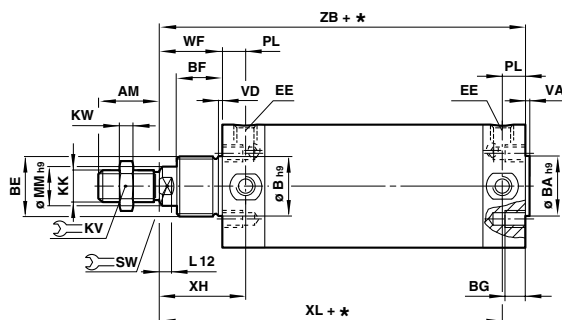
*1) -40°C ... +80°C protection class IP65; -20°C ... +80°C protection class IP67 and IP68

Dimensions

Ø 32 ... 63 mm



Ø 80 and 100 mm



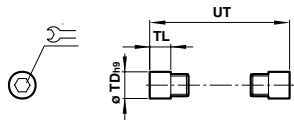
* stroke
□ Cushion screw

Ø	AM	Ø B/BAh9	BE	BF	BG	BG1	D	EE	FB	KK	KV	KV1	KW	KW1	LB
32	22	30	M 30 x 1,5	30	—	6	36,5	G1/8	—	M 10 x 1,25	17	36	5	8	14
40	24	38	M 38 x 1,5	35	—	8	45,5	G1/4	—	M 12 x 1,25	19	46	6	10	16
50	32	45	M 45 x 1,5	38	—	9,5	55,5	G1/4	—	M 16 x 1,5	24	55	8	10	18
63	32	45	M 45 x 1,5	38	—	10	69,5	G3/8	—	M 16 x 1,5	24	55	8	10	18
80	40	55	M 55 x 1,5	45	14	17,5	87,5	G3/8	M8	M 20 x 1,5	30	—	10	—	—
100	40	55	M 55 x 1,5	45	14	21,5	107,5	G1/2	M10	M 20 x 1,5	30	—	10	—	—
Ø	L12	Ø MMh9	PL	RT	SW	Ø TC	TG	VA/VD	WF	XH	XL	ZB	kg at 0 mm	kg per 100 mm	Model
32	5,5	12	9	M 8 x 1	10	35	—	3	38	47	123	132	0,40	0,14	LRM/55433/*
40	7,5	16	12	M 10 x 1	13	44	—	3	45	57	142	154	0,83	0,27	LRM/55441/*
50	8,5	20	12	M 12 x 1,5	17	54	—	3	50	62	152	164	1,30	0,32	LRM/55451/*
63	8,5	20	13	M 14 x 1,5	17	67	—	3	51	64	159	172	1,60	0,38	LRM/55464/*
80	11,5	25	15	M 16 x 1,5	22	85,5	70	5	61	76	196	211	3,10	0,59	LRM/55481/*
100	11,5	25	18,5	M 20 x 1,5	22	105,5	80	5	61	79,5	200,5	219	4,60	0,68	LRM/55411/*

DOUBLE ACTING ROUNDLINE CYLINDERS

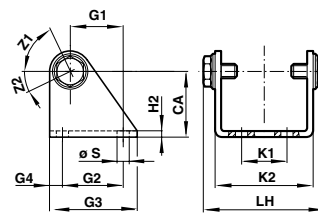
LRM/55401/M Ø 32 ... 100 mm

End cover trunnion H



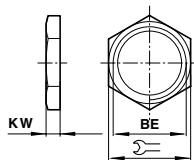
Ø	Ø TDh9	TL	UT	kg	Model
32	10	8	51	5	QM/55232/28
40	12	9,5	63	6	QM/55240/28
50	14	11	76	6	QM/55250/28
63	16	13	93	8	QM/55263/28
80	18	13	111,5	8	QM/55480/28
100	20	13	131,5	10	QM/55410/28

Rear hinge L



Ø	CA	G1	G2	G3	G4	Ø S	H2	K1	K2	LH	Z1	Z2	Model
32	35	20	24	40	8	7	4	20	46,5	59,5	202°	36°	QM/55232/24
40	40	27	30	50	10	9	5	28	56,5	71	197°	33°	QM/55240/24
50	45	30	34	54	10	9	5	36	68,5	83	196°	31°	QM/55250/24
63	50	34	35	65	15	9	5	42	82,5	99	191°	25°	QM/55263/24
80	65	47,5	55	80	12,5	11	6	55	102,5	125,5	193°	27°	QM/55480/24
100	77	63	70	100	15	11	6	70	122,5	145,5	192°	27°	QM/55410/24

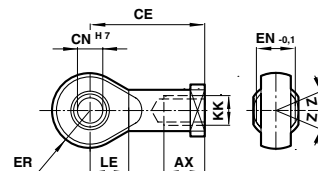
Nose nut N



Ø	BE	KW	kg	Model
32	M30 x 1,5	36	8	M/P29254
40	M38 x 1,5	46	10	M/P29255
50/63	M45 x 1,5	55	10	M/P29256
80/100	M55 x 1,5	60	13	M/P34806

Universal piston rod eye UF

Conforms to DIN ISO 8139



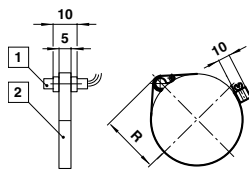
Ø	Thread KK	AX	CE	Ø CNH7	EN-0,1	ER	LE	Z	kg	Model
32	M10x1,25	20	43	10	14	14	15	13°	0,09	QM/8025/32
40	M12x1,25	22	50	12	16	16	17	13°	0,13	QM/8040/32
50/63	M16x1,5	28	64	16	21	21	22	15°	0,33	QM/8050/32
80/100	M20x1,5	33	77	20	25	25	26	15°	0,67	QM/8080/32

● Switch mounting

QM/50/XXX/23



1 Magnetically operated switch
2 Switch mounting bracket



Ø	R max.	Model
32	29	QM/50/432/23
40	33,5	QM/50/440/23
50	38,5	QM/50/450/23
63	45,5	QM/50/463/23
80	54,5	QM/50/480/23
100	64,5	QM/50/410/23

AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

- Suitable for applications on rail vehicles
- Almost frictionless operation
- No maintenance or lubrication
- Weather/corrosion resistant metal parts
- Typical applications; actuator, air spring, or vibration isolation

Technical Features

Medium:

Compressed air lubricated or unlubricated, Nitrogen, water (with glycol)

Operation:

Single acting

Operating pressure:

5,5 bar (79 psi) recommended dynamic pressure 8 bar (116 psi) max.

Operating temperature:

"Static" -40°C ... +80°C max.

Note

"Dynamic" -30 ... (+50°C)

The numbers in brackets represent the maximum permissible operating temperature. NB. When operated at this temperature for pro-longed periods, the bellow will experience a reduce working life.

Nominal diameters:

8, 10, 12, 14 1/2 inches

Strokes:

From 50 ... 430 mm max., depending on diameters and number of convolutions

Materials

End plates: Steel, chromplated

Studs: Steel, zinc plated

Central ring: Aluminium or steel, chromplated, partly moulded in

Bellow: NR/BR, SBR compound rubber



Note: When operated at +70°C for pro-longed periods, the bellow will experience a reduce working life.

Static = constant/unchanging external load

Dynamic = vibration or a changing internal pressure as a result of changing external load

Technical data

Models	M/31081	M/31082	M/31101	M/31102	M/31103	M/31121	M/31122	M/31123	M/31141	M/31142	M/31143
Normal Ø (inch)	8	8	10	10	10	12	12	12	14 1/2	14 1/2	14 1/2
Air port	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2	G 1/2
Normal Ø (inch) x convolutions	8 x 1	8 x 2	10 x 1	10 x 2	10 x 3	12 x 1	12 x 2	12 x 3	14 1/2 x 1	14 1/2 x 2	14 1/2 x 3
Recommended max. stroke in mm (inch)	65 (2.56)	145 (5.71)	85 (3.35)	170 (6.69)	250 (9.84)	85 (3.35)	170 (6.69)	250 (9.84)	100 (3.94)	215 (8.47)	320 (12.6)
Stroke in mm (inch)	75 (2.95)	175 (6.9)	100 (3.94)	225 (8.85)	330 (13)	100 (3.94)	225 (8.85)	330 (13)	125 (4.92)	265 (10.43)	380 (14.96)
Installation height min. in mm (inch)	50 (1.97)	75 (2.95)	50 (1.97)	75 (2.95)	100 (3.94)	50 (1.97)	75 (2.95)	100 (3.94)	50 (1.97)	75 (2.95)	100 (3.94)
Installation height max. in mm (inch)	125 (4.92)	250 (9.84)	150 (5.91)	300 (11.81)	430 (16.92)	150 (5.91)	300 (11.81)	430 (16.92)	175 (6.89)	340 (13.39)	480 (18.9)
Recommended max. working height in mm (inch)	115 (4.53)	220 (8.66)	135 (5.32)	245 (9.65)	350 (13.78)	135 (5.32)	245 (9.65)	350 (13.78)	150 (5.91)	290 (11.41)	420 (16.54)
Retracting force in N (lbs) to reach min. height	120 (26.97)	130 (29.23)	150 (33.72)	150 (33.72)	100 (22.48)	200 (44.96)	250 (56.20)	250 (56.20)	230 (51.70)	280 (62.94)	330 (74.18)
Clearance around the air bellow in mm (inch)	245 (9.65)	245 (9.65)	300 (11.81)	300 (11.81)	300 (11.81)	350 (13.78)	350 (13.78)	350 (13.78)	425 (16.73)	425 (16.73)	425 (16.73)
Weight in kg (lb)	3 (6.61)	3,75 (8.26)	4,1 (9.03)	4,7 (10.36)	5,3 (11.68)	5,4 (11.90)	6,2 (13.66)	6,9 (15.21)	7,1 (15.65)	8,3 (18.29)	9,6 (21.16)
Theor. thrust in N (lbs) at 6 bar (87 psi) at installation height min.	18300 (4114)	18000 (4047)	25000 (5020)	26000 (5845)	26500 (5957)	39000 (8767)	39700 (8925)	41000 (9217)	59000 (13264)	59500 (13376)	58900 (13241)
Theor. thrust in N (lbs) at 6 bar (87 psi) at installation height max.	6000 (1349)	4500 (1012)	8000 (1798)	6000 (1349)	7000 (1574)	14000 (3147)	10100 (2270)	10500 (2360)	17000 (3822)	17500 (3934)	15400 (3462)
Vibration height in mm (inch)	100 (3.94)	200 (7.87)	120 (4.74)	220 (8.66)	*	120 (4.74)	240 (9.45)	*	130 (5.12)	250 (9.84)	*
Volume (l) at vibration height	1,55	4	3,4	7,2	*	5,5	12	*	9,8	20,4	*
Stiffness at 4 bar (58 psi) in N/mm (lbs/inch)	560 (126)	200 (45)	257 (58)	123,5 (28)	*	372 (84)	190 (43)	*	558 (125)	252 (56)	*
Airspring natural "fn" frequency (Hz) at 4 bar (58 psi)	3	2,2	2,6	1,8	*	2,5	1,9	*	2,4	1,6	*
Isolation rate "I" in % at 10 Hz and 4 bar (58 psi)	91,1	95,8	92,6	96,5	*	93,3	96,7	*	93,9	97,4	*
Max. torque in Nm (inch/lbs) for mounting studs or holes	28 (247.8)	28 (247.8)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)	25 (221.3)

AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Option selector

M/31★★★

Nominal diameters (inches)	Substitute
8	8
10	10
12	12
14 1/2	14

Number of convolutions	Substitute
1	1
2	2
3	3



Important instructions:

Thrust:

The thrust depends on the height of the bellow. When height increases - the thrust decreases.

- Before installing the air bellow, check it carefully for any damage it may have suffered from transport or improper storage.
- Do not inflate the air bellow until it has been secured properly.

Clearance:

There must be enough clearance around the air bellow.

- The full surface of the metal parts is to be used to bear the forces.
- Air bellows must be equipped with lateral guides.
- Deflate the air bellows fully before removing.
- Ensure that the bellows are not constantly in contact with hydraulic oil, lubricants, solvents, metal cuttings and welding sparks.
- Should the air bellow be subjected to special media in an application, ask IMI Precision Engineering for further information, specifying the medium, temperature and concentration.

Stops:

To avoid damage when the bellow is compressed or extended mechanical stops at both end positions have to be used.

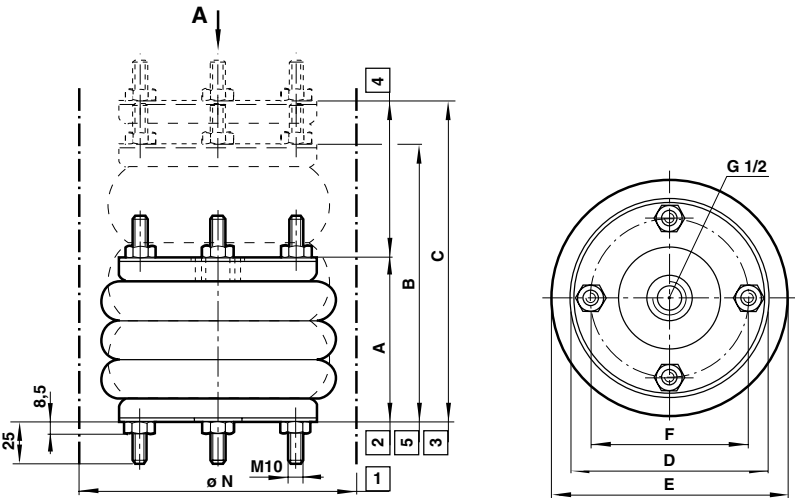
AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Dimensions

M/31061 ... M/31163

- 1 Installation diameter min.
- 2 Installation height min.
- 3 Installation height max.
- 4 Stroke
- 5 Recommended max. working height



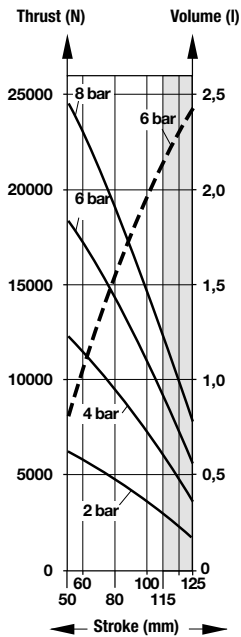
Normal Ø (inch) x convolutions	Recommended max. stroke (mm)	Recommended max. working height B (mm)	Stroke (mm)	Installation height A min. (mm)	Installation height C max. (mm)	Max. torque for mounting studs (Nm)	Ø E	Ø D	Ø F	Ø N	Weight (kg)	Models
8 x 1	65	115	75	50	125	28	230	184	155,5	245	3	M/31081
8 x 2	145	220	175	75	250	28	230	184	155,5	245	3,75	M/31082
10 x 1	85	135	100	50	150	25	270	210	181	300	4,1	M/31101
10 x 2	170	245	225	75	300	25	270	210	181	300	4,7	M/31102
10 x 3	250	350	330	100	430	25	270	210	181	300	5,3	M/31103
12 x 1	85	135	100	50	150	25	330	260	232	350	5,4	M/31121
12 x 2	170	245	225	75	300	25	330	260	232	350	6,2	M/31122
12 x 3	250	350	330	100	430	25	330	260	232	350	6,9	M/31123
14 1/2 x 1	100	150	125	50	175	25	400	310	282,5	425	7,1	M/31141
14 1/2 x 2	215	290	265	75	340	25	400	310	282,5	425	8,3	M/31142
14 1/2 x 3	320	420	380	100	480	25	400	310	282,5	425	9,6	M/31143

AIR BELLOWS

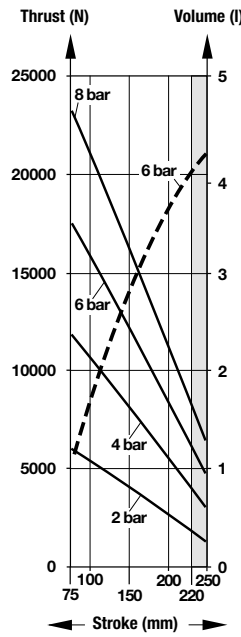
Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Thrust (at 2, 4, 6, 8 bar), volume (at 6 bar)

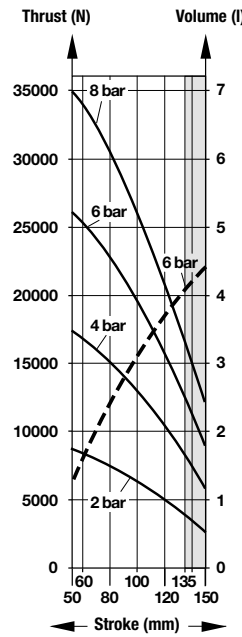
M/31081



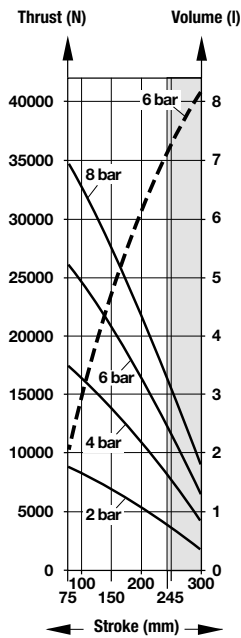
M/31082



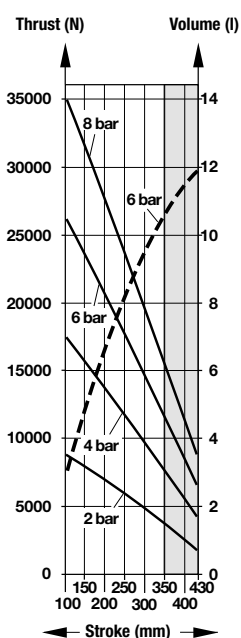
M/31101



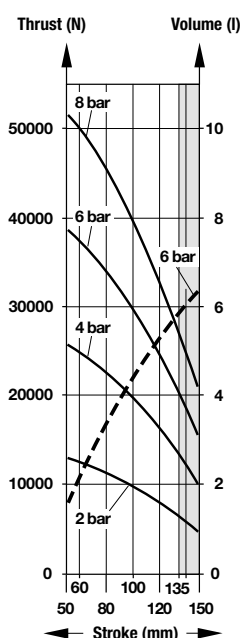
M/31102



M/31103



M/31121



— Thrust (N) -- Volume (l)

Caution!

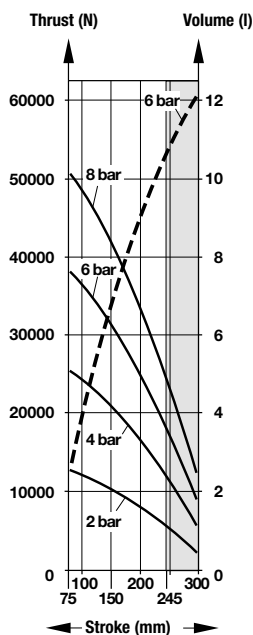
Ensure that all applications are within the max. installation height. For applications in the grey area please contact our technical service.

AIR BELLOWS

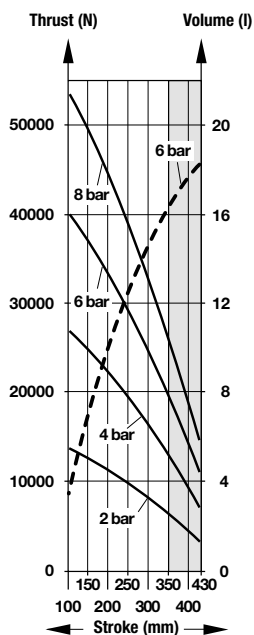
Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Thrust (at 2, 4, 6, 8 bar), volume (at 6 bar)

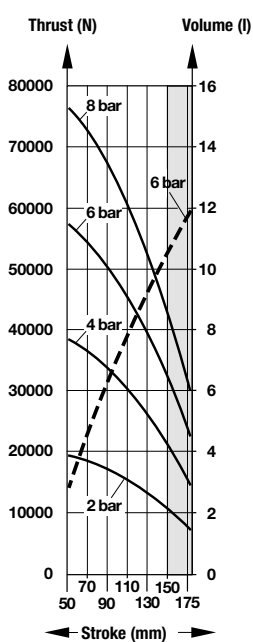
M/31122



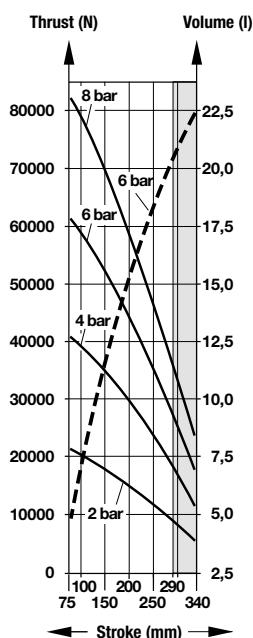
M/31123



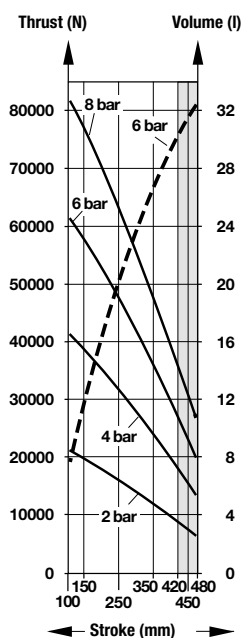
M/31141



M/31142



M/31143



— Thrust (N) - - - Volume (l)

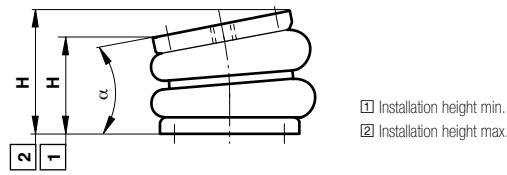
Caution!

Ensure that all applications are within the max. installation height. For applications in the grey area please contact our technical service.

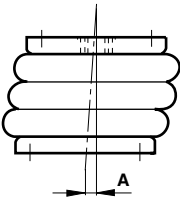
AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Operation angle



● Out of alignment



Normal Ø (inch) x convolutions	max. α °	max. A	Models
8 x 1	10	10	M/31081
8 x 2	15	10	M/31082
10 x 1	20	10	M/31101
10 x 2	25	20	M/31102
10 x 3	30	30	M/31103
12 x 1	20	10	M/31121
12 x 2	25	20	M/31122
12 x 3	30	30	M/31123
14 1/2 x 1	20	10	M/31141
14 1/2 x 2	25	20	M/31142
14 1/2 x 3	30	30	M/31143

Operation angle

Tilt angles from 10 ... 30° are possible, depending on the air bellow design.
Ensure application is within minimum and maximum installation heights.

AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

● Application example Air bellow as an actuator

A 1000 kg conveyor carrying a 550 kg pallet needs to be lifted by 90 mm (stroke) in order to transfer the pallet to another level. Four (4) air bellows should be used. The available operating pressure is 5 bar.

The operating temperature is 45°C. There is a 270 mm square space to house each air bellow. Compression and extension stops are provided. The air bellows have to be mounted in a space which is 85 mm apart. During the lifting operation the conveyor may tilt in the second half of the stroke by a max. of 9°.

Step 1: Fill in and complete the datasheet

a) Total weight to be lifted:	F	=	(1000 kg + 550 kg) • 10 m/s ² = 15500 N
b) Number of air bellows:	n	=	4
c) Thrust per air bellow:	f	=	$\frac{15500 \text{ N}}{4} = 3875 \text{ N}$
d) Operating pressure:	P	=	5 bar
e) Required stroke:	S	=	90 mm
f) Vertical space:	Xv	=	85 mm
g) Horizontal space:	Xh	=	270 mm
h) Operating temperature:	T	=	45°C
i) Operation angle:	a	=	9°
j) Out of alignment:	A	=	0 mm
k) Chemical resistance:			normal environment

Step 2:

From table (technical data) air bellows have to be selected, that have a min. 90 mm stroke and clearance around the air bellows smaller than Xh = 270 mm.

We select: M/31082

Step 3:

Calculate the total height at which the air bellow should be used, see step 1:

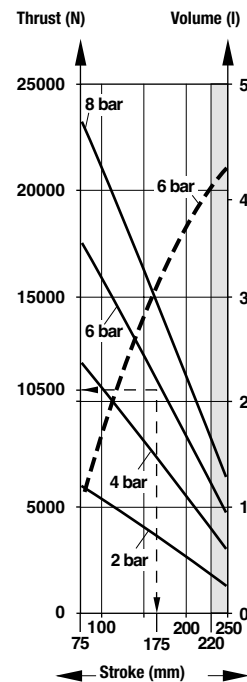
Vertical space	Xv	85 mm
Stroke	S	90 mm
Total height		175 mm

By referring to the total height of 175 mm and the vertical space of 85 mm, only M/31082 (installation height min. 75 to recommended max. working height 220 mm) can be used from table (technical data).

The max. installation height is 165 mm. 75 mm installation height min. of M/31083 plus 90 mm stroke.

Step 4:

Check the thrust at 6 bar at a height of 165 mm.
From the charts in the datasheet we can see that:



M/31082 will provide 10500 N at 6 bar. To get the figure for 5 bar, we have to calculate:

$$\frac{105060 \text{ N} \cdot 5}{6} = 8750 \text{ N at 5 bar}$$

Result:

The air bellow M/31082 can provide the required thrust of 3875 N.

Step 5:

Check the operation angle and the out of alignment when the selected air bellow can tilt.

- i) max. operation angle 15° is higher as existing operating angel 9°.
- j) max. out of alignment is 10 mm is higher as existing alignment 0 mm.

Result:

M/31082 can be used.

Step 6:

Check all remaining parameters

- h) At 45°C Standard rubber material
- 40°C ... (+ 70°C) "Static";
- 30°C ... + 50°C "Dynamic"
- k) No special chemical resistance is required

Result:

M/31082 is the chosen air bellow, because it meets all requirements.

AIR BELLOWS

Single Acting M/31000 Ø 8 ... 14 1/2 inch

Application example Air bellow as a vibration isolator

A hydraulic power unit with an excitation frequency (f_e) between 1200 and 3000 cycles/min (= 20 to 50 Hz) must be vibration isolated. The total weight of the power unit is 3800 kg. The supporting area under the unit is 1,2 m x 0,8 m. The operating temperature is 50°C. The space for the installation is 240 mm high. Four air bellows will be used. The max. operating pressure is 4 bar. A minimum of 97% vibration isolation has to be reached.

Step 1: Fill in and complete the datasheet

a) Total weight to be isolated:	F	=	3800 kg • 10 m/s ² = 38000 N
b) Number of air bellows:	n	=	4
c) Thrust per air bellow:	f	=	$\frac{38000 \text{ N}}{4} = 9500 \text{ N}$
d) Operating pressure:	P	=	4 bar
f) Vertical space:	Xv	=	240 mm
g) Horizontal space:	Xh	=	400 mm (0,8 m /2)
h) Operating temperature:	T	=	50°C
k) Chemical resistance:			normal environment
m) Isolation rate:	I	=	97%
p) Excitation frequency	f_e	=	min. 20 Hz, max. 50 Hz

Two types of air bellows are chosen. Each one has to work with a vibration height lower than 240 mm and fit in a horizontal space-sampler than 400 mm. From table (technical data) we select:

1. M/31102 - Vibration height 220 mm - Clearance around the air bellow 300 (mm) - Airspring natural frequency " f_n " at 4 bar 1,8 (Hz)
2. M/31122 - Vibration height 240 mm - Clearance around the air bellow 350 (mm) - Airspring natural frequency " f_n " at 4 bar 1,9 (Hz)

Step 2:

Take the air bellow with the lowest airspring natural frequency $f_n = 1,8$ Hz in order to get the highest isolation rate referring to f_e min. = 20 Hz. Air bellow M/31102 is chosen.

Step 3:

Calculate the isolation rate (I) of the M/31102 by using the formula:

Formula:

$$I = 1 - \frac{1}{\left(\frac{f_e}{f_n}\right)^2 - 1}$$

Example:

$$I = 1 - \frac{1}{\left(\frac{20}{1,8}\right)^2 - 1}$$

$$I = 1 - \frac{1}{122,4} = 0,991$$

$$I = 99,1\%$$

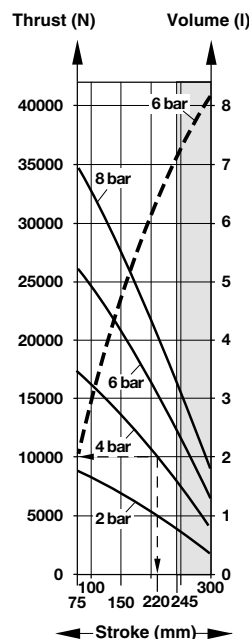
Warning

These products are intended for use in industrial compressed air and rail transport systems only. Do not use these products where pressures and temperatures can exceed those listed under 'Technical features'. Before using these products with fluids other than those specified, for non-industrial applications, life-support systems, or other applications not within published specifications, consult our technical service.

Through misuse, age, or malfunction, components used in fluid power systems can fail in various modes.

Step 4:

Check the thrust at 4 bar at a height of 220 mm. From the charts in the datasheet we can see that.



M/31102 will provide 10000 N as a vibration height of 220 mm at 4 bar.

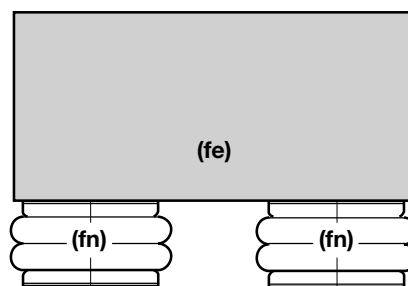
Step 5:

Check all remaining parameters

- h) At 50°C Standard rubber material (-40 to +70°C) can be used.
- g) No special chemical resistance is required.

Result:

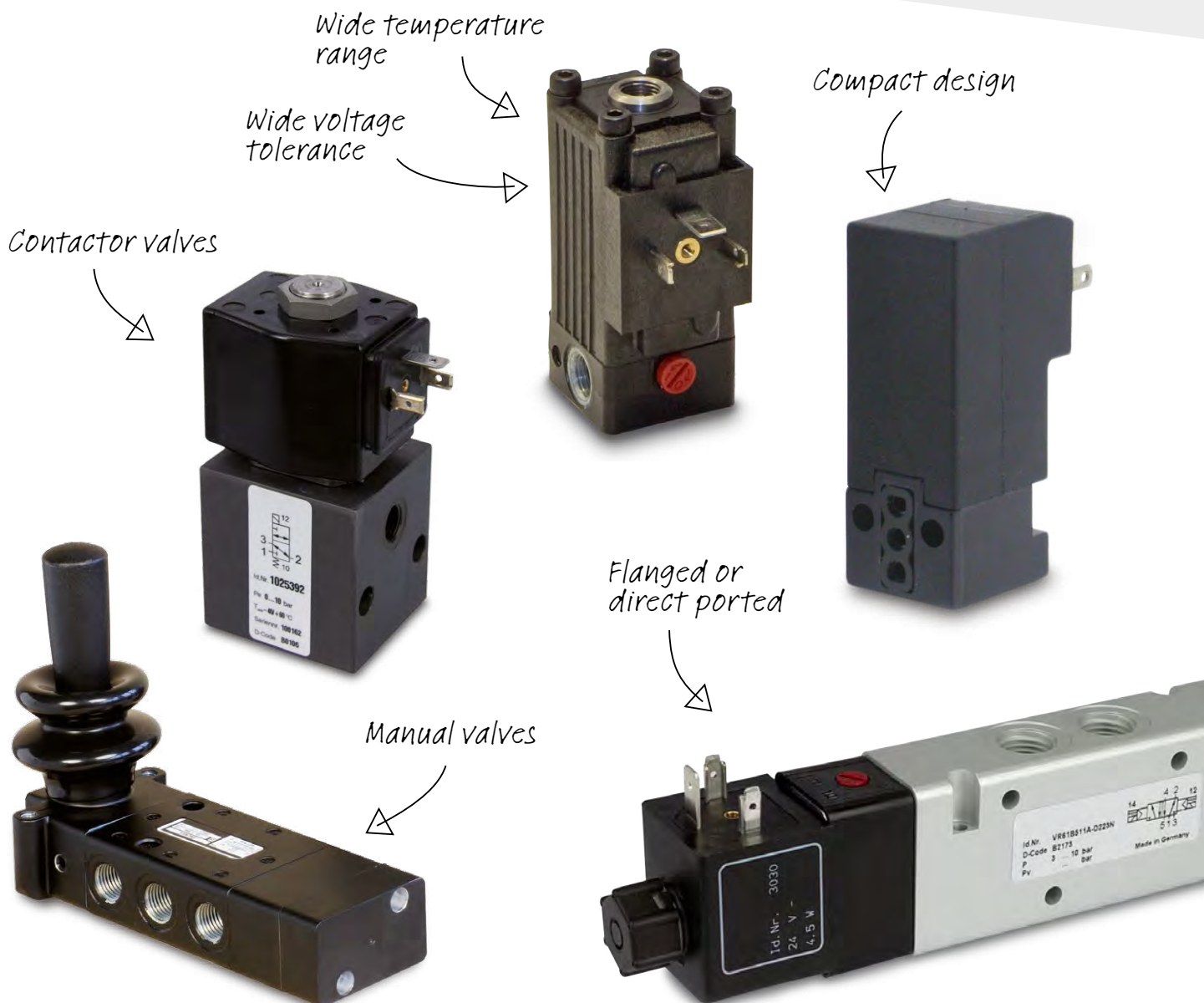
4 x M/31102 air bellows are chosen. They will provide 99,1% vibration isolation and lift the 3800 kg weight at 4 bar.



f_e = Excitation frequency of load
 f_n = Airspring natural frequency

The system designer is warned to consider the failure modes of all component parts used in fluid power systems and to provide adequate safeguards to prevent personal injury or damage to equipment in the event of such failure. System designers must provide a warning to end users in the system instructional manual if protection against a failure mode cannot be adequately provided. System designers and end users are cautioned to review specific warnings found in instruction sheets packed and shipped with these products.

Valves



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering valves range.
If you can't see the option you require please contact us.

● In-line and Manifold Valves

RXE & RXP (ISO★STAR) 5/2 & 5/3 glandless valves (solenoid and pilot actuated) ISO 1, 2 & 3  Page 93	VRW 2/2, 3/2 way solenoid poppet valves (directly actuated) CNOMO Interface & G1/8 ported  Page 102	Microsol 2/2 & 3/2 way solenoid valves (directly actuated) Base mounted  Page 106	VR61 3/2, 2 x 3/2, 5/2 & 5/3 directional control solenoid and pilot valves 1/4"  Page 108	VR61Z 3/2, 5/2 & 5/3 directional control solenoid valves Flange version  Page 120	Prospector® 3/2 way pilot actuated poppet valves 1/2" ... 1"  Page 126
Rail Prospector® Solenoid pilot actuated poppet valves 2/2, 3/2 3/8" ... 1" (BSPP/PTF)  Page 128					

● Pilot/Manual/Mechanical Valves

SUPER X 3/2 & 5/2 pilot actuated spool valves 1/8" & 1/4"  Page 132	SUPER X 3/2, 5/2 & 5/3 manually and mechanically actuated spool valves 1/8" & 1/4"  Page 134	SLV/15293/A 3/2 Heavy duty poppet valves G1/4  Page 144
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● Solenoid and Special Purpose Valves

VR95 2/2 way direct solenoid operated poppet valves G1/4 or 1/4 NPT  Page 145	VR96 3/2 way direct solenoid operated poppet valves G1/4 or 1/4 NPT  Page 148	VR24 3/2 way direct solenoid operated poppet valves G1/4, 1/4 NPT or flanged with NAMUR interface  Page 151	VR24Z 3/2 way direct solenoid operated poppet valves Special flange mounting option  Page 156	VR98 3/2 way direct or indirect solenoid operated poppet valves G1/2, 1/2 NPT  Page 159	NMPV 2/2 way minimum pressure valve 3/8", 1/2" & 3/4" or interface version  Page 163
82530 2/2 way valves (solenoid actuated diaphragm with forced lifting) 1/4" ... 1/2"  Page 165	82710 2/2 way valves (pilot actuated) 1/4" ... 1/2"  Page 167	84500, 84720 2/2 way valves (pilot actuated) 1/2" ... 2"  Page 169	82180, 82280 2/2 way valves (pilot actuated) 1/2" ... 2"  Page 171	8499986 2/2 way seat valve G1/4"  Page 173	8495237 3/2 way seat valve G1/8"  Page 174
8251180 2/2 way seat valves G3/8"  Page 175	8253200 2/2 way diaphragm valves G1/2"  Page 177	8591099 2/2 way piston valves G1"  Page 178	8495584 2/2 way seat valves G1"  Page 179	8271099 2/2 way diaphragm valve G1/4"  Page 181	8450400 2/2 way seat valve G1"  Page 183
8590907 2/2 way piston valves DN 32, Flange connection, PN 40, acc. to GOST 12815-0 Russia RU  Page 185	8591127 2/2 way SEAT VALVES G1/4  Page 187	82900, 83300 2/2 way release exhaust valves (pilot actuated) 3/4" & 1"  Page 188			

5/2 & 5/3 GLANDLESS VALVES

RXE & RXP (ISO*STAR) ISO 1, 2 & 3

- Specially coated glandless spool and sleeve for long trouble-free life
- Manual override as standard
- Wide range of sub-bases and accessories
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

(Basic valve without solenoid operator)

Medium:

Compressed air, 40 µm filtered, lubricated or non-lubricated

Operation:

Glandless spool valve, solenoid pilot or air pilot actuated

Mounting:

On sub-bases

Maximum operating pressure:

12 bar for internal pilot version (standard)
16 bar, external pilot pressure
maximum 12 bar

Ambient temperature:

-40°C ... +70°C - solenoid actuated valves

-40°C ... +80°C - pilot actuated valves

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Flow characteristics: (unregulated):

Size	Function	l/min	Cv	Kv
ISO 1	5/2	1230	1,20	1,08
ISO 1	5/3 COP	1320	1,35	1,15
ISO 2	5/2	2450	2,45	2,16
ISO 2	5/3 COP	2520	2,57	2,20
ISO 3	5/2	4400	4,48	3,84
ISO 3	5/3 COP	4650	4,74	4,06

Materials

Body: Die cast aluminium

Spool and sleeve: Hard anodised
PTFE coated, matched aluminium

Static seals: VMQ and Nitrile rubber

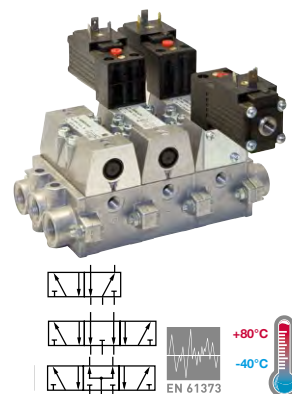
Plastic parts: POM

Screws: Zinc plated

Coil: Glass reinforced nylon

Internal parts: Stainless steel

Seals: NBR (FPM top seat)



Technical Data - Solenoid operators

Type	32 mm solenoid valve with sub base inlet and outlet connections
Circuit function	3/2, Normally closed
Orifice	1,5 mm
Seal material	NBR
Body material	Brass, zinc or plastic
Port connection	Exhaust port 1/8" BSP female; inlet and outlet ports CNOMO sub base
Coil Material	Glass reinforced PA
Nominal voltages	12, 24, 37,5, 52, 74, 96, 110 Volts
Pull in voltage	80% of nominal voltage
Drop out voltage	3% of nominal voltage
Power consumption	6 Watt

Voltage tolerance	±30% of nominal
Electrical connection	DIN EN 175301-803 (DIN 43650) Form A
Manual override	Screw turn and lock *1)
Pressure range	1,5 ... 12 bar
Kv value	0.05 cubic metres / hour
Weight	0.25 kg
Duty cycle	100% ED
Low voltage directive	2006/95/EC
EMC directive	2004/108/EC
PE directive	97/23/EC
Fire and smoke	NFF 16-101

*1) Rotational lever or without manual override on request.

5/2 CNOMO solenoid pilot actuated valves

Symbol	ISO size	Pilot supply *1)	Operator 14	Return 12	Operating pressure (bar)	Weight (kg)	Model
	1	Internal	Solenoid	Spring	2 ... 16	0,60	RXE9573-Z71-*
	2					0,80	RXE9574-Z71-*
	3					1,00	RXE9575-Z71-*
	1	Internal	Solenoid	Solenoid	2 ... 16	1,00	RXE0573-Z50-*
	2					1,20	RXE0574-Z50-*
	3					1,40	RXE0575-Z50-*

* Insert 'Voltage Code' from table, see next page.

*1) Optional external pilot supply; operating pressure -0,9 ... 16 bar, with external pilot supply 2 ... 16 bar - contact our technical service for further information.

5/2 & 5/3 GLANDLESS VALVES

RXE & RXP (ISO*STAR) ISO 1, 2 & 3

● 5/3 CNOMO solenoid pilot actuated valves

Symbol	ISO size	Mid position	Pilot supply *1)	Operator 14	Return 12	Operating pressure (bar)	Weight (kg)	Model
	1	COE	Internal	Solenoid	Solenoid	2 ... 16	1,00	RXE9773-Z50-*
	2						1,20	RXE9774-Z50-*
	3						1,40	RXE9775-Z50-*
	1	COP	Internal	Solenoid	Solenoid	2 ... 16	1,00	RXE9873-Z50-*
	2						1,20	RXE9874-Z50-*
	3						1,40	RXE9875-Z50-*

* Insert 'Voltage Code' from table below.

*1) Optional external pilot supply; operating pressure -0,9 ... 16 bar, with external pilot supply 2 ... 16 bar - contact our technical service for further information.

5/3 valve mid position function: COP = Centre Open Pressure, COE = Centre Open Exhaust

● Option selector

(solenoid actuated valves)

RXE★7★-Z★-★★★

Valve function	Substitute	Voltage code	Substitute
5/2 solenoid/solenoid, bistable valve	05	For voltage code please see tables below	
5/2 solenoid/spring, monostable valve	95		
5/3 - COE	97		
5/3 - COP	98		
ISO size	Substitute	Pilot supply *	Substitute
ISO 1	3	Internal (double solenoid)	0
ISO 2	4	Internal (single solenoid valve, mechanical spring)	1
ISO 3	5	External (double solenoid)	5
		External (single solenoid valve, mechanical spring)	6
		Integrated flow control	Substitute
		Without flow regulator (double solenoid)	5
		With flow regulator (double solenoid)	6
		Without flow regulator (solenoid & spring)	7
		With flow regulator (solenoid & spring)	8

* Single acting, air spring return options not available in Railline product range.

● Solenoid pilot valves – voltage codes and part numbering

	Voltage	Voltage code – solenoid pilot valve with manual override *1)	Spare – replacement coil part number *1)
	12 V d.c.	12S	VRW4204111/12N
	24 V d.c.	24S	VRW4204111/24N
	37,5 V d.c.	37S	VRW4204111/37N
	52 V d.c.	52S	VRW4204111/52N
	74 V d.c.	74S	VRW4204111/74N
	96 V d.c.	96S	VRW4204111/96N
	110 V d.c.	11S	VRW4204111/11N

*1) Standard manual override is a screw driver turn and lock = S at the last position in the voltage code.

Optional overrides available on request;

None = X

Lever = L

Push button = P

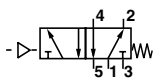
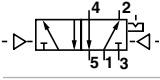
● Accessories

Connector	Connector with moulded cable
0570275	MP 43315/1 (1 m)
	MP 43315/3 (3 m)

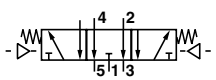
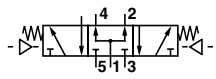
5/2 & 5/3 GLANDLESS VALVES

RXE & RXP (ISO*STAR) ISO 1, 2 & 3

● 5/2 air pilot actuated valves

Symbol	ISO size	Operator 14	Return 12	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Model
	1	Air	Spring	-0,9 ... 16	2 ... 16	0,30	RXP9573-170-00
	2					0,50	RXP9574-170-00
	3					0,70	RXP9575-170-00
	1	Air	Air	-0,9 ... 16	2 ... 16	0,20	RXP0573-170-00
	2					0,40	RXP0574-170-00
	3					0,70	RXP0575-170-00

● 5/3 air pilot actuated valves

Symbol	ISO size	Mid position	Operator 14	Return 12	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Model
	1	COE	Air	Air	-0,9 ... 16	2 ... 16	0,30	RXP9773-170-00
	2						0,50	RXP9774-170-00
	3						0,70	RXP9775-170-00
	1	COP	Air	Air	-0,9 ... 16	2 ... 16	0,30	RXP9873-170-00
	2						0,50	RXP9874-170-00
	3						0,70	RXP9875-170-00

5/3 valve mid position function: COP = Centre Open Pressure, COE = Centre Open Exhaust

● Option selector (air pilot actuated valves)

RXP★7★-1★0-00

Valve function	Substitute	Integrated flow control	Substitute
5/2 pilot/pilot, bistable valve	05	Without - Standard	7
5/2 pilot/spring, monostable valve	95	With	8
5/3 - COE	97		
5/3 - COP	98		
ISO size	Substitute		
ISO 1	3		
ISO 2	4		
ISO 3	5		

5/2 & 5/3 GLANDLESS VALVES

RXE & RXP (ISO*STAR) ISO 1, 2 & 3

● Sub-bases, end plates and blanking disc VDMA 24345 sub-base options

Form A Single station sub-base side ported			Form B Single station sub-base bottom ported		Form C Modular sub-base		Form D End plates		Blanking disc for VDMA sub-bases *1)	
										
	G thread	NPT thread	G thread	G thread	NPT thread	G thread	NPT thread	G thread	NPT thread	
ISO 1	M/P19126 (1/4)	C/P19126 (1/4)	M/P19125 (1/4)	CQM/22152/3/21	239-238B	CQM/22152/3/22	239-289B	FP 8382	239-251	
ISO 2	M/P19132 (3/8)	C/P19132 (3/8)	M/P19131 (3/8)	CQM/22253/3/21	239-242B	CQM/22253/3/22	239-291B	FP 8482	239-252	
ISO 3	M/P19138 (1/2)	C/P19138 (1/2)	M/P19137 (1/2)	CQM/22354/3/21	239-246B	CQM/22354/3/22	239-293B	FP 8582	239-253	

● Universal sub-base options for ISO G parallel thread only

	Modular base with side, end and bottom ports open	Universal end plate, all ports blocked	Universal end plate, side ports open	Transition plate from ISO 1 to ISO 2	Blanking disk for ISO 1 and ISO 2 *1)
					
ISO 1	CQM/22152/3/27 (G1/4)	CQM/22152/28 (G1/4)	CQM/22152/3/31 (G1/4)	CQM/22152/3/29 (1+2)	M/P43173
ISO 2	CQM/22253/3/27 (G3/8)	CQM/22153/28 (G3/8)	CQM/22253/3/31 (G3/8)	CQM/22152/3/29 (1+2)	M/P43174

● Accessories for G- and NPT threads

Blanking plate for VDMA and universal sub-bases		Transition plate for VDMA sub-bases		Silencer	
					
ISO 1	CQM/22152/3/23	CQM/22152/3/24 (1 to 2)		0015510	
ISO 2	CQM/22253/3/23	CQM/22253/3/24 (2 to 3)			
ISO 3	CQM/22354/3/23	FP8570 (1 to 3)			

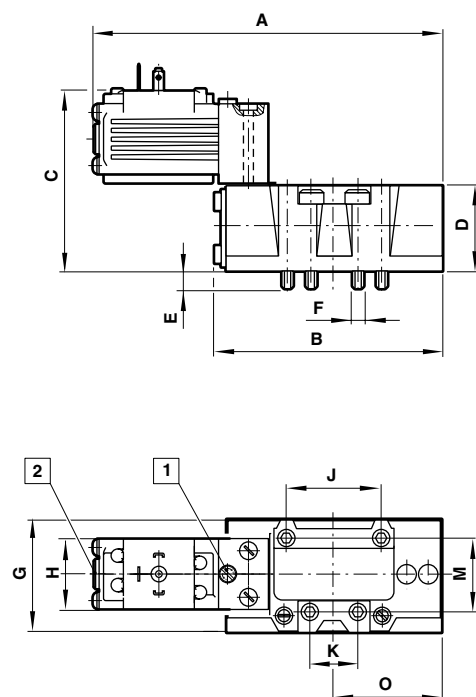
*1) For multipressure systems.

5/2 & 5/3 GLANDLESS VALVES RXE & RXP (ISO*STAR) ISO 1, 2 & 3

Models

RXE 957*-Z

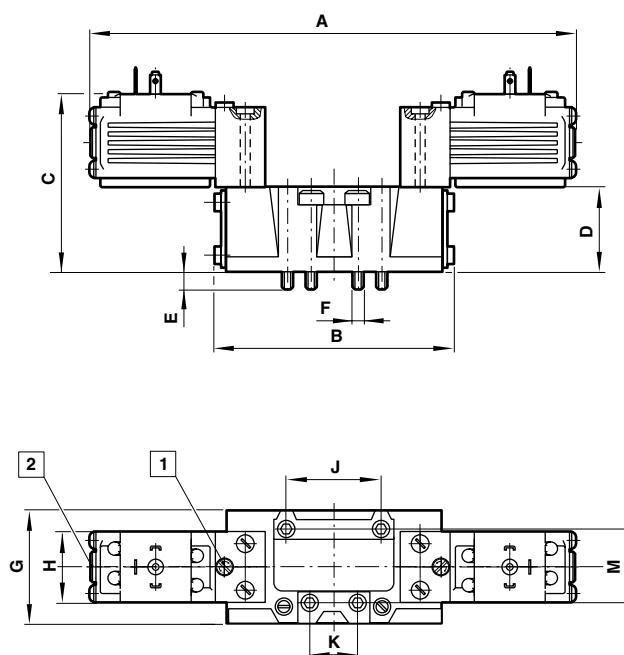
Single CNOMO solenoid pilot valves



Manual override

RXE 057*-Z, RXE 977*-Z and RXE 987*-Z

Double CNOMO solenoid pilot valves



Single CNOMO solenoid pilot valves

ISO size	A	B	C	D	E	F	G	H	J	K	M	O	kg	Model
1	148	88,5	69	33	7,5	M5	42	32	36	18	28	42	0,6	RXE9573-Z...
2	167	112,5	79	42	7	M6	55,5	32	48	24	38	53	0,8	RXE9574-Z...
3	188	135,5	80	43	11,5	M8	62,5	32	64	32	48	65,5	1,0	RXE9575-Z...

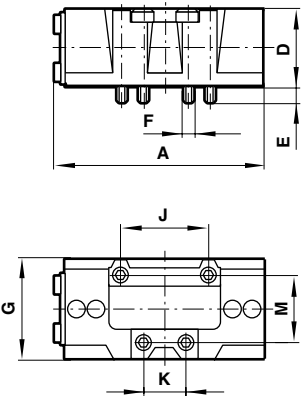
Double CNOMO solenoid pilot valves

ISO size	A	B	C	D	E	F	G	H	J	K	M	kg	Model
1	206	92	69	33	7,5	M5	42	32	36	18	28	1,0	RXE0573-Z... RXE9773-Z... RXE9873-Z...
2	224	118	79	42	7	M6	55,5	32	48	24	38	1,2	RXE0574-Z... RXE9774-Z... RXE9874-Z...
3	247	140	80	43	11,5	M8	62,5	32	64	32	48	1,4	RXE0575-Z... RXE9775-Z... RXE9875-Z...

5/2 & 5/3 GLANDLESS VALVES
RXE & RXP (ISO*STAR) ISO 1, 2 & 3

Models

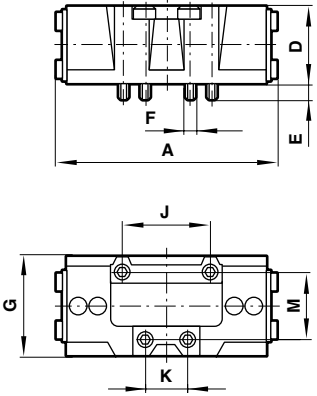
RXP957*
Single air pilot valve



ISO size	A	D	E	F	G	J	K	M	kg	Model
1	92,5	33	7,5	M5	42	36	18	28	0,3	RXP9573-170-00
2	118	42	7	M6	55,5	48	24	38	0,5	RXP9574-170-00
3	134	43	11,5	M8	62,5	64	32	48	0,7	RXP9575-170-00

Models

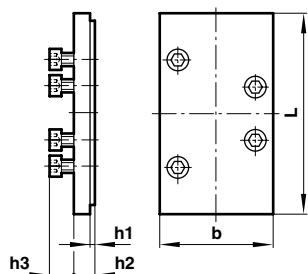
RXP057*, RXP977*, RXP987*
Double air pilot valve



ISO size	A	D	E	F	G	J	K	M	kg	Model
1	88,5	33	7,5	M5	42	36	18	28	0,2	RXP0573-170-00
1	92,5	33	7,5	M5	42	36	18	28	0,3	RXP9773-170-00 RXP9873-170-00
2	111	42	7	M6	55,5	48	24	38	0,4	RXP0574-170-00
2	118	42	7	M6	55,5	48	24	38	0,5	RXP9774-170-00 RXP9874-170-00
3	134	43	11,5	M8	62,5	64	32	48	0,7	RXP0575-170-00
3	134	43	11,5	M8	62,5	64	32	48	0,7	RXP9775-170-00 RXP9875-170-00

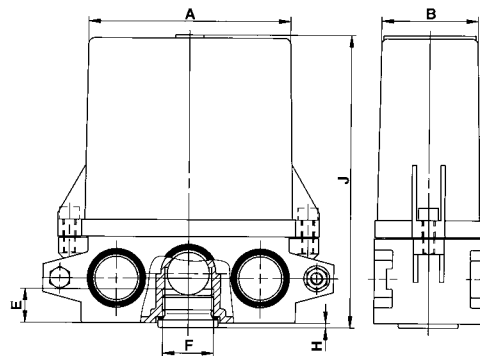
5/2 & 5/3 GLANDLESS VALVES RXE & RXP (ISO*STAR) ISO 1, 2 & 3

Blanking plate for VDMA & universal sub-bases with ISO G and NPT threads



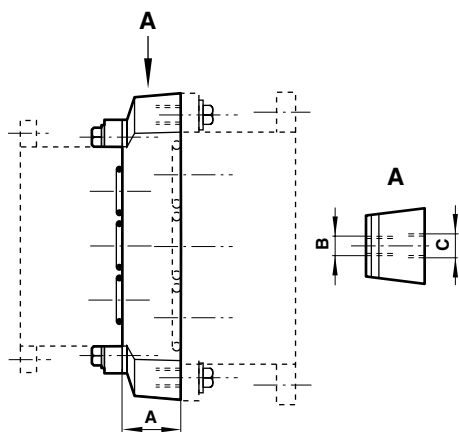
ISO	b	L	h1	h2	h3	kg	Model
1	42	80	2	14	11	0,05	CQM/22152/3/23
2	55	85	2,5	12,5	13,5	0,09	CQM/22253/3/23
3	70	120	2,5	12,5	15,5	0,26	CQM/22354/3/23

Silencer for VDMA & universal sub-bases with ISO G and NPT threads



ISO	A	B	E	F	H	J	Model
1	77	38	15	G3/8	2	122	0015510

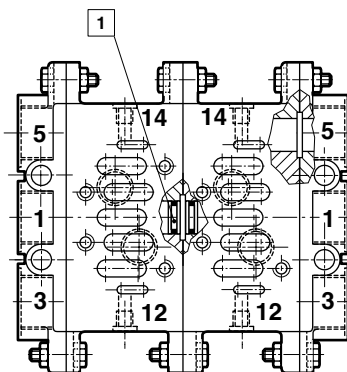
Transition plate from ISO 1 to ISO 2 and ISO 2 to ISO 3 for VDMA sub-bases for ISO G and NPT threads



ISO	A	B	C	kg	Model
1 to 2	25	M5	M6	0,35	CQM/22152/3/24
2 to 3	40	M6	M8	0,65	CQM/22253/3/24
1 to 3	34	M5	M8	0,90	FP8570

Blanking disc

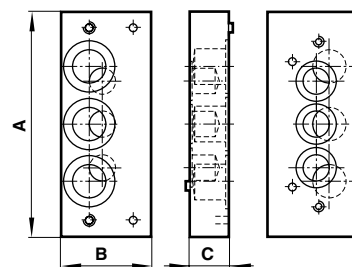
FP8382, FP8482 & FP8582
for ISO G thread
239-251, 239-252 & 239-253
for NPT thread



□ Blanking disc (FP.) or 239-...

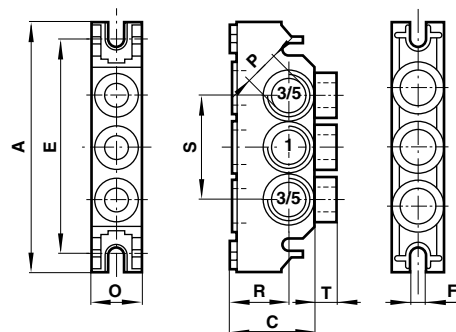
VALVES

Transition plate from ISO 1 to ISO 2



ISO	A	B	C	kg	Model
1 to 2	114	46	20	0,23	CQM/22152/3/29

Universal end plate, side ports open



ISO	A	C	E	F	O	P	R	S	T	kg	Model
1	106	36	92	5,5	22	G3/8	25	44	9	0,13	CQM/22152/3/31
2	120	46	102	6,5	29	G1/2	31	58	7	0,23	CQM22253/3/31

Drill dimensions for opening ports

G1/4	Ø 8
G3/8	Ø 15
G1/2	Ø 15

Online at www.imi-precision.com

2/2, 3/2 WAY SOLENOID POPPET VALVES

VRW CNOMO Interface and G1/8 ported

- Port options : G1/8, G1/4, Base 2-port, CNOMO or Base 3-port
- Fully encapsulated coil
- Extensive range of power and orifice sizes
- Wide voltage tolerance band
Wide temperature range
- Shock & vibration to EN 61373, category 2
- Environmental validation to EN 50155
- Fire and smoke compliance to EN 45545-2 and NF F16-101

Technical Features

Medium:

Compressed air lubricated or non-lubricated, water

Operation:

Solenoid direct operated poppet valve

Operating pressure:

0 ... 12 bar

Orifice:

1,5 ... 2,5 mm

Port size/mounting:

G1/8, G1/4, Base 2-port,
Base 3-port or CNOMO interface version

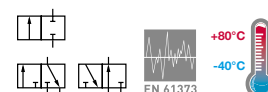
Exhaust port (3/2):

G1/8 with ported diffuser

Ambient/Media temperature:

-40°C ... +70°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C



Materials

Valve base: Zinc, Brass or Plastic

Coil: Glass reinforced nylon

Internal parts: Stainless steel

Seals: NBR

Technical Data - Solenoid operators

Nominal voltages	12, 24, 37,5, 52, 72, 96, 110 V d.c.
Power consumption	6 or 8 Watt
Voltage tolerance	±30% of nominal
Duty cycle	100% ED
Electrical connection	DIN EN 175301-803 (DIN 43650) Form A
Protection class	IP65 (with sealed plug fitted)
Fire and smoke	NF F16-101 and EN 45545-2:2013

Test results EN 45545-2:2013

Requirement set	Test results (hazard level classification)
R22	HL2
R23	HL3

Models

Symbol	Function	Base type	Power (W)	Orifice (mm)	Flow (l/min)	Operating pressure (bar)	Manual override	Dimension No.	Model
	2/2 NC	G 1/8	6	1,5	75	1,5 ... 12	Screw driver turn and lock	1	VRW6101111/**N
		G 1/8	8	2	104	1,5 ... 10	Screw driver turn and lock	1	VRW8101121/**N
		G 1/8	8	2,5	152	2,0 ... 10	Screw driver turn and lock	1	VRW8101131/**N
		CNOMO	6	1,5	75	1,5 ... 12	Screw driver turn and lock	4	VRW6104111/**N
		CNOMO	8	2	89	1,5 ... 10	Screw driver turn and lock	4	VRW8104121/**N
		Interface	6	1,5	50	1,5 ... 12	Screw driver turn and lock	2	VRW6103111/**N
		Interface	8	2	80	1,5 ... 10	Screw driver turn and lock	2	VRW8103121/**N
	2/2 NC	Interface	8	2,5	100	2,0 ... 10	Screw driver turn and lock	2	VRW8103131/**N
		G1/4	6	1,5	75	1,5 ... 12	Without	3	VRW6102011/**N
		G1/4	8	2	104	1,5 ... 10	Without	3	VRW8102021/**N
		G1/4	8	2,5	152	2,0 ... 10	Without	3	VRW8102031/**N
		G 1/8	6	1,5	75	1,5 ... 12	Screw driver turn and lock	5	VRW6201111/**N
		G 1/8	8	2	104	1,5 ... 10	Screw driver turn and lock	5	VRW8201121/**N
		G 1/8	8	2,5	152	2,0 ... 10	Screw driver turn and lock	5	VRW8201131/**N
	3/2 NC	CNOMO	6	1,5	75	1,5 ... 12	Screw driver turn and lock	8	VRW6204111/**N
		CNOMO	8	2	89	1,5 ... 10	Screw driver turn and lock	8	VRW8204121/**N
		Interface	6	1,5	50	1,5 ... 12	Screw driver turn and lock	6	VRW6203111/**N
		Interface	8	2	80	1,5 ... 10	Screw driver turn and lock	6	VRW8203121/**N
		Interface	8	2,5	100	2,0 ... 10	Screw driver turn and lock	6	VRW8203131/**N
		G1/4	6	1,5	75	1,5 ... 12	Without	7	VRW6202011/**N
		G1/4	8	2	104	1,5 ... 10	Without	7	VRW8202021/**N
	3/2 NC	G1/4	8	2,5	152	2,0 ... 10	Without	7	VRW8202031/**N
		G 1/8	8	1,5	75	0 ... 10	Screw driver turn and lock	5	VRW8301111/**N
		CNOMO	8	1,5	75	0 ... 10	Screw driver turn and lock	8	VRW8304111/**N
		Interface	8	1,5	50	0 ... 10	Screw driver turn and lock	6	VRW8303111/**N
		G1/4	8	1,5	75	0 ... 10	Without	7	VRW8302011/**N
		G1/4	8	2	104	1,5 ... 10	Without	7	VRW8202021/**N
		G1/4	8	2,5	152	2,0 ... 10	Without	7	VRW8202031/**N
	3/2 NO*	G 1/8	8	1,5	75	0 ... 10	Screw driver turn and lock	5	VRW8301111/**N
		CNOMO	8	1,5	75	0 ... 10	Screw driver turn and lock	8	VRW8304111/**N
		Interface	8	1,5	50	0 ... 10	Screw driver turn and lock	6	VRW8303111/**N
		G1/4	8	1,5	75	0 ... 10	Without	7	VRW8302011/**N
		G1/4	8	2	104	1,5 ... 10	Without	7	VRW8202021/**N
		G1/4	8	2,5	152	2,0 ... 10	Without	7	VRW8202031/**N
		G1/4	8	1,5	75	0 ... 10	Without	7	VRW8302011/**N

* = Inlet is the stem port on the top of the coil.

** = Insert voltage code, see below.

2/2, 3/2 WAY SOLENOID POPPET VALVES
VRW CNOMO Interface and G1/8 ported

● Option Selector

VRW★★0★★★1/★★N

Power	Substitute
6 W (orifice 1,5 mm)	6
8 W (orifice 1,5, 2 and 2,5 mm)	8
Function	Substitute
2/2 Normally closed (NC)	1
3/2 Normally closed (NC)	2
3/2 Normally open (NO) orifice 1,5 mm only *2)	3
Base type	Substitute
G1/8	1
G1/4	2
Interface	3
CNOMO interface	4
Manual override	Substitute
Without	0
Screw driver turn and lock *1)	1

*1) G1/4 valves are delivered without manual override only.
*2) If selecting a 3/2 Normally Open variant please note that the inlet must be via P3 (stem) and the outlet ist via P2, with exhaust via P1.
Other options are available, please contact our technical service.

Voltage	Substitute
12 V d.c.	12
24 V d.c.	24
37,5 V d.c.	37
52 V d.c.	52
72 V d.c.	72
96 V d.c.	96
110 V d.c.	11
Orifice	Substitute
1,5 mm	1
2,0 mm	2
2,5 mm	3

2/2, 3/2 WAY SOLENOID POPPET VALVES

VRW CNOMO Interface and G1/8 ported

Accessories

Connector

Connector with moulded cable



0570275

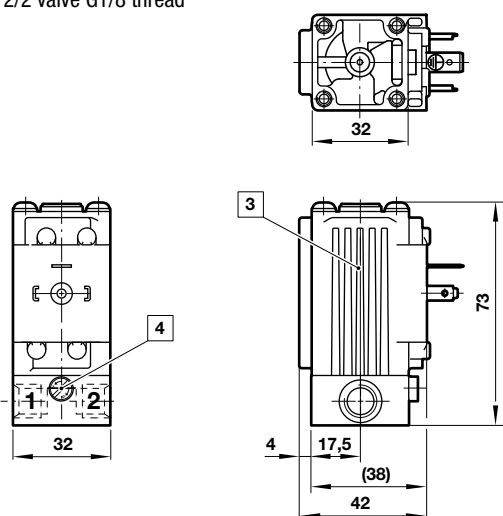
M/P 43315/1 (1 m)

M/P 43315/3 (3 m)

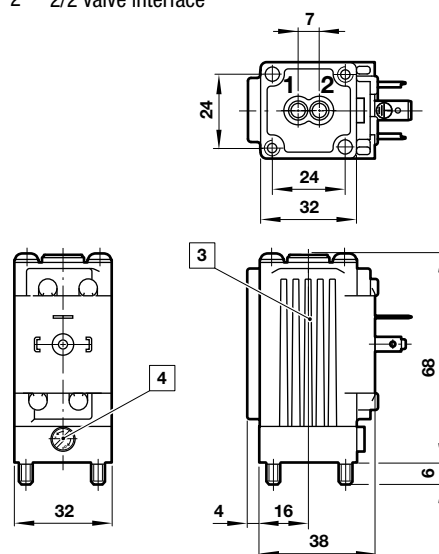
To ensure IP65 integrity a compliant plug and gasket is to be fitted checking that the cable gland/wiring is terminated and sealed correctly. The cable plug is fastened using M3 screw with a torque value of 0.4 - 0.6 Nm.

Dimensions

1 2/2 valve G1/8 thread

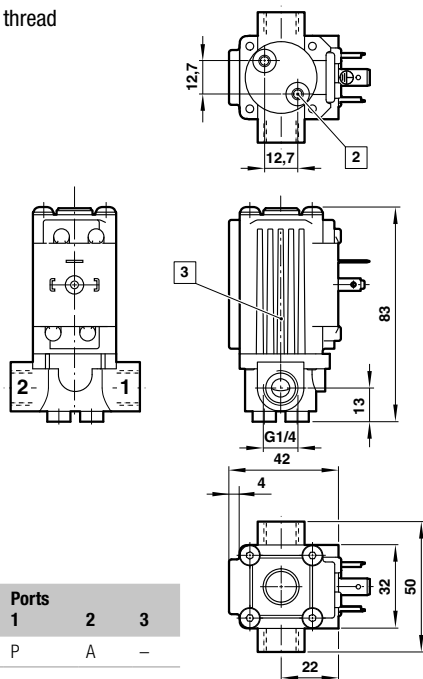


2 2/2 valve interface

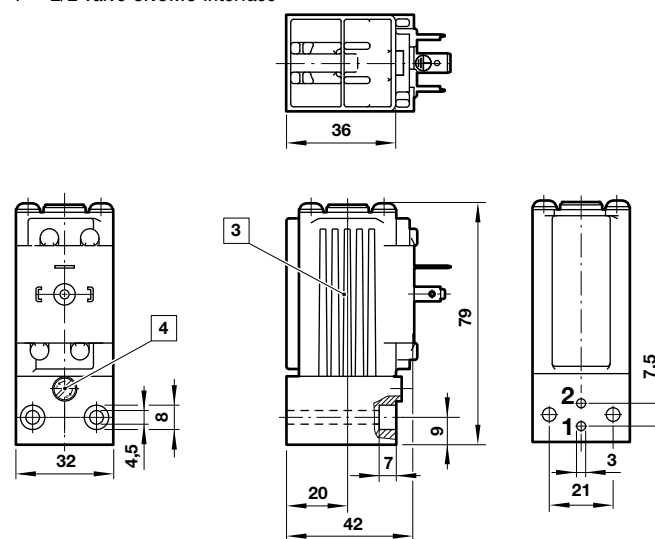


Two M4 x 75 mm fixing screws (hex socket) included as standard in scope of supply. Installation torque: 1.25 to 1.50 Nm.

3 2/2 valve G1/4 thread



4 2/2 valve CNOMO interface



Two M4 x 35 mm fixing screws (cheese head) included as standard in scope of supply. Installation torque: 1.25 to 1.50 Nm.

P = Inlet; A = Outlet; R = Exhaust
Please refer to marking on the valve body for flow direction or port identification.
Port fitting torque (all ports) 3 Nm.

② M4 x 8 deep fixing threads

③ Solenoid coil may be supplied rotated at 90° intervals. Contact technical services for drawing.

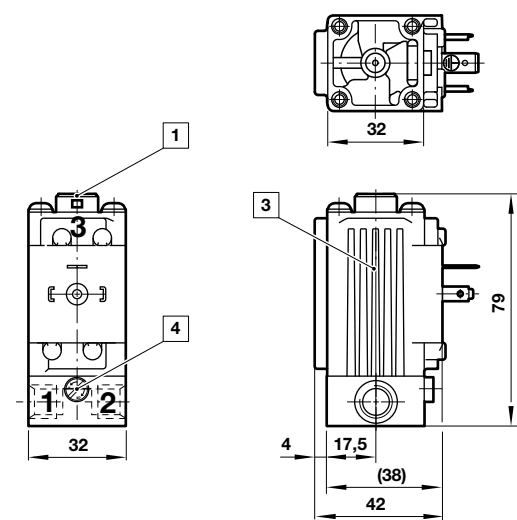
④ Manual override

2/2, 3/2 WAY SOLENOID POPPET VALVES

VRW CNOMO Interface and G1/8 ported

● Dimensions

5 3/2 valve G1/8 thread



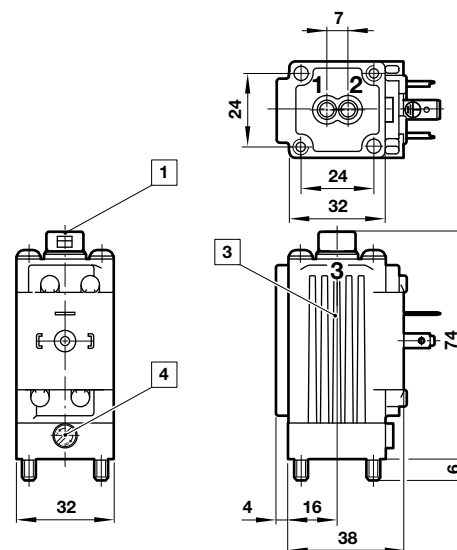
	Ports 1	2	3
3/2 NC	P	A	R
3/2 NO	R	A	P

P = Inlet; A = Outlet; R = Exhaust

Please refer to marking on the valve body for flow direction or port identification.

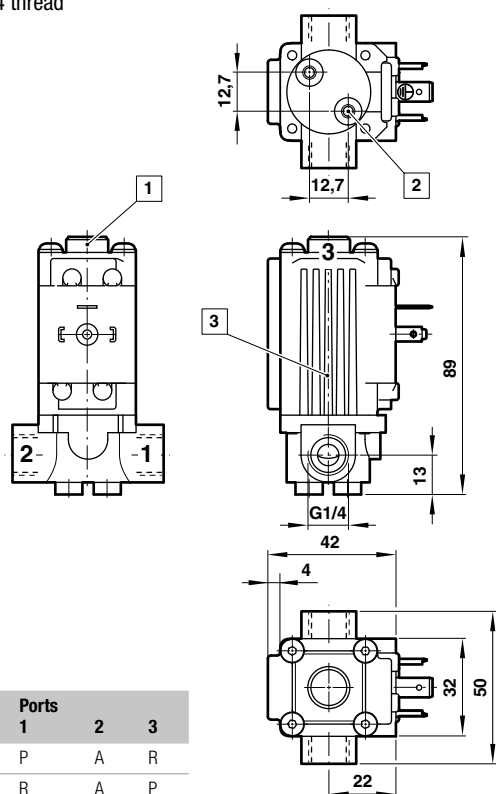
Port fitting torque (all ports) 3 Nm

6 3/2 valve interface



Two M4 x 7.5 mm fixing screws (hex socket) included as standard in scope of supply.
Installation torque: 1.25 to 1.50 Nm

7 3/2 valve G1/4 thread



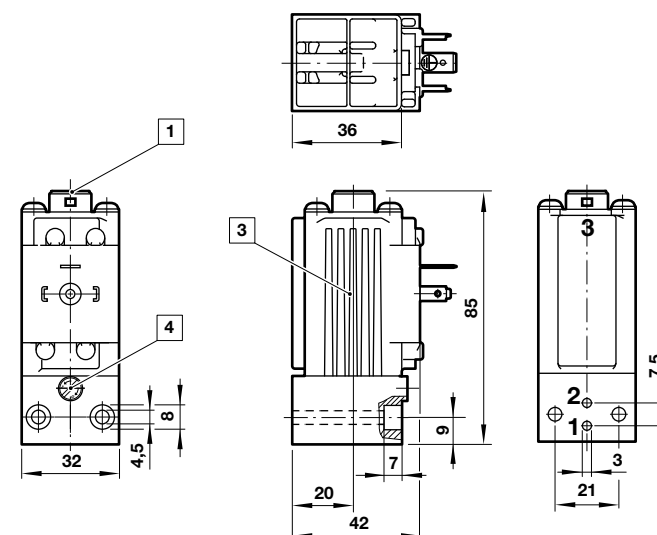
	Ports 1	2	3
3/2 NC	P	A	R
3/2 NO	R	A	P

P = Inlet; A = Outlet; R = Exhaust

Please refer to marking on the valve body for flow direction or port identification.

Port fitting torque (all ports) 3 Nm.

8 3/2 valve CNOMO interface



Two M4 x 3.5 mm fixing screws (cheese head) included as standard in scope of supply. Installation torque: 1.25 to 1.50 Nm.

❑ NC function with diffuser 3/2 valves only, NO function inlet is the diffuser port

❑ M4 x 8 deep fixing threads

❑ Solenoid coil may be supplied rotated at 90° intervals. Contact technical services for drawing.

❑ Manual override

2/2 & 3/2 WAY SOLENOID VALVES

Microsol Base mounted

- Very compact design – 15 mm wide
- High flow rate
- Designed and manufactured specifically for each application
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Compressed air, filtered, lubricated or non-lubricated, neutral liquids or gases

Operation:
Poppet valve, directly actuated with spring return

Switching function:
Normally closed and normally open

Response time:
8 ... 15 ms

Operating pressure:
0 ... 10 bar

Available orifice:
0,5 ... 1,1 mm

Fluid temperature:
-45°C ... +80°C

Ambient temperature:
-45°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Mounting position:
As required

Materials

Body: For 2/2 valves PPS, for 3/2 valves PPS, PA, stainless steel

Seat seal: FMVQ

Internal parts: Stainless steel, PA 6/6



Please note:
Microsol valves are manufactured to order and are designed to specifically to meet the needs of each customer application.
Technical features will vary slightly depending upon the application.

● Technical Data - Electrical details

Voltage	Voltage tolerance	Power	Rating	Electrical insulation	Insulation class	Protection class
6 ... 110 V d.c.	±30%	1,5 ... 2 W	100% E.D.	1500 V a.c.	F (155°C)	IP65

● 2/2 direct acting valves

Symbol	Function	Port	Orifice mm	Flow (l/min)	Operating pressure (bar)	Manual override	Drawing No.	Model
	NC	Flange	0,5 ... 1,1	up to 48	Application specific	No	1	Contact our technical service
	NO	Flange	0,5 ... 1,1	up to 48	Application specific	No	2	Contact our technical service

● 3/2 direct acting valves

Symbol	Function	Port	Orifice mm	Flow (l/min)	Operating pressure (bar)	Manual override	Drawing No.	Model
	NC	Flange	0,5 ... 1,1	up to 27	Application specific	No	4	Contact our technical service
	NO	Flange	0,5 ... 1,1	up to 27	Application specific	No	4	Contact our technical service

2/2 & 3/2 WAY SOLENOID VALVES

Microsol Base mounted

Accessories

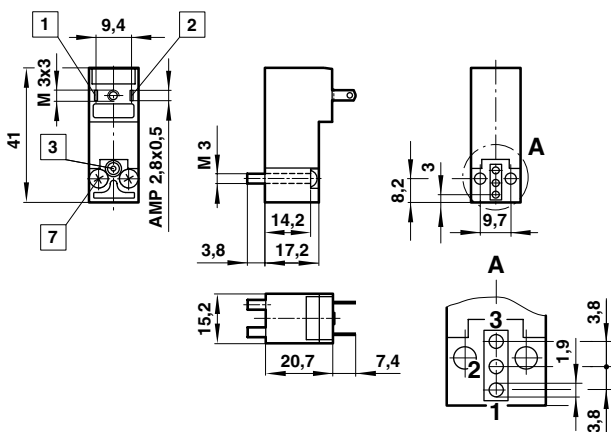
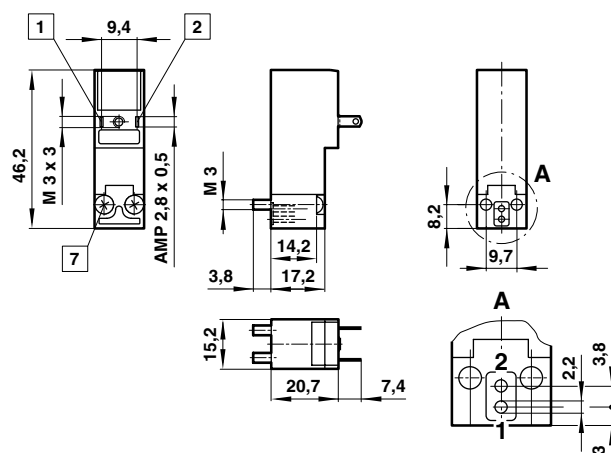
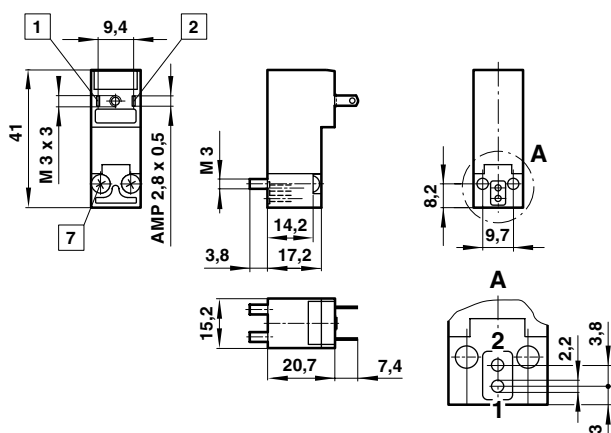
Electrical connector



Single connector

M/P43082

Dimensions



- ① Wire (red)/pin +
 - ② Wire (black)/pin -
 - ③ Manual override
 - ④ For NC models
 - ⑤ For NO models
 - ⑥ Mounting pattern
 - ⑦ The recommended mounting screw tightening torque is 0,6 Nm.
- All solenoids are supplied with mounting screws and gasket.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES VR61 1/4"

- High flow rate
- Proven sealing system using Herion experience in the chemical and process industry
- Maintenance-free
- Optional manual overrides
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Filtered, lubricated or non-lubricated compressed air

Actuation:

Solenoid or pilot controlled

Mounting position:

Spring return valves horizontal preferable

Air ports:

G1/4, 1/4 NPT

Other port sizes on request

Operating pressure:

3 ... 10 bar

Solenoid actuated with external supply: -0,9 ... 10 bar

Pilot actuated: -0,9 ... 10 bar

Details on the following pages

Flow direction:

Internal pilot: Supply must be port 1

External pilot and air pilot:

Supply to any port

Temperatures:

Fluid/ambient:

-40°C ... +65°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Housing and base plate: Aluminium

Spindle: Stainless steel

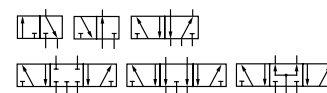
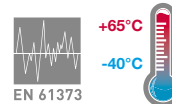
Piston, spacers and cover:

Synthetic material, aluminium

Static and dynamic seals: NBR

Screws: Zinc plated

Springs: Stainless steel



● Technical Data for solenoid

Voltage tolerance	±30% of nominal
Power consumption	4,5 ... 5,4 W (12, 24, 36, 72, 85, 110 V d.c.), details see next pages
Rating	100% E.D.
Protection class	IP 65 with sealed plugs (ISO 6952)
Manual override	Push only - Standard
Solenoid	4 x 90° rotatable
Solenoid plug interface	Type A, EN 175301-803 (DIN 43650)
Material	Thermosat (body), NBR (seals)

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

Models - 3/2 directional control valves, solenoid actuated

Symbol	Size	Function	Actuation/return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	NC	Solenoid/spring	internal	1300	3 ... 10	–	0,29	1	VR61B417A-D#*
	1/4 NPT	NC	Solenoid/spring	internal	1300	3 ... 10	–	0,29	1	VR61R417A-D#*
	G1/4	NO	Solenoid/spring	internal	1300	3 ... 10	–	0,29	1	VR61B317A-D#*
	1/4 NPT	NO	Solenoid/spring	internal	1300	3 ... 10	–	0,29	1	VR61R317A-D#*
	G1/4	NC	Solenoid/air-spring	internal	1300	3 ... 10	–	0,29	3	VR61B413A-D#*
	1/4 NPT	NC	Solenoid/air-spring	internal	1300	3 ... 10	–	0,29	3	VR61R413A-D#*
	G1/4	NO	Solenoid/air-spring	internal	1300	3 ... 10	–	0,29	5	VR61B313A-D#*
	1/4 NPT	NO	Solenoid/air-spring	internal	1300	3 ... 10	–	0,29	5	VR61R313A-D#*
	G1/4	NC	Solenoid/air-spring	external	1300	-0,9 ... 10	3 ... 10	0,29	3	VR61B423A-D#*
	1/4 NPT	NC	Solenoid/air-spring	external	1300	-0,9 ... 10	3 ... 10	0,29	3	VR61R423A-D#*
	G1/4	NC	Solenoid/solenoid	internal	1300	3 ... 10	–	0,38	7	VR61B411A-D#*
	1/4 NPT	NC	Solenoid/solenoid	internal	1300	3 ... 10	–	0,38	7	VR61R411A-D#*

Models - 2 x 3/2 directional control valves, solenoid actuated, Fluid/Ambient temperature -20°C ... +65°C only

Symbol	Size	Function	Actuation/return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Weight (kg)	Drawing No.	Model
	G1/4	NC/NC	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61BA11A-D#*
	1/4 NPT	NC/NC	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61RA11A-D#*
	G1/4	NO/NO	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61BB11A-D#*
	1/4 NPT	NO/NO	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61RB11A-D#*
	G1/4	NO/NC	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61BC11A-D#*
	1/4 NPT	NO/NC	Solenoid/solenoid	internal	950	3 ... 10	0,43	13	VR61RC11A-D#*

Insert code for manual override. Note: Standard option is 3 = push only, see next pages.

* Insert voltage code from table on see next pages.

*1) However ≥ operating pressure

NC = Normally closed

NO = Normally open

NC/NC = Both valves normally closed (port P)

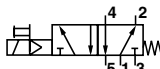
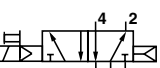
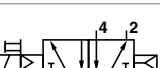
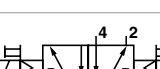
NO/NO = Both valves normally open (port P)

NO/NC = 1 valve normally open, 1 valve normally closed (port P)

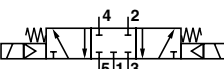
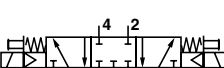
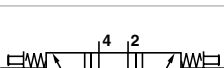
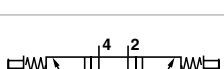
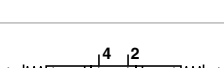
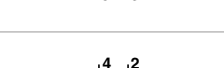
3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

● Models - 5/2 directional control valves, solenoid actuated

Symbol	Size	Actuation/return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	Solenoid/spring	internal	1300	3 ... 10	–	0,29	9	VR61B517A-D#*
	1/4 NPT	Solenoid/spring	internal	1300	3 ... 10	–	0,29	9	VR61R517A-D#*
	G1/4	Solenoid/air-spring	internal	1300	3 ... 10	–	0,33	11	VR61B513A-D#*
	1/4 NPT	Solenoid/air-spring	internal	1300	3 ... 10	–	0,33	11	VR61R513A-D#*
	G1/4	Solenoid/air-spring	external	1300	-0,9 ... 10	3 ... 10	0,33	11	VR61B523A-D#*
	1/4 NPT	Solenoid/air-spring	external	1300	-0,9 ... 10	3 ... 10	0,33	11	VR61R523A-D#*
	G1/4	Solenoid/solenoid	internal	1300	3 ... 10	–	0,42	13	VR61B511A-D#*
	1/4 NPT	Solenoid/solenoid	internal	1300	3 ... 10	–	0,42	13	VR61R511A-D#*

● Models - 5/3 directional control valves, solenoid actuated

Symbol	Size	Function	Actuation/ return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	APB	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61B611A-D#*
	1/4 NPT	APB	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61R611A-D#*
	G1/4	APB	Solenoid/solenoid	external	950	-0,9 ... 10	3 ... 10	0,47	15	VR61B622A-D#*
	1/4 NPT	APB	Solenoid/solenoid	external	950	-0,9 ... 10	3 ... 10	0,47	15	VR61R622A-D#*
	G1/4	COE	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61B711A-D#*
	1/4 NPT	COE	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61R711A-D#*
	G1/4	COE	Solenoid/solenoid	external	950	-0,9 ... 10	3 ... 10	0,47	15	VR61B722A-D#*
	1/4 NPT	COE	Solenoid/solenoid	external	950	-0,9 ... 10	3 ... 10	0,47	15	VR61R722A-D#*
	G1/4	COP	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61B811A-D#*
	1/4 NPT	COP	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	15	VR61R811A-D#*
	G1/4	COP	Solenoid/solenoid	internal	950	-0,9 ... 10	3 ... 10	0,47	15	VR61B822A-D#*
	1/4 NPT	COP	Solenoid/solenoid	external	950	-0,9 ... 10	3 ... 10	0,47	15	VR61R822A-D#*

Insert code for manual override. Note: Standard option is 3 = push only, see next pages.

* Insert voltage code from table on see next pages.

*1) However ≥ operating pressure

APB = All ports blocked

COE = Centre open exhaust

COP = Centre open pressure

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

Option selector (solenoid actuated valves)

VR61★★★★A-D★★★N

Thread sizes	Substitute
G1/4	B
1/4 NPT	R
Function	Substitute
3/2 - NO	3
3/2 - NC	4
5/2	5
5/3 - APB	6
5/3 - COE	7
5/3 - COP	8
2 x 3/2 - NC	A
2 x 3/2 - NO	B
2 x 3/2 - NO/NC	C

Voltage		Substitute
12 V d.c.		22
24 V d.c.		23
36 V d.c.		24
72 V d.c.		2A
85 V d.c.		2C
110 V d.c.		27
Manual override		Substitute
Push only - Standard		3
Push and turn		2
Without		1
Actuation/return	Pilot supply	Substitute
Solenoid/solenoid	Internal	11
Solenoid/air-spring	Internal	13
Solenoid/spring	Internal	17
Solenoid/solenoid	External	22
Solenoid/air-spring	External	23
Solenoid/spring	External	27

Selection of voltage codes

	Voltage	Part number code	Power consumption
	12 V d.c.	22N	5,2 W
	24 V d.c.	23N	4,5 W
	36 V d.c.	24N	4,7 W
	72 V d.c.	2AN	4,8 W
	85 V d.c.	2CN	5,4 W
	110 V d.c.	27N	5,3 W

Solenoids comply with ROHS directive 2011/165/EU.

Coils are CE marked in accordance with low voltage directive 2007/95/EG.

Accessories

Connector DIN EN 175301-803, form A
(DIN 43650 A)

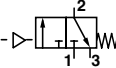
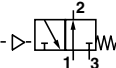
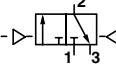


0570275
12 ... 250 V a.c./d.c.

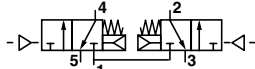
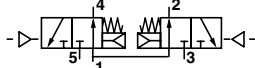
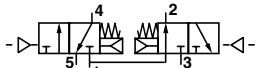
3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

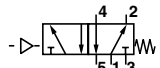
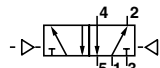
● Models - 3/2 directional control valves, pilot actuated

Symbol	Size	Function	Actuation/ return	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	NC	Air/spring	1300	-0,9 ... 10	3 ... 10	0,21	33	VR61B4D7A-XA090
	1/4 NPT	NC	Air/spring	1300	-0,9 ... 10	3 ... 10	0,21	33	VR61R4D7A-XP090
	G1/4	NO	Air/spring	1300	-0,9 ... 10	3 ... 10	0,21	33	VR61B3D7A-XA090
	1/4 NPT	NO	Air/spring	1300	-0,9 ... 10	3 ... 10	0,21	33	VR61R3D7A-XP090
	G1/4	NC	Air/air	1300	-0,9 ... 10	3 ... 10	0,21	37	VR61B4DDA-XA020
	1/4 NPT	NC	Air/air	1300	-0,9 ... 10	3 ... 10	0,21	37	VR61R4DDA-XP020

● Models - 2 x 3/2 directional control valves, pilot actuated, Fluid/Ambient temperature -20°C ... +65°C (-4 ... +149°F) only

Symbol	Size	Function	Actuation/ return	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	NC/NC	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61B4DDA-XA020
	1/4 NPT	NC/NC	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61R4DDA-XP020
	G1/4	NO/NO	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61B3DDA-XA020
	1/4 NPT	NO/NO	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61R3DDA-XP020
	G1/4	NO/NC	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61B3CDDA-XA020
	1/4 NPT	NO/NC	Air/air	950	3 ... 10	3 ... 10	0,28	43	VR61R3CDDA-XP020

● Models - 5/2 directional control valves, pilot actuated

Symbol	Size	Actuation/ return	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	Air/spring	1300	-0,9 ... 10	3 ... 10	0,26	41	VR61B5D7A-XA090
	1/4 NPT	Air/spring	1300	-0,9 ... 10	3 ... 10	0,26	41	VR61R5D7A-XP090
	G1/4	Air/air	1300	-0,9 ... 10	3 ... 10	0,27	43	VR61B5DDA-XA020
	1/4 NPT	Air/air	1300	-0,9 ... 10	3 ... 10	0,27	43	VR61R5DDA-XP020

*1) However $\geq$ operating pressure

NC = Normally closed

NO = Normally open

NC/NC = Both valves normally closed (port P)

NO/NO = Both valves normally open (port P)

NO/NC = 1 valve normally open, 1 valve normally closed (port P)

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

● Models - 5/3 directional control valves, pilot actuated

Symbol	Size	Function	Actuation/ return	Flow (l/min)	Operating pressure (bar)	Pilot pressure *1) (bar)	Weight (kg)	Drawing No.	Model
	G1/4	APB	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61B6DDA-XA020
	1/4 NPT	APB	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61R6DDA-XP020
	G1/4	COE	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61B7DDA-XA020
	1/4 NPT	COE	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61R7DDA-XP020
	G1/4	COP	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61B8DDA-XA020
	1/4 NPT	COP	Air/air	950	-0,9 ... 10	3 ... 10	0,32	46	VR61R8DDA-XP020

*1) However $\geq$ operating pressure

APB = All ports blocked

COE = Centre open exhaust

COP = Centre open pressure

● Option selector (pilot actuated valves)

(pilot actuated valves)

VR61★ ★ D★ A-X★ ★ ★ 0

Thread sizes	Substitute
G1/4	B
1/4 NPT	R
Function	Substitute
3/2 - NO	3
3/2 - NC	4
5/2	5
5/3 - APB	6
5/3 - COE	7
5/3 - COP	8
2 x 3/2 - NC	A
2 x 3/2 - NO	B
2 x 3/2 - NO/NC	C

Actuation/return	Substitute
Air/air	02
Air/spring	09
Pilot thread	Substitute
G1/8	A
1/8 NPT	P
Actuation/return	Substitute
Air/air	D
Air/spring	7

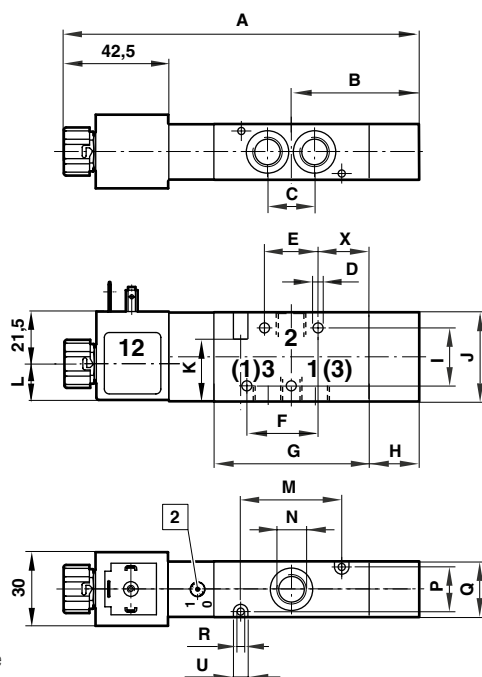
VR61★★D★A-X★★★0

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

● Dimensions

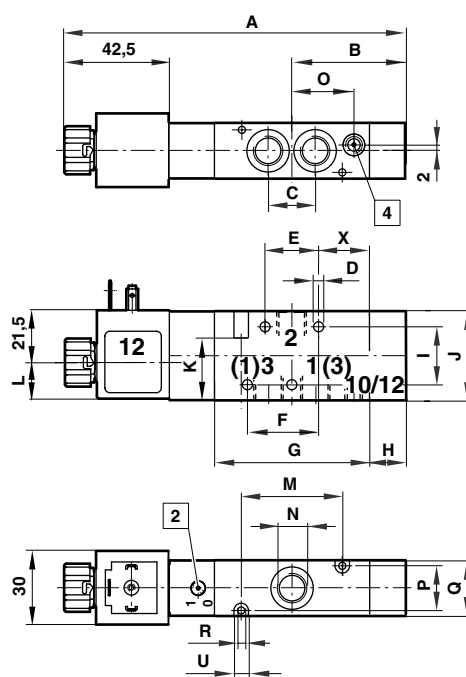
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☐ Manual override

☐ External pilot port, M5 or 10-32 UNF

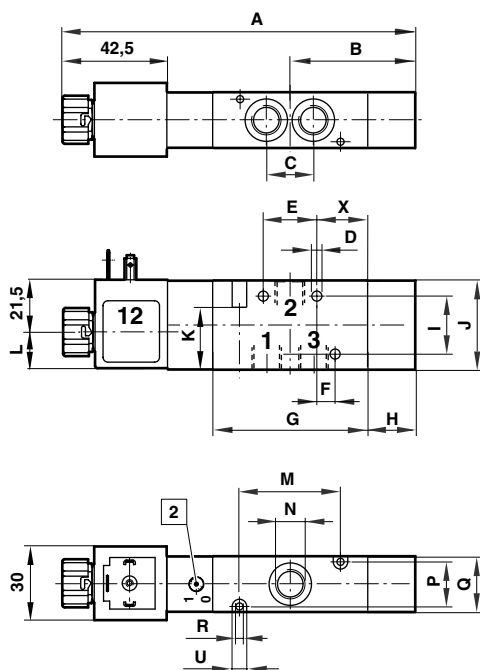
3



No.	A	B	C	Ø D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Ø R	Ø U	X	Model
1	154	53	21	4,5	24	—	74	16	41	55	—	32	—	1/4"	—	—	30	—	—	25	VR61#317A...
3	140,5	43	21	4,5	24	32	70	8	26	40	28	17	46	1/4"	—	20	25	3,2	6,5	23	VR61#413A...
1	154	53	21	4,5	24	—	74	16	41	55	—	32	—	1/4"	—	—	30	—	—	25	VR61#417A...
3	140,5	43	21	4,5	24	32	70	8	26	40	28	17	46	1/4"	29	20	25	3,2	6,5	23	VR61#423A...

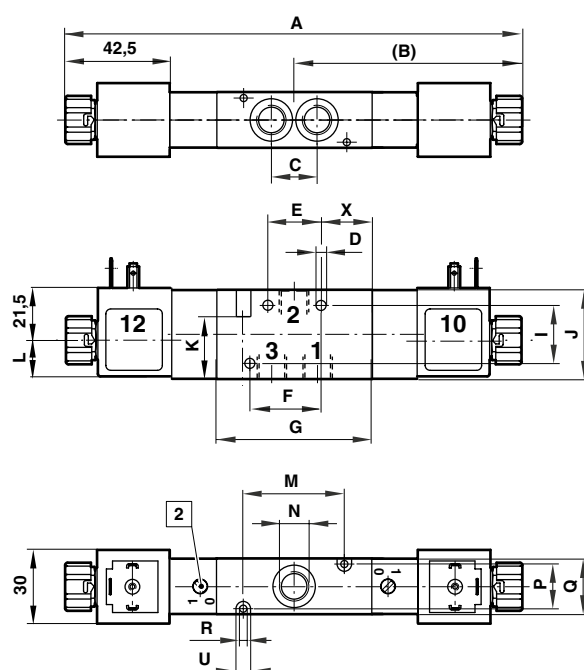
= 'B' for ISO G and 'R' for NPT threads.

5



☐ Manual override

7

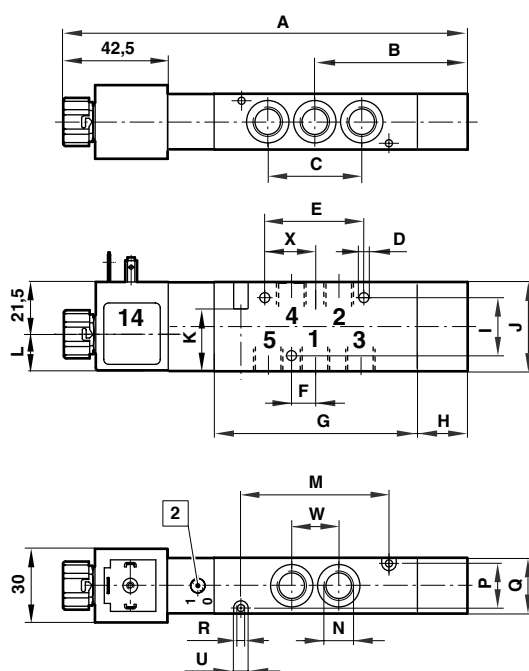


No.	A	B	C	Ø D	E	F	G	H	I	J	K	L	M	N	P	Q	Ø R	Ø U	X	Model
5	140,5	43	21	4,5	24	8	70	8	26	40	28	17	46	1/4"	20	25	3,2	6,5	23	VR61#313A...
7	195	97,5	21	4,5	24	32	70	-	26	40	28	17	46	1/4"	20	25	3,2	6,5	23	VR61#411A...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES VR61 1/4"

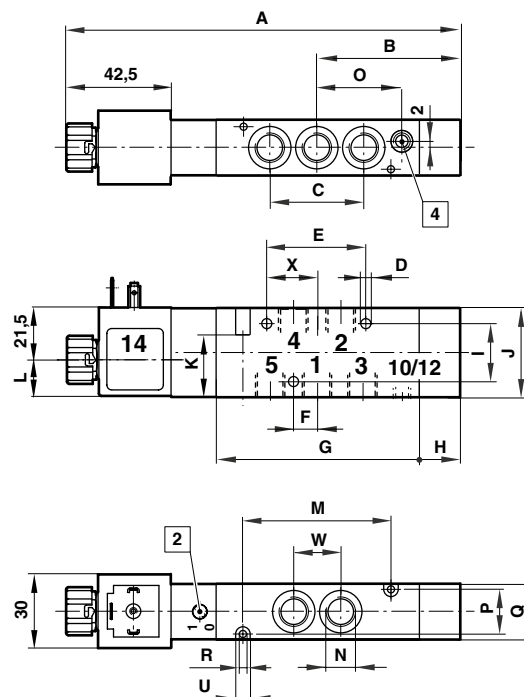
9



☐ Manual override

⌘ External pilot port, M5 or 10-32 UNF

11



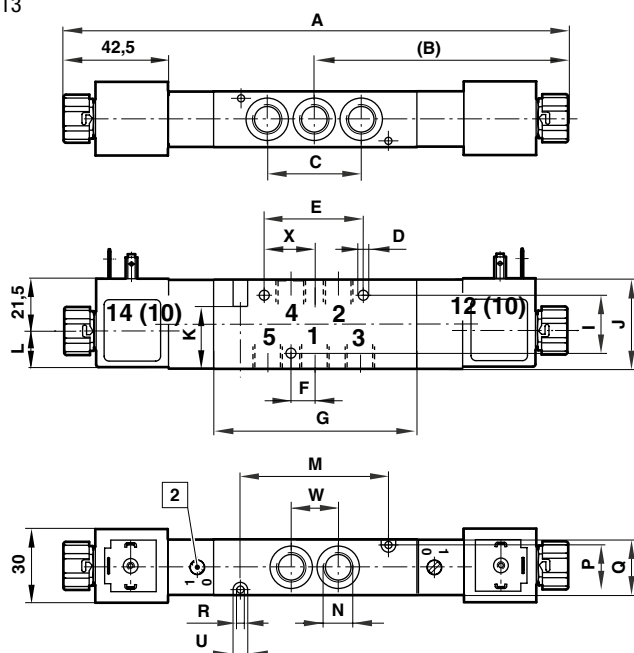
No.	A	B	C	Ø D	E	F	G	H	I	J	K	L	M	N	O	P	Q	Ø R	Ø U	W	X	Model
9	174	63	42	4,5	44	10	94	16	36	55	—	32	—	1/4"	—	—	30	—	—	21	22	VR61#517A-...
11	161	53	42	4,5	44	10	90	8	26	40	28	17	66	1/4"	—	20	25	3,2	6,5	21	22	VR61#513A-...
11	161	53	42	4,5	44	10	90	8	26	40	28	17	66	1/4"	39	20	25	3,2	6,5	21	22	VR61#523A-...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

13

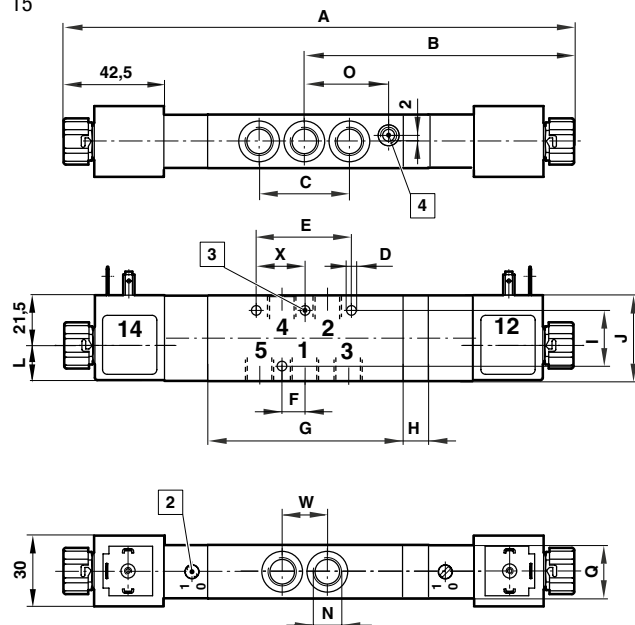


② Manual override

No.	A	B	C	Ø D	E	F	G	I	J	K	L	M	N	P	Q	Ø R	Ø U	W	X	Model
13	215	107,5	42	4,5	44	10	90	26	40	28	17	66	1/4"	20	25	3,2	6,5	21	22	VR61#511A-...
																				VR61#A11A-...
																				VR61#B11A-...
																				VR61#C11A-...

= 'B' for ISO G and 'R' for NPT threads.

15



② Manual override

④ External pilot port, M5 or 10-32 UNF

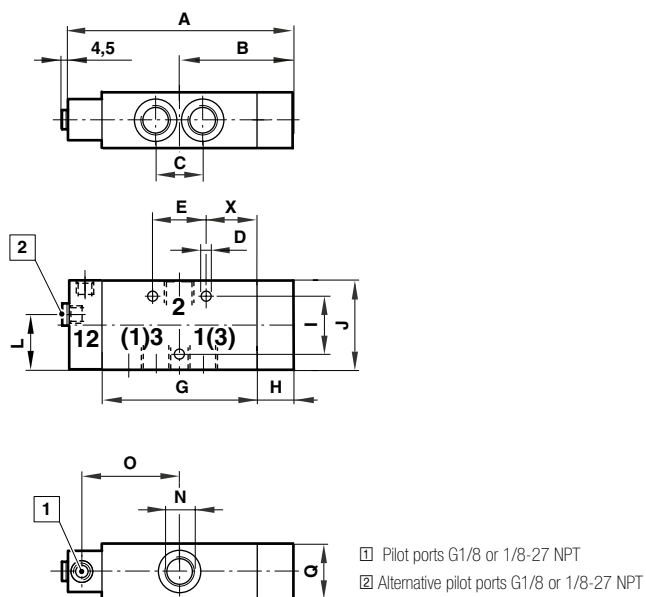
No.	A	B	C	Ø D	E	F	G	H	I	J	L	N	O	Q	W	X	Model
15	239	128,5	42	4,5	44	10	94	18	36	55	23	1/4"	—	30	21	22	VR61#611A-...
																	VR61#711A-...
																	VR61#811A-...
																	VR61#622A-...
15	239	128,5	42	4,5	44	10	94	18	36	55	23	1/4"	41	30	21	22	VR61#722A-...
																	VR61#822A-...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

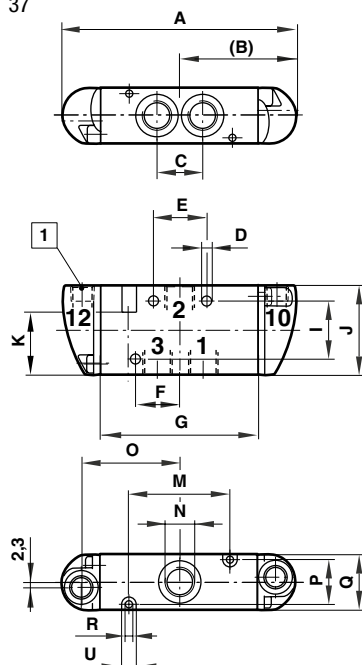
33



No.	A	B	C	Ø D	E	G	H	I	J	L	N	O	Q	X	Model
33	110	53	21	4,5	24	74	16	41	55	33,5	1/4"	47	30	25	VR61#4D7A-... VR61#3D7A-...

= 'B' for ISO G and 'R' for NPT threads.

37



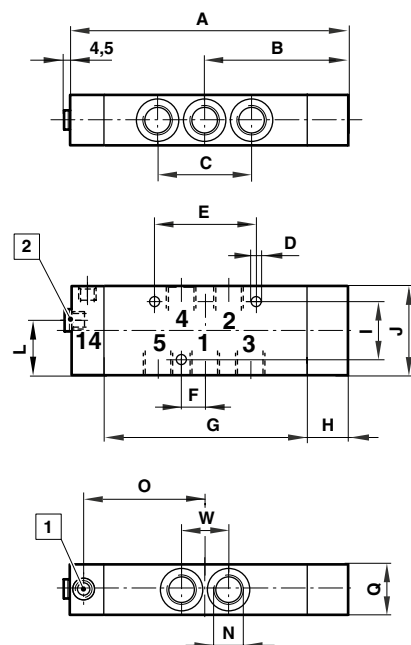
No.	A	B	C	D	E	F	G	I	J	K	M	N	O	P	Q	R	U	Model
37	104	52	21	4,5	24	20	70	26	40	28	46	1/4"	43	20	25	3,2	6,5	VR61#4DDA-...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES

VR61 1/4"

41



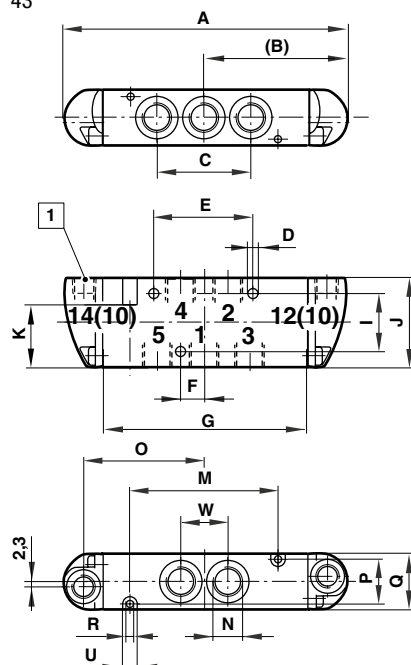
1 Pilot ports G1/8 or 1/8-27 NPT

2 Alternative pilot ports G1/8 or 1/8-27 NPT

No.	A	B	C	D	E	F	G	H	I	J	L	N	O	Q	W	Model
41	130	63	42	4,5	44	10	94	16	36	55	33,5	1/4"	57	30	21	VR61#5D7A-...

= 'B' for ISO G and 'R' for NPT threads.

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1 Pilot ports G1/8 or 1/8-27 NPT

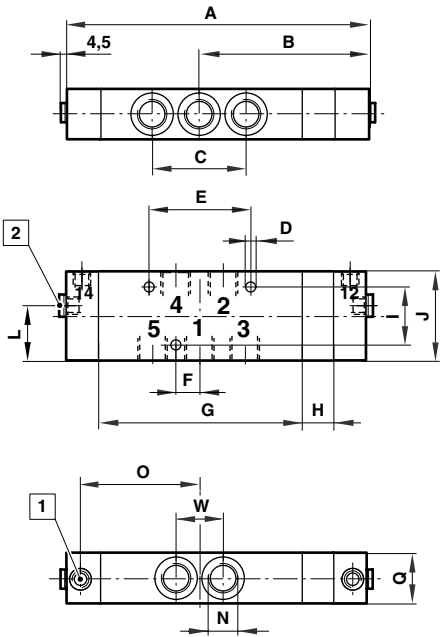
2 Alternative pilot ports G1/8 or 1/8-27 NPT

No.	A	B	C	D	E	F	G	I	J	K	M	N	O	P	Q	R	U	W	Model
43	124	62	42	4,5	44	10	90	26	40	28	66	1/4"	53	20	25	3,2	6,5	21	VR61#5DDA-...
																			VR61#ADDA-...
																			VR61#BDDA-...
																			VR61#CDDA-...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 2 X 3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID AND PILOT VALVES VR61 1/4"

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- Pilot ports G1/8 or 1/8-27 NPT
- ▣ Alternative pilot ports G1/8 or 1/8-27 NP

No.	A	B	C	D	E	F	G	H	I	J	L	N	O	Q	W	Model
46	161	85	42	4,5	44	10	94	18	36	55	33,5	1/4"	57	30	21	VR61#6DDA-...
																VR61#7DDA-...
																VR61#8DDA-...

= 'B' for ISO G and 'R' for NPT threads.

3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES

VR61Z Flange Version

- High flow rate
- Proven sealing system using Herion experience in the chemical and process industry
- Maintenance-free
- Optional manual overrides
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and BB

Technical Features

Medium:
Filtered, lubricated or non-lubricated compressed air

Actuation:
Solenoid controlled

Mounting position:
Spring return valves horizontal preferable

Air ports:
Flange pattern, see next pages

Operating pressure:
Solenoid actuated:
3 ... 10 bar
Details on the following pages

Flow direction:
Internal pilot: Supply must be port 1
External pilot and air pilot:
Supply to any port

Temperatures:
Fluid/ambient:
-40°C ... +65°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Housing and base plate: Aluminium

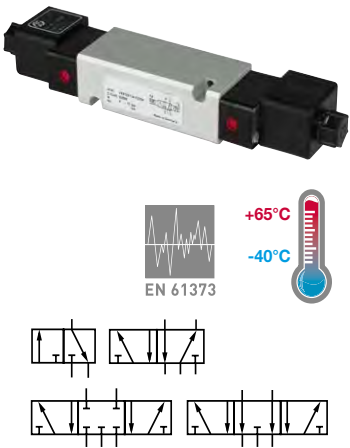
Spindle: Stainless steel

Piston, spacers and cover: Synthetic material, aluminium

Static and dynamic Seals: NBR

Screws: Zinc plated

Springs: Stainless steel



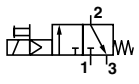
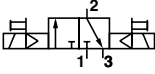
● Technical Data for solenoid

Voltage tolerance	±30% of nominal
Power consumption	4,5 ... 5,4 W (12, 24, 36, 72, 85, 110 V d.c.), details see next pages
Rating	100% E.D.
Protection class	IP 65 with sealed plugs (ISO 6952)
Manual override	Push only - Standard
Solenoid	4 x 90° rotatable
Solenoid plug interface	Type A, EN 175301-803 (DIN 43650)
Material	Thermosat (body), NBR (seals)

3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES

VR61Z Flange Version

● Models - 3/2 directional control valves, solenoid actuated

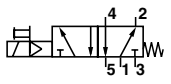
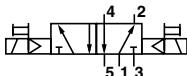
Symbol	Size	Function	Actuation/return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Drawing No.	Model
	Flange	NC	Solenoid/spring	internal	1300	3 ... 10	–	0,29	1	VR61Z417A-D#*
	Flange	NC	Solenoid/solenoid	internal	1300	3 ... 10	–	0,38	2	VR61Z411A-D#*

Insert code for manual override. Note: Standard option is 3 = push only, see next page.

* Insert voltage code from table on next page.

NC = Normally closed

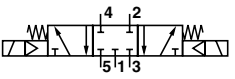
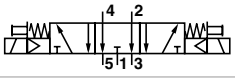
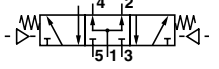
● Models - 5/2 directional control valves, solenoid actuated

Symbol	Size	Actuation/ return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Drawing No.	Model
	Flange	Solenoid/spring	internal	1300	3 ... 10	–	0,29	3	VR61Z517A-D#*
	Flange	Solenoid/solenoid	internal	1300	3 ... 10	–	0,42	4	VR61Z511A-D#*

Insert code for manual override. Note: Standard option is 3 = push only, see next pages.

* Insert voltage code from table on next page.

● Models - 5/3 directional control valves, solenoid actuated

Symbol	Size	Function	Actuation/ return	Pilot supply	Flow (l/min)	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Drawing No.	Model
	Flange	APB	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	5	VR61Z611A-D#*
	Flange	COE	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	5	VR61Z711A-D#*
	Flange	COP	Solenoid/solenoid	internal	950	3 ... 10	-	0,47	5	VR61Z811A-D#*

Insert code for manual override. Note: Standard option is 3 = push only, see next pages.

* Insert voltage code from table on next page.

APB = All ports blocked

COE = Centre open exhaust

COP = Centre open pressure

3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES VR61Z Flange Version

Option selector (solenoid actuated valves)

Function	Substitute
3/2 - NC	4
5/2	5
5/3 - APB	6
5/3 - COE	7
5/3 - COP	8

VR61Z★ ★ ★ A-D ★ ★ ★ N

Voltage	Substitute	
12 V d.c.	22	
24 V d.c.	23	
36 V d.c.	24	
72 V d.c.	2A	
85 V d.c.	2C	
110 V d.c.	27	
Manual override	Substitute	
Push only - Standard	3	
Push and turn	2	
Without	1	
Actuation/ return	Pilot supply	Substitute
Solenoid/solenoid	Internal	11
Solenoid/spring	Internal	17

Selection of voltage codes

Voltage	Part number code	Power consumption
12 V d.c.	22N	5,2 W
24 V d.c.	23N	4,5 W
36 V d.c.	24N	4,7 W
72 V d.c.	2AN	4,8 W
85 V d.c.	2CN	5,4 W
110 V d.c.	27N	5,3 W

Solenoids comply with ROHS directive 2011/165/EU.
Coils are CE marked in accordance with low voltage directive 2007/95/EG.



Accessories

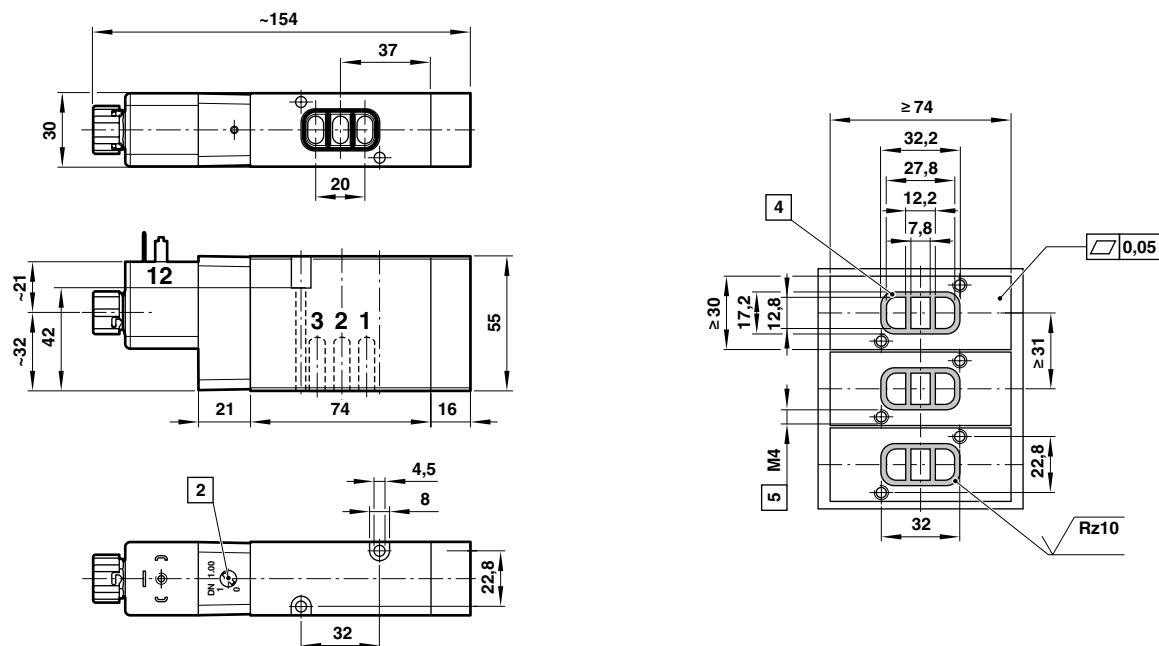
Connector DIN EN 175301-803, form A (DIN 43650 A)
0570275 12 ... 250 V a.c./d.c.

3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES

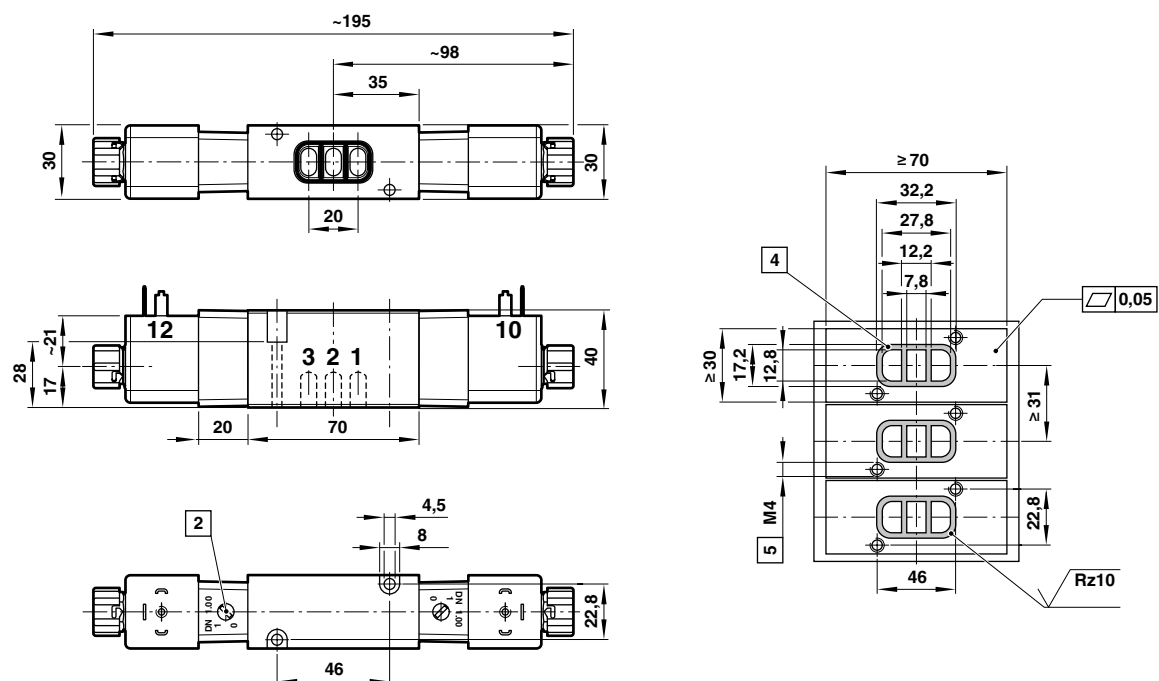
VR61Z Flange Version

● Dimensions

1



2

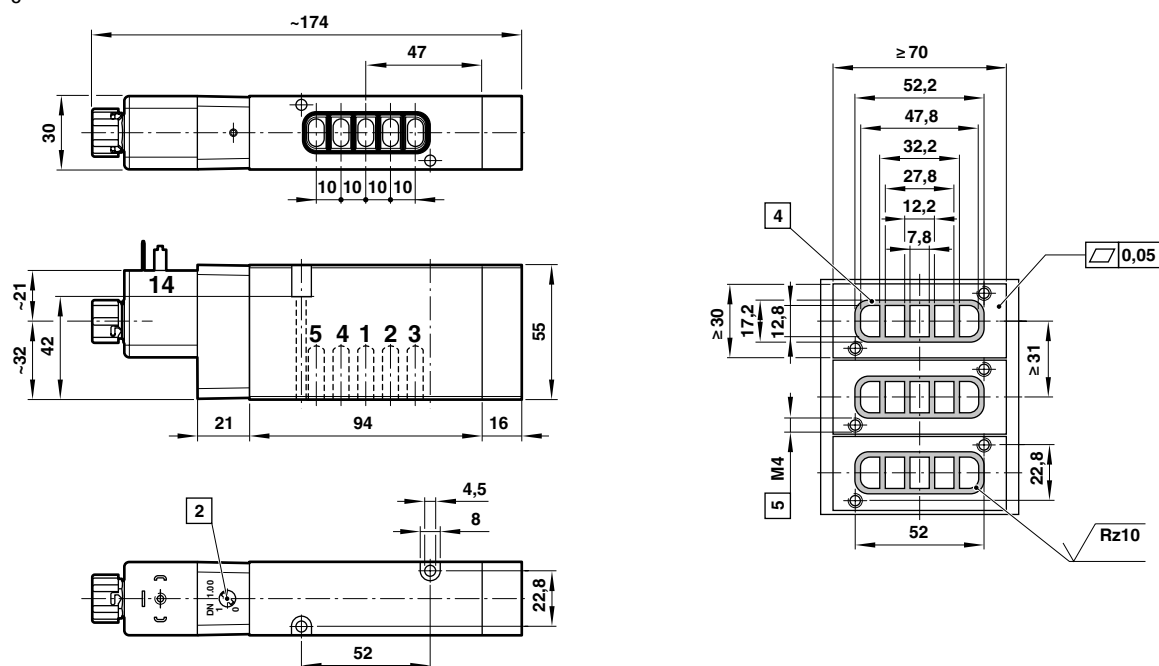


- ☐ Manual override
- ☐ Sealing area
- ☐ 9 mm deep

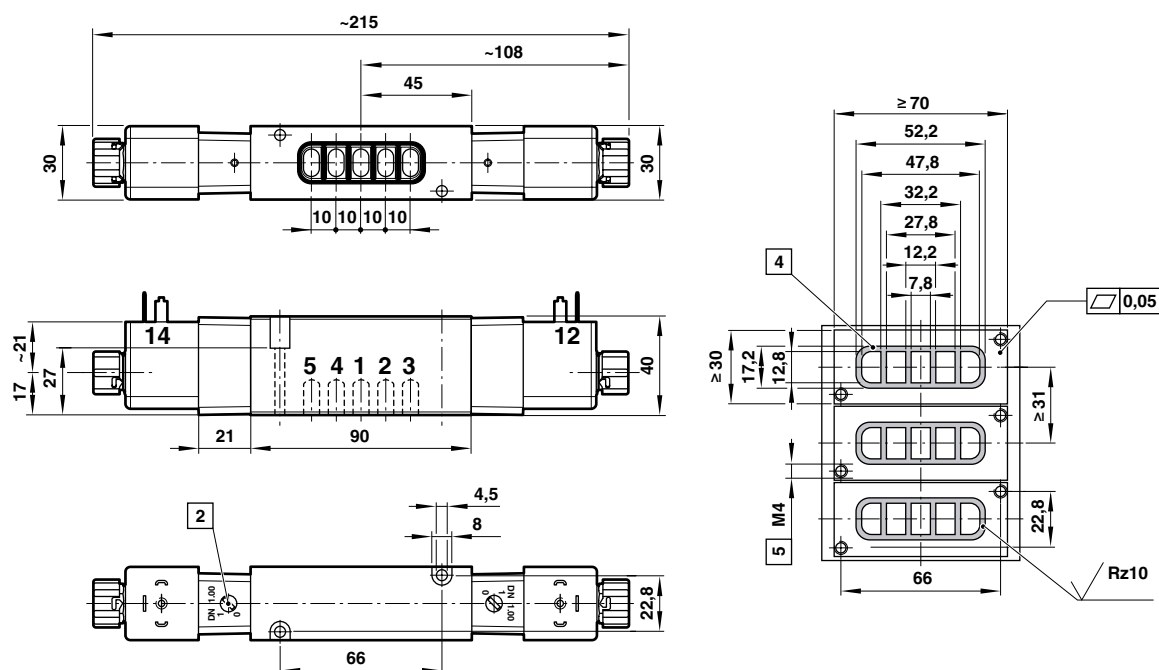
3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES

VR61Z Flange Version

3



4

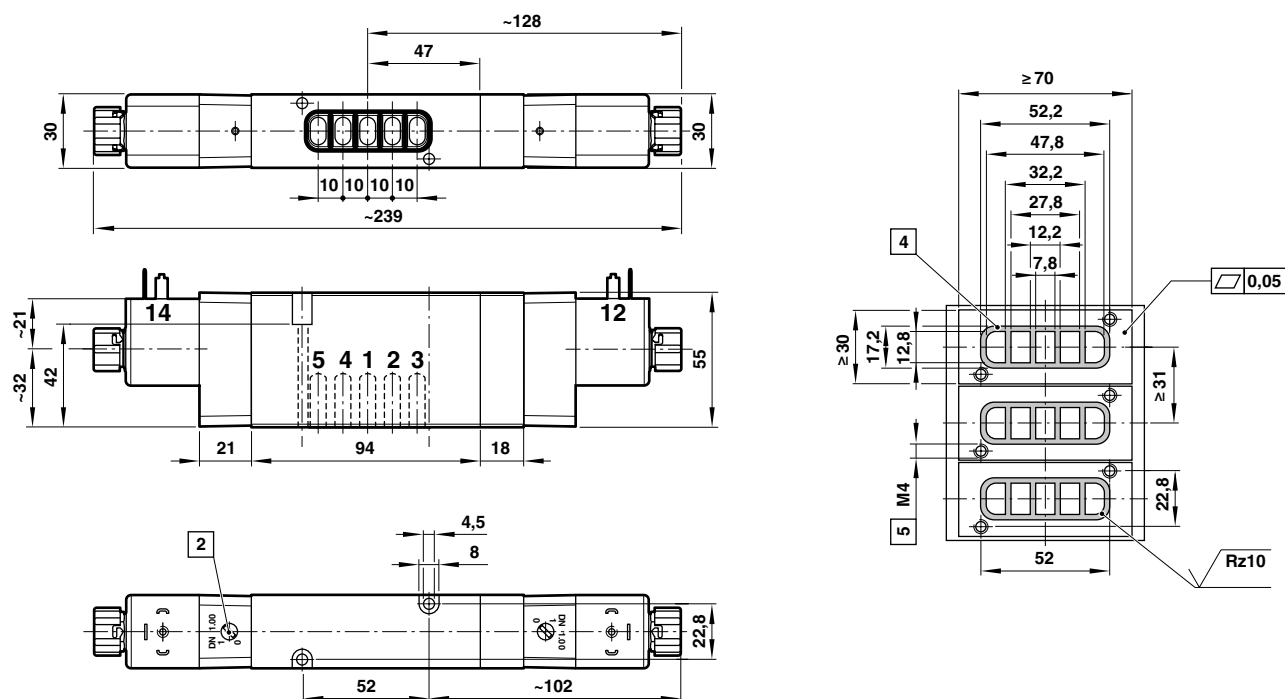


- ② Manual override
- ④ Sealing area
- ⑤ 9 mm deep

3/2, 5/2 & 5/3 DIRECTIONAL CONTROL SOLENOID VALVES

VR61Z Flange Version

5



- ☐ Manual override
- ☐ Sealing area
- ☐ 9 mm deep

PILOT ACTUATED POPPET VALVES

PROSPECTOR® 3/2

- Port size: 1/2" ... 1" (BSPP/PTF)
- Exceptionally high flow
- High reliability
- Durable, robust construction
- Built in Repair Kit with reversible seals
- Solenoid options available on request
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Filtered and lubricated or non-lubricated compressed air

Mounting:
Through-holes in valve body

Operating pressure:
0 ... 20 bar

Pilot pressure:
2.8 bar minimum, or equal to or greater than supply pressure

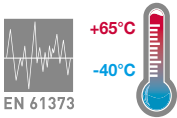
Ambient temperature:
-40°C ... +79°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body, piston, poppets and sub-base: Aluminium alloy

Operators: Zinc or aluminium

Elastomers: NBR



Models

Symbol	Port size	Pilot port size	Valve size (inch)	Flow (l/min)	Weight (kg)	Model
	1/2 BSPP	1/4 BSPP	1/2	5,717	0,96	VRDA024H-RAJ
	1/2 PTF	1/4 PTF	1/2	5,717	0,96	VRD1024H-RA9
	3/4 BSPP	1/4 BSPP	1/2	6,111	0,96	VRDA025H-RAJ
	3/4 PTF	1/4 PTF	1/2	6,111	0,96	VRD1025H-RA9
	1 BSPP	1/4 BSPP	1	14,391	1,86	VRDA036H-RAA
	1 PTF	1/4 PTF	1	14,391	1,86	VRD1036H-RA1

Option selector

Thread form		Substitute	
BSPP		A	
PTF		1	

VRD★0★★H-RA★

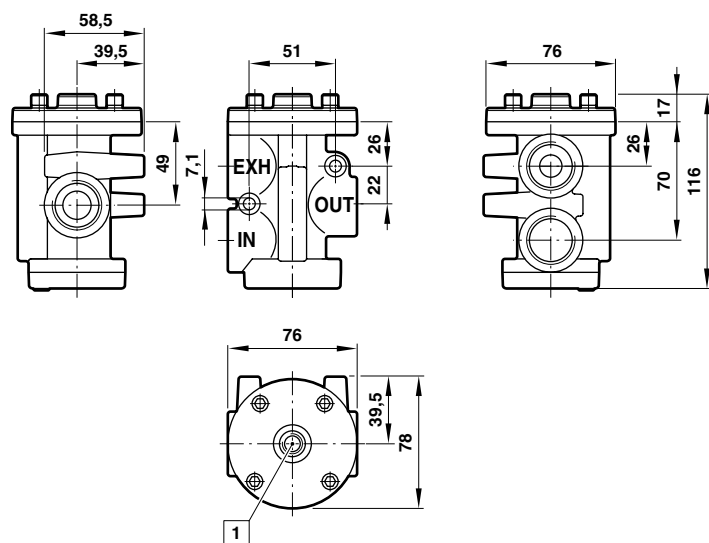
Thread		Substitute	
1/2 BSPP & 3/4 BSPP		J	
1/2 PTF & 3/4 PTF		9	
1 BSPP		A	
1 PTF		1	

Body size/port size		Substitute	
1/2" body/ 1/2" ports		24	
1/2" body/ 3/4" ports		25	
1" body/ 1" ports		36	

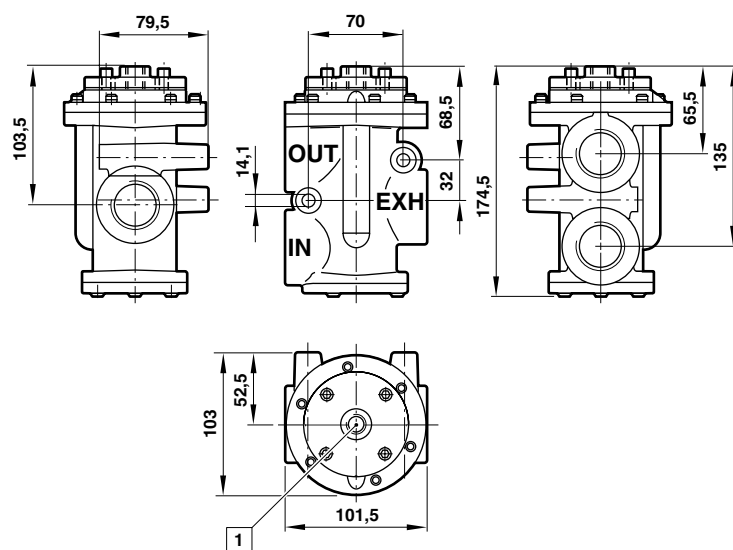
PILOT ACTUATED POPPET VALVES PROSPECTOR® 3/2

● Dimensions

1/2" valve size, pilot valve
Port size: 1/2 or 3/4"



1" valve size, pilot valve
Port size: 1"



SOLENOID PILOT ACTUATED POPPET VALVES 2/2, 3/2

RAIL PROSPECTOR® 3/8" ... 1" (BSPP/PTF)

- Exceptionally high flow
- High reliability
- Durable, robust construction
- Internal Pilot Check valve standard
- Wide temperature range
- Shock vibration tested
- Wide Voltage Tolerance
- Large selection of voltages

Technical Features

Medium:

Filtered and lubricated or non-lubricated compressed air

Mounting:

Through-holes in valve body

Operating pressure:

0 ... 10 bar

Pilot pressure:

2.8 bar minimum, or equal to or greater than supply pressure

Ambient temperature:

-40°C ... +70°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body, piston, poppets and sub-base: Aluminium alloy

Valve Base: Zinc or Plastic

Coil: Glass reinforced nylon

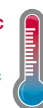
Internal parts: Stainless steel

Seals: NBR



+70°C

-40°C



Technical Data for solenoid operators

Nominal voltages	12, 24, 37,5, 52, 72, 96, 110 V d.c.
Power consumption	6 Watt
Voltage tolerance	±30% of nominal
Duty cycle	100% ED
Electrical connection	DIN EN 175301-803 (DIN 43650) Form A

Models

2/2 Normally closed

Symbol	Port size	Wattage (W)	Valve Body Basic Size (inch)	Inlet to Outlet Flow *1) (l/min)	Model *2)
	3/8 PTF	6	1/2	3,400	VRA1013C-R**
	1/2 PTF	6	1/2	5,500	VRA1014C-R**
	3/4 PTF	6	1/2	6,500	VRA1015C-R**
	1 PTF	6	1	13,500	VRA1026C-R**
	3/8 BSPP	6	1/2	3,400	VRAA013C-R**
	1/2 BSPP	6	1/2	5,500	VRAA014C-R**
	3/4 BSPP	6	1/2	6,500	VRAA015C-R**
	1 BSPP	6	1	13,500	VRAA026C-R**

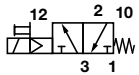
2/2 Normally Open

Symbol	Port size	Wattage (W)	Valve Body Basic Size (inch)	Inlet to Outlet Flow *1) (l/min)	Model *2)
	3/8 PTF	6	1/2	3,400	VRB1013C-R**
	1/2 PTF	6	1/2	5,500	VRB1014C-R**
	3/4 PTF	6	1/2	6,500	VRB1015C-R**
	1 PTF	6	1	13,500	VRB1026C-R**
	3/8 BSPP	6	1/2	3,400	VRBA013C-R**
	1/2 BSPP	6	1/2	5,500	VRBA014C-R**
	3/4 BSPP	6	1/2	6,500	VRBA015C-R**
	1 BSPP	6	1	13,500	VRBA026C-R**

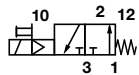
SOLENOID PILOT ACTUATED POPPET VALVES 2/2, 3/2

RAIL PROSPECTOR® 3/8" ... 1" (BSPP/PTF)

3/2 Normally closed

Symbol	Port size	Wattage (W)	Valve Body Basic Size (inch)	Inlet to Outlet Flow *1) (l/min)	Outlet to Exhaust Flow *1) (l/min)	Model *2)
	3/8 PTF	6	1/2	3,600	4,900	VRD1023C-R**
	1/2 PTF	6	1/2	4,600	5,800	VRD1024C-R**
	3/4 PTF	6	1/2	5,400	6,200	VRD1025C-R**
	1 PTF	6	1	13,200	14,600	VRD1036C-R**
	3/8 BSPP	6	1/2	3,600	4,900	VRDA023C-R**
	1/2 BSPP	6	1/2	4,600	5,800	VRDA024C-R**
	3/4 BSPP	6	1/2	5,400	6,200	VRDA025C-R**
	1 BSPP	6	1	13,200	14,600	VRDA036C-R**

3/2 Normally open

Symbol	Port size	Wattage (W)	Valve Body Basic Size (inch)	Inlet to Outlet Flow *1) (l/min)	Outlet to Exhaust Flow *1) (l/min)	Model *2)
	1/2 PTF	6	1/2	4,100	5,500	VRE1024C-R**
	3/4 PTF	6	1/2	4,900	5,800	VRE1025C-R**
	1 PTF	6	1	11,700	13,800	VRE1036C-R**
	1/2 BSPP	6	1/2	4,100	5,500	VREA024C-R**
	3/4 BSPP	6	1/2	4,900	5,800	VREA025C-R**
	1 BSPP	6	1	11,700	13,800	VREA036C-R**

**) Choose voltage code from table above, where as a 24 V d.c. would be shown as -R24.

*1) Flow was originally measured in Cv and was converted by the following formula $C_v \text{ of } 1 = 1,000 \text{ l/min.}$

*2) Internal pilot version shown, where the inlet pressure must be a minimum of 2,8 bar (40 psi) or greater.

Option selector

Valve type	Substitute	VR★★0★★★-R★★				Voltage	Substitute
2/2 Normally Closed	A					110 V d.c.	11
2/2 Normally Open	B					24 V d.c.	24
3/2 Normally Closed	D					37 V d.c.	37
3/2 Normally Open	E					72 V d.c.	72
						96 V d.c.	96
Thread form	Substitute					Pilot	Substitute
BSPP	A					Internal Pilot	C
PTF	1					External Pilot	H
						Port / Body size	Substitute
Port size	Body size	Valve Type					
3/8"	1/2"	2/2					13
1/2"	1/2"	2/2					14
3/4"	1/2"	2/2					15
1"	1"	2/2					26
3/8"	1/2"	3/2 *1)					23
1/2"	1/2"	3/2					24
3/4"	1/2"	3/2					25
1"	1"	3/2					36

Accessories

Connector	Connector with moulded cable
	
0570275	M/P 43315/1 (1 m)
	M/P 43315/3 (3 m)

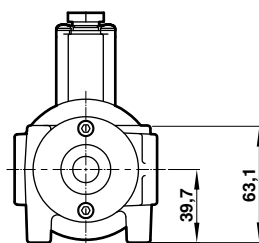
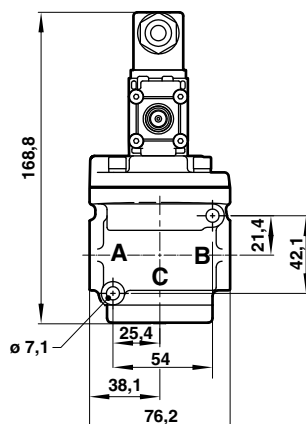
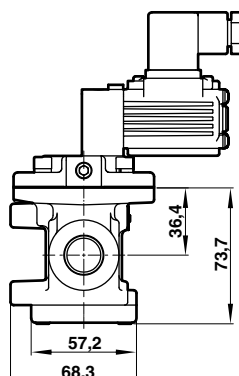
SOLENOID PILOT ACTUATED POPPET VALVES 2/2, 3/2

RAIL PROSPECTOR® 3/8" ... 1" (BSPP/PTF)

● Dimensions

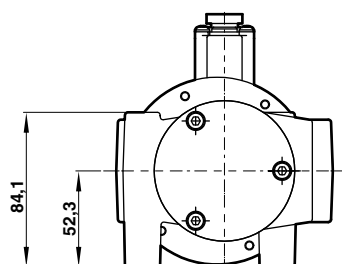
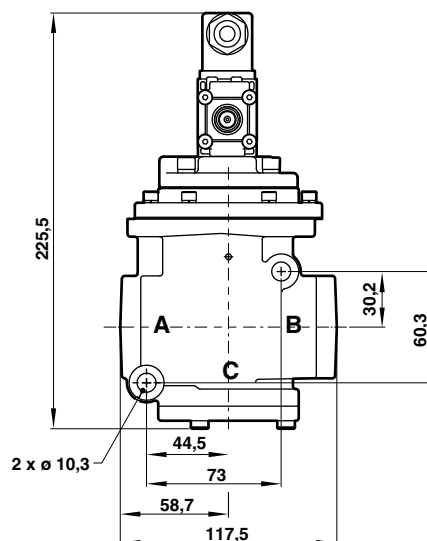
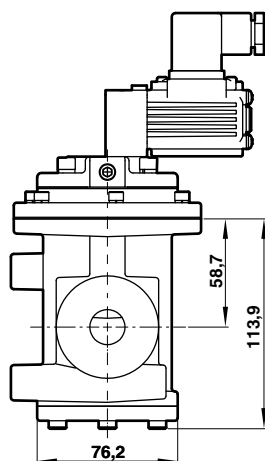
2/2-way valve

Valve body basic: 1/2"



2/2-way valve

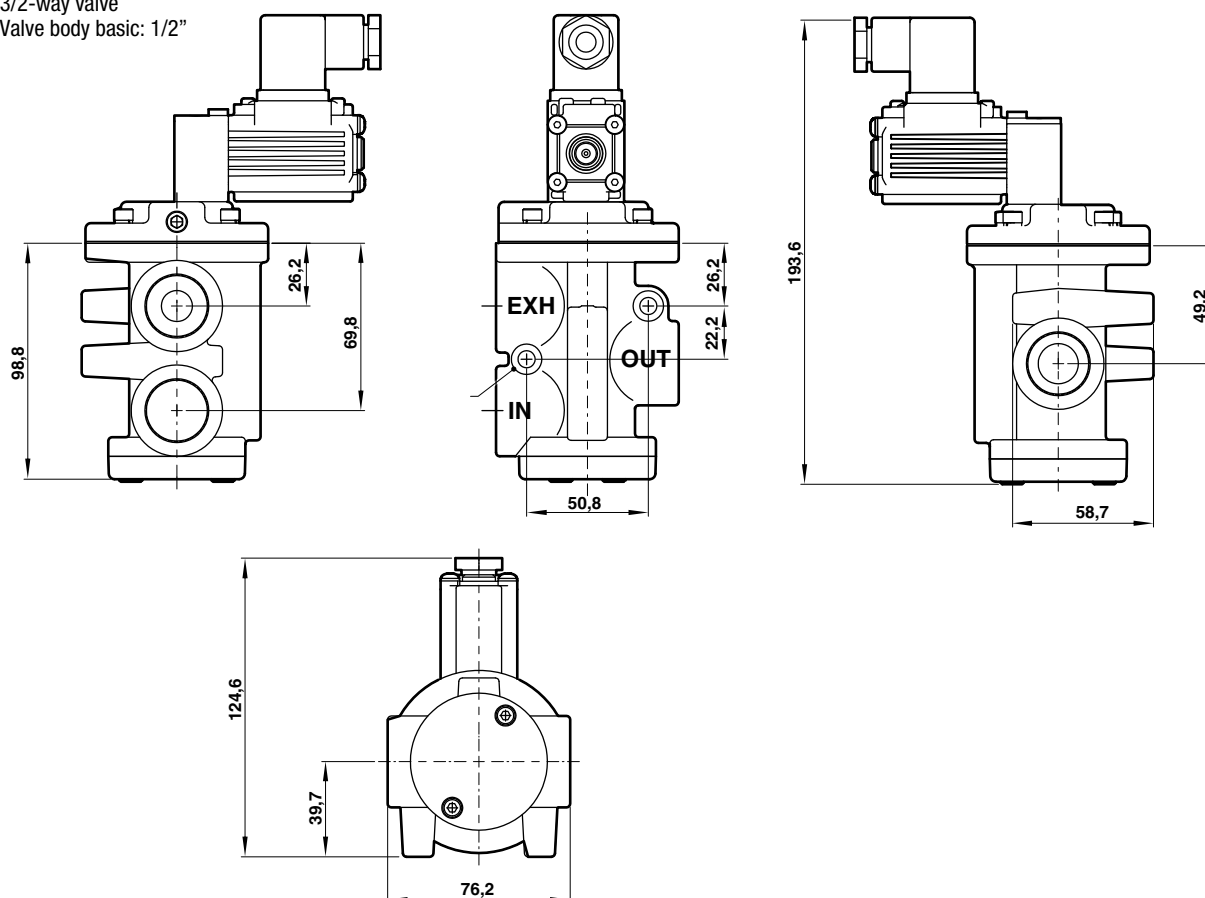
Valve body basic: 1"



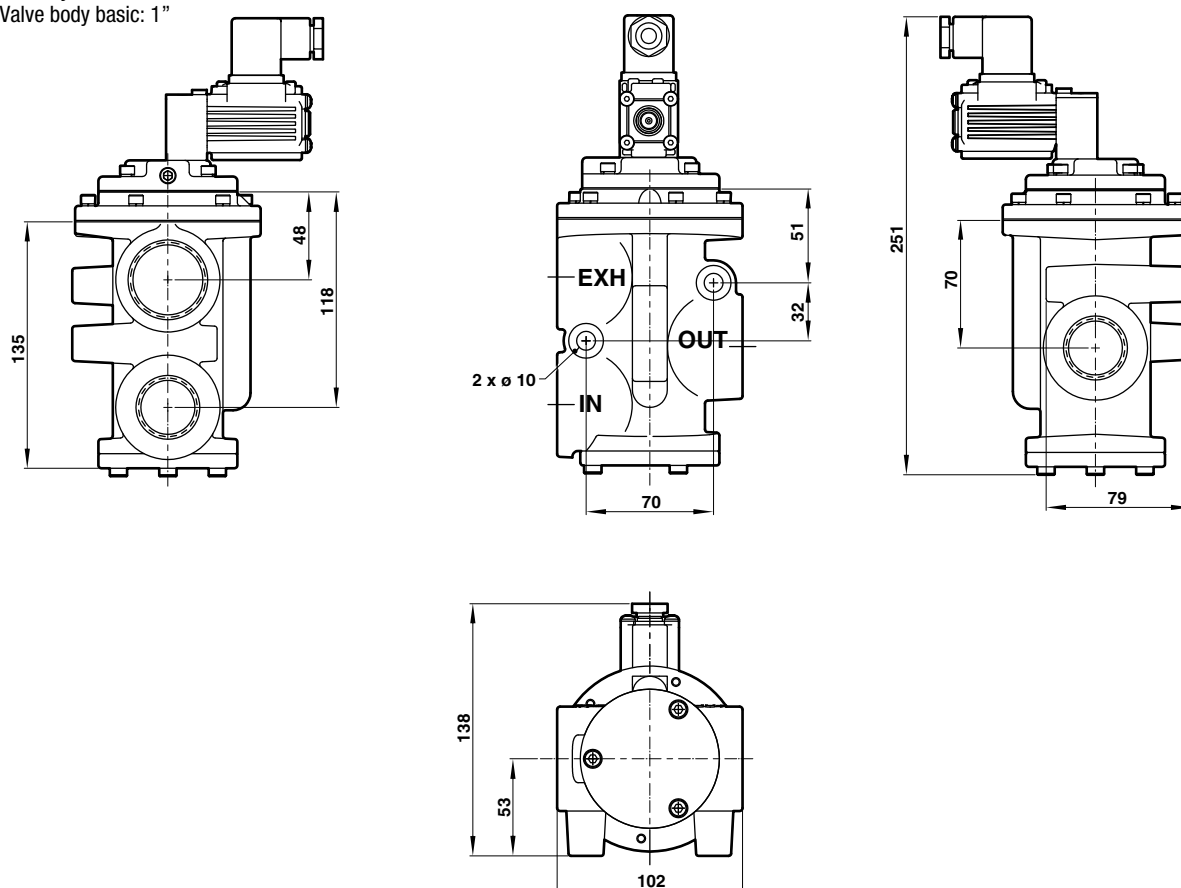
SOLENOID PILOT ACTUATED POPPET VALVES 2/2, 3/2

RAIL PROSPECTOR® 3/8" ... 1" (BSPP/PTF)

3/2-way valve
Valve body basic: 1/2"



3/2-way valve
Valve body basic: 1"



PILOT ACTUATED SPOOL VALVES

SUPER X 3/2 & 5/2, 1/8", 1/4"

- Wide range of operators
- Suitable for multi-directional flow and dual supply applications
- High flow capacity
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated and non-lubricated

Operation:

Spool valve, directly and indirectly actuated

Mounting:

Through-holes in valve body

Operating pressure:

Max. 10 bar

Pilot pressure:

2.8 bar minimum, or equal to or greater than supply pressure

Ambient temperature:

-30°C ... +70°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Flow:

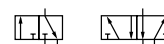
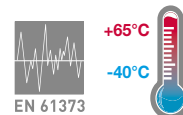
Size	l/min	Cv	Kv
1/8"	335	0,34	0,295
1/4"	965	0,98	0,351

Materials

Body: Diecast zinc

End cover: Aluminium or glass-filled nylon

Seals: Nitrile rubber



Models - 3/2 Pilot actuated valves

Symbol	Port size	Actuation	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Air/spring	-0,9 ... 10	2 ... 10	0,21	VR03 8447 02	1	VR03041302
	1/8 PTF	Air/spring	-0,9 ... 10	2 ... 10	0,21	VR03 8447 02	1	VR03041322
	G1/4	Air/spring	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	7	VR03060102
	1/4 PTF	Air/spring	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	7	VR03060122
	G1/8	Air/air	-0,9 ... 10	2 ... 10	0,22	VR03 8447 02	2	VR03040702
	1/8 PTF	Air/air	-0,9 ... 10	2 ... 10	0,22	VR03 8447 02	2	VR03040722
	G1/4	Air/air	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	8	VR03060702
	1/4 PTF	Air/air	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	8	VR03060722
	G1/8	Air priority/air	-0,9 ... 10	2 ... 10	0,25	VR03 8447 02	3	VR03041202
	1/8 PTF	Air priority/air	-0,9 ... 10	2 ... 10	0,25	VR03 8447 02	3	VR03041222
	G1/4	Air priority/air	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	8	VR03061202
	1/4 PTF	Air priority/air	-0,9 ... 10	2 ... 10	0,42	VR03 8612 02	8	VR03061222

Models - 5/2 Pilot actuated valves

Symbol	Port size	Actuation	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Air/spring	-0,9 ... 10	3 ... 10	0,30	VR03 8447 02	4	VRX3044102
	1/8 PTF	Air/spring	-0,9 ... 10	3 ... 10	0,30	VR03 8447 02	4	VRX3044122
	G1/4	Air/spring	-0,9 ... 10	3 ... 10	0,50	VR03 8612 02	9	VRX3064102
	1/4 PTF	Air/spring	-0,9 ... 10	3 ... 10	0,50	VR03 8612 02	9	VRX3064122
	G1/8	Air/air	-0,9 ... 10	3 ... 10	0,35	VR03 8447 02	5	VRX3044702
	1/8 PTF	Air/air	-0,9 ... 10	3 ... 10	0,35	VR03 8447 02	5	VRX3044722
	G1/4	Air/air	-0,9 ... 10	3 ... 10	0,57	VR03 8612 02	10	VRX3064702
	1/4 PTF	Air/air	-0,9 ... 10	3 ... 10	0,57	VR03 8612 02	10	VRX3064722
	G1/8	Air priority/air	-0,9 ... 10	3 ... 10	0,33	VR03 8447 02	6	VRX3045202
	1/8 PTF	Air priority/air	-0,9 ... 10	3 ... 10	0,33	VR03 8447 02	6	VRX3045222
	G1/4	Air priority/air	-0,9 ... 10	3 ... 10	0,57	VR03 8612 02	10	VRX3065202
	1/4 PTF	Air priority/air	-0,9 ... 10	3 ... 10	0,57	VR03 8612 02	10	VRX3065222

PILOT ACTUATED SPOOL VALVES

SUPER X 3/2 & 5/2, 1/8", 1/4"

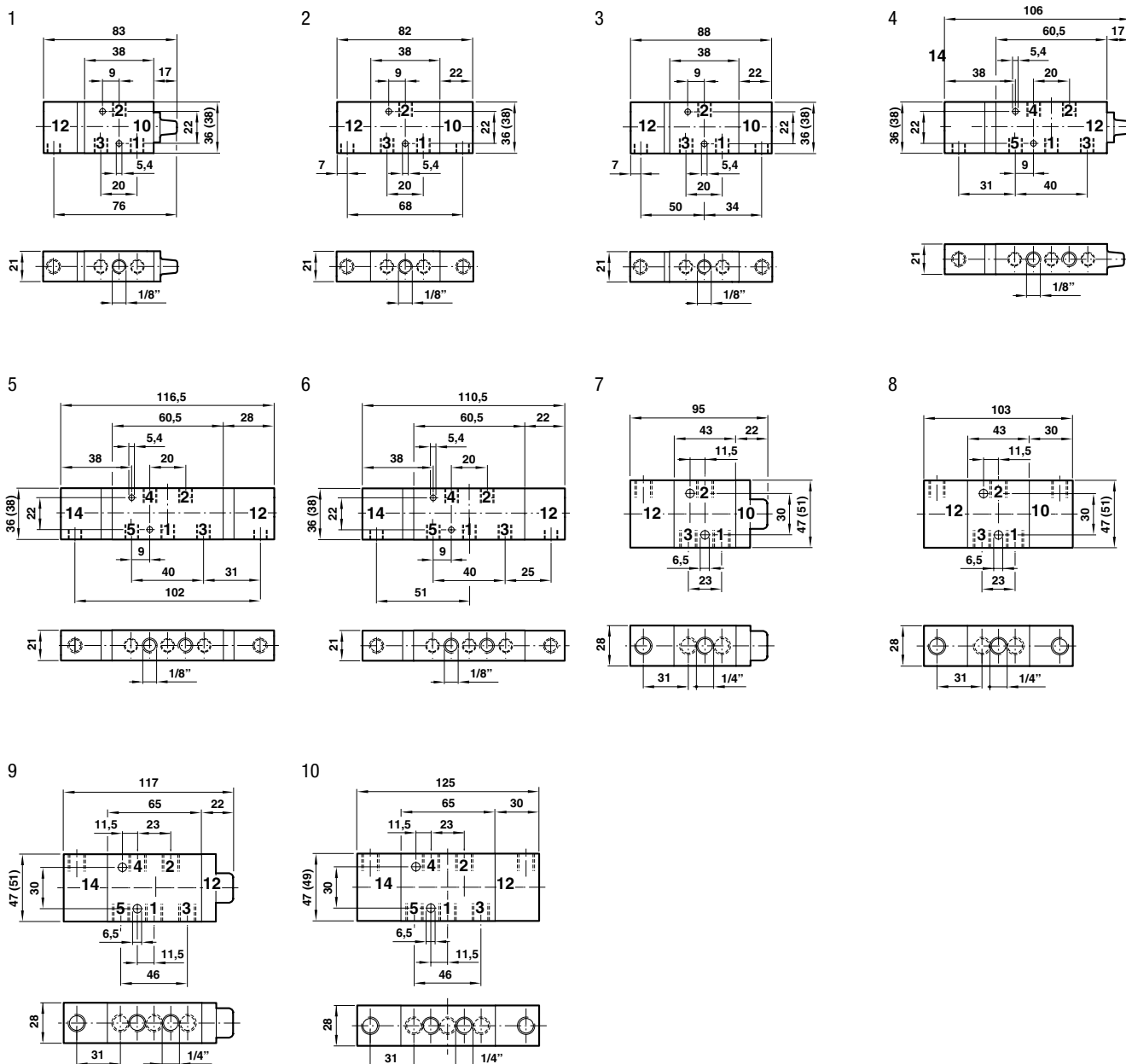
Option selector

Function	Substitute
3/2	0
5/2	X
Air port	Substitute
1/8"	4
1/4"	6
3/2 Pilot actuated valves	Substitute
Air/spring (1/4")	01
Air/air (1/8")	07
Air/air (1/4")	12
Air priority/air (1/8")	12
Air/spring (1/8")	13
Air priority/air (1/4")	60

VR★30★★★★★2

Thread	Substitute
ISO G	0
PTF (SAE SHORT)	2
5/2 Pilot actuated valves	Substitute
Air/spring	41
Air/air	47
Air priority/air	52

Dimensions



MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

- Wide range of operators
- Suitable for multi-directional flow and dual supply applications
- High flow capacity
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, lubricated and non-lubricated

Operation:

Spool valve, directly and indirectly actuated

Mounting:

Through-holes in valve body

Operating pressure:

Maximum 10 bar

Ambient temperature:

-30°C ... +70°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Flow:

Size	l/min	Cv	Kv
1/8"	335	0,34	0,295
1/4"	965	0,98	0,351

Materials

Body: Diecast zinc

End cover: Aluminium or glass-filled nylon

Seals: Nitrile rubber



Models – 3/2 mechanical valves

Symbol	Port size	Actuation	Operating pressure (bar)	Operating force (N)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Plunger/spring	-0,9 ... 10	31	0,14	VR03 8408 02	1	VR03 0400 02
	1/8 PTF	Plunger/spring	-0,9 ... 10	31	0,14	VR03 8408 02	1	VR03 0400 22
	G1/4	Plunger/spring	-0,9 ... 10	53	0,34	VR03 8602 02	22	VR03 0600 02
	1/4 PTF	Plunger/spring	-0,9 ... 10	53	0,34	VR03 8602 02	22	VR03 0600 22
	G1/8	Roller/spring	-0,9 ... 10	31	0,14	VR03 8408 02	2	VR03 0402 02
	1/8 PTF	Roller/spring	-0,9 ... 10	31	0,14	VR03 8408 02	2	VR03 0402 22
	G1/4	Roller/spring	-0,9 ... 10	61	0,34	VR03 8602 02	23	VR03 0602 02
	1/4 PTF	Roller/spring	-0,9 ... 10	61	0,34	VR03 8602 02	23	VR03 0602 22
	G1/8	Roller lever/spring	-0,9 ... 10	18	0,21	VR03 8408 02	4	VR03 0293 02
	1/8 PTF	Roller lever/spring	-0,9 ... 10	18	0,21	VR03 8408 02	4	VR03 0293 22

Models – 3/2 manual valves

Symbol	Port size	Actuation	Operating pressure (bar)	Operating force (N)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Plunger/spring	-0,9 ... 10	54	0,25	VR03 8408 02	5	VRX3 04400 2
	1/8 PTF	Plunger/spring	-0,9 ... 10	54	0,25	VR03 8408 02	5	VRX3 0440 22
	G1/4	Plunger/spring	-0,9 ... 10	62	0,46	VR03 8602 02	24	VRX3 0640 02
	1/4 PTF	Plunger/spring	-0,9 ... 10	62	0,46	VR03 8602 02	24	VRX3 0640 22
	G1/8	Roller/spring	-0,9 ... 10	54	0,25	VR03 8408 02	6	VRX3 0442 02
	1/8 PTF	Roller/spring	-0,9 ... 10	54	0,25	VR03 8408 02	6	VRX3 0442 22
	G1/4	Roller/spring	-0,9 ... 10	67	0,46	VR03 8602 02	25	VRX3 0642 02
	1/4 PTF	Roller/spring	-0,9 ... 10	67	0,46	VR03 8602 02	25	VRX3 0642 22
	G1/8	Roller lever (heavy duty)/spring	-0,9 ... 10	31	0,29	VR03 8408 02	7	VRX3 0393 02
	1/8 PTF	Roller lever (heavy duty)/spring	-0,9 ... 10	31	0,29	VR03 8408 02	7	VRX3 0393 22

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

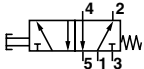
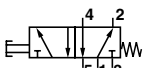
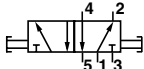
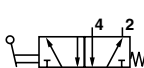
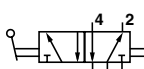
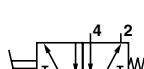
Models – 3/2 manual valves

Symbol	Port size	Actuation	Colour	Operating pressure (bar)	Operating force (N)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Button/spring	Black	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0404 02
	1/8 PTF	Button/spring	Black	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0404 22
	G1/8	Button/spring	Green	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0405 02
	1/8 PTF	Button/spring	Green	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0405 22
	G1/8	Button/spring	Red	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0406 02
	1/8 PTF	Button/spring	Red	-0,9 ... 10	31	0,15	VR03 8408 02	8	VR03 0406 22
	G1/4	Button/spring	Black	-0,9 ... 10	53	0,35	VR03 8602 02	26	VR03 0604 02
	1/4 PTF	Button/spring	Black	-0,9 ... 10	53	0,35	VR03 8602 02	26	VR03 0604 22
	G1/8	Button (palm)/spring	Red	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0366 02
	1/8 PTF	Button (palm)/spring	Red	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0366 22
	G1/8	Button (palm)/spring	Green	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0367 02
	1/8 PTF	Button (palm)/spring	Green	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0367 22
	G1/8	Button (palm)/spring	Black	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0368 02
	1/8 PTF	Button (palm)/spring	Black	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0368 22
	G1/8	Emergency stop/twist reset	Red	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0428 02
	1/8 PTF	Emergency stop/twist reset	Red	-0,9 ... 10	31	0,29	VR03 8408 02	9	VR03 0428 22
	G1/8	Rotary knob/set reset	Black	-0,9 ... 10	31	0,29	VR03 8408 02	10	VR03 0419 02
	1/8 PTF	Rotary knob/set reset	Black	-0,9 ... 10	31	0,29	VR03 8408 02	10	VR03 0419 22
	G1/8	Button (shrouded)/spring	Black	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0414 02
	1/8 PTF	Button (shrouded)/spring	Black	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0414 22
	G1/8	Button (shrouded)/spring	Green	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0415 02
	1/8 PTF	Button (shrouded)/spring	Green	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0415 22
	G1/8	Button (shrouded)/spring	Red	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0416 02
	1/8 PTF	Button (shrouded)/spring	Red	-0,9 ... 10	31	0,21	VR03 8408 02	11	VR03 0416 22
	G1/8	Lever/spring	Black	-0,9 ... 10	9	0,28	VR03 8408 02	12	VR03 0438 02
	1/8 PTF	Lever/spring	Black	-0,9 ... 10	9	0,28	VR03 8408 02	12	VR03 0438 22
	G1/4	Lever/spring	Black	-0,9 ... 10	15	0,48	VR03 8408 02	27	VR03 0638 02
	1/4 PTF	Lever/spring	Black	-0,9 ... 10	15	0,48	VR03 8408 02	27	VR03 0638 22
	G1/8	Toggle/toggle	Black	-0,9 ... 10	28	0,16	VR03 8408 02	13	VR03 0403 02
	1/8 PTF	Toggle/toggle	Black	-0,9 ... 10	28	0,16	VR03 8408 02	13	VR03 0403 22
	G1/8	Lever/lever	Black	-0,9 ... 10	9	0,29	VR03 8408 02	12	VR03 0437 02
	1/8 PTF	Lever/lever	Black	-0,9 ... 10	9	0,29	VR03 8408 02	12	VR03 0437 22
	G1/4	Lever/lever	Black	-0,9 ... 10	13	0,49	VR03 8602 02	27	VR03 0637 02
	1/4 PTF	Lever/lever	Black	-0,9 ... 10	13	0,49	VR03 8602 02	27	VR03 0637 22
	G1/4	Knob/knob	Black	-0,9 ... 10	13	0,37	VR03 8602 02	28	VR03 0625 02
	1/4 PTF	Knob/knob	Black	-0,9 ... 10	13	0,37	VR03 8602 02	28	VR03 0625 22
	G1/4	Knob/knob or pilot *	Black	-0,9 ... 10	13	0,41	VR03 8612 02	29	VR03 0627 02
	1/4 PTF	Knob/knob or pilot *	Black	-0,9 ... 10	13	0,41	VR03 8612 02	29	VR03 0627 22
	G1/8	Pedal/spring	Black	-0,9 ... 10	22	1,03	VR03 8408 02	14	VR03 0481 02
	1/8 PTF	Pedal/spring	Black	-0,9 ... 10	22	1,03	VR03 8408 02	14	VR03 0481 22
	G1/4	Pedal/spring	Black	-0,9 ... 10	22	1,23	VR03 8602 02	30	VR03 0681 02
	1/4 PTF	Pedal/spring	Black	-0,9 ... 10	22	1,23	VR03 8602 02	30	VR03 0681 22
	G1/8	Pedal/pedal	Black	-0,9 ... 10	22	1,07	VR03 8408 02	14	VR03 0483 02
	1/8 PTF	Pedal/pedal	Black	-0,9 ... 10	22	1,07	VR03 8408 02	14	VR03 0483 22
	G1/4	Pedal/pedal	Black	-0,9 ... 10	22	1,27	VR03 8602 02	30	VR03 0683 02
	1/4 PTF	Pedal/pedal	Black	-0,9 ... 10	22	1,27	VR03 8602 02	30	VR03 0683 22

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

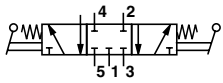
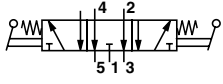
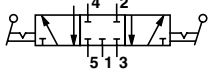
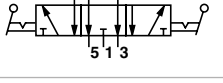
● Models – 5/2 manual valves

Symbol	Port size	Actuation	Colour	Operating pressure (bar)	Operating force (N)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Button/spring	Black	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0444 02
	1/8 PTF	Button/spring	Black	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0444 22
	G1/8	Button/spring	Green	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0445 02
	1/8 PTF	Button/spring	Green	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0445 22
	G1/8	Button/spring	Red	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0446 02
	1/8 PTF	Button/spring	Red	-0,9 ... 10	54	0,26	VR03 8408 02	15	VRX3 0446 22
	G1/4	Button/spring	Black	-0,9 ... 10	54	0,47	VR03 8408 02	31	VRX3 0644 02
	1/4 PTF	Button/spring	Black	-0,9 ... 10	62	0,47	VR03 8408 02	31	VRX3 0644 22
	G1/8	Button (palm)/spring	Red	-0,9 ... 10	62	0,40	VR03 8408 02	16	VRX3 0386 02
	1/8 PTF	Button (palm)/spring	Red	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0386 22
	G1/8	Button (palm)/spring	Green	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0387 02
	1/8 PTF	Button (palm)/spring	Green	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0387 22
	G1/8	Button (palm)/spring	Black	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0388 02
	1/8 PTF	Button (palm)/spring	Black	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0388 22
	G1/8	Emergency stop/twist reset	Red	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0468 02
	1/8 PTF	Emergency stop/twist reset	Red	-0,9 ... 10	31	0,40	VR03 8408 02	16	VRX3 0468 22
	G1/8	Button (shrouded)/spring	Black	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0454 02
	1/8 PTF	Button (shrouded)/spring	Black	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0454 22
	G1/8	Button (shrouded)/spring	Green	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0455 02
	1/8 PTF	Button (shrouded)/spring	Green	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0455 22
	G1/8	Button (shrouded)/spring	Red	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0456 02
	1/8 PTF	Button (shrouded)/spring	Red	-0,9 ... 10	54	0,32	VR03 8408 02	17	VRX3 0456 22
	G1/8	Knob, push/knob, pull	Black	-0,9 ... 10	22	0,28	VR03 8408 02	18	VRX3 0465 02
	1/8 PTF	Knob, push/knob, pull	Black	-0,9 ... 10	22	0,28	VR03 8408 02	18	VRX3 0465 22
	G1/4	Knob/knob	Black	-0,9 ... 10	13	0,49	VR03 8408 02	32	VRX3 0665 02
	1/4 PTF	Knob/knob	Black	-0,9 ... 10	13	0,49	VR03 8408 02	32	VRX3 0665 22
	G1/8	Lever/spring	Black	-0,9 ... 10	16	0,40	VR03 8408 02	19	VRX3 0478 02
	1/8 PTF	Lever/spring	Black	-0,9 ... 10	16	0,40	VR03 8408 02	19	VRX3 0478 22
	G1/4	Lever/spring	Black	-0,9 ... 10	15	0,60	VR03 8602 02	33	VRX3 0678 02
	1/4 PTF	Lever/spring	Black	-0,9 ... 10	15	0,60	VR03 8602 02	33	VRX3 0678 22
	G1/8	Toggle/toggle	Black	-0,9 ... 10	48	0,27	VR03 8408 02	20	VRX3 0443 02
	1/8 PTF	Toggle/toggle	Black	-0,9 ... 10	48	0,27	VR03 8408 02	20	VRX3 0443 22
	G1/8	Lever/lever	Black	-0,9 ... 10	13	0,40	VR03 8408 02	19	VRX3 0477 02
	1/8 PTF	Lever/lever	Black	-0,9 ... 10	13	0,40	VR03 8408 02	19	VRX3 0477 22
	G1/4	Lever/lever	Black	-0,9 ... 10	13	0,61	VR03 8602 02	33	VRX3 0677 02
	1/4 PTF	Lever/lever	Black	-0,9 ... 10	13	0,61	VR03 8602 02	33	VRX3 0677 22
	G1/8	Pedal/spring	Black	-0,9 ... 10	22	1,12	VR03 8408 02	14	VRX3 0482 02
	1/8 PTF	Pedal/spring	Black	-0,9 ... 10	22	1,12	VR03 8408 02	14	VRX3 0482 22
	G1/4	Pedal/spring	Black	-0,9 ... 10	22	1,33	VR03 8602 02	35	VRX3 0682 02
	1/4 PTF	Pedal/spring	Black	-0,9 ... 10	22	1,33	VR03 8602 02	35	VRX3 0682 22
	G1/8	Pedal/pedal	Black	-0,9 ... 10	22	1,18	VR03 8408 02	14	VRX3 0484 02
	1/8 PTF	Pedal/pedal	Black	-0,9 ... 10	22	1,18	VR03 8408 02	14	VRX3 0484 22
	G1/4	Pedal/pedal	Black	-0,9 ... 10	22	1,39	VR03 8602 02	35	VRX3 0684 02
	1/4 PTF	Pedal/pedal	Black	-0,9 ... 10	22	1,39	VR03 8602 02	35	VRX3 0684 22

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

● Models – 5/3 manual valves

Symbol	Port size	Actuation	Colour	Function	Operating pressure (bar)	Operating force (N)	Weight (kg)	Spares kit	Dimension No.	Model
	G1/8	Lever/spring/lever	Black	APB	-0,9 ... 10	15	0,85	VR03 8408 02	21	VRX3 3438 02
	1/8 PTF	Lever/spring/lever	Black	APB	-0,9 ... 10	15	0,85	VR03 8408 02	21	VRX3 3438 22
	G1/4	Lever/spring/lever	Black	APB	-0,9 ... 10	15	1,06	VR03 8602 02	34	VRX3 3638 02
	1/4 PTF	Lever/spring/lever	Black	APB	-0,9 ... 10	15	1,06	VR03 8602 02	34	VRX3 3638 22
	G1/8	Lever/spring/lever	Black	COE	-0,9 ... 10	15	0,85	VR03 8408 02	21	VRX3 3478 02
	1/8 PTF	Lever/spring/lever	Black	COE	-0,9 ... 10	15	0,85	VR03 8408 02	21	VRX3 3478 22
	G1/4	Lever/spring/lever	Black	COE	-0,9 ... 10	15	1,06	VR03 8602 02	34	VRX3 3678 02
	1/4 PTF	Lever/spring/lever	Black	COE	-0,9 ... 10	15	1,06	VR03 8602 02	34	VRX3 3678 22
	G1/8	Lever/lever/lever	Black	APB	-0,9 ... 10	12	0,44	VR03 8408 02	21	VRX3 3437 02
	1/8 PTF	Lever/lever/lever	Black	APB	-0,9 ... 10	12	0,44	VR03 8408 02	21	VRX3 3437 22
	G1/4	Lever/lever/lever	Black	APB	-0,9 ... 10	12	0,65	VR03 8602 02	34	VRX3 3637 02
	1/4 PTF	Lever/lever/lever	Black	APB	-0,9 ... 10	12	0,65	VR03 8602 02	34	VRX3 3637 22
	G1/8	Lever/lever/lever	Black	COE	-0,9 ... 10	12	0,44	VR03 8408 02	21	VRX3 3477 02
	1/8 PTF	Lever/lever/lever	Black	COE	-0,9 ... 10	12	0,44	VR03 8408 02	21	VRX3 3477 22
	G1/4	Lever/lever/lever	Black	COE	-0,9 ... 10	12	0,65	VR03 8602 02	34	VRX3 3677 02
	1/4 PTF	Lever/lever/lever	Black	COE	-0,9 ... 10	12	0,65	VR03 8602 02	34	VRX3 3677 22

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

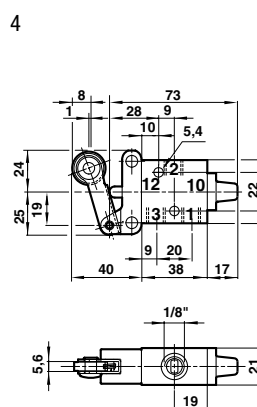
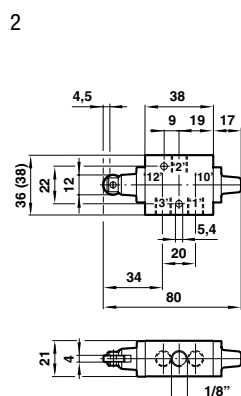
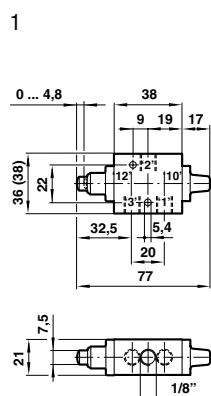
Option selector

Function	Substitute
3/2	030
5/2	X30
5/3	X33
Air port	Substitute
1/8"	4
1/4"	6
3/2 Mechanical actuated valves	Substitute
Plunger/spring	00
Roller/spring	02
Roller lever (heavy duty)/spring	93
3/2 Manual actuated valves	Substitute
Button/spring (Black)	04
Button/spring (Green)	06
Button/spring (Red)	05
Emergency stop/twist reset (Red)	82
Rotary knob/set reset (Black)	19
Button (shrouded)/spring (Black)	14
Button (shrouded)/spring (Green)	15
Button (shrouded)/spring (Red)	16
Lever/spring	38
Toggle/toggle	03
Lever/lever	37
Knob/knob	25
Knob/knob or pilot	27
Pedal/spring	81
Pedal/pedal	83

VR★★★★★2

Thread	Substitute
ISO G	0
PTF-SAE SHORT	2
5/2 Mechanical actuated valves	Substitute
Plunger/spring	40
Roller lever (heavy duty)/spring	93
5/2 and 5/3 Manual actuated valves	Substitute
Lever/lever/lever, APB	37
Lever/spring lever, APB	38
Toggle/toggle	43
Button / spring (Black)	44
Button / spring (Green)	45
Button / spring (Red)	46
Button (shrouded) / spring (Black)	54
Button (shrouded) / spring (Green)	55
Button (shrouded) / spring (Red)	56
Knob, push / knob, pull or pilot (Black)	65
Emergency stop / twist reset (Red)	68
Lever/lever	77
Lever/lever/lever, COE	77
Lever/spring	78
Lever/spring/lever, COE	78
Pedal/spring	82
Pedal/pedal	84
Button (palm) / spring (Red)	86
Button (palm) / spring (Green)	87
Button (palm) / spring (Black)	88

Dimensions



The plunger on this valve is designed for axial loading only.

Recommended cam rise:
max. 4.5 mm
Cam angle of approach: 30° max.
Cam speed: max. 8 m/min
Operating speed: 300 cpm

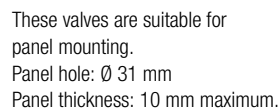
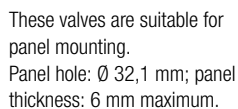
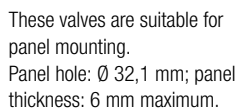
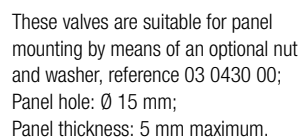
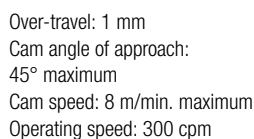
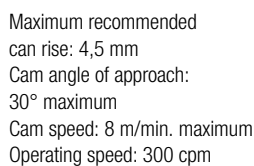
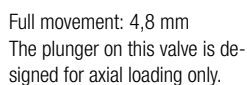
Over-travel: 1 mm
Cam angle of approach:
45° maximum
Cam speed: 8 m/min. maximum
Operating speed: 300 cpm

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

2 VALVES

139

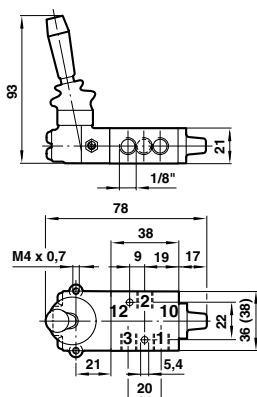
Online at www.imi-precision.com



MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

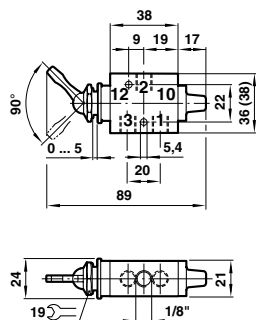
Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

12



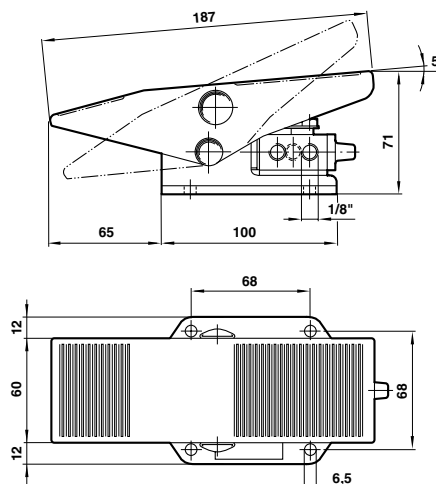
Model VR03 0437 02 features a positive detent in each position and is suitable for panel mounting by means of a bezel kit, reference 03 3437 64. Panel hole: Ø 24 mm. Panel thickness: 8 mm maximum.

13



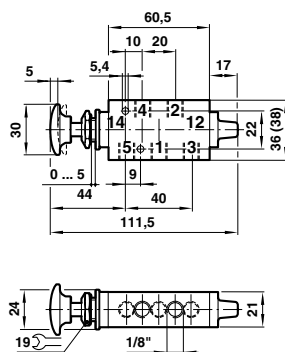
This valve is suitable for panel mounting. Panel hole: Ø 15 mm; Panel thickness: 5 mm maximum.

14



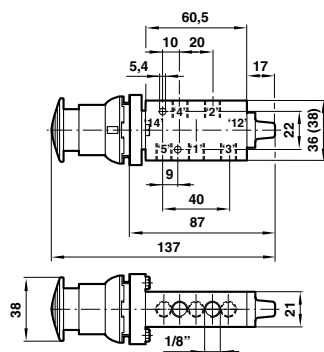
A foot guard is available for this valve, reference 03 0480 60.

15



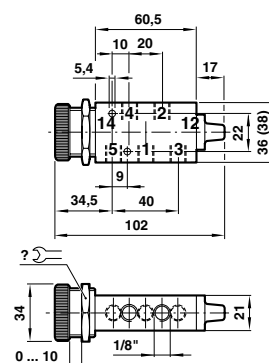
These valves are suitable for panel mounting by means of an optional nut and washer, reference 03 0430 00; Panel hole: Ø 15 mm; Panel thickness: 5 mm maximum.

16



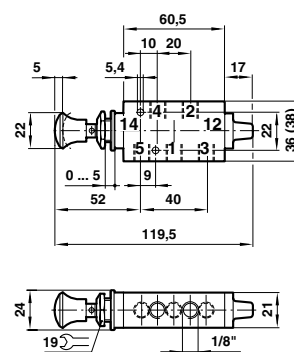
These valves are suitable for panel mounting. Panel hole: Ø 32,1 mm; panel thickness: 6 mm maximum.

17



These valves are suitable for panel mounting. Panel hole: Ø 31 mm. Panel thickness: 10 mm maximum.

18



This valve is suitable for panel mounting by means of an optional nut and washer, reference 03 0430 00. Panel hole: Ø 15 mm. Panel thickness: 5 mm maximum.

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

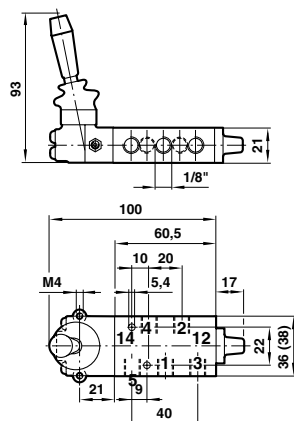
2

VALVES

141

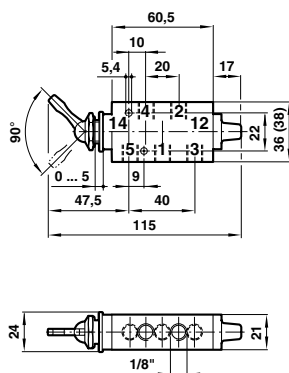
Online at www.imi-precision.com

19



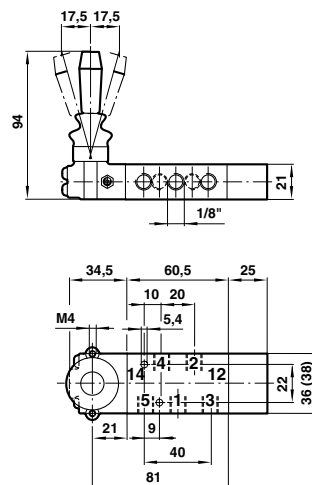
Both models are suitable for panel mounting by means of a bezel kit, reference 03 3437 64.
Panel hole: Ø 24 mm;
Panel thickness: 8 mm maximum.

20



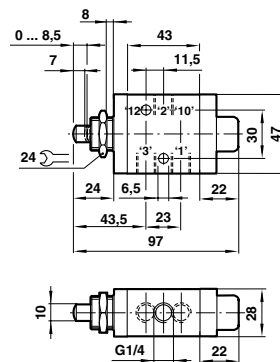
This valve is suitable for panel mounting.
Panel hole: Ø 15 mm;
Panel thickness: 5 mm maximum.

21



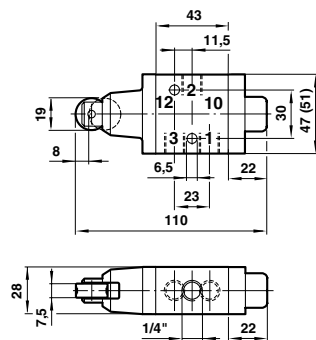
Panel hole: Ø 24 mm;
Panel thickness: 8 mm maximum.

22



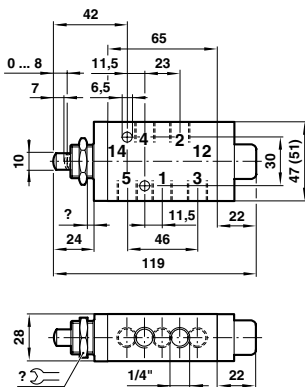
The plunger on this valve is designed for axial loading only.

23



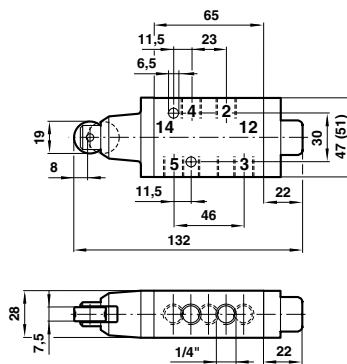
Cam angle of approach: 45° maximum
Cam speed: 6 m/min. maximum
Operating speed: 200 cpm

24



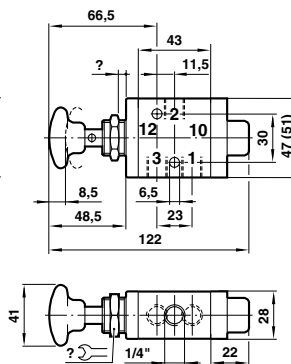
The plunger on this valve is designed for axial loading only.

25



Cam angle of approach: 45° maximum
Cam speed: 6 m/min. maximum
Operating speed: 200 cpm

26

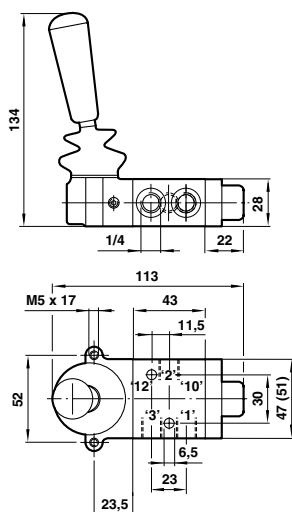


This valve is suitable for panel mounting and includes a nut and washer.
Panel hole: Ø 21 mm;
Panel thickness: 8 mm maximum.

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

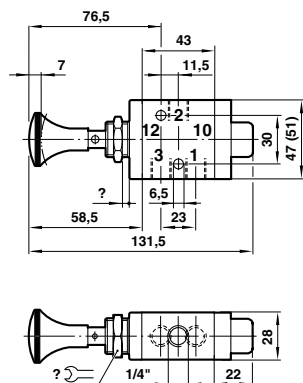
Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

27



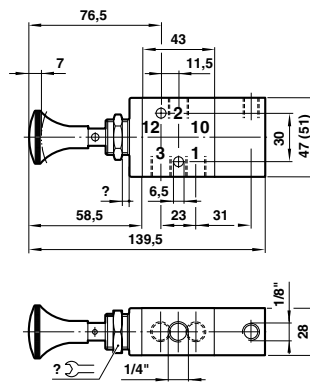
Model VR03063702 features a positive detent in each position.
Panel hole: Ø 31 mm;
Panel thickness: 8 mm maximum.

28



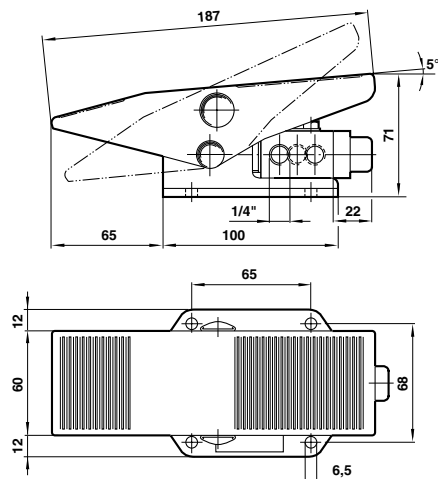
This valve is suitable for panel mounting and includes a nut and washer.
Panel hole: Ø 21 mm; Panel thickness: 8 mm maximum

29



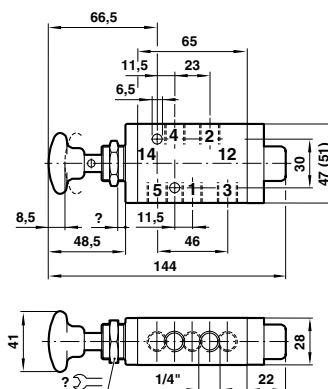
Reset pressure: 4 bar minimum
This valve is suitable for panel mounting and includes a nut and washer.
Panel hole: Ø 21 mm; Panel thickness: 8 mm maximum.

30



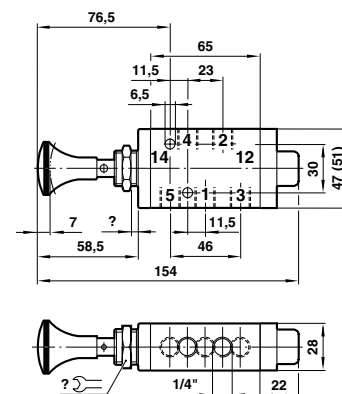
A foot guard is available for this valve, reference 03 0480 60.

31



This valve is suitable for panel mounting and includes a nut and washer.
Panel hole: Ø 21 mm; Panel thickness: 8 mm maximum.

32

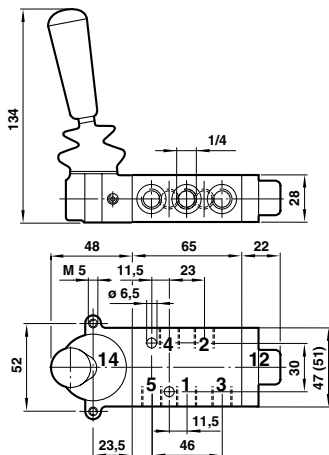


This valve is suitable for panel mounting and includes a nut and washer.
Panel hole: Ø 21 mm; Panel thickness: 8 mm maximum.

MANUALLY & MECHANICALLY ACTUATED SPOOL VALVE

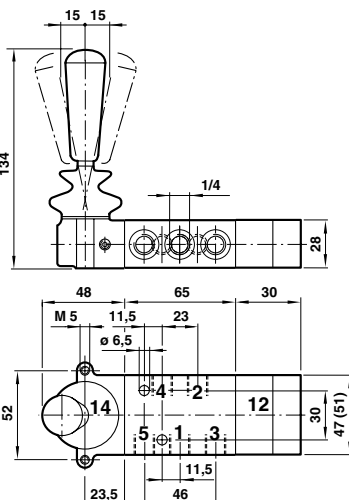
Super X 3/2, 5/2 and 5/3, 1/8", 1/4"

33



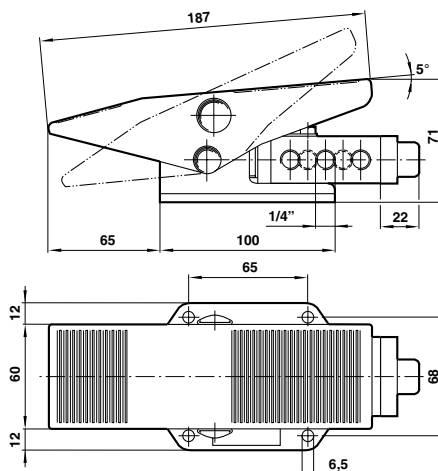
Model VRX3 0677 02 features a positive detent in each position.
Panel hole: Ø 31 mm;
Panel thickness: 8 mm maximum.

34



Panel hole: Ø 31 mm
Panel thickness: 8 mm maximum.

35



A foot guard is available for this valve, reference 03 0480 60.

MECHANICALLY ACTUATED HEAVY DUTY POPPET VALVE

SLV/15293/A 3/2, G1/4

- Robust corrosion resistant construction
- Dustproof and water ingress protected
- Position of levers may be adjusted

Technical Features

Medium:
Compressed air, filtered, lubricated and non-lubricated

Operation:
Poppet valve, directly actuated

Mounting:
Through-holes in valve body

Port size:
G1/4

Operating pressure:
NC 0,7 ... 10 bar
NO 0,7 ... 7 bar

Operating temperature:
-40°C ... +75°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Flow:
'1' – '2':

Cv	Kv	l/min
1,28	1,11	1258

'2' – '3':

Cv	Kv	l/min
0,86	0,74	844

Materials

Body, poppet and lever: Brass

Screws and roller: Stainless steel

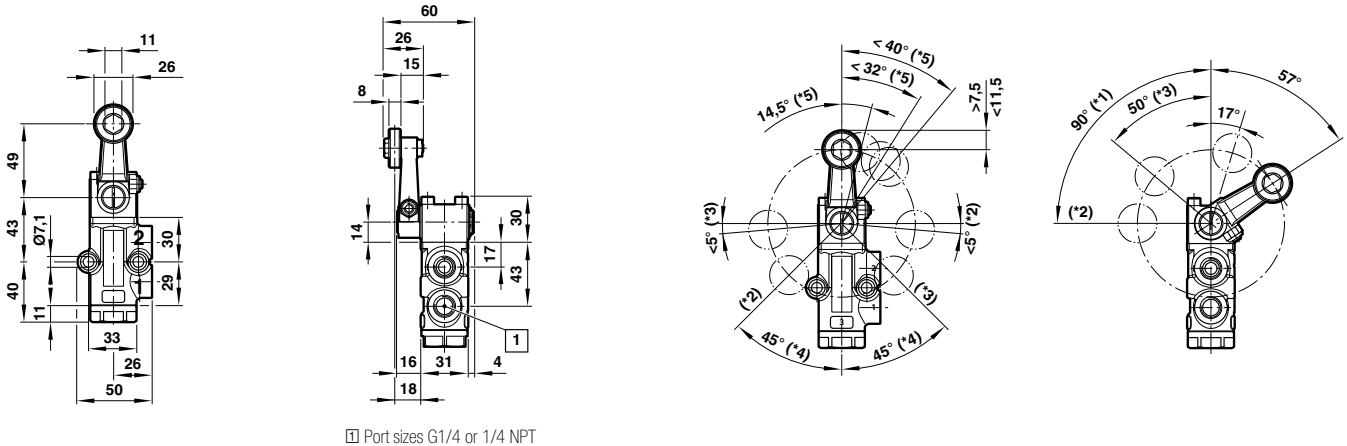
Seals: Low NBR



Technical Data

Symbol	Port Size	Operator/return	Operating pressure (bar)	Operating force at 0,7 bar at 10 bar		Weight (kg)	Spares kit	Drawing No.	Model
	G1/4	Roller/spring	NC 0,7 ... 10	1,5 Nm	1,8 Nm	0,77	SLV/15293/00	1	SLV/15293/A

Dimensions



Pre-travel: 14° maximum, exhaust seat closes
 Operating travel: 32°/7,5 mm minimum, including pre-travel
 Total movement of valve including over-travel:
 40°/11,5 mm maximum

- *Notes**
1. Operating lever must not be set to exceed this position at any time during operation.
 2. Maximum rest position of operating lever for valve operating clockwise.
 3. Maximum rest position of operating lever for valve operating anti-clockwise.
 4. Operating lever must not enter this arc at any time during operation.
 5. Valve may be operated either clockwise or anti-clockwise.
 6. Operating lever may be positioned at any angle on the operating spindle providing the conditions of operation in notes 1 ... 5 are maintained.

Operating mechanism may be rotated through 360° at 90° intervals.

2/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR95 G1/4 or 1/4 NPT

- Working from 0 bar up
- Short switching times
- Suited for fine vacuum down to 1,33 • 10⁻³ mbar • l/s
- Suited for outdoor use under critical environment conditions (see solenoid list)
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

For neutral gaseous and liquid fluids (with contaminated fluids, upstream installation of a dirt trap is recommended.)

Operation:

Solenoid direct operated poppet valve

Mounting position:

Optional, preferably with solenoid on top

Flow:

350 l/min.

Orifice:

3 mm

Port size:

G1/4, 1/4 NPT

Operating pressure:

0 ... 10 bar

Operating temperature:

-40°C ... +80°C, depending on solenoid system.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Housing: Brass

Seals: EPDM

other see option selector

Inner parts: Steel 1.4104 (430 F), brass



Technical Data

Symbol	Port size	Operating pressure bar	Material Seat seal	Housing	Temperature *2) (°C)	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	G1/4	0 ... 10	EPDM	brass	-40 ... +80	0,21	1	0700 or 5220	VR95B1613-01XXP
	1/4 NPT	0 ... 10	EPDM	brass	-40 ... +80	0,21	1	0700 or 5220	VR95R1613-01XXP

*1) xx = Insert solenoid code on 13th digit and voltage code on 14th digit, see below!

*2) Depending on solenoid system, see next pages.

Option selector

VR95★1613-01★★P

Port size	Substitute
G1/4	B
1/4 NPT	R

Additional versions on request.

Voltage	Substitute
24 V d.c.	3
36 V d.c.	4
72 V d.c.	A
110 V d.c.	7
Solenoids	Substitute
5220	1
0700	3

2/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR95 G1/4 or 1/4 NPT

● Solenoid operators

	Power consumption 24 V d.c. (W)	Rated current 24 V d.c. (mA)	Temperature range (°C)	Voltage tolerance (%)	Protection class *7)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model	Code
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10) 193 (72 V d.c.) *10) 139 (110 V d.c.)	-25 ... +40 -25 ... +60	+20/-30 (+15/-32) +10/-30 (+6/-32) () for 37,5 and 74 V d.c. only	IP 65 (with Connector) *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0700	3
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10) 120 (72 V d.c.) *10) 69 (110 V d.c.)	-40 ... +80	±30 (+25/-32) () for 37,5 and 74 V d.c. only	IP 65	M20 x 1,5 *6)	0,500	6	4	5220 *8)	1

*5) Required connector: type 0570275.

*6) Connector cable gland not supplied, see table »Accessories«.

*7) IP-Protection class according to EN60529.

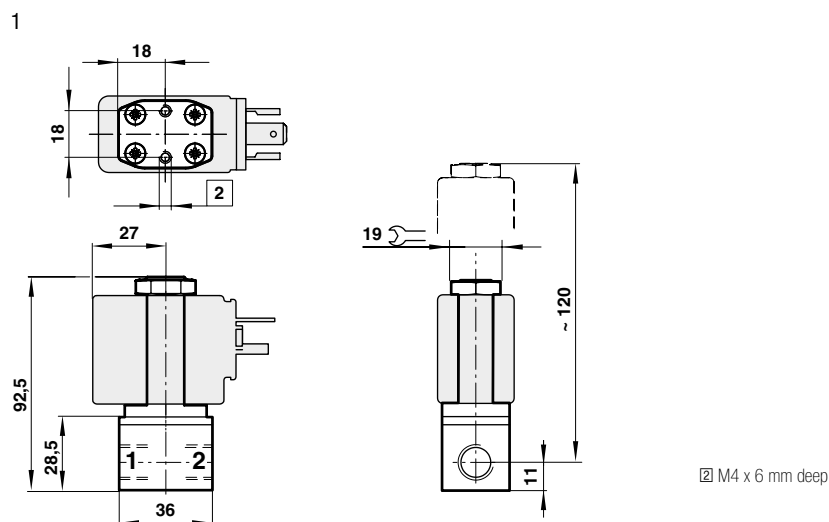
*8) Suitable for outdoor installation.

*10) Voltage range: 36 ... 37,5 d.c. and 72 ... 74 V d.c.

● Accessories

Cable gland				Connector
Thread	Cable Ø	Material	Model	
				
Page 2-62				0570275
M 20x1,5	5,0...9,0 mm	PA, UL94 V0	0110854	
M 20x1,5	6,0...12 mm	PA, UL94 V0	0110855	

● Dimensions - Valves

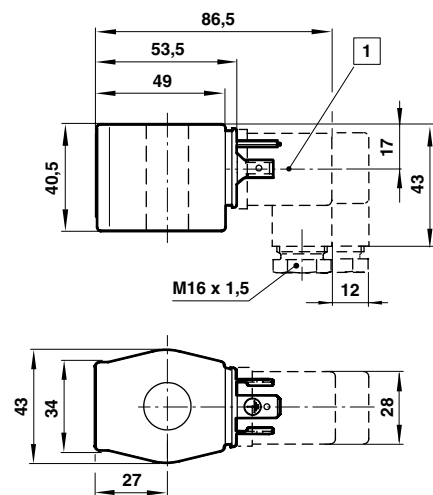


2/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR95 G1/4 or 1/4 NPT

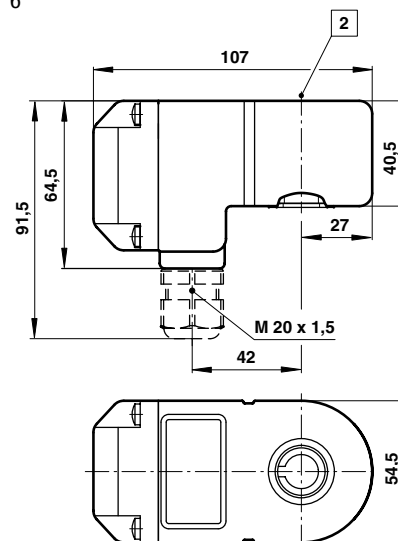
● Dimensions - Solenoids

3



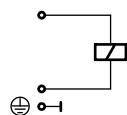
☐ Connector can be indexed by 4x90°
 ☐ Ø 13 (with spacer tube)

6

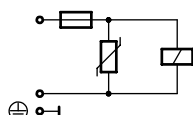


Circuit diagrams

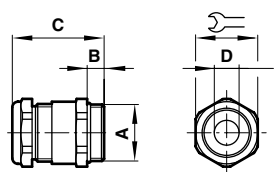
1



4



Cable gland



For cable Ø	A	B	C		Model
5 ... 9	M20 x 1,5	9	36	24	0110854
6 ... 12	M20 x 1,5	9	36	24	0110855

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR96 G1/4 or 1/4 NPT

- Working from 0 bar up
- Short switching times
- Suited for fine vacuum down to 1,33 • 10-3 mbar • l/s
- Suited for outdoor use under critical environmentconditions (see solenoid list)
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

For neutral gaseous and liquid fluids (with contaminated fluids, upstream installation of a dirt trap is recommended)

Operation:

Solenoid direct operated poppet valve

Mounting position:

Through-holes in valve body

Orifice:

3 & 4 mm

Port size:

G1/4, 1/4 NPT

Operating pressure:

See table below

Operating temperature:

-40°C ... +80°C, depending on solenoid system.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

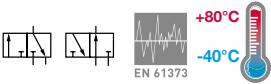
Materials

Housing: Brass

Seals: EPDM

other see option selector

Inner parts: Steel 1.4104 (430 F), brass



● Technical Data

Symbol	Port size	Orifice (mm)	Flow (l/min)	Operating pressure (bar)	Material Seat seal	Housing	Temperature *2) (°C)	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	G1/4	3	200	0 ... 10	EPDM	brass	-40 ... +80	0,32	1	0700 or 5220	VR96B4613-01XXP
	1/4 NPT	3	200	0 ... 10	EPDM	brass	-40 ... +80	0,32	1	0700 or 5220	VR96R4613-01XXP
	G1/4	4	350	9 ... 11	EPDM	brass	-40 ... +80	0,32	1	0800 or 5270	VR96B4614-01XXP
	1/4 NPT	4	350	9 ... 11	EPDM	brass	-40 ... +80	0,32	1	0800 or 5270	VR96R4614-01XXP
	G1/4	3	200	0 ... 9	EPDM	brass	-40 ... +80	0,50	2	0700 or 5220	VR96B3613-91XXP
	1/4 NPT	3	200	0 ... 9	EPDM	brass	-40 ... +80	0,50	2	0700 or 5220	VR96R3613-91XXP

*1) xx = Insert solenoid code on 13th digit and voltage code on 14th digit, see below!

*2) Depending on solenoid system, see next pages.

● Option selector

Port size	Substitute	VR96★★61★-★1★★P	Voltage	Substitute
G1/4	B		24 V d.c.	3
1/4 NPT	R		36 V d.c.	4
Function	Substitute		72 V d.c.	A
NO	3		110 V d.c.	7
NC	4		Solenoids	Substitute
Orifice (mm)	Substitute		5220, for orifice 3 mm only	1
3	3		5270, for orifice 4 mm only	2
4 (NC only)	4		0700, for orifice 3 mm only	3
			0800, for orifice 4 mm only	4
			Operating pressure	
			See table	

Additional versions on request.

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR96 G1/4 or 1/4 NPT

● Solenoid operators

	Power consumption 24 V d.c. (W)	Rated current 24 V d.c. (mA)	Temperature range (°C)	Voltage tolerance (%)	Protection class *7)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model	Code
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10 193 (72 V d.c.) *10 139 (110 V d.c.)	-25 ... +40 -25 ... +60	+20/-30 (+15/-32) +10/-30 (+6/-32)	IP 65 (with Connector *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0700	3
				() for 37,5 and 74 V d.c. only							
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10 193 (72 V d.c.) *10 139 (110 V d.c.)	-25 ... +40 -25 ... +60	+20/-30 (+15/-32) +10/-30 (+6/-32)	IP 65 (with Connector *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0800	4
				() for 37,5 and 74 V d.c. only							
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10 120 (72 V d.c.) *10 69 (110 V d.c.)	-40 ... +80 -40 ... +80	±30 (+25/-32) +30/-10 (+25/-22) *11)	IP 65	M20 x 1,5 *6)	0,500	6	4	5220 *8)	1
				() for 37,5 and 74 V d.c. only							
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10 120 (72 V d.c.) *10 69 (110 V d.c.)	-40 ... +80	±30 (+25/-32)	IP 65	M20 x 1,5 *6)	0,500	6	4	5270 *8)	2
				() for 37,5 and 74 V d.c. only							

*5) Required connector: type 0570275.

*6) Connector cable gland not supplied, see table »Accessories«.

*7) IP-Protection class according to EN60529.

*8) Suitable for outdoor installation.

*10) Voltage range: 36 ... 37,5 d.c. and 72 ... 74 V d.c.

*11) For NO function only.

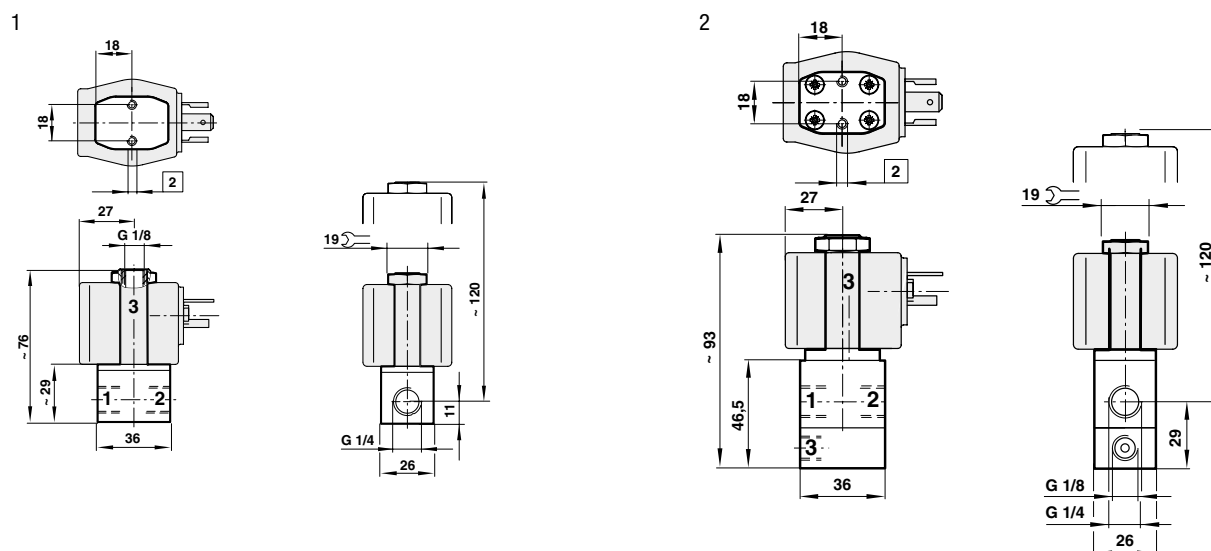
● Accessories

Cable gland			
Thread	Cable Ø	Material	Model
			
Page 2-64			
M 20x1,5	5,0...9,0 mm	PA, UL94 V0	0110854
M 20x1,5	6,0...12 mm	PA, UL94 V0	0110855

Connector

0570275

● Dimensions - Valves

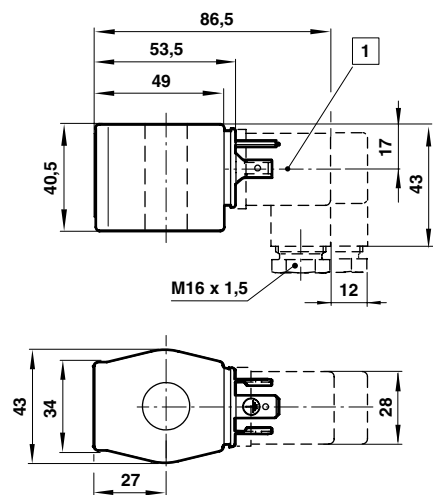


3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR96 G1/4 or 1/4 NPT

● Dimensions - Solenoids

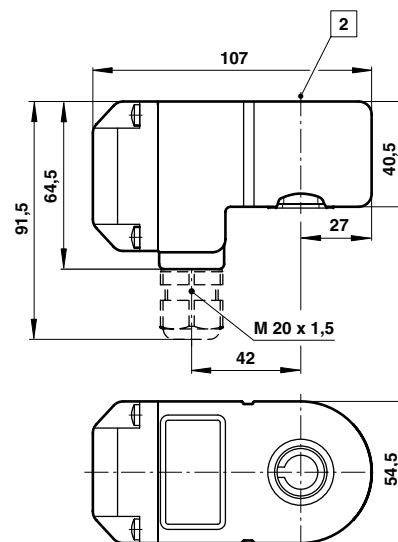
3



① Connector can be indexed by 4x90°

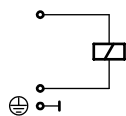
② Ø 16 or 13 (with spacer tube)

6

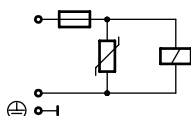


Circuit diagrams

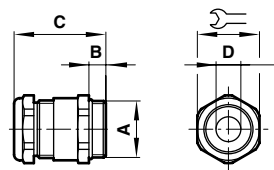
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4



Cable gland



For cable Ø	A	B	C		Model
5 ... 9	M20 x 1,5	9	36	24	0110854
6 ... 12	M20 x 1,5	9	36	24	0110855

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24 G1/4, 1/4 NPT or flanged with NAMUR interface

- Valve switches at power failure into starting position (mechanical spring return)
- Add-on manual override optional
- Suited for outdoor use under critical environment conditions (see solenoid list)
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, non-lubricated and dry
Other gase and liquid fluids on request

Operation:

Direct solenoid operated poppet valves

Flow direction:

Optional

Mounting position:

Any, but preferably with solenoid vertical

Flow:

Gaseous fluids: 340 l/min

Liquid fluids: Kv 0,34

Port size:

G1/4, 1/4 NPT or flanged
with NAMUR Interface

Orifice:

5 mm

Operating pressure:

0 ... 10 bar

Temperature valve:

-40°C ... +80°C, depending
on solenoid system.

Air supply must be dry enough to avoid ice formation
at temperatures below +2°C

Temperature solenoid:

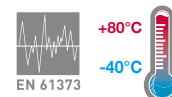
See table

Materials

Housing: Brass (standard), hard
anodized aluminium (NAMUR)

Seals: VMQ

Inner parts: Stainless steel, brass



● Models - With threaded connection, brass valves

Symbol	Port size	Operating pressure (bar)	Material Seat seal	Temperature *2) (°C)	Manual override	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	G1/4	0 ... 10	VMQ	-40 ... +80	without	0,65	1	0800 or 5270	VR24B9665-01XXP
	1/4 NPT	0 ... 10	VMQ	-40 ... +80	without	0,65	1	0800 or 5270	VR24R9665-01XXP
	G1/4	0 ... 10	VMQ	-40 ... +80	push only	0,70	2	0800 or 5270	VR24B9665-03XXP
	1/4 NPT	0 ... 10	VMQ	-40 ... +80	push only	0,70	2	0800 or 5270	VR24R9665-03XXP
	G1/4	0 ... 10	VMQ	-40 ... +80	turn and lock	0,70	3	0800 or 5270	VR24B9665-02XXP
	1/4 NPT	0 ... 10	VMQ	-40 ... +80	turn and lock	0,70	3	0800 or 5270	VR24R9665-02XXP

● Models - Namur version, hard anodized aluminium valves

Symbol	Port size	Operating pressure (bar)	Material Seat seal	Temperature *2) (°C)	Manual override *3)	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	G1/4	0 ... 10	VMQ	-40 ... +80	without	0,65	4	0800 or 5270	VR24U9565-01XXP
	1/4 NPT	0 ... 10	VMQ	-40 ... +80	without	0,65	4	0800 or 5270	VR24W9565-01XXP

*1) xx = Insert solenoid code on 13th digit and voltage code on 14th digit, see next page.

*2) Depending on solenoid system, see next page.

*3) Push only and turn and lock on request.

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24 G1/4, 1/4 NPT or flanged with NAMUR interface

Option selector

VR24★9★65-0★★★P

Port size	Substitute
G1/4	B
1/4 NPT	R
G1/4 Namur	U
1/4 NPT Namur	W
Housing material	Substitute
Aluminium anodized, Namur only	5
Brass , G1/4, 1/4 NPT only	6
Stainless steel (optional)	7

Voltage	Substitute
24 V d.c.	3
36 V d.c.	4
72 V d.c.	A
110 V d.c.	7
Solenoids	Substitute
5270	2
0800	4
Manual override	Substitute
None (Namur standard)	1
Push and turn	2
Push only	3

Solenoid operators

	Power consumption 24 V d.c. (W)	Rated current (m A)	Temperature range (°C)	Voltage tolerance (%)	Protection class *7)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model	Code
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10) 193 (72 V d.c.) *10) 139 (110 V d.c.)	-25 ... +40 -25 ... +60	+20/-30 (+15/-32) +10/-30 (+6/-32) () for 37,5 and 74 V d.c. only	IP 65 (with Connector) *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0800	4
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10) 120 (72 V d.c.) *10) 69 (110 V d.c.)	-40 ... +60 -40 ... +80	±30 (+25/-32) +30/-20 (+25/-22) () for 37,5 and 74 V d.c. only	IP 65	M20 x 1,5 *6)	0,50	6	4	5270 *8)	2

*5) Required connector: type 0570275; *6) Connector cable gland not supplied, see table »Accessories«.

*7) IP-Protection class according to EN60529; *8) Suitable for outdoor installation.

*10) Voltage range: 36 ... 37,5 d.c. and 72 ... 74 V d.c.

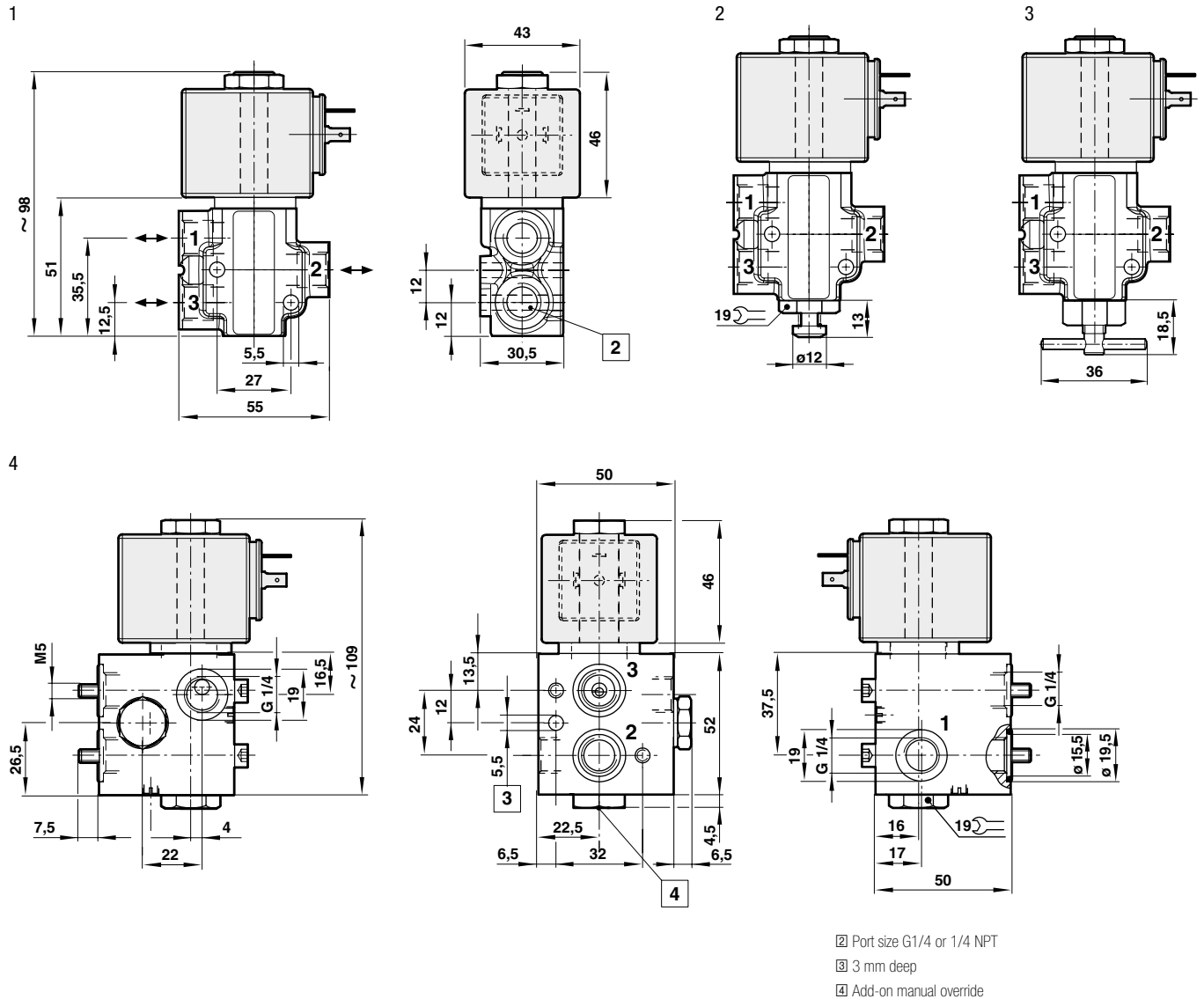
Accessories

Cable gland										
Thread	Cable Ø	Material	Model	Connector	Silencer *1)	Exhaust guard *2)	Manual override (without detent)	Manual override (with detent)	Flange plate	Yoke
										
M 20x1,5	5,0...9,0 mm	PA, UL94 V0	0110854	0570275	T40C2800 (G1/4)	0613422 (G1/4, 1/4 NPT)	0600205	0601765	0612790 (NAMUR single connection plate)	0540593
M 20x1,5	6,0...12 mm	PA, UL94 V0	0110855		MS002A (1/4 NPT)				0612791 (NAMUR-rip use in combination with 0612790, Alu)	

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

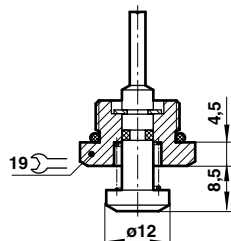
VR24 G1/4, 1/4 NPT or flanged with NAMUR interface

● Dimensions - Valves

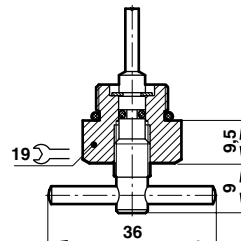


Add-on manual override

Without detent
Model: 0600205



With detent
Model: 0601765

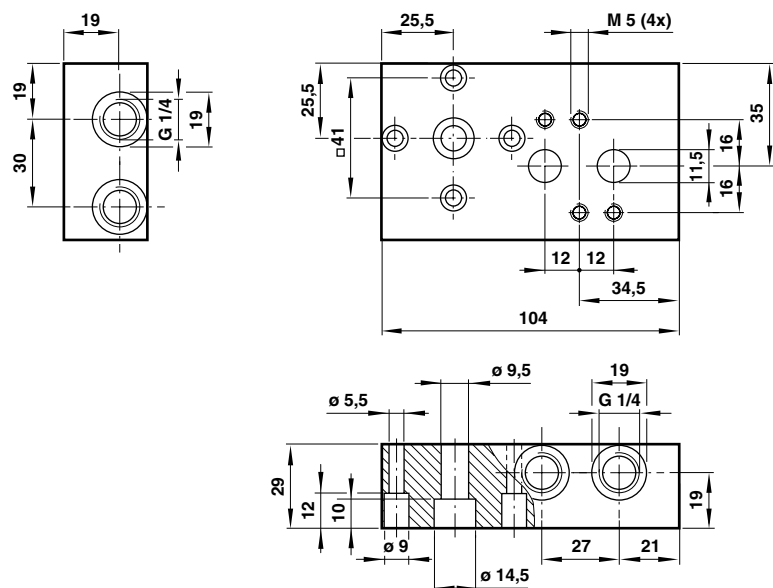


3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24 G1/4, 1/4 NPT or flanged with NAMUR interface

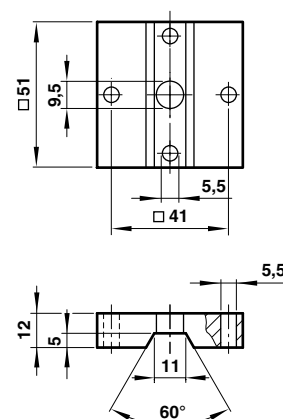
Single connection plate

Type: 0612790



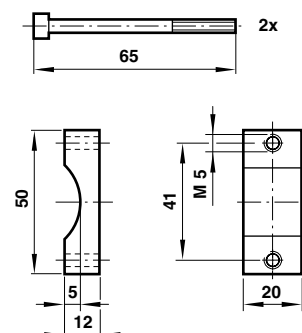
NAMUR slot

Type: 0612791



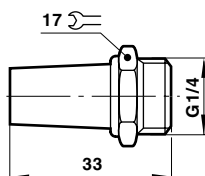
Yoke

Type: 0540593

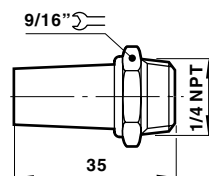


Silencer

Model: T40C2800

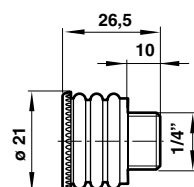


MS002A

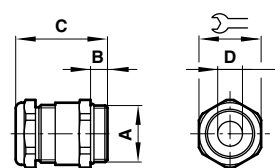


Exhaust guard

Model: 0613422



Cable gland



For cable Ø	A	B	C		Model
5 ... 9	M20 x 1,5	9	36	24	0110854
6 ... 12	M20 x 1,5	9	36	24	0110855

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24Z Special flange mounting option

- Valve switches at power failure into starting position (mechanical spring return)
- Suited for outdoor use under critical environment conditions (see solenoid list)
- Add-on manual override
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Compressed air, filtered, non-lubricated and dry
Other gase and liquid fluids on request

Operation:
Direct solenoid operated poppet valves

Flow direction:
Optional

Mounting position:
Any, but preferably with solenoid vertical

Flow:
Gaseous fluids: 340 l/min
Liquid fluids: Kv 0,34

Port size:
Flanged version, port 3 - G1/8

Orifice:
5 mm

Operating pressure:
0 ... 10 bar

Temperature valve:
-40°C ... +80°C, depending on solenoid system.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

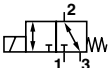
Temperature solenoid:
See table

Materials

Housing: Hard anodized aluminium
Seals: VMQ
Inner parts: Stainless steel, brass



Technical Data

Symbol	Port size 1 & 2	3	Operating pressure bar	Material Seat seal	Temperature *2) (°C)	Manual override *3)	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	Flange	G1/8	0 ... 10	VMQ	-40 ... +80	without	0,65	1	0800 or 5270	VR24Z9565-01XXP

*1) xx = Insert solenoid code on 13th digit and voltage code on 14th digit, see below!

*2) Depending on solenoid system, see next page.

*3) Push only and turn and lock on request.

Option selector

VR24Z9565-01★★P

Solenoids	Substitute	Voltage	Substitute
5270	2	24 V d.c.	3
0800	4	36 V d.c.	4
		72 V d.c.	A
		110 V d.c.	7

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24Z Special flange mounting option

● Solenoid operators

	Power consumption 24 V d.c. (W)	Rated current (mA)	Temperature range (°C)	Voltage tolerance (%)	Protection class *7)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model	Code
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10) 193 (72 V d.c.) *10) 139 (110 V d.c.)	-25 ... +40 -25 ... +60	+20/-30 (+15/-32) +10/-30 (+6/-32) () for 37,5 and 74 V d.c. only	IP 65 (with Connector *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0800	4
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10) 120 (72 V d.c.) *10) 69 (110 V d.c.)	-40 ... +60 -40 ... +80	±30 (+25/-32) +30/-20 (+25/-22) () for 37,5 and 74 V d.c. only	IP 65	M20 x 1,5 *6)	0,50	6	4	5270 *8)	2

*5) Required connector: type 0570275; *6) Connector cable gland not supplied, see table »Accessories«.

*7) IP-Protection class according to EN60529; *8) Suitable for outdoor installation.

*10) Voltage range: 36 ... 37,5 d.c. and 72 ... 74 V d.c.

● Accessories

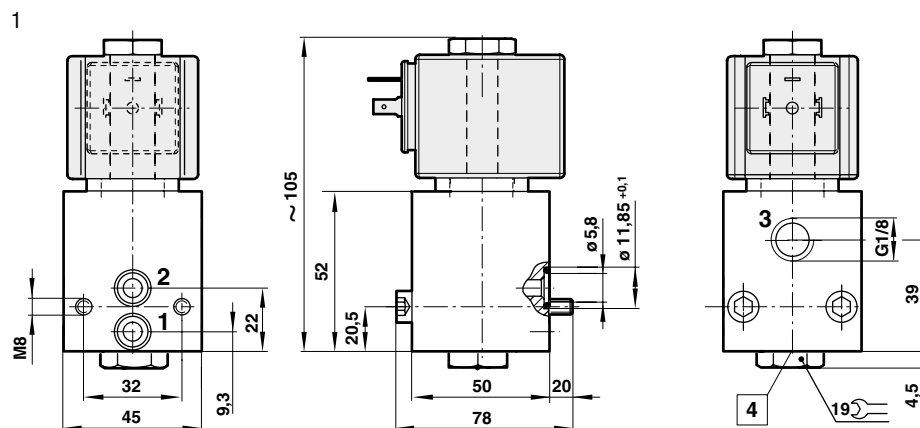
Cable gland								
Thread	Cable Ø	Material	Model	Connector	Silencer *1)	Exhaust guard *2)	Manual override (without detent)	Manual override (with detent)
								
M 20x1,5	5,0...9,0 mm	PA, UL94 V0	0110854	0570275	T40C1800 (G1/8)	0613421 (G1/4, 1/4 NPT)	0600205	0601765
M 20x1,5	6,0...12 mm	PA, UL94 V0	0110855		MS001A (1/8 NPT)			

*1) For indoor use.

*2) For outdoor use.

*3) Please order the connector 160231828 (from G1/8 to G1/4) separately.

● Dimensions - Valves



☐ Add-on manual override, below

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR24Z Special flange mounting option

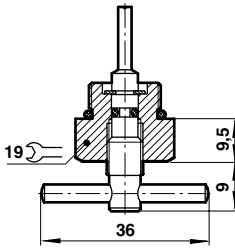
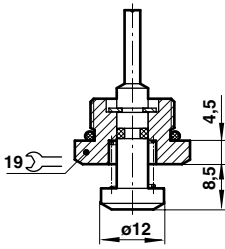
Add-on manual override

Without detent

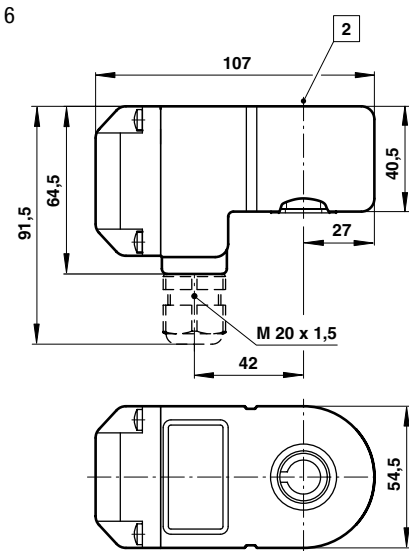
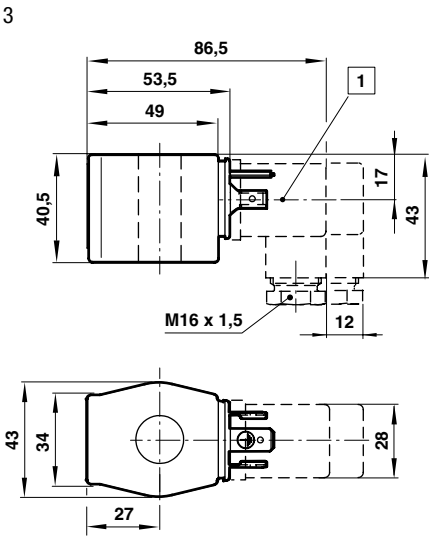
Model: 0600205

With detent

Model: 0601765



Dimensions - Solenoids



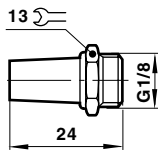
- 1 Connector can be indexed by 4x90°
- 2 Ø 16 or 13 (with spacer tube)

Circuit diagrams



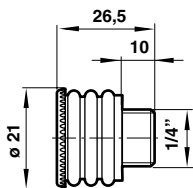
Silencer

Model: T40C1800

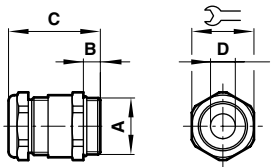


Exhaust guard

Model: 0613422



Cable gland



For cable Ø	A	B	C		Model
5 ... 9	M20 x 1,5	9	36	24	0110854
6 ... 12	M20 x 1,5	9	36	24	0110855

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR98 G1/2, 1/2 NPT

- Valve switches at power failure into starting position (mechanical spring return)
- Suited for outdoor use under critical environment conditions (see solenoid list)
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, filtered, non-lubricated and dry

Operation:

Direct solenoid operated poppet valves

Flow direction:

Optional

Mounting position:

Any, but preferably with solenoid vertical

Flow:

1000 l/min

Port size:

G1/2, 1/2 NPT

Orifice:

8 mm

Operating pressure:

0 ... 10 bar

Temperature valve:

-40°C ... +60°C, depending on solenoid system.

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Housing: Brass

Seal: SNBR (special NBR)

Inner parts: Stainless steel, brass



Models - With threaded connection, brass valves

Symbol	Port size	Operating pressure bar	Material Seat seal	Temperature *2) range °C	Manual override	Weight (kg)	Dimension No.	Solenoid group	Model *1)
	G1/2	0 ... 10	SNBR	-40 ... +60	without	0,90	1	0800 or 5270	VR98D9678-01XXP
	1/2 NPT	0 ... 10	SNBR	-40 ... +60	without	0,90	1	0800 or 5270	VR98T9678-01XXP

*1) xx = Insert voltage code on 14th digit, see below.

*2) Depending on solenoid system, see next page.

Option selector

VR98★9678-01★★P

Port size	Substitute
G1/2	D
1/2 NPT	T

Additional versions on request.

Voltage	Substitute
24 V d.c.	3
36 V d.c.	4
72 V d.c.	A
110 V d.c.	7
Solenoids	Substitute
5270	2
0800	4

3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR98 G1/2, 1/2 NPT

● Solenoid operators

	Power consumption 24 V d.c. (W)	Rated current (mA)	Temperature range (°C)	Voltage tolerance (%)	Protection class *7)	Electrical connection	Weight (kg)	Dimension No.	Circuit diagram No.	Model	Code
	16,9	703 (24 V d.c.) 425 (36 V d.c.) *10) 193 (72 V d.c.) *10) 139 (110 V d.c.)	-25 ... +40 -25 ... +60	±20 (+15/-22) *9) +10/-20 (+6/-22) *9) () for 37,5 and 74 V d.c. only	IP 65 (with Connector *5)	Connector DIN EN 175301-803 Form A *6)	0,26	3	1	0800	4
	8,9	369 (24 V d.c.) 222 (36 V d.c.) *10) 120 (72 V d.c.) *10) 69 (110 V d.c.)	-40 ... +60 -40 ... +80	+30/-15 (+25/-17) +30/-10 (+25/-12) () for 37,5 and 74 V d.c. only	IP 65	M20 x 1,5 *6)	0,50	6	4	5270 *8)	2

*5) Required connector: type 0570275.

*6) Connector cable gland not supplied, see table »Accessories«.

*7) IP-Protection class according to EN60529.

*8) Suitable for outdoor installation.

*9) Working pressure applied to port 3: -16%.

*10) Voltage range: 36 ... 37,5 d.c. and 72 ... 74 V d.c.

● Accessories

Cable gland						
Thread	Cable Ø	Material	Model	Connector	Silencer *1)	Exhaust guard *2)
						
M 20x1,5	5,0...9,0 mm	PA, UL94 V0	0110854	0570275	T40C4800 (G1/2)	0613423 (G1/2, 1/2NPT)
M 20x1,5	6,0...12 mm	PA, UL94 V0	0110855		MS004A (1/2 NPT)	

*1) For indoor use only.

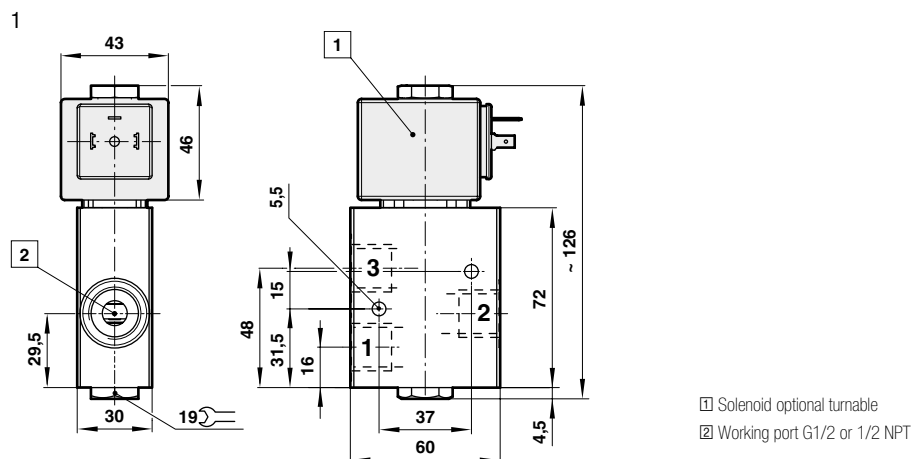
*2) For outdoor use.

*3) Useable with the indirect actuated valves only.

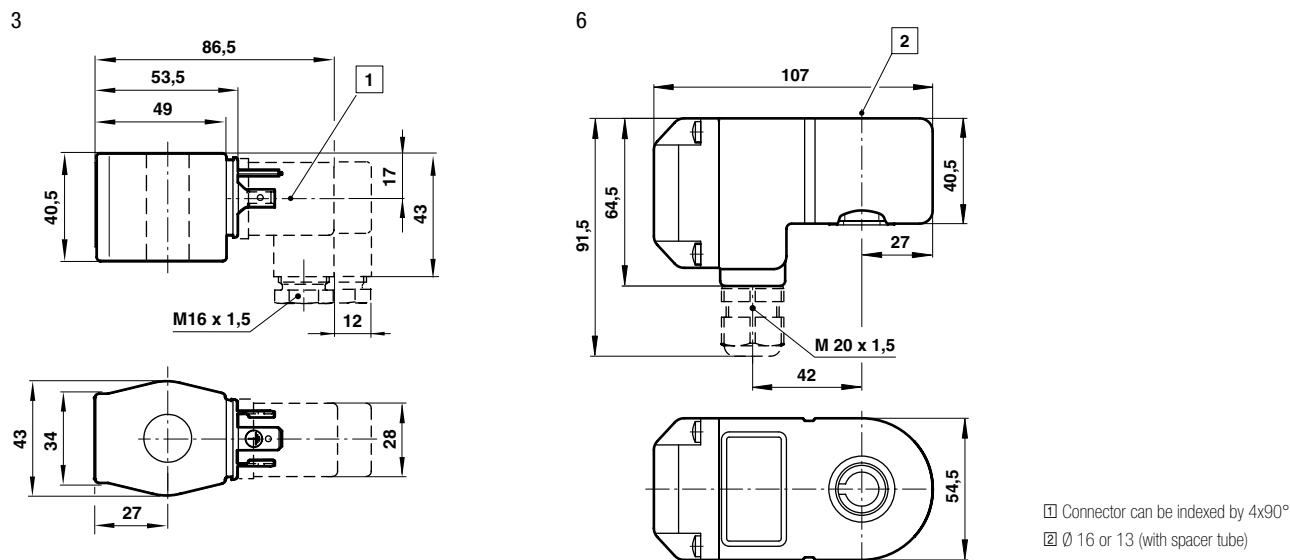
3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

VR98 G1/2, 1/2 NPT

● Dimensions - Valves



● Dimensions - Solenoids



3/2 WAY DIRECT SOLENOID OPERATED POPPET VALVES

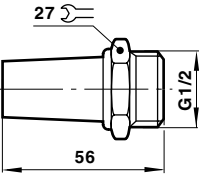
VR98 G1/2, 1/2 NPT

Circuit diagrams

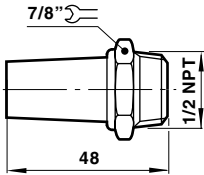


Silencer

Model: T40C4800

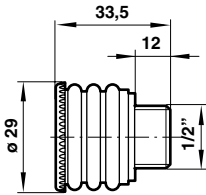


Model: MS004A

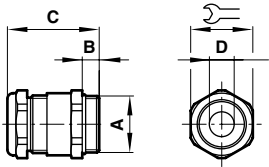


Exhaust guard

Model: 0613423



Cable gland



For cable Ø	A	B	C		Model
5 ... 9	M20 x 1,5	9	36	24	0110854
6 ... 12	M20 x 1,5	9	36	24	0110855

2/2 WAY MINIMUM PRESSURE VALVE

NMPV 3/8", 1/2" & 3/4" or interface version

- The valve fully opens when supply pressure is higher than setting point, otherwise closed (low hysteresis)
- Integral non-return valve as standard
- Optional sub-base version available
- Setting point can be locked
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air

Maximum inlet pressure:

30 bar

Set pressure range:

2 ... 7,5 bar

Flow:

2000 l/min at P1 = 8,5 bar,
set pressure = 6,5 bar

Port sizes:

G3/8, G1/2 & G3/4

3/8 NPT, 1/2 NPT & 3/4 NPT

Mounting position:

Optional

Fluid/Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation
at temperatures below +2°C

Materials

Body: Hard anodized aluminium

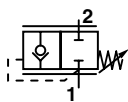
Bonnet & adjusting screw: Stainless steel 316 (1.4404)

Internal parts: Steel, aluminium

Seal: NBR, VMQ



● Standard model with non-return valve

Symbol	Port size	Set pressure (bar)	Weight (kg)	Model *
	G3/8	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,913	NMPV-P3G-75N
	G1/2	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,905	NMPV-P4G-75N
	G3/4	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,890	NMPV-P6G-75N
	3/8 NPT	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,913	NMPV-P3A-75N
	1/2 NPT	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,905	NMPV-P4A-75N
	3/4 NPT	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	0,890	NMPV-P6A-75N
	Interface	7,5 ^{+0,3} bar (109 ^{+4,35} psi)	1,230	NMPV-ZZZ-75N

* Please order mounting nut or nut with bracket separately.

● Option selector

Interface	Substitute	Non-return option	Substitute
Inline (standard)	P	With (standard)	M
Sub-base (on request)	N	Without	X
Port size	Substitute	Set pressure *	Substitute
3/8"	3	No setting	00
1/2"	4	6,5 ^{+0,3} bar (94 ^{+4,35} psi)	65
3/4"	6	6,7 ^{+0,3} bar (97 ^{+4,35} psi)	67
		7,5 ^{+0,3} bar (109 ^{+4,35} psi)	75
Thread form	Substitute		
ISO G parallel	G		
NPT	A		
Interface	Z		

* Other set pressures available on request.

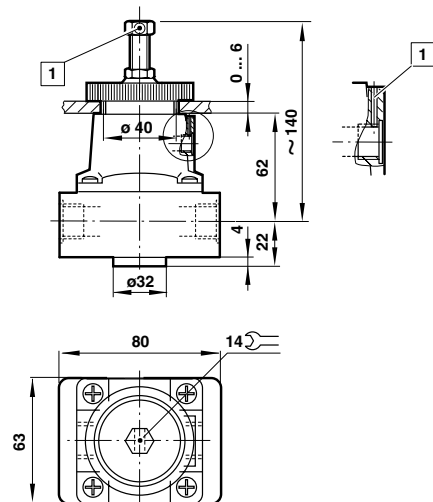
* Other set pressures available on request.

2/2 WAY MINIMUM PRESSURE VALVE

NMPV 3/8", 1/2" & 3/4"

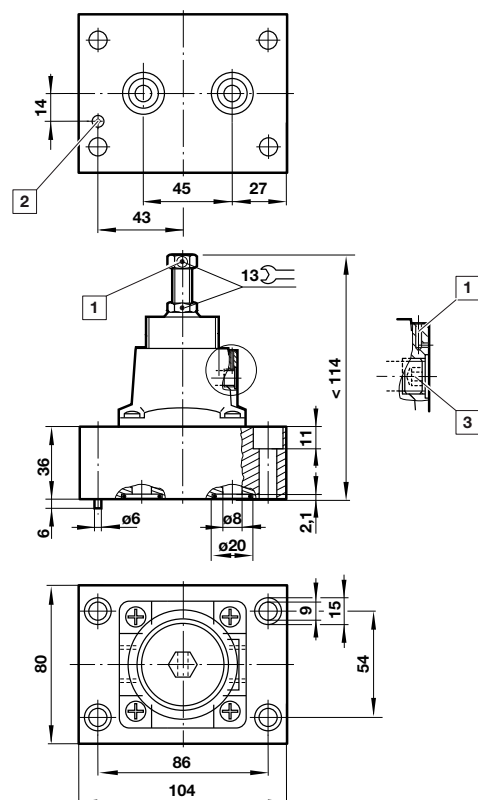
● Dimensions

Interface model



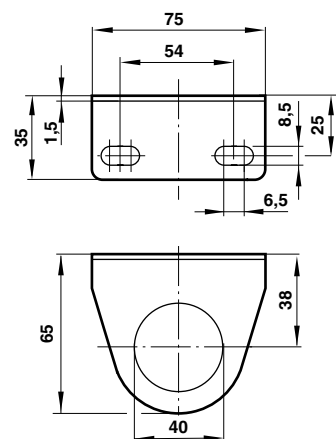
□ Hole for seal wire

Threaded models



□ Hole for seal wire
 □ Coding stud
 □ Plugged port

Neck mounting bracket



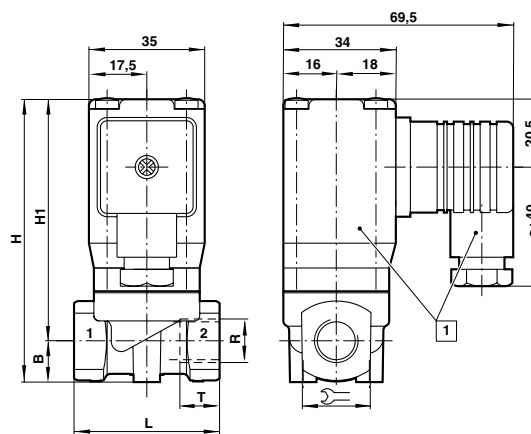
2/2 WAY VALVES (SOLENOID ACTUATED DIAPHRAGM WITH FORCED LIFTING)

82530 1/4" ... 1/2"

Voltage and frequency codes

Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Power consumption Hold
024	00	24 V d.c.	-	12 W	12 W
036	00	36 V d.c.	-	12 W	12 W
110	00	110 V d.c.	-	12 W	12 W
024	50	24 V a.c.	50 Hz	20 VA	20 VA
110	50	110 V a.c.	50 Hz	20 VA	20 VA
230	50	230 V a.c.	50 Hz	20 VA	20 VA
120	60	120 V a.c.	60 Hz	20 VA	20 VA
220	60	220 V a.c.	60 Hz	20 VA	20 VA

● Dimensions



☐ Solenoid rotatable 4 x 90°
Socket turnable 4 x 90° (socket included)

Supply port	Orifice (mm)	B	H	H1	L	T	☐	Model
G1/4	10	14	87	73	44	12	21	8253000.8001
1/4 NPT	10	14	87	73	44	10	21	8263000.8001
G3/8	10	14	87	73	44	12	21	8253100.8001
3/8 NPT	10	14	87	73	44	10	21	8263100.8001
G1/2	10	14	90	74,5	60	15	27	8253200.8001
1/2 NPT	10	14	90	74,5	60	13	27	8263200.8001

● Special applications

Symbol	Application	Port size	Orifice (mm)	Flow kv value (m³/h)	Operating pressure (bar)	Fluid temperature	Ambient/ Pilot temperature	Sealing	Voltage (V d.c.)	Model
	Clean water /air	G1/4	4	0,37	0 ... 0,25	-10 ... +90°C	-10 ... +50°C	NBR	24	8496874.8080.02400
	Hand wash basin tab	G1/4	5	0,17	0 ... 0,2	0 ... +50°C	0 ... +50°C	EDPM	24	8495896.8087.02400
	Hand wash basin tab	G1/4	5	0,17	0 ... 0,2	0 ... +50°C	0 ... +50°C	EDPM	36	8495896.8087.03600
	Hand wash basin tab	G1/4	5	0,17	0 ... 0,2	0 ... +50°C	0 ... +50°C	EDPM	110	8495896.8087.11000
	Clean water /air	G3/8	10	1,7	0 ... 1,0	0 ... +40°C	-10 ... +40°C	NBR	24	8497834.8080.02400

2/2 WAY VALVES (PILOT ACTUATED)

82710 1/4" ... 1/2"

- Quick release valve for Pantograph systems
- One-piece diaphragm
- Clear compact design
- High flow rate
- Aluminium or stainless steel body
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Neutral gases and liquids

Operation:
Remote pilot operated

Mounting:
Internal threads

Port size:
G1/4 ... G1/2 or 1/4 NPT ... 1/2 NPT

Pilot port:
G1/8

Operating pressure:
-0,9 ... 6 bar

Pilot pressure:
3 ... 8 bar

Fluid temperature:
-10°C ... +90°C/150°C optional

Ambient temperature:
-10°C ... +50°C/150°C optional

Storage temperature:
-40°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Brass, PPO (cover)

Seat Seal: Fabric reinforced NBR diaphragm (EPDM or FPM optional)



Models - 2/2 way normally closed valves

Symbol	Size	Flow kv value (m³/h)	Operating pressure (bar)	Pilot pressure (bar)	Weight (kg)	Model
	G1/4	1,9	-0,9 ... 6	3 ... 8	0,75	8271000.0000.00000
	1/4 NPT	1,9	-0,9 ... 6	3 ... 8	0,75	8275000.0000.00000
	G3/8	2,4	-0,9 ... 6	3 ... 8	0,72	8271100.0000.00000
	3/8 NPT	2,4	-0,9 ... 6	3 ... 8	0,72	8275100.0000.00000
	G1/2	2,9	-0,9 ... 6	3 ... 8	0,70	8271200.0000.00000
	1/2 NPT	2,9	-0,9 ... 6	3 ... 8	0,70	8275200.0000.00000

Special applications

Symbol	Application	Port size	Flow kv value (m³/h)	Operating pressure (bar)	Pilot pressure (bar)	Fluid temperature	Ambient / Pilot temperature	Sealing	Model
	Drain valve (general purpose)	G1/4	1.9	-0.9 ... 6	3 ... 8	0 ... +90°C	0 ... +50°C	NBR	8271099.0000.00000
	Odour-trap drain valve	G1/4	1.9	-0.9 ... 6	3 ... 8	0 ... +120°C	-10 ... +50°C	EPDM	8495488.0000.00000
	Odour-trap drain valve	G1/2	2.9	-0.9 ... 6	3 ... 8	0 ... +120°C	-10 ... +50°C	EPDM	8496443.0000.00000
	Drain valve (general purpose)	G1/2	2.9	0 ... 2.5	1.5 ... 8	0 ... +90°C	0 ... +50°C	NBR	8496564.0000.00000
	Oil carry over prevention – drain valve	G1/4	1.9	-0.9 ... 10	3 ... 8	0 ... +150°C	0 ... +150°C	FPM	8499330.0000.00000

Option selector

827★★★★.0000.00000

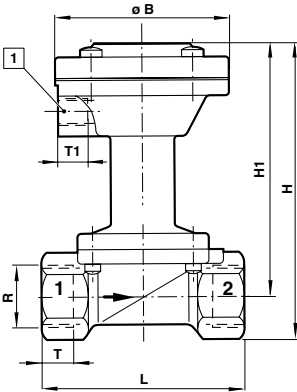
Thread form	Substitute
ISO G parallel	1
NPT	5
Port size	Substitute
1/4"	0
3/8"	1
1/2"	2

Valve options	Substitute
NC (normally closed) Standard	00
NO (normally open)	01
Seat seal FPM	03
Seat seal EPDM	14
Body stainless steel	51

2/2 WAY VALVES (PILOT ACTUATED)

82710 1/4" ... 1/2"

● Dimensions



□ Pilot port G1/8 or 1/8 NPT

Body brass

Supply port (R)	Ø B	H	H1	L	T	T1	Model
G1/4	60	101	86	67	12	10	8271000.0000.00000
1/4 NPT	60	101	86	67	10	9	8275000.0000.00000
G3/8	60	101	86	67	12	10	8271100.0000.00000
3/8 NPT	60	101	86	67	10.5	9	8275100.0000.00000
G1/2	60	101	86	67	14	10	8271200.0000.00000
1/2 NPT	60	101	86	67	13.5	9	8275200.0000.00000

2/2 WAY VALVES (PILOT ACTUATED)

84500, 84720 1/2" ... 2"

- Large size drain or shut-off valve
- High flow rate
- Suitable for contaminated process fluids
- Damped closing (Valves closes against flow direction)
- Suitable for lower case vacuum up to max. 90%
- Optical position indicator is standard
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Neutral gases and liquids

Operation:
Remote pilot operated

Mounting:
Internal threads

Port size:
G1/2 ... G2 or 1/2 NPT ... 2 NPT

Pilot port:
G1/4 or 1/4 NPT

Operating pressure:
0 ... 16 bar see table

Pilot pressure:
3,5 ... 10 bar

Fluid temperature:
-10°C ... +180°C

Ambient temperature:
-10°C ... +60°C

Storage temperature:
-40°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C (+35°F).

Materials

Body: Brass,

Seat Seal: NBR

Internal parts: Brass, stainless steel

Actuator: Polymer



Models - 2/2 way normally closed valves

Symbol	Size	Flow kv value (m³/h)	Op. pressure act. Ø 50 (bar)	Op. pressure act. Ø 70 (bar)	Pilot pressure (bar)	Weight act. Ø 50 (kg)	Weight act. Ø 70 (kg)	Model actuator Ø 50	Model actuator Ø 70
	G1/2	4,8	0 ... 16	0 ... 16	3,5 ... 10	1,3	1,4	8472200.0000.00000	8450200.0000.00000
	1/2 NPT	4,8	0 ... 16	0 ... 16	3,5 ... 10	1,3	1,4	8473200.0000.00000	8451200.0000.00000
	G3/4	10	0 ... 8	0 ... 10	3,5 ... 10	1,4	1,5	8472300.0000.00000	8450300.0000.00000
	3/4 NPT	10	0 ... 8	0 ... 10	3,5 ... 10	1,4	1,5	8473300.0000.00000	8451300.0000.00000
	G1	14	0 ... 5	0 ... 10	3,5 ... 10	1,7	1,8	8472400.0000.00000	8450400.0000.00000
	1 NPT	14	0 ... 5	0 ... 10	3,5 ... 10	1,7	1,8	8473400.0000.00000	8451400.0000.00000
	G1 1/4	23	-	0 ... 7	3,5 ... 10	-	2,4	-	8450500.0000.00000
	1 1/4 NPT	23	-	0 ... 7	3,5 ... 10	-	2,4	-	8451500.0000.00000
	G1 1/2	30	-	0 ... 4,5	3,5 ... 10	-	2,7	-	8450600.0000.00000
	1 1/2 NPT	30	-	0 ... 4,5	3,5 ... 10	-	2,7	-	8451600.0000.00000
	G2	37	-	0 ... 3	3,5 ... 10	-	3,9	-	8450700.0000.00000
	2 NPT	37	-	0 ... 3	3,5 ... 10	-	3,9	-	8451700.0000.00000

Option selector

84★★★★.0000.00000

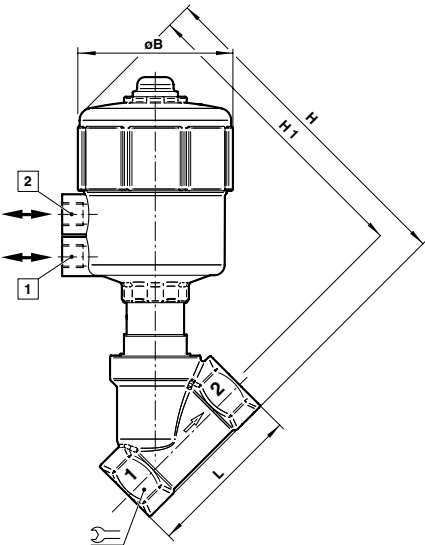
Actuator size	Substitute
Ø 50 (G)	72
Ø 50 (NPT)	73
Ø 70 (G)	50
Ø 70 (NPT)	51
Port size	Substitute
1/2"	2
3/4"	3
1"	4
1 1/4"	5
1 1/2"	6
2"	7

Valve options	Substitute
NC (normally closed) Standard	00
NO (normally open)	01
Double acting	08
Double electrical position indicator	23
NAMUR interface plate	50

2/2 WAY VALVES (PILOT ACTUATED)

84500, 84720 1/2" ... 2"

● Dimensions



- Pilot port (normally closed) G1/4 or 1/4 NPT
- ▣

Pilot port (normally open) G1/4 or 1/4 NPT

2/2 way valves

Supply port	Orifice	Ø B	H	H1	L		Model
G1/2	15	66	154	140,5	65	27	8472200.0000.00000
1/2 NPT	15	66	154	140,5	65	27	8473200.0000.00000
G3/4	20	66	160	144	75	32	8472300.0000.00000
3/4 NPT	20	66	160	144	75	32	8473300.0000.00000
G1	25	66	171	150,5	90	41	8472400.0000.00000
1 NPT	25	66	171	150,5	90	41	8473400.0000.00000
G1/2	15	89,5	177,5	164	65	27	8450200.0000.00000
1/2 NPT	15	89,5	177,5	164	65	27	8451200.0000.00000
G3/4	20	89,5	184	168	75	32	8450300.0000.00000
3/4 NPT	20	89,5	184	168	75	32	8451300.0000.00000
G1	25	89,5	194,5	174	90	41	8450400.0000.00000
1 NPT	25	89,5	194,5	174	90	41	8451400.0000.00000
G1 1/4	32	89,5	209,5	184,5	110	50	8450500.0000.00000
1 1/4 NPT	32	89,5	209,5	184,5	110	50	8451500.0000.00000
G1 1/2	40	89,5	208,5	186	120	55	8450600.0000.00000
1 1/2 NPT	40	89,5	208,5	186	120	55	8451600.0000.00000
G2	50	89,5	229,5	194,5	150	70	8450700.0000.00000
2 NPT	50	89,5	229,5	194,5	150	70	8451700.0000.00000

2/2 WAY VALVES (PILOT ACTUATED)

82180, 82280 1/2" ... 2"

- Large size drain or shut-off valve
- High flow rate
- Suitable for contaminated process fluids
- Damped closing (valves closes against flow direction)
- Suitable for vacuum up to max. 90%
- Steel operating for higher operating pressure
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:
Neutral gases and liquids

Operation:
Remote pilot operated

Mounting:
Internal threads

Port size:
G1/2 ... G2 or 1/2 NPT ... 2 NPT

Pilot port:
G1/4 or 1/4 NPT

Operating pressure:
0 ... 16 bar see table

Pilot pressure:
3,5 ... 10 bar

Fluid temperature:
-10°C ... +180°C

Ambient temperature:
-10°C ... +60°C

Storage temperature:
-40°C

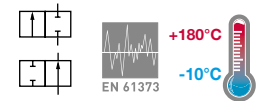
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Brass,

Seat Seal: NBR

Actuator: Steel



Models - 2/2 way normally closed valves

Symbol	Port size	Flow kv value (m³/h)	Op. pressure act. Ø 70 (bar)	Op. pressure act. Ø 125 (bar)	Pilot pressure (bar)	Weight act. Ø 70 (kg)	Weight act. Ø 125 (kg)	Model actuator Ø 70	Model actuator Ø 125
	G1/2	4,8	0 ... 16	-	3,5 ... 8	1,4	-	8218200.0000.00000	-
	1/2 NPT	4,8	0 ... 16	-	3,5 ... 8	1,4	-	8219200.0000.00000	-
	G3/4	10	0 ... 10	-	3,5 ... 8	1,5	-	8218300.0000.00000	-
	3/4 NPT	10	0 ... 10	-	3,5 ... 8	1,5	-	8219300.0000.00000	-
	G1	14	0 ... 10	-	3,5 ... 8	1,8	-	8218400.0000.00000	-
	1 NPT	14	0 ... 10	-	3,5 ... 8	1,8	-	8219400.0000.00000	-
	G1 1/4	23	0 ... 7	0 ... 16	3,5 ... 8	2,4	5,3	8218500.0000.00000	8228500.0000.00000
	1 1/4 NPT	23	0 ... 7	0 ... 16	3,5 ... 8	2,4	5,3	8219500.0000.00000	8229500.0000.00000
	G1 1/2	30	0 ... 4,5	0 ... 10	3,5 ... 8	2,7	5,5	8218600.0000.00000	8228600.0000.00000
	1 1/2 NPT	30	0 ... 4,5	0 ... 10	3,5 ... 8	2,7	5,5	8219600.0000.00000	8229600.0000.00000
	G2	37	0 ... 3	0 ... 10	3,5 ... 8	3,9	7,7	8218700.0000.00000	8228700.0000.00000
	2 NPT	37	0 ... 3	0 ... 10	3,5 ... 8	3,9	7,7	8219700.0000.00000	8229700.0000.00000

Special applications

Symbol	Application	Port size	Flow kv value (m³/h)	Operating pressure (bar)	Pilot pressure (bar)	Fluid temperature	Ambient / Pilot temperature	Sealing	Weight (kg)	Model
	Reduced pilot pressure	G1/2	3,8	0 ... 5	1,5 ... 8	-10 ... +180°C	-10 ... +60°C	PTFE	1,2	8496243.0000.00000
	Tank drain valve	G1	15	0 ... 10	3,5 ... 8	-10 ... +90°C	-10 ... +60°C	PTFE	1,7	8495584.0000.00000
	Tank drain valve	G1 1/2	30	0 ... 10	3,5 ... 8	-10 ... +90°C	-10 ... +60°C	PTFE	5,7	8495585.0000.00000
	Normally open valve	G1	16	0 ... 10	1 ... 6	-10 ... +200°C	-30 ... +60°C	PTFE	2	8496088.0000.00000

2/2 WAY VALVES (PILOT ACTUATED) 82180, 82280 1/2" ... 2"

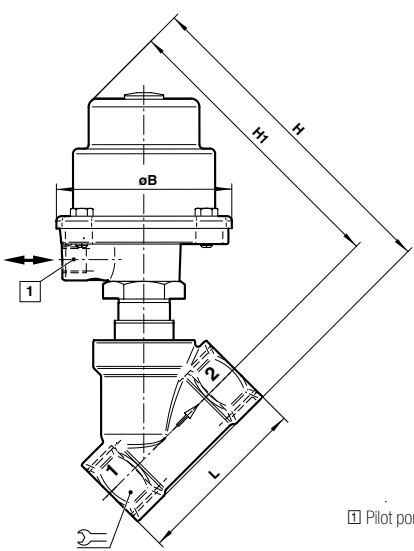
Option selector

Actuator size	Substitute
Ø 70	1
Ø 125	2
Thread form	Substitute
ISO G parallel	8
NPT	9
Port size (G or NPT)	Substitute
1/2"	2
3/4"	3
1"	4
1 1/4"	5
1 1/2"	6
2"	7

82★★★★.0000.00000

Valve options	Substitute
NC (normally closed) Standard	00
NO (normally open)	01
Double electrical position indicator	23
Optical position indicator	52
Fluid temperature max. 200°C (392°F)	59

Dimensions



□ Pilot port G1/4 or 1/4 NPT

2/2 way valves

Supply port	Orifice	Ø B	H	H1	L	Symbol	Model
G1/2	15	89,5	154	140,5	65	27	8218200.0000.00000
1/2 NPT	15	89,5	154	140,5	65	27	8219200.0000.00000
G3/4	20	89,5	160	144	75	32	8218300.0000.00000
3/4 NPT	20	89,5	160	144	75	32	8219300.0000.00000
G1	25	89,5	171	150,5	90	41	8218400.0000.00000
1 NPT	25	89,5	171	150,5	90	41	8219400.0000.00000
G1 1/4	32	89,5	186	161	110	50	8218500.0000.00000
1 1/4 NPT	32	89,5	186	161	110	50	8219500.0000.00000
G1 1/2	40	89,5	190	162,5	120	55	8218600.0000.00000
1 1/2 NPT	40	89,5	190	162,5	120	55	8219600.0000.00000
G2	50	89,5	206	171	150	70	8218700.0000.00000
2 NPT	50	89,5	206	171	150	70	8219700.0000.00000
G1 1/4	32	163,0	250	225	110	50	8228500.0000.00000
1 1/4 NPT	32	163,0	250	225	110	50	8229500.0000.00000
G1 1/2	40	163,0	255	227,5	120	55	8228600.0000.00000
1 1/2 NPT	40	163,0	255	227,5	120	55	8229600.0000.00000
G2	50	163,0	270	235	150	70	8228700.0000.00000
2 NPT	50	163,0	270	235	150	70	8229700.0000.00000

2/2 WAY SEAT VALVE

8499986 G1/4"

- Functional design
- Sealed core tube chamber
- Wetted Polymer parts with drinking water approval acc. KTW-reference and DVGW-process-sheet W 270
- Back pressure thight up to 10 bar
- Voltage range 16 ... 32 V
- Core tube protected with PTFE-bellow
- Unsusceptible to calcification and magnetization of foreign particles
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:

Water

Switching function:

Normally closed

Operation:

Directly solenoid actuated

Type:

Seat valve operating without differential pressure

Mounting position:

Optional, preferably solenoid vertical on top

Flow direction:

Determined

Port size:

G1/4, DN 4,5

Operating pressure:

0 ... 1,5 bar

Fluid temperature:

0°C ... +60°C

Ambient temperature:

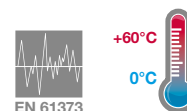
0°C ... +50°C

Materials

Body: Brass

Seat seal: EPDM

Internal parts: PTFE-bellows



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G1/4	4,5	0,42	0 ... 1,5	0,4	8499986.8264.02400

*1) Cv-value (US) $\approx$ kv value x 1,2.

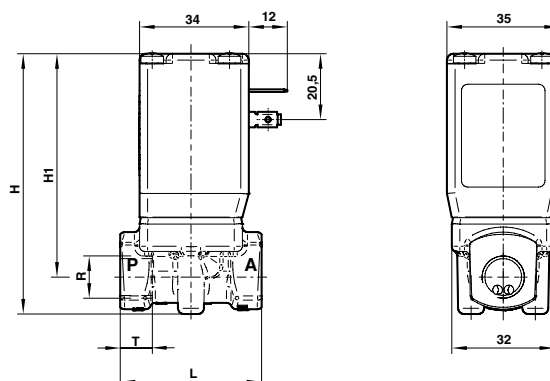
*2) For gases and liquid fluids up to 80 mm³/s (cSt).

Standard solenoid systems

Voltage and Frequency Solenoid 8264					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	10 W	10 W

Further versions on request!

Dimensions



Model	Port size R	Orifice (mm)	H	H1	L	T
8499986.8264.02400	G1/4	4,5	81	70	44	10

Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	16 ... 32 V
Duty cycle	100% ED
Protection class	EN 60529 IP65/IP00
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°C.

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

3/2 WAY SEAT VALVE

8495237 G1/8"

- Shock and vibration tested to EN 61373, Category 1, class B
- Voltage range 16 ... 32 V

Technical Features

Medium:
Air

Switching function:
Normally closed

Operation:
Directly solenoid actuated

Mounting:
Optional, preferably solenoid vertical on top

Flow direction:
Determined

Port size:
G1/8, DN 1,6

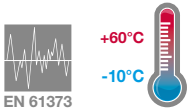
Operating pressure:
0 ... 10 bar

Fluid temperature:
-10°C ... +60°C

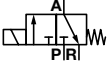
Ambient temperature:
-10°C ... +55°C

Materials

Body: PBT
Seat seal: NBR



Models

Symbol	Orifice (mm)	Port size Internal P	R	External A	Flow *2) (l/min)	Operating pressure (bar)	Weight (kg)	Model Solenoid in V d.c.
	1,6	G1/8	*1)	G1/4		0 ... 10	0,22	8495237.9784.02400

*1) Noiseless exhaust.

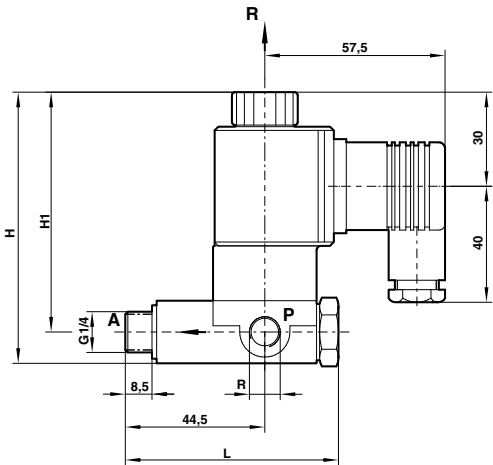
*2) Cv-value (US) $\approx$ kv-value x 1,2.

Standard solenoid systems

Voltage and Frequency Solenoid 9784					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	5 W	5 W

Further versions on request!

Dimensions



Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	16 ... 32 V
Duty cycle	100% ED
Protection class	EN 60529 IP65/IP00
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°C.

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

Model	Port size R	Orifice (mm)	H	H1	L
8495237.9784.02400	G1/8	4,5	87	77	68

2/2 WAY SEAT VALVES

8251180 G3/8"

- Suitable for vacuum
- High flow rate
- Functional compact design
- Body with M5 fastening thread as standard
- Solenoid interchangeable without tools (Click-on®)
- Valve operates without pressure differential
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:
Neutral gases and liquids

Switching function:
Normally closed

Operation:
Directly solenoid actuated

Mounting position:
Optional, preferably solenoid vertical on top

Flow direction:
Determined

Port size:
G3/8

Operating pressure:
0 ... 6 bar

Fluid temperature:
-10°C ... +90°C

Ambient temperature:
-10°C ... +50°C

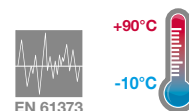
Materials

Body: Brass (CW617N)

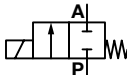
Seat seal: NBR

Internal parts: Stainless steel, Brass

For contaminated fluids insertion of a strainer is recommended.



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G3/8	5	0,5	0 ... 6	0,56	8251180.9151.02400

*1) Cv-value (US) ≈ kv value x 1,2.

*2) For gases and liquid fluids up to 25 mm²/s (cSt).

Standard solenoid systems

Voltage and Frequency Solenoid 9151					
Code	Code	Voltage	Frequency	Power consumption	
Voltage	Frequency			Inrush	Holding
024	00	24 V d.c.	-	18 W	18 W

Further versions on request!

Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65
Socket	Form A acc. to DIN EN 175301-803 (included)

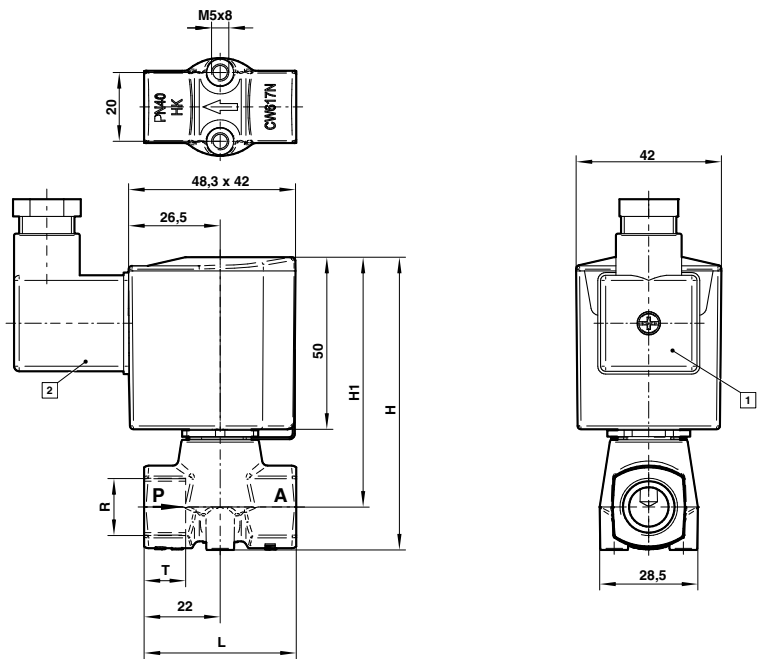
According to DIN VDE 0580 at a solenoid temperature of +20°C.

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

2/2 WAY SEAT VALVES

8251180 G3/8"

● Dimensions



Model	Port size R	H	H1	L	T
8251180.9151.02400	G3/8	85	73	44	12

2/2 WAY DIAPHRAGM VALVES

8253200 G1/2"

- Functional design
- Compact solenoid with integrated core tube
- Valve operates without differential pressure
- Shock and vibration tested to EN 61373, Category 1, class B
- Voltage tolerance $\pm 10\%$

Technical Features

Medium:
Neutral gases and liquids

Switching function:
Normally closed

Operation:
Solenoid actuated, with forced lifting

Mounting position:
Optional, preferably solenoid vertical on top

Flow direction:
Determined

Port size:
G1/2, DN 10

Operating pressure:
0 ... 10 bar

Fluid temperature:
-10°C ... +90°C

Ambient temperature:
-10°C ... +50°C

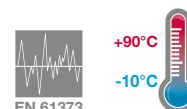
Materials

Body: Brass (CW617N), PA66

Seat seal: NBR

Internal parts: Stainless steel, PVDF

For contaminated fluids insertion of a strainer is recommended.



Models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G1/2	10	60	1,7	0 ... 10	0,6	8253200.8000.02400

*1) Cv-value (US) $\approx$ kv value x 1,2.

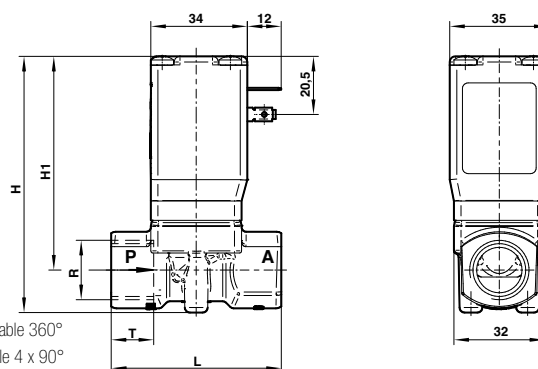
*2) For gases and liquid fluids up to 25 mm³/s (cSt).

Standard solenoid systems

Voltage and Frequency Solenoid 9151					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption Inrush	Holding
024	00	24 V d.c.	-	12 W	12 W

Further versions on request!

Dimensions



① Solenoid rotatable 360°

② Socket turnable 4 x 90° (Socket included)

Model	Port size R	H	H1	L	T
8253200.8000.02400	G1/2	90	75	60	15

Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	$\pm 10\%$
Duty cycle	100% ED
Protection class	EN 60529 IP65
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°C.

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

2/2 WAY PISTON VALVES

8591099 G1"

- Valve operates without differential pressure
- Valve with PTFE piston guide rings
- Suitable for vacuum
- Damped operation
- Shock and vibration tested to EN 61373, Category 1, class B
- Voltage tolerance $\pm 30\%$

Technical Features

Medium:
Air, water and oil

Switching function:
Normally closed

Operation:
Solenoid actuated, with forced lifting

Mounting position:
Solenoid vertical on top

Flow direction:
Determined

Port size:
G1, DN 25

Operating pressure:
0 ... 6 bar

Fluid/Ambient temperature:
-40°C ... +60°C

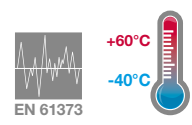
Materials

Body: Brass (CW617N)

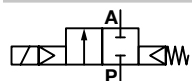
Seat seal: NBR-K

Internal parts: PTFE/Carbon, Brass

For contaminated fluids insertion of a strainer is recommended.



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G1	25	10	0 ... 6	2,2	8591099.8402.02400

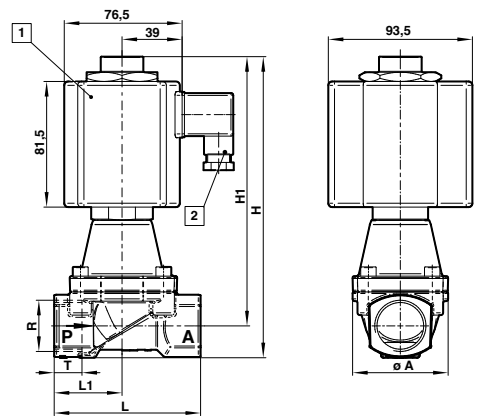
*1) Cv-value (US) $\approx$ kv value x 1,2.
*2) For gases and liquid fluids up to 40 mm²/s (cSt).

Standard solenoid systems

Voltage and Frequency Solenoid 8402					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
024	00	24 V d.c.	-	29 W	29 W

Further versions on request!

Dimensions



- 1 Solenoid rotatable 360°
- 2 Socket turnable 4 x 90° (Socket included)

Model	Port size R	ø A	H	H1	L	L1	T
8591099.8402.02400	G1	62	195	175	95	44	18

Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	$\pm 30\%$
Duty cycle	100% ED
Protection class	EN 60529 IP65
Socket	Form A acc. to DIN EN 175301-803 (included)

According to DIN VDE 0580 at a solenoid temperature of +20°C.
At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

2/2 WAY SEAT VALVES

8495584 G1"

- High flow rate
- Suitable for contaminated process fluid
- Damped closing (Valves closes against flow direction)
- Suitable for vacuum up to max. 90%
- Option pressure actuated by external liquid fluid
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:
Neutral gases and liquids

Pilot fluid:
Neutral gases max. +80°C

Switching function:
Normally closed

Operation:
Pressure actuated by external fluid

Mounting position:
Optional

Flow direction:
Determined

Port size:
G1, DN 25

Operating pressure:
0 ... 10 bar

Pilot pressure:
3,5 ... 8 bar

Fluid temperature:
-10°C ... +90°C

Ambient temperature:
-10°C ... +60°C

Materials

Process fluid characteristics

Body: Dezincification Brass (CW617N)

Seat seal: PTFE

Internal parts: Brass, Stainless steel

Spindle sealing: PTFE/FPM, self-adjustable

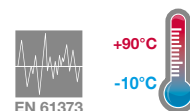
Pilot fluid characteristics

Body: Stainless steel, Aluminium

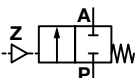
Bottom: WEMA-Kor, coated

Seals: NBRI

Internal parts: Coated steel



Models

Symbol	Port size	Orifice (mm)	Actuator ø (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G1	25	70	15	0 ... 10	1,8	8495584.0000.00000

*1) Cv-value (US) $\approx$ kv value x 1,2.

*2) For gases and liquid fluids up to 600 mm²/s (cSt).

*3) Without pilot valve.

Notes for 3/2-way pilot valve 8495236.9784

Material	Body Brass
Pilot fluid temperature	max. +60°C
Pilot pressure	0 ... 10 bar
Standard voltages	24 V d.c., 110 V a.c.

Electrical Data for 3/2-way pilot valve 8495236.9784

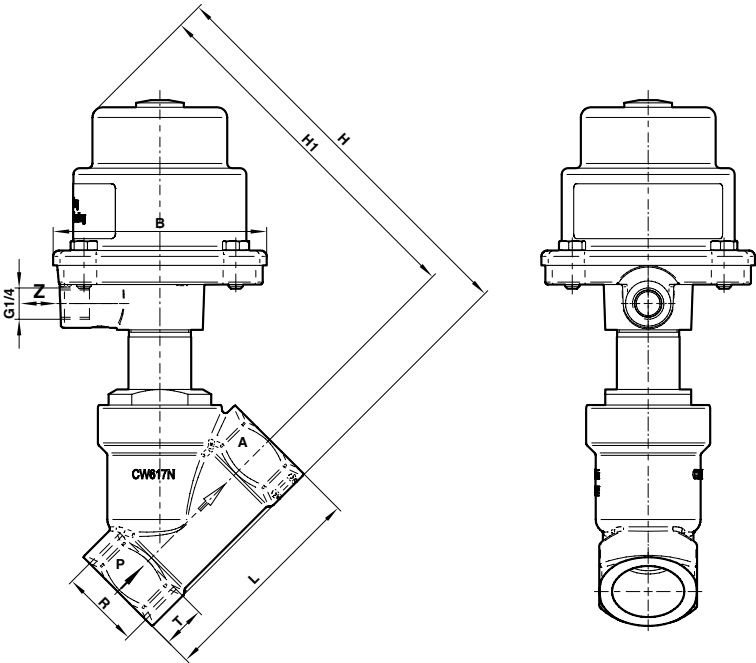
Voltage range	±30%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)

Further versions on request!

2/2 WAY SEAT VALVES

8495584 G1"

Dimensions



Model	Port size R	B	H	H1	L	T
8495584.0000.00000	G1	89,5	170	149	90	18

2/2 WAY DIAPHRAGM VALVES

8271099 G1/4"

- Spindle seal with diaphragm
- Suitable for contaminated process fluids
- Optical position indicator is standard
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:
Neutral gases and liquids

Pilot fluid:
Air, water, hydraulic oil
max. +90°C

Switching function:
Normally closed

Operation:
Pressure actuated by external fluid

Mounting position:
Optional

Flow direction:
Optional

Port size:
G1/4, DN 8

Operating pressure:
-0,9 ... 6 bar

Pilot connection:
G1/8

Fluid temperature:
-10°C ... +90°C

Ambient temperature:
-10°C ... +50°C

Materials

Process fluid characteristics

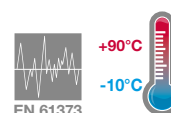
Body: Brass

Seat seal: Fabric reinforced NBR diaphragm

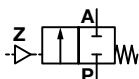
Pilot fluid characteristics

Body: Brass, PPO (cover)

Seat seal: Fabric reinforced NBR diaphragm



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	G1/4	8	1,9	-0,9 ... 6	0,75	8271099.0000.00000

*1) Cv-value (US) ≈ kv value x 1,2.

*2) For gases and liquid fluids up to 25 mm²/s (cSt).

*3) For vacuum inset min. pilot pressure 4 bar.

Notes for 3/2-way pilot valve 8495236.9784

Material	Body Brass
Pilot fluid temperature	max. +60°C
Pilot pressure	0 ... 10 bar
Standard voltages	24 V d.c., 110 V a.c.

Electrical Data for 3/2-way pilot valve 8495236.9784

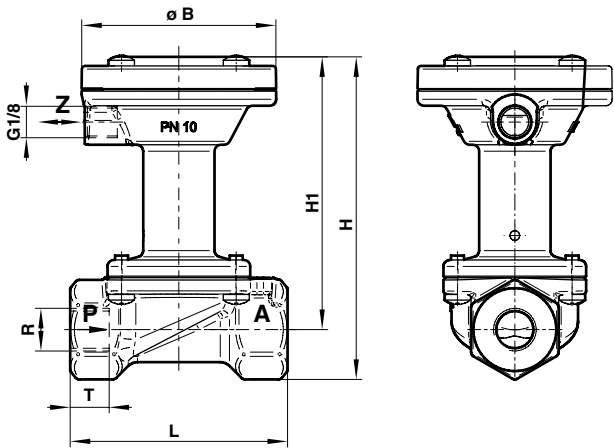
Voltage range	±30%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)

Further versions on request!

2/2 WAY DIAPHRAGM VALVES

8271099 G1/4"

● Dimensions



Model	Port size R	ϕB	H	H1	L	T
8271099.0000.00000	G1/4	60	99	84	67	12

2/2 WAY SEAT VALVES

8450400 G1

- Easy rebuilding into »normally open« or »double-acting« without tools
- Optical position indicator is standard
- Damped closing (Valves closes against flow direction)
- Suitable for contaminated flow fluid
- Suitable for vacuum up to max. 90%
- Reversed flow direction optional
- High flow rate
- Option pressure actuated by external liquid fluid
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:
Neutral gases and liquids

Pilot fluid:
Neutral gases max. +60°C

Switching function:
Normally closed

Operation:
Pressure actuated by external fluid

Mounting position:
Optional

Flow direction:
Determined

Port size:
G1, DN 25

Pilot connection:
G1/4

Operating pressure:
0 ... 10 bar

Pilot pressure:
3,5 ... 10 bar

Fluid temperature:
-10°C ... +180°C

Ambient temperature:
-10°C ... +60°C

Materials

Process fluid characteristics

Body: Dezincification Brass (CW617N)

Seat seal: PTFE

Internal parts: Brass, Stainless steel

Spindle sealing: PTFE / FPM, self-adjustable

Pilot fluid characteristics

Body: Polyamid 66 with glass fibre 30%

Seat seals: NBR

Internal parts: Brass, Stainless steel



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model *3)
	G1	25	14	0 ... 10	1,8	8450400.0000.00000

*1) Cv-value (US) $\approx$ kv value x 1,2.

*2) For gases and liquid fluids up to 25 mm³/s (cSt).

*3) For vacuum inset min. pilot pressure 4 bar.

⚠-Note:

For hazardous areas, e. g. Zone 1/2 or 21/22, the kit 1264287 is required.

It contains an additional sign, a silencer as dust shield and a conformity explanation.

The maximum fluid temperature is reduced to 85°C.

Notes for 3/2-way pilot valve 8495236.9784

Material	Body Brass
Pilot fluid temperature	max. +60°C
Pilot pressure	0 ... 10 bar
Standard voltages	24 V d.c., 110 V a.c.

Electrical Data for 3/2-way pilot valve 8495236.9784

Voltage range	±30%
Duty cycle	100% ED
Protection class	EN 60529 IP65 with mounted socket
Socket	Form A acc. to DIN EN 175301-803 (included)

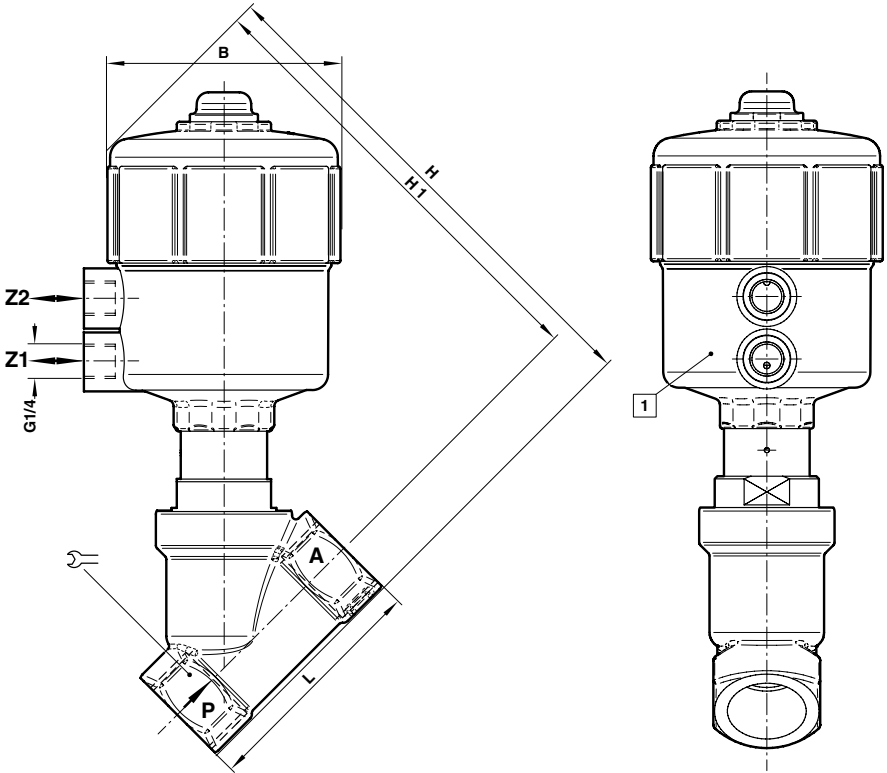
Further versions on request!

2/2 WAY SEAT VALVES

8450400 G1

● Dimensions

 Solenoid rotatable 360°



Model	Port size R	ø B	H	H1	L	
8450400.0000.00000	G1	89,5	191	174	90	41

2/2 WAY PISTON VALVES

8590907 DN 32, Flange connection, PN 40, acc. to GOST 12815-0 Russia RU

- High flow rate
- Damped operation
- Explosion proof electrical position indicator: NAMUR, (inherently safe)
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Features

Medium:

Liquid natural gas, oxygen, nitrogen

Switching function:

Normally closed

Mech. equipment:

Electrical position indicator with 2 limit switches

Mounting position:

Solenoid vertical on top

Flow direction:

Determined

Port size:

DN 32

Operating pressure:

0 ... 40 bar

Leak tightness:

DIN EN 12266-1 Leakage rate "E"

Fluid temperature:

-200°C ... +100°C

Ambient temperature:

-40°C ... +70°C

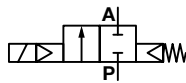
Materials

Body: Stainless steel (1.4301)

Internal parts: Stainless steel, PTFE



Models

Symbol	Port size	Orifice (mm)	Valve length (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model Solenoid in V d.c.
	32	25	200	9,5	0 ... 40	17,5	8590907.8955.11000

*1) Cv-value (US) $\approx$ kv value x 1,2.

*2) For gases and liquid fluids up to 25 mm²/s (cSt).

Standard solenoid systems

Voltage and Frequency Solenoid 8955					
Code Voltage	Code Frequency	Voltage	Frequency	Power consumption	
				Inrush	Holding
110	00	110 V d.c.	-	43 W	43 W

Further versions on request!

Electrical details for all solenoid systems

Design	DIN VDE 0580
Voltage range	±10%
Duty cycle	100% ED
Protection class	EN 60529 IP65
Socket	Form A acc. to DIN EN 175301-803 (included)

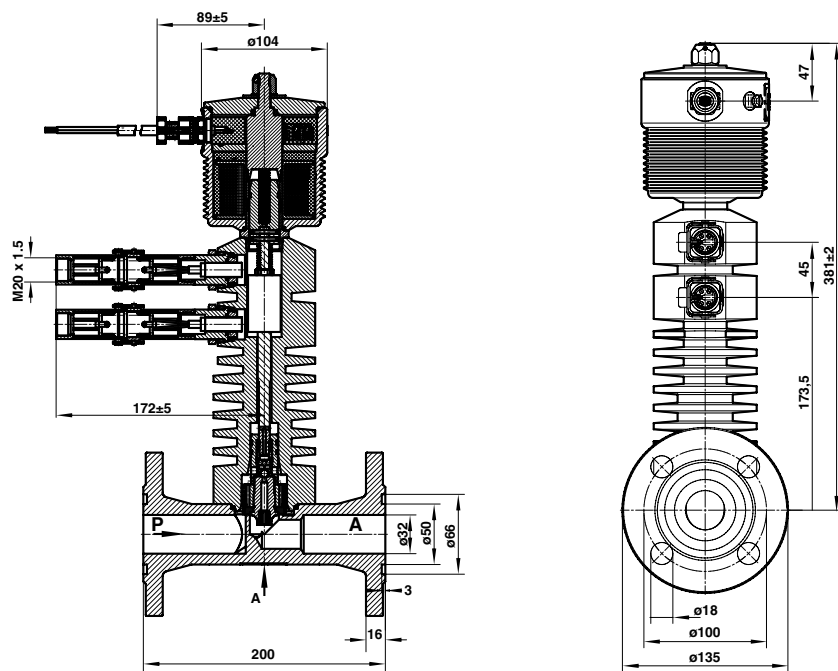
According to DIN VDE 0580 at a solenoid temperature of +20°C.

At operating state temperature the input power of a coil decreases by up to ca. 30% due to physical reasons.

2/2 WAY PISTON VALVES

8590907 DN 32, Flange connection, PN 40, acc. to GOST 12815-0 Russia RU

● Dimensions



2/2 WAY SEAT VALVES

8591127 G1/4

- Suitable for contaminated process fluid
- Valve operates without pressure differential
- Pressure actuated by external fluid

Technical Features

Medium:
Condensate

Switching function:
Normally closed

Operation:
Pressure actuated
by external fluid

Mounting position:
Optional

Flow direction:
Determined

Leak tightness:
DN 32

Leak tightness:
DIN EN 12266-1 Leak rate A

Pilot connection:
G1/8

Operating pressure:
0 ... 12 bar

Pilot pressure:
4 ... 10 bar

Fluid temperature:
+1 ... +60°C

Ambient temperature:
-40 ... +70°C

Materials

Valve

Body: Aluminium

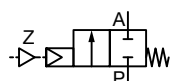
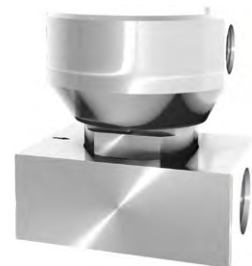
Seat seal: TPU

Actuator

Body: Aluminium

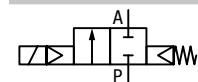
Seat seal: HNBR, FPM

Fastening thread: M5 standard



Models

Symbol	Port size	Orifice (mm)	Flow kv value *1) (m³/h)	Operating pressure *2) (bar)	Weight (kg)	Model
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G1/4

1,8

0,09

0 ... 12

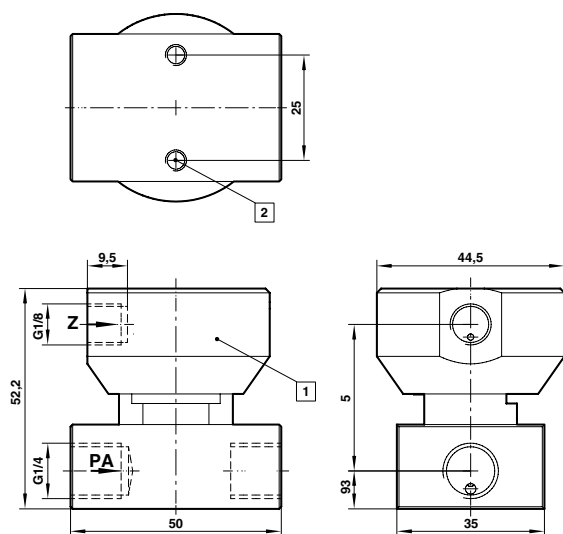
0,15

8591127.0000.00000

*1) Cv-value (US) $\approx$ kv value x 1,2.

*2) For gases and liquid fluids up to 100 mm³/s (cSt).

Dimensions



- 1 Actuator rotatable 360°
- 2 M5 x 8

Note to Pressure Equipment Directive (PED):

The valves of this series are according to Art. 3 § 3 of the Pressure Equipment Directive (PED) 97/23/EG. This means interpretation and production are in accordance to engineers practice wellknown in the member countries.

A certificate of conformity is not designated.

2/2 WAY RELEASE EXHAUST VALVES (PILOT ACTUATED)

82900, 83300 3/4" & 1"

- Quick release valve for Pantograph systems
- One-piece diaphragm
- Clear compact design
- High flow rate
- Aluminium or stainless steel body
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Features

Medium:

Compressed air, lubricated or non-lubricated

Operation:

Remote pilot operated (pilot exhaust)

Mounting:

Internal threads

Supply ports:

G3/4, 3/4 NPT, G1 or 1 NPT

Pilot port:

G1/8 or 1/8 NPT

Operating pressure:

0,4 ... 8 bar

Fluid temperature:

-40°C ... +85°C

Ambient temperature:

83300: -40°C ... +85°C

82900 (standard):

-20°C ... +85°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium

Seat Seal: TPE

Body: Stainless Steel

Seat Seal: TPE



Models - 2/2 way normally closed valves

Symbol	Port size	Body material	Flow kv value (m³/h)	Operating pressure (bar)	Weight (kg)	Model
	G3/4	Aluminium	18	0,4 ... 8	0,30	8290300.0000.00000
	3/4 NPT	Aluminium	22	0,4 ... 8	0,26	8290400.0000.00000
	G1	Stainless steel	18	0,4 ... 8	0,75	8330300.0000.00000
	1 NPT	Stainless steel	22	0,4 ... 8	0,70	8330400.0000.00000

Special applications

Symbol	Application	Port size	Body material	Flow kv value (m³/h)	Operating pressure (bar)	Weight (kg)	Model
	Adapted switching speed	G3/4	Aluminium, anodized	18	0,4 ... 8	0,30	8590103.0000.00000

Option selector

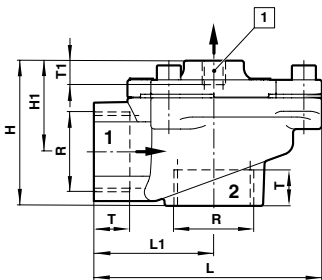
8★★★★★.0000.00000

Material/thread	Substitute
Aluminium/ISO G parallel	290
Aluminium/NPT	291
Stainless steel/ISO G parallel	330
Stainless steel/NPT	331

Valve options	Substitute
NC (normally closed) Standard	00
Ambient temperature (82900 only) -40°C ... +85°C	71
Port size	Substitute
3/4"	3
1"	4

2/2 WAY RELEASE EXHAUST VALVES (PILOT ACTUATED) 82900, 83300 3/4" & 1"

● Dimensions



□ Pilot port G1/8 or 1/8 NPT (pilot exhaust)

Body aluminium

Supply port (R)	B	H	H1	L	L1	T	T1	Model
G3/4	80,0	61,5	39,0	95,0	50	16	10	8290300.0000.00000
3/4 NPT	80,0	61,5	39,0	95,0	50	14	10	8291300.0000.00000
G1	80,0	61,5	39,0	95,0	50	18	10	8290400.0000.00000
1 NPT	80,0	61,5	39,0	95,0	50	17	10	8291400.0000.00000

Body stainless steel

Supply port (R)	B	H	H1	L	L1	T	T1	Model
G3/4	80,0	61,5	39,0	95,0	50	16	10	8330300.0000.00000
3/4 NPT	80,0	61,5	39,0	95,0	50	14	10	8331300.0000.00000
G1	80,0	61,5	39,0	95,0	50	18	10	8330400.0000.00000
1 NPT	80,0	61,5	39,0	95,0	50	17	10	8331400.0000.00000

Pressure Switches



*wide temperature
range, shock &
vibration tested*



*High accuracy,
fixed or adjustable
hysteresis*



*Robust and
space saving
sensor*



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering pressure switch range. If you can't see the option you require please contact us.

● Electro-Mechanical Pressure Switches

18D-LT x2
G1/4, 1/4 NPT, flange



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21D
G1/4, 1/4 NPT



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● Electronic Pressure Sensor

19S
M12



Page 203

ELECTRO-MECHANICAL PRESSURE SWITCH

18D-LT x2 G1/4, 1/4 NPT, flange

- Microswitch with gold plated contacts
- High number of switching cycles
- Microswitch approved by UL and CSA
- Wide range of temperature
- Shock and vibration tested to EN 61373, Category 1, class A and B
- Pressure switches suitable for -55°C on request

Technical Data

Medium:
For neutral, gaseous and liquid fluids, non-combustible

Operation:
Diaphragm

Repeatability:
0,2 ... 2 bar : $\pm 0,2$ bar
0,5 ... 8 bar : $\pm 0,4$ bar
1,0 ... 10 bar : $\pm 0,6$ bar
1,6 ... 16 bar : $\pm 0,75$ bar

Media viscosity:
Up to 1000 mm²/s

Switching pressure difference/hysteresis:
Fixed

Life cycle of mechanical parts:
10⁶ switching cycles

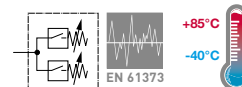
Degree of protection:
IP65

Mounting position:
Optional

Electrical connection:
DIN EN 175301-803 (DIN 43650) form A

Operating temperature range:
Fluid/Ambient (reliability)
-40°C ... +85°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C



Materials

Housing: Aluminium (brass)

Seals: EPDM

● Models - G1/4, 1/4 NPT

Thread port connection – plug included in scope of supply

Pressure range *1) switch A (bar)	switch B (bar)	Max. over pressure *2) (bar)	Switching cycles (l/min)	Materials press sensor body	seals	Port size	Weight (kg)	Drawing No.	Model
0,2 ... 2	0,2 ... 2	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440202*A00
0,5 ... 8	0,5 ... 8	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440808*A00
1 ... 10	1 ... 10	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#441010*A00
1 ... 16	1 ... 16	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#441616*A00
0,2 ... 2	0,5 ... 8	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440208*A00
0,2 ... 2	1 ... 10	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440210*A00
0,2 ... 2	1 ... 16	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440216*A00
0,5 ... 8	1 ... 10	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440810*A00
0,5 ... 8	1 ... 16	26	100	Aluminium, anodized	EPDM, VMQ	Female, 1/4"	0,5	4	DS-M2#440816*A00

● Models - Flange switches

Thread port connection – plug included in scope of supply

Pressure range *1) switch A (bar)	switch B (bar)	Max. over pressure *2) (bar)	Switching cycles (l/min)	Materials press sensor body	seals	Port size	Weight (kg)	Drawing No.	Model
0,2 ... 2	0,2 ... 2	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40202*A00
0,5 ... 8	0,5 ... 8	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40808*A00
1 ... 10	1 ... 10	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF41010*A00
1 ... 16	1 ... 16	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF41616*A00
0,2 ... 2	0,5 ... 8	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40208*A00
0,2 ... 2	1 ... 10	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40210*A00
0,2 ... 2	1 ... 16	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40216*A00
0,5 ... 8	1 ... 10	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40810*A00
0,5 ... 8	1 ... 16	26	100	AL, anodized	EPDM, VMQ, NBR	Flange	0,5	5	DS-M2FF40816*A00

* Please insert X, Y, O or C for electrical switching function.

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure. Switching pressure must not exceed the indicated values.

*2) Max. values.

Please insert 'G' for ISO G, 'N' for NPT thread.

Switching pressure difference see table on next page.

ELECTRO-MECHANICAL PRESSURE SWITCH

18D-LT x2 G1/4, 1/4 NPT, flange

Option selector

DS-M2★★★★★★A00

Thread form	Substitute
ISO G	G
NPT	N
Flange	F
Port size	Substitute
1/4"	4
Flange	F
Temperature range (°C)	Substitute
-40 ... +85 (standard)	4
-55 ... +85 (optional)*	5

* Not at all pressure ranges are available contact Norgren

Electrical switching function	switch 'A'	switch 'B'	Substitute
NO	NC		X
NC	NO		Y
NO	NO		O
NC	NC		C
Pressure range switch 'B' (bar)		Substitute	
0,2 ... 2			02
0,5 ... 8			08
1,0 ... 10			10
1,0 ... 16			16
Pressure range switch 'A' (bar)		Substitute	
0,2 ... 2			02
0,5 ... 8			08
1,0 ... 10			10
1,0 ... 16			16

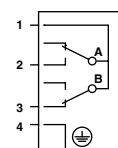
Pressure range and switching pressure difference

Pressure range (bar)	Max. switching pressure difference lower range (bar)	upper range (bar)
0,2 ... 2	0,25	0,45
0,5 ... 8	0,40	0,90
1,0 ... 10	0,45	1,00
1,0 ... 16	0,50	1,10

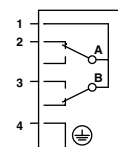
Accessories

Pressure port reducing nipple	Surge damper	Connector (included as standard in scope of supply of switch)
		
0574767 (brass)	0574773 (brass)	0570110
0550083 (stainless steel)	0553258 (stainless steel)	

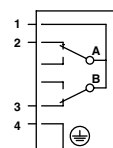
Switching function



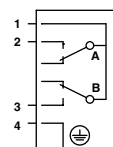
Switch A: NO
Terminals 1 - 2: Contacts closed on rising pressure.
Switch B: NC
Terminals 1 - 3: Contacts closed on falling pressure.



Switch A: NC
Terminals 1 - 2: Contacts closed on falling pressure.
Switch B: NO
Terminals 1 - 3: Contacts closed on rising pressure.



Switch A: NC
Terminals 1 - 2: Contacts closed on falling pressure.
Switch B: NC
Terminals 1 - 3: Contacts closed on falling pressure.



Switch A: NO
Terminals 1 - 2: Contacts closed on rising pressure.
Switch B: NO
Terminals 1 - 3: Contacts closed on rising pressure.

ELECTRO-MECHANICAL PRESSURE SWITCH

18D-LT x2 G1/4, 1/4 NPT, flange

● Switching capacity

Commutator with gold plated contacts

Current type	Load type *2)	U min [V]	Max. permissible persistent current I _{max} [A] at U *1)					Electrical life-time
			M 12x1 30 V	DIN EN 175301-803, Form A 30 V	48 V	125 V	250 V	
AC	ohmic, inductive	6	0,1	0,1	0,1	0,1	0,1	≥ 2 x 10 ⁵ Switching cycles
DC	ohmic, inductive	6	0,1	0,1	—	—	—	

Reference number: 20/min, Reference temperature: +20°C.

I_{min} = 1 mA at 24 V DC or 5 mA at 6 V DC.

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Furthermore additional measurements has to be taken to fulfil the EMV regulation 2004/108/EG by the manufacturer.

*2) Spark quenching/overload protection will be necessary using inductive loads.

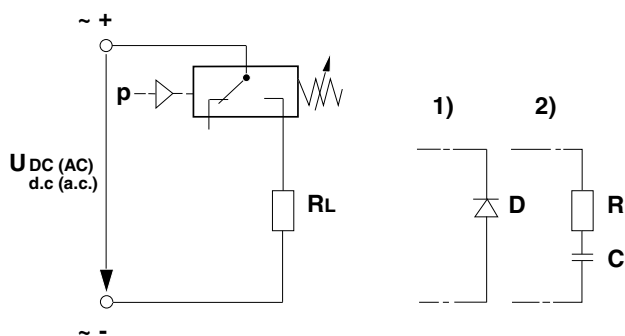
● Recommended circuit

Spark quenching and EMV intrinsically safe

1. Quick diode (D) with $t_v \leq 200$ ns, parallel to inductive load.

2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

 R_L in W $\approx 0,2 \times R_{Load}$ in W
 C in μF $\approx I_{Load}$ in [A]
 R_L = Load resistance

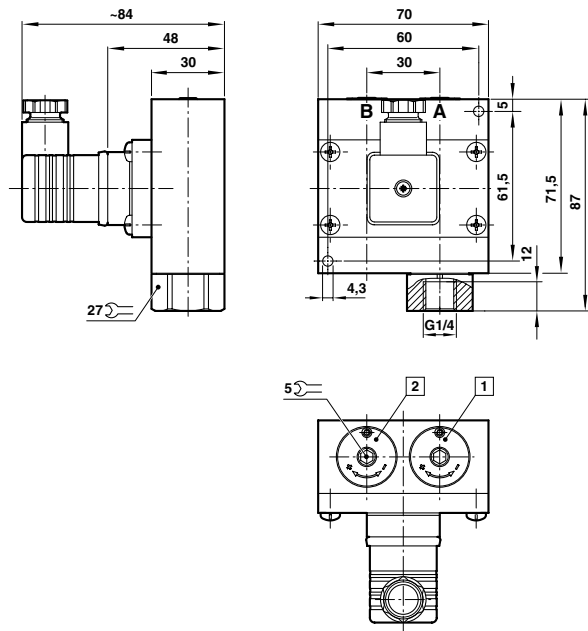
ELECTRO-MECHANICAL PRESSURE SWITCH

18D-LT x2 G1/4, 1/4 NPT, flange

● Dimensions

G1/4 or 1/4 NPT

4



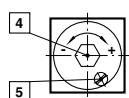
- 1 Switch A
- 2 Switch B

Adjustable switch point

After releasing the locking screw

Clockwise rotation = encreasing switch point

Anti-clockwise rotation = decreasing the switch point



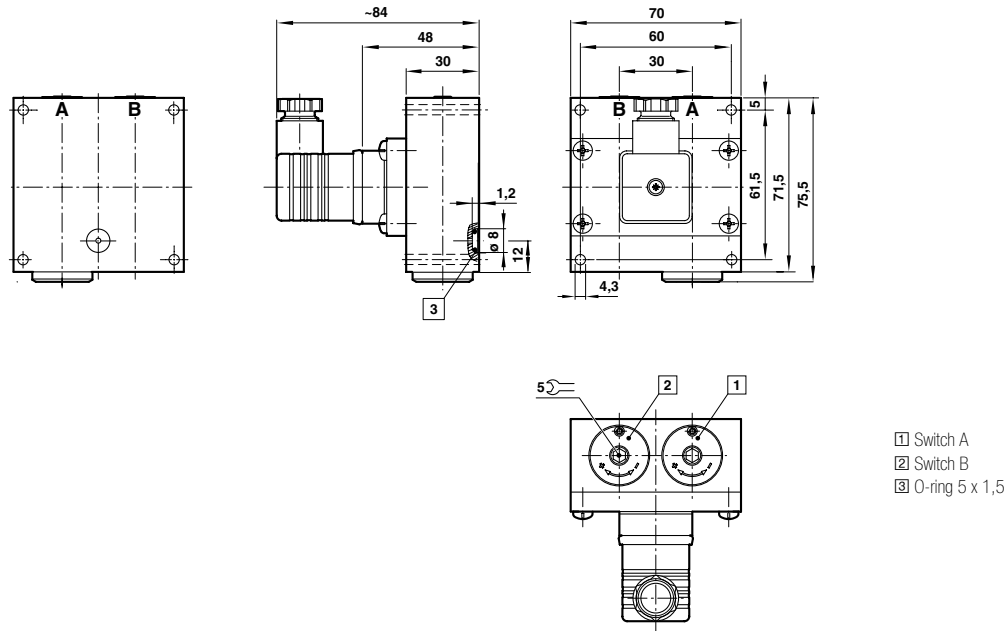
- 4 Switch point screw
- 5 Locking screw

ELECTRO-MECHANICAL PRESSURE SWITCH

18D-LT x2 G1/4, 1/4 NPT, flange

Flange

5



Adjustable switch point

After releasing the locking screw

Clockwise rotation = encreasing switch point

Anti-clockwise rotation = decreasing the switch point



ALL FLUID PRESSURE SWITCH, ELECTRO-MECHANICALLY ACTUATED 21D 0,1 ... 10,5 bar

- G1/4, 1/4 NPT
- High accuracy
- High number of switching cycles
- Microswitch approved by UL and CSA
- Fixed or adjustable hysteresis
- Shock and vibration tested to EN 61373, Category 1, class B

Technical Data

Medium:
For neutral, gaseous and liquid fluids, non-combustible

Operation:
Diaphragm

Operating pressure range:
Standard
0,1 ... 10,5 bar
Low pressure
0,1 ... 6 bar

Operating viscosity:
Up to 1000 mm²/s

Switching pressure difference/hysteresis:
Fixed - option
Adjustable - option

Repeatability:
±3% of final value

Switching element:
Microswitch with gold plated or silver alloy contacts

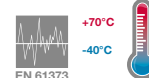
Mounting position:
Optional

Degree of protection:
IP65

Electrical connection:
DIN EN 175301-803; form A;
3 pin & PE;
DIN 43651; M26x1,5; 6 pin & PE
alternative thread for cable gland

Ambient / Media temperature:
-40°C ... +70°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C



Materials

Cover and Housing: Die cast aluminium

Diaphragm: Silicon

Sealing: NBR

● Standard models (pressure range *1) 0,1 ... 10,5 bar (1,4 ... 152 psi)

Symbol	Port size	Switching pressure difference				Switch type *2)	Circuit	Circuit diagram no. *3)	Electrical base Interface according	Weight	Dim.	Model
		Lower range (bar)	(psi)	Upper range (bar)	(psi)					(kg)	No.	
	G1/4	0,35	5,0	0,75	10,8	A	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D1101
	1/4 NPT	0,35	5,0	0,75	10,8	A	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D1201
	G1/4	0,35	5,0	0,75	10,8	A	SPDT	C1	Thread for cable gland *4)	0,50	3	21D1102
	1/4 NPT	0,35	5,0	0,75	10,8	A	SPDT	C1	Thread for cable gland *4)	0,50	3	21D1202
	G1/4	0,4	5,8	0,8	11,6	A	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D1103
	1/4 NPT	0,4	5,8	0,8	11,6	A	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D1203
	G1/4	0,4	5,8	0,8	11,6	A	DPDT	C2	Thread for cable gland *4)	0,50	3	21D1104
	1/4 NPT	0,4	5,8	0,8	11,6	A	DPDT	C2	Thread for cable gland *4)	0,50	3	21D1204
	G1/4	0,35	5,0	0,75	10,8	B	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D1105
	1/4 NPT	0,35	5,0	0,75	10,8	B	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D1205
	G1/4	0,35	5,0	0,75	10,8	B	SPDT	C1	Thread for cable gland *4)	0,50	3	21D1106
	1/4 NPT	0,35	5,0	0,75	10,8	B	SPDT	C1	Thread for cable gland *4)	0,50	3	21D1206
	G1/4	0,4	5,8	0,8	11,6	B	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D1107
	1/4 NPT	0,4	5,8	0,8	11,6	B	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D1207
	G1/4	0,4	5,8	0,8	11,6	B	DPDT	C2	Thread for cable gland *4)	0,50	3	21D1108
	1/4 NPT	0,4	5,8	0,8	11,6	B	DPDT	C2	Thread for cable gland *4)	0,50	3	21D1208
	G1/4	0,6	8,7	0,85	12,3	C	SPDT	C3	Thread for cable gland *4)	0,50	3	21D1109
	1/4 NPT	0,6	8,7	0,85	12,3	C	SPDT	C3	Thread for cable gland *4)	0,50	3	21D1209
	G1/4	0,85	12,3	1,1	15,9	D	DPDT	C4	Thread for cable gland *4)	0,50	3	21D1110
	1/4 NPT	0,85	12,3	1,1	15,9	D	DPDT	C4	Thread for cable gland *4)	0,50	3	21D1210

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.
Switching pressure must not exceed the indicated values.

*2) Electrical details on page 199.

*3) Details on page 199.

*4) Cable gland not included, please order separately.

ALL FLUID PRESSURE SWITCH, ELECTRO-MECHANICALLY ACTUATED

21D 0,1 ... 10,5 bar

● Standard models (pressure range *1) 0,1 ... 6 bar (1,4 ... 87 psi)

Symbol	Port size	Switching pressure difference		Upper range		Switch type *2)	Circuit	Circuit diagram no. *3)	Electrical base Interface according	Weight (kg)	Dim. No.	Model
	G1/4	0,25	3,6	0,55	7,9	A	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D2101
	1/4 NPT	0,25	3,6	0,55	7,9	A	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D2201
	G1/4	0,25	3,6	0,55	7,9	A	SPDT	C1	Thread for cable gland *4)	0,50	3	21D2102
	1/4 NPT	0,25	3,6	0,55	7,9	A	SPDT	C1	Thread for cable gland *4)	0,50	3	21D2202
	G1/4	0,35	5,0	0,65	9,4	A	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D2103
	1/4 NPT	0,35	5,0	0,65	9,4	A	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D2203
	G1/4	0,35	5,0	0,65	9,4	A	DPDT	C2	Thread for cable gland *4)	0,50	3	21D2104
	1/4 NPT	0,35	5,0	0,65	9,4	A	DPDT	C2	Thread for cable gland *4)	0,50	3	21D2204
	G1/4	0,25	3,6	0,55	7,9	B	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D2105
	1/4 NPT	0,25	3,6	0,55	7,9	B	SPDT	C1	DIN EN 175301-803; form A	0,55	1	21D2205
	G1/4	0,25	3,6	0,55	7,9	B	SPDT	C1	Thread for cable gland *4)	0,50	3	21D2106
	1/4 NPT	0,25	3,6	0,55	7,9	B	SPDT	C1	Thread for cable gland *4)	0,50	3	21D2206
	G1/4	0,35	5,0	0,65	9,4	B	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D2107
	1/4 NPT	0,35	5,0	0,65	9,4	B	DPDT	C2	DIN 43651; M26x1,5	0,55	2	21D2207
	G1/4	0,35	5,0	0,65	9,4	B	DPDT	C2	Thread for cable gland *4)	0,50	3	21D2108
	1/4 NPT	0,35	5,0	0,65	9,4	B	DPDT	C2	Thread for cable gland *4)	0,50	3	21D2208
	G1/4	0,5	7,2	0,8	11,6	C	SPDT	C3	Thread for cable gland *4)	0,50	3	21D2109
	1/4 NPT	0,5	7,2	0,8	11,6	C	SPDT	C3	Thread for cable gland *4)	0,50	3	21D2209
	G1/4	0,65	9,4	0,9	13,0	D	DPDT	C4	Thread for cable gland *4)	0,50	3	21D2110
	1/4 NPT	0,65	9,4	0,9	13,0	D	DPDT	C4	Thread for cable gland *4)	0,50	3	21D2210

*1) Setpoints should be ideally in the middle of the switching pressure range. Reference pressure = atmospheric pressure.

Switching pressure must not exceed the indicated values.

*2) Electrical details on page 200.

*3) Details see below.

*4) Cable gland not included, please order separately.

● Option selector

Pressure range	Substitute
0,1 ... 10 bar (standard)	1
0,1 ... 6 bar (low pressure)	2
Port size	Substitute
G1/4	1
1/4 NPT	2

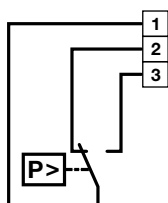
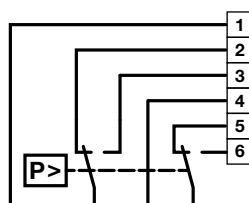
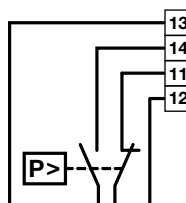
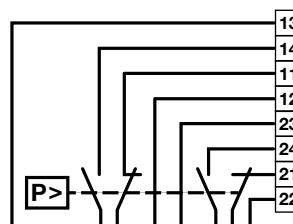
Other modifications fixed pressure settings, pressure range, materials etc. on request.

21D★★★★

Switch modification Switch type	Circuit type	Electrical base Interface according to	Substitute
A	SPDT	DIN EN 175301-803	01
A	SPDT	Cable gland	02
A	DPDT	DIN 43651	03
A	DPDT	Cable gland	04
B	SPDT	DIN EN 175301-803	05
B	SPDT	Cable gland	06
B	DPDT	DIN 43651	07
B	DPDT	Cable gland	08
C	SPDT	Cable gland	09
D	DPDT	Cable gland	10

Note: Factory preset options available.

● Switching function/electrical connection

Circuit SPDT
Circuit diagram C1Circuit DPDT
Circuit diagram C2Circuit SPDT
Circuit diagram C3Circuit DPDT
Circuit diagram C4

ALL FLUID PRESSURE SWITCH, ELECTRO-MECHANICALLY ACTUATED

21D 0,1 ... 10,5 bar

Accessories

Pressure port Reducing nipple	Surge damper	Connector; Interface according to DIN EN 175301-803; form A	7 pin connector	Cable gland (M20 x 1,5)		
						
Model	Model	Model	Model	Cable Ø	Material	Model
0574767 (brass)	0574773 (brass)	0570110	0660689	5,0 ... 8,0 mm	Nickel plated brass	0588819
0550083 (stainless steel)	0553258 (stainless steel)			10 ... 14 mm	Nickel plated brass	0588851
				7,0 ... 12 mm	Stainless steel 1.4404	0589395
				10 ... 14 mm	Stainless steel 1.4404	0589387

Switching capacity

Switch type	Current type	Load type *2)	U min [V]	Max. permanent current I _{max} [A] at U *1) (UL & CSA)		
				30 V	125 V	250 V
A	a.c.	Ohmic	12	10	10	10
		Inductive COS φ = 0,7		5	5	5
	d.c.	Ohmic		2	0,5	—
		Inductive L/R ≤ 10 ms		2	0,5	—
B *3)	a.c.	Ohmic	5	0,4	0,1	0,05
		Inductive COS φ = 0,7		0,4	0,1	0,0,5
	d.c.	Ohmic		0,1	—	—
		Inductive L/R ≤ 10 ms		0,1	—	—
C	a.c.	Ohmic	12	10	10	10
		Inductive COS φ = 0,7		6	6	6
	d.c.	Ohmic		10	2	—
		Inductive L/R ≤ 10 ms		2,9	0,7	—
D	a.c.	Ohmic	12	8	8	8
		Inductive COS φ = 0,7		4,8	4,8	4,8
	d.c.	Ohmic		5	1,0	—
		Inductive L/R ≤ 10 ms		0,8	0,2	—

*1) Higher currents (5 A max) will cause a reduction of the durability of the micro-switch contacts. Furthermore additional measurements has to be taken to fulfil the EMV regulation 2004/108/EG by the manufacturer.

*2) Spark quenching/overload protection will be necessary using inductive loads.

*3) With gold plated contacts.

Recommended circuit

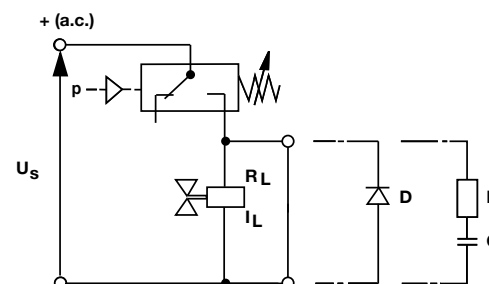
Spark quenching and EMV intrinsically safe

1. Quick diode (D) with $t_v \leq 200$ ms, parallel to inductive load.
2. RC link in parallel to load in parallel to switching contact.

Dimensioning principles:

RL in W $\approx 0,2 \times R_{Load}$ in W

C in μF $\approx I_{Load}$ in [A]



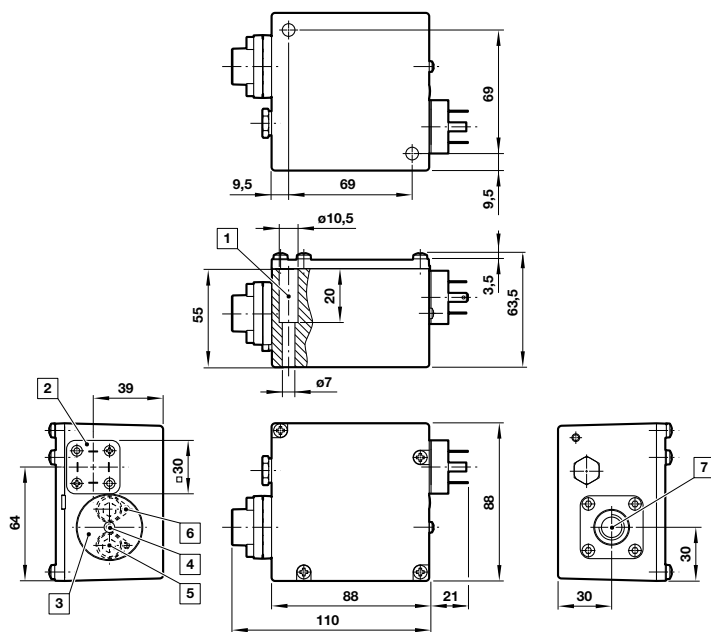
RL = Load resistance

ALL FLUID PRESSURE SWITCH, ELECTRO-MECHANICALLY ACTUATED

21D 0,1 ... 10,5 bar

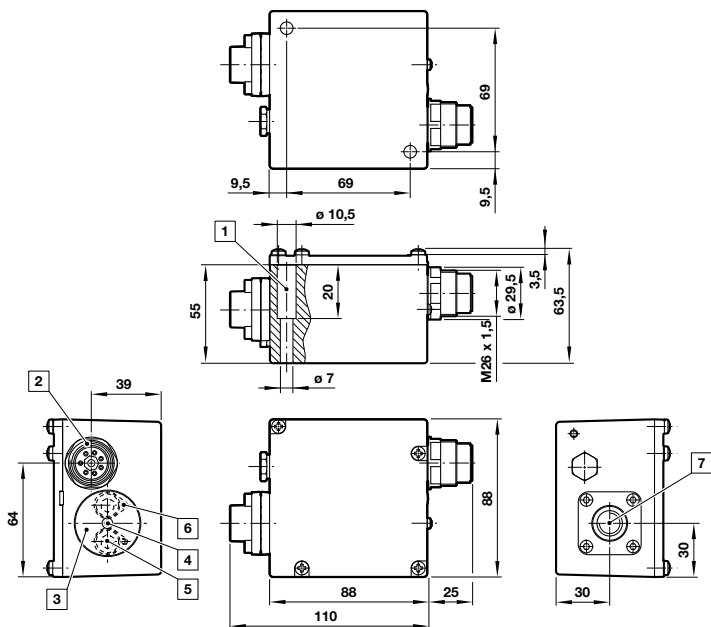
● Dimensions

1



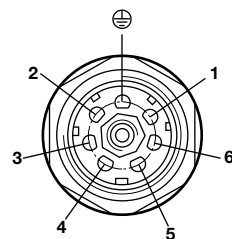
- 1 Two holes for panel mounting
- 2 Electrical interface according to DIN EN 175 301-803; form A
- 3 Cover
- 4 Cover screw; torque 0,5 ... 0,7 Nm
- 5 Two adjustable screws for pressure setting
- 6 Two lockable screws; torque 0,5 ... 0,7 Nm; after pressure setting
- 7 Inlet port - G1/4 or 1/4 NPT

2



- 1 Two holes for panel mounting
- 2 Electrical interface according to DIN 43651
- 3 Cover
- 4 Cover screw; torque 0,5 ... 0,7 Nm
- 5 Two adjustable screws for pressure setting
- 6 Two lockable screws; torque 0,5 ... 0,7 Nm; after pressure setting
- 7 Inlet port - G1/4 or 1/4 NPT

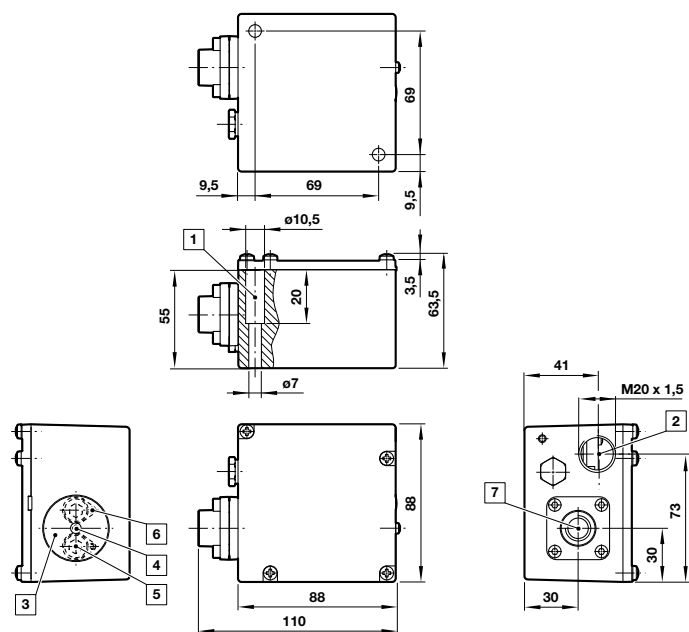
Pin view



ALL FLUID PRESSURE SWITCH, ELECTRO-MECHANICALLY ACTUATED

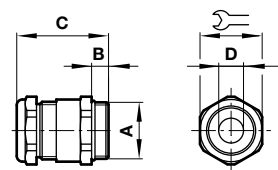
21D 0,1 ... 10,5 bar

3



- 1 Two holes for panel mounting
- 2 Thread for cable gland
- 3 Cover
- 4 Cover screw; torque 0,5 ... 0,7 Nm
- 5 Two adjustable screws for pressure setting
- 6 Two lockable screws; torque 0,5 ... 0,7 Nm; after pressure setting
- 7 Inlet port - G1/4 or 1/4 NPT

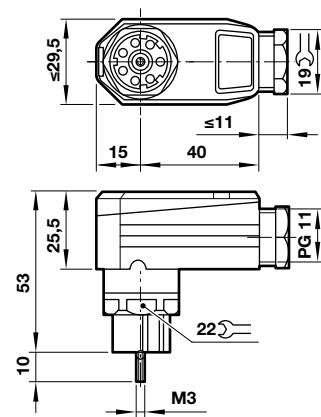
Cable gland



A	B	C	ø D		Model
M20 x 1,5	9	36	5 ... 8	22	0588819
M20 x 1,5	14	39	10 ... 14	24	0588851
M20 x 1,5	14	39	7 ... 12	24	0589395
M20 x 1,5	10	34	10 ... 14	24	0589387

7 Pin connector

Model: 0660689



Pressure port/Reducing nipple

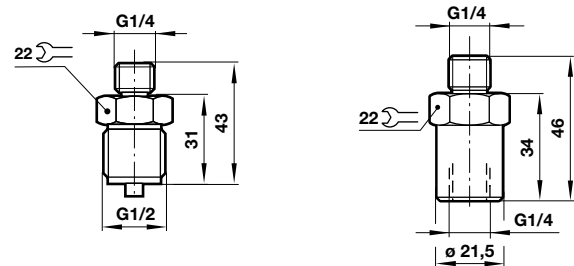
Model: 0574767

Material: brass

Surge damper

Model: 0574773

Material: brass



ALL FLUID ELECTRONIC PRESSURE SENSOR

19S 0 ... 50 bar

- Robust sensor for hydraulic/ fluid applications
- Small, space saving stainless steel construction
- Excellent long-term stability
- Wide temperature range
- Shock tested to ICE 60068-2-27 (6g)
- Vibration tested to ICE 60068-2-6 (20g)

Technical Data

Medium:
Neutral and aggressive gases or fluids

Output signal:
4 ... 20 mA (2-wire technology)
0 ... 10 V (3-wire technology)

Supply voltage (PIN 1):
9 ... 36 V d.c. (2-wire technology)
14 ... 36 V d.c. (3-wire technology)

Electrical connection:
M12 x 1

Hysteresis and repeatability accuracy:
< ± 0,5% FS

Residual ripple (max.):
10% (within supply voltage) at 50 Hz

Linearity analogue port:
< ± 0,5% FS

Interference emission:
EN 50081-1

Interference immunity:
EN 50082-2

Degree of protection:
IP67 acc to EN 60529
(with plug mounted)

Long term drift:
< ± 0.2% FS / a

EMC:
EN 61000-6-2 and EN 61000-6-3
conforming to RL 2004/108/EC

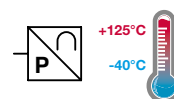
Fluid/Ambient temperature:
Fluid: -40°C ... +150°C
Ambient: -40°C ... +125°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Temperature sensitivity:
< ± 1.0% FS,
0°C... +80°C
< ± 1.5% FS,
-25°C... +100°C
< ± 2.5% FS,
-40°C... +125°C

Materials

Housing:
Stainless steel 1.4301

Medium contacting parts:
Stainless steel 1.4548/FPM



Models

Symbol	Port size	Measuring range *2) (relative pressure) (bar)	Max. over pressure (bar)	Output signal		Technology	Weight (kg)	Model *1)
				(mA)	(V)			
	G1/4	0 ... 10	40	4 ... 20	—	2-wire	0,05	0862062
	G1/4	0 ... 25	40	4 ... 20	—	2-wire	0,05	0862162
	G1/4	0 ... 50	100	4 ... 20	—	2-wire	0,05	0862262
	G1/4	0 ... 10	40	—	0 ... 10	3-wire	0,05	0862362
	G1/4	0 ... 25	40	—	0 ... 10	3-wire	0,05	0862462
	G1/4	0 ... 50	100	—	0 ... 10	3-wire	0,05	0862562

*1) Connector not included. Please see next page.

*2) Alternative ranges available on request.

ALLFLUID ELECTRONIC PRESSURE SENSOR

19S 0 ... 50 bar

Accessories

Connector M 12 x 1
90°

90°

straight

straight



0523058 (2 m cable length, 4-core)

0523056 (without cable)

0523057 (2 m cable length, 4-core)

0523055 (without cable)

0523053 (5 m cable length, 4-core)

0523052 (5 m cable length, 4-core)

Electrical connection M 12 x 1

Electrical connection, M 12 x 1, PIN-No.

2-wire

3-wire



+ UB

1

1

GND

-

3

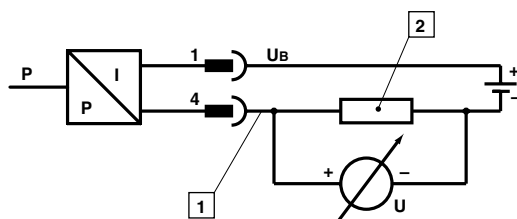
Signal

4

4

Electrical diagram for 2-wire versions

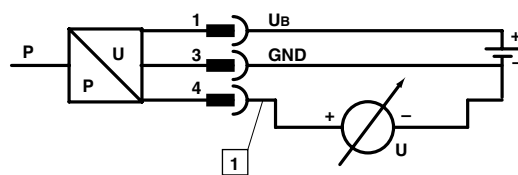
4 ... 20 mA



□ Signal
▣ Load (RL)

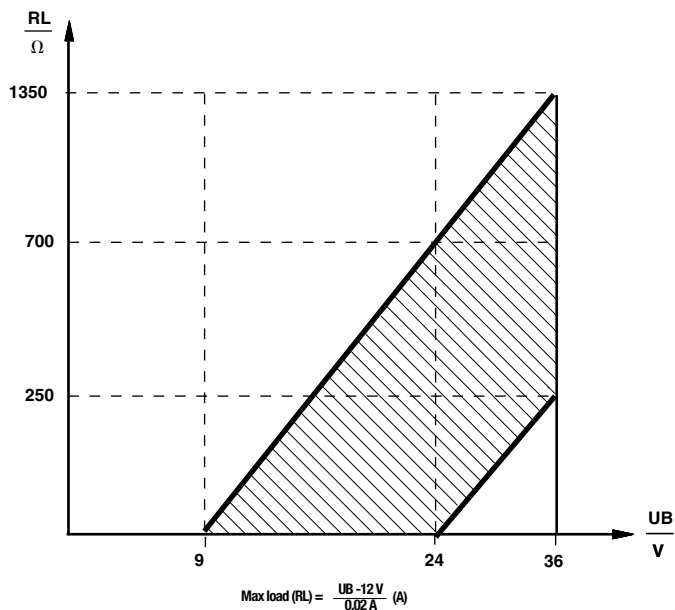
Electrical diagram for 3-wire versions

0 ... 10 V

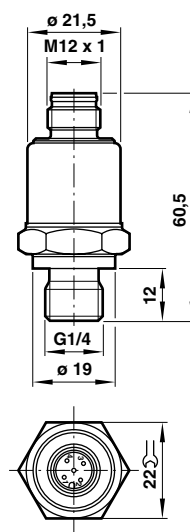


□ Signal

Characteristic load curve



Dimensions

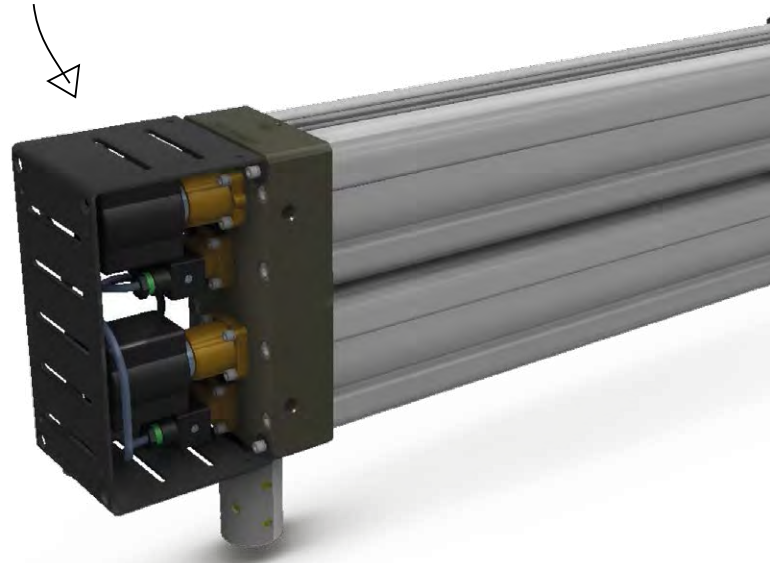


Air Preparation (FRL)

Robust design



Patented Technology



Compact Design



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering air preparation range. If you can't see the option you require please contact us.

Dryers

WR2 - AMT Dryer
G1/2, G3/4 & G1



Page 207

Filtration

Miniature series LF07 1/8" & 1/4"  Page 210	Excelon® Quikclamp system LF72G, LF73G, LF74G 1/4" ... 3/4"  Page 212	Olympian Plus plug-in system LF64G, LF68G/E 1/4" ... 1 1/2"  Page 215	Excelon® Quikclamp system LF74H 1/2" & 3/4"  Page 220	Olympian Plus plug-in system LF64H, LF68H 3/8" ... 1 1/2"  Page 222	Miniature series LB07 1/8" & 1/4"  Page 228
Excelon® Quikclamp system LB72G, LB73G, LB74G 1/4" ... 3/4"  Page 230	Olympian Plus plug-in System LB64G, LB68G 1/4" ... 1 1/2"  Page 234				

Pressure Regulators

Miniature series LR07 1/8" & 1/4"  Page 239	Excelon® Quikclamp system LR72G, LR73G, LR74G 1/4" ... 3/4"  Page 241	Excelon® Sub Base LR72Z 1/4" ... 3/4"  Page 245	Olympian Plus plug-in system LR64G, LR68G 1/4" ... 1 1/2"  Page 247	SLA/15542 Compact interface mount regulator  Page 252	LR27 G1/4  Page 254
LR27H G1/4, 1/4 NPT or interface version  Page 256	L20AG 1/2" ... 1"  Page 259	LVP50 G1/4, 1/4 NPT or manifold  Page 262			

Relief Valves

Excelon® Quikclamp system LV72G, LV74G 1/4" ... 3/4"  Page 265	1002 R1/4  Page 268
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Accessories

18-015-... 1/8" & 1/4"  Page 269	18-015-914/915 R1/8 & 1/4 PTF  Page 270
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AMT RAIL DRYERS

Pressure Swing WR2A-4GT, WR3A-6GT, WR4A-8GT

- Port size: G1/2, G3/4 & G1
- High efficiency Adsorbent Media Tube (AMT) air dryer providing variable pressure dew point suppression
- Suitable for flow rates up to 3,000 l/min (106 scfm)
- Fully recovers from water saturation
- Full environmental validation to EN 50155
- Performance un-affected by shock, vibration or orientation
- Shock and Vibration tested to EN 61373:2010 Category 1, Class B
- No post dryer dust filtration required
- Available with heaters for cold start up applications

Technical Data

Medium:
Compressed air

Operation:
Pressure swing adsorption

Operating pressure:
4 ... 12 bar (58 ... 175 psi)

Flow:
See table below

Port size:
G1/2, G3/4, G1

Particle removal:
None

Purge air:
See table below

Ambient/Media temperature:
-40 ... +80°C (+40 ... +176°F)

Servicing:
Long service life – up to 21000 hours (7 year service intervals)

Materials

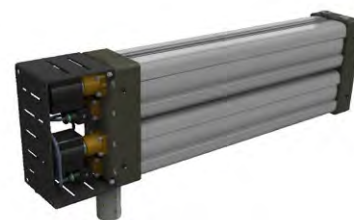
Manifolds: Aluminium Alloy

Barrels: Aluminium alloy

Adsorbent Material:
Adsorbent Media Tube (AMT)

Polymer (internal components):
Flame Retardant PA66

Elastomers (Seals): NBR



Electrical details for solenoid operators

Voltage	24 V d.c. (8 W exhaust valve, 22 W inlet valve)
Voltage tolerance	± 10%, wider tolerance on request
Rating	100% continuous duty
Electrical connection	EN 175301-803 - Form A, 30 mm
Protection class	IP 65 (with sealed plug)

Electrical details for optional operators

Voltages	24, 37.5, 48, 72, 96, 110 V d.c.
Voltage tolerance	± 30%
Electrical connection	3m long leads through PMA conduit connector. Series WR2: 3 x 4-core flying leads. Series WR3 and WR4: 4 x 4-core flying leads.
Protection class	IP 65

Models

Symbol	Inlet/ Outlet port size	Inlet flow rate *2)		Purge flow rate *1) *2)		Dew point suppression *1)		Outlet RH *1)	Weight *3)		Model
		(l/min)	(scfm)	(l/min)	(scfm)	(°C)	(°F)		(kg)	(lbs)	
	G1/2	550	19.4	110	3.9	> 40	> 72	<10	16	35	WR2A-4GT-D2C- ★ ★ ★ ★
	G1/2	1000	35.3	200	7.1	> 40	> 72	<10	19	42	WR2A-4GT-C2E- ★ ★ ★ ★
	G1/2	1450	51.2	290	10.2	> 40	> 72	<10	22	49	WR2A-4GT-H2F- ★ ★ ★ ★
	G3/4	750	26.5	150	5.3	> 40	> 72	<10	28	62	WR3A-6GT-A2C- ★ ★ ★ ★
	G3/4	1350	47.7	270	9.5	> 40	> 72	<10	32	71	WR3A-6GT-H2E- ★ ★ ★ ★
	G3/4	1800	63.6	360	12.7	> 40	> 72	<10	36	79	WR3A-6GT-G2F- ★ ★ ★ ★
	G1	875	30.9	175	6.2	> 40	> 72	<10	34	75	WR4A-8GT-B2C- ★ ★ ★ ★
	G1	2000	70.6	400	14.1	> 40	> 72	<10	38	84	WR4A-8GT-E2E- ★ ★ ★ ★
	G1	3000	105.9	600	21.2	> 40	> 72	<10	42	93	WR4A-8GT-J2F- ★ ★ ★ ★

*1) Typical performance figures at rated inlet conditions of 35°C, 90% RH @8barg.

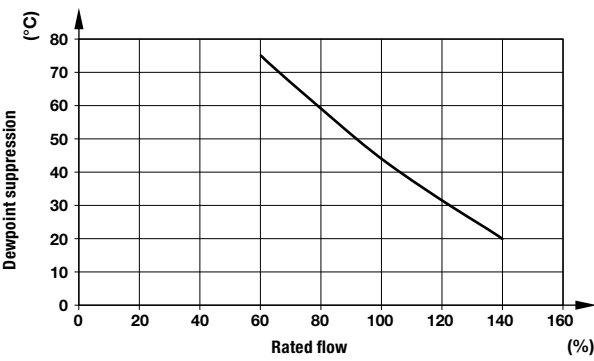
*2) Inlet and purge flow rates stated to produce 40°C dew point suppression, other performance available upon request.

*3) Weight may vary +/- 1 kg depending on options selected.

AMT RAIL DRYERS

Pressure Swing WR2A-4GT,WR3A-6GT,WR4A-8GT

● Typical performance characteristics



For further data please consult IMI Precision Technical Department

● Option selector

WR#A-#GT-###-★★★★

Heater voltage	Substitute
No heaters	0
24	1
37	2
48	3
72	4
96	5
110	6

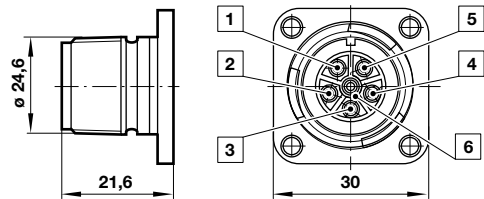
Wiring harness and rock guard configuration	Substitute
Harness and rock guard with side guards	AA
Harness and rock guard without side guards	AB
No harness and rock guard	BB

IMI Precision branding	Substitute
Yes	Y
No	N

● Accessories

Connector lead For all series	Silencer for Series	Silencer
		
PL95004 - 1m long lead	WR2	MB006B (R3/4)
PL95005 - 3m long lead	WR3	MB006B (R3/4)
PL95006 - 5m long lead	WR4	MB008B (R1)

● Electrical connector

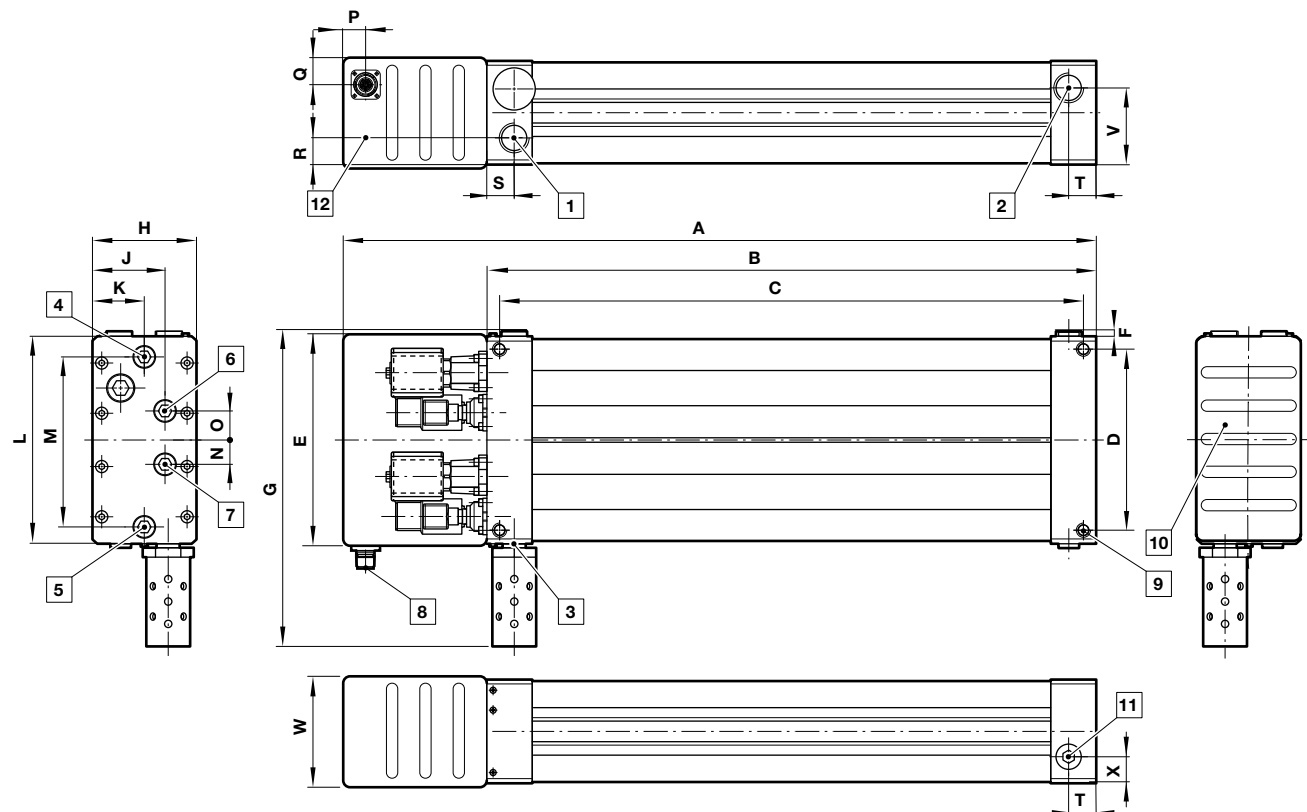


- 1 Pin A – 24 V d.c. (Upper purge valve)
- 2 Pin B – 24 V d.c. (Upper flow valve)
- 3 Pin C – 24 V d.c. (Lower purge valve)
- 4 Pin D – 24 V d.c. (Lower flow valve)
- 5 Pin E – Common OV
- 6 Pin F – Earth (Common earth)

AMT RAIL DRYERS

Pressure Swing WR2A-4GT, WR3A-6GT, WR4A-8GT

● Dimensions



- 1 Inlet port
- 2 Outlet port
- 3 Exhaust port Ø 80 mm: G3/4; Ø 100 mm: G3/4; Ø 100 mm: G1
- 4 G1/4 port to allow monitoring of pressure in top barrel
- 5 G1/4 port to allow monitoring of pressure in bottom barrel
- 6 G1/4 port on outlet to allow fitting of humidity sensor
- 7 G1/4 port on outlet to allow fitting of test point sensor

- 8 Electrical connector (valve control)
- 9 Mounting threads
 - Ø 80 mm: M10 x 1,5, thread 16 mm deep
 - Ø 100 mm: M12 x 1,75, thread 18 mm deep
 - Ø 125 mm: M12 x 1,75, thread 20 mm deep
- 10 Standard guard, side guard optional
- 11 Alternative outlet port (plugged)
- 12 Conduit adaptor for leads from optional heaters

System	A *1)	B	C	D	E	F	G	H	J	K	L	M	N	O	P	Q	R	S	T	V	W	X	Y	Model
Ø 80	633/593	470	380	126	234	5	339	100	72	50	220	166	29	29	26	29	26	25	33	74	100	28	G1/2	WR2A-4GT- ★ 2C- ★★★★★
Ø 80	833/793	670	580	126	234	5	339	100	72	50	220	166	29	29	26	29	26	25	33	74	100	28	G1/2	WR2A-4GT- ★ 2E- ★★★★★
Ø 80	1033/993	870	780	126	234	5	339	100	72	50	220	166	29	29	26	29	26	25	33	74	100	28	G1/2	WR2A-4GT- ★ 2F- ★★★★★
Ø 100	656/629	505	474	152	240	6	360	120	89	49	240	178	31	31	24	101	31	28	31	89	120	31	G3/4	WR3A-6GT- ★ 2C- ★★★★★
Ø 100	856/829	705	674	152	240	6	360	120	89	49	240	178	31	31	24	101	31	28	31	89	120	31	G3/4	WR3A-6GT- ★ 2E- ★★★★★
Ø 100	1056/1029	905	874	152	240	6	360	120	89	49	240	178	31	31	24	101	31	28	31	89	120	31	G3/4	WR3A-6GT- ★ 2F- ★★★★★
Ø 125	700/669	544	452	185	280	7	405	145	110	70	280	210	50	50	25	19	42	26	28	101	145	44	G1	WR4A-8GT- ★ 2C- ★★★★★
Ø 125	900/869	744	652	185	280	7	405	145	110	70	280	210	50	50	25	19	42	26	28	101	145	44	G1	WR4A-8GT- ★ 2E- ★★★★★
Ø 125	1100/1069	944	852	185	280	7	405	145	110	70	280	210	50	50	25	19	42	26	28	101	145	44	G1	WR4A-8GT- ★ 2F- ★★★★★

*1) Overall length with/without rock guard.

MINIATURE SERIES

General Purpose Filter LF07 – 1/8" ... 1/4"

- Very compact unit
- Protects air operated devices by removing liquid and solids contaminants
- Screw-on bowl reduces maintenance time
- Can be disassembled without the use of tools or removal from the air line
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air only

Maximum inlet pressure:
17 bar

Filter element:
5 or 40 µm

Typical flow:
see below

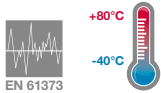
Bowl volume:
31 ml (1 fluid ounce)

Drain:
Manual

Ambient/Media temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Zinc alloy
Bowl: Zinc alloy
Filter element: PE
Elastomers: NBR



Models

Symbol	Port size	Filter element (µm)	Flow *1) (dm³/s)	(scfm)	Weight (kg)	(lb)	Model ISO G thread	PFT thread
	1/8"	40	9	19	0,13	0.28	LF07-100-M3MG	LF07-100-M3MA
	1/4"	40	11,5	24	0,13	0.28	LF07-200-M3MG	LF07-200-M3MA
	1/8"	5	9	19	0,13	0.28	LF07-100-M1MG	LF07-100-M1MA
	1/4"	5	11,5	24	0,13	0.28	LF07-200-M1MG	LF07-200-M1MA

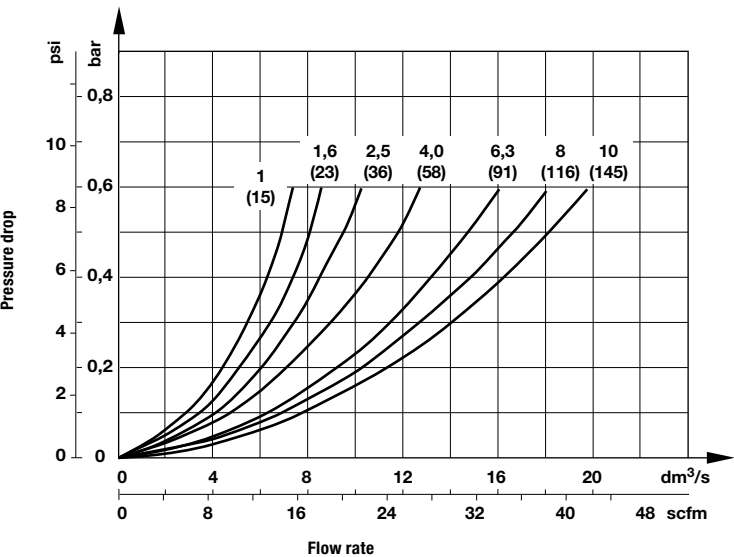
*1) Typical flow with 6,3 bar inlet pressure and a 0,3 bar droop from set.

Option selector

Port size	Substitute	LF07-★00-M★M★	Thread form	Substitute
1/8"	1		PTF	A
1/4"	2		ISO G	G
			Filter element	Substitute
			5 µm	1
			40 µm	3

Flow characteristics

Port size 1/4"
Inlet pressure:
10 bar (145 psi)
Filter element: 40 µm



MINIATURE SERIES

General Purpose Filter LF07 – 1/8" ... 1/4"

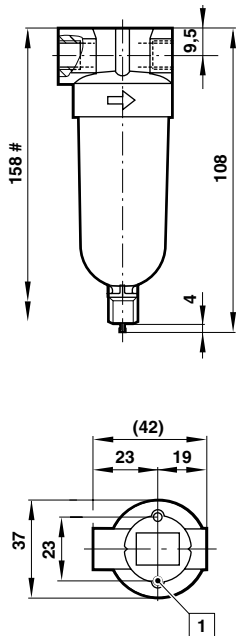
● Accessories

Service kit

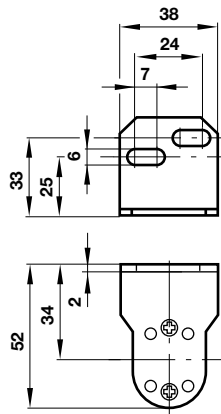
Wall mounting bracket	Service kit manual drain	Replacement drain
1		
		
5939-06	5 µm: 3652-23 (5 µm – black)	773-07
5939-06	40 µm: 3652-24 (40 µm – green)	



● Dimensions



Wall mounting bracket



Use 1/8" (3 mm) screws
to mount bracket to wall.

Minimum clearance required to remove bowl
□ Mounting holes, ø 4 mm, 13 mm deep

EXCELON® QUIKCLAMP SYSTEM

General Purpose Filter LF72G, LF73G, LF74G – 1/4" ... 3/4"

- Excelon design allows in-line installation or modular installation with other Excelon products
- Quick release bayonet bowl
- Prismatic liquid level indicator lens
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air only

Maximum inlet pressure:
17 bar

Filter element:
5 or 40 µm; 25 µm optional

Drain:
Manual

Ambient temperature:
LF72G: -40°C ... +65°C
LF73G & LF74G: -40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

LF72G:
Body and bowl: Die cast zinc
Liquid level indicator lens: Transparent PA
Filter element: Sintered PP
Elastomers: CR & NBR

LF73G & LF74G:
Body and bowl: Aluminium
Liquid level indicator lens: Transparent PA
Filter element: Sintered PP
Elastomers: NBR

LF72G



LF73G
LF74G



Models

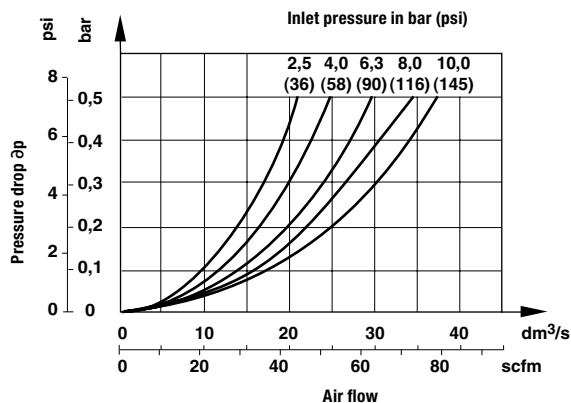
Air port	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread 40 µm	5 µm	Model with PTF-thread 40 µm	5 µm
1/4"	30	64	0,56	1.23	LF72G-2GN-ME3	LF72G-2GN-ME1	LF72G-2AN-ME3	LF72G-2AN-ME1
3/8"	30	64	0,56	1.23	LF72G-3GN-ME3	LF72G-3GN-ME1	LF72G-3AN-ME3	LF72G-3AN-ME1
1/4"	29	62	0,51	1.12	LF73G-2GN-MD3	LF73G-2GN-MD1	LF73G-2AN-MD3	LF73G-2AN-MD1
3/8"	35	75	0,51	1.12	LF73G-3GN-MD3	LF73G-3GN-MD1	LF73G-3AN-MD3	LF73G-3AN-MD1
1/2"	38	81	0,51	1.12	LF73G-4GN-MD3	LF73G-4GN-MD1	LF73G-4AN-MD3	LF73G-4AN-MD1
3/8"	66	141	0,81	1.78	LF74G-3GN-MD3	LF74G-3GN-MD1	LF74G-3AN-MD3	LF74G-3AN-MD1
1/2"	83	178	0,82	1.80	LF74G-4GN-MD3	LF74G-4GN-MD1	LF74G-4AN-MD3	LF74G-4AN-MD1
3/4"	83	178	0,80	1.76	LF74G-6GN-MD3	LF74G-6GN-MD1	LF74G-6AN-MD3	LF74G-6AN-MD1

Option selector

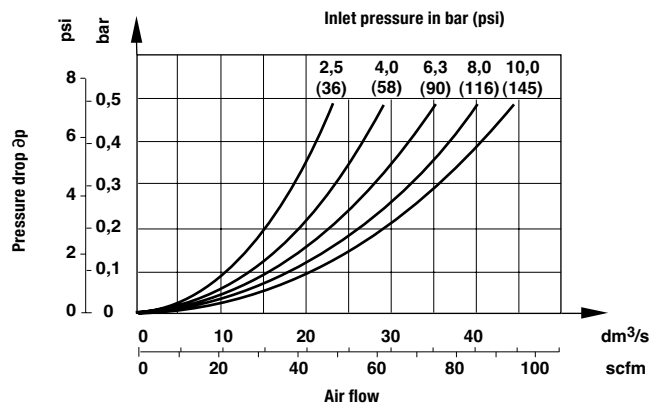
Series	Substitute	Filter element	Substitute
72	2	5 µm	1
73	3	25 µm (optional)	2
74	4	40 µm	3
Port size	Substitute	Bowl with liquid level indicator	Substitute
1/4" (72 & 73)	2	Metal (73/74)	D
3/8" (72, 73 & 74)	3	Long metal with liquid indicator (72)	E
1/2" (73 & 74)	4		
3/4" (74)	6		
Threads form	Substitute		
PTF	A		
ISO G parallel	G		

● Flow characteristics

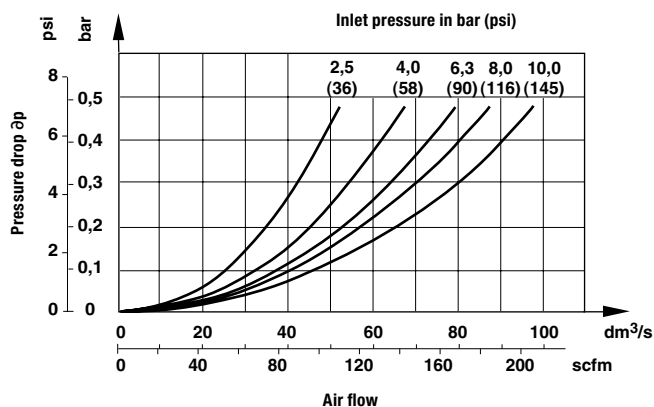
LF72G – Port size 1/4", 40 µm element



LF73G – Port size 3/8", 40 µm element



LF74G – Port size 1/2", 40 µm element



EXCELON® QUIKCLAMP SYSTEM

General Purpose Filter LF72G, LF73G, LF74G – 1/4" ... 3/4"

● Accessories

72 series



73/74 series



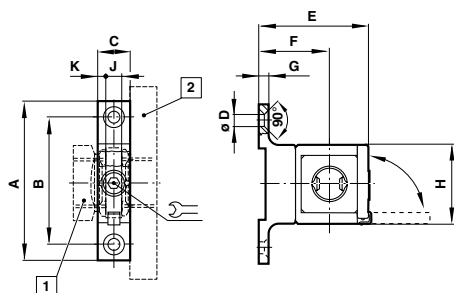
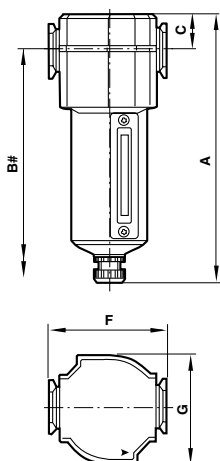
Quikclamp with wall bracket*		Quikclamp*	Service kit	Replacement elements	
1					
Series				5 µm	40 µm
72	4214-58	4214-57	4380-502	5925-03	5925-02
73	4314-63	4314-62	4380-607	4438-01	4438-03
74	4314-63	4314-62	4380-701	4438-04	4438-05

*Please use a Quikmount pipe adaptor if the Quikclamp be mounted at inlet or outlet side.

Series	Port size	Quikmount pipe adaptor ISO G parallel thread	PTF-thread
		2	2
72	1/4"	4215-08	4215-02
72	3/8"	4215-09	4215-03
73 & 74	1/4"	4315-09	4315-01
73 & 74	3/8"	4315-10	4315-02
73 & 74	1/2"	4315-11	4315-03
73 & 74	3/4"	4315-12	4315-04

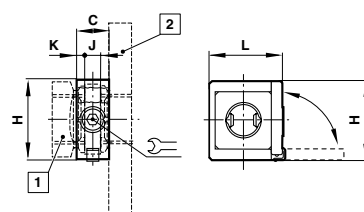
● Dimensions

Quikclamp® with wall bracket



Series	A	B	C	Ø D	E	F	G	H	J	K	↺
72	74	59	14,5	5,3	56	38	4,5	36,5	6,5	4	3
73/74	102	83	24,5	6,5	74	51	6,5	51	13,5	5,5	4

Quikclamp®

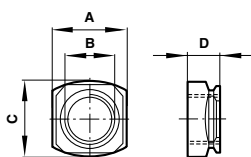


1 Quikmount pipe adaptor
2 Excelon® unit

Series	C	H	J	K	L	↺
72	14,5	36,5	6,5	4	36,5	3
73/74	24,5	51	13,5	5,5	46	4

Minimum clearance required to remove bowl

Series	A	B	C	F	G
72	161	176	19	50	48
73	175	198	25	68	62
74	196	221	25	80	74



Series	A	B	C	D
72	29	1/4, 3/8	29	16
73/74	38,5	1/4, 3/8, 1/2, 3/4	38,5	18

OLYMPIAN PLUS PLUG-IN SYSTEM

General purpose filter LF64G, LF68G/E – 1/4" ... 1 1/2"

- Effective liquid removal and positive solid filtration
- Large filter element area for minimum pressure drop
- Optional male threaded drain adaptor available for connection to pilot or solenoid operated drain valve
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air

Maximum inlet pressure:
17 bar

Filter element:
5 or 40 µm; 25 µm optional

Drain:
Manual (standard)

Ambient temperature:

LF64G: -40°C ... +80°C

LF68E: -40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Bowl size:

Sight glass (standard)

LF64G: 0,2 litre,

LF68G/E: 0,5 litre, 1 litre

Materials

LF64G

Body and yoke: Zinc alloy

Bowl: Aluminium

Prismatic liquid level indicator:
Grilamid

Filter element: Sintered plastic

Elastomers: Synthetic rubber

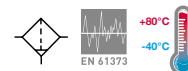
LF68G/E

Body, bowl and yoke: Aluminium

Liquid level indicator: Pyrex

Filter element: Sintered bronze

Elastomers: Synthetic rubber



Models

Air port	Flow*		Weight		Model with G-thread 40 µm		Model with PTF-thread 40 µm	
	dm ³ /s	scfm	kg	lb	5 µm	5 µm	5 µm	5 µm
1/4"	33	70	1,42	3.13	LF64G-2GN-MD3	LF64G-2GN-MD1	LF64G-2AN-MD3	LF64G-2AN-MD1
3/8"	66	140	1,42	3.13	LF64G-3GN-MD3	LF64G-3GN-MD1	LF64G-3AN-MD3	LF64G-3AN-MD1
1/2"	75	158	1,32	2.91	LF64G-4GN-MD3	LF64G-4GN-MD1	LF64G-4AN-MD3	LF64G-4AN-MD1
3/4"	75	158	1,72	3.79	LF64G-6GN-MD3	LF64G-6GN-MD1	LF64G-6AN-MD3	LF64G-6AN-MD1
Without yoke					LF64G-NNN-MD3	LF64G-NNN-MD1	LF64G-NNN-MD3	LF64G-NNN-MD1

Air port	Flow*		Weight		Model with G-thread 40 µm		Model with PTF-thread 40 µm	
	dm ³ /s	scfm	kg	lb	5 µm	5 µm	5 µm	5 µm
3/4"	215	456	2,45	5.40	LF68E-6GN-MU3	LF68E-6GN-MU1	LF68E-6AN-MU3	LF68E-6AN-MU1
1"	215	456	2,33	5.13	LF68E-8GN-MU3	LF68E-8GN-MU1	LF68E-8AN-MU3	LF68E-8AN-MU1
1 1/4"	215	456	2,43	5,35	LF68E-AGN-MU3	LF68E-AGN-MU1	LF68E-AAN-MU3	LF68E-AAN-MU1
1 1/2"	215	456	2,30	5,07	LF68E-BGN-MU3	LF68E-BGN-MU1	LF68E-BAN-MU3	LF68E-BAN-MU1
Without yoke					LF68E-NNN-MU3	LF68E-NNN-MU1	LF68E-NNN-MU3	LF68E-NNN-MU1

* Typical flow at 6,3 bar (90 psi) inlet pressure, 40 µm element and 0,5 bar (7 psi) pressure drop.

OLYMPIAN PLUS PLUG-IN SYSTEM

General purpose filter LF64G, LF68G/E – 1/4" ... 1 1/2"

Option selector

Port size	Substitute
1/4"	2
3/8"	3
1/2"	4
3/4"	6
Without yoke	N
Threads form	Substitute
PTF or without yoke (N in 6th position), drain thread = PTF	A
ISO G parallel	G
Without yoke (N in 6th position), drain thread = ISO RC	N

Automatic drain conditions:
Pressure to close drain: > 0,3 bar (4.3 psi)
Pressure to open drain: < 0,2 bar (2.9 psi)
Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

LF64G-★★N-★★★

Filter element	Substitute
5 µm	1
25 µm (optional)	2
40 µm	3
Bowl	Substitute
With liquid level indicator	D
No liquid level indicator	M
Drain	Substitute
Manual (standard)	M
Automatic	A*
Open (with male thread adaptor)	N

* For temperature range -25°C ... 80°C only, shock and vibration, contact IMI Norgren

LF68★-★★N-★★★

Version	Substitute
Long filtration element	E*1)
Short filtration element	G
Port size	Substitute
3/4"	6
1"	8
1 1/4"	A
1 1/2"	B
Without yoke	N
Threads form	Substitute
PTF or without yoke (N in 6th position), drain thread = PTF	A
ISO G parallel	G
Without yoke (N in 6th position), drain thread = ISO RC	N

Automatic drain conditions:
Pressure to close drain: > 0,3 bar (4.3 psi)
Pressure to open drain: < 0,2 bar (2.9 psi)
Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

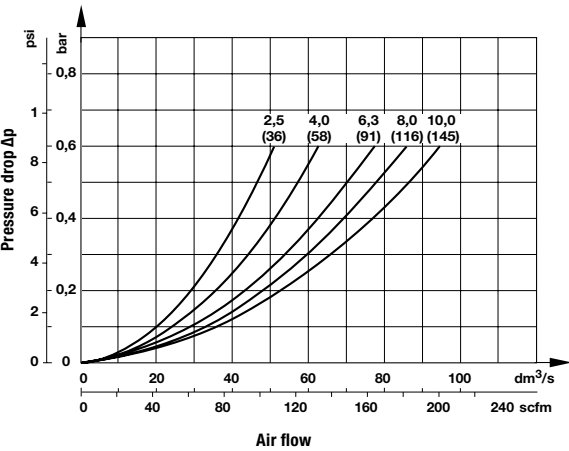
Filter element	Substitute
5 µm	1
25 µm (optional)	2
40 µm	3
Bowl	Substitute
0,5 l with liquid level indicator	R
1 l with liquid level indicator	U
0,5 l no liquid level indicator	M
1 l no liquid level indicator	C
Drain	Substitute
Automatic	A*2)
Manual (spindle type)	M
Open (with male thread adaptor)	N

*1) Long Filtration Elements are available with 1 litre bowl only; therefore substitute E at the 5th digit and U or C at the 10th position.

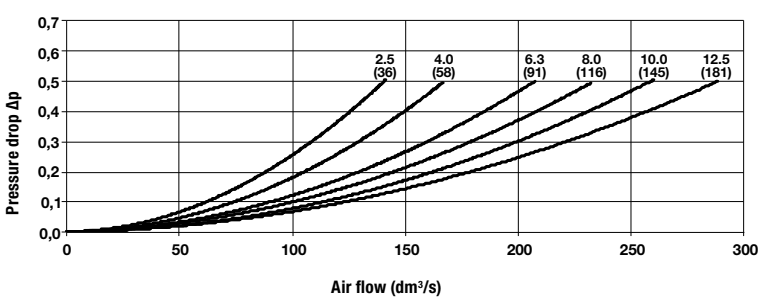
*2) For temperature range -25°C ... 80°C only, shock and vibration, contact IMI Norgren.

Flow characteristics

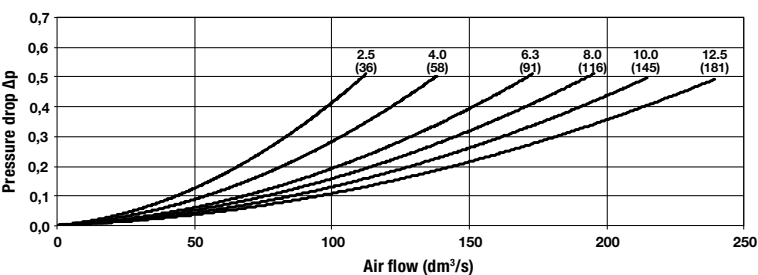
LF64 – Port size 1/2", 40 µm element



LF68 – Port size 1", 40 µm element



LF68 – Port size 1", 5 µm element



OLYMPIAN PLUS PLUG-IN SYSTEM

General purpose filter LF64G, LF68G/E – 1/4" ... 1 1/2"

● Accessories

64 Series



	Models with G-thread Single yoke 5	Double yoke	Models with PTF-thread Single yoke 5	Double yoke
Thread				
1/4"	Y64A-2GA-N1N	Y64A-2GA-N2N	Y64A-2AA-N1N	Y64A-2AA-N2N
3/8"	Y64A-3GA-N1N	Y64A-3GA-N2N	Y64A-3AA-N1N	Y64A-3AA-N2N
1/2"	Y64A-4GA-N1N	Y64A-4GA-N2N	Y64A-4AA-N1N	Y64A-4AA-N2N
3/4"	Y64A-6GA-N1N*	Y64A-6GA-N2N*	Y64A-6AA-N1N*	Y64A-6AA-N2N*

*These yokes are supplied with two end connector kits as standard.

	Models with G-threads End connector kit 2	Models with G-threads Rear entry bracket kit 8	Models with PTF-threads End connector kit 2	Drain Valves
Thread				
3/4"	74505-53	18-026-981	74505-55	8591127.0000.00000 *3)
				VRW8102031/12N (12 V D.C.)
				VRW8102031/24N (24 V D.C.)
				VRW8102031/37N (37,5 V D.C.)
				VRW8102031/52N (52 V D.C.)
				VRW8102031/72N (72 V D.C.)
				VRW8102031/96N (96 V D.C.)
				VRW8102031/11N (110 V D.C.)

*3) for more details please see valve section.

*4) for more details please see valve section.

Others

Bracket mounting 1	Nut 4	Service kit, manual drain	Service kit, open ended adaptor	Service kit, automatic drain
74504-50	74502-89	LF64G-KITM05 (5 µm)	LF64G-KITN05 (5 µm)	LF64G-KITA05 (5 µm)
		LF64G-KITM25 (25 µm)	LF64G-KITN25 (25 µm)	LF64G-KITA25 (25 µm)
		LF64G-KITM40 (40 µm)	LF64G-KITN40 (40 µm)	LF64G-KITA40 (40 µm)

OLYMPIAN PLUS PLUG-IN SYSTEM

General purpose filter LF64G, LF68G/E – 1/4" ... 1 1/2"

68 Series



Models with G-thread Single yoke 5		Double yoke		Models with PTF-thread Single yoke 5		Double yoke	
Thread							
1/4"		Y68A-6GN-N1N		Y68A-6AN-N1N		Y68A-6AN-N2N	
3/8"		Y68A-8GN-N1N		Y68A-8AN-N1N		Y68A-8AN-N2N	
1/2"		Y68A-AGN-N1N		Y68A-AAN-N1N		Y68A-AAN-N2N	
3/4"		Y68A-BGN-N1N		Y68A-BAN-N1N		Y68A-BAN-N2N	

Models with G-thread End connector kit 2		Models with PTF-thread End connector kit 2		Without thread Single yoke 5		Bracket mounting 1	
Thread							
3/4"		5524-55		74785-99		18-001-979	
1"		5524-52				18-001-979	
1 1/4"		5523-52				18-001-978	
1 1/2"		5523-93				18-001-972	

Others

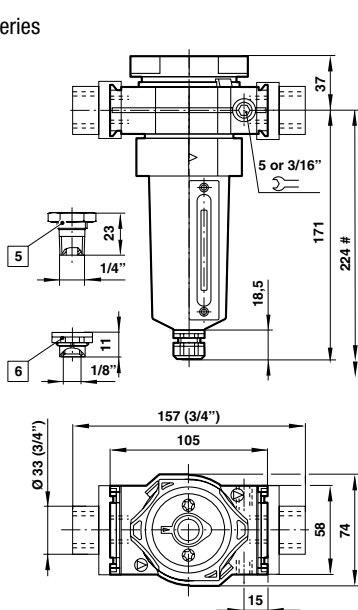
Nut		Service kit, manual drain		Service kit, open ended adaptor		Service kit, automatic drain		Drain Valves	
4								Pneumatically operated *3)	Electrically operated *4)
									
5520-89	LF68E-KITM05/LF68G-KITM05 (5 µm)	LF68E-KITN05/LF68G-KITN05 (5 µm)	LF68E-KITA05/LF68G-KITA05 (5 µm)	8591127.0000.00000 *3)					
	LF68E-KITM25/LF68G-KITM25 (25 µm)	LF68E-KITN25/LF68G-KITN25 (25 µm)	LF68E-KITA25/LF68G-KITA25 (25 µm)	VRW8102031/24N (24 V D.C.)					
	LF68E-KITM40/LF68G-KITM40 (40 µm)	LF68E-KITN40/LF68G-KITN40 (40 µm)	LF68E-KITA40/LF68G-KITA40 (40 µm)	VRW8102031/37N (37,5 V D.C.)					
				VRW8102031/52N (52 V D.C.)					
				VRW8102031/72N (72 V D.C.)					
				VRW8102031/96N (96 V D.C.)					
				VRW8102031/11N (110 V D.C.)					

OLYMPIAN PLUS PLUG-IN SYSTEM

General purpose filter LF64G, LF68G/E – 1/4" ... 1 1/2"

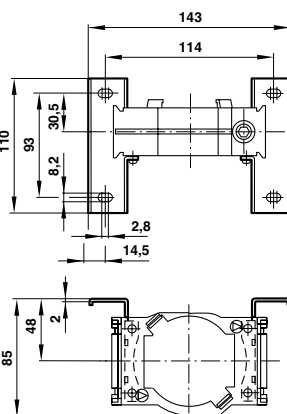
● Dimensions

64 Series

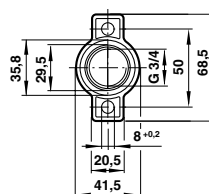


Minimum clearance required to remove bowl

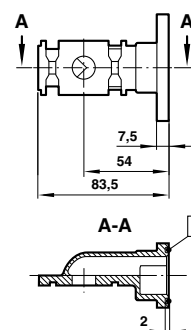
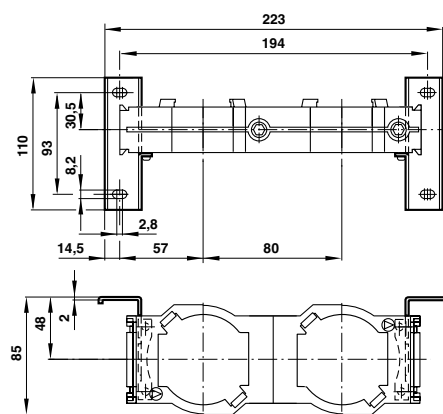
- 5 Open ended adaptor (optional)
- 6 Automatic drain (optional)



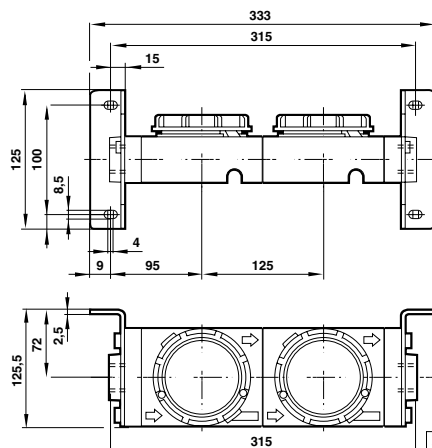
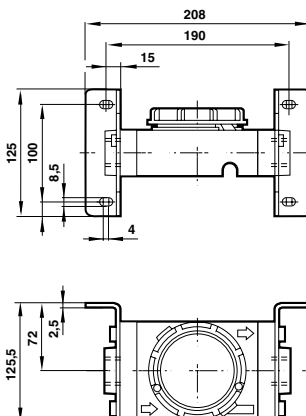
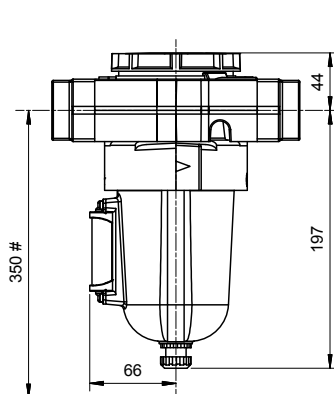
Rear entry bracket



1 'O'-ring (included in scope of supply of bracket)



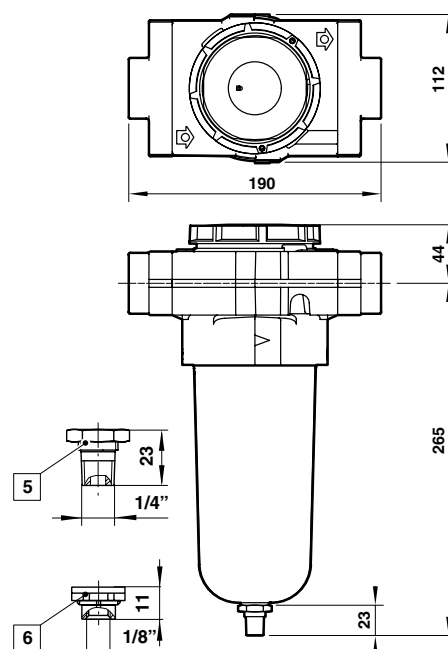
LF68G



Minimum clearance required to remove bowl

- 3 For 1 1/4" and 1 1/2" ported yokes add 10 mm
- 5 Open ended adaptor
- 6 Automatic drain (optional)

LF68E



EXCELON® QUIKCLAMP SYSTEM

Oil removal filter LF74H – 1/2" & 3/4"

- Excelon design allows in-line installation or modular installation with other Excelon products
- High efficiency oil and particle removal
- Quick release bayonet bowl
- Service indicator standard
- Prismatic liquid level indicator lens
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B
- Install an LF74G filter with 5 µm element upstream of the LF74H for maximum service life

Technical Data

Medium:
Compressed air

Maximum inlet pressure:
17 bar

Particle removal:
To 0,01 µm

Maximum remaining oil content in outlet air:
0,01 mg/m³ at +20°C with an inlet concentration of 17 mg/m³

Drain:
Manual

Ambient temperature:
-40°C ... +65°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body and bowl: Aluminium

Liquid level indicator lens:
Transparent nylon

Element: Synthetic fibre & polyurethane foam

Elastomers: Nitrile

Service life indicator:

Body and adaptor: Aluminium

Lens: Transparent nylon

Internal parts: Acetal

Spring: Stainless steel

Elastomers: Nitrile



Models

Air port	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread	Model with PTF-thread
1/2"	28	59	1,12	2.46	LF74H-4GN-MD0	LF74H-4AN-MD0
3/4"	28	59	1,11	2.44	LF74H-6GN-MD0	LF74H-6AN-MD0

* Maximum flow to maintain stated oil content at 6,3 bar (90 psi) inlet pressure.

Option selector

LF74H-★ ★ D-MD0

Port size	Substitute
1/2"	4
3/4"	6

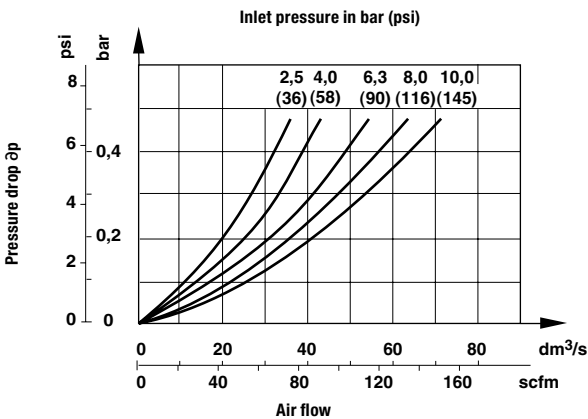
Threads form	Substitute
PTF	A
ISO G parallel	G

Typical performance characteristics

Inlet pressure bar	psi	Maximum flow dm³/s*	scfm
1	15	11,2	24
3	45	19,3	41
5	75	24,9	53
6,3	90	28,0	59
7	100	29,5	63
9	130	33,5	71

* Maximum flow to maintain stated oil removal performance.

Flow characteristics



EXCELON® QUIKCLAMP SYSTEM

Oil removal filter LF74H – 1/2" & 3/4"

Accessories



Quikclamp with wall bracket*	Quikclamp*	Service kit
1		



4314-63



4314-62



4380-731 Seal and element
4344-04 Oil removal element

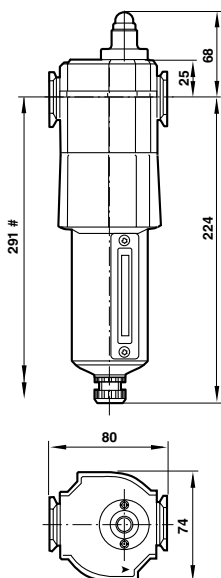
* Please use a Quikmount pipe adaptor if the Quikclamp is mounted at inlet or outlet side.

Port size	Quikmount pipe adaptor ISO G parallel thread	PTF-thread
2		2



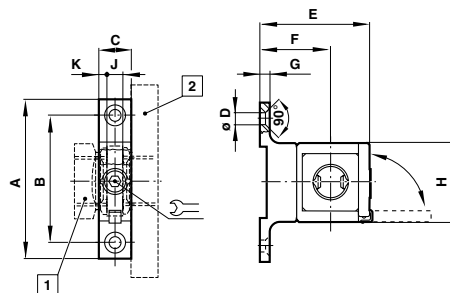
1/4"	4315-09	4315-01
3/8"	4315-10	4315-02
1/2"	4315-11	4315-03
3/4"	4315-12	4315-04

Dimensions



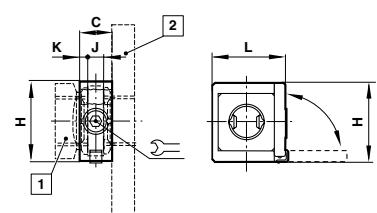
Minimum clearance required to remove bowl

Quikclamp® with wall bracket



A	B	C	Ø D	E	F	G	H	J	K	
102	83	24,5	6,5	74	51	6,5	51	13,5	5,5	4

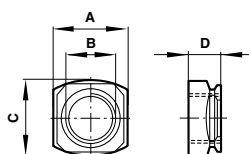
Quikclamp®



□ Quikmount pipe adaptor
▣ Excelon® unit

C	H	J	K	L	
24,5	51	13,5	5,5	46	4

Quikmount pipe adaptor



A	B	C	D
38,5	1/4, 3/8, 1/2, 3/4	38,5	18

OLYMPIAN PLUS PLUG-IN SYSTEM

Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

- Coalescing element provides high efficiency oil and particle removal
- Standard visual service indicator heavy duty design specially for rail
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air only

Maximum operating pressure:
17 bar

Particle removal:
To 0,01 µm

Maximum remaining oil content in outlet air:
0,01 mg/m³ at +21°C

Drain:
Manual or automatic

Service life indicator:
Standard

Bowl size:
0,2 litre - LF64H
1 litre - LF68H

Ambient/Media temperature:
-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Note:
Install an F68E filter with a 5 µm filter element upstream of the F68H filter for maximum service life.

Materials

LF64H
Body and yoke: Zinc alloy
Connection piece: Aluminium
Metal bowl: Aluminium
Element: Composite
Prismatic liquid level indicator: Grilamid
Elastomers: Synthetic rubber

LF68H
Body yoke and bowl: Aluminium
Liquid level indicator: Pyrex
Element: Composite
Elastomers: Synthetic rubber
Elastomers: Nitrile

Service life indicator:
Body and adaptor: Aluminium
lens: Transparent nylon
Internal parts: Acetal
Spring: Stainless steel
Elastomers: Synthetic rubber
Filtration Level: ISO 8573-1:2010 [1.-.1]



Models

Symbol	Port size	Size	Flow* dm³/s	scfm	Weight (kg)	(lbs)	Model ISO G thread	PTF thread
	3/8"	—	28	59	1,70	3.74	LF64H-3GD-MD0	LF64H-3AD-MD0
	1/2"	Basic	28	59	1,67	3.68	LF64H-4GD-MD0	LF64H-4AD-MD0
	3/4"	—	28	59	2,01	4.43	LF64H-6GD-MD0	LF64H-6AD-MD0
	—	—	—	—	—	—	LF64H-NND-MD0	LF64H-NND-MD0

* Typical flow at 6,3 bar (90 psi) inlet pressure, 40 µm element and 0,5 bar (7 psi) pressure drop.

Symbol	Port size	Size	Flow* dm³/s	scfm	Weight (kg)	(lbs)	Model ISO G thread	PTF thread
	3/4"	—	60	127	2,66	5.86	LF68H-6GD-MU0	LF68H-6AD-MU0
	1"	Basic	60	127	2,60	5.73	LF68H-8GD-MU0	LF68H-8AD-MU0
	1 1/4"	—	60	127	2,60	5.73	LF68H-AGD-MU0	LF68H-AAD-MU0
	1 1/2"	—	60	127	2,60	5.73	LF68H-BGD-MU0	LF68H-BAD-MU0
	Without yoke	—	—	—	—	—	LF68H-NND-MU0	LF68H-NND-MU0

* Typical flow at 6,3 bar (90 psi) inlet pressure to maintain stated oil removal performance.

Option selector

Port size	Substitute	LF64H-★★★★★0	Bowl	Substitute
3/8"	3		With liquid level indicator	D
1/2"	4		No liquid level indicator	M
3/4"	6		Drain	Substitute
Without yoke	N		Automatic	A *1)
Thread	Substitute		Manual, spindle type (standard)	M
PTF	A		Open ended (with male thread adaptor)	N
ISO G parallel (standard)	G		Optional service life indicator	Substitute
Without yoke	N		No service indicator	N
			With service indicator	D

Automatic drain conditions:
Pressure to close drain: > 0,3 bar (4.3 psi)
Pressure to open drain: < 0,2 bar (2.9 psi)
Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

*1) For temperature range -25 ... 80°C only, shock and vibration, contact IMI Norgren.

OLYMPIAN PLUS PLUG-IN SYSTEM

Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

LF68H-★★★★★0

Port size	Substitute
3/4"	6
1"	8
1 1/4"	A
1 1/2"	B
Without yoke	N
Thread	Substitute
PTF or without yoke (N in 6th position), drain thread = PTF	A
ISO G parallel (standard)	G
Without yoke (N in 6th position), drain thread = ISO Rc	N

Automatic drain conditions:

Pressure to close drain: > 0,3 bar (4.3 psi)

Pressure to open drain: < 0,2 bar (2.9 psi)

Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

Bowl	Substitute
1l With liquid level indicator	U
1l No liquid level indicator	C
Drain	Substitute
Automatic	A *1)
Manual, spindle type (standard)	M
Open ended (with male thread adaptor)	N
Optional Service Life Indicator	Substitute
No service indicator	N
With service indicator	D

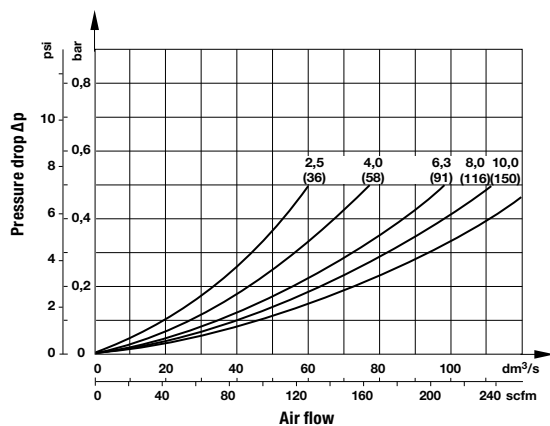
*1) For temperature range -25 ... 80°C only, shock and vibration, contact Norgren.

● Flow characteristics

LF64H

Port size: 1/2"

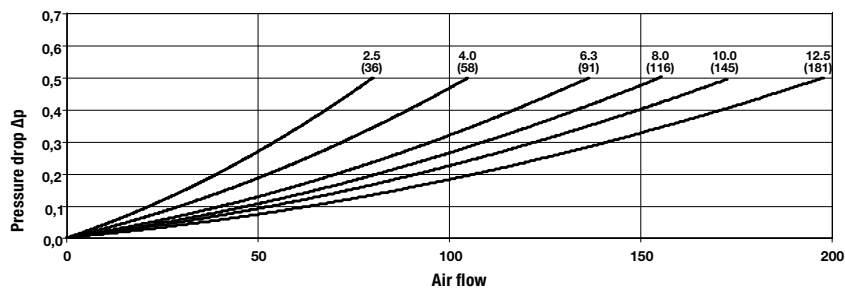
Dry element



LF68H

Port size: 1"

Dry element



OLYMPIAN PLUS PLUG-IN SYSTEM
Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

● Accessories, service kit

LF64H



● Accessories

Thread	Models with G-thread Single yoke	Double yoke	End connector kit	Rear entry bracket kit	Bracket mounting	Nut	Yoke connector kit
	5		2	8	1	4	
G1/4	Y64A-2GA-N1N	Y64A-2GA-N2N	—	—	74504-50	74502-89	74503-51
G3/8	Y64A-3GA-N1N	Y64A-3GA-N2N	—	—			
G1/2	Y64A-4GA-N1N	Y64A-4GA-N2N	74505-50	—			
G3/4	Y64A-6GA-N1N*	Y64A-6GA-N2N*	74505-53	18-026-981			
1/4 PTF	Y64A-2AA-N1N	Y64A-2AA-N2N	—	—			
3/8 PTF	Y64A-3AA-N1N	Y64A-3AA-N2N	—	—			
1/2 PTF	Y64A-4AA-N1N	Y64A-4AA-N2N	74505-52	—			
3/4 PTF	Y64A-6AA-N1N*	Y64A-6AA-N2N*	74505-55	—			

* These yokes are supplied with two end connector kits as standard.

Service kit

Drain Valves		Service kit Manual drain	Service kit, open ended adaptor	Service kit Automatic drain
Pneumatically operated *3)	Electrically operated *4)			
8591127.0000.00000 *3)	VRW8102031/12N (12 V D.C.)	LF64H-KITMOC	LF64H-KITNOC	LF64H-KITAOC
	VRW8102031/24N (24 V D.C.)			
	VRW8102031/37N (37,5 V D.C.)			
	VRW8102031/52N (52 V D.C.)			
	VRW8102031/72N (72 V D.C.)			
	VRW8102031/96N (96 V D.C.)			
	VRW8102031/11N (110 V D.C.)			

*3) for more details please see valve section.

*4) for more details please see valve section.

OLYMPIAN PLUS PLUG-IN SYSTEM

Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

LF68H



● Accessories

Thread	Single yoke	Double yoke	End connector kit	Single yoke non threads	Bracket mounting
	5	5	2	5	1



G3/4	Y68A-6GN-N1N	Y68A-6GN-N2N	5524-55	74785-98	18-001-979
G1	Y68A-8GN-N1N	Y68A-8GN-N2N	5524-52		18-001-979
G1 1/4	Y68A-AGN-N1N	Y68A-AGN-N2N	5523-52		18-001-978
G1 1/2	Y68A-BGN-N1N	Y68A-BGN-N2N	5523-93		18-001-972
3/4 PTF	Y68A-6AN-N1N	Y68A-6AN-N2N	5524-53		18-001-979
1 PTF	Y68A-8AN-N1N	Y68A-8AN-N2N	5524-50		18-001-979
1 1/4 PTF	Y68A-AAN-N1N	Y68A-AAN-N2N	5523-50		18-001-978
1 1/2 PTF	Y68A-BAN-N1N	Y68A-BAN-N2N	5523-95		18-001-972

Drain Valves

Pneumatically operated
*3)Electrically operated
*4)

8591127.0000.00000 *3)	VRW8102031/12N (12 V D.C.)
	VRW8102031/24N (24 V D.C.)
	VRW8102031/37N (37,5 V D.C.)
	VRW8102031/52N (52 V D.C.)
	VRW8102031/72N (72 V D.C.)
	VRW8102031/96N (96 V D.C.)
	VRW8102031/111N (110 V D.C.)

*3) for more details please see valve section.

*4) for more details please see valve section.

Others

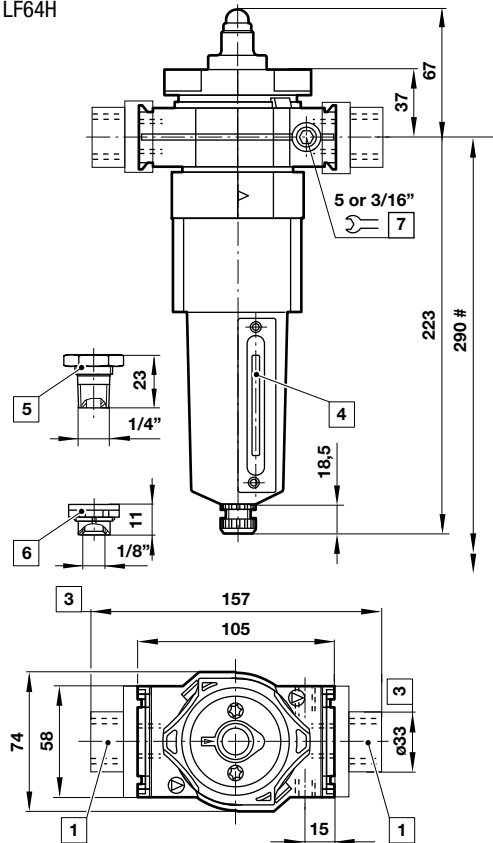
Nut 4	Service kit manual drain	Service kit, open ended adaptor	Service kit automatic drain
5520-89	LF68H-KITMOC	LF68H-KITNOC	LF68H-KITAOC

OLYMPIAN PLUS PLUG-IN SYSTEM

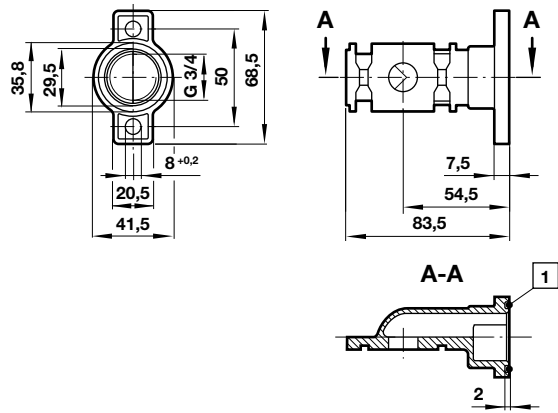
Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

● Dimensions

LF64H



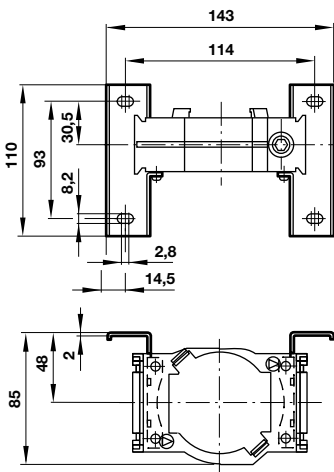
Rear entry bracket
18-026-981



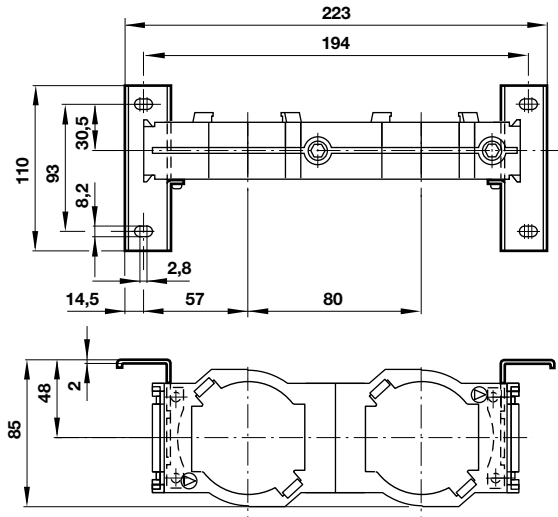
1 'O'-ring (included in scope of supply of bracket)

- # Minimum clearance required to remove bowl
- 1 Main ports 1/4", 3/8", 1/2" or 3/4"
 - 3 For main ports 3/4" only
 - 4 Sight glass
 - 5 Open ended adaptor
 - 6 Automatic drain (optional)
 - 7 Gauge port 1/8"

Single yoke with bracket mounting



Double yoke with bracket mounting

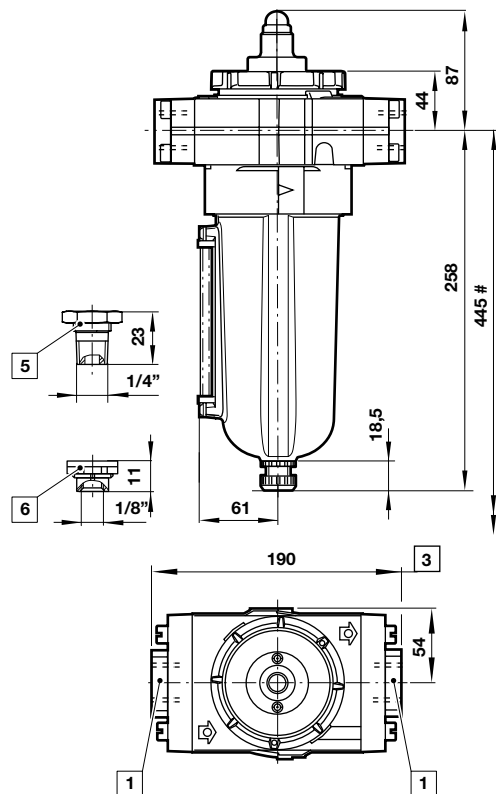


OLYMPIAN PLUS PLUG-IN SYSTEM

Oil removal filter LF64H, LF68H – 3/8" ... 1 1/2"

Solenoid Drain Valve

LF68H



Minimum clearance required to remove bowl

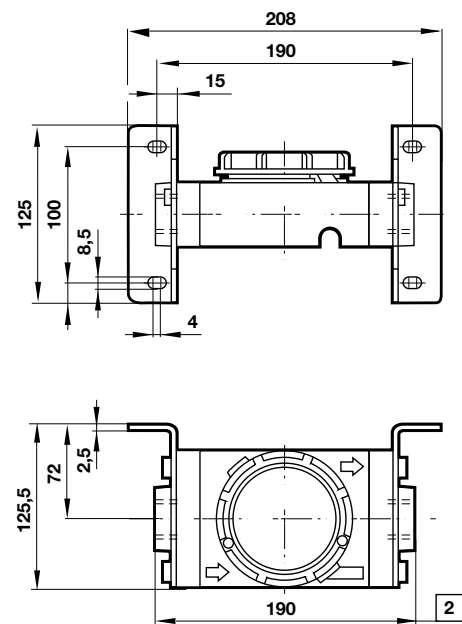
1 Main ports 3/4", 1", 1 1/4" or 1 1/2"

3 Plus 10 mm for ports 1 1/4" or 1 1/2"

5 Open ended adaptor

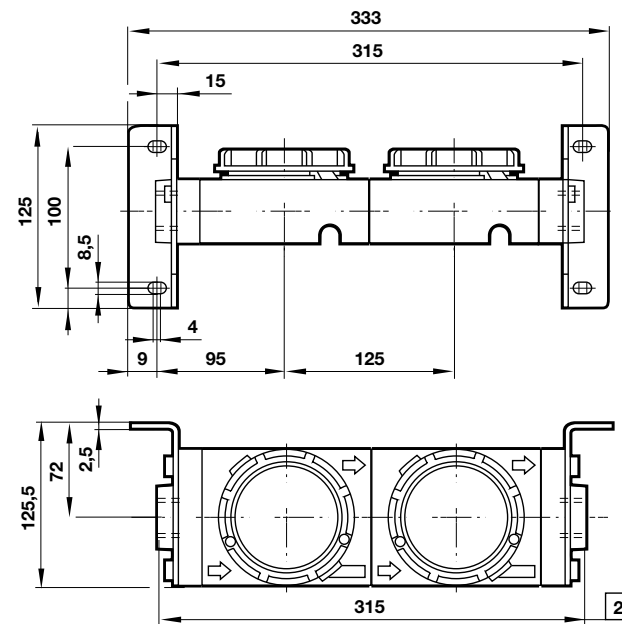
6 Automatic drain (optional)

Single yoke with bracket



1 For 1 1/4" and 1 1/2" ported yokes add 10 mm

Double yoke with bracket



1 For 1 1/4" and 1 1/2" ported yokes add 10 mm

MINIATURE SERIES

General purpose filter/regulator LB07 – 1/8" & 1/4"

- Compact design
- Snap action knob locks pressure setting when pushed in
- Standard relieving models allow reduction of outlet pressure even when the system is dead-ended
- Protects air operated devices by removing liquid and solids contaminants
- Screw-on bowl reduces maintenance time
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air only

Pressure range:
0,3 ... 10 bar
Other pressure ranges are available contact Norgren

Maximum inlet pressure:
17 bar

Filter element:
5 or 40 µm

Typical flow:
See below

Gauge ports:
1/8" PTF with PTF main ports 1/8"
ISO Rc with ISO G main ports

Drain:
Manual

Bowl size:
31 ml (1 fluid ounce)

Ambient temperature:*
-40°C ... +65°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Zinc

Bonnet and valve seat: Acetal

Valve: Brass/nitrile

Valve seat: Acetal

Element: Sintered polypropylene

Elastomers: Nitrile



Models

Port size	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread 40 µm	5 µm	Model with PTF-thread 40 µm	5 µm
1/8"	6,2	13	0,26	0.57	LB07-133-M3KG	LB07-133-M1KG	LB07-133-M3KA	LB07-133-M1KA
1/4"	6,5	14	0,26	0.57	LB07-233-M3KG	LB07-233-M1KG	LB07-233-M3KA	LB07-233-M1KA

* Typical flow with 7 bar (100 psi) inlet pressure, 6,3 bar (90 psi) set pressure, 40 µm element, and a 1 bar (15 psi) droop from set.

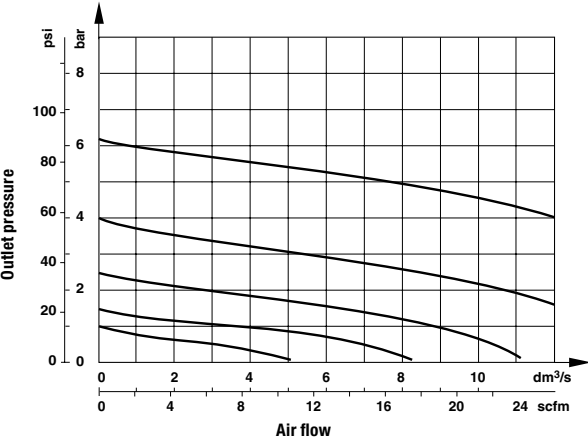
Option selector

LB07-★33-M★M★

Port size	Substitute	Threads	Substitute
1/8"	1	PTF	A
1/4"	2	ISO G parallel	G
Filter element	Substitute		
5 µm	1		
40 µm	3		

Flow characteristics

LB07 – Port size: 1/4", element: 40 µm, inlet pressure: 10 bar (145 psi), range: 0,3 ... 7 bar (5 ... 100 psi)



MINIATURE SERIES

General purpose filter/regulator LB07 – 1/8" & 1/4"

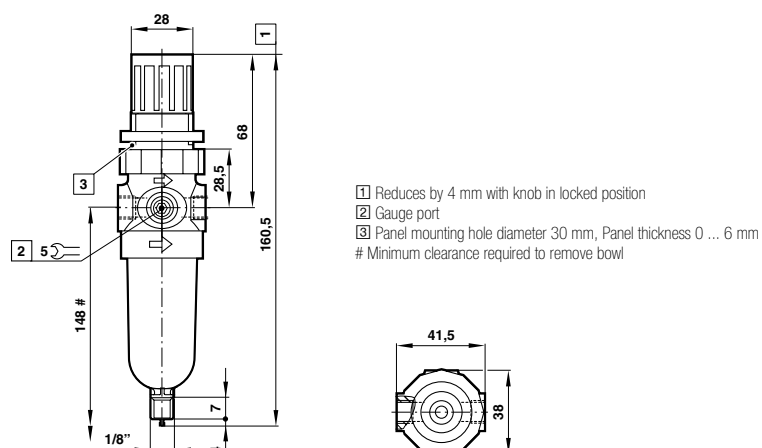
Accessories



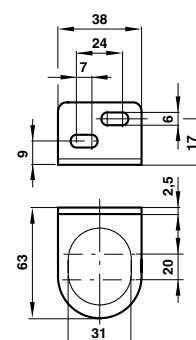
Wall mounting bracket and panel nut	Panel nut	Service kit	Replacement drain
1 4	4	Type	
			
18-025-004	2962-04	5 µm	3820-15
		40 µm	3820-17
			773-07

Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
					
07 (ISO G main port)	Rc 1/8	0 ... 10		40 mm	18-015-989
07 (PTF main port)	1/8 PTF		0 ... 160	1 1/2"	18-015-212

Dimensions



Wall mounting bracket



EXCELON® QUIKCLAMP SYSTEM

Filter regulator LB72G, LB73G, LB74G – 1/4" ... 3/4"

- Excelon design allows in-line installation or modular installation with other Excelon products
- High efficiency water and particle removal
- Quick release bayonet bowl
- Push to lock adjusting knob with tamper resistant accessory
- Prismatic liquid level indicator lens
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air only

Pressure range:

0,3 ... 10 bar

Other pressure ranges are available contact Norgren

Maximum inlet pressure:

17 bar

Filter element:

5 or 40 µm; 25 µm optional

Gauge ports:

LB72G: Rc 1/8 for ISO G main ports, 1/8 PTF for PTF main ports LB73G & LB74G:

Rc 1/8 for ISO G main ports, 1/4 PTF for PTF main ports

Drain:

Manual

Relieving:

Standard

Ambient temperature:

LB72G: -40°C ... +65°C

LB73G & LB74G: -40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

LB72G

Body and bowl: Zinc

Bonnet: Acetal

Valve: Brass and nitrile

Liquid level indicator lens:

Transparent nylon

Element: Sintered polypropylene

Elastomers: Nitrile

LB73G

Body and bowl: Aluminium

Bonnet: Zinc

Valve: Brass and nitrile

Liquid level indicator lens:

Transparent nylon

Element: Sintered polypropylene

Elastomers: Nitrile

LB74G

Body & bonnet: Aluminium

Valve: Brass and nitrile

Liquid level indicator lens:

Transparent nylon

Element: Sintered polypropylene

Elastomers: nitrile

LB72G



LB73G

LB74G



Models

Air port	Flow* dm³/s	scfm	Weight kg		Model with G-thread		Model with PTF-thread	
				lb	40 µm	5 µm	40 µm	5 µm
1/4"	38	81	0,76	1.67	LB72G-2GK-ME3-RMN	LB72G-2GK-ME1-RMN	LB72G-2AK-ME3-RMN	LB72G-2AK-ME1-RMN
3/8"	38	81	0,76	1.67	LB72G-3GK-ME3-RMN	LB72G-3GK-ME1-RMN	LB72G-3AK-ME3-RMN	LB72G-3AK-ME1-RMN
1/4"	49	104	0,71	1.56	LB73G-2GK-MD3-RMN	LB73G-2GK-MD1-RMN	LB73G-2AK-MD3-RMN	LB73G-2AK-MD1-RMN
3/8"	50	106	0,71	1.56	LB73G-3GK-MD3-RMN	LB73G-3GK-MD1-RMN	LB73G-3AK-MD3-RMN	LB73G-3AK-MD1-RMN
1/2"	50	106	0,71	1.56	LB73G-4GK-MD3-RMN	LB73G-4GK-MD1-RMN	LB73G-4AK-MD3-RMN	LB73G-4AK-MD1-RMN
3/8"	77	163	1,31	2.88	LB74G-3GK-MD3-RMN	LB74G-3GK-MD1-RMN	LB74G-3AK-MD3-RMN	LB74G-3AK-MD1-RMN
1/2"	100	212	1,31	2.88	LB74G-4GK-MD3-RMN	LB74G-4GK-MD1-RMN	LB74G-4AK-MD3-RMN	LB74G-4AK-MD1-RMN
3/4"	100	212	1,31	2.88	LB74G-6GK-MD3-RMN	LB74G-6GK-MD1-RMN	LB74G-6AK-MD3-RMN	LB74G-6AK-MD1-RMN

* Typical flow at 10 bar (145 psi) inlet pressure, 6,3 bar (90 psi) set pressure and 0,5 bar (7 psi) droop from set.

EXCELON® QUIKCLAMP SYSTEM

Filter regulator LB72G, LB73G, LB74G – 1/4" ... 3/4"

Option selector

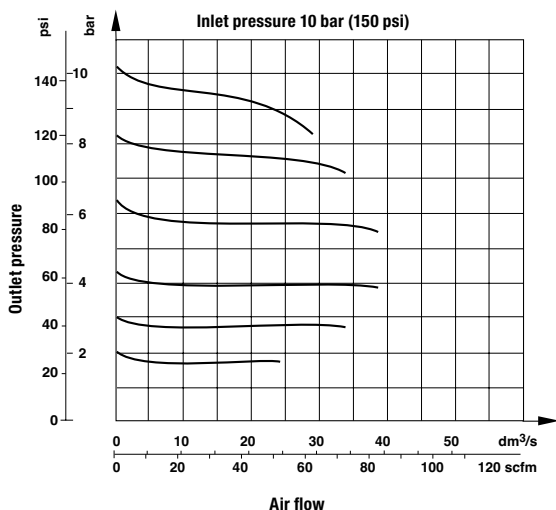
LB7★G-★★★-M★★-RMN

Series	Substitute
72	2
73	3
74	4
Port size	Substitute
1/4" (72 & 73)	2
3/8" (72 ... 74)	3
1/2" (73 & 74)	4
3/4" (74)	6
Threads form	Substitute
PTF	A
ISO G parallel	G

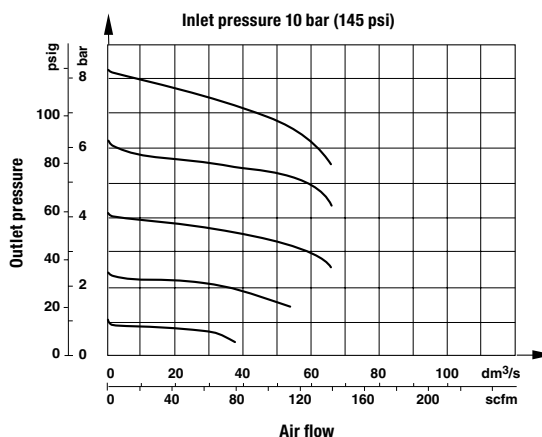
Filter element	Substitute
5 µm	1
25 µm (optional)	2
40 µm	3
Bowl with liquid level indicator	Substitute
Metal (73/74)	D
Long metal with liquid indicator (72)	E
Adjustment	Substitute
Knob (standard)	K
T-handle (10 bar, 145 psi)	T

Flow characteristics

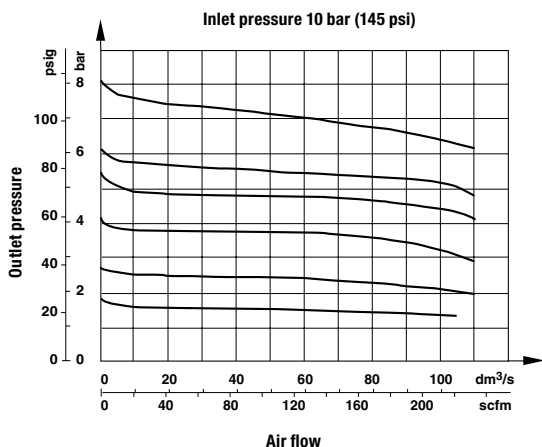
LB72G – Port size 1/4", pressure range 0,3 ... 10 bar (5 ... 145 psi), 40 µm element



LB73G – Port size 3/8", pressure range 0,3 ... 10 bar (5 ... 145 psi), 40 µm element



LB74G – Port size 1/2", pressure range 0,3 ... 10 bar (5 ... 145 psi), 40 µm element



EXCELON® QUIKCLAMP SYSTEM Filter regulator LB72G, LB73G, LB74G – 1/4" ... 3/4"

● Accessories

72 series



73/74 series



Series	Quikclamp with wall bracket*	Quikclamp*	Tamper resistant cover & seal wire	Wall bracket and panel mounting nut	Panel nut (zinc)	Service kit	Service kit	Replacement elements	
	1		3	4 5	4			5 µm	40 µm
									
72	4214-58	4214-57	4255-51	74316-51	4248-88	4381-513	4380-502	5925-03	5925-02
73	4314-63	4314-62	4455-51	4461-50	5191-88	4383-607	4380-607	4438-01	4438-03
74	4314-63	4314-62	4355-51	4368-51	4348-89	4381-708	4380-701	4438-04	4438-05

* Please use a Quikmount pipe adaptor if the Quikclamp be mounted at inlet or outlet side.

Series	Port size	Quikmount pipe adaptor ISO G parallel thread	PTF-thread
		2	2
			
72	1/4"	4215-08	4215-02
72	3/8"	4215-09	4215-03
73 & 74	1/4"	4315-09	4315-01
73 & 74	3/8"	4315-10	4315-02
73 & 74	1/2"	4315-11	4315-03
73 & 74	3/4"	4315-12	4315-04

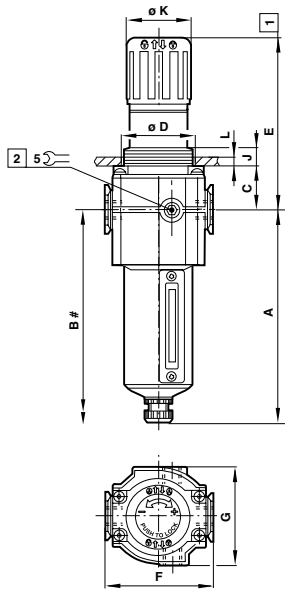
Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
					
72 (ISO G main port)	Rc 1/8	0 ... 10		40 mm	18-015-989
72 (PTF main port)	1/8 PTF		0 ... 160	1 1/2"	18-015-212
73 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
73 (PTF main port)	1/4 PTF		0 ... 160	2"	18-015-209
74 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
74 (PTF main port)	1/4 PTF		0 ... 160	2"	18-015-209

EXCELON® QUIKCLAMP SYSTEM

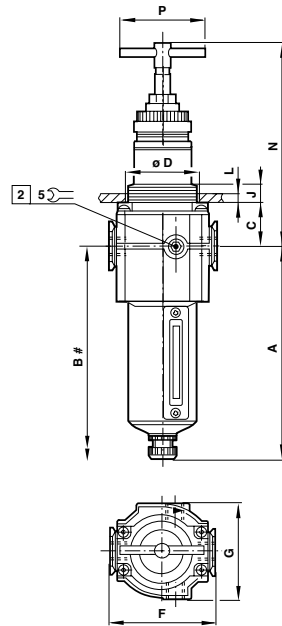
Filter regulator LB72G, LB73G, LB74G – 1/4" ... 3/4"

● Dimensions

Standard



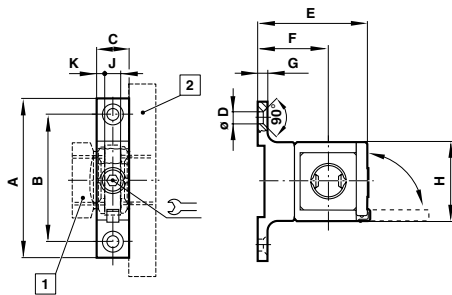
T-handle



Minimum clearance required to remove bowl
 1 Reduces by 4 mm with knob in locked position
 2 Gauge port

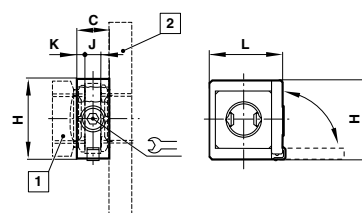
Series	A	B	C	D	E	F	G	J	K	L	N	P
72	127	176	26	40	73	50	48	12	35	0 ... 4	95	63
73	150	198	31	48	96	68	62	11	42	2 ... 6	103	63
74	170	221	31	52	127	80	74	19	47	2 ... 6	151	63

Quikclamp® with wall bracket



Series	A	B	C	Ø D	E	F	G	H	J	K	W
72	74	59	14,5	5,3	56	38	4,5	36,5	6,5	4	3
73/74	102	83	24,5	6,5	74	51	6,5	51	13,5	5,5	4

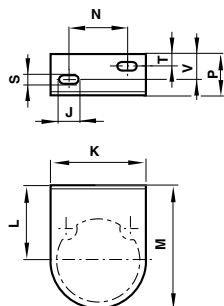
Quikclamp®



1 Quikmount pipe adaptor
 2 Excelon® unit

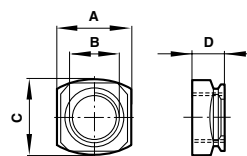
Series	C	H	J	K	L	W
72	14,5	36,5	6,5	4	36,5	3
73/74	24,5	51	13,5	5,5	46	4

Neck mounting bracket



Series	J	K	L	M	N	P	R	S	T	V
72	8	49	38	63,5	30	24	—	4,4	7	10
73	17	64	38	70	38	38	25	7	13	13
74	24	89	52	86	56	35	23	7	12	12

Quikmount pipe adaptor



Series	A	B	C	D
72	29	1/4, 3/8	29	16
73/74	38,5	1/4, 3/8, 1/2, 3/4	38,5	18

OLYMPIAN PLUS PLUG-IN SYSTEM

Filter regulator LB64G, LB68G – 1/4" ... 1 1/2"

- High efficiency water removal
- Diaphragm and balanced valve design ensure good regulation characteristics
- Non-rising adjusting knob has snap-action lock
- Standard options include non-relieving models, manual drain and alternative pressure ranges
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air

Pressure range:
LB64G: 0,3 ... 10 bar
LB68G: 0,4 ... 8 bar
Other pressure ranges are available contact IMI Norgren

Maximum inlet pressure:
17 bar

Filter element:
5 or 40 µm; 25 µm optional

Gauge ports:
Rc 1/8 with ISO G main ports,
1/8 PTF with PTF main ports

Drain:
Manual (standard)

Bowl size:
LB64G: 0,2 litre, LB68G: 1 litre

Ambient temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

LB64G
Body and yoke: Zinc alloy
Bowl: Aluminium
Prismatic liquid level indicator: Grilamid
Filter element: Sintered plastic
Adjusting knob: Acetal resin
Elastomers: Synthetic rubber

LB68G
Body, bonnet, valve and yoke: Aluminium
Liquid level indicator: Pyrex
Filter element: Sintered plastic
Adjusting knob: Acetal resin
Elastomers: Synthetic rubber



Models

Air port	Flow*		Weight		Model with G-thread 40 µm		Model with PTF-thread 40 µm	
	dm³/s	scfm	kg	lb	5 µm	5 µm	5 µm	5 µm
1/4"	30	64	1,71	3.76	LB64G-2GK-MD3-RMN	LB64G-2GK-MD1-RMN	LB64G-2AK-MD3-RMN	LB64G-2AK-MD1-RMN
3/8"	76	161	1,69	3.72	LB64G-3GK-MD3-RMN	LB64G-3GK-MD1-RMN	LB64G-3AK-MD3-RMN	LB64G-3AK-MD1-RMN
1/2"	106	225	1,66	3.65	LB64G-4GK-MD3-RMN	LB64G-4GK-MD1-RMN	LB64G-4AK-MD3-RMN	LB64G-4AK-MD1-RMN
3/4"	106	225	2,02	4.45	LB64G-6GK-MD3-RMN	LB64G-6GK-MD1-RMN	LB64G-6AK-MD3-RMN	LB64G-6AK-MD1-RMN
Without yoke					LB64G-NNK-MD3-RMN	LB64G-NNK-MD1-RMN	LB64G-NNK-MD3-RMN	LB64G-NNK-MD1-RMN

Air port	Flow*		Weight		Model with G-thread 40 µm		Model with PTF-thread 40 µm	
	dm³/s	scfm	kg	lb	5 µm	5 µm	5 µm	5 µm
3/4"	240	509	3,29	7.25	LB68G-6GK-MU3-RLN	LB68G-6GK-MU1-RLN	LB68G-6AK-MU3-RLN	LB68G-6AK-MU1-RLN
1"	240	509	3,29	7.25	LB68G-8GK-MU3-RLN	LB68G-8GK-MU1-RLN	LB68G-8AK-MU3-RLN	LB68G-8AK-MU1-RLN
1 1/2"	240	509	3,35	7.38	LB68G-AGK-MU3-RLN	LB68G-AGK-MU1-RLN	LB68G-AAK-MU3-RLN	LB68G-AAK-MU1-RLN
1 1/4"	240	509	3,35	7.38	LB68G-BGK-MU3-RLN	LB68G-BGK-MU1-RLN	LB68G-BAK-MU3-RLN	LB68G-BAK-MU1-RLN
Without yoke					LB68G-NNK-MU3-RLN	LB68G-NNK-MU1-RLN	LB68G-NAK-MU3-RLN	LB68G-NAK-MU1-RLN

* Typical flow at 10 bar (145 psi) inlet pressure 6,3 bar (90 psi) set, 40 µm element and 1 bar (15 psi) pressure drop.

OLYMPIAN PLUS PLUG-IN SYSTEM

Filter regulator LB64G, LB68G – 1/4" ... 1 1/2"

● Option selector

LB64G-★★K-★★★-RMN			
Port size	Substitute	Filter element	Substitute
1/4"	2	5 µm	1
3/8"	3	25 µm (optional)	2
1/2"	4	40 µm	3
3/4"	6	Bowl	Substitute
Without yoke	N	11 With liquid level indicator	D
		11 No liquid level indicator	M
Threads form	Substitute	Drain	Substitute
PTF or without yoke (N in 6th position), drain thread = PTF	A	Manual (standard)	M
ISO G parallel	G	Automatic	A*
Without yoke (N in 6th position), drain thread = ISO RC	N		

Automatic drain conditions:

Pressure to close drain: > 0,3 bar (4.3 psi)

Pressure to open drain: < 0,2 bar (2.9 psi)

Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

* For temperature range -25°C ... 80°C only, shock and vibration, contact IMI Norgren.

LB68G-★★K-★★★-RLN			
Port size	Substitute	Filter element	Substitute
3/4"	6	5 µm	1
1"	8	25 µm (optional)	2
1 1/4"	A	40 µm	3
1 1/2"	B	Bowl	Substitute
Without yoke	N	11 With liquid level indicator	U
		11 No liquid level indicator	C
Threads form	Substitute	Drain	Substitute
PTF or without yoke (N in 6th position), drain thread = PTF	A	Manual (standard)	M
ISO G parallel	G	Automatic	A*
Without yoke (N in 6th position), drain thread = ISO RC	N		

Automatic drain conditions:

Pressure to close drain: > 0,3 bar (4.3 psi)

Pressure to open drain: < 0,2 bar (2.9 psi)

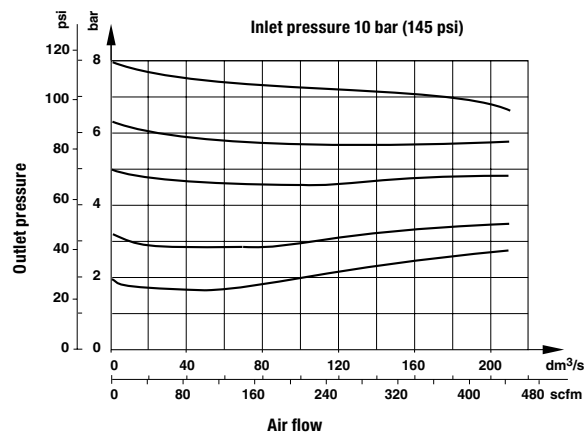
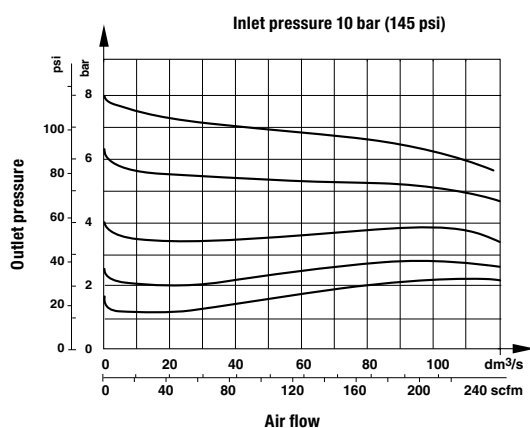
Minimum air flow to close drain: 0,6 dm³/s (1.3 scfm)

* For temperature range -25°C ... 80°C only, shock and vibration, contact IMI Norgren.

● Flow characteristics

LB64G – Port size 1/2", 40 µm element, range 0,3 ... 10 bar (5 ... 145 psi)

LB68G – Port size 1", 40 µm element, range 0,4 ... 8 bar (5 ... 120 psi)



OLYMPIAN PLUS PLUG-IN SYSTEM
Filter regulator LB64G, LB68G – 1/4" ... 1 1/2"

● Accessories

64 Series



Models with G-thread Single yoke		Models with PTF-thread Single yoke		Drain Valves	
Double yoke		Double yoke		Pneumatically operated *3)	Electrically operated *4)
5		5			
Thread		Thread		8591127.0000.00000 *3)	VRW8102031/12N (12 V D.C.)
1/4"	Y64A-2GA-N1N	Y64A-2GA-N2N	Y64A-2AA-N1N		VRW8102031/24N (24 V D.C.)
3/8"	Y64A-3GA-N1N	Y64A-3GA-N2N	Y64A-3AA-N1N		VRW8102031/37N (37,5 V D.C.)
1/2"	Y64A-4GA-N1N	Y64A-4GA-N2N	Y64A-4AA-N1N		VRW8102031/52N (52 V D.C.)
3/4"	Y64A-6GA-N1N*	Y64A-6GA-N2N*	Y64A-6AA-N1N*		VRW8102031/72N (72 V D.C.)
					VRW8102031/96N (96 V D.C.)
					VRW8102031/11N (110 V D.C.)

* These yokes are supplied with two end connector kits as standard.

*3) for more details please see valve section.

*4) for more details please see valve section.

Models with G-threads End connector kit	Models with G-threads Rear entry bracket kit	Models with PTF-threads End connector kit	Bracket mounting	Nut	Tamper resistant cap & seal wire
2	8	2	1	4	3
					
Thread	Thread	Thread	Thread	Thread	Thread
3/4"	74505-53	18-026-981	74504-50	74502-89	4355-51

● Others

Service kit, manual drain	Service kit, automatic drain
	
LB64G-KITM05R (5 µm)	LB64G-KITA05R (5 µm)
LB64G-KITM25R (25 µm)	LB64G-KITA25R (25 µm)
LB64G-KITM40R (40 µm)	LB64G-KITA40R (40 µm)

Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
6					
					
64 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
64 (PTF main port)	1/8 PTF		0 ... 160	2"	18-015-212

OLYMPIAN PLUS PLUG-IN SYSTEM

Filter regulator LB64G, LB68G – 1/4" ... 1 1/2"

68 Series

Models with G-thread
Single yoke

5

Double yoke

Models with PTF-thread
Single yoke

5

Double yoke



Thread

3/4"

Y68A-6GN-N1N

Y68A-6GN-N2N

Y68A-6AN-N1N

Y68A-6AN-N2N

1"

Y68A-8GN-N1N

Y68A-8GN-N2N

Y68A-8AN-N1N

Y68A-8AN-N2N

1 1/4"

Y68A-AGN-N1N

Y68A-AGN-N2N

Y68A-AAN-N1N

Y68A-AAN-N2N

1 1/2"

Y68A-BGN-N1N

Y68A-BGN-N2N

Y68A-BAN-N1N

Y68A-BAN-N2N

Drain Valves

Pneumatically operated
*3)Electrically operated
*4)

8591127.0000.00000 *3)

VRW8102031/12N (12 V D.C.)

VRW8102031/24N (24 V D.C.)

VRW8102031/37N (37,5 V D.C.)

VRW8102031/52N (52 V D.C.)

VRW8102031/72N (72 V D.C.)

VRW8102031/96N (96 V D.C.)

VRW8102031/11N (110 V D.C.)

*3) for more details please see valve section.

*4) for more details please see valve section.

Models with G-thread
End connector kit

2

Models with PTF-thread
End connector kit

2

Without thread
Single yoke

5

Bracket mounting

1



Thread

3/4"

5524-55

5524-53

74785-99

18-001-979

1"

5524-52

5524-50

18-001-979

1 1/4"

5523-52

5523-50

18-001-978

1 1/2"

5523-93

5523-95

18-001-972

● Others

Nut

4

Tamper resistant
cap & seal wire

3

Service kit, manual
drainService kit, automatic
drain

5520-89

4355-51

LB68G-KITM05R (5 µm)

LB68G-KITA05R (5 µm)

LB68G-KITM25R (25 µm)

LB68G-KITA25R (25 µm)

LB68G-KITM40R (40 µm)

LB68G-KITA40R (40 µm)

Gauge (for full technical specification see Accessories section)

Series

Port size

Pressure
range in bar

6

Pressure
range in psi

6

Diameter

Model



68 (ISO G main port)

Rc 1/8

0 ... 10

50 mm

18-015-013

68 (PTF main port)

1/8 PTF

0 ... 160

2"

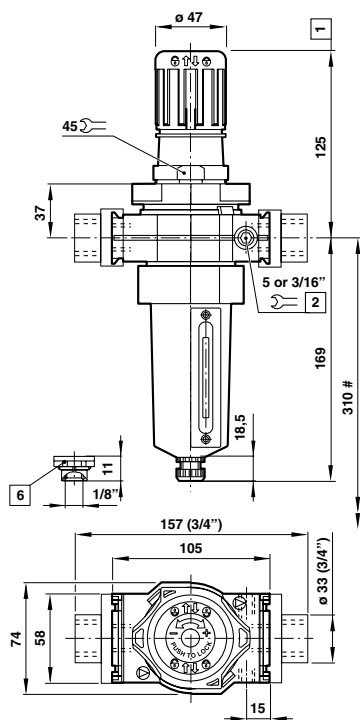
18-015-212

OLYMPIAN PLUS PLUG-IN SYSTEM

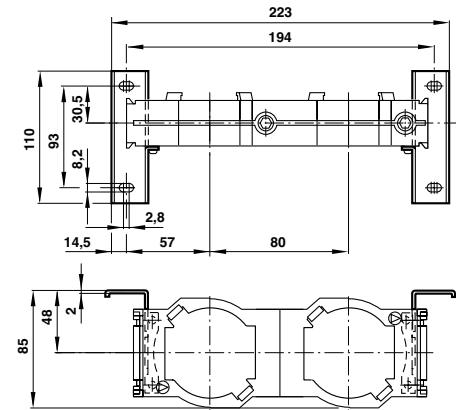
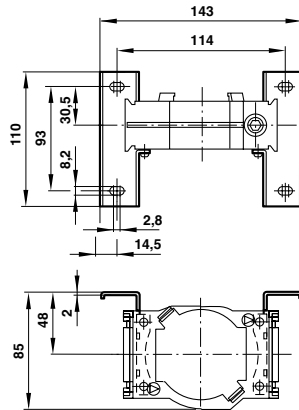
Filter regulator LB64G, LB68G – 1/4" ... 1 1/2"

● Dimensions

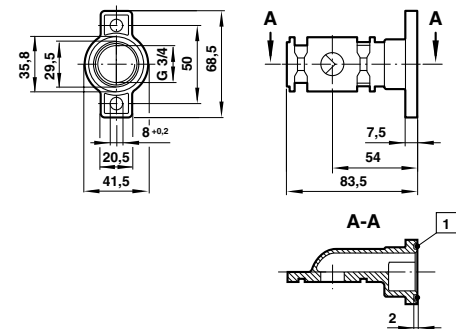
64 Series



Minimum clearance required to remove bowl
 ① Reduces by 4 mm with knob in locked position
 ② Gauge port
 ③ Automatic drain (optional)

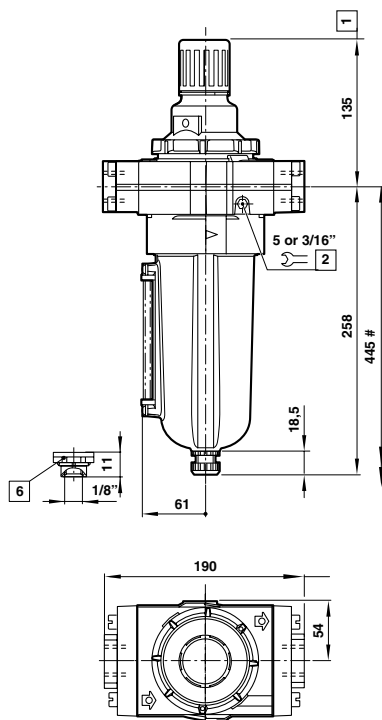


Rear entry bracket

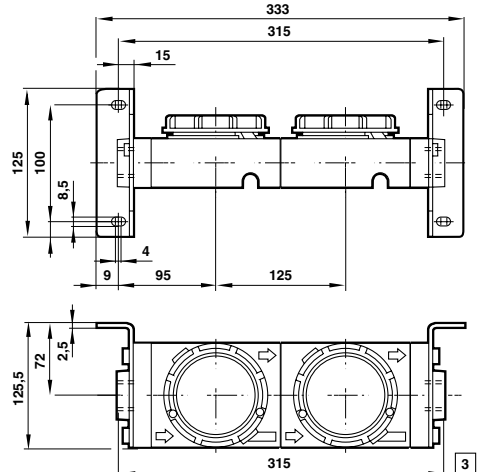
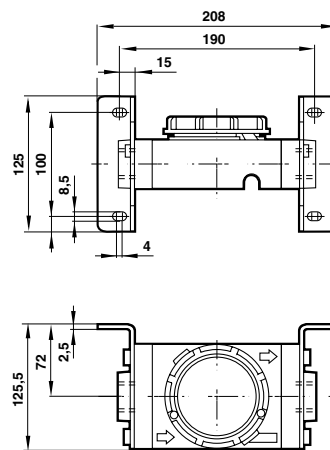


① 'O'-ring (included in scope of supply of bracket)

68 Series



Minimum clearance required to remove bowl
 ① Reduces by 4 mm with knob in locked position
 ② Gauge port
 ③ For 1 1/4" and 1 1/2" ported yokes add 10 mm
 ④ Automatic drain (optional)



MINIATURE SERIES

General purpose regulator LR07 – 1/8" & 1/4"

- Compact design
- Full flow gauge ports
- Low torque, non-rising adjusting knob
- Snap action knob locks pressure setting when pushed in
- Standard relieving models allow reduction of outlet pressure even when the system is dead-ended
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air only

Pressure range:

0,3 ... 10 bar

Other pressure ranges are available contact Norgren

Maximum inlet pressure:

20 bar

Typical flow:

See below

Gauge ports:

1/8" PTF with PTF main ports 1/8"

ISO Rc with ISO G main ports

Relieving:

Standard

Ambient temperature:

-40°C ... +65°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Zinc

Bonnet and valve seat: Acetal

Valve: Brass/nitrile

Elastomers: Nitrile



Models

Port size	Flow* dm ³ /s	scfm	Weight kg	lb	Model with G-thread	Model with PTF-thread
1/8"	6,5	14	0,19	0,41	LR07-100-RNMG	LR07-100-RNMA
1/4"	7	15	0,19	0,41	LR07-200-RNMG	LR07-200-RNMA

* Typical flow with 7 bar (100 psi) inlet pressure, 40 µm element, 6,3 bar (90 psi) set pressure and a 1 bar (15 psi) droop from set.

Option selector

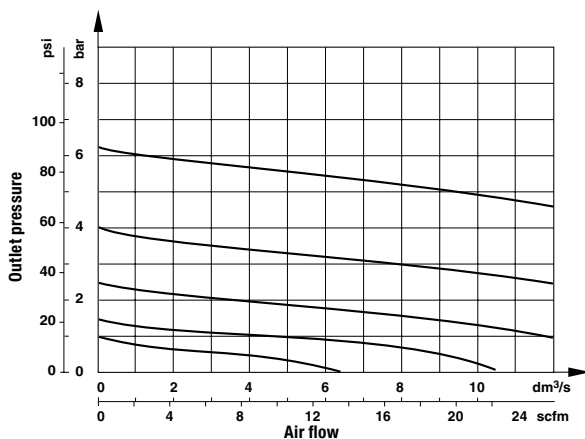
LR07-★00-RNM★

Port size	Substitute
1/8"	1
1/4"	2

Threads	Substitute
PTF	A
ISO G parallel	G

Flow characteristics

LR07 – Port size: 1/4", inlet pressure: 10 bar (145 psi), pressure range: 0,3 ... 7 bar (5 ... 100 psi)



MINIATURE SERIES

General purpose regulator LR07 – 1/8" & 1/4"

● Accessories

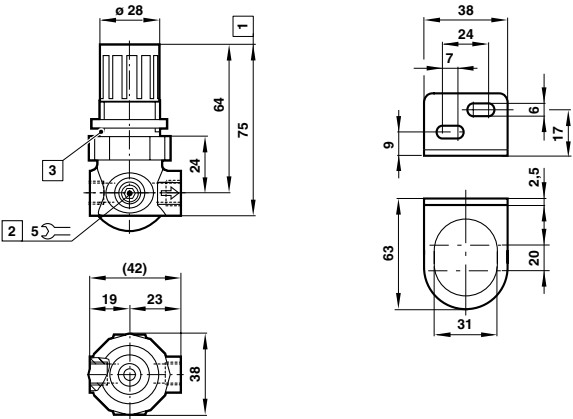


Wall mounting bracket and panel nut	Panel nut	Service kit
1 4	4	
		
18-025-004	2962-04	3407-A2

Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
					
07 (ISO G main port)	Rc 1/8	0 ... 10		40 mm	18-015-989
07 (PTF main port)	1/8 PTF		0 ... 160	1 1/2"	18-015-212

● Dimensions

Wall mounting bracket



- 1 Reduces by 4 mm with knob in locked position
- 2 Gauge port
- 3 Panel mounting hole diameter 30 mm, Panel thickness 0 ... 6 mm

EXCELON® QUIKCLAMP SYSTEM

Pressure regulator LR72G, LR73G, LR74G – 1/4" ... 3/4"

- Excelon design allows in-line or modular installation
- Balanced valve design for optimum pressure control
- Push to lock adjusting knob with tamper resistant accessory
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air

Pressure range:

0,3 ... 10 bar

Other pressure ranges are available contact Norgren

Maximum inlet pressure:

20 bar

Gauge ports:

LR72: Rc 1/8 for ISO G main ports, 1/8 PTF for PTF main ports

LR73/74: Rc 1/8 for ISO G main ports, 1/4 PTF for PTF main ports

Ambient temperature:

LR72G: -40°C ... +65°C

LR73G & LR74G: -40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

LR72

Body: Zinc

Bonnet & bottom plug: Acetal

Valve: Brass

Elastomers: Nitrile

LR73G

Body: Aluminium

Bonnet: Zinc

Valve: Brass

Bottom plug: Acetal

Elastomers: Nitrile

LR74G

Body & bonnet: Aluminium

Valve: Brass

Bottom plug: Acetal

Elastomers: nitrile

LR72G



LR73G

LR74G



Models

Air port	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread	Model with PTF-thread
1/4"	33	70	0,36	0.79	LR72G-2GK-RMN	LR72G-2AK-RMN
3/8"	33	70	0,36	0.79	LR72G-3GK-RMN	LR72G-3AK-RMN
1/4"	50	106	0,48	1.05	LR73G-2GK-RMN	LR73G-2AK-RMN
3/8"	60	127	0,48	1.05	LR73G-3GK-RMN	LR73G-3AK-RMN
1/2"	60	127	0,48	1.05	LR73G-4GK-RMN	LR73G-4AK-RMN
3/8"	98	208	0,82	1.80	LR74G-3GK-RMN	LR74G-3AK-RMN
1/2"	105	222	0,80	1.76	LR74G-4GK-RMN	LR74G-4AK-RMN
3/4"	105	222	0,78	1.71	LR74G-6GK-RMN	LR74G-6AK-RMN

* Typical flow at 10 bar (145 psi) inlet pressure, 6,3 bar (90 psi) set pressure and 0,5 bar (7 psi) drop from set.

Option selector

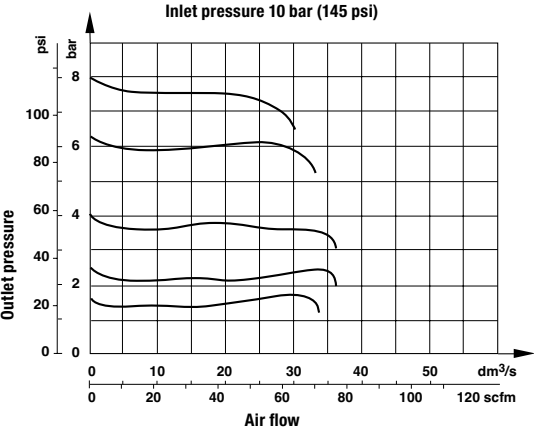
Series	Substitute	LR7★G-★★★-RMN	Adjustment	Substitute
72	2		Knob (standard)	K
73	3		T-handle (10 bar, 145 psi)	T
74	4		Threads form	Substitute
Port size	Substitute		PTF	A
1/4" (72 & 73)	2		ISO G parallel	G
3/8" (72, 73 & 74)	3			
1/2" (73 & 74)	4			
3/4" (74)	6			

EXCELON® QUIKCLAMP SYSTEM

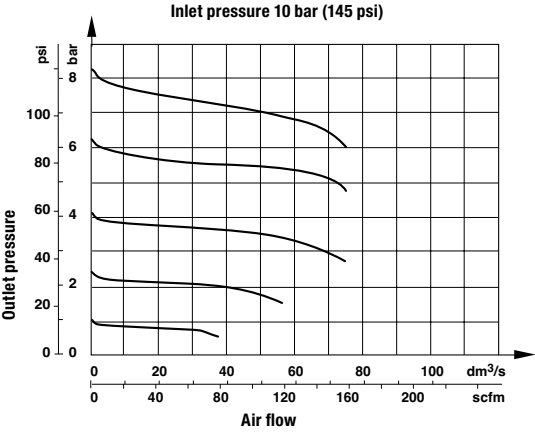
Pressure regulator LR72G, LR73G, LR74G – 1/4" ... 3/4"

● Flow characteristics

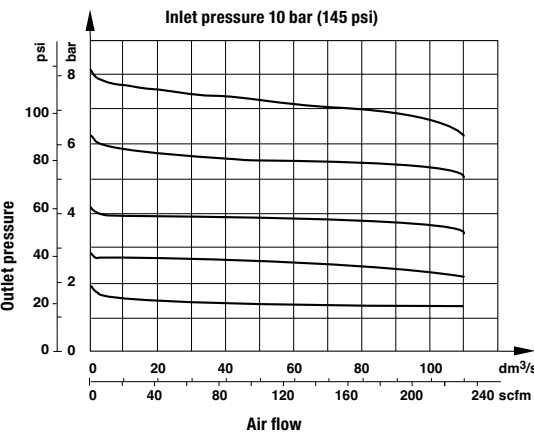
LR72G – Port size 1/4",
regulating range 0,3 ... 10 bar



LR73G – Port size 3/8",
regulating range 0,3 ... 10 bar



LR74G – Port size 1/2",
regulating range 0,3 ... 10 bar (5 ... 145 psi)



EXCELON® QUIKCLAMP SYSTEM

Pressure regulator LR72G, LR73G, LR74G – 1/4" ... 3/4"

● Accessories

72 series



73/74 series



Series	Quikclamp with wall bracket*	Quikclamp*	Tamper resistant cover & seal wire	Wall bracket and panel mounting nut	Panel nut (zinc)	Service kit
	1		3	4 5	4	
72	4214-58	4214-57	4255-51	74316-50	4268-89	4381-513
73	4314-63	4314-62	4455-51	4461-50	5191-88	4383-607
74	4314-63	4314-62	4355-51	4368-51	4368-89	4381-708

* Please use a Quikmount pipe adaptor if the Quikclamp is mounted at inlet or outlet side.

Series	Port size	Quikmount pipe adaptor ISO G parallel thread	PTF-thread
		2	2
72	1/4"	4215-08	4215-02
72	3/8"	4215-09	4215-03
73 & 74	1/4"	4315-09	4315-01
73 & 74	3/8"	4315-10	4315-02
73 & 74	1/2"	4315-11	4315-03
73 & 74	3/4"	4315-12	4315-04

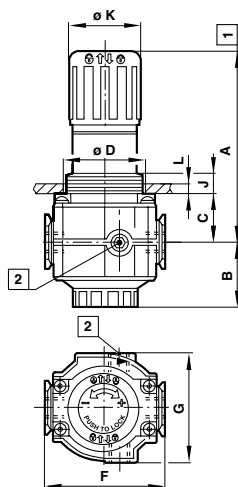
Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
72 (ISO G main port)	Rc 1/8	0 ... 10		40 mm	18-015-989
72 (PTF main port)	1/8 PTF		0 ... 160	1 1/2"	18-015-212
73 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
73 (PTF main port)	1/4 PTF		0 ... 160	2"	18-015-209
74 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
74 (PTF main port)	1/4 PTF		0 ... 160	2"	18-015-209

EXCELON® QUIKCLAMP SYSTEM

Pressure regulator LR72G, LR73G, LR74G – 1/4" ... 3/4"

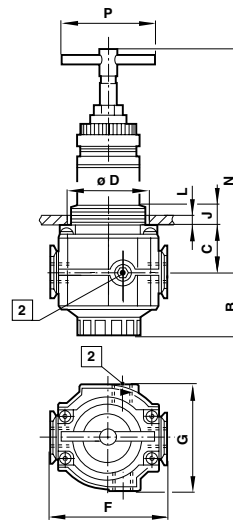
● Dimensions

Standard



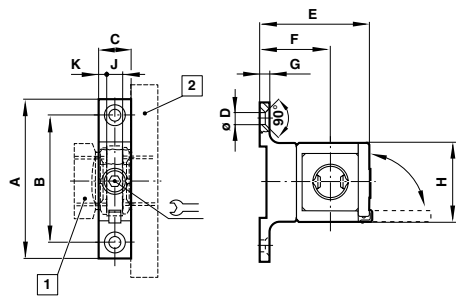
- 1 Reduces by 4 mm with knob in locked position
2 Gauge port

T-handle



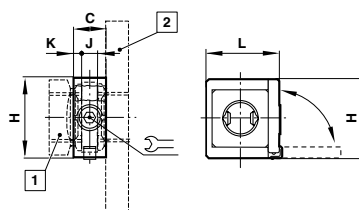
Series	A	B	C	F	G	ØD	J	ØK	L	N	P
72	73	33	26	50	48	40	12	35	0 ... 4	102	63
73	96	39	31	68	62	48	11	42	2 ... 6	103	63
74	127	43	31	80	74	52	19	47	2 ... 6	151	63

Quikclamp® with wall bracket



Series	A	B	C	ØD	E	F	G	H	J	K	↺
72	74	59	14,5	5,3	56	38	4,5	36,5	6,5	4	3
73/74	102	83	24,5	6,5	74	51	6,5	51	13,5	5,5	4

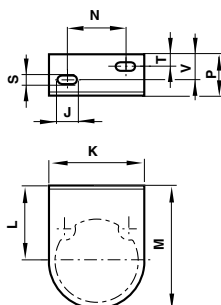
Quikclamp®



- 1 Quikmount pipe adaptor
2 Excelon® unit

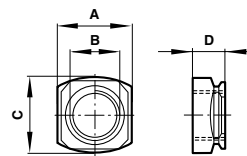
Series	C	H	J	K	L	↺
72	14,5	36,5	6,5	4	36,5	3
73/74	24,5	51	13,5	5,5	46	4

Neck mounting bracket



Series	J	K	L	M	N	P	R	S	T	V
72	8	49	38	63,5	30	24	—	4,4	7	10
73	17	64	38	70	38	38	25	7	13	13
74	24	89	52	86	56	35	23	7	12	12

Quikmount pipe adaptor



Series	A	B	C	D
72	29	1/4, 3/8	29	16
73/74	38,5	1/4, 3/8, 1/2, 3/4	38,5	18

EXCELON® SUB BASE

Pressure regulator, flange version LR72Z

- Balanced valve design for optimum pressure control
- Push to lock adjusting knob with tamper resistant accessory
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air

Pressure range:

0,3 ... 10 bar

Other pressure ranges are available contact Norgren

Maximum inlet pressure:

20 bar

Ambient temperature:

-25°C ... +65°C max.

-40°C version available on request

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Anodized aluminium

Bonnet: Acetal

Valve: Brass

Elastomers: NBR



EN 61373

● Standard version - knob actuated

Symbol	Operating pressure (bar)	Operating pressure (psi)	Flow (dm³/s)	Flow (scfm)	Diaphragm	Weight (kg)	Weight (lb)	Model
	0,3 ... 10	4,3 ... 145	23	49	Relieving	0,4	0,88	LR72Z-0GK-RMN

* Typical flow at 10 bar (145 psi) inlet pressure, 6,3 bar (90 psi) set pressure and 0,5 bar (7 psi) droop from set.

● Option selector

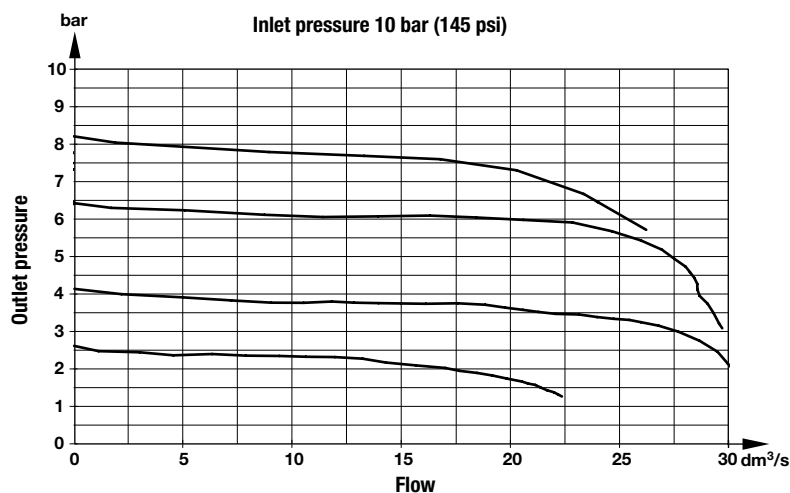
LR72Z-0★-★-★-★N

Version	Substitute	Pressure range	Substitute
General purpose (standard)	G	0,3 ... 2 bar (4,3 ... 29 psi)	C
Reverse full flow	R	0,3 ... 4 bar (4,3 ... 58 psi)	F
Adjustment	Substitute	0,3 ... 10 bar (4,3 ... 145 psi)	M
Knob (standard)	K	Diaphragm	Substitute
Screw	S	Relieving	R
T-handle	T	Non relieving	N

● Flow characteristics

Regulating range

0,3 ... 10 bar (4,3 ... 145 psi)



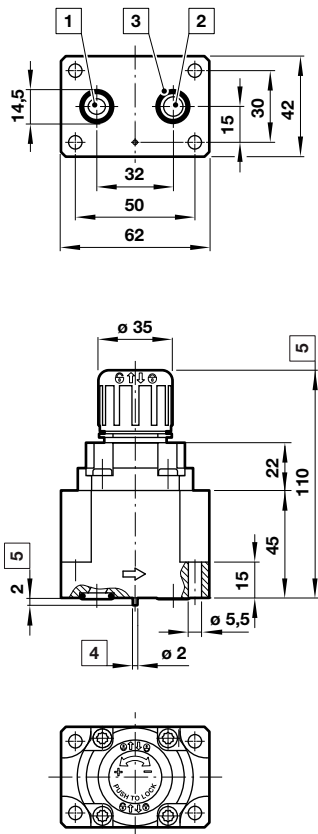
EXCELON® SUB BASE Pressure regulator, flange version LR72Z

Accessories

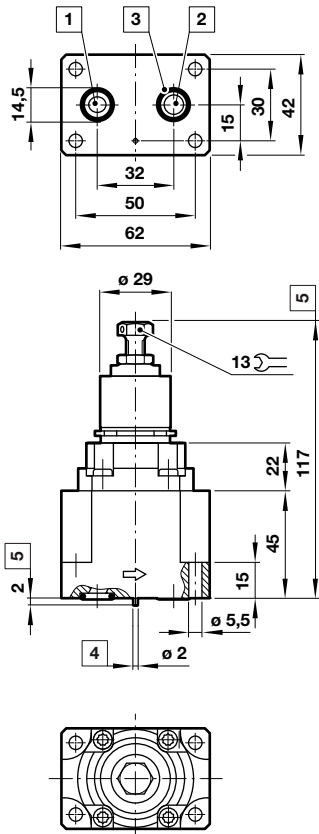
Tamper resistant cover & seal wire	Service kit
	
4255-51	A1333-S01 (relieving)
	A1333-S02 (non-relieving)

Dimensions

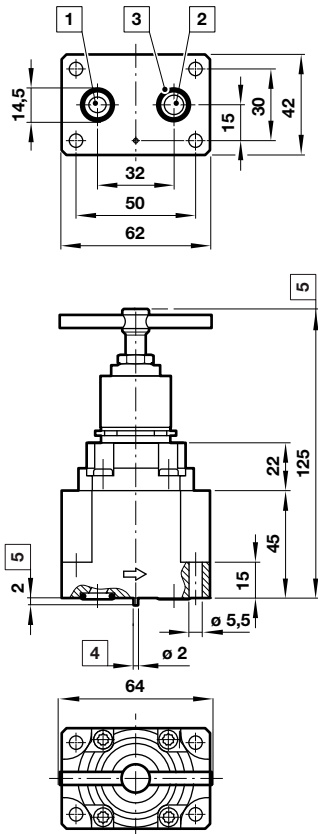
Knob adjustable



Screw adjustable



T-handle adjustable



- 1 Inlet port
- 2 Outlet port
- 3 'O'-rings are in scope of delivery
- 4 Position pin
- 5 Reference

OLYMPIAN PLUS PLUG-IN SYSTEM

Pressure regulator LR64G, LR68G – 1/4" ... 1 1/2"

- Non-rising adjusting knob has snap-action lock
- Diaphragm and balanced valve design ensure good regulation characteristics
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air only

Pressure range:

LR64G: 0,3 ... 10 bar

LR68G: 0,4 ... 8 bar

Other pressure ranges are available contact Norgren

Maximum inlet pressure:

17 bar for LR64G

20 bar for LR68G

Gauge ports:

Rc 1/8 with ISO G main ports,

1/8 PTF with PTF main ports

Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Relieving:

Standard

Materials

LR64G

Body and yoke: Zinc alloy

Bonnet: Aluminium

Adjusting knob: Acetal resin

Elastomers: Synthetic rubber

LR68G

Body, bonnet, valve and yoke:

Aluminium

Adjusting knob: Acetal resin

Elastomers: Synthetic rubber



Models

Air port	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread	Model with PTF-thread
1/4"	35	74	1,54	3.39	LR64G-2GK-RMN	LR64G-2AK-RMN
3/8"	80	170	1,52	3.35	LR64G-3GK-RMN	LR64G-3AK-RMN
1/2"	120	254	1,49	3.28	LR64G-4GK-RMN	LR64G-4AK-RMN
3/4"	120	254	1,85	4.07	LR64G-6GK-RMN	LR64G-6AK-RMN
Without yoke					LR64G-NNK-RMN	LR64G-NNK-RMN

Air port	Flow* dm³/s	scfm	Weight kg	lb	Model with G-thread	Model with PTF-thread
3/4"	150	318	1,95	4.29	LR68G-6GK-RLN	LR68G-6AK-RLN
1"	180	381	1,89	4.16	LR68G-8GK-RLN	LR68G-8AK-RLN
1 1/4"	180	381	1,93	4.25	LR68G-AGK-RLN	LR68G-AAK-RLN
1 1/2"	180	381	1,97	4.34	LR68G-BGK-RLN	LR68G-BAK-RLN
Without yoke					LR68G-NAK-RLN	LR68G-NAK-RLN

* Typical flow at 6,3 bar (90 psi) inlet pressure and 0,5 bar (7 psi) pressure drop.

Option selector

LR64G-★★K-RMN

Port size	Substitute
1/4"	2
3/8"	3
1/2"	4
3/4"	6
Without yoke	N

Threads form	Substitute
PTF	A
ISO G parallel	G
Without yoke	N

LR68G-★K-RLN

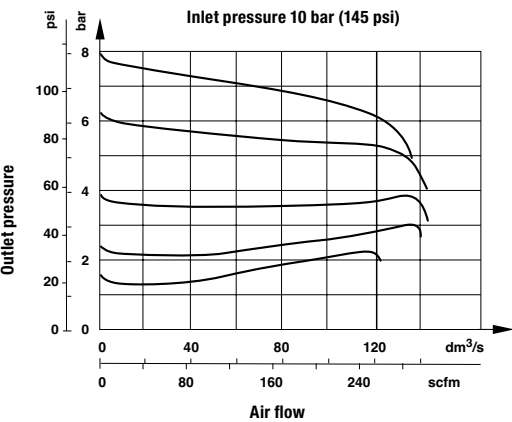
Port size	Substitute
3/4"	6
1"	8
1 1/4"	A
1 1/2"	B
Without yoke	N

Threads form	Substitute
PTF or without yoke (N in 6th position), gauge port threads = PTF	A
ISO G parallel	G
Without yoke (N in 6th position), gauge port threads = ISO RC	N

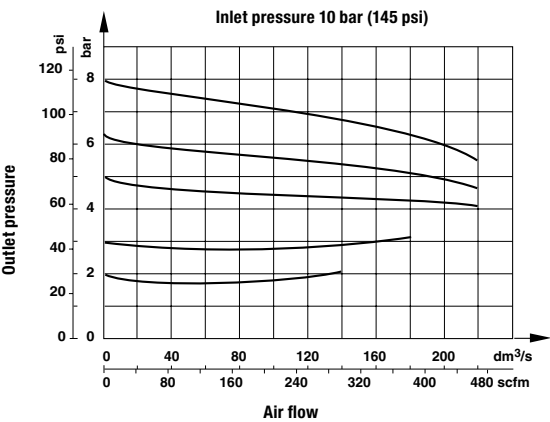
OLYMPIAN PLUS PLUG-IN SYSTEM
Pressure regulator LR64G, LR68G – 1/4" ... 1 1/2"

● Flow characteristics

LR64G – Port size 1/2", range 0,3 ... 10 bar
(5 ... 145 psi)



LR68G – Port size 1", range 0,4 ... 8 bar
(5 ... 120 psi)



OLYMPIAN PLUS PLUG-IN SYSTEM

Pressure regulator LR64G, LR68G – 1/4" ... 1 1/2"

Accessories

64 series



Models with G-thread Single yoke 5		Double yoke	Models with PTF-thread Single yoke 5	Double yoke
Thread				
1/4"	Y64A-2GA-N1N	Y64A-2GA-N2N	Y64A-2AA-N1N	Y64A-2AA-N2N
3/8"	Y64A-3GA-N1N	Y64A-3GA-N2N	Y64A-3AA-N1N	Y64A-3AA-N2N
1/2"	Y64A-4GA-N1N	Y64A-4GA-N2N	Y64A-4AA-N1N	Y64A-4AA-N2N
3/4"	Y64A-6GA-N1N*	Y64A-6GA-N2N*	Y64A-6AA-N1N*	Y64A-6AA-N2N*

*These yokes are supplied with two end connector kits as standard.

Thread	Models with G-thread End connector kit 2	Models with G-thread Rear entry bracket kit 8	Models with PTF-threads End connector kit 2
3/4"	74505-53	18-026-981	74505-55

Others

Bracket mounting 1	Nut 4	Tamper resistant cap & seal wire 3	Service kit
74504-50	74502-89	4355-51	LR64G-KITR

Gauge (for full technical specification see Accessories section)

Series	Port size	Pressure range in bar 6	Pressure range in psi 6	Diameter	Model
64 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
64 (PTF main port)	1/8 PTF		0 ... 160	2"	18-015-212

OLYMPIAN PLUS PLUG-IN SYSTEM
Pressure regulator LR64G, LR68G – 1/4" ... 1 1/2"

68 series



Models with G-thread Single yoke		Double yoke		Models with PTF-thread Single yoke		Double yoke	
5				5			
							
Thread							
3/4"	Y68A-6GN-N1N	Y68A-6GN-N2N		Y68A-6AN-N1N		Y68A-6AN-N2N	
1"	Y68A-8GN-N1N	Y68A-8GN-N2N		Y68A-8AN-N1N		Y68A-8AN-N2N	
1 1/4"	Y68A-AGN-N1N	Y68A-AGN-N2N		Y68A-AAN-N1N		Y68A-AAN-N2N	
1 1/2"	Y68A-BGN-N1N	Y68A-BGN-N2N		Y68A-BAN-N1N		Y68A-BAN-N2N	

Models with G-thread End connector kit		Models with PTF-thread End connector		Bracket mounting		Without thread Single yoke	
2		2		1		5	
							
Thread							
3/4"	5524-55	5524-53		18-001-979		74785-99	
1"	5524-52	5524-50		18-001-979			
1 1/4"	5523-52	5523-50		18-001-978			
1 1/2"	5523-93	5523-95		18-001-972			

Others

Nut			Tamper resistant cap & seal wire			Service kit		
4			3					
5520-89	4355-51	LR68G-KITR						

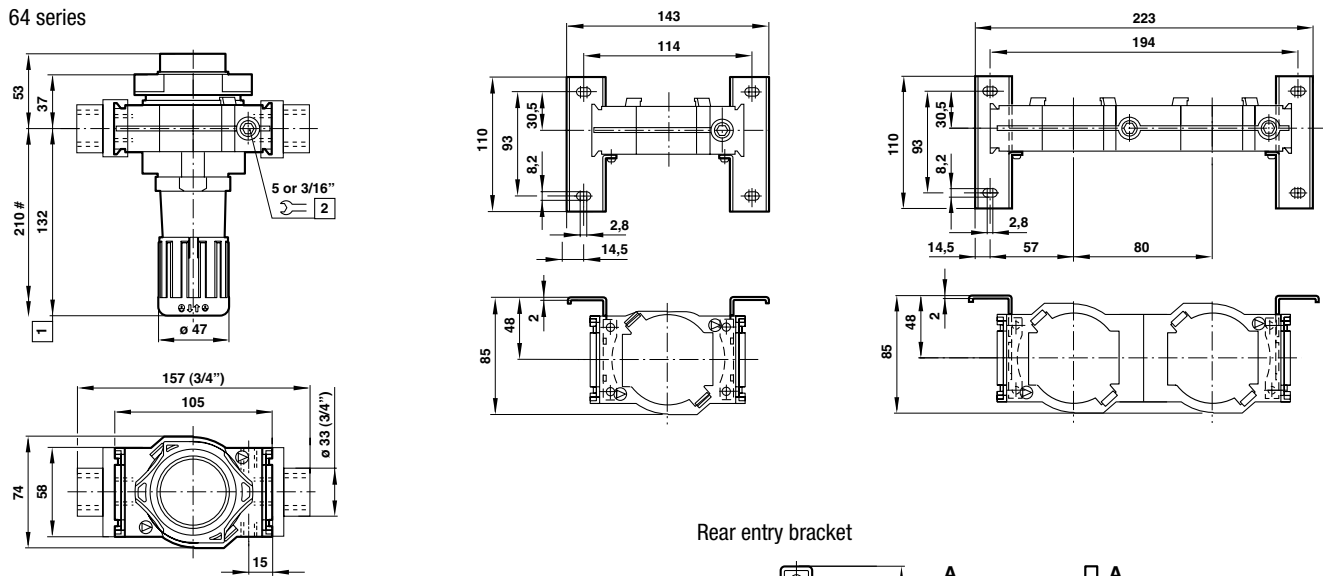
Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
64 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
64 (PTF main port)	1/8 PTF		0 ... 160	2"	18-015-212

OLYMPIAN PLUS PLUG-IN SYSTEM

Pressure regulator LR64G, LR68G – 1/4" ... 1 1/2"

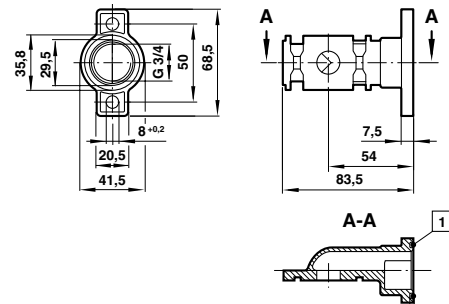
● Dimensions

64 series



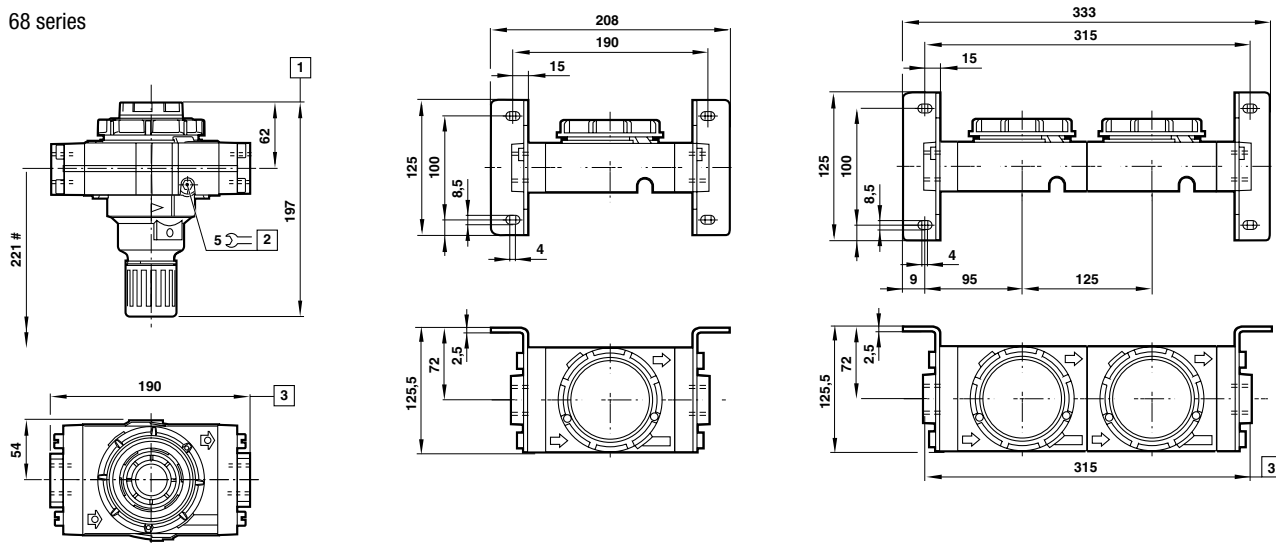
- # Minimum clearance required to remove unit from yoke
 1 Reduces by 4 mm with knob in locked position
 2 Gauge port

Rear entry bracket



- 1 'O'-ring (included in scope of supply of bracket)

68 series



- # Minimum clearance required to remove unit from yoke
 1 Reduces by 4 mm with knob in locked position
 2 Gauge port
 3 For 1 1/4" and 1 1/2" ported yokes add 10 mm

COMPACT INTERFACE MOUNT REGULATOR

SLA/15542 0,3 ... 10 bar

- Compact Design
- Wide temperature and pressure range
- Pre-set versions available on request
- Complete with mounting screws and O-Rings
- Shock & Vibration resistant to EN 61373, Category 1, Class A & B
- Salt spray tested to BS EN ISO 9227:2012
- Characteristics and requirements are in accordance with ISO 6953-1:2015
- RoHS compliant

Technical Data

Medium:
Compressed air only

Maximum inlet pressure:
12 bar

Pressure range:
0,3 ... 10 bar

Typical flow:
See below

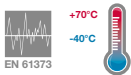
Relieving:
Relieving and non-relieving

Filtration:
Installation of at least a 40 µm prefilter is recommended

Ambient temperature:
-40°C ... +70°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium
Cap: Aluminium
Valve: Brass/low temp. nitrile
Elastomers: Nitrile and EPDM (low temperatures)
Adjusting screw/lock nut: Stainless steel



Models

	Port size	Flow *1) (dm³/s)	Weight (kg)	(lb)	Model
	Interface	6	0,11	0,24	SLA/15542/R
	Interface	6	0,11	0,24	SLA/15542/NR

*1) Typical flow with 10 bar (145 psi) inlet pressure, 6.3 bar (90 psi) set pressure and a 1 bar (14.5 psi) droop from set.

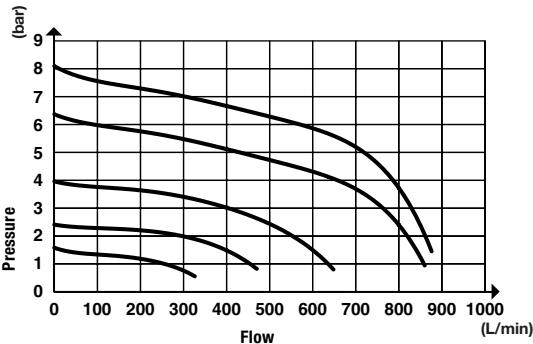
Option selector

Diaphragm	Substitute
Relieving	R
Non-Relieving	NR

SLA/15542/★

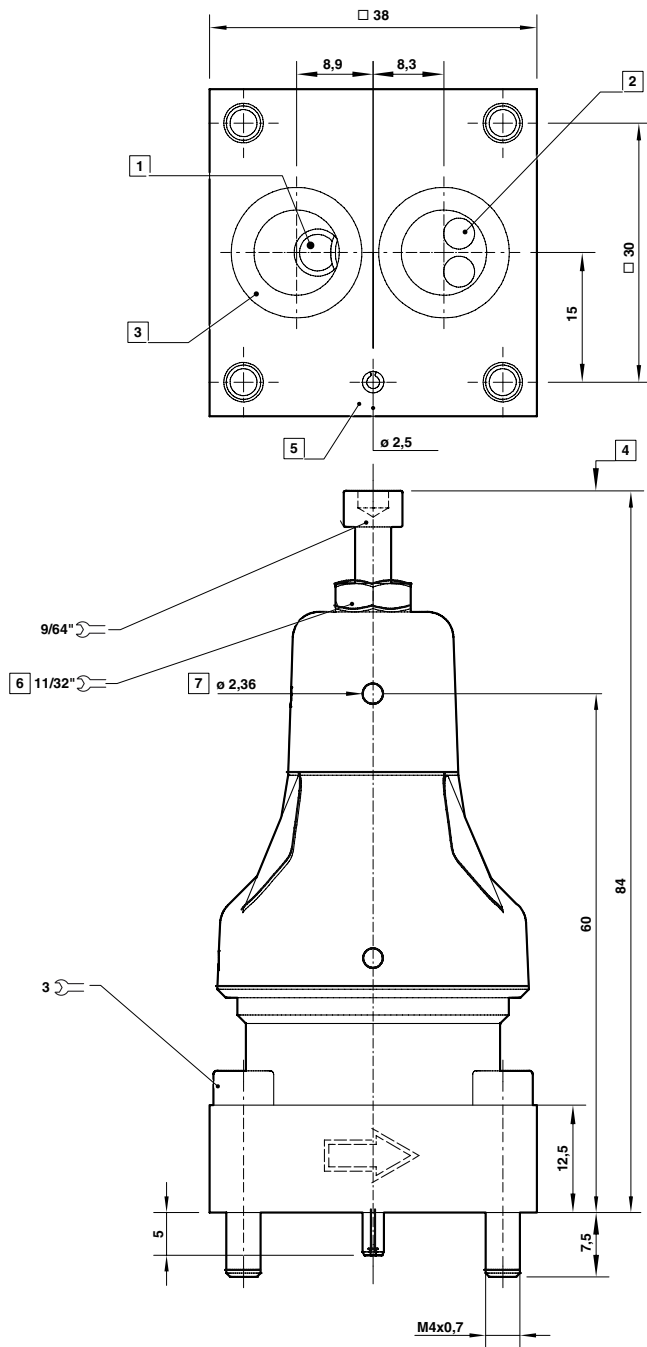
Flow characteristics

Inlet pressure 10 bar



COMPACT INTERFACE MOUNT REGULATOR SLA/15542 0,3 ... 10 bar

● Dimensions



- 1 Inlet port
- 2 Outlet port
- 3 2-off 'O'-rings (ø9.93 i/d x ø2.62) included in the scope of supply
- 4 Adjustable section 9 mm
- 5 Location pin
- 6 Torque to 2Nm +/- 0.2Nm
- 7 Relief hole

PRECISION PRESSURE REGULATOR

LR27 G1/4

- Ideally suited to Pantograph application
- High-precision manual pressure regulator
- Highly sensitive and accurate
- Perfect for dead-end applications
- Excellent long term stability
- High forward and relief flow capability
- Low air consumption
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Oil free, dry air filtered to 25 µm
Note: for use with gases other than compressed air please consult NORGREN

Operation:
Handwheel 2,5 ... 3 turns

Inlet pressure:
At least 0,2 bar above max required output pressure, up to a maximum of 10 bar

Gauge ports:
G1/4 or 1/4 NPT

Flow capacity:
Up to 600 l/min

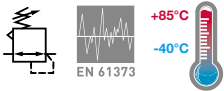
Sensitivity:
Better than 0,3 mbar per bar of supply pressure change.

Hysteresis & repeatability:
Typically < 0,05% at mid range

Fluid/Ambient temperature:
-40°C ... +70°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Zinc
Internal springs: Stainless steel
Elastomers: NBR



Models

Pressure range (bar)	Air consumption (l/min)	Weight kg	lb	Model with ISO G-thread	Model with NPT thread
0,14 ... 2,0	Typically < 2	0,72	1.58	LR27-200-RNCG	LR27-200-RNCR
0,14 ... 4,0	Typically < 2	0,72	1.58	LR27-200-RNFG	LR27-200-RNFR
0,14 ... 8,0	Typically < 2	0,72	1.58	LR27-200-RNLG	LR27-200-RNLR

Option selector

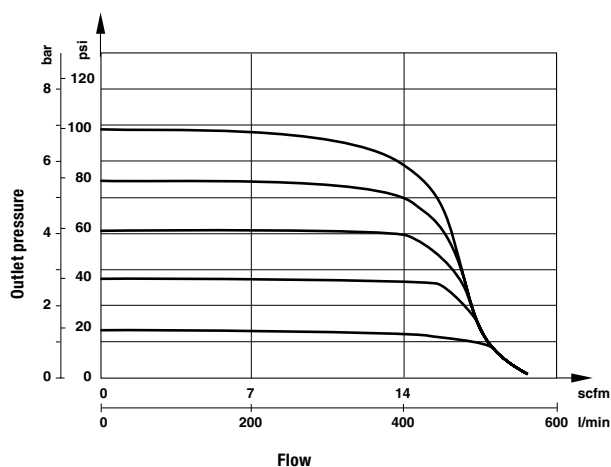
LR27-200-RN★★			
Pressure range	Substitute	Threads	Substitute
0,14 ... 2 bar	C	NPT	R
0,14 ... 4 bar	F	ISO G parallel	G
0,14 ... 8 bar	L		

PRECISION PRESSURE REGULATOR

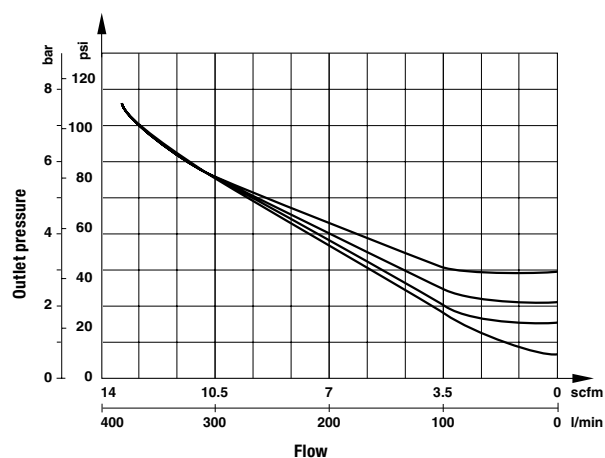
LR27 G1/4

Flow characteristics

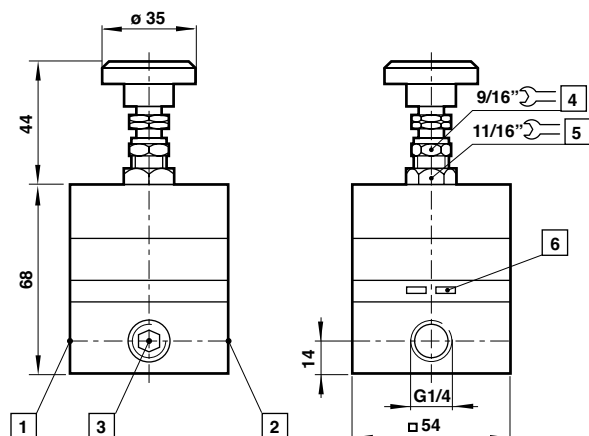
Forward flow (supply pressure 7 bar)



Relief flow (supply pressure 7 bar)



Dimensions



- 1 Inlet port
- 2 Outlet port
- 3 Gauge port
- 4 Tension nut
- 5 Mounting nut (Ø 11,5 required for panel mounting)
- 6 Exhaust

HIGH-FLOW PRECISION PRESSURE REGULATOR

LR27H G1/4, 1/4 NPT or interface version

- Ideally suited to pantograph application
- High-precision manual pressure regulator
- Highly sensitive and accurate
- Perfect for dead-end applications
- Excellent long term stability
- Very high forward and relief flow capability
- Optional quick exhaust function
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:
Oil free, dry compressed air,
filtered to better than 25 µm
Note: for use with gases other than compressed air
please consult our technical department.

Operation:
Optional - see option selector for details

Flow Capacity:
Up to 1500 l/min.

Pressure:
Maximum inlet pressure:
10 bar
At least 0.2bar (3 psi) above output pressure

Working pressure range:
1 ... 8 bar

Ports:
G1/4 and 1/4 NPT

Air Consumption:
Typically < 4,0 l/min

Ambient temperature:
-40°C ... +70°C
Air supply must be dry enough to avoid ice formation
at temperatures below +2°C

Materials

Body: Passivated zinc die casting, black
powder coated

Pilot operator and sub base interface
plate are anodised aluminium, black
powder coated

Elastomers: Reinforced nylon

Pressure capsule: Beryllium copper



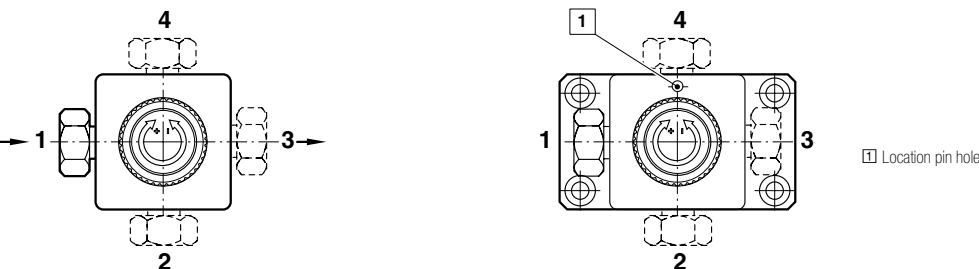
Models

Symbol	Port size	Gauge	Weight (kg)	Model
	G1/4	Without	0,890	LR27H-200-RNLG-S1
	1/4 NPT	Without	0,890	LR27H-200-RNLA-S1

Option selector

Function		Substitute	Relief port position		Substitute
Standard		None	Left		1
Quick Exhaust		Q	Front		2
Mounting		Substitute	Right		3
Subbase		0	Back		4
1/4" Port		2	Filter		Substitute
Operation		Substitute	Without		N
			With		S
Standard		00	Thread		Substitute
Gearbox operated (6:1 ratio)		10	ISO G Parallel		G
Pilot operated		34	NPT		A

Relief port position

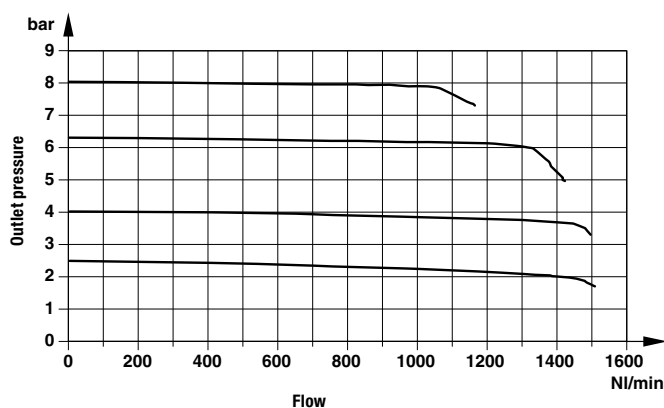


HIGH-FLOW PRECISION PRESSURE REGULATOR

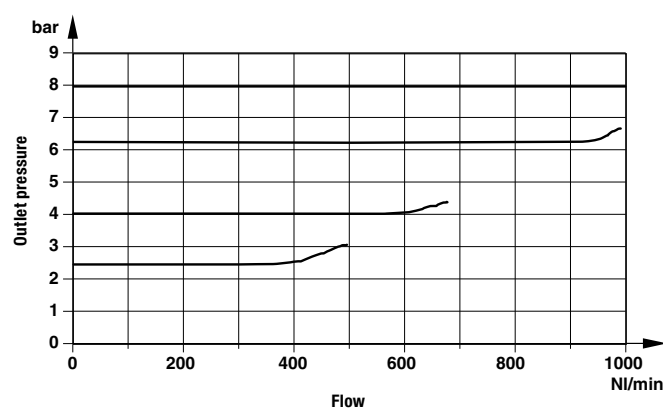
LR27H G1/4, 1/4 NPT or interface version

Flow characteristics

Forward flow (Inlet pressure 10 bar)



Relief flow (Inlet pressure 10 bar)



Accessories

Gauge (for full technical specification see Accessories section)

Series	Port size	Diameter	Pressure range (bar)	Pressure range (psi)	Model
--------	-----------	----------	----------------------	----------------------	-------



LR27H (ISO G port)	R 1/8	40 mm	0 ... 10	0 ... 140	18-015-989 *
LR27H (NPT port)	1/4 PTF	2"	0 ... 11	0 ... 160	18-015-209

* Please order a BSP connector 160232818 (G1/4 o/f to G1/8 i/f) separately.

Exhaust filter

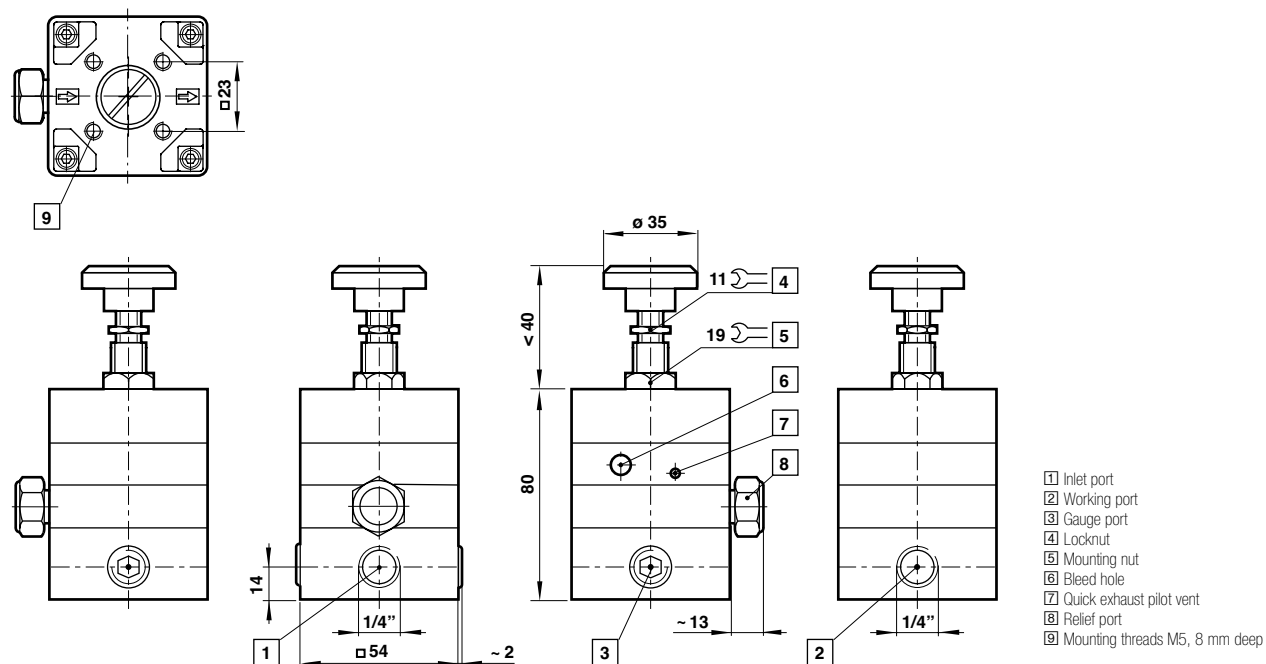
Series	Model
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LR27H (ISO G port)	M/1512
LR27H (NPT port)	MV002A

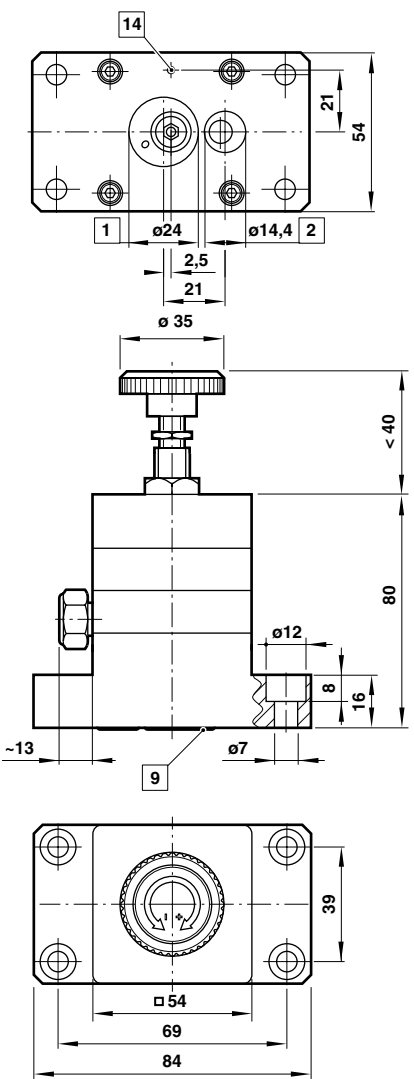
Dimensions

Standard (typical for other inline versions)

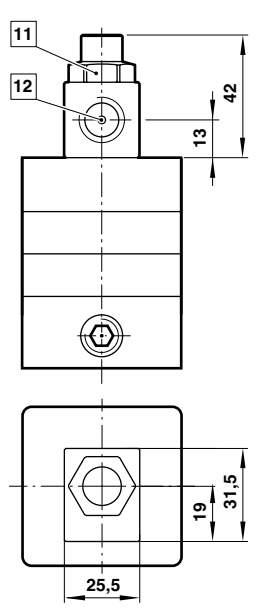


HIGH-FLOW PRECISION PRESSURE REGULATOR LR27H G1/4, 1/4 NPT or interface version

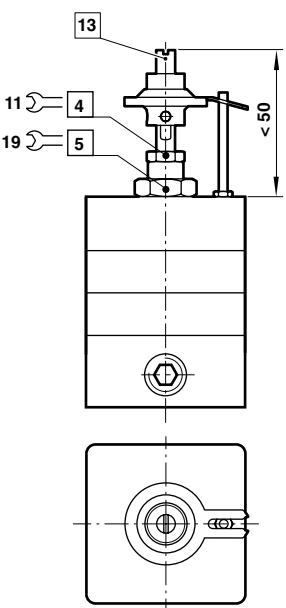
Sub base version



Pilot operated



Gearbox operated



- 1 Inlet port, 2,1 mm deep
- 2 Working port, 2,1 mm deep
- 4 Locknut
- 5 Mounting nut
- 9 Two O-Rings are supplied
- 11 Cap nut, A/F 20 mm
- 12 Pilot port 1/4" rotatable 4 x 90° positions
- 13 Adjusting screw
- 14 Location pin hole, Ø 2 mm, 3 mm deep

HIGH FLOW PRESSURE REGULATOR

L20AG 1/2" ... 1"

- Ported regulators for general purpose pneumatic applications
- Relieving operation as standard
- Options include non-relieving models and alternative spring ranges
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air only

Pressure range:

See below

Maximum inlet pressure:

28 bar

Gauge port:

Rc 1/8 with main G ports

1/8 PTF with main PTF ports

Operating temperature:

-20°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body & bonnet: Zinc alloy

Bottom plug: Glass filled nylon for 1/2, brass for 3/4" and 1"

Adjusting screw: Steel plated

Valve seat: Acetal

Elastomers: Synthetic rubber



Models

Port size	Flow dm ³ /s	scfm	Pressure range (bar)*	Relieving	Weight kg	lb	Model with ISO G-thread	Model with PTF-thread
1/2	60	127	0,1 ... 3,5	Standard	1,40	3.08	L20AG-X4G-PD100	L20AG-X4G-AD100
1/2	60	127	0,2 ... 8	Standard	1,30	2.86	L20AG-X4G-PH100	L20AG-X4G-AH100
1/2	60	127	7 ... 16	Standard	1,29	2.84	L20AG-X4G-PJ100	L20AG-X4G-AJ100
3/4	80	170	0,1 ... 3,5	Standard	2,75	6.06	L20AG-X6G-PD100	L20AG-X6G-AD100
3/4	80	170	0,2 ... 8	Standard	2,85	6.28	L20AG-X6G-PH100	L20AG-X6G-AH100
1	100	212	0,1 ... 3,5	Standard	2,44	5.37	L20AG-X8G-PD100	L20AG-X8G-AD100
1	100	212	0,2 ... 8	Standard	2,90	6.39	L20AG-X8G-PH100	L20AG-X8G-AH100

*Can be adjusted to zero bar outlet pressure and generally to pressures in excess of those specified

Option selector

L20AG-X★G-★★100

Port size	Substitute
1/2"	4
3/4"	6
1"	8

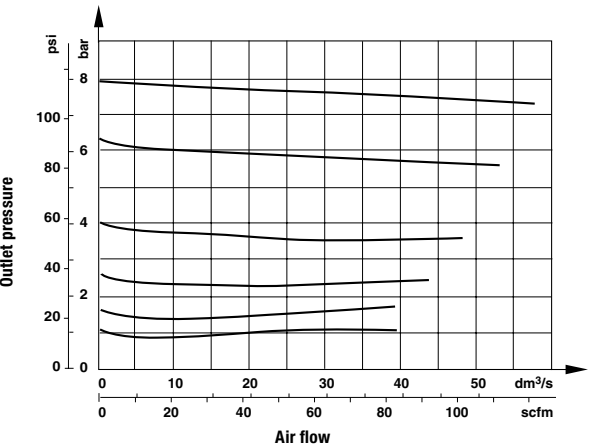
* Outlet pressure can be adjusted to pressures in excess of, and less than, those specified. Do not use these units to control pressures outside of the specified ranges.

Pressure ranges*	Substitute
0,1 ... 3,5 bar	D
0,2 ... 8 bar	H
7 ... 16 bar, 1/2" only	J
Threads	Substitute
PTF	A
ISO G parallel	P

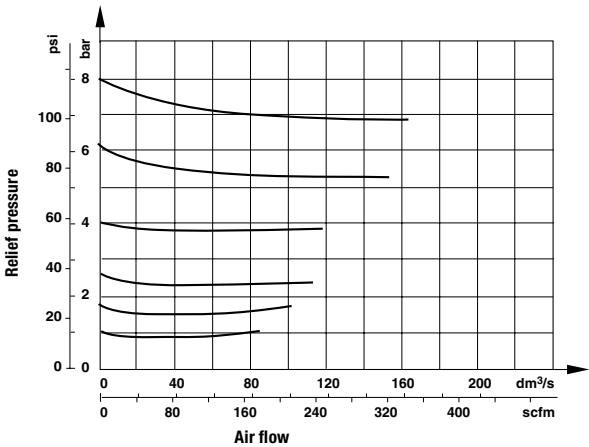
HIGH FLOW PRESSURE REGULATOR
L20AG 1/2" ... 1"

Flow characteristics

Inlet pressure: 10 bar (145 psi), port size: 1/2"
Range: 0,2 ... 8 bar (3 ... 116 psi)



Inlet pressure: 10 bar (145 psi), port size: 1"
Range: 0,2 ... 7 bar (3 ... 101 psi)



Accessories

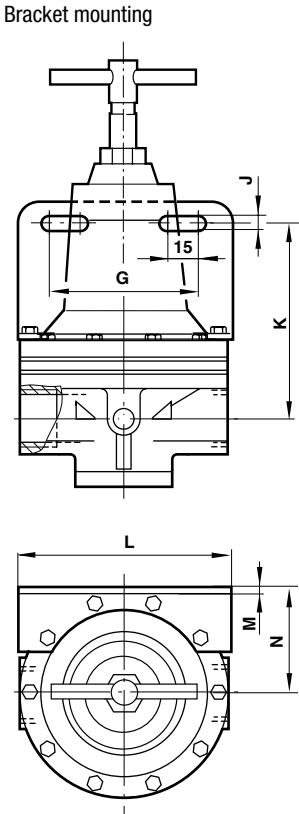
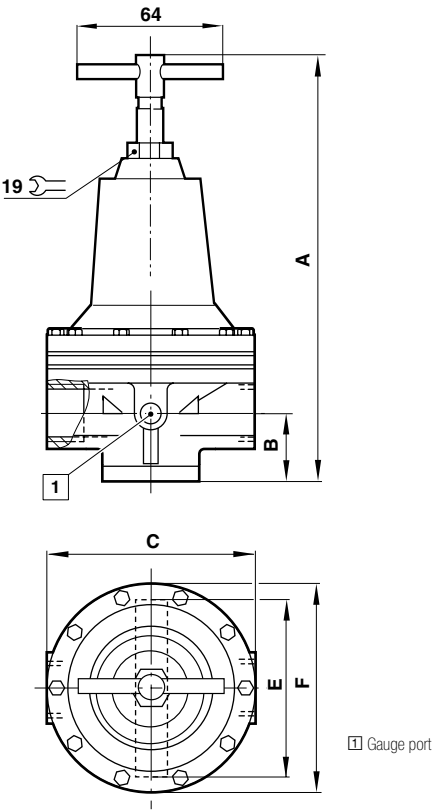


Wall mounting bracket	Service kit
1	
	
18-001-005 (1/2" body only)	20AG-X4-101 (1/2" body only)
18-001-029	20AG-X8-101

Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
					
L20AG (ISO G main port)	Rc 1/8	0 ... 10	0 ... 140	40 mm	18-015-989
L20AG (PTF main port)	1/8 PTF	0 ... 11	0 ... 160	2"	18-015-204
L20AG (ISO G main port)	Rc 1/8	0 ... 10	0 ... 140	50 mm	18-015-013

HIGH FLOW PRESSURE REGULATOR L20AG 1/2" ... 1"

● Dimensions



Series	A	B	C	E	Ø F
L20AG-X4G	162	36	86	82	83
L20AG-X6G	190	41	124	108	124
L20AG-X8G	190	41	124	108	124

Series	G	J	K	L	M	N
L20AG-X4G	63	5	73	83	2	57
L20AG-X6G	98	8	76	124	2	75
L20AG-X8G	98	8	76	124	2	75

PROPORTIONAL PRESSURE CONTROL VALVE

LVP50 G1/4, 1/4 NPT or manifold

- Closed-loop air piloted proportional pressure control valve
- High flow
- Excellent performance characteristics
- Fast response time
- Adjustable gain and pressure range
- Low power consumption
- Feedback signal
- Manifold mountable
- Wide temperature range
- Shock vibration tested to EN 61373, Category 1, class A and B
- 1000 hrs salt spray compliant

Technical Data

Medium:
Compressed dry air, oil free filtered to 5 µm

Operation:
Air piloted spool valve with integrated electronic pressure control

Output (nominal) pressure:
0 ... 10 bar

Supply pressure:
Minimum 2 bar above maximum output required, 12 bar max.

Air supply sensitivity:
Better than 0,75% span output change per bar supply pressure change

Flow:
Up to 1400 N l/min (see characteristic curves)

Air consumption:
< 5 N l/min

Fluid/Ambient temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Temperature sensitivity:
Typically better than 0.03% span/°C (0 ... +50°C), < 5% span (extended range -40°C ... +80°C)

Degree of protection:
IP65 in normal operation (exhaust and baffle protected from water ingress at temperatures < +5°C)

Linearity:
< 1%

Hysteresis and deadband:
< 1%

Response time:
< 80 ms (from 10 ... 90% of output pressure into a 0,1 litre load).

Vibration & shock immunity:
< 3% span
0,75 m/s², 5 ... 150Hz,
1 m/s², 5 ... 150Hz

Weight:
0,55 kg



Materials

Body: Aluminium
Lid: Zinc die cast
Front cover and End cap: Nylon

Models

Electromagnetic compatibility	Conforms to EC requirements EN 50081-2 (1994) and EN 50082-2 (1995)
Electrical input signal	4 ... 20 mA or 0 ... 10 V factory set
Electrical power input	24 V d.c. +25%, -30% (power consumption < 1 W)
Output pressure feedback signal	0 ... 10 V full range, < ±1% Accuracy
Connections	M12x1, 5-pin

Option selector

Output pressure		Substitute	
0 ... 2 bar/30 psi		02	
0 ... 6 bar/90 psi		06	
0 ... 10 bar/150 psi		10	
Unit for pressure		Substitute	
bar		B	
psi		P	

LVP50★★★★★11HSR

Input signal		Substitute	
0 ... 10 V		1	
4 ... 20 mA		4	
Port size		Substitute	
G1/4		J	
NPT 1/4		K	
Manifold		X	

PROPORTIONAL PRESSURE CONTROL VALVE

LVP50 G1/4, 1/4 NPT or manifold

● Connecting plugs

Elbow connector M12 x 1



0250081

● Manifold mount assembly to ISO 2 sub base

Single manifold



ZZ5M00

O-rings, flat seal and screws are included.

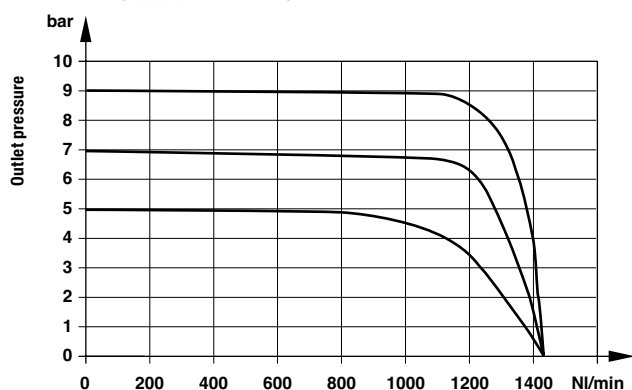
● Electrical connector pin looking into the end of the instrument

Pin-No.	Function
1	+24 V d.c. supply
2	0 ... 10 V feedback
3	Control signal (+VE)
4	Common (supply signal and feedback return)
5	Chassis

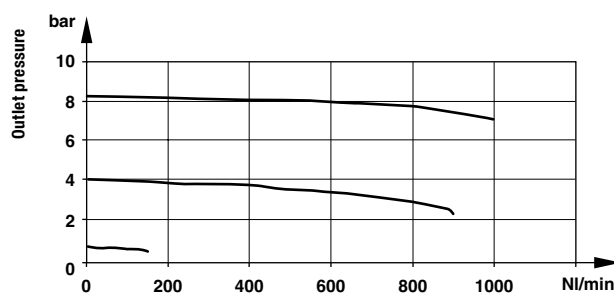


● Characteristic curves

Forward flow characteristics
(supply pressure 11 bar)



Relief flow characteristics
(supply pressure 9 bar)



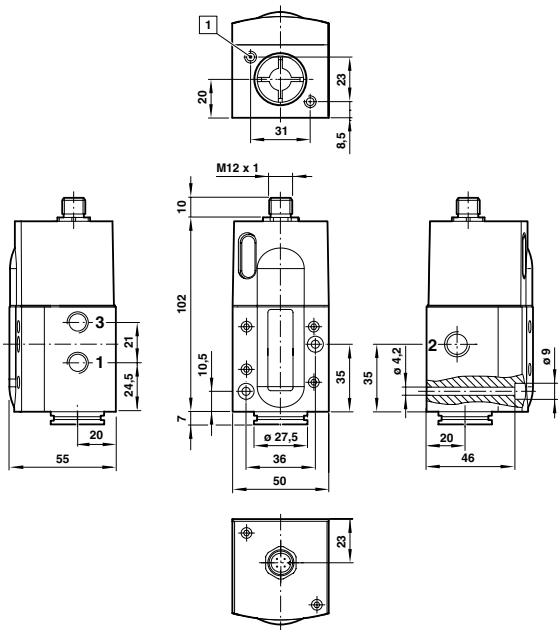
PROPORTIONAL PRESSURE CONTROL VALVE

LVP50 G1/4, 1/4 NPT or manifold

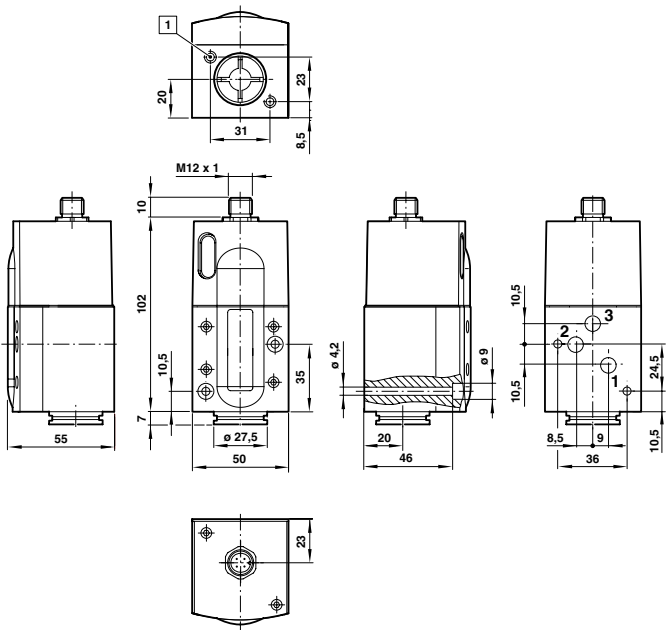
Dimensions

LVP50

VP50 with manifold surface

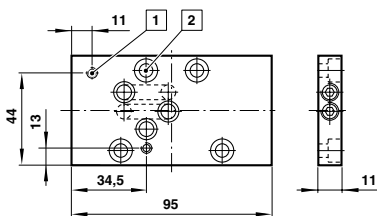


□ M5 x 8 mm deep

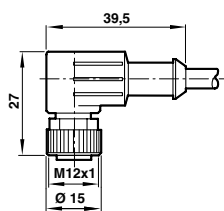


Manifold mount assembly to ISO 2 sub base included all seals and screws

Connector



- Two screws M4 x 50 mm deep to mount the VP50 onto the manifold
- Four screws M6x16 mm deep to mount the manifold onto the iso subbase



Connector, 90°

M12 x 1, 5 pin, female,
5 m cable length, A coded
Model: 0250081

EXCELON® QUIKCLAMP SYSTEM

Pressure relief valves LV72G, LV74G – 1/4" ... 3/4"

- Excelon design allows in-line installation or modular installation with other Excelon products
- Push to lock adjusting knob with tamper resistant accessory
- Helps protect air operated equipment from over pressurisation
- Norgren pressure relief valves comply with category 0 (S.E.P.) and category 1 of the Pressure Equipment Directive 97/23/EC.
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air

Relief pressure range:

0,3 ... 10 bar

Other relief pressures are available, contact Norgren

Relief port:

LV72: 1/4"

LV74G: tapped air port size only

Gauge ports:

LV72G: Rc 1/8 for ISO G main ports, 1/8 PTF for PTF main ports

LV74G: Rc 1/8 for ISO G main ports, 1/4 PTF for PTF main ports

Ambient temperature:

-40°C ... +65°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

LV72G

Body: Zinc body

Bonnet: Acetal

Elastomers: Nitrile

Bottom plug: Acetal

Adjusting screw/lock nut:

Stainless steel

LV74G

Body & bonnet: Aluminium

Valve: Aluminium and nitrile

Elastomers: Nitrile

Bottom plug: Acetal



Models

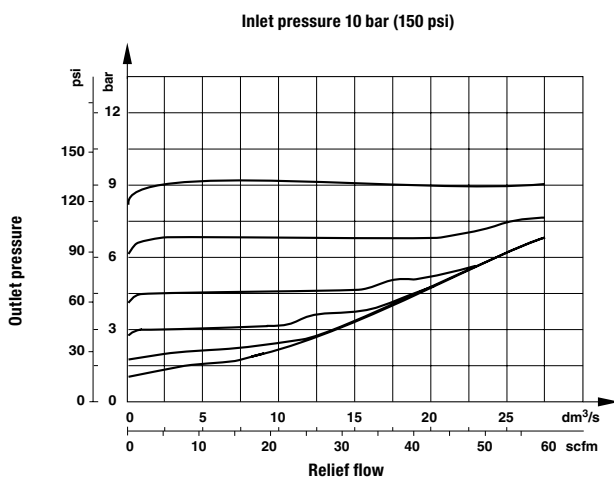
Air port	Weight kg	lb	Model with ISO G-thread	Model with PTF-thread
1/4"	0,33	0.72	LV72G-2GK-NMN	LV72G-2AK-NMN
3/8"	0,33	0.72	LV72G-3GK-NMN	LV72G-3AK-NMN
3/8"	0,69	1.52	LV74G-3GK-NMN	LV74G-3AK-NMN
1/2"	0,68	1.49	LV74G-4GK-NMN	LV74G-4AK-NMN
3/4"	0,67	1.47	LV74G-6GK-NMN	LV74G-6AK-NMN

Option selector

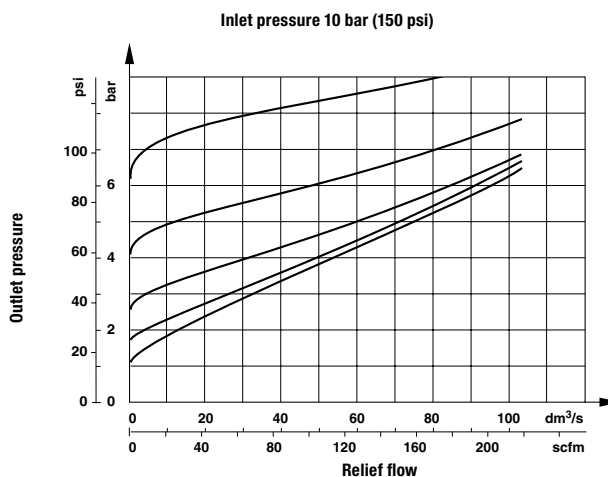
Series		Substitute	Adjustment		Substitute
72		2	Knob (standard)		K
74		4	T-handle (10 bar, 145 psi)		T
Port size		Substitute	Threads form		Substitute
1/4" (72)		2	PTF		A
3/8" (72 + 73)		3	ISO G parallel		G
1/2" (74)		4			
3/4" (74)		6			

Flow characteristics

LV72G – Port size 1/4",
regulating range 0,3 ... 10 bar (5 ... 145 psi)



LV74G – Port size 1/2",
regulating range 0,3 ... 10 bar (5 ... 145 psi)



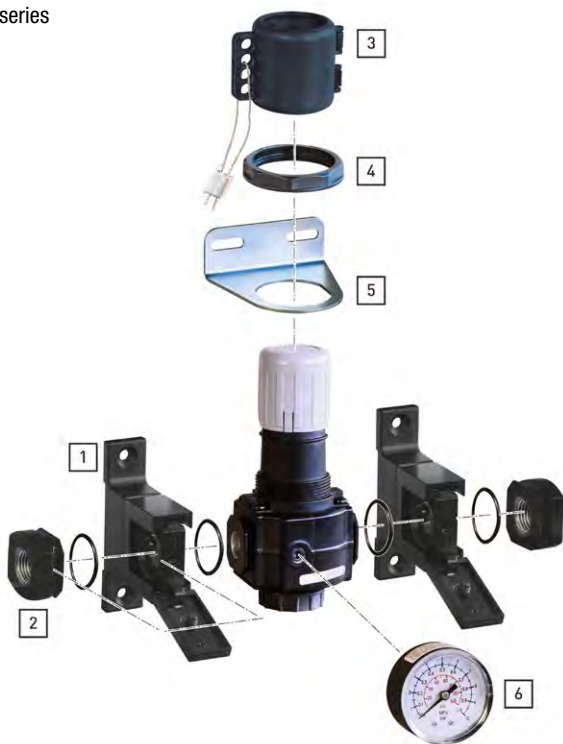
EXCELON® QUIKCLAMP SYSTEM Pressure relief valves LV72G, LV74G – 1/4" ... 3/4"

● Accessories

72 series



74 series



Series	Quikclamp with wall bracket*	Quikclamp*	Tamper resistant cover & seal wire	Wall bracket and panel mounting nut	Panel nut (zinc)	Silencer	Service kit
	1		3	4 5	4	5	
72	4214-58	4214-57	4255-51	74316-50	4268-89	MB002B (Rc 1/4) MB002A (1/4 NPT)	NA
74	4314-63	4314-62	4355-51	4368-51	4368-89	–	4384-703

* Please use a Quikmount pipe adaptor if the Quikclamp® is mounted at inlet or outlet side.

Series	Port size	Quikmount pipe adaptor ISO G parallel thread	PTF-thread
		2	2
72	1/4"	4215-08	4215-02
72	3/8"	4215-09	4215-03
74	1/4"	4315-09	4315-01
74	3/8"	4315-10	4315-02
74	1/2"	4315-11	4315-03
74	3/4"	4315-12	4315-04

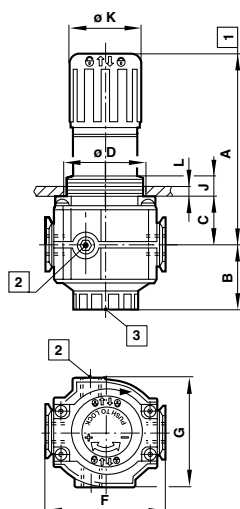
Gauge (for full technical specification see Accessories section)					
Series	Port size	Pressure range in bar	Pressure range in psi	Diameter	Model
		6	6		
72 (ISO G main port)	Rc 1/8	0 ... 10		40 mm	18-015-989
72 (PTF main port)	1/8 PTF		0 ... 160	1 1/2"	18-015-212
74 (ISO G main port)	Rc 1/8	0 ... 10		50 mm	18-015-013
74 (PTF main port)	1/4 PTF		0 ... 160	2"	18-015-209

EXCELON® QUIKCLAMP SYSTEM

Pressure relief valves LV72G, LV74G – 1/4" ... 3/4"

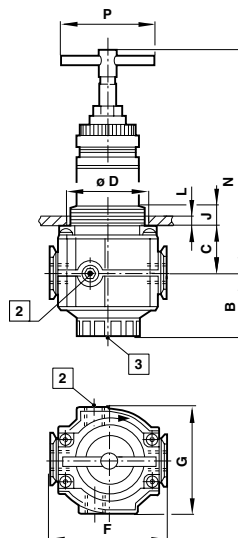
● Dimensions

Standard



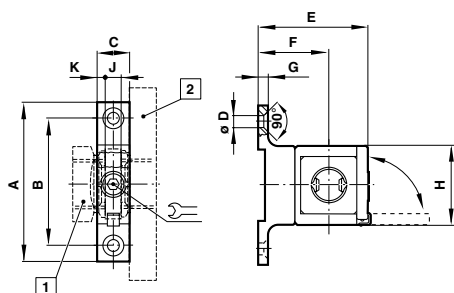
Series	A	B	C	F	G	ØD	J	ØK	L	N	P
72	73	33	26	50	48	40	12	35	0 ... 4	102	63
74	127	43	31	80	74	52	19	47	2 ... 6	151	63

T-handle



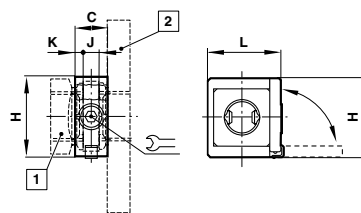
- 1 Reduces by 4 mm with knob in locked position
 2 Gauge port
 3 Exhaust port Rc 1/4, 1/4 PTF for LV72G only

Quikclamp® with wall bracket



Series	A	B	C	ØD	E	F	G	H	J	K	↺
72	74	59	14,5	5,3	56	38	4,5	36,5	6,5	4	3
74	102	83	24,5	6,5	74	51	6,5	51	13,5	5,5	4

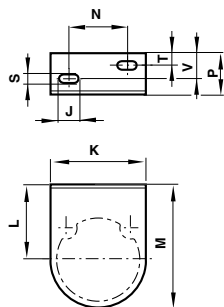
Quikclamp®



- 1 Quikmount pipe adaptor
 2 Excelon® unit

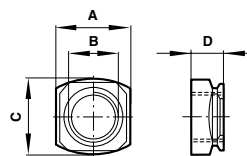
Series	C	H	J	K	L	↺
72	14,5	36,5	6,5	4	36,5	3
74	24,5	51	13,5	5,5	46	4

Neck mounting bracket



Series	J	K	L	M	N	P	R	S	T	V
72	8	49	38	63,5	30	24	—	4,4	7	10
74	24	89	52	86	56	35	23	7	12	12

Quikmount pipe adaptor



Series	A	B	C	D
72	29	1/4, 3/8	29	16
74	38,5	1/4, 3/8, 1/2, 3/4	38,5	18

PRESSURE RELIEF VALVES

1002 R1/4

- Simple, compact design and construction
- Protect compressed air systems from over-pressurisation
- Quick & easy installation
- Very wide temperature range
- Optional manual pull ring

Technical Data

Medium:
Compressed air only

Operation:
Poppet valve, directly actuated with spring return

Recommended operating pressure:
0,14 ... 1,6 bar
1,6 ... 2,5 bar
2 ... 6,3 bar
6,3 ... 14 bar

Note: Use of this unit outside of its recommended operating pressure range could lead to product malfunction and should not be attempted

Accuracy limitation:
± 25% of relief setting

Port size:
R 1/4

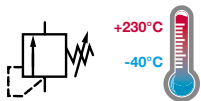
Flow:
See table

Mounting position:
Vertical

Temperature range:
-40°C ... +230°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body and adjusting cap: Brass
Ball seal: Stainless steel



Models

Symbol	Port size	Recommended pressure (bar)	Weight (kg)	Model
	R1/4	6,3 ... 14	0,11	1002/BR000

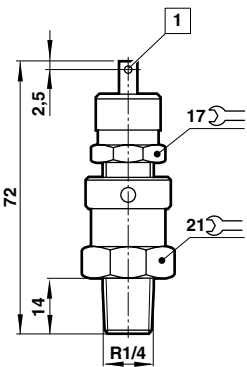
Option selector

1002/B★00★

Recommended operating pressure	Substitute
2,0 ... 6,3 bar	G
0,14 ... 1,6 bar	M
1,6 ... 2,5 bar	P
6,3 ... 14 bar	R

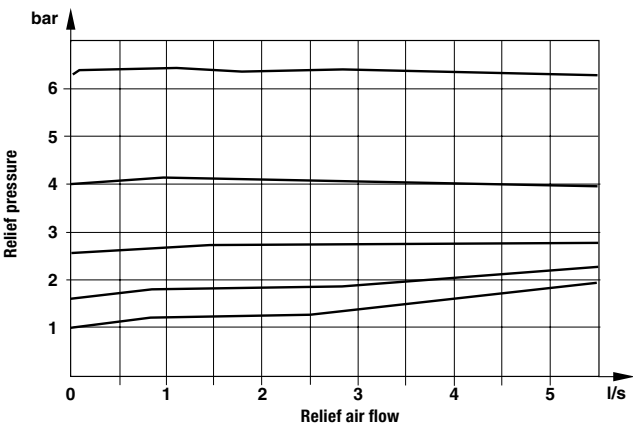
Pull ring	Substitute
Without	0
With	8

Dimensions



□ Ø 3 mm hole for pull ring

Relief air flow characteristics



GAUGES

18-015-... 1/8" & 1/4"

- Monitor pressures in compressed air systems for optimum efficiency
- The gauges are manufactured & calibrated to maintain accuracy within ASME B40.1 specifications for the published process/ambient -40°C ... +65°C temperature limits. Reference temperature is +23°C ±1°C as per Section 6.2.1. Calibration procedure & accuracy of the gauges is determined by Section 6.2.4 & Table 1.
- Wide temperature range
- Shock and vibration tested to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, oil and gases or liquids which do not corrode copper alloys

Port connections:

Rc 1/8, 1/8 NPT, 1/4 NPT

Ambient temperature:

-40°C ... +65°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Steel

Face: Plastic

Movements: Copper/brass

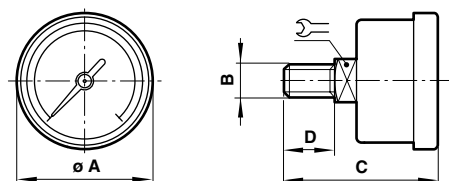


Models

Port size	Diameter	Pressure range	Face	Model
Rc1/8	40 mm	0 ... 10 bar	White, black & red lettering	18-015-989
Rc1/8	50 mm	0 ... 10 bar	White, black & red lettering	18-015-013
1/8 PTF	1 1/2"	0 ... 160 psi	Black, red & white lettering	18-015-212
1/4 PTF	2"	0 ... 160 psi	Black, red & white lettering	18-015-209

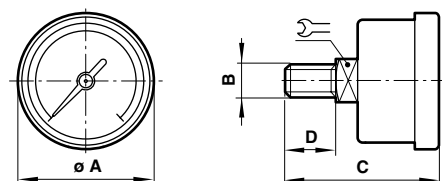
Dimensions

Gauge – metric, white face



Ø A	B	C	D		Model
40	R1/8	44	10	14	18-015-989
50	R1/8	48	14	14	18-015-013

Gauge – inch, black face



Ø A	B	C	D		Model
1 1/2	1/8 PTF	1.60	0.97	0.43	18-015-212
2	1/4 PTF	1.73	1.03	0.55	18-015-209

STAINLESS STEEL HEAVY DUTY GAUGE

18-015-914/915 R1/8 & 1/4 PTF

- Ideally suited for use in harsh environments
- Vibration and pulsation resistant
- Restricted orifice
- Enclosure rating - IP65
- Stainless steel case with brass and stainless steel internals
- Wide temperature range

Technical Data

Medium:
Compressed air, oil and gases or liquids which do not corrode copper alloys

Pressure range:
0 ... 11 bar

Port connections:
R1/8 and 1/4 PTF

Accuracy:
± 2,5% of full scale value

Enclosure rating:
IP65

Fluid/Ambient temperature:
-40°C ... +93°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Case and ring: Stainless steel (304 SS)

Lens: Polycarbonate

Movements: Stainless steel/brass

Gaskets: NBR/Silicone

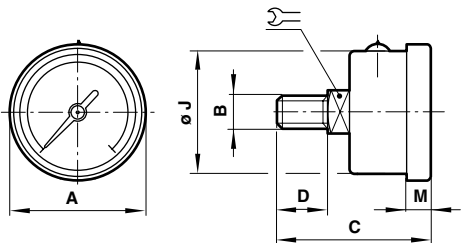


Models

	Port size	Diameter	Pressure range	Face	Weight (kg)	Model
	Rc1/8	50 mm	0 ... 11 bar	White, black & red lettering	0,10	18-015-914
	1/8 PTF	2"	0 ... 160 psi	Black, red & white lettering	0,10	18-015-916

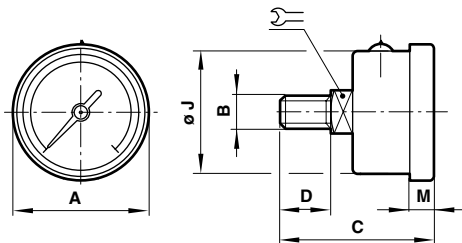
Dimensions

Gauge – bar, white face



Ø A	B	C	D	Ø J	M		Model
57,5	Rc1/8	55	8	51,5	5	14	18-015-914

Gauge – psi, black face



Ø A	B	C	D	Ø J	M		Model
2.26	1/8 PTF	2.158	0.512	2.027	0.199	9/16	18-015-916

Fittings



Lightweight →



↖
Shock and vibration



↖
BSP Pipe fittings



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering fittings range. If you can't see the option you require please contact us.

● Fittings

82A series Aluminium (light weight) compression fittings Ø 6 ... 42 mm tube size, BSPP & BSPT thread  Page 273	83A series Aluminium (light weight) compression fittings Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread  Page 275	83A series Aluminium (light weight) compression fittings Ø 1/8" ... 2" nominal pipe size, NPT thread  Page 277	82 series Brass compression fittings Ø 6 ... 42 mm tube size, BSPP & BSPT thread  Page 279	83 series Brass compression fittings Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread  Page 281	83 series Brass compression fittings Ø 1/8" ... 2" nominal pipe size, NPT thread  Page 283
Fleetfit Commercial vehicle push-in fittings Ø 6 ... 18 mm tube size  Page 285	Fleetfit Commercial vehicle push-in fittings Ø 1/4" ... 3/4" tube size, BSP & NPT threads  Page 289	Pneufit Push-in fittings Ø 4 ... 14 mm tube size, BSP threads  Page 293	Pneufit Push-in fittings Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads  Page 305	BSP & HOSE M5, 1/8" ... 1"  Page 314	

ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

82A series Ø 6 ... 42 mm tube size, BSPP & BSPT thread

- For use in areas of vibration
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,8 mm wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$
- Corrosion resistant AL2 alloy
- Approximately 65% lighter than brass or stainless steel fittings

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes:

6, 8, 10, 12, 14, 15, 18, 20, 22, 25, 28, 32, 35, 38, 42 mm

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12 (tube support required)

Testing & Approvals:

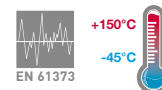
PED 97/23/EC
Shock & Vibration tested to EN 61373 Category 2 (Bogie mounted)
Salt Spray tested to ISO 9227-06, data on request

Materials

Body & nut: AL2 Aluminium with PA20 anodic treatment to HB 175 hardness

Washer & clamping: Brass, white galvanised

'O'-Ring: HNBR – colour coded yellow



Recommended nut torque settings

Tube Ø mm	Recommended torque	Tube Ø mm	Recommended torque
6	20 Nm	22	55 Nm
8	20 Nm	25	75 Nm
10	20 Nm	28	95 Nm
12	25 Nm	30	135 Nm
14	30 Nm	32	150 Nm
15	30 Nm	35	170 Nm
16	35 Nm	38	280 Nm
18	45 Nm	42	290 Nm
20	55 Nm		

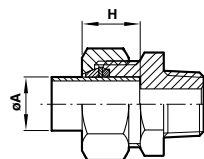
Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

Tube stop position

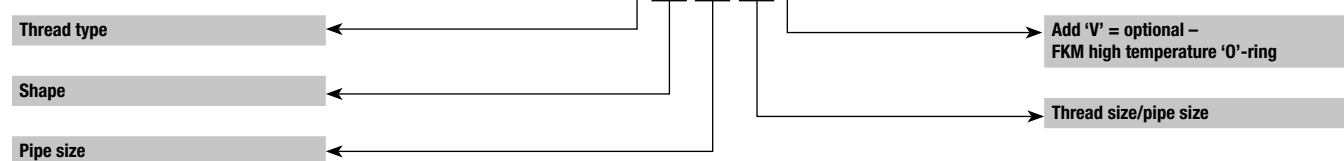
Ø A	H	Ø A	H
6	16,0	22	19,5
8	17,0	25	21,0
10	18,5	28	22,5
12	18,0	30	23,0
14	18,0	32	23,5
15	18,5	35	23,5
16	20,5	38	27,0
18	19,5	42	26,5
20	19,5		

The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut.

For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.



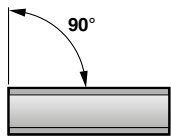
Option selector



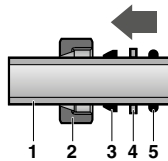
ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

82A series Ø 6 ... 42 mm tube size, BSPP & BSPT thread

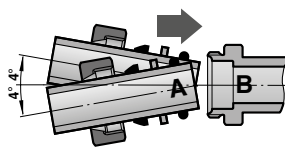
Method of assembly



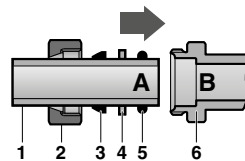
1. Ensure that the end of the tube is cut square and is free from burrs.



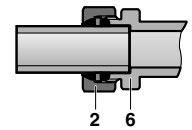
2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.



3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.



4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.



5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Straight adaptor (parallel)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)	Straight stem connector (parallel)
82A125	82A225	82A226	82A020	82A020	82A029	82A012	82A115	82A215

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
82A040	82A040	82A145	82A246

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
82A060	82A060	82A165	82A266

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring	Thread 'O'-ring ISO G parallel thread
82A0F4	82A0J1	82A0E7	8000K	8000K

Please contact IMI Norgren technical service for a full list of part numbers.

ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

83A series Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread

- For use in areas of vibration
- Pre-assembled units
- No special assembly tools or heat required
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,03" (0,8 mm) wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$
- Corrosion resistant AL2 alloy
- Approximately 65% lighter than brass or stainless steel fittings

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes:

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/4", 1 1/2", 2"

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12 (tube support required)

Testing & Approvals:

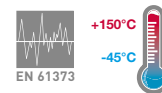
PED 97/23/EC
Shock & Vibration tested to EN 61373 Category 2 (Bogie mounted)
Salt spray tested to ISO 9227-06, data on request

Materials

Body & nut: AL2 Aluminium with PA20 anodic treatment to HB 175 hardness

Washer & clamping: Brass, white galvanised

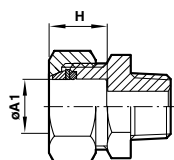
'O'-Ring: HNBR – colour coded yellow



Recommended nut torque settings

Nominal pipe size	Recommended torque	Tube Ø	Recommended torque
1/8"	20 Nm	1"	150 Nm
1/4"	30 Nm	1 1/4"	300 Nm
3/8"	40 Nm	1 1/2"	310 Nm
1/2"	45 Nm	2"	320 Nm
3/4"	90 Nm		

Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

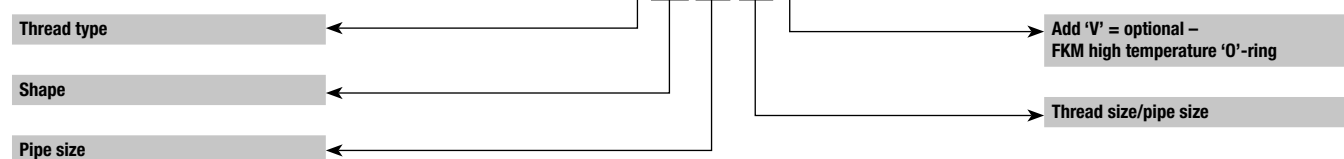


Tube stop position and tube outside diameter details

Nominal pipe size	Pipe O/D Ø A1"	Pipe O/D Ø A1 mm	H mm
1/8"	0,405	10,3	18
1/4"	0,540	13,7	18,5
3/8"	0,675	17,1	20
1/2"	0,840	21,3	20
3/4"	1,050	26,7	21,5
1"	1,315	33,4	22,5
1 1/4"	1,660	42,2	27
1 1/2"	1,900	48,3	25
2"	2,375	60,3	35

The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut. For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.

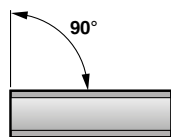
Option selector



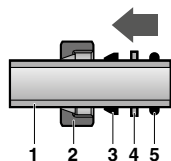
ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

83A series Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread

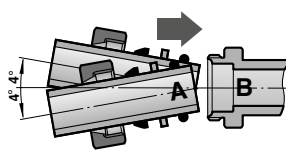
Method of assembly



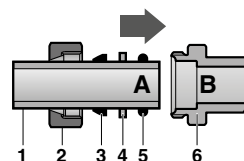
1. Ensure that the end of the tube is cut square and is free from burrs.



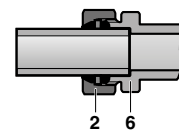
2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.



3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.



4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.



5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Straight adaptor (parallel)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)	Straight stem connector (parallel)
83A125	83A225	83A226	83A020	83A020	83A029	83A012	83A115	83A215

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
83A040	83A040	83A145	83A246

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
83A060	83A060	83A165	83A266

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring	Thread 'O'-ring ISO G parallel thread
83A0F4	83A0J1	83A0E7	8000K	8000K

Please contact IMI Norgren technical service for a full list of part numbers.

ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

83A series Ø 1/8" ... 2" nominal pipe size, NPT thread

- For use in areas of vibration
- Pre-assembled units
- No special assembly tools or heat required
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,03" (0,8 mm) wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$
- Corrosion resistant AL2 alloy
- Approximately 65% lighter than brass or stainless steel fittings

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes (nominal pipe size see below for corresponding tube outside diameter):

1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/4", 1 1/2", 2"

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/2" (NPT)

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12 (tube support required)

Testing & Approvals:

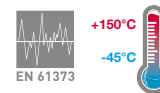
PED 97/23/EC
Shock & Vibration tested to EN 61373 Category 2 (Bogie mounted)
Salt spray tested to ISO 9227-06, data on request

Materials

Body & nut: AL2 Aluminium with PA20 anodic treatment to HB 175 hardness

Washer & clamping: Brass, white galvanised

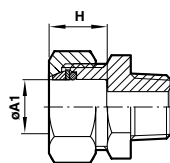
'O'-Ring: HNBR – colour coded yellow



Recommended nut torque settings

Nominal pipe size	Recommended torque	Tube Ø	Recommended torque
1/8"	20 Nm (15 ft.lb.)	1"	150 Nm (111 ft.lb.)
1/4"	30 Nm (22 ft.lb.)	1 1/4"	300 Nm (221 ft.lb.)
3/8"	40 Nm (30 ft.lb.)	1 1/2"	310 Nm (229 ft.lb.)
1/2"	45 Nm (33 ft.lb.)	2"	320 Nm (236 ft.lb.)
3/4"	90 Nm (66 ft.lb.)		

Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

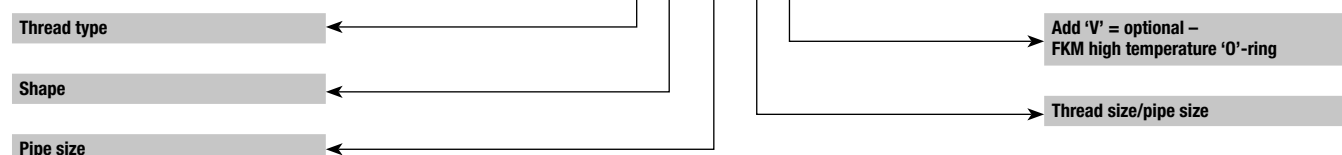


Tube stop position and tube outside diameter details

Nominal pipe size	Pipe O/D Ø A1"	Pipe O/D Ø A1 mm	H
1/8"	0,405	10,3	18
1/4"	0,540	13,7	18,5
3/8"	0,675	17,1	20
1/2"	0,840	21,3	20
3/4"	1,050	26,7	21,5
1"	1,315	33,4	22,5
1 1/4"	1,660	42,2	27
1 1/2"	1,900	48,3	25
2"	2,375	60,3	35

The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut. For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.

Option selector



ALUMINIUM (LIGHT WEIGHT) COMPRESSION FITTINGS

83A series Ø 1/8" ... 2" nominal pipe size, NPT thread

Method of assembly

1. Ensure that the end of the tube is cut square and is free from burrs.
2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.
3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.
4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.
5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)
83A425	83A426	83A020	83A020	83A029	83A012	83A415

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
83A040	83A040	83A445	83A446

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
83A060	83A060	83A465	83A466

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring
83A0F4	83A0J1	83A0E7	8000K

Please contact IMI Norgren technical service for a full list of part numbers.

BRASS COMPRESSION FITTINGS

82 series Ø 6 ... 42 mm tube size, BSPP & BSPT thread

- For use in areas of vibration
- Pre-assembled units
- No special assembly tools or heat required
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,8 mm wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes:

6, 8, 10, 12, 14, 15, 18, 20, 22, 25, 28, 32, 35, 38, 42 mm

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4", 1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12
(tube support required)

Testing & Approvals:

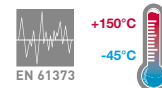
PED 97/23/EC
Shock & Vibration tested to EN 61373 Category 2
(Bogie mounted)

Materials

Body & nut: Brass

Washer & clamping: Brass, white galvanised

'O'-Ring: HNBR – colour coded yellow



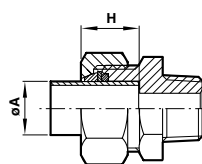
Recommended nut torque settings

Tube Ø mm	Recommended torque	Tube Ø mm	Recommended torque
6	20 Nm	22	55 Nm
8	20 Nm	25	75 Nm
10	20 Nm	28	95 Nm
12	25 Nm	30	135 Nm
14	30 Nm	32	150 Nm
15	30 Nm	35	170 Nm
16	35 Nm	38	280 Nm
18	45 Nm	42	290 Nm
20	55 Nm		

Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

Tube stop position

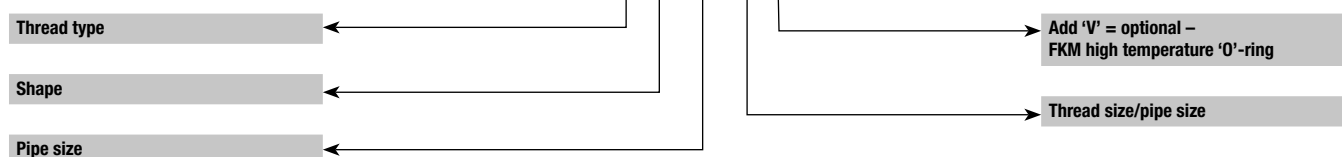
Ø A	H	Ø A	H
6	16,0	22	19,5
8	17,0	25	21,0
10	18,5	28	22,5
12	18,0	30	23,0
14	18,0	32	23,5
15	18,5	35	23,5
16	20,5	38	27,0
18	19,5	42	26,5
20	19,5		



The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut.

For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.

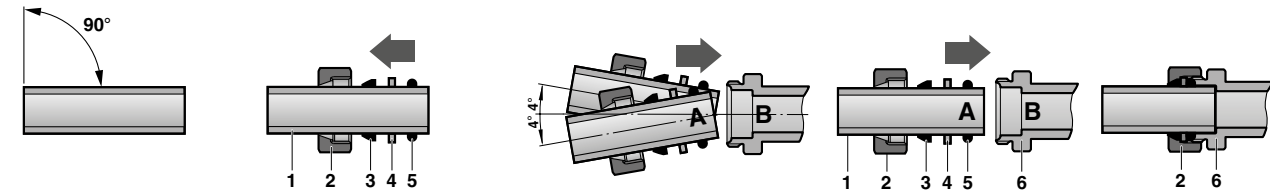
Option selector



BRASS COMPRESSION FITTINGS

82 series Ø 6 ... 42 mm tube size, BSPP & BSPT thread

Method of assembly



1. Ensure that the end of the tube is cut square and is free from burrs.

2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.

3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.

4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.

5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Straight adaptor (parallel)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)	Straight stem connector (parallel)
82125	82225	82226	82020	82020	82029	82012	82115	82215

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
82040	82040	82145	82246

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
82060	82060	82165	82266

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring	Thread 'O'-ring ISO G parallel thread	Tube support
820F4	820J1	820E7	8000K	8000K	82033

Please contact IMI Norgren technical service for a full list of part numbers.

BRASS COMPRESSION FITTINGS

83 series Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread

- For use in areas of vibration
- Pre-assembled units
- No special assembly tools or heat required
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,03" (0,8 mm) wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes (nominal pipe size see below for corresponding tube outside diameter):

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/4", 1 1/2", 2"

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12 (tube support required)

Testing & Approvals:

PED 97/23/EC

Shock & Vibration tested to EN 61373 Category 2 (Bogie mounted)

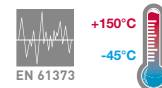
Salt spray tested to ISO 9227-06, data on request

Materials

Body & nut: Brass

Washer & clamping: Brass

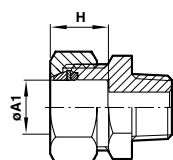
'O'-Ring: HNBR – colour coded yellow



Recommended nut torque settings

Tube Ø mm	Recommended torque	Tube Ø mm	Recommended torque
1/8"	20 Nm	1"	150 Nm
1/4"	30 Nm	1 1/4"	300 Nm
3/8"	40 Nm	1 1/2"	310 Nm
1/2"	45 Nm	2"	320 Nm
3/4"	90 Nm		

Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

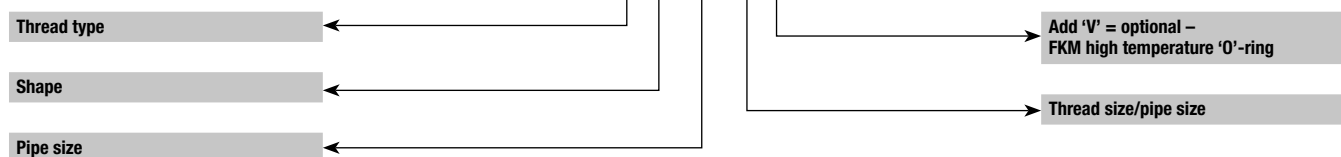


Tube stop position and tube outside diameter details

Nominal pipe size	Pipe O/D Ø A1"	Pipe O/D Ø A1 mm	H mm
1/8"	0,405	10,3	18
1/4"	0,540	13,7	18,5
3/8"	0,675	17,1	20
1/2"	0,840	21,3	20
3/4"	1,050	26,7	21,5
1"	1,315	33,4	22,5
1 1/4"	1,660	42,2	27
1 1/2"	1,900	48,3	25
2"	2,375	60,3	35

The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut. For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.

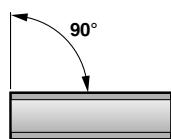
Option selector



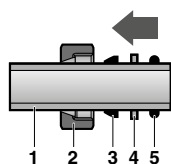
BRASS COMPRESSION FITTINGS

83 series Ø 1/8" ... 2" nominal pipe size, BSPP & BSPT thread

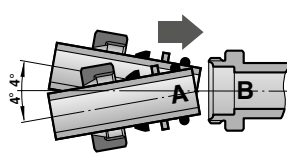
Method of assembly



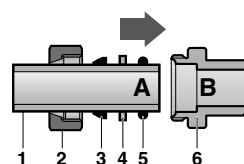
1. Ensure that the end of the tube is cut square and is free from burrs.



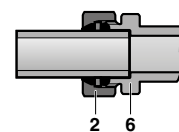
2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.



3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.



4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.



5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Straight adaptor (parallel)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)	Straight stem connector (parallel)
83125	83225	83226	83020	83020	83029	83012	83115	83215

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
83040	83040	83145	83246

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
83060	83060	83165	83266

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring	Thread 'O'-ring ISO G parallel thread
830F4	830J1	830E7	8000K	8000K

Please contact IMI Norgren technical service for a full list of part numbers.

BRASS COMPRESSION FITTINGS

83 series Ø 1/8" ... 2" nominal pipe size, NPT thread

- For use in areas of vibration
- Pre-assembled units
- No special assembly tools or heat required
- Can be remade without damage to tube
- Suitable for use on seam welded as well as seamless tube or pipe
- Thinner tube can be used; as thin as 0,03" (0,8 mm) wall thickness
- Lower torque requirement on the tube nut than fittings which bite into the tube
- Will cope with tube misalignment of $\pm 4^\circ$

Technical Data

Medium:

Compressed air, water (plus other media suitable for use with materials of construction)

Operating pressure:

Typically up to 15 bar
For applications above 15 bar contact Norgren technical service

Ambient temperature:

-45°C ... +150°C with HNBR 'O'-ring (yellow)

Tube sizes (nominal pipe size see below for corresponding tube outside diameter):

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/4", 1 1/2", 2"

Thread sizes:

1/8", 1/4", 3/8", 1/2", 3/4",
1", 1 1/2" (BSPT & BSPP)

Tubing:

Designed for use with:
Copper tube to BS 2871 Stainless steel tube to AISI 304 & AISI 316
Nylon – PA12 (tube support required)

Testing & Approvals:

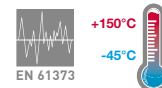
PED 97/23/EC
Shock & Vibration tested to EN 61373 Category 2 (Bogie mounted)
Salt spray tested to ISO 9227-06, data on request

Materials

Body & nut: Brass

Washer & clamping: Brass

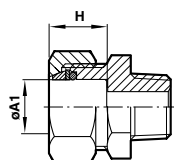
'O'-Ring: HNBR – colour coded yellow



Recommended nut torque settings

Nominal pipe size	Recommended torque	Tube Ø	Recommended torque
1/8"	20 Nm (15 ft.lb.)	1"	150 Nm (111 ft.lb.)
1/4"	30 Nm (22 ft.lb.)	1 1/4"	300 Nm (221 ft.lb.)
3/8"	40 Nm (30 ft.lb.)	1 1/2"	310 Nm (229 ft.lb.)
1/2"	45 Nm (33 ft.lb.)	2"	320 Nm (236 ft.lb.)
3/4"	90 Nm (66 ft.lb.)		

Torque settings based on Railway applications up to 15 bar for use with stainless steel tube.

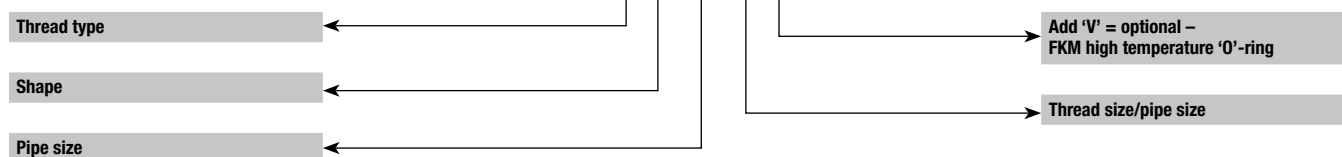


Tube stop position and tube outside diameter details

Nominal pipe size	Pipe O/D Ø A1"	Pipe O/D Ø A1 mm	H mm
1/8"	0,405	10,3	18
1/4"	0,540	13,7	18,5
3/8"	0,675	17,1	20
1/2"	0,840	21,3	20
3/4"	1,050	26,7	21,5
1"	1,315	33,4	22,5
1 1/4"	1,660	42,2	27
1 1/2"	1,900	48,3	25
2"	2,375	60,3	35

The information provided in this table are typical values as dimension H will vary slightly with torque applied to the nut. For fittings without tube stops such as straight connector and bulkheads the above tube insertion depths are also applicable.

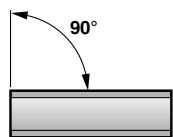
Option selector



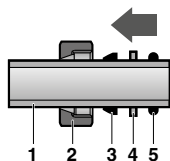
BRASS COMPRESSION FITTINGS

83 series $\varnothing$ 1/8" ... 2" nominal pipe size, NPT thread

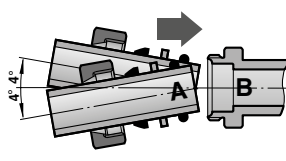
Method of assembly



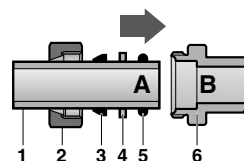
1. Ensure that the end of the tube is cut square and is free from burrs.



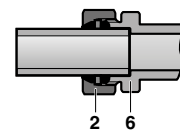
2. Slide the nut (2) onto the pipe (1) from right to left. Slide the split ring (3) onto the pipe (1) from right to left keeping the smaller edge towards the nut (2). Slide the washer (4) onto the pipe (1) from right to left. Slide the 'O'-ring (5) onto the pipe (1) from right to left. N.B. The pipe head must be deburred to ensure the 'O'-ring is not damaged.



3. Before installing the pipe fittings, check that the pipes misalignment is not higher than $\pm 4^\circ$.



4. Move the pipe head (A) with all components assembled as shown towards the casing abutment (B). In pipe fittings without abutment (B), the pipe should be inserted as per the tube stop/abutment position listed below.



5. Move the four components from left to right and screw the nut (2) onto the pipe fitting casing (6).

Straight adaptors and connectors

Straight adaptor (taper)	Female adaptor (parallel)	Straight union (equal)	Straight union (unequal)	Bulkhead union	Cap	Straight stem connector (taper)
83425	83426	83020	83020	83029	83012	83415

Elbow adaptors and connectors

Union elbow (equal)	Union elbow (unequal)	90° Elbow adaptor (taper)	90° Elbow adaptor female (taper)
83040	83040	83445	83446

Tee adaptors and connectors

Union tee (equal)	Union tee (unequal)	Tee adaptor (taper)	Tee adaptor female (taper)
83060	83060	83465	83466

Accessories

Tubing nut	Split ring	Tubing washer	Tubing 'O'-ring	Thread 'O'-ring ISO G parallel thread
830F4	830J1	830E7	8000K	8000K

Please contact IMI Norgren technical service for a full list of part numbers.

COMMERCIAL VEHICLE PUSH-IN FITTINGS

Fleetfit Ø 6 ... 18 mm tube size

- Simple tube connection and disconnection – no tools required
- Fewer component parts – internally machined form in body to secure collet reduces number of potential leak paths
- Internal tube support as standard for greater safety
- Corrosion resistant
- Easy identification – all collets marked with tube size
- Reduced assembly & maintenance times provide time/labour savings
- Greater reliability and reduced testing
- Ease of tube insertion in areas of restricted access

Technical Data

Medium:

Compressed air
Maximum working pressure:
0 to 10 bar (0 ... 145 psi)

Working temperature:

-40°C ... +100°C

Tubing:

Tube should be to DIN 74324

Standards & Legislation:

Fittings and tubing comply to department of transport Federal motor vehicle safety standard, (DOT FMVSS 106) (Mandatory requirements for Inch tube fittings in U.S.A.)
Society for automotive engineers SAE J1131 (inch tube and fittings)
German TUV approval and DIN 74324 (metric tube and fittings)

Swivel fittings:

The swivel feature should be used for positioning purposes only and should not be used as a rotating joint.

Additional ranges:

The selection of metric fittings listed in this catalogue form part of a wider range of vehicle push-in fittings for further details consult Norgren Technical service.

Materials

Body (straights), tube support, collet:
Brass BS 2874 CZ 121

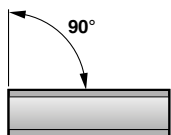
Body (elbows, tees): Brass
BS 2874 CZ 122

'O'-Ring: Buna N (low nitrile)

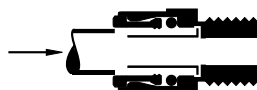
Thread sealant: Precoat 5



Method of assembly



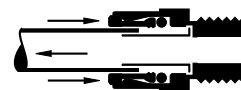
1. Ensure that the end of the tube is cut square and is free from burrs.



2. Push the tube through the collet into the fitting.

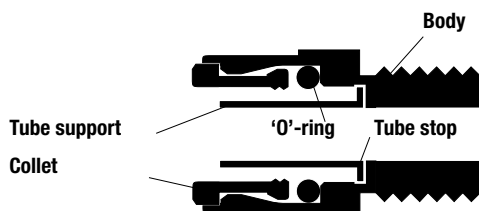


3. Continue pushing the tube through the 'O'-ring until it bottoms on the tube stop. Then pull back on the tube to reinforce the collet teeth gripping action.



4. To disconnect - first ensure there is no air present. Push the tube into the fitting until it bottoms on the tube stop. Then hold down the collet and withdraw the tube.

Component functions



Body

The body has an internally machined form to secure the collet(s), 'O'-Ring(s) and Tube support(s). It also has internal & externally machined thread form(s) for connection to ports where applicable.

Collet

The purpose of the collet is to grip the tube and ensure it is retained by the fitting at all times.

'O'-ring

The 'O'-Ring is to ensure adequate interference between the tube & fitting body therefore providing a pneumatic seal at all times.

Tube support

The tube support prevents the tube collapsing during extreme tensile loading conditions. Such conditions are only encountered during performance testing and far exceed those experienced during normal use.

COMMERCIAL VEHICLE PUSH-IN FITTINGS

Fleetfit Ø 6 ... 18 mm tube size

● Straight adaptors and connectors

Straight adaptor (metric)	Straight adaptor (BSP taper)	Straight connector (equal)	Reducing straight connector
			
974666	974530	974503	974504

● Elbow adaptors and connectors

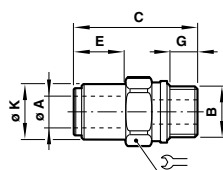
Swivel elbow adaptor (metric)	Universal hobbs elbow adaptor (metric)	Swivel elbow adaptor (BSP parallel)	Elbow adaptor (BSP taper)	Elbow connector
				
974521	974138	974104	974330	974511

● Tee connectors

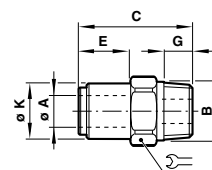
Tee connector (equal)	Reducing tee connector
	
974514	974588

● Dimensions

Straight adaptor
Metric thread



Straight adaptor
BSP taper thread



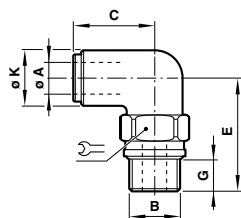
O/D Tube A	B	C	E	G	Ø K	Model
6	M10 x 1,0	28,5	13,5	8,0	13,0	14 97466631
6	M12 x 1,5	30,5	11,5	10,0	13,0	17 97466633
6	M14 x 1,5	31,5	13,5	10,0	13,0	19 97466634
6	M16 x 1,5	27,5	7,5	10,0	13,0	22 97466635
6	M22 x 1,5	30,5	5,0	12,0	13,0	27 97466638
8	M10 x 1,0	29,5	12,5	8,0	15,0	17 97466641
8	M12 x 1,5	31,5	12,5	10,0	15,0	17 97466643
8	M14 x 1,5	31,5	13,5	10,0	15,0	19 97466644
8	M16 x 1,5	31,5	11,5	10,0	15,0	22 97466645
8	M22 x 1,5	30,5	15,0	12,0	15,0	27 97466648
10	M10 x 1,0	33,0	16,0	8,0	17,0	17 97466651
10	M12 x 1,5	35,0	16,0	10,0	17,0	17 97466653
10	M14 x 1,5	5,0	15,0	10,0	17,0	19 97466654
10	M16 x 1,5	35,0	15,0	10,0	17,0	22 97466655
10	M22 x 1,5	31,0	5,5	12,0	17,0	27 97466658
12	M12 x 1,5	38,5	18,5	10,0	20,5	22 97466663
12	M14 x 1,5	38,5	18,5	10,0	20,5	22 97466664
12	M16 x 1,5	39,0	19,0	10,0	20,5	22 97466665
12	M22 x 1,5	35,0	9,5	12,0	20,5	27 97466668
15	M22 x 1,5	45,0	19,5	12,0	26,0	27 97466670
16	M16 x 1,5	42,5	19,5	10,0	26,0	27 97466679
16	M22 x 1,5	44,5	19,5	12,0	26,0	27 97466675
18	M22 x 1,5	44,5	18,5	12,0	29,0	30 97466680

O/D Tube A	Taper B	C	E	G	Ø K	Model
6	R1/8	26,5	11,0	9,5	12,5	13 97453004
6	R1/4	27,0	9,5	11,1	12,5	14 97453010
8	R1/8	30,0	13,5	9,5	14,5	15 97453005
8	R1/4	30,0	11,5	11,1	14,5	15 97453011
10	R1/4	34,5	16,0	11,1	16,5	17 97453012
10	R3/8	34,5	13,5	12,5	16,5	17 97453020
12	R1/4	39,5	19,0	11,1	20,0	22 97453013

COMMERCIAL VEHICLE PUSH-IN FITTINGS

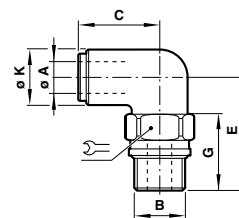
Fleetfit Ø 6 ... 18 mm tube size

Swivel elbow adaptor
metric thread



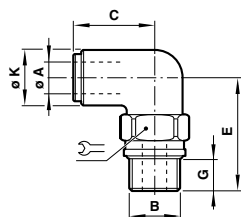
O/D Tube A	B	C	E	G	Ø K		Model
6	M16 x 1,5	21,5	30,0	10,0	17,5	22	97452135
8	M12 x 1,5	23,0	27,0	10,0	17,5	17	97452143
8	M16 x 1,5	27,0	26,0	12,5	17,5	26	97452145
8	M22 x 1,5	25,0	35,5	12,0	26,0	27	97452148
10	M12 x 1,5	27,5	29,0	10,0	18,5	17	97452153
10	M16 x 1,5	27,5	30,0	10,0	18,5	22	97452155
10	M22 x 1,5	27,5	35,5	12,0	26,0	27	97452158
12	M16 x 1,5	32,5	34,0	10,0	22,0	22	97452165
12	M22 x 1,5	32,5	40,0	12,0	26,0	27	97452168

Universal hobbs elbow adaptor
metric thread



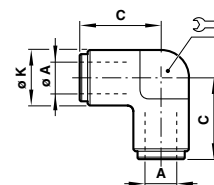
O/D Tube A	B	C	E	G	Ø K		Model
6	M10 x 1,0	23,5	26,0	16,0	14,0	15	97413831
6	M12 x 1,5	23,5	29,0	19,0	14,0	17	97413833
6	M16 x 1,5	24,5	34,0	21,5	17,5	24	97413835
6	M22 x 1,5	28,5	41,5	25,0	26,0	30	97413838
8	M12 x 1,5	25,5	31,5	19,0	17,5	17	97413843
8	M16 x 1,5	25,5	34,0	21,5	17,5	24	97413845
8	M22 x 1,5	28,5	41,5	25,0	26,0	30	97413848
10	M10 x 1,0	27,0	28,0	16,0	18,5	15	97413851
10	M12 x 1,5	29,0	31,0	19,0	18,5	17	97413853
10	M14 x 1,5	28,0	31,5	19,5	18,5	19	97413854
10	M16 x 1,5	29,0	33,5	21,5	18,5	24	97413855
10	M22 x 1,5	32,0	40,5	25,0	26,0	30	97413858
12	M16 x 1,5	32,0	35,5	21,5	22,0	24	97413865
12	M22 x 1,5	34,5	40,5	25,0	26,0	30	97413868
16	M16 x 1,5	38,0	38,5	25,0	26,0	24	97413879
16	M22 x 1,5	38,0	40,5	21,5	26,0	30	97413875
18	M22 x 1,5	39,5	43,0	25,0	23,0	30	97413880

Swivel elbow adaptor
BSP parallel thread



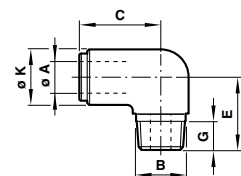
O/D Tube A	BSP parallel B	C	E	G	Ø K		Model
6	R1/8	21,0	23,0	7,0	12,0	15,0	97410404
10	R1/4	27,5	31,0	10,0	15,0	19,0	97410412

Elbow connector



O/D Tube A	C	Ø K		Model
6	21,0	13,0	10	97451104
8	23,0	15,0	11	97451105
9	27,0	17,0	14	97451113
10	27,0	17,0	14	97451106
12	32,0	20,5	16	97451107
15	38,5	27,0	27	97451115
16	39,0	27,0	27	97451108

Elbow adaptor
BSP taper thread

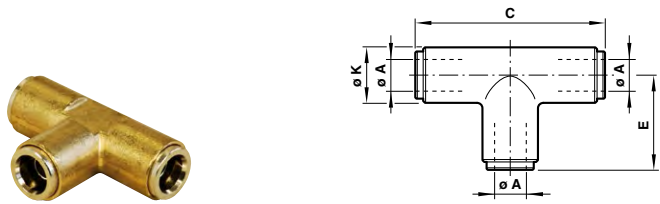


O/D Tube A	BSP Taper B	C	E	G	Ø K	Model
6	R1/8	20,5	20,0	9,5	14,0	97433004
6	R1/4	22,0	22,0	11,0	16,0	97433010
8	R1/4	23,0	22,0	11,0	16,0	97433011
10	R1/4	25,0	24,0	11,0	17,5	97433012
12	R1/4	30,0	27,0	11,0	24,0	97433013
12	R1/2	30,5	31,0	16,0	24,0	97433030

COMMERCIAL VEHICLE PUSH-IN FITTINGS

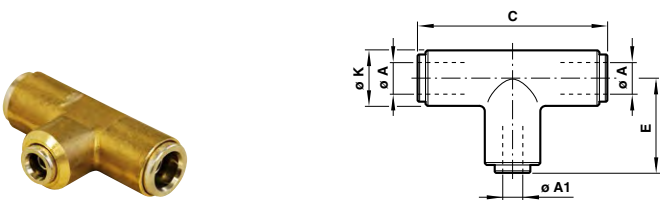
Fleetfit Ø 6 ... 18 mm tube size

Equal tee connector



O/D Tube A	C	E	Ø K	Model
6	42,0	21,0	13,0	97451404
8	45,5	23,0	15,0	97451405
9	54,0	27,0	14,0	97451413
10	54,0	27,0	17,0	97451406
12	64,0	32,0	20,5	97451407
15	77,0	38,5	27,0	97451415
16	78,0	39,0	27,0	97451408

Reducing tee connector



O/D Tube A	Tube A	Tube Ø A1	C	E	Ø K	Model
10	10	6	55,0	23,5	17,0	97458801
12	12	6	64,0	25,5	21,0	97458810
12	12	8	64,0	27,5	21,0	97458822

Equal straight connector



O/D Tube A	C	Ø K	Model
6	35,6	13,0	97450304
8	37,6	15,0	97450305
9	44,1	17,0	97450313
10	44,1	17,0	97450306
11	46,1	19,0	97450336
12	51,1	20,5	97450307
14	50,2	22,0	97450392
15	61,5	25,4	97450315
16	61,5	25,4	97450308

Reducing straight connector



O/D Tube A	O/D Tube Ø A1	C	Ø K	Model
8	6	38,5	15,0	97450447
10	6	43,5	17,0	97450448

COMMERCIAL VEHICLE PUSH-IN FITTINGS

Fleetfit Ø 1/4" ... 3/4" tube size, BSP & NPT threads

- Simple tube connection and disconnection – no tools required
- Fewer component parts – internally machined form in body to secure collet reduces number of potential leak paths
- Internal tube support as standard for greater safety
- Corrosion resistant
- Easy identification – all collets marked with tube size
- Total fittings system solution
- Reduced assembly & maintenance times provide time/labour savings
- Greater reliability and reduced testing
- Ease of tube insertion in areas of restricted access

Technical Data

Medium:

Compressed air

Maximum working pressure:
0 to 10 bar

Working temperature:
-40°C ... +100°C

Standards & Legislation:

Fittings and tubing comply to department of transport Federal motor vehicle safety standard, (DOT FMVSS 106) (Mandatory requirements for Inch tube fittings in U.S.A.)
Society for automotive engineers SAE J1131 (inch tube and fittings)
German TUV approval and DIN 74324 (metric tube and fittings)

Swivel fittings:

The swivel feature should be used for positioning purposes only and should not be used as a rotating joint.

Materials

Body (straights), tube support, collet:
Brass BS 2874 CZ 121

Body (elbows, tees): Brass
BS 2874 CZ 122

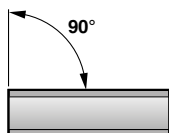
'O'-Ring: Buna N (low nitrile)

Thread sealant: Precoat 5

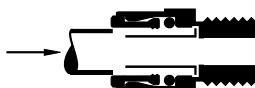
Tubing: Tube should be to SAE J844



Method of assembly



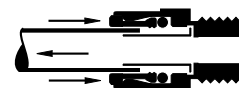
1. Ensure that the end of the tube is cut square and is free from burrs.



2. Push the tube through the collet into the fitting.

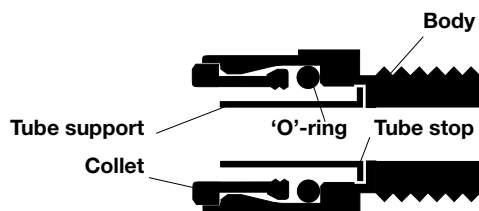


3. Continue pushing the tube through the 'O'-ring until it bottoms on the tube stop. Then pull back on the tube to reinforce the collet teeth gripping action.



4. To disconnect - first ensure there is no air present. Push the tube into the fitting until it bottoms on the tube stop. Then hold down the collet and withdraw the tube.

Component functions



Body

The body has an internally machined form to secure the collet(s), 'O'-Ring(s) and Tube support(s). It also has internal & externally machined thread form(s) for connection to ports where applicable.

Collet

The purpose of the collet is to grip the tube and ensure it is retained by the fitting at all times.

'O'-ring

The 'O'-Ring is to ensure adequate interference between the tube & fitting body therefore providing a pneumatic seal at all times.

Tube support

The tube support prevents the tube collapsing during extreme tensile loading conditions. Such conditions are only encountered during performance testing and far exceed those experienced during normal use.

COMMERCIAL VEHICLE PUSH-IN FITTINGS

Fleetfit Ø 1/4" ... 3/4" tube size, BSP & NPT threads

● Straight adaptors and connectors

Straight adaptor (NPTF)	Straight adaptor (metric)	Straight adaptor (BSP taper)	Straight connector (equal)	Reducing straight connector
				
95453	944666	944530	944503	944504

● Elbow adaptors and connectors

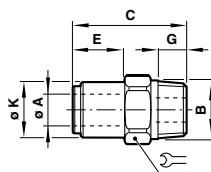
Elbow adaptor (NPTF)	Elbow adaptor (BSP taper)	Universal hobbs elbow adaptor (metric)	Equal elbow connector
			
954331	944330	944138	944511

● Tee connectors

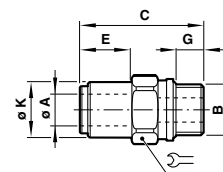
Tee connector (equal)	Reducing tee connector
	
944514	944588

● Dimensions

Straight adaptor
NPTF thread



Straight adaptor
Metric thread



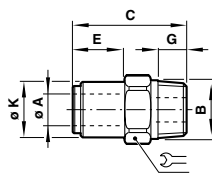
O/D Tube A	NPTF B	C	E	G	ØK	Model
3/16"	1/8"	25,8	10,8	9,5	11,7	1/2" 95453003
1/4"	1/8"	26,3	10,8	9,5	12,7	1/2" 95453004
1/4"	1/4"	29,8	9,3	14,3	12,7	9/16" 95453010
1/4"	3/8"	30,5	8,0	14,3	12,7	1 1/16" 95453018
3/8"	1/8"	33,6	17,1	9,5	16,5	1 1/16" 95453006
3/8"	1/4"	37,6	16,1	14,3	16,5	1 1/16" 95453012
3/8"	3/8"	36,1	13,6	14,3	16,5	1 1/16" 95453020
3/8"	1/2"	37,1	9,1	19,0	16,5	7/8" 95453029
1/2"	1/4"	42,6	19,1	14,3	20,0	7/8" 95453013
1/2"	3/8"	41,6	18,1	14,3	20,0	7/8" 95453021
1/2"	1/2"	43,6	15,6	19,0	20,0	7/8" 95453030
5/8"	3/8"	47,5	22,5	14,3	25,0	1 1/16" 95453022
5/8"	1/2"	53,5	23,5	19,0	25,0	1 1/16" 95453031
3/4"	1/2"	53,5	22,5	19,0	29,5	1 3/16" 95453049

O/D Tube A	Thread B	C	E	G	ØK	Model
1/4"	M10 x 1.0	28,5	13,5	6,5	13,0	14 94466631
1/4"	M12 x 1.5	30,5	11,5	7,5	13,0	17 94466633
1/4"	M16 x 1.5	27,5	7,5	7,5	13,0	22 94466635
3/8"	M12 x 1.5	35,0	16,0	7,5	16,8	17 94466653
3/8"	M14 x 1.5	35,0	15,0	7,5	17,0	19 94466654
3/8"	M16 x 1.5	35,0	15,0	7,5	17,0	22 94466655
3/8"	M22 x 1.5	31,0	5,5	9,5	17,0	27 94466658
1/2"	M16 x 1.5	39,0	19,0	7,5	20,5	22 94466665
1/2"	M20 x 1.5	38,0	13,0	10,0	20,5	27 94466667
1/2"	M22 x 1.5	35,0	9,5	9,5	20,5	27 94466668
5/8"	M16 x 1.5	42,5	19,5	7,5	26,0	27 94466679
5/8"	M22 x 1.5	44,5	19,5	9,5	26,0	27 94466675

COMMERCIAL VEHICLE PUSH-IN FITTINGS

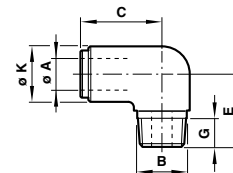
Fleetfit Ø 1/4" ... 3/4" tube size, BSP & NPT threads

Straight adaptor
BSP taper thread



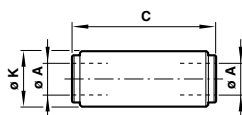
O/D Tube A	B	C	E	G	Ø K		Model
1/4"	1/8"	26,5	10,5	9,5	12,5	13	94453004
1/4"	1/4"	27,0	9,5	11,0	12,5	14	94453010
3/8"	1/8"	33,5	17,0	9,5	16,5	17	94453006
3/8"	1/4"	39,5	19,0	11,0	20,0	22	94453012
3/8"	3/8"	34,5	13,5	12,5	16,5	17	94453020
3/8"	1/2"	34,0	9,0	16,0	16,5	22	94453029
1/2"	1/4"	39,5	19,0	11,0	20,0	22	94453013
1/2"	3/8"	40,0	18,0	12,5	20,0	22	94453021
1/2"	1/2"	40,5	15,5	16,0	20,0	22	94453030

Elbow adaptor
NPTF thread



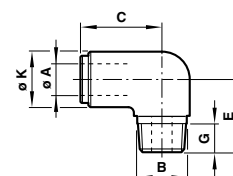
O/D Tube A	NPTF B	C	E	G	Ø K	Model
3/16"	1/8"	20,5	19,0	9,5	12,0	95433103
1/4"	1/8"	20,5	20,0	9,5	14,0	95433104
1/4"	1/4"	22,0	26,0	14,5	17,5	95433110
1/4"	3/8"	24,0	28,0	14,5	21,0	95433118
1/4"	1/2"	24,5	35,0	19,0	24,0	95433127
5/16"	1/8"	22,5	24,0	9,5	17,5	95433105
3/8"	1/8"	27,5	22,0	9,5	17,5	95433106
3/8"	1/4"	27,0	26,0	14,5	17,5	95433112
3/8"	3/8"	29,0	28,0	14,5	21,0	95433120
3/8"	1/2"	29,0	35,0	19,0	24,0	95433129
1/2"	1/4"	31,0	29,0	14,5	22,0	95433113
1/2"	3/8"	32,0	29,0	14,5	22,0	95433121
1/2"	1/2"	32,5	35,0	19,0	24,0	95433130
1/2"	3/4"	37,0	38,0	19,0	29,5	95433144
5/8"	3/8"	36,5	31,0	14,5	27,0	95433198
5/8"	1/2"	39,0	36,0	19,0	29,5	95433131
3/4"	1/2"	38,5	37,5	19,0	33,0	95433149

Equal straight connector



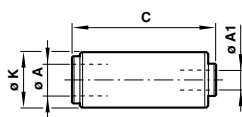
O/D Tube A	C	Ø K	Model
1/4"	35,6	13,0	94450304
3/8"	44,1	17,0	94450306
1/2"	51,1	20,5	94450307
5/8"	61,5	25,5	94450308
3/4"	63,0	30,0	94450309

Elbow adaptor
BSP taper thread



O/D Tube A	BSP taper B	C	E	G	Ø K	Model
1/4"	1/8"	20,5	20,0	9,5	14,3	94433004
1/4"	1/4"	21,8	22,0	11,1	15,9	94433010
3/8"	1/4"	25,1	24,0	11,1	17,5	94433012
3/8"	3/8"	26,1	27,5	12,7	20,0	94433020
3/8"	1/2"	30,1	31,0	15,9	23,8	94433029
1/2"	1/4"	30,1	27,0	11,1	23,8	94433013
1/2"	3/8"	30,1	28,5	12,7	23,8	94433021
1/2"	1/2"	30,6	31,0	15,9	23,8	94433030

Reducing straight connector

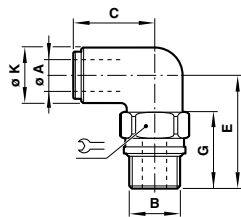


O/D Tube A	O/D Tube Ø A1	C	Ø K	Model
1/4"	3/16"	36,0	13,0	94450437
3/8"	3/16"	43,0	17,0	94450439
3/8"	1/4"	43,5	17,0	94450448
1/2"	3/8"	48,5	20,5	94450464

COMMERCIAL VEHICLE PUSH-IN FITTINGS

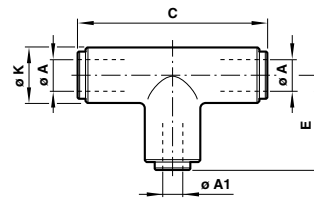
Fleetfit Ø 1/4" ... 3/4" tube size, BSP & NPT threads

Universal hobbs elbow adaptor
Metric thread



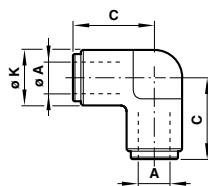
O/D Tube A	Thread B	C	E	G	Ø K		Model
1/4"	M12 x 1.5	23,5	29,0	19,0	14,0	17	94413833
1/4"	M16 x 1.5	24,5	34,0	21,5	17,5	24	94413835
1/4"	M22 x 1.5	28,5	41,5	25,0	26,0	30	94413838
3/8"	M12 x 1.5	29,0	31,0	19,0	18,5	17	94413853
3/8"	M16 x 1.5	29,0	33,5	21,5	18,5	24	94413855
3/8"	M22 x 1.5	32,0	40,5	25,0	26,0	30	94413858
1/2"	M14 x 1.5	32,5	33,5	19,5	22,0	19	94413864
1/2"	M16 x 1.5	32,5	35,5	21,5	22,0	24	94413865
1/2"	M22 x 1.5	34,5	40,5	25,0	26,0	30	94413868
5/8"	M22 x 1.5	38,0	40,5	25,0	26,0	30	94413875

Reducing tee connector



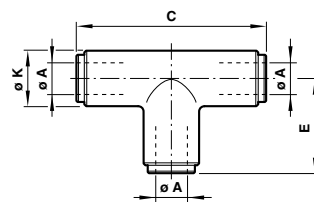
O/D Tube A	O/D Tube A1	O/D Tube A2	C	E	Ø K	Model
3/8"	1/4"	1/4"	51,0	23,5	17,0	94458816
3/8"	3/8"	1/4"	55,0	23,5	17,0	94458801
3/8"	3/8"	1/2"	60,0	32,5	20,5	94458802
1/2"	3/8"	3/8"	62,5	30,0	20,5	94458804
1/2"	1/2"	3/16"	64,0	24,5	20,5	94458803
1/2"	1/2"	1/4"	64,0	25,0	20,5	94458810
1/2"	1/2"	3/8"	62,0	31,0	20,5	94458811
5/8"	1/2"	5/8"	76,5	39,5	27,0	94458814

Equal elbow connector



O/D Tube A	C	Ø K	Model
1/4"	21	11	94451104
3/8"	27	14,5	94451106
1/2"	32	18	94451107

Equal tee connector



O/D Tube A	C	E	Ø K	Model
1/4"	42,0	21,0	13,0	94451404
3/8"	54,0	27,0	17,0	94451406
1/2"	64,0	32,0	20,5	94451407
5/8"	78,0	39,0	27,0	94451408

PUSH-IN FITTINGS

Pneufit Ø 4 ... 14 mm tube size, BSP threads

- Very compact units
- Easy tube insertion for rapid assembly of pneumatic circuits
- Positive tube anchorage
- All BSP taper threads pre-coated with non-PTFE based sealant
- Straight adaptors feature internal hexagon for allen key
- Silicone free 'O'-rings

Technical Data

Medium:

Compressed air (For other media please consult Technical Department)

Operating pressure:

Vacuum -18 bar
(Dependent upon operating specification of tubing)

Vacuum:

-750 mm of Hg i.e. 98%

Operating temperature:

-20°C ... +80°C

"Special" low temperature options contact Norgren Technical service

Tube sizes:

4, 5, 6, 8, 10, 12, 14 mm O/D

Tubing types:

Nylon 11 or 12, Polyurethane and other plasticised or unplasticised tubing which conforms to the tolerances specified in BS 5409, Part 1, 1976, light and normal duty, DIN 73378, DIN 74234, NFE 49-100

Materials

Nickel plated brass body

Nickel plated brass for collet

Silicone free nitrile rubber 'O'-ring (FKM optional)

Plastic sealing washer (parallel threads)

Non - PTFE thread sealant (taper threads)

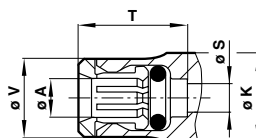


Models

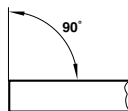
Ø A O/D tube	Ø S*2)	Ø T*1)	V	Ø K
4	2,8	14	7,5	10
5	3,4	15	10	11
6	4,4	15,5	11	12
8	6	16,5	13	14
10	7,6	21	14,5	17
12	9,6	24,5	18	20,5
14	11,5	24,5	20	21

*1) Dimensions here and in the individual tables refer to the collet being in the 'IN' position.

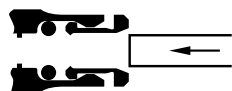
*2) Dimensions here (minimum bore diameter) are common per tube size for all Connectors, elbows and Tees unless otherwise stated.



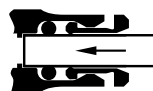
Method of assembly



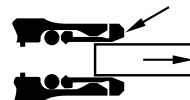
1. Ensure that the end of the tube is cut square and is free from burrs.



2. Push the tube through the collet into the fitting.



3. Continue pushing the tube through the 'O'-ring until it bottoms on the tube stop then pull back.



4. To disconnect push the tube into the fitting, hold down the collet and withdraw the tube.

Option selector

Thread type	10 ★★★★★★	Thread size/tube size
Shape		Thread size/tube size

PUSH-IN FITTINGS

Pneufit Ø 4 ... 14 mm tube size, BSP threads

● Straight adaptors and connectors

Stem tailpiece adaptor (stem to hose bore)	Straight connector (tube to tube)	Straight stem connector	Reducing/expanding connector	Bulkhead connector (tube to tube)	Mixed bulkhead connector	Straight stem adaptor (BSP taper)
						
10019	10020	10022	10023	10029	10031	10115

● Elbow adaptors, connectors and banjos

Straight stem adaptor (BSP parallel)	Straight adaptor (BSP taper)	Straight adaptor (BSP parallel)	Female straight adaptor (female parallel BSP)	Elbow connector	Stem elbow connector	Bulkhead swivel elbow connector
						
10215	10125	10225	10226	10040	10043	10049

Elbow adaptor (BSP taper)	90° Swivel elbow adaptor (BSP taper)	90° Swivel elbow adaptor (BSP parallel)	Extended swivel elbow adaptor (BSP taper)	45° Swivel elbow adaptor (BSP parallel)	Elbow banjo assembly (non-Regulating BSP parallel)	Elbow banjo assembly (regulating-out BSP parallel)
						
10145	10147	10247	10154	10257	10A51	10K51

● Tee adaptors, connectors and banjos, 'Y' adaptors and connectors, 4-way connectors

Tee connector (tube x 3)	Tee adaptor (BSP taper)	Swivel tee adaptor (BSP taper)	Swivel tee adaptor (BSP parallel)	Tee banjo assembly (non-regulating parallel thread)	Fixed side tee adaptor (BSP taper)	Swivel tee adaptor (BSP taper)	Swivel tee adaptor (BSP parallel)	4-way connector (tube x 4)
								
10060	10165	10167	10267	10A71	10175	10168	10268	10090

● Banjo bodies and bolts

Elbow banjo body	Tee banjo body	Banjo bolt (non-regulating single stacking)	Banjo bolt (non-regulating double stacking BSP parallel)	Banjo bolt (non-regulating triple stacking BSP parallel)	Banjo bolt (non-regulating single stacking with top port BSP parallel)	Banjo bolt (regulating single stacking)
						
10051	10071	20A00	20B00	20C00	20*00	20*00

● Accessories, manifolds

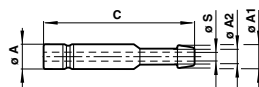
Silencer (plug in)	Plug (acetal)
	
10011	11004

PUSH-IN FITTINGS

Pneufit Ø 4 ... 14 mm tube size, BSP threads

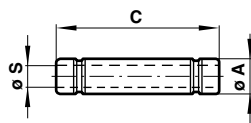
● Dimensions

Stem tailpiece adaptor, stem to hose bore
10019



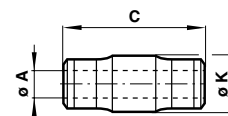
Ø A	Ø A1	Ø A2	C	Ø S	Model
4	4,5	3	34	1,8	100190403
4	6,5	5	34	2,1	100190405
5	6,5	5	35,5	2,8	100190505
6	6,5	5	36	2,8	100190605
6	8	6,5	36	4	100190606
8	8	6,5	37	4,3	100190806
8	9,5	8	38,5	5,5	100190808
10	8	6,5	41,5	4,3	100191006
10	9,5	8	43	5,5	100191008
10	12	10	44	7,3	100191010
12	9,5	8	46,5	5,5	100191208
12	12	10	46,5	7,3	100191210
12	15	12,5	47,5	9,7	100191212
14	15	12,5	47	9,7	100191412

Straight stem connector
10022



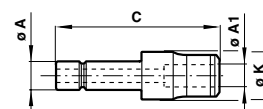
Ø A	C	Ø S	Model
4	30	2,6	100220400
5	33	3,4	100220500
6	34	4	100220600
8	36	6	100220800
10	45	7,6	100221000
12	52	9,6	100221200
14	52	11,5	100221400

Straight connector, tube to tube
10020



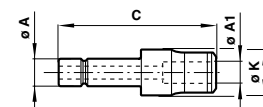
Ø A	C	Ø K	Model
4	30	10	100200400
5	32	11	100200500
6	33,5	12	100200600
8	35,5	14	100200800
10	44,5	17	100201000
12	51,5	20,5	100201200
14	52,5	21	100201400

Reducing/expanding connector
10023



Ø A	Ø A1	C	Ø K	Model
5	4	33,5	10	100230504
6	4	34	10	100230604
6	5	35	11	100230605
8	4	31	10	100230804
8	5	33	11	100230805
8	6	36,5	12	100230806
10	4	31	12	100231004
10	5	36,5	12	100231005
10	6	37,5	12	100231006
10	8	38	14	100231008
12	4	35	14	100231204
12	5	35	14	100231205
12	6	35	14	100231206
12	8	42	14	100231208
12	10	50	17	100231210
14	6	36,5	16	100231406
14	8	37,5	16	100231408
14	10	46,5	17	100231410
14	12	53,5	20,5	100231412

Reducing/expanding connector
10023

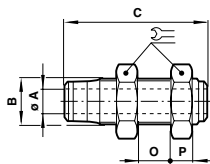


Ø A	Ø A1	C	Ø K	Model
4	6	35	12	100230406
6	8	37,5	14	100230608

PUSH-IN FITTINGS

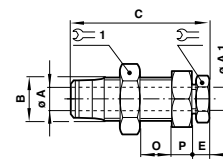
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Bulkhead connector, tube to tube
10029



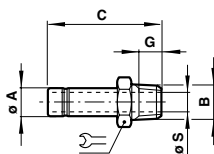
Ø A	B	C	O	P		Model
4	M10x1,0	30	12	9	14	100290400
5	M12x1,0	32	14	9	17	100290500
6	M14x1,5	35,5	15	10	19	100290600
8	M16x1,5	36,5	16	10	22	100290800
10	M20x1,5	43,5	14	11	27	100291000
12	M24x1,5	50,5	15	11	30	100291200
14	M24x1,5	50,5	15	11	30	100291400

Mixed bulkhead connector
10031



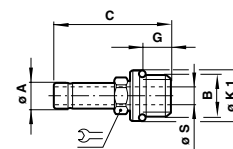
Ø A & Ø A1	B	C	E	O	P			Model
4	M12x1,0	27	6	9,5	9	8	17	100310404
6	M15x1,0	29,5	7	9,5	10	13	22	100310606
8	M18x1,5	33,5	8	11	10	13	24	100310808
10	M20x1,5	40	8	14,5	11	17	27	100311010
12	M24x1,5	44	9	17,5	11	19	30	100311212
14	M26x1,5	46	11,5	18,5	11	22	32	100311414

Straight stem adaptor, BSP taper
10115



Ø A	B	C	G	Ø S		Model
4	R1/8	30	7,5	2,1	10	101150418
4	R1/4	33,5	11	2,1	14	101150428
5	R1/8	31	7,5	3,2	11	101150518
5	R1/4	35	11	3,2	14	101150528
6	R1/8	32	7,5	4,1	12	101150618
6	R1/4	35	11	4,1	14	101150628
8	R1/8	33	7,5	7,1	14	101150818
8	R1/4	36,5	11	5,1	14	101150828
8	R3/8	40	12,5	5,1	19	101150838
10	R1/4	40	11	7,7	15	101151028
10	R3/8	45	12,5	7,7	19	101151038
10	R1/2	48	16	8,1	22	101151048
12	R3/8	48	12,5	9,1	19	101151238
12	R1/2	51,5	16	9,1	22	101151248
14	R1/2	51,5	16	11,2	22	101151448

Straight stem adaptor, BSP parallel
10215

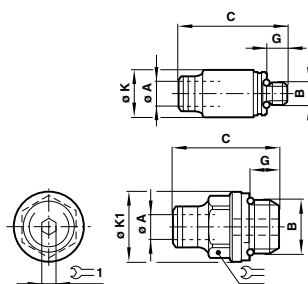


Ø A	B	C	G	Ø K1	Ø S		Model
4	G1/8	29	5	13,5	2,1	8	102150418
4	G1/4	33	7,5	17,5	2,1	10	102150428
5	G1/8	30,5	5	13,5	3,3	8	102150518
5	G1/4	34	7,5	17,5	3,3	10	102150528
6	G1/8	31	5	13,5	4	8	102150618
6	G1/4	34,5	7,5	17,5	4	10	102150628
8	G1/8	32,5	5	13,5	5	10	102150818
8	G1/4	35,5	7,5	17,5	6	10	102150828
8	G3/8	39	9	21,5	6	13	102150838
10	G1/4	41,5	7,5	17,5	6,5	13	102151028
10	G3/8	43,5	9	21,5	8	13	102151038
10	G1/2	49	12	25,5	8	17	102151048
12	G3/8	48,5	9	21,5	10	17	102151238
12	G1/2	52,5	12	25,5	10	17	102151248
14	G3/8	48,5	9	21,5	10	17	102151438
14	G1/2	52,5	12	25,5	11,5	17	102151448

PUSH-IN FITTINGS

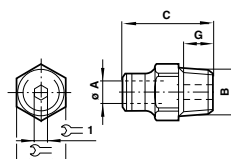
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Straight adaptor, BSP parallel
10225



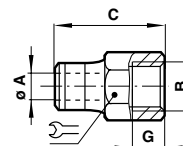
Ø A	B	C	G	Ø K	Ø K1	1	1	Model
4	M3	21	2,5	9	—	—	1,5	102250403
4	M5	21,5	3,5	9	—	—	2,5	102250405
4	G1/8	19	5	—	14	10	3	102250418
4	G1/4	21,5	7,5	—	18	10	3	102250428
5	M5	23	3,5	10	—	—	2,5	102250505
5	G1/8	23,5	5	—	14	10	4	102250518
5	G1/4	22	7,5	—	18	12	4	102250528
6	M5	24	3,5	11	—	—	2,5	102250605
6	G1/8	25	5	—	14	11	4	102250618
6	G1/4	23,5	7,5	—	18	13	4	102250628
8	G1/8	26,5	5	—	14	13	5	102250818
8	G1/4	28	7,5	—	18	14	6	102250828
8	G3/8	26	9	—	12	17	6	102250838
8	G1/2	31,5	12	—	26	17	6	102250848
10	G1/8	32	5	—	14	17	5	102251018
10	G1/4	33,5	7,5	—	18	17	7	102251028
10	G3/8	32	9	—	22	19	8	102251038
10	G1/2	32	12	—	26	19	8	102251048
12	G1/4	37,5	7,5	—	18	22	7	102251228
12	G3/8	38	9	—	22	22	10	102251238
12	G1/2	37	12	—	26	22	10	102251248
14	G3/8	38	9	—	22	22	10	102251438
14	G1/2	37	12	—	26	22	10	102251448

Straight adaptor, BSP taper
10125



Ø A	B	C	G	1	1	Model
4	R1/8	20,5	10	10	3	101250418
4	R1/4	23	11	14	3	101250428
5	R1/8	22,5	7,5	10	4	101250518
5	R1/4	23	11	14	4	101250528
6	R1/8	23	7,5	11	4	101250618
6	R1/4	25	11	14	4	101250628
8	R1/8	26,5	7,5	13	5	101250818
8	R1/4	28	11	14	6	101250828
8	R3/8	27	12,5	17	6	101250838
8	R1/2	29	16	22	6	101250848
10	R1/8	31,5	7,5	17	5	101251018
10	R1/4	34	11	17	7	101251028
10	R3/8	34	12,5	17	8	101251038
10	R1/2	33,5	16	22	8	101251048
12	R1/4	39	11	22	7	101251228
12	R3/8	39	12,5	22	10	101251238
12	R1/2	40	16	22	10	101251248
14	R3/8	39,5	12,5	22	10	101251438
14	R1/2	40	16	22	10	101251448

Female straight adaptor, female parallel BSP
10226

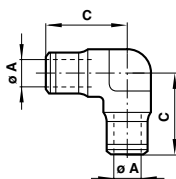


Ø A	B	C	G	1	Model
4	M5	22,5	5	10	102260405
4	G1/8	24,5	7,5	13	102260418
4	G1/4	29	5	17	102260428
5	M5	23,5	7,5	10	102260505
5	G1/8	25,5	7,5	13	102260518
5	G1/4	29,5	7,5	17	102260528
6	G1/8	26	11	13	102260618
6	G1/4	30,5	11	17	102260628
8	G1/8	27	11	13	102260818
8	G1/4	31,5	11	17	102260828
10	G1/4	36,5	11	17	102261028
10	G3/8	39	11,5	19	102261038
12	G3/8	41	11,5	19	102261238
12	G1/2	44,5	15	24	102261248

PUSH-IN FITTINGS

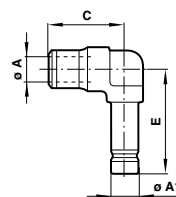
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Elbow connector
10040



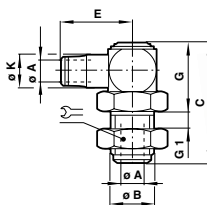
Ø A	C	Model
4	17	100400400
5	18,5	100400500
6	19,5	100400600
8	21,5	100400800
10	26,5	100401000
12	31,5	100401200
14	33	100401400

Stem elbow connector
10043



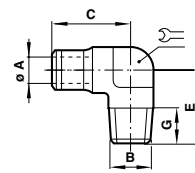
Ø A	Ø A1	C	E	Model
4	4	9,5	25	100430400
6	6	19	27,5	100430600
8	8	21	29,5	100430800
8	5	19,5	30	100430805

Bulkhead swivel elbow connector
10049



Ø A	Ø B	C	E	G	G1	Ø K	Model
4	M12x1,0	35,5	20,5	21,5	7	10	100490400
5	M12x1,0	35,5	21,5	21,5	7	11	100490500
6	M14x1,5	40	24	24,5	7	12	100490600
8	M16x1,5	45	26,5	30	7	14,5	100490800
10	M22x1,5	49	31,5	31	9	17	100491000
12	M24x1,5	54	38	32,5	12	20,5	100491200
14	M26x1,5	57	38	32,5	15	22,5	100491400

Elbow adaptor, BSP taper
10145

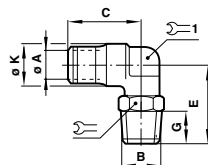


Ø A	B	C	E	G	Model
4	R1/8	15	17	7,5	101450418
4	R1/4	20	18	11	101450428
5	R1/8	15,5	18,5	7,5	101450518
5	R1/4	20	20	11	101450528
6	R1/8	16	19,5	7,5	101450618
6	R1/4	20	20	11	101450628
8	R1/8	17	21,5	7,5	101450818
8	R1/4	20	21,5	11	101450828
8	R3/8	23	22	12,5	101450838
8	R1/2	29	24	16	101450848
10	R1/8	18,5	26,5	7,5	101451018
10	R1/4	21,5	26,5	11	101451028
10	R3/8	23	26,5	12,5	101451038
10	R1/2	29	28,5	16	101451048
12	R1/4	23,5	31,5	11	101451228
12	R3/8	25	31,5	12,5	101451238
12	R1/2	29	32	16	101451248

PUSH-IN FITTINGS

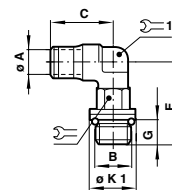
Pneufit Ø 4 ... 14 mm tube size, BSP threads

90o Swivel elbow adaptor, BSP taper
10147



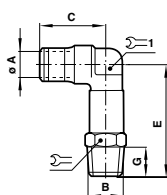
Ø A	B	C	E	G	Ø K	1	Model
4	R1/8	17	20,5	7,5	10	7	101470418
4	R1/4	17	24	11	10	7	101470428
5	R1/8	18,5	21	7,5	11	9	101470518
5	R1/4	18,5	24,5	11	11	9	101470528
6	R1/8	19,5	21,5	7,5	12	9	101470618
6	R1/4	19,5	25	11	12	9	101470628
6	R3/8	20	27,5	12,5	12	8	101470638
8	R1/8	21,5	23	7,5	14,5	14	101470818
8	R1/4	21,5	26	11	14,5	14	101470828
8	R3/8	22	30,5	12,5	14,5	13	101470838
8	R1/2	22	34,5	16	14,5	13	101470848
10	R1/8	26,5	25,5	7,5	17	14	101471018
10	R1/4	26,5	29	11	17	13	101471028
10	R3/8	26,5	30,5	12,5	17	13	101471038
10	R1/2	26,5	34,5	16	17	13	101471048
12	R1/4	31,5	32	11	20,5	16	101471228
12	R3/8	31,5	34	12,5	20,5	16	101471238
12	R1/2	31,5	38	16	20,5	16	101471248
14	R3/8	30,5	33	12,5	21,5	17	101471438
14	R1/2	31,5	37	16	21,5	17	101471448

90o Swivel elbow adaptor, BSP parallel
10247



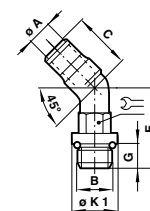
Ø A	B	C	E	G	Ø K1		 1	Model
4	M3	17	16	3,5	—	8	7	102470403
4	M5	17	19	4	8	8	7	102470405
4	G1/8	17	22	5,5	14	11	7	102470418
4	G1/4	17	25,5	8	18	11	7	102470428
5	M5	18,5	20	4	8	8	9	102470505
5	G1/8	18,5	22,5	5,5	14	11	9	102470518
5	G1/4	18,5	26	8	18	11	9	102470528
6	M5	19,5	20,5	4	8	8	9	102470605
6	G1/8	19,5	23	5,5	14	11	9	102470618
6	G1/4	19,5	26,5	8	18	11	9	102470628
8	G1/8	21,5	24	5,5	14	13	11	102470818
8	G1/4	21,5	29	8	18	17	11	102470828
8	G3/8	22	33,5	9	22	19	13	102470838
8	G1/2	22	39,5	11	26	19	13	102470848
10	G1/8	26,5	26,5	5,5	14	17	13	102471018
10	G1/4	26,5	31,5	8	18	17	13	102471028
10	G3/8	26,5	33,5	9	22	19	13	102471038
10	G1/2	26,5	39,5	11	26	19	13	102471048
12	G1/4	31,5	35,5	8	18	19	16	102471228
12	G3/8	31,5	37	9	22	19	16	102471238
12	G1/2	31,5	43	11	26	19	16	102471248
14	G3/8	30,5	36	9	22	19	17	102471438
14	G1/2	31,5	39	11	26	24	17	102471448

Extended swivel elbow adaptor, BSP taper
10154



Ø A	B	C	E	G		 1	Model
4	R1/8	17	34	7,5	10	7	101540418
4	R1/4	17	40	11	14	7	101540428
6	R1/8	19,5	36,5	7,5	11	9	101540618
6	R1/4	19,5	41	11	14	9	101540628
8	R1/8	21,5	40,5	7,5	14	11	101540818
8	R1/4	21,5	44,5	11	14	11	101540828
8	R3/8	22	51,5	12,5	17	13	101540838
10	R3/8	26,5	51,5	12,5	17	13	101541038

45o Swivel elbow adaptor, BSP parallel
10257

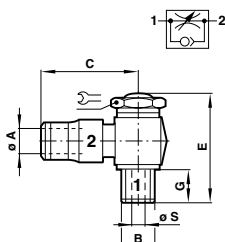


Ø A	B	C	E	G	Ø K1	1	Model
6	G1/8	17,5	19,5	5	14	11	102570618
6	G1/4	17,5	23	7,5	18	11	102570628
8	G1/8	19,5	20,5	5	14	11	102570818
8	G1/4	19,5	26	7,5	18	17	102570828

PUSH-IN FITTINGS

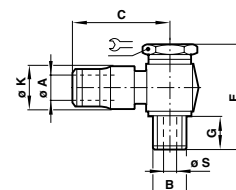
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Elbow banjo assembly, regulating-out BSP parallel
10K51



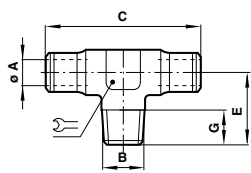
Ø A	B	C	E	G	Ø S	Ø K	Model
4	M5	18,5	27	4,5	2,5	8	10K510405
4	G1/8	20,5	34	6	5	14	10K510418
5	M5	20	27	4,5	2,5	8	10K510505
5	G1/8	21,5	34	6	5	14	10K510518
6	M5	22	27	4,5	2,5	8	10K510605
6	G1/8	23,5	34	6	5	14	10K510618
6	G1/4	24	36,5	6	8,5	17	10K510628
8	G1/8	23,5	34	6	5	14	10K510818
8	G1/4	24,5	36,5	6	8,5	17	10K510828
8	G3/8	26,5	51,5	10	10	22	10K510838
10	G1/4	30	36,5	6	8,5	17	10K511028
10	G3/8	31	51,5	10	10	22	10K511038
12	G3/8	33	51,5	10	10	22	10K511238
12	G1/2	38	57,5	10	10	27	10K511248

Elbow banjo assembly, non-regulating BSP parallel
10A51



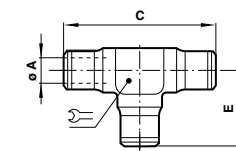
Ø A	B	C	E	G	Ø K	Ø S	Model
4	M5	18,5	22	4	9,5	2,5	10A510405
4	G1/8	20,5	30	6	11	5	10A510418
5	M5	20	22	4	11	2,5	10A510505
5	G1/8	21,5	30	6	11,5	5	10A510518
6	G1/8	23,5	30	6	12,5	5	10A510618
6	G1/4	24	34	7,5	13	8,5	10A510628
8	G1/8	23,5	30	6	14	5	10A510818
8	G1/4	24,5	34	7,5	14	8,5	10A510828
8	G3/8	26,5	41	9	16,5	10	10A510838
10	G1/4	30	34	7,5	16	8,5	10A511028
10	G3/8	31	41	9	17	10	10A511038

Tee adaptor, BSP taper
10165



Ø A	B	C	E	G	Model
4	R1/8	34	15	7,5	101650418
5	R1/8	37	15,5	7,5	101650518
5	R1/4	40	20	11	101650528
6	R1/8	39	16	7,5	101650618
6	R1/4	40	20	11	101650628
8	R1/8	42,5	17	7,5	101650818
8	R1/4	42,5	20	11	101650828
8	R3/8	44	23,5	12,5	101650838
10	R1/4	53,5	21,5	11	101651028
10	R3/8	53,5	23,5	12,5	101651038
12	R1/4	63,5	23,5	11	101651228
12	R3/8	63	25	12,5	101651238

Tee connector, tube X 3
10060

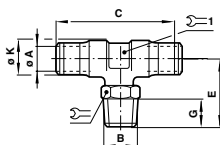


Ø A	C	E	Model
4	34	17	100600400
5	37	18,5	100600500
6	39	19,5	100600600
8	42,5	21,5	100600800
10	53,5	26,5	100601000
12	63,5	31,5	100601200
14	66,5	33	100601400

PUSH-IN FITTINGS

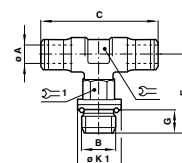
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Swivel tee adaptor, BSP taper
10167



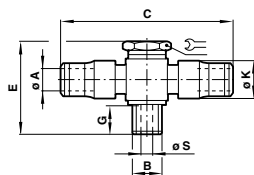
Ø A	B	C	E	G	Ø K	Ø K1	Model
4	R1/8	34	21,5	7,5	10	10	101670418
4	R1/4	34	24	11	10	14	101670428
5	R1/8	37	22	7,5	11	11	101670518
5	R1/4	37	24,5	11	11	14	101670528
6	R1/8	39	22,5	7,5	12	11	101670618
6	R1/4	39	25	11	12	14	101670628
8	R1/8	42,5	24	7,5	14,5	14	101670818
8	R1/4	42,5	26	11	14,5	14	101670828
8	R3/8	43,5	30,5	12,5	14,5	17	101670838
10	R1/4	53,5	29	11	17	17	101671028
10	R3/8	53,5	30,5	12,5	17	17	101671038
10	R1/2	53,5	34,5	16	17	22	101671048
12	R1/4	63,5	32	11	20,5	19	101671228
12	R3/8	63,5	34	12,5	20,5	22	101671238
12	R1/2	63,5	38	16	20,5	22	101671248
14	R3/8	61,5	33	12,5	22,5	22	101671438
14	R1/2	63,5	37	16	22,5	22	101671448

Swivel tee adaptor, BSP parallel
10267



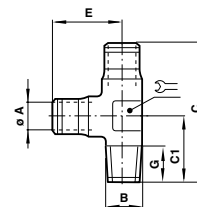
Ø A	B	C	E	G	Ø K1	Model
4	M3	34	16	3,5	—	102670403
4	M5	34	19,5	4	8	102670405
4	G1/8	34	22	5,5	14	102670418
5	M5	37	20	4	8	102670505
5	G1/8	37	22	5,5	14	102670518
5	G1/4	37	26	8	18	102670528
6	M5	39	20,5	4	8	102670605
6	G1/8	39	23	5,5	14	102670618
6	G1/4	39	26,5	8	18	102670628
8	G1/8	42,5	23,5	5,5	14	102670818
8	G1/4	42,5	29	8	18	102670828
8	G3/8	43,5	22	9	22	102670838
10	G1/4	53,5	31,5	8	18	102671028
10	G3/8	53,5	33,5	9	22	102671038
12	G1/4	63,5	35,5	8	18	102671228
12	G3/8	63,5	37	9	22	102671238
14	G1/2	63,5	39	11	26	102671448

Tee banjo assembly, non-regulating parallel thread
10A71



Ø A	B	C	E	G	Ø K	Ø S	Model
4	M5	37,5	22	4	9,5	2,5	10A710405
4	G1/8	41	30	6	11	5	10A710418
5	M5	40,5	22	4	11	2,5	10A710505
5	G1/8	43,5	30	6	11,5	5	10A710518
6	M5	41,5	22	4	11,5	2,5	10A710605
6	G1/8	47,5	30	6	12,5	5	10A710618
6	G1/4	48,5	34	7,5	13	8,5	10A710628
8	G1/8	47,5	30	6	14	5	10A710818
8	G1/4	49,5	34	7,5	14	8,5	10A710828

Fixed side tee adaptor, BSP taper
10175

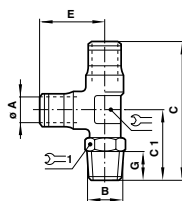


Ø A	B	C	C1	E	G	Model
4	R1/8	32	15	17	7,5	101750418
5	R1/8	34	15,5	18,5	7,5	101750518
5	R1/4	40	20	20	11	101750528
6	R1/8	35,5	16	19,5	7,5	101750618
6	R1/4	40	20	20	11	101750628
8	R1/8	38	17	21,5	7,5	101750818
8	R1/4	41,5	20	21,5	11	101750828
8	R3/8	45,5	23,5	22	12,5	101750838
10	R1/4	48,5	21,5	26,5	11	101751028
10	R3/8	50	23,5	26,5	12,5	101751038
12	R1/4	55	23,5	31,5	11	101751228
12	R3/8	56,5	25	31,5	12,5	101751238

PUSH-IN FITTINGS

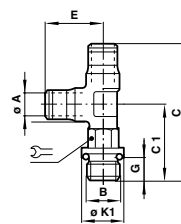
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Swivel tee adaptor, BSP taper
10168



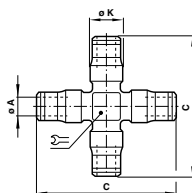
Ø A	B	C	C1	E	G		I	Model
4	R1/8	38,5	20,5	17	7,5	7	10	101680418
4	R1/4	41	24	17	11	7	14	101680428
5	R1/8	40,5	22	18,5	7,5	9	11	101680518
5	R1/4	43	24,5	18,5	11	9	14	101680528
6	R1/8	42	22,5	19,5	7,5	9	11	101680618
6	R1/4	44,5	25	19,5	11	9	14	101680628
8	R1/8	45	24	21,5	7,5	11	14	101680818
8	R1/4	47,5	26	21,5	11	11	14	101680828
8	R3/8	52,5	30,5	22	12,5	13	17	101680838
10	R1/4	55,5	29	26,5	11	13	17	101681028
10	R3/8	57	30,5	26,5	12,5	13	17	101681038
12	R1/4	63,5	32	31,5	11	16	19	101681228
12	R3/8	66	34	31,5	12,5	16	22	101681238
12	R1/2	70	38	31,5	16	16	22	101681248
14	R3/8	66,5	33	33	12,5	17	22	101681438
14	R1/2	70	37	33	16	17	22	101681448

Swivel tee adaptor, BSP parallel
10268



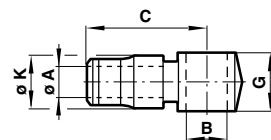
Ø A	B	C	C1	E	G	Ø K1		Model
4	M3	34	17	17	3,5	-	8	102680403
4	M5	36,5	19,5	17	4	8	8	102680405
4	G1/8	38,5	22	17	5,5	14	11	102680418
5	M5	39	20	18,5	4	8	8	102680505
5	G1/8	40,5	22,5	18,5	5,5	14	11	102680518
5	G1/4	44,5	26	18,5	8	18	11	102680528
6	G1/8	42,5	23	19,5	5,5	14	11	102680618
6	G1/4	46	26,5	19,5	8	18	11	102680628
8	G1/8	45	24	21,5	5,5	14	13	102680818
8	G1/4	50,5	29	21,5	8	18	17	102680828
8	G3/8	55	33	21,5	9	22	19	102680838
10	G1/4	58,5	31,5	26,5	8	18	17	102681028
10	G3/8	60	33,5	26,5	9	22	19	102681038
12	G1/4	67	35,5	31,5	8	18	19	102681228
12	G3/8	68,5	37	31,5	9	22	19	102681238
14	G3/8	69	36	33	9	22	19	102681438
14	G1/2	72,5	39	33	11	26	24	102681448

4-way connector, tube X 4
10090



Ø A	C	Ø K		Model
4	42	10,5	10	100900400
5	45,5	11	10	100900500
6	47,5	12	10	100900600
8	57,5	14,5	13	100900800
10	68,5	17	13	100901000

Elbow banjo body
10051

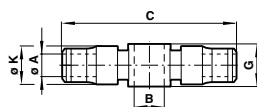


Ø A	B for screw	C	G	Ø K	Model
4	M5	18,5	12,5	9,5	100510405
4	G1/8	20,5	14	11	100510418
5	M5	20	12,5	11	100510505
5	G1/8	21,5	14	11,5	100510518
6	M5	22	12,5	12,5	100510605
6	G1/8	23,5	14	12,5	100510618
6	G1/4	24	16	13	100510628
8	G1/8	23,5	14	14	100510818
8	G1/4	24,5	16	14	100510828
8	G3/8	26,5	20,5	16,5	100510838
10	G1/4	30	16	16	100511028
10	G3/8	31	20,5	17	100511038
12	G3/8	33	20,5	17,5	100511238
12	G1/2	38	22	17,5	100511248

PUSH-IN FITTINGS

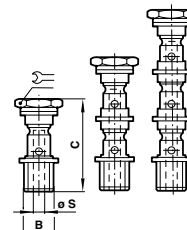
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Tee banjo body
10071



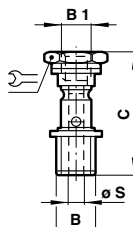
Ø A	B for screw	C	G	Ø K	Model
4	M5	37,5	12,5	9,5	100710405
4	G1/8	41	14	11	100710418
5	M5	40	12,5	11	100710505
5	R1/8	43	14	11,5	100710518
6	M5	41,5	12,5	11,5	100710605
6	G1/8	47,5	14	12,5	100710618
6	G1/4	48,5	16	13	100710628
8	G1/8	47,5	14	14	100710818
8	G1/4	49,5	16	14	100710828

Banjo bolt, non-regulating stacking
20A00, 20B00, 20C00



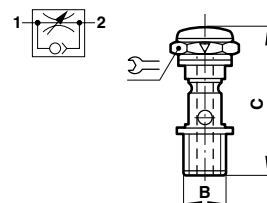
B	C	Ø S	Execution	Symbol	Model
M5	22	2,5	single	8	20A000005
G1/8	29	5	single	14	20A000018
G1/4	33	8,5	single	17	20A000028
G3/8	41	10	single	22	20A000038
G1/2	49	11,5	single	27	20A000048
M5	34,5	2,5	double	8	20B000005
G1/8	46,5	5	double	14	20B000018
G1/4	52,5	8,5	double	17	20B000028
G3/8	64	10	double	22	20B000038
G1/2	72,5	11,5	double	27	20B000048
G1/8	63	5	triple	14	20C000018
G1/4	71,5	8,5	triple	17	20C000028
G3/8	87	10	triple	22	20C000038

Banjo bolt, non-regulating single stacking with top port BSP parallel
20*00



B	B1	C	Ø S	Symbol	Model
M5	M5	25,5	2,5	8	20D000505
M5	G1/4	34	8,5	17	20D000528
M5	G3/8	41	10	22	20D000538
G1/8	G1/8	36	5	14	20E001818
G1/8	G1/4	35,5	6	17	20E001828
G1/8	G3/8	41	10	22	20E001838
G1/4	G1/4	45	8,5	17	20F002828
G3/8	G3/8	52	10	22	20G003838

Regulating out banjo bolts Single stacking, (screwdriver adjustable), Reg out
20K00

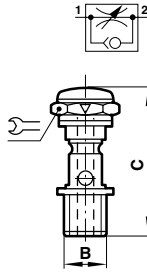


B	C	Triple	Symbol	Model
M5	27,5	10 bar	8	20K000005
G1/8	34	10 bar	14	20K000018
G1/4	36,5	10 bar	17	20K000028
G3/8	51,5	10 bar	22	20K000038
G1/2	57	10 bar	27	20K000048

PUSH-IN FITTINGS

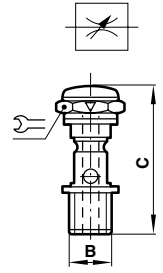
Pneufit Ø 4 ... 14 mm tube size, BSP threads

Regulating out banjo bolts single stacking, (screwdriver adjustable), reg in
20L00



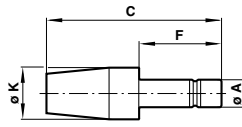
B	C	Triple		Model
M5	27,5	10 bar	8	20L000005
G1/8	34	10 bar	14	20L000018
G1/4	36,5	10 bar	17	20L000028
G3/8	51,5	10 bar	22	20L000038
G1/2	57	10 bar	27	20L000048

Regulating out banjo bolts single stacking
(screwdriver adjustable), bi-directional
20M00



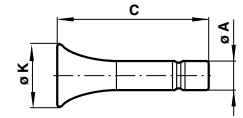
B	C	Triple		Model
M5	27,3	10 bar	8	20M000005
G1/8	34	10 bar	14	20M000018
G1/4	36,5	10 bar	17	20M000028
G3/8	51,5	10 bar	22	20M000038
G1/2	57	10 bar	27	20M000048

Silencer, plug in
10011



Ø A	C	F	Ø K	Model
4	31,5	16,5	11	100110400
6	33,5	18,5	11	100110600
8	40,5	19,5	13	100110800
10	53,5	24	19	100111000
12	57	27,5	19	100111200

Plug (Acetal)
11004



Ø A	C	Ø K	Model
4	26,5	9,5	110040400
5	28	10,5	110040500
6	28,5	11,5	110040600
8	29,5	12,5	110040800
10	34	15,5	110041000
12	37,5	16,5	110041200
14	37,5	19,5	110041400

PUSH-IN FITTINGS

Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

- Very compact units
- Easy tube insertion for rapid assembly of pneumatic circuits
- Positive tube anchorage
- All taper threads pre-coated with non-PTFE based sealant
- Straight Adaptors feature internal hexagon for Allen key
- Silicone free 'O'-rings

Technical Data

Medium:

Compressed air (For other media please consult Technical Department)

Operating pressure:

Vacuum -18 bar
(Dependent upon operating specification of tubing)

Vacuum:

-750 mm of Hg i.e. 98%

Operating temperature:

-20°C ... +80°C

"Special" low temperature options
contact Norgren Technical service

Tube sizes:

1/8", 5/32", 3/16", 1/4",
5/16", 3/8", 1/2" O/D

Tubing types:

Nylon 11 or 12, Polyurethane and other plasticised or unplasticised tubing which conforms to the tolerances specified in BS 5409, Part 1, 1976, light and normal duty, DIN 73378, DIN 74234, NFE 49-100

Materials

Body: Nickel plated brass
or glass filled nylon

Collet: Nickel plated brass

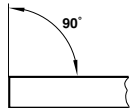
'O'-ring: Silicone free nitrile rubber (FPM optional)

Washer: Plastic sealing (parallel threads)

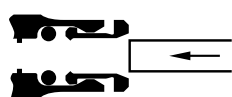
Thread sealant: Non-PTFE



Method of assembly



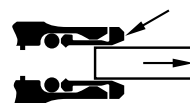
1. Ensure that the end of the tube is cut square and is free from burrs.



2. Push the tube through the collet into the fitting.

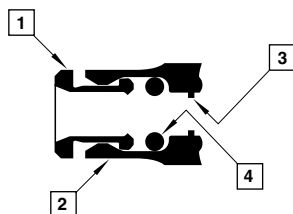


3. Continue pushing the tube through the 'O'-ring until it bottoms on the tube stop then pull back.



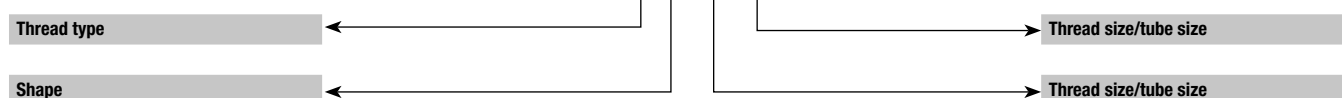
4. To disconnect push the tube into the fitting, hold down the collet and withdraw the tube.

Components



- 1 Collet
- 2 Body
- 3 Tube stop
- 4 'O'-ring

Option selector



PUSH-IN FITTINGS

Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

● Straight adaptors and connectors

Straight adaptor MM O/D tube to NPTF (male) thread	Straight adaptor Inch O/D tube to BSPT thread	Straight adaptor O/D tube to male NPTF taper	Straight adaptor O/D tube to male metric thread	Straight adaptor O/D tube to female NPTF thread	Stem adaptor MM O/D stem to NPTF (male) thread	Straight stem adaptor (BSP taper)	Straight stem adaptor O/D tube stem to taper NPTF thread
							
10425/12425	10125/12125	12425	12225/10225	12426	10415/12415	10115/12115	12415

Straight connector Inch tube to MM tube	Straight connector O/D tube to O/D tube	Bulkhead connector O/D tube to O/D tube	Expanding	Tube end expander/ reducer, tube stem to O/D tube	Straight stem connector	Plug	Plug	Stem tailpiece adaptor, O/D tube stem to hose bore
								
10020/12037	12020	12029	12023	12023	12022	12004	13004	12019

● Elbow adaptors, connectors and banjos

Fixed elbow adaptor O/D tube to male BSPT thread	Fixed elbow adaptor O/D tube to male NPTF thread	Swivel male elbow O/D tube to male NPTF thread	Swivel elbow adaptor O/D tube to male BSPT thread	Extended swivel elbow adaptor, O/D tube to male NPTF thread	Elbow connector O/D tube to O/D tube
					
12145	12445	12447	12147/10147	12454	12040

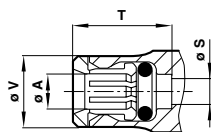
● Tee adaptors, connectors and banjos, 'Y' adaptors and connectors, 4-way connectors

Swivel tee adaptor O/D tube to male taper BSP thread	Swivel male centre tee O/D tube to male NPTF thread	Tee connector O/D tube to O/D tube	Swivel side tee adaptor O/D tube to male taper BSP thread	Swivel male side tee O/D tube to male taper NPTF thread
				
12167/10167	12467	12060	12168/10168	12468

PUSH-IN FITTINGS

Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Typical dimensions

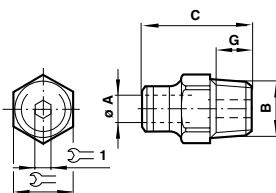


A O/D tube	S	T tubing stop	V
1/8"	0.09	0.53	0.26
5/32"(4)	0.11	0.55	0.3
3/16"	0.13	0.59	0.38
1/4"	0.17	0.61	0.42
5/16"(8)	0.24	0.65	0.51
3/8"	0.3	0.83	0.59
1/2"	0.38	0.96	0.71

Dimensions

Straight adaptor 10425/12425

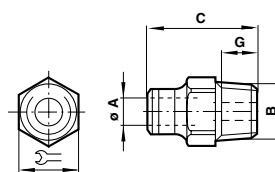
MM O/D Tube to NPTF (male) thread



O/D Tube A mm	Thread B	C	G	1	Model
4	10/32 UNF	0.85	0.2	0.35	3/32" 124250210
4	1/8 NPT	0.89	0.37	7/16"	1/8" 124250218
4	1/4 NPT	1.04	0.56	9/16"	1/8" 124250228
5	1/8 NPT	0.96	0.37	7/16"	5/32" 104250518
5	1/4 NPT	1.04	0.56	9/16"	5/32" 104250528
6	10/32 UNF	0.94	0.2	0.43Ø	3/32" 104250610
6	1/8 NPT	0.98	0.37	7/16"	5/32" 104250618
6	1/4 NPT	1.11	0.56	9/16"	5/32" 104250628
6	3/8 NPT	1.07	0.56	11/16"	5/32" 104250638
8	1/8 NPT	1.12	0.37	1/2"	3/16" 124250518
8	1/4 NPT	1.23	0.56	9/16"	1/4" 124250528
8	3/8 NPT	1.13	0.56	11/16"	1/4" 124250538
10	1/8 NPT	1.32	0.37	11/16"	3/16" 104251018
10	1/4 NPT	1.47	0.56	11/16"	9/32" 104251028
10	3/8 NPT	1.41	0.56	11/16"	5/16" 104251038
10	1/2 NPT	1.45	0.75	7/8"	5/16" 104251048
12	1/4 NPT	1.67	0.56	7/8"	9/32" 104251228
12	3/8 NPT	1.63	0.56	7/8"	13/32" 104251238
12	1/2 NPT	1.7	0.75	7/8"	13/32" 104251248

Straight adaptor 10125/12125

Inch O/D tube to BSPT thread



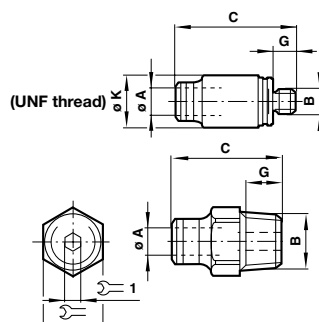
O/D Tube A	Thread B	C	G	1	Model
1/8"	R1/8	0.79	0.3	0.39	121250118
1/8"	R1/4	0.89	0.44	0.55	121250128
5/32"	R1/8	0.81	0.3	0.39	101250418
5/32"	R1/4	0.91	0.44	0.55	101250428
1/4"	R1/8	0.91	0.3	0.43	121250418
1/4"	R1/4	0.99	0.44	0.55	121250428
1/4"	R3/8	1.01	0.5	0.67	121250438
5/16"	R1/8	1.05	0.3	0.51	101250818
5/16"	R1/4	1.11	0.44	0.55	101250828
5/16"	R3/8	1.07	0.5	0.67	101250838
3/8"	R1/8	1.25	0.3	0.67	121250618
3/8"	R1/4	1.35	0.44	0.67	121250628
3/8"	R3/8	1.35	0.5	0.67	121250638
3/8"	R1/2	1.33	0.63	0.87	121250648
1/2"	R1/4	1.54	0.44	0.87	121250728
1/2"	R3/8	1.56	0.5	0.87	121250738
1/2"	R1/2	1.58	0.63	0.87	121250748

PUSH-IN FITTINGS

Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Straight adaptor 12425

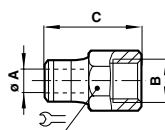
O/D tube to male NPTF taper



O/D Tube A	Thread B	C	G	Ø K		Model
1/8"	10-32 UNF	0.79	0.2	0.31	3/32"	124250110
1/8"	1/16 NPT	0.8	0.37	3/8"	3/32"	124250116
1/8"	1/8 NPT	0.67	0.37	7/16"	3/32"	124250118
1/8"	1/4 NPT	0.95	0.56	9/16"	3/32"	124250128
5/32"	10-32 UNF	0.85	0.2	0.35	3/32"	124250210
5/32"	1/8 NPT	0.89	0.37	7/16"	1/8"	124250218
5/32"	1/4 NPT	1.04	0.56	9/16"	1/8"	124250228
3/16"	1/8 NPT	0.96	0.37	7/16"	5/32"	124250318
3/16"	1/4 NPT	1.04	0.56	9/16"	5/32"	124250328
1/4"	10-32 UNF	0.94	0.2	0.43	3/32"	124250410
1/4"	1/8 NPT	0.98	0.37	7/16"	5/32"	124250418
1/4"	1/4 NPT	1.11	0.56	9/16"	5/32"	124250428
1/4"	3/8 NPT	1.07	0.56	11/16"	5/32"	124250438
5/16"	1/8 NPT	1.12	0.37	1/2"	3/16"	124250518
5/16"	1/4 NPT	1.23	0.56	9/16"	1/4"	124250528
5/16"	3/8 NPT	1.13	0.56	11/16"	1/4"	124250538
3/8"	1/8 NPT	1.32	0.37	11/16"	3/16"	124250618
3/8"	1/4 NPT	1.47	0.56	11/16"	1/4"	124250628
3/8"	3/8 NPT	1.41	0.56	11/16"	5/16"	124250638
3/8"	1/2 NPT	1.45	0.75	7/8"	5/16"	124250648
1/2"	1/4 NPT	1.67	0.56	7/8"	1/4"	124250728
1/2"	3/8 NPT	1.63	0.56	7/8"	3/8"	124250738
1/2"	1/2 NPT	1.7	0.75	7/8"	3/8"	124250748

Straight adaptor 12426

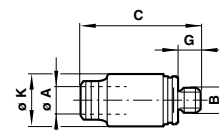
O/D tube to female NPTF thread



O/D Tube A	Thread B	C		Model
1/8"	1/8 NPT	1.14	9/16"	124260118
1/8"	1/4 NPT	1.38	11/16"	124260128
5/32"	1/8 NPT	1.14	9/16"	124260218
5/32"	1/4 NPT	1.42	11/16"	124260228
1/4"	1/8 NPT	1.19	9/16"	124260418
1/4"	1/4 NPT	1.46	11/16"	124260428
5/16"	1/8 NPT	1.23	9/16"	124260518
5/16"	1/4 NPT	1.5	11/16"	124260528
3/8"	1/4 NPT	1.66	11/16"	124260628
3/8"	3/8 NPT	1.7	7/8"	124260638

Straight adaptor 12225/10225

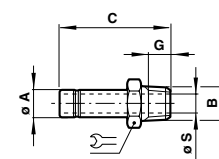
O/D tube to male metric thread



O/D Tube A	Thread B	C	G	Ø K	Model
1/8"	M5 x 0.8	0.78	0.2	0.31	122250105
5/32"	M5 x 0.8	0.84	0.2	0.35	102250405
3/16"	M5 x 0.8	0.9	0.2	0.39	122250305
1/4"	M5 x 0.8	0.94	0.2	0.43	122250405

Stem adaptor 10415/12415

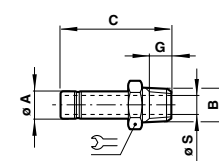
MM O/D stem to NPTF (male) thread



O/D Tube A mm	Thread B	C	G	Ø S		Model
4	1/8 NPT	1.25	0.37	0.08	7/16"	124150218
4	1/4 NPT	1.44	0.56	0.08	9/16"	124150228
5	1/8 NPT	1.31	0.37	0.13	7/16"	104150518
5	1/4 NPT	1.5	0.56	0.13	9/16"	104150528
6	1/8 NPT	1.33	0.37	0.16	7/16"	104150618
6	1/4 NPT	1.52	0.56	0.16	9/16"	104150628
8	1/8 NPT	1.37	0.37	0.2	7/16"	124150518
8	1/4 NPT	1.56	0.56	0.2	9/16"	124150528
10	1/4 NPT	1.74	0.56	0.3	9/16"	104151028
10	3/8 NPT	1.81	0.56	0.3	11/16"	104151038
12	3/8 NPT	1.95	0.56	0.36	11/16"	104151238
12	1/2 NPT	2.15	0.75	0.36	7/8"	104151248

Stem adaptor 10115/12115

Inch O/D stem to BSPT thread

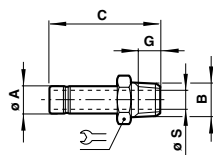


O/D Tube A	Thread B	C	G	Ø S		Model
5/32"	1/8 NPT	1.18	0.3	0.08	0.39	101150418
5/32"	1/4 NPT	1.32	0.44	0.08	0.55	101150428
1/4"	1/8 NPT	1.26	0.3	0.16	0.47	121150418
1/4"	1/4 NPT	1.4	0.44	0.16	0.55	121150428
5/16"	1/8 NPT	1.3	0.3	0.2	0.55	101150818
5/16"	1/4 NPT	1.44	0.44	0.2	0.55	101150828
3/8"	1/4 NPT	1.57	0.44	0.3	0.59	121150628
3/8"	3/8 NPT	1.77	0.5	0.3	0.75	121150638
1/2"	3/8 NPT	1.89	0.5	0.39	0.75	121150738
1/2"	1/2 NPT	2.03	0.63	0.39	0.87	121150748

PUSH-IN FITTINGS

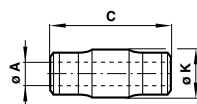
Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Straight stem adaptor 12415
O/D tube stem to taper NPTF thread



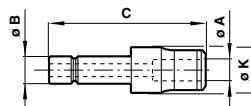
O/D Tube A	Thread B	C	G	Ø S		Model
5/32"	10-32 UNF	1.14	0.2	0.08	5/16"	124150210
5/32"	1/8 NPT	1.25	0.37	0.08	7/16"	124150218
5/32"	1/4 NPT	1.45	0.56	0.08	9/16"	124150228
1/4"	1/8 NPT	1.33	0.37	0.16	7/16"	124150418
1/4"	1/4 NPT	1.52	0.56	0.16	9/16"	124150428
5/16"	1/8 NPT	1.37	0.37	0.19	7/16"	124150518
5/16"	1/4 NPT	1.56	0.56	0.19	9/16"	124150528
3/8"	1/4 NPT	1.74	0.56	0.3	9/16"	124150628
3/8"	3/8 NPT	1.82	0.56	0.3	11/16"	124150638
1/2"	3/8 NPT	1.95	0.56	0.35	11/16"	124150738
1/2"	1/2 NPT	2.15	0.75	0.35	7/8"	124150748

Straight connector 12020
O/D tube to O/D tube



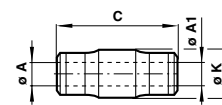
O/D Tube A	C	Ø K	Model
1/8"	1.15	0.35	120200100
5/32"	1.17	0.39	120200200
3/16"	1.26	0.43	120200300
1/4"	1.28	0.47	120200400
5/16"	1.35	0.55	120200500
3/8"	1.71	0.67	120200600
1/2"	1.98	0.81	120200700

Tube end expander
tube stem to O/D tube 12023



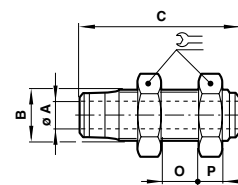
O/D Tube A	Stem O/D B	C	Ø K	Model
1/4"	1/8"	1.34	0.47	120230104
1/4"	5/32"	1.38	0.47	120230204
1/4"	3/16"	1.4	0.47	120230304

Straight connector 10020/12037
inch tube to mm tube



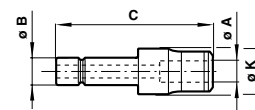
O/D Tube A	O/D Tube A1	C	Ø K	Model
5/32"	4 mm	1.17	0.35	100200400
3/16"	5 mm	1.26	0.43	120370305
1/4"	6 mm	1.28	0.47	120370406
5/16"	8 mm	1.35	0.55	100200800
3/8"	10 mm	1.71	0.66	120370610
1/2"	12 mm	1.98	0.81	120370712

Bulkhead connector 12029
O/D tube to O/D tube



O/D Tube A	Thread B	C	O	P		Model
1/8"	M10 x 1.0	1.15	0.47	0.20	0.55	120290100
5/32"	M10 x 1.0	1.18	0.47	0.20	0.55	120290200
3/16"	M12 x 1.0	1.26	0.55	0.20	0.67	120290300
1/4"	M14 x 1.5	1.38	0.59	0.24	0.75	120290400
5/16"	M16 x 1.5	1.42	0.63	0.24	0.87	120290500
3/8"	M20 x 1.5	1.69	0.55	0.28	1.06	120290600
1/2"	M24 x 1.5	1.97	0.59	0.28	1.18	120290700

Tube end reducer 12023
tube stem to O/D tube

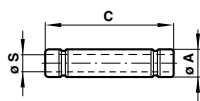


O/D Tube A	Stem O/D B	C	Ø K	Model
1/8"	5/32"	1.22	0.35	120230201
1/8"	1/4"	1.3	0.35	120230401
5/32"	1/4"	1.34	0.39	120230402
5/32"	5/16"	1.22	0.39	120230502
5/32"	3/8"	1.22	0.47	120230602
3/16"	1/4"	1.38	0.43	120230403
3/16"	5/16"	1.3	0.43	120230503
1/4"	5/16"	1.46	0.47	120230504
1/4"	3/8"	1.5	0.47	120230604
1/4"	1/2"	1.38	0.55	120230704
5/16"	3/8"	1.69	0.55	120230605
5/16"	1/2"	1.65	0.55	120230705
3/8"	1/2"	1.97	0.67	120230706

PUSH-IN FITTINGS

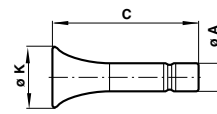
Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Straight stem connector 12022



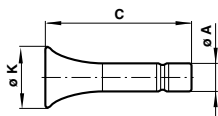
O/D Tube A	C	Ø S	Model
1/8"	1.18	0.09	120220100
5/32"	1.19	0.13	120220200
3/16"	1.31	0.16	120220300
1/4"	1.34	0.24	120220400
5/16"	1.42	0.3	120220500
3/8"	1.77	0.38	120220600
1/2"	2.05	0.45	120220700

Plug 12004 (Nickel plated brass)



O/D Tube A	C	Ø K	Model
1/8"	1.02	0.34	120040100
5/32"	1.04	0.38	120040200
3/16"	1.1	0.42	120040300
1/4"	1.12	0.46	120040400
5/16"	1.16	0.5	120040500
3/8"	1.34	0.61	120040600
1/2"	1.48	0.66	120040700

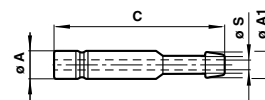
Plug 13004 (Plastic)



O/D Tube A	C	Ø K	Model
5/32"	1.04	0.38	130040200
3/16"	1.1	0.41	130040300
1/4"	1.12	0.46	130040400
5/16"	1.16	0.5	130040500
3/8"	1.34	0.61	130040600
1/2"	1.48	0.65	130040700

Stem tailpiece adaptor 12019

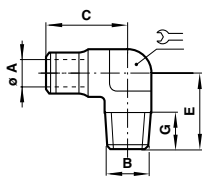
O/D tube stem to hose bore



O/D Tube A	A1 mm	C	Ø S	Model
1/8"	1.34	0.17	0.06	120190101
5/32"	1.35	0.17	0.07	120190201
1/4"	1.43	0.24	0.11	120190403
5/16"	1.47	0.31	0.17	120190504
3/8"	1.7	0.37	0.22	120190605
1/2"	1.84	0.47	0.29	120190706

Fixed elbow adaptor 12145

O/D tube to male BSPT thread



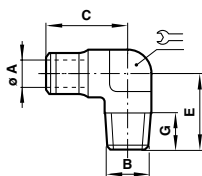
O/D Tube A	Thread B	C	E	G	Ø A	Model
1/8"	R1/8	0.66	0.63	0.34	0.27	121450118
3/16"	R1/8	0.72	0.65	0.34	0.27	121450318
1/4"	R1/8	0.77	0.67	0.34	0.42	121450418
3/16"	R1/4	0.78	0.8	0.44	0.38	121450328

PUSH-IN FITTINGS

Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Fixed elbow adaptor 12445

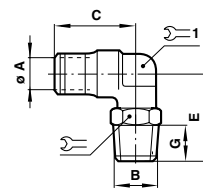
O/D tube to male NPTF thread



O/D Tube A	Thread B	C	E	G		Model
1/8"	1/8 NPT	0.67	0.66	0.37	0.28	124450118
5/32"	1/8 NPT	0.67	0.66	0.37	0.28	124450218
5/32"	1/4 NPT	0.72	0.92	0.56	0.43	124450228
3/16"	1/8 NPT	0.72	0.67	0.37	0.28	124450318
3/16"	1/4 NPT	0.79	0.92	0.56	0.43	124450328
1/4"	1/8 NPT	0.77	0.7	0.37	0.31	124450418
1/4"	1/4 NPT	0.79	0.92	0.56	0.43	124450428
1/4"	3/8 NPT	0.84	1.1	0.56	0.63	124450438
5/16"	1/8 NPT	0.84	0.74	0.37	0.43	124450518
5/16"	1/4 NPT	0.84	0.92	0.56	0.43	124450528
3/8"	1/8 NPT	1.05	0.8	0.37	0.52	124450618
3/8"	1/4 NPT	1.05	0.98	0.56	0.52	124450628
3/8"	3/8 NPT	1.05	1.1	0.56	0.63	124450638
3/8"	1/2 NPT	1.13	1.36	0.75	0.94	124450648
1/2"	1/4 NPT	1.25	1.03	0.56	0.63	124450728
1/2"	3/8 NPT	1.25	1.1	0.56	0.63	124450738
1/2"	1/2 NPT	1.25	1.36	0.75	0.94	124450748

Swivel male elbow 12447

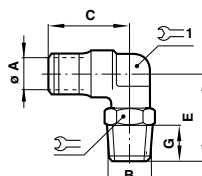
O/D tube to male NPTF thread



O/D Tube A	Thread B	C	E	G		Model
1/8"	10-32 UNF	0.63	0.73	0.2	5/16"	124470110
1/8"	1/8 NPT	0.63	0.82	0.37	7/16"	124470118
1/8"	1/4 NPT	0.68	1.07	0.37	9/16"	124470128
5/32"	10-32 UNF	0.67	0.77	0.2	5/16"	124470210
5/32"	1/8 NPT	0.67	0.86	0.37	7/16"	124470218
5/32"	1/4 NPT	0.67	1.07	0.56	9/16"	124470228
3/16"	1/8 NPT	0.72	0.88	0.37	7/16"	124470318
3/16"	1/4 NPT	0.72	1.09	0.56	9/16"	124470328
1/4"	1/8 NPT	0.77	0.9	0.37	7/16"	124470418
1/4"	1/4 NPT	0.77	1.11	0.56	9/16"	124470428
1/4"	3/8 NPT	0.8	1.15	0.56	3/4"	124470438
5/16"	1/8 NPT	0.84	0.96	0.37	9/16"	124470518
5/16"	1/4 NPT	0.84	1.15	0.56	9/16"	124470528
3/8"	1/8 NPT	1.05	1.05	0.37	9/16"	124470618
3/8"	1/4 NPT	1.05	1.26	0.56	11/16"	124470628
3/8"	3/8 NPT	1.05	1.26	0.56	3/4"	124470638
3/8"	1/2 NPT	1.05	1.48	0.75	7/8"	124470648
1/2"	1/4 NPT	1.25	1.37	0.56	3/4"	124470728
1/2"	3/8 NPT	1.25	1.41	0.56	3/4"	124470738
1/2"	1/2 NPT	1.25	1.62	0.75	7/8"	124470748

Swivel elbow adaptor 12147/10147

O/D tube to male BSPT thread

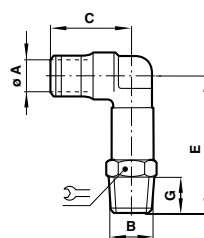


O/D Tube A	Thread B	C	E	G		Model
1/8"	R1/8	0.63	0.86	0.34	0.39	121470118
5/32"	R1/8	0.66	0.81	0.3	0.39	101400418
3/16"	R1/8	0.73	0.86	0.34	0.43	121470318
1/4"	R1/8	0.77	0.88	0.34	0.43	121470418
5/16"	R1/8	0.84	0.91	0.34	0.55	101470818
5/32"	R1/4	0.66	0.95	0.44	0.55	101470428
3/16"	R1/4	0.72	1.04	0.44	0.55	121470328
1/4"	R1/4	0.77	0.99	0.44	0.55	121470428
5/16"	R1/4	0.84	1.03	0.44	0.55	101470828
3/8"	R1/4	1.05	1.13	0.44	0.67	121470628
1/2"	R1/4	1.25	1.25	0.44	0.75	121470728
3/8"	R3/8	1.05	1.2	0.5	0.67	121470638
3/8"	R1/2	1.25	1.36	0.63	0.87	121470648
1/2"	R3/8	1.05	1.35	0.5	0.87	121470738
1/2"	R1/2	1.25	1.5	0.63	0.87	121470748

PUSH-IN FITTINGS

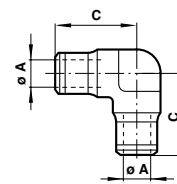
Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Extended swivel elbow adaptor 12454
O/D tube to male NPTF thread



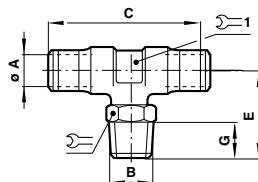
O/D Tube A	Thread B	C	E	G		Model
5/32"	1/8 NPT	0.67	1.39	0.37	7/16"	124540218
5/32"	1/4 NPT	0.77	1.49	0.37	7/16"	124540228
1/4"	1/8 NPT	0.67	1.71	0.56	9/16"	124540418
1/4"	1/4 NPT	0.77	1.75	0.56	9/16"	124540428
3/8"	1/4 NPT	1.05	2.1	0.56	11/16"	124540628
3/8"	3/8 NPT	1.05	2.1	0.56	3/4"	124540638

Elbow connector 12040
O/D tube to O/D tube



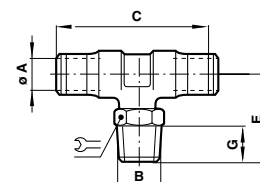
O/D Tube A	C	Model
1/8"	0.65	120400100
5/32"	0.67	120400200
3/16"	0.72	120400300
1/4"	0.77	120400400
5/16"	0.84	120400500
3/8"	1.05	120400600
1/2"	1.25	120400700

Swivel tee adaptor 12167/10167
O/D tube to male taper BSP thread



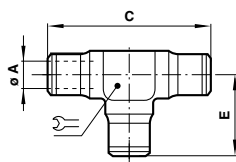
O/D Tube A	Thread B	C	E	G			Model
5/32"	R1/8	1.33	0.81	0.34	0.39	0.28	101670418
1/4"	R1/8	1.54	0.88	0.34	0.34	0.35	121670418
5/32"	R1/4	1.33	0.95	0.44	0.55	0.28	101670428
1/4"	R1/4	1.54	0.99	0.44	0.43	0.35	121670428
3/8"	R1/4	2.1	1.13	0.44	0.43	0.52	121670618
1/2"	R1/4	2.5	1.25	0.44	0.43	0.63	121670728
3/8"	R3/8	2.1	1.2	0.5	0.5	0.52	121670638
1/2"	R3/8	2.5	1.34	0.5	0.5	0.63	121670738

Swivel male centre tee 12467
O/D tube to male NPTF thread



O/D Tube A	Thread B	C	E	G		Model
1/8"	10-32 UNF	1.25	0.73	0.2	5/16"	124670110
1/8"	1/8 NPT	1.26	0.81	0.37	7/16"	124670118
1/8"	1/4 NPT	1.34	1.07	0.56	9/16"	124670128
5/32"	10-32 UNF	1.34	0.77	0.2	5/16"	124670210
5/32"	1/8 NPT	1.33	0.86	0.37	7/16"	124670218
5/32"	1/4 NPT	1.33	1.07	0.56	9/16"	124670228
3/16"	1/8 NPT	1.45	0.88	0.37	7/16"	124670318
3/16"	1/4 NPT	1.45	1.09	0.56	9/16"	124670328
1/4"	1/8 NPT	1.54	0.9	0.37	7/16"	124670418
1/4"	1/4 NPT	1.54	1.12	0.56	9/16"	124670428
1/4"	3/8 NPT	1.57	1.2	0.56	3/4"	124670438
5/16"	1/8 NPT	1.68	0.96	0.37	9/16"	124670518
5/16"	1/4 NPT	1.68	1.15	0.56	9/16"	124670528
3/8"	1/8 NPT	2.1	0.66	0.37	9/16"	124670618
3/8"	1/4 NPT	2.1	1.26	0.56	11/16"	124670628
3/8"	3/8 NPT	2.1	1.26	0.56	3/4"	124670638
3/8"	1/2 NPT	2.1	1.48	0.75	7/8"	124670648
1/2"	1/4 NPT	2.5	1.37	0.56	3/4"	124670728
1/2"	3/8 NPT	2.5	1.41	0.56	3/4"	124670738
1/2"	1/2 NPT	2.5	1.62	0.75	7/8"	124670748

Tee connector 12060
O/D tube to O/D tube

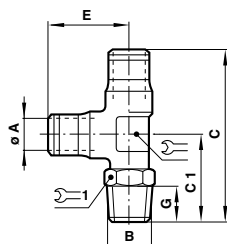


O/D Tube A	C	E	Ø K		Model
1/8"	1.26	0.63	0.32	0.2	120600100
5/32"	1.34	0.67	0.4	0.28	120600200
3/16"	1.44	0.72	0.44	0.28	120600300
1/4"	1.54	0.77	0.48	0.31	120600400
5/16"	1.68	0.84	0.56	0.43	120600500
3/8"	2.1	1.05	0.67	0.52	120600600
1/2"	2.5	1.25	0.81	0.63	120600700

PUSH-IN FITTINGS

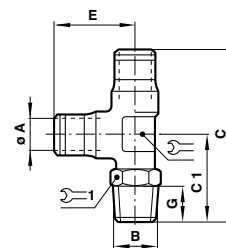
Pneufit Ø 1/8" ... 1/2", Ø 4 ... 12 mm tube size, BSP & NPT threads

Swivel side tee adaptor, O/D tube to male taper BSP thread
12168/10168



O/D Tube A	Thread B	C	C1	E	G		1	Model
5/32"	R1/8	1.47	0.81	0.66	0.34	0.28	0.39	101680418
3/16"	R1/8	1.59	0.86	0.72	0.34	0.35	0.34	121680318
1/4"	R1/8	1.65	0.88	0.77	0.34	0.35	0.34	121680418
5/16"	R1/8	1.74	0.91	0.84	0.34	0.43	0.55	101680818
5/32"	R1/4	1.61	0.95	0.72	0.44	0.28	0.55	101680428
3/16"	R1/4	1.69	0.97	0.72	0.44	0.34	0.43	121680328
1/4"	R1/4	1.76	1	0.77	0.44	0.35	0.43	121680428
5/16"	R1/4	1.87	1.03	0.84	0.44	0.43	0.55	101680828
3/8"	R1/4	2.19	1.13	1.05	0.44	0.52	0.43	121680628
1/2"	R1/4	2.5	1.25	1.24	0.44	0.63	0.43	121680728
3/8"	R3/8	2.25	1.2	1.05	0.5	0.52	0.5	121680638
1/2"	R3/8	2.59	1.34	1.25	0.5	0.63	0.5	121680738

Swivel male side tee adaptor, O/D tube to male taper NPTF thread
12468



O/D Tube A	Thread B	C	C1	E	G		1	Model
1/8"	10-32 UNF	1.36	0.63	1.36	0.63	—	5/16"	124680110
1/8"	1/8 NPT	1.36	0.73	0.63	0.63	0.20	7/16"	124680118
1/8"	1/4 NPT	1.44	0.77	0.67	0.67	0.27	9/16"	124680128
5/32"	10-32 UNF	1.44	0.67	1.44	0.67	—	5/16"	124680210
5/32"	1/8 NPT	1.52	0.86	0.67	0.67	0.27	7/16"	124680218
5/32"	1/4 NPT	1.73	1.07	0.67	0.67	0.27	9/16"	124680228
3/16"	1/8 NPT	1.6	0.88	0.72	0.72	0.35	7/16"	124680318
3/16"	1/4 NPT	1.81	1.09	0.72	0.72	0.35	9/16"	124680328
1/4"	1/8 NPT	1.67	0.9	0.77	0.77	0.35	7/16"	124680418
1/4"	1/4 NPT	1.88	1.11	0.77	0.77	0.35	9/16"	124680428
1/4"	3/8 NPT	1.59	0.81	0.79	0.79	0.31	3/4"	124680438
5/16"	1/8 NPT	1.8	0.96	0.84	0.84	0.43	9/16"	124680518
5/16"	1/4 NPT	1.98	1.15	1.98	0.84	0.43	9/16"	124680528
3/8"	1/8 NPT	2	0.94	1.05	1.05	0.52	9/16"	124680618
3/8"	1/4 NPT	2.31	1.26	1.05	1.05	0.52	11/16"	124680628
3/8"	3/8 NPT	2.31	1.26	1.05	1.05	0.52	3/4"	124680638
3/8"	1/2 NPT	2.53	1.48	1.05	1.05	0.52	7/8"	124680648
1/2"	1/4 NPT	2.62	1.37	1.25	1.25	0.63	3/4"	124680728
1/2"	3/8 NPT	2.65	1.41	1.25	1.25	0.63	3/4"	124680738
1/2"	1/2 NPT	2.87	1.62	1.25	1.25	0.63	7/8"	124680748

BSP & HOSE

M5 1/8" ... 1"

- Very compact units
- Easy tube insertion for rapid assembly of pneumatic circuits
- Positive tube anchorage
- All taper threads pre-coated with non-PTFE based sealant
- Straight Adaptors feature internal hexagon for Allen key
- Silicone free 'O'-rings

Technical Data

Medium:

Compressed air or any fluids compatible with the materials listed opposite

Operating pressure:

Generally limited by tubing specification except where plastic sealing washers are used (banjo bolts and M5 units). In these cases pressure is limited to 18 bar. Suitable for vacuum applications. Flow regulating banjos are limited to 1 ... 10 bar operating range.

Ambient temperature:

Generally limited by tubing specification except where plastic sealing washers are used (banjo bolts, & M5 units). In these cases temperature is limited to +70°C. light and normal duty, DIN 73378, DIN 74234, NFE 49-100

Materials

Bar parts: Brass to BS 2874: 1986 (CZ 121), bright nickel plated

Stamped parts: Brass to BS 2872: 1969 (CZ 122), bright nickel plated

Sealing washers: Copper (Acetal for M5 items)



● Straight adaptors and connectors

BSP connector – reducer	BSP connector – expander	BSP connector – reducer	BSP connector – expander	Bulkhead connector	Sleeve adaptor	Adaptor NPTF – BSPT	Adaptor BSPT – NPTF	
								
16023	16023	15023	15023	16029	16022	15423	17223	
Nipple adaptor	Nipple adaptor	Nipple adaptor	Flat union	Plug	Plug	Plug	Hose adaptor	Hose adaptor
								
15020	16020	15420	15033	15005	16005	25013	29117	29217

● Elbow adaptors and T-connectors

Elbow	Elbow	Elbow	Tee connector	Tee	Tee
					
16042	15043	15040	16062	15060	15069
Cross	Cross block	Manifold			
					
16092	16094	34050			

● Elbow banjos

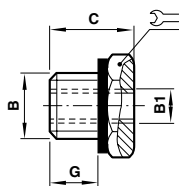
Elbow banjo assembly regulating out	Elbow banjo assembly non-regulating	Elbow banjo body
		
16K51	16A51	16051

BSP & HOSE

M5 1/8" ... 1"

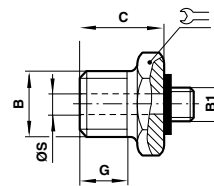
● Dimensions

BSP connector – reducer 16023
ISO G parallel thread with seal



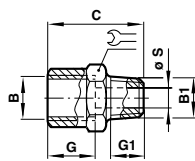
B	B1	C	G		Model
G1/8	M5	10,5	6	14	160231805
G1/4	M5	15,5	7,5	17	160232805
G1/4	G1/8	13	8	17	160232818
G3/8	G1/8	14	9	19	160233818
G3/8	G1/4	14	9	19	160233828
G1/2	G1/8	15,5	10	24	160234818
G1/2	G1/4	15,5	10	24	160234828
G1/2	G3/8	15,5	10	24	160234838
G3/4	G1/4	23	14	32	160236828
G3/4	G3/8	17,5	12	30	160236838
G3/4	G1/2	17,5	12	30	160236848

BSP connector – expander 16023
ISO G parallel thread with seal



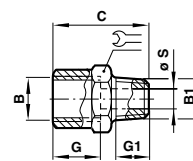
B	B1	C	G	G1	Ø S		Model
M5	G1/8	14,5	4	7,5	2	14	160230518
G1/8	G1/4	19,5	6	9,5	5,5	17	160231828
G1/8	G3/8	21	6	10,5	5,5	22	160231838
G1/4	G3/8	22,5	8	10,5	8	22	160232838
G1/4	G1/2	26	8	13	8	26	160232848
G1/4	G3/4	33	7,5	16,5	6,5	32	160232868
G3/8	G1/2	27	9	13	11	26	160233848
G3/8	G3/4	34	8,5	16,5	9,5	32	160233868
G1/2	G3/4	38	11,5	16,5	13,5	32	160234868

BSP connector – reducer 15023
ISO R taper thread



B	B1	C	G	G1	Ø S		Model
G1/8	R1/8	20	7,5	7,5	5,5	14	150231818
G1/8	R1/4	16	11	7,5	5,5	14	150232818
G1/4	R1/4	26	11	9,5	8	17	150232828
G1/8	R3/8	16,5	11,5	7,5	5,5	17	150233818
G1/4	R3/8	16,5	11,5	9,5	8	17	150233828
G3/8	R3/8	27,5	11,5	10,5	11	22	150233838
G1/8	R1/2	19,5	14	7,5	5,5	22	150234818
G1/4	R1/2	19,5	14	9,5	8	22	150234828
G3/8	R1/2	19,5	14	10,5	11	22	150234838
G1/2	R1/2	33	14	13	15	26	150234848
G1/4	R3/4	29,5	18,5	11	11,5	27	150236828
G3/8	R3/4	23,5	16,5	10,5	11	27	150236838
G1/2	R3/4	23,5	16,5	13	15	27	150236848
G3/8	R1	34,5	21,5	14	15	35	150238838
G1/2	R1	26,5	19	13	15	34	150238848
G3/4	R1	26,5	19	14,5	19	34	150238868

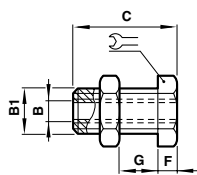
BSP connector – expander 15023
ISO R taper thread



B	B1	C	G	G1	Ø S		Model
G1/4	R1/8	22	7,5	9,5	5	17	150231828
G3/8	R1/8	22,5	7,5	10,5	5	22	150231838
G1/2	R1/8	31	8,5	15	5	27	150231848
G3/8	R1/4	27	11	10,5	8	22	150232838
G1/2	R1/4	30	11	13	8	26	150232848
G3/4	R1/4	37,5	11	16,5	7	32	150232868
G1/2	R3/8	30,5	11,5	13	11	26	150233848
G3/4	R3/8	38,5	12,5	16,5	11	32	150233868
G3/4	R1/2	35	14	14,5	15	32	150234868
G1	R3/4	45	19	19	18	41	150236888

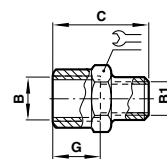
BSP & HOSE M5 1/8" ... 1"

Bulkhead connector 16029
metric and ISO G parallel thread



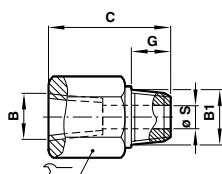
B	B1	C	F	G max.	Symbol	Model
M5	M10x1,0	14	3,5	7	14	160290005
G1/8	M16x1,5	18	4	10	22	160290018
G1/4	M20x1,5	25	4	16	27	160290028
G3/8	M26x1,5	26	5	15	32	160290038
G1/2	M28x1,5	33	6	21	36	160290048
G3/4	M33x1,5	36,5	6	22,5	41	160290068
G1	M42x1,5	41,5	8	24,5	46	160290088
G1 1/4	M48x1,5	50	8	29,5	55	1602900A8

Sleeve adaptor 16022
ISO G parallel thread



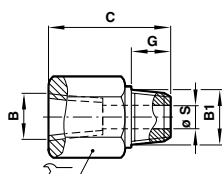
B	B1	C	G	Symbol	Model
M5	M5	11	11	8	160220505
G1/8	M5	13	7,5	14	160221805
G1/8	G1/8	15	15	14	160221818
G1/4	G1/8	19	9,5	17	160222818
G1/4	G1/4	22	22	17	160222828
G3/8	G1/8	20	10,5	22	160223818
G3/8	G1/4	23	10,5	22	160223828
G3/8	G3/8	24	24	22	160223838
G1/2	G1/8	24	13	24	160224818
G1/2	G1/4	25	13	24	160224828
G1/2	G3/8	27,5	13	24	160224838
G1/2	G1/2	30	30	26	160224848
G3/4	G1/2	30	14,5	30	160226848
G3/4	G3/4	31	31	32	160226868
G1	G3/4	39	17	40	160228868
G1	G1	45,5	46,5	41	160228888

Adaptor 15423
NPTF – BSPT thread



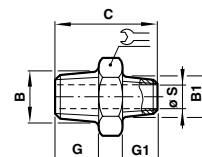
B	B1	C	G	Ø S	Symbol	Model
1/8 NPT	R1/8	27,5	9,5	4,5	15	154231818
1/4 NPT	R1/4	36	11	7,5	19	154232828
3/8 NPT	R3/8	38	12,5	9,5	22	154233838
1/2 NPT	R1/2	47	16	13	27	154234848
3/4 NPT	R3/4	50	19	17,5	36	154236868

Adaptor 17223
BSPT – NPTF thread



B	B1	C	G	Ø S	Symbol	Model
R1/4	1/4 NPT	33,5	14,5	7,5	19	172232828
R3/8	3/8 NPT	33,5	14,5	9,5	24	172233838
R1/2	1/2 NPT	44	19	12,5	27	172234848

Nipple adaptor 15020
ISO R taper thread

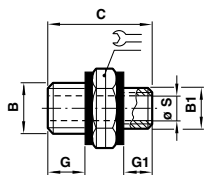


B	B1	C	G	G1	Ø S	Symbol	Model
R1/8	R1/8	19,5	7,5	7,5	5,5	12	150201818
R1/4	R1/8	23,5	11	7,5	5,5	14	150202818
R1/4	R1/4	27	11	11	6,4	14	150202828
R3/8	R1/8	24	11,5	7,5	5,5	17	150203818
R3/8	R1/4	27,5	11,5	11	8	17	150203828
R3/8	R3/8	28	11,5	11,5	11	17	150203838
R1/2	R1/8	27	14	7,5	5,5	22	150204818
R1/2	R1/4	30,5	14	11	8	22	150204828
R1/2	R3/8	31	14	11,5	11	22	150204838
R1/2	R1/2	33,5	14	14	15	22	150204848
R3/4	R1/4	37	19	11	6,4	27	150206828
R3/4	R3/8	39	19	12,5	9	27	150206838
R3/4	R1/2	37,5	16	14	15	27	150206848
R3/4	R 3/4	40	16,5	16,5	19	27	150206868
R1	R3/8	43	22	12,5	9	36	150208838
R1	R1/2	46	22	16	12,5	36	150208848
R1	R3/4	43	19	16,5	19	34	150208868
R1	R1	45,5	19	19	23	34	150208888

BSP & HOSE

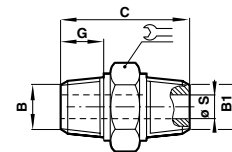
M5 1/8" ... 1"

Nipple adaptor 16020
ISO G parallel thread with seal



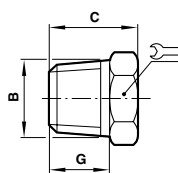
B	B1	C	G	G1	Ø S		Model
M5	M5	11,5	4	4	2	8	160200505
G1/8	M5	14,5	6	4	2	14	160201805
G1/8	G1/8	16,5	6	6	5,5	14	160201818
G1/4	G1/8	19	8	6	5,5	17	160202818
G1/4	G1/4	21	8	8	8	17	160202828
G3/8	G1/4	22	9	8	8	19	160203828
G3/8	G3/8	23	9	9	11	19	160203838
G1/2	G1/4	23,5	10	8	8	24	160204828
G1/2	G3/8	24,5	10	9	11	24	160204838
G1/2	G1/2	25,5	10	10	15	24	160204848
G3/4	G1/2	27,5	12	10	15	30	160206848
G3/4	G3/4	53	14,5	14,5	18	32	160206868
G1	G1/2	56,5	17,5	13,5	14	41	160208848
G1	G3/4	58	17,5	14,5	18	41	160208868
G1	G1	61	17,5	17,5	25	41	160208888

Nipple adaptor 15420
NPT thread



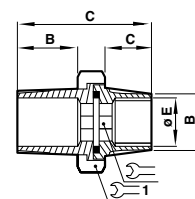
B	B1	C	Ø D	G	G1		Model
1/8 NPT	R1/8	27	4,5	9,5	9,5	11	154201818
1/4 NPT	R1/4	3,5	7,5	11	14,5	14	154202828
3/8 NPT	R3/8	37	9,5	12,5	14,5	17	154203838
1/2 NPT	R1/2	46,5	12,5	16	19	22	154204848
3/4 NPT	R3/4	47,5	17,5	19	19	27	154206868

Plug 15005
ISO R taper thread



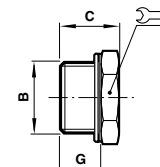
B	C	G		Model
R1/8	14,5	9,5	10	150050018
R1/4	16,5	11	14	150050028
R3/8	19	12,5	17	150050038
R1/2	22,5	16	22	150050048
R3/4	27	19	27	150050068
R1	30	22	36	150050088

Flat union 15033
ISO R taper thread



B	C	E	F		1	Model
R1/8	33,5	15	10	5	15	150331818
R1/4	42	18,5	13	8	24	150332828
R3/8	43	19	13	10	27	150333838
R1/2	52	23	17,5	14	30	150334848
R3/4	56,5	25	19	17	38	150336868
R1	68	29	23	19	46	150338888

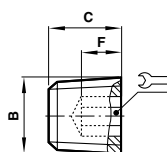
Plug 16005
ISO G parallel thread with seal



B	C	G		Model
M5	7,5	4	8	160050005
G1/8	10	6,5	14	160050018
G1/4	13	9	17	160050028
G3/8	13,5	9,5	19	160050038
G1/2	14,5	10	24	160050048
G3/4	16	11	30	160050068
G1	17	12	40	160050088

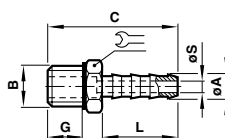
BSP & HOSE M5 1/8" ... 1"

Plug 25013
ISO R taper thread



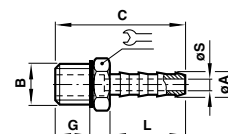
B	C	F		Model
R1/8	8	6	5	250130018
R1/4	10	8	6	250130028
R3/8	11	8	8	250130038
R1/2	13	8	10	250130048
R3/4	17	11	14	250130068
R1	18	13	17	250130088

Hose adaptor 29117
ISO R taper thread



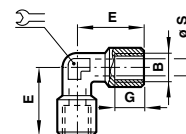
Ø A	B	C	G	L	Ø S min.		Model
4	R1/8	32	7,5	19,5	3,2	12	291170418
6	R1/8	32	7,5	19,5	3,2	12	291170618
6	R1/4	35,5	11	19,5	3,2	14	291170628
6	R3/8	42,5	14,5	22,5	5	17	291170638
7	R1/8	32	7,5	19,5	5	12	291170718
7	R1/4	35,5	11	19,5	6	14	291170728
7	R3/8	36	11,5	19,5	6	17	291170738
8	R1/4	35,5	11	19,5	7,5	14	291170828
8	R3/8	36	11,5	19,5	7,5	17	291170838
9	R1/8	36	8,5	22,5	5	13	291170918
9	R1/4	41	12,5	22,5	7,6	14	291170928
9	R3/8	42,5	14	22,5	7,6	17	291170938
9	R1/2	45,5	17	22,5	7,6	22	291170948
10	R1/8	36	8,5	22,5	8,8	13	291171018
10	R1/4	35,5	11	19,5	7,5	14	291171028
10	R3/8	36	11,5	19,5	7,5	17	291171038
12	R3/8	36	11,5	19,5	9,5	17	291171238
13	R1/4	48,5	12,5	29,5	7	16	291171328
13	R3/8	49,5	14,5	29,5	11	17	291171338
13	R1/2	52,5	16,8	29,5	11	22	291171348
13	R3/4	55	18,5	29,5	11	27	291171368
16	R3/8	36	11,5	19,5	11	19	291171638
16	R1/2	39	14	19,5	12,5	22	291171648
16	R3/4	43,5	16,5	19,5	14,5	27	291171668
19	R3/8	58,5	14,5	38	11	22	291171938
19	R1/2	61	17	38	14	22	291171948
19	R3/4	63,5	18,5	38	17,5	27	291171968
25	R3/4	63,5	18,5	38	18	27	291172568
25	R1	67,5	21,5	38	22	35	291172588
32	R1	72,5	21,5	43	24	35	291173288

Hose adaptor 29217 metric and ISO G parallel thread with seal



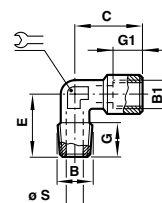
Ø A	B	C	G	L	Ø S min.		Model
2,5	M3	14	3,5	7,5	1,8	5	292170203
3	M5	15,5	3,5	7,5	2	8	292170305
3	G1/8	21	7,5	7,5	2	14	292170318
4	G1/8	36,5	7,5	22,5	3,3	14	292170418
4	G1/4	40,5	10	22,5	3,3	19	292170428
5	G1/8	36,5	7,5	22,5	4	14	292170518
6	G1/8	36,5	7,5	22,5	5	14	292170618
6	G1/4	40,5	10	22,5	5	19	292170628
6	G3/8	43	11,5	22,5	5	22	292170638
9	G1/8	36,5	7,5	22,5	7,5	14	292170918
9	G1/4	40,5	10	22,5	7,5	19	292170928
9	G3/8	43	11,5	22,5	7,5	22	292170938
9	G1/2	47	15	22,5	7,5	27	292170948
13	G1/4	47,5	10	29,5	11	19	292171328
13	G3/8	49,5	11,5	29,5	11	22	292171338
13	G1/2	54,5	15	29,5	11	27	292171348
13	G3/4	59,5	16,5	29,5	11	32	292171368
19	G3/4	67,5	16,5	38	17,5	32	292171968

Elbow 16042
ISO G parallel thread



B	E	G	Ø S		Model
G1/8	21	7	5,5	12	160420018
G1/4	25,5	9,5	8	13	160420028
G3/8	28	11,5	11	16	160420038
G1/2	32	15	15	20	160420048
G3/4	36,5	14,5	19	27	160420068

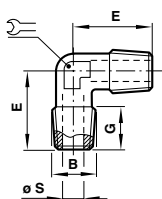
Elbow 15043
ISO G parallel and ISO R taper thread



B	B1	C	E	G	G1	Ø S		Model
R1/8	G1/8	21	18,5	8	7	5,5	12	150430018
R1/4	G1/4	25,5	24	11	9,5	8	13	150430028
R3/8	G3/8	28	27	11,5	11,5	11	16	150430038
R1/2	G1/2	32	29,5	14	13	15	20	150430048
R3/4	G3/4	36,5	32	14,5	14,5	19	27	150430068

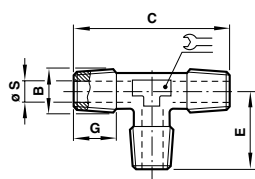
BSP & HOSE M5 1/8" ... 1"

Elbow 15040
ISO R taper thread



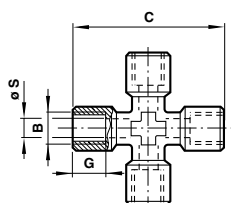
B	E	G	Ø S		Model
R1/8	18,5	7,5	6	12	150400018
R1/4	24	11	8	13	150400028
R3/8	27	12	11	16	150400038
R1/2	29,5	14	15	20	150400048

Tee 15060
ISO R taper thread



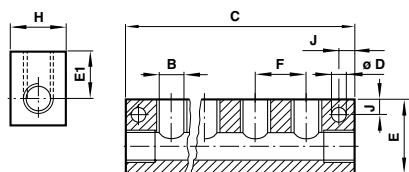
B	C	E	G	Ø S		Model
R1/4	46	23	11	8	13	150600028

Cross 16092
ISO G parallel thread



B	C	G	Ø S	Model
G1/8	39	8,5	6	160920018
G1/4	50	11	8	160920028
G3/8	56	12	11	160920038
G1/2	64	15	15	160920048

Manifold 34050
ISO G parallel thread



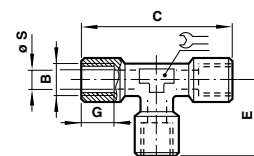
Numbers of outlets: 4

B	C	Ø D	E	E1	F	H	J	Model
G1/8	81	5,5	25	15	17	16	5	34050401
G1/4	109	5,5	31	20	23	23	5	34050402
G3/8	127	6,5	35	23	27	25,5	6	34050403

Numbers of outlets: 6

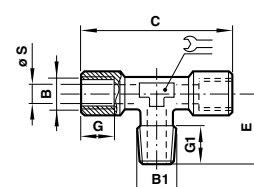
B	C	Ø D	E	E1	F	H	J	Model
G1/8	115	5,5	25	15	17	16	5	34050601
G1/4	155	5,5	31	20	23	23	5	34050602
G3/8	181	6,5	35	23	27	25,5	6	34050603

Tee connector 16062
ISO G parallel thread



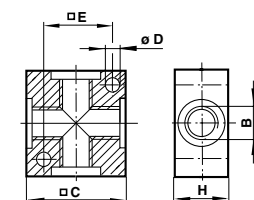
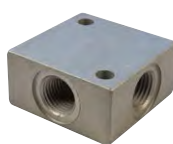
B	C	E	G	Ø S		Model
G1/8	39	19,5	8,5	6	12	160620018
G1/4	49	14,5	11	8	13	160620028
G3/8	54	27	12	11	16	160620038
G1/2	64	29	15	15	20	160620048
G3/4	73	36,5	14,5	19	27	160620068

Tee 15069
ISO G parallel and ISO R taper thread



B	B1	C	E	G	G1	Ø S		Model
G1/8	R1/8	39	17,5	8,5	8	6	12	150690018
G1/4	R1/4	49	23	11	11	8	13	150690028
G3/8	R3/8	54	25,5	12	11,5	11	16	150690038
G1/2	R1/2	64	29	15	14	15	20	150690048
G3/4	R3/4	73	32	16,5	14,5	19	27	150690068

Cross block 16094
ISO G parallel thread

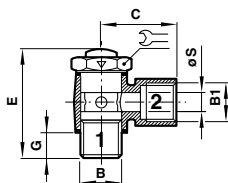


B	C	Ø D	E	H	Model
G1/8	25	4,5	17,5	16	160940018
G1/4	40	5,5	27	20	160940028
G3/8	50	5,5	35	25	160940038
G1/2	50	5,5	35	32	160940048

BSP & HOSE

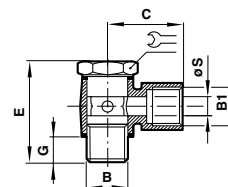
M5 1/8" ... 1"

Elbow banjo assembly 16K51
regulating out, operating pressure 10 bar,
ISO G parallel thread with seal



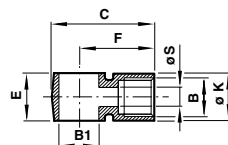
B/B1	C	E	G	Ø S		Model
G1/8	21	34	5	6	14	16K511818
G1/4	28	37	6	7,6	17	16K512828
G3/8	31	52	9,5	9,6	22	16K513838
G1/2	47	58	12	9,6	27	16K514848

Elbow banjo assembly 16A51
non-regulating
ISO G parallel thread with seal



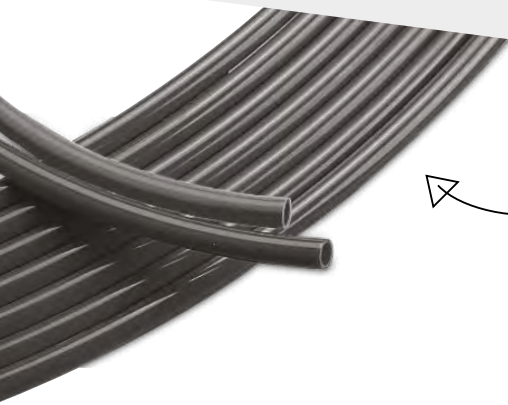
B/B1	C	E	G	Ø S		Model
G1/8	21	29	5	6	14	16A511818
G1/4	28	32	6	7,6	17	16A512828
G3/8	31	45	9,5	9,6	22	16A513838
G1/2	47	47	12	9,6	27	16A514848

Elbow banjo body 16051



B/B1	C	E	F	Ø K	Ø S	Model
G1/8	28	14	21	13	6	160511818
G1/4	37	16	28	16	7,6	160512828
G3/8	42	20,5	31	20,5	9,6	160513838
G1/2	61	22	47	24,5	9,6	160514848

Tubing



Fire & smoke
resistant tube

Flexible tubing



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering tubing range. If you can't see the option you require please contact us.

● Tubing

PA2 Nylon tube Ø 3 ... 16 mm  Page 323	PB Nylon tube Ø 1/8" ... 1/2"  Page 325	LPA2, LPA3 Rail vehicle approved fire and smoke resistant nylon tube Ø 6 ... 12 mm  Page 326	LPA4, LPA5 Rail Vehicle Approved Nylon Tubing Ø 6 ... 12 mm  Page 328
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NYLON TUBE

PA2 Ø 3 ... 16 mm

- Available in a range of colours for ease of identification
- In addition to general industrial applications Nylon is suitable for use on air braking systems of commercial vehicles and conforms to DIN 74324 (applicable sizes: 6, 8, 10, 12, 16mm O/D)
- 25 metre lengths supplied in cartons providing good protection and easy storage

Technical Data

Medium:

Compressed air.
Consult our Technical Service for use with other fluids

Operating pressure:

Refer to specific tubing type on the following pages

Ambient temperature:

Refer to specific tubing type on the following pages

Materials

Nylon (polyamide) type 12, fully plasticised and light stabilised. Metric tube meets the requirements of DIN 74324



Models

Colour	Length (m)	O/D I/D tube 4/2,5	5/3*	6/4	8/6	10/7,5	12/9	14/11*	16/12
Natural	25	PA2-0004025C	PA2-0005025C	PA2-0006025C	PA2-0008025C	PA2-0010025C	PA2-0012025C	PA2-0014025C	PA2-0016025C
Natural	100	PA2-0004100	-	PA2-0006100	PA2-0008100	PA2-0010100	PA2-0012100	-	-
Red	25	PA2-0104025C	PA2-0105025C	PA2-0106025C	PA2-0108025C	PA2-0110025C	PA2-0112025C	PA2-0114025C	PA2-0116025C
Red	100	PA2-0104100	-	PA2-0106100	PA2-0108100	PA2-0110100	PA2-0112100	-	-
Green	25	PA2-0204025C	PA2-0205025C	PA2-0206025C	PA2-0208025C	PA2-0210025C	PA2-0212025C	PA2-0214025C	PA2-0216025C
Green	100	PA2-0204100	-	PA2-0206100	PA2-0208100	PA2-0210100	PA2-0212100	-	-
Yellow	25	PA2-0304025C	PA2-0305025C	PA2-0306025C	PA2-0308025C	PA2-0310025C	PA2-0312025C	PA2-0314025C	PA2-0316025C
Yellow	100	PA2-0304100	-	PA2-0306100	PA2-0308100	PA2-0310100	PA2-0312100	-	-
Blue	25	PA2-0504025C	PA2-0505025C	PA2-0506025C	PA2-0508025C	PA2-0510025C	PA2-0512025C	PA2-0514025C	PA2-0516025C
Blue	100	PA2-0504100	-	PA2-0506100	PA2-0508100	PA2-0510100	PA2-0512100	-	-
Black	25	PA2-0704025C	PA2-0705025C	PA2-0706025C	PA2-0708025C	PA2-0710025C	PA2-0712025C	PA2-0714025C	PA2-0716025C
Black	100	PA2-0704100	-	PA2-0706100	PA2-0708100	PA2-0710100	PA2-0712100	-	-
Silver	25	PA2-0904025C	PA2-0905025C	PA2-0906025C	PA2-0908025C	PA2-0910025C	PA2-0912025C	PA2-0914025C	PA2-0916025C
Silver	100	PA2-0904100	-	PA2-0906100	PA2-0908100	PA2-0910100	PA2-0912100	-	-

Option selector

Colour	Substitute
Natural	0
Red	1
Green	2
Yellow	3
Blue	5
Black	7
Silver	9

PA2-0★★★★★

Packaging	Substitute
25 m Carton/Box	C
100 m Plastic bag	None
Length (m)	Substitute
25	025
100	100
Outer diameter	Substitute
Silver	9
3	03
4	04
5	05
6	06
8	08
10	10
12	12
14	14
16	16

NYLON TUBE

PA2 Ø 3 ... 16 mm

● Maximum operating pressures and bend radii

	Ø 3	Ø 4	Ø 5	Ø 6	Ø 8	Ø 10	Ø 12	Ø 14	Ø 16
Max. pressure (bar)* at -40 ... +20°C	-	31	33	27	19	19	19	16	19
Min. bend radius	-	25	25	30	40	60	60	80	95

Maximum continuous working temperature: nylon +80°C.

* Multiply by factors in table below for use at higher temperatures.

● Operating pressure/temperature conversion factors

Working temperature	Factor (Nylon)
-40°C ... +20°C	1,00
+30°C	0,83
+40°C	0,75
+50°C	0,64
+60°C	0,57
+80°C	0,47

To calculate working pressures at various temperatures, multiply working pressure at -40°C ... +20°C by factor given in table.

Maximum continuous working temperature: +80°C.

● Accessories

Tubing channels			Tube clips – single sided		
Model	Tube Ø	No. of channels	Model	Tube Ø	Number of tubes
					
100HA0600	6	10	34021804	6	1
100HA0800	8	10	34021904	6	2
100H61200	12	6	34021805	8	1
			34021905	8	2
			34021806	10	1
			34021906	10	2
			34021807	12	1
			34021907	12	2
			34021508	16	1

Tube cutter	
Model	Description
	
M/3314	Cutter
39012010	Replacement blade (pack of 10)
39012061	Replacement blade (1-off)

NYLON TUBE

PB Ø 1/8" ... 1/2"

- Strong, lightweight and flexible
- Available in a range of colours for ease of identification
- Meets UL 94HB flammability standard
- Heat and UV light stabilized
- Resistant to corrosion and stress cracking
- Supplied in 100 ft. (30m) coils packed in polyethylene bags

Technical Data

Medium:

Compressed air, nitrogen and inert gases Consult our Technical Service for use with other fluids

Operating pressure range:

Refer to specific tube size below

Diameter tolerances:

+0,002"; - 0,004"

Temperature range:

-50°C ... +90°C refer below for further information

Materials

Nylon PA11, hardness;
78 Rockwell R



Models

Colour	Length (ft.)	O/D I/D tube 1/8" 0,093"	3/16" 0,138"	1/4" 0,180"	5/16" 0,232"	3/8" 0,275"	1/2" 0,375"
Natural	100' coils	PB0051100	PB0053100	PB0054100	PB0055100	PB0056100	PB0057100
Black	100' coils	PB0751100	PB0753100	PB0754100	PB0755100	PB0756100	PB0757100
Blue	100' coils	PB0551100	PB0553100	PB0554100	PB0555100	PB0556100	PB0557100
Red	100' coils	PB0151100	PB0153100	PB0154100	PB0155100	PB0156100	PB0157100

Option selector

PB0★5★100

Colour	Substitute
Natural	0
Red	1
Blue	5
Black	7

Outer diameter	Substitute
1/8"	1
3/16"	3
1/4"	4
5/16"	5
3/8"	6
1/2"	7

Maximum operating pressure (normal temperature range), bend radius and weight

		Ø 1/8"	Ø 3/16"	Ø 1/4"	Ø 5/16"	Ø 3/8"	Ø 1/2"
Max pressure	at 25°C	18 bar	17,3 bar	19,3 bar	16 bar	16,7 bar	16 bar
	at 65°C	10,7bar	10,7bar	11,3 bar	9,3 bar	10 bar	93 bar
Min. bend radius		1/2"	5/8"	1"	1 1/2"	1 1/2"	2 1/4"
Weight (100' coils)		0,113 kg	0,249 kg	0,513 kg	0,744 kg	1,111 kg	1,869 kg

Pressure factor of safety 4:1.

Consult our technical service for maximum operating pressures outside ranges stated above.

Accessories

Tube clips single sided		
Model	Tube Ø	Number of tubes
34021803	3/16"	1
34021903	3/16"	2
34021804	1/4"	1
34021904	1/4"	2
34021805	5/16"	1
34021905	5/16"	2
34021806	3/8"	1
34021906	3/8"	2
34021807	1/2"	1
34021907	1/2"	2

Tube cutter	
Model	Description
M/3314	Cutter
39012010	Replacement blade (pack of 10)
39012061	Replacement blade (1-off)

RAIL VEHICLE APPROVED NYLON TUBING

LPA2, LPA3 Ø 6 ... 12 mm

- Fire and smoke resistant nylon tubing designed for applications on railway vehicles
- Tube tested and conforming to the following standards;
DIN 54 837: 2007-12
DIN EN ISO 5659-2: 2007
DIN 5510: 2007-10
(see details below)
Smoke toxicity test to
DIN5110-2:2009-05
- Additionally tested and conforming to;
NF X 70-100 : 2006
NF X - 10-702 : 1995
(see details below)
- Dimensionally compatible with DIN 74324
- Suitable for use with Norgren Fleetfit vehicle fittings

Technical Data

Medium:

Compressed air

Dimensional standard:

Conforming to DIN 74324

Operating pressure:

See below

Operating temperature:

-60°C ... +100°C max.

Note: pressure/temperature conversions factor see below

Tube colour:

Grey

Standard length:

50 m

Materials

Vestamide Nylon PA12



Models

Outer Ø (mm)	Wall thickness (mm)	Inner Ø (mm)	Operating pressure at 20°C max.* (bar)	Burst pressure at 20°C (bar)	Min. bend radius (mm)
6	1	4	26	78	60
8	1	6	19	57	80
8	1,5	5	30	90	80
10	1	8	14	42	110
12	1,5	9	19	57	110

* Multiply by factors in the below table for use at higher temperatures.

Pressure/temperature conversation factors

Working temperature	Factor
-60°C ... +20°C	1
-60°C ... +30°C	0,83
-60°C ... +40°C	0,72
-60°C ... +50°C	0,64
-60°C ... +60°C	0,57
-60°C ... +70°C	0,52
-60°C ... +80°C	0,47
-60°C ... +90°C	0,44
-60°C ... +100°C	0,36

Testing results DIN 5510-2

Flamibility class	S 4
Smoke development class	SR 2
Dripping class	ST 2
Toxicity	(request test report)

Additional testing

Test standard	NF X 70 – 100 : 2006 Fire tests - Analysis of gaseous effluents - Part 2: Tubular furnace thermal degradation method NF X 10 – 702 : 1995 Fire test methods - Determination of the opacity of the fumes in an atmosphere without air renewal
Classification standard	NF F 16 – 101 : 1988 Rolling stock - Fire behaviour - Materials choosing
Test result	The requirements of Class F 2 were fulfilled

RAIL VEHICLE APPROVED NYLON TUBING

LPA2, LPA3 Ø 6 ... 12 mm

● Option selector

LPA★-06★★050

Tube size to DIN 74324	Substitute
Conforming	2
Non conforming	3
Tube size	Substitute
6	06
8	08
10	10
12	12

● Order numbers

Colour	Coil length (m)	Outer Ø (mm)	Wall thickness (mm)	Inner Ø (mm)	Model
Grey	50	6	1	4	LPA2-0606050
Grey	50	8	1	6	LPA2-0608050
Grey	50	8*	1,5*	5	LPA3-0608050
Grey	50	10	1	8	LPA2-0610050
Grey	50	12	1,5	9	LPA2-0612050

* Tube size does not conform to DIN 74324.

● Accessories

Tube clips single sided

Model	Tube Ø	Number of tubes
		
34021804	6	1
34021904	6	2
34021805	8	1
34021905	8	2
34021806	10	1
34021906	10	2
34021807	12	1
34021907	12	2

Tube cutter

Model	Description
	
M/3314	Cutter
39012010	Replacement blade (pack of 10)
39012061	Replacement blade (1-off)

Fittings



For fittings conforming to DIN 74324 see the Fleetfit range on the fittings section.

RAIL VEHICLE APPROVED NYLON TUBING

LPA4, LPA5 Ø 6 ... 12 mm

- Tube size: Ø 6 ... 12 mm
- Fire and smoke resistant nylon tubing designed for applications on railway vehicles
- Tube tested and conforming to the following standard: EN 45545-2:2013 HL3
- Dimensionally compatible with DIN 74324

Technical Data

Medium:

Compressed air

Dimensional standard:

Conforming to DIN 74324

Operating pressure:

See diagram below

Operating temperature:

-40°C ... +100°C max.

Note: pressure/temperature conversions factor see below

Tube colour:

Dark Grey

Standard length:

50 m

Materials

Polyamide



Models

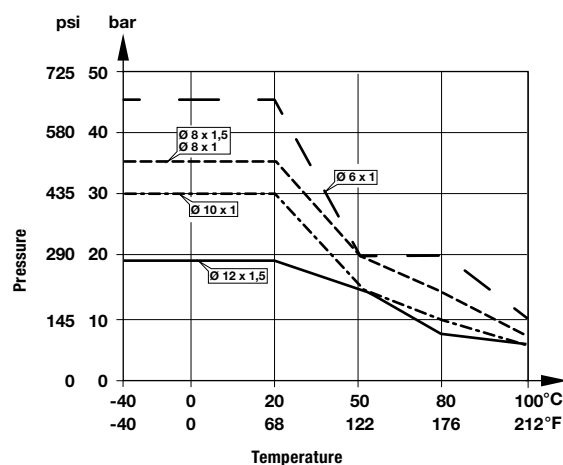
Outer Ø (mm)	Wall thickness (mm)	Inner Ø (mm)	Min. bend radius (mm)	Weight approx. (kg/50 m)	Model
6 +0,05; -0,1	1 ±0,08	4	90	0,9	LPA4-0606050
8 +0,05; -0,1	1 ±0,08	6	120	1,3	LPA4-0608050
8 +0,05; -0,1 *1)	1,5 ±0,1	5	120	1,8	LPA5-0608050
10 ±0,1	1 ±0,08	8	140	1,6	LPA4-0610050
12 ±0,1	1,5 ±0,1	9	160	2,9	LPA4-0612050

*1) Tube size does not conform to DIN 74324.

Test results EN 45545-2:2013

Requirement set	Test results (hazard level classification)
R22	HL3
R23	HL3
R25	HL3

Pressure/temperature



RAIL VEHICLE APPROVED NYLON TUBING

LPA4, LPA5 Ø 6 ... 12 mm

● Option selector

LPA★-06★★050

Tube size to DIN 74324	Substitute
Conforming	4
Non conforming (Ø 8 x 1,5 mm only)	5

Tube size	Substitute
6	06
8	08
10	10
12	12

● Accessories

Tube clips single sided

Model	Tube Ø	Number of tubes
		
34021804	6	1
34021904	6	2
34021805	8	1
34021905	8	2
34021806	10	1
34021906	10	2
34021807	12	1
34021907	12	2

Tube cutter

Model	Description
	
M/3314	Cutter
39012010	Replacement blade (pack of 10)
39012061	Replacement blade (1-off)

Accessories

G1/2 – G1 1/4, fully rail compliant



Compact design



Wide pressure and temperature range



Easy installation



Prevent the ingress of dirt with minimal flow restriction



Fast Find Guide

Please note: These products represent only part of the IMI Precision Engineering accessories range. If you can't see the option you require please contact us.

● Accessories

LT1000 Block form flow regulators (uni-directional) 1/4"  Page 333	LT1100 Block form flow regulators (bi-directional) 1/8" & 1/4"  Page 334	LT1000Z Block form flow regulators (uni-directional) Flange interface  Page 336	LT1100Z Block form flow regulators (bi-directional) Flange interface  Page 337	LT70 Quick exhaust valves 1/8" & 1/4"  Page 338	LS/52x, LC/52x Heavy duty non-return valves 1/4" ... 1"  Page 340
LZ521, LZ523 Non-return valves Flange Interface  Page 341	LT65 Shuttle valves (‘OR’ Logic Function) 1/8" & 1/4"  Page 342	LT65Z Shuttle valves (‘OR’ Logic Function) Flange Interface  Page 343	40600 Shuttle Valve (‘OR’ Logic Function) G1/4, G 1/2, 1/4 NPT, 1/2 NPT  Page 344	60 series Ball valves G1/8 ... G1  Page 345	T10 Ball valves G1/4 or interface version  Page 350
VT20 ... 50 Ball valves 1/2" ... 1 1/4" or interface version  Page 353	T40 Sintered bronze silencers M5, 1/8" ... 1"  Page 359	MA & MB Heavy duty silencers 1/8" ... 2"  Page 360	M/1500 Exhaust filter G1/8 ... G1  Page 362	0613422, 0613423 Exhaust guard 1/4" & 1/2"  Page 363	0310000 Strainer G1/4 ... G2  Page 364
74749-60, 74749-61 Pneumatic Visual Indicators 1/4"  Page 367	A1401-07 General Purpose Filter Flange interface  Page 368				

BLOCK FORM FLOW REGULATORS (UNI-DIRECTIONAL)

LT1000 1/4"

- Compact size (low weight) in-line units
- High flow performance
- Suitable for panel and wall mounting*
- Adjustment can be locked
- Captive regulator needle will not blow out when unscrewed
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

*Note: In areas of vibration use of panel mounting is not recommended

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated, inert gases

Operation:

Flow regulators (uni-directional)

Operating pressure:

1 ... 10 bar

Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

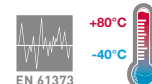
Body: Aluminium alloy (painted)

Seals: Low NBR

Internal parts: Brass

External parts: Aluminium alloy (anodised)

Needle: Brass (nickel plated)



Models

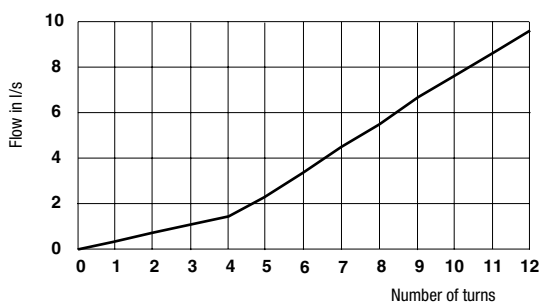
Symbol	Port size	Max. regulated flow factor			Free flow factor			Opening pressure (bar)	Weight (kg)	Model
		C *1)	Cv	Kv *2)	C *1)	Cv	Kv *2)			
	G1/4	1,30	0,32	0,28	2,80	0,69	0,6	< 0,1	0,056	LT1000C2800
	1/4 NPT	1,30	0,32	0,28	2,80	0,69	0,6	< 0,1	0,056	LT1000A2800

*1) Measured in dm³/(s.bar).

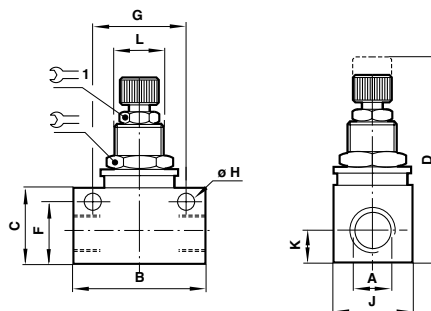
*2) Measured in m³/h.

Flow vs turns at 6 bar – flow in dm³/s ANR

1/4" version



Dimensions



A	B	C	D	F	G	H	J	K	L			Panel hole	Max. panel thickness	Model
1/4"	45,0	25,5	61,5	21,0	32,0	4,5	19,0	9,5	M14x1	17	9	14,5	4,0	LT1000#2800

Please insert 'C' for ISO G and 'A' for NPT thread.

BLOCK FORM FLOW REGULATORS (BI-DIRECTIONAL)

LT1100 1/8" & 1/4"

- Compact size (low weight) in-line units
- High flow performance
- Suitable for panel and wall mounting*
- Two gain flow control
- Adjustment can be locked
- Captive regulator needle will not blow out when unscrewed
- Adjusting knob position line
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

*Note: In areas of vibration use of panel mounting is not recommended

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated, inert gases

Operating pressure:
0 ... 10 bar

Ambient temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

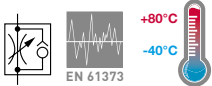
Body: Aluminium alloy (painted)

Seals: Low nitrile

Internal parts: Brass

External parts: Aluminium alloy (anodised)

Needle: Brass (nickel plated)



Models

Symbol	Port size	Max. regulated flow factor C dm ³ /s.bar	Cv	Kv m ³ /h	Min. operating pressure (bar)	Opening pressure (bar)	Weight (kg)	Model
	G1/8	0,57	0,14	0,12	0	< 0,1	0,031	LT1100C1800
	1/8 NPT	0,57	0,14	0,12	0	< 0,1	0,031	LT1100A1800
	G1/4	1,3	0,32	0,28	0	< 0,1	0,056	LT1100C2800
	1/4 NPT	1,3	0,32	0,28	0	< 0,1	0,056	LT1100A2800

Option selector

LT1100★★★00

Thread form	Substitute
ISO G parallel	C
NPT	A

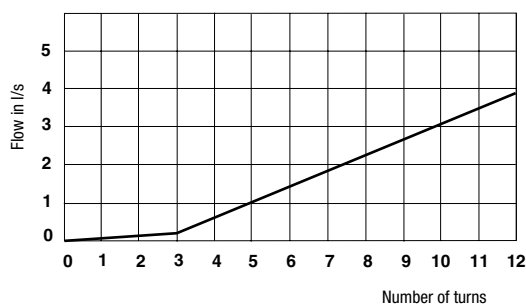
Port size	Substitute
1/8"	18
1/4"	28

BLOCK FORM FLOW REGULATORS (BI-DIRECTIONAL)

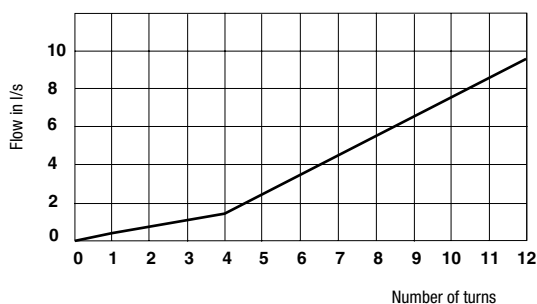
LT1100 1/8" & 1/4"

● Flow vs turns at 6 bar – flow in dm³/s

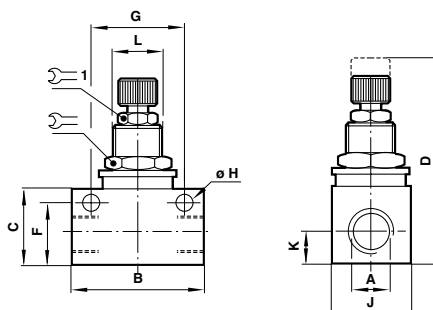
1/8" version



1/4" version



● Dimensions



A	B	C	D	F	G	H	J	K	L			Panel hole	Max. panel thickness	Model
1/8"	34,0	20,0	51,0	16,5	24,0	4,5	16,0	8,0	M12 x 1	14	9	12,5	4,0	LT1100#1800
1/4"	45,0	25,4	61,5	20,8	32,0	4,5	19	9,5	M14 x 1	17	9	14,5	4,0	LT1100#2800

Please insert 'C' for ISO G and 'A' for NPT thread.

BLOCK FORM FLOW REGULATORS (UNI-DIRECTIONAL)

LT1000Z Flange interface

- High flow performance
- Easy installation and maintenance
- Adjustment can be locked
- Captive regulator needle will not blow out when unscrewed
- Adjusting knob position line
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated, inert gases

Operation:
Flow regulators (uni-directional)

Operating pressure:
1 ... 10 bar

Mounting:
Flange

Ambient temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

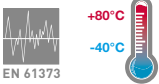
Materials

Body: Aluminium alloy (painted)

Seals: Low nitrile

Needle & Internal parts: Brass

External parts: Aluminium alloy



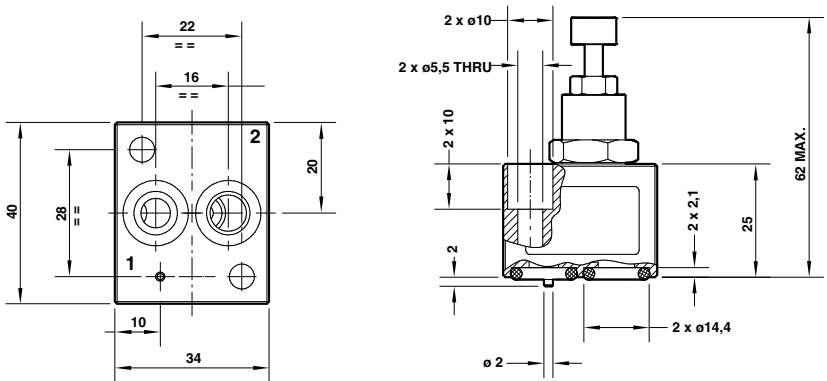
Models

Symbol	Port size	Max. regulated flow factor C *1) Cv Kv *2)			Free flow factor C *1) Cv Kv *2)			Opening pressure (bar)	Weight (kg)	Model
	Flange interface	1,6	0,39	0,34	1,50	0,37	0,32	1 ... 10	0,1	LT1000Z2800

*1) Measured in dm³/(s.bar).

*2) Measured in m³/h.

Dimensions



BLOCK FORM FLOW REGULATORS (BI-DIRECTIONAL)

LT1100Z Flange interface

- High flow performance
- Easy installation and maintenance
- Adjustment can be locked
- Captive regulator needle will not blow out when unscrewed
- Adjusting knob position line
- Wide temperature range
- Easy installation and maintenance
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated, inert gas

Operation:

Flow regulators (bi-directional)

Operating pressure:

1 ... 10 bar

Mounting:

Flange

Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium alloy

Seals: Low nitrile

Needle & Internal parts: Brass

External parts: Aluminium alloy



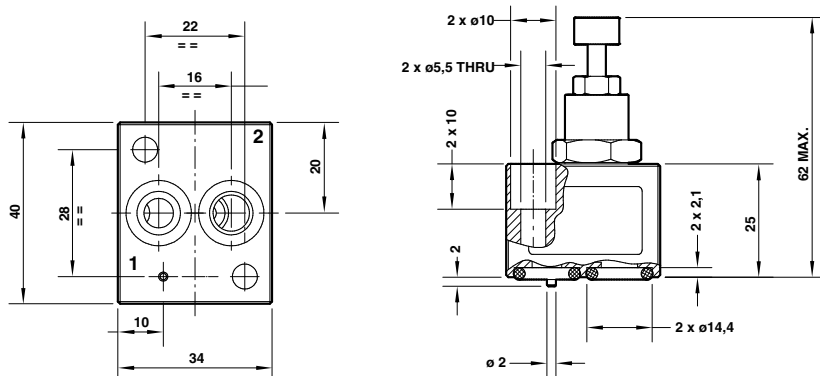
Models

Symbol	Port size	Max. regulated flow factor			Opening pressure	Weight	Model
		G *1)	Cv	Kv *2)	(bar)	(kg)	
	Flange interface	1,6	0,39	0,34	1 ... 10	0,1	LT1100Z2800

*1) Measured in $\text{dm}^3/(\text{s} \cdot \text{bar})$.

*2) Measured in m^3/h .

Dimensions



QUICK EXHAUST VALVE

LT70 1/8" & 1/4"

- Port size: 1/8" & 1/4" (ISO G/NPT)
- Enables air to be exhausted quickly from air cylinders
- Allows higher cylinder speeds to be achieved
- Simple, compact design and construction
- Very reliable in operation
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air, filtered, lubricated or non-lubricated

Operation:
Poppet valve

Operating pressure:
0,5 ... 10 bar

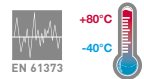
Port size:
G1/8, G1/4, 1/8 NPT, 1/4 NPT

Mounting:
Line mounted

Ambient/Media temperature:
-40°C ... +80°C max.
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body and Cover: Aluminium or zinc alloy
Seals: NBR



Models

Symbol	Port size			Flow factor				Flow from at 6 » 5 bar (m³ /h)		Weight (kg)	Spare kit	Model
	Inlet	Outlet	Exhaust	1 » 2 Cv	Kv *2)	2 » 3 Cv	Kv *2)	1 » 2	2 » 3			
	G1/8	G1/8	G1/8	0,9	1,06	1,8	1,23	95,8	110,9	0,15	LT70C1800K0	LT70C1800
	1/8 NPT	G1/8	G1/8	0,9	1,06	1,8	1,23	95,8	110,9	0,15	LT70C1800K0	LT70A1800
	G1/4	G1/4	G1/4	1,9	2,23	2,5	2,46	201,6	221,8	0,13	LT70C2800K0	LT70C2800
	1/4 NPT	G1/4	G1/4	1,9	2,23	2,5	2,46	201,6	221,8	0,13	LT70C2800K0	LT70A2800

*1) Measured in dm³/(s.bar).
*2) Measured in m³/h.

Option selector

LT70★★★★00

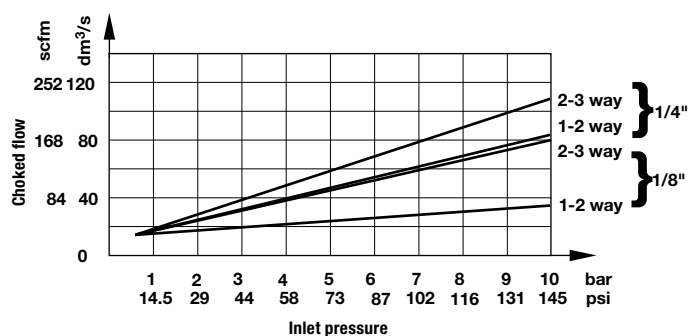
Thread form	Substitute	Port size	Substitute
ISO G parallel	C	1/8"	18
NPT	A	1/4"	28

QUICK EXHAUST VALVE

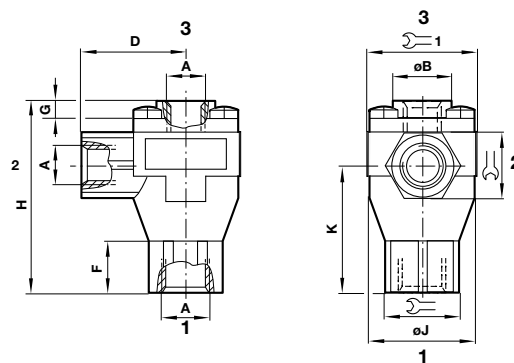
LT70 1/8" & 1/4"

● Choked flow versus inlet pressure

Way (1 » 2) and (2 » 3)



● Dimensions



A	ØB	D	F	G	H	ØJ	K	1	2	Model
1/8"	19	28	15,5	3,5	53	29	35,5	19	30	LT70#1800
1/4"	19	28	15,5	3,5	53	29	35,5	19	30	LT70#2800

Please insert 'C' for ISO G and 'A' for NPT thread.

HEAVY DUTY NON-RETURN VALVES

LS/52x, LC/52x 1/4" ... 1"

- Allows free flow of air in one direction only
- Simple, reliable design
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air, filtered, lubricated and non-lubricated

Operation:
Heavy duty non-return valve

Mounting:
Line mounted

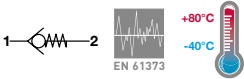
Operating pressure:
0,2 ... 16 bar

Cracking pressure:
< 0,2 bar

Ambient temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Brass
Seals: Low NBR
Valve: Aluminium



Models

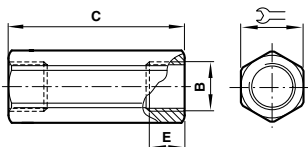
Symbol	Port size	Flow factor C dm ³ /s.bar	Cv	Kv m ³ /h	Weight (kg)	Model
	G1/4	4,3	1	0,92	0,09	LS/521
	1/4 NPT	4,3	1	0,92	0,09	LC/521
	G3/8	10,5	2,6	2,24	0,14	LS/532
	3/8 NPT	9,2	2,2	1,96	0,14	LC/532
	G1/2	17	4,2	3,62	0,21	LS/522
	1/2 NPT	13	3,2	2,77	0,21	LC/522
	G3/4	42	10,3	8,95	0,55	LS/523
	3/4 NPT	38	9,3	8,1	0,55	LC/523
	G1	65	16	13,85	1,10	LS/524
	1 NPT	65	16	13,85	1,10	LC/524

Option selector

Thread form	Substitute	Port size	Substitute
ISO G parallel	S	1/4"	21
NPT *	C	3/8"	32
		1/2"	22
		3/4"	23
		1"	24

* Product with National Pipe Straight. Thread to suit male NPT fittings.

Dimensions



Dimensions shown in mm

B	C	E	Symbol	Model
1/4"	48	11		L#/521
3/8"	62	13		L#/532
1/2"	76	17		L#/522
3/4"	92	18		L#/523
1"	124	25		L#/524

Please insert 'C' for ISO G and 'A' for NPT thread

NON-RETURN VALVES

LZ521, LZ523 Flange interface

- Interface version
- Permit free flow of air in one direction only
- Simple, reliable design
- Light weight
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated and non-lubricated

Operation:

Non-return valves

Operating pressure:

0,2 ... 10 bar

Cracking pressure:

< 0,2 bar

Port sizes:

Interface

Ambient/Media temperature:

-40°C ... +80°C max

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

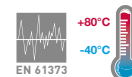
Materials

Body and valve: Aluminium anodized

Spring: Stainless steel

Plug: Brass

Seals: NBR



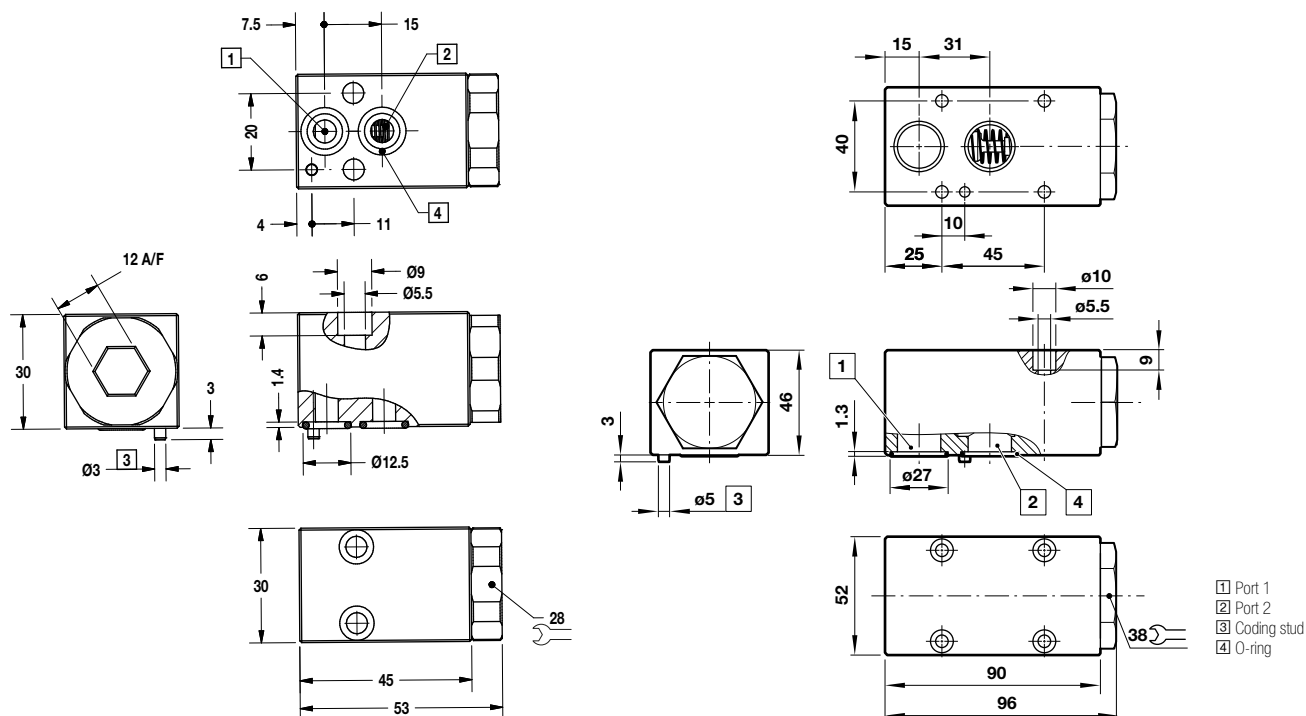
Models

Symbol	Orifice (mm)	Flow factor C *1)	Cv	Kv *2)	Weight (kg)	Model
1 —  — 2	6	4,3	1	0,92	0,10	LZ/521
	19	42	10,3	8,95	0,50	LZ/523

*1) Measured in dm³/(s.bar).

*2) Measured in m³/h.

Dimensions



SHUTTLE VALVE ('OR' LOGIC FUNCTION)

LT65 1/8" & 1/4"

- Allows two independent signal sources to be connected to a common pilot line
- Can be used to perform an 'OR' logic function
- Can be combined to operate from three or more sources
- Valves can be ganged together
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated, inert gases

Operation:

Shuttle valve ('OR' logic function)

Operating pressure:

0,7 ... 10 bar

Port size:

G1/8, G1/4, 1/8 NPT or 1/4 NPT

Mounting:

Line mounted

Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

1/8" version

Body: Zinc alloy

Ball: Chrome

Valve seat: Brass

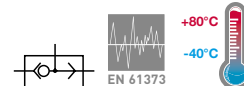
1/4" version

Body: Brass

Ball: Stainless steel

Seat: Brass

Seals: Low nitrile



Models

Symbol	Port size	C dm ³ /s.bar	Cv	Kv m ³ /h	Flow at 6 - 5 bar (l/min)	Weight (kg)	Model
	G1/8	1,7	0,42	0,36	412	0,055	LT65C1800
	1/8 NPT	1,7	0,42	0,36	412	0,055	LT65A1800
	G1/4	2,6	0,64	0,56	631	0,42	LT65C2800
	1/4 NPT	2,6	0,64	0,56	631	0,42	LT65A2800

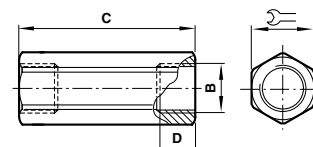
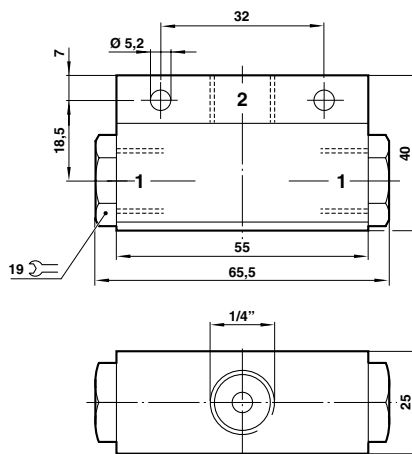
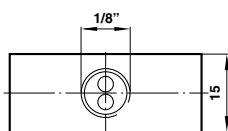
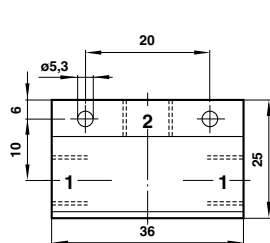
Option selector

LT65★★★00

Thread form	Substitute
ISO G parallel	C
NPT	A

Port size	Substitute
1/8"	18
1/4"	28

Dimensions



SHUTTLE VALVE ('OR' LOGIC FUNCTION)

LT65Z Flange Interface

- Flange interface
- Allows two independent signal sources to be connected to a common pilot line
- Can be used to perform an 'OR' logic function
- Can be combined to operate from three or more sources
- Easy for installation and maintenance
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated or non-lubricated, inert gases

Operation:

Shuttle valve ('OR' logic function)

Operating pressure:

0,7 ... 10 bar

Mounting:

Flange

Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

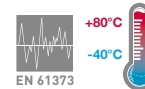
Materials

Body: Aluminium anodized black

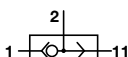
Piston: POM

Valve seat: Brass

Seals: NBR



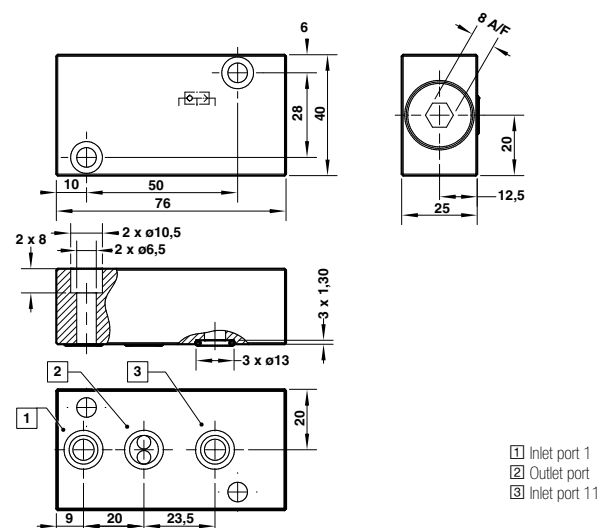
Models

Symbol	Port size	Flow factor C *1)	Cv	Kv*2)	Flow at 6 - 1 bar (l/min)	Weight (kg)	Model
	Flange interface	5,1	1,25	1,1	1650	0,2	LT65Z2800

*1) Measured in $\text{dm}^3/(\text{s} \cdot \text{bar})$.

*2) Measured in m^3/h .

Dimensions



SHUTTLE VALVE ("OR" LOGIC FUNCTION)

40600 G1/4, G 1/2, 1/4 NPT, 1/2 NPT

- Port size: 1/4", 1/2" (ISO G/NPT)
- Allow two independent signal sources to be connected to a common pilot line
- Can be used to perform an 'OR' logic function
- Valves can be ganged together
- Verification according to IEC 61508

Technical Data

Medium:
Filtered, non-lubricated or dry compressed air, instrument air nitrogen and other non-flammable neutral dry fluids

Operating pressure:
1 ... 10 bar

Operation:
Shuttle valve ('OR' logic function)

Port size:
G1/4, G 1/2, 1/4 NPT, 1/2 NPT

Ambient/Media temperature:
-40°C ... +80°C
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Housing: Anodized aluminium 3.0615 or stainless steel 1.4404 (316 L)

Inner parts: Stainless steel

Seals: NBR

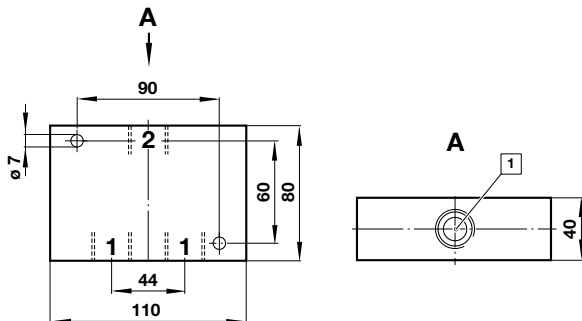


Models

Symbol	Port size	Flow 1 » 2 *1) (l/min)	Flow 2 » 1 *1) (l/min)	Material	Weight (kg)	Model
	G1/4	1900	2100	Aluminium	1,0	4060450
	1/4 NPT	1900	2100	Aluminium	1,0	4060451
	G1/4	1900	2100	Stainless steel	2,5	4060452
	1/4 NPT	1900	2100	Stainless steel	2,5	4060453
	G1/2	2050	2250	Aluminium	1,0	4060650
	1/2 NPT	2050	2250	Aluminium	1,0	4060651
	G1/2	2050	2250	Stainless steel	2,5	4060652
	1/2 NPT	2050	2250	Stainless steel	2,5	4060653

*1) Flow characteristics conforms to ISO6358 [6 x 5 bar].

Dimensions



□ Port size G1/4, G1/2, 1/4 NPT or 1/2 NPT

BALL VALVES

60 series Rp1/8 ... Rp3, G1/8 ... G1

- Ideally suited for most general purpose applications
- Easy installation, simple operation and maintenance free
- Full bore passage giving minimum flow resistance
- 3-way ball valves with actuator interface conforming to ISO 5211 for rotary actuators
- Wide pressure and temperature range

Technical Data

Medium:
Compressed air, water, inert gases and any other fluid compatible with the valve materials

Port size:
Mini G1/8 ... G1/2
Standard Rp1/8 ... Rp3
3-way Rp1/4 ... Rp3/4
Exhausting Rp1/4 ... Rp1 1/2
Lockable G1/4 ... G1
Heavy duty G1/4 ... G1

Operating pressure:
See individual details

Fluid/Ambient temperature:

-30°C ... +220°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body, seats and seals:
See table on following page

Handle with PVC grip: Zinc plated steel (plastic handle on mini ball range)



Symbol	Port size	Series #	Type	Material Body/Body finish	Seats/seals	Operating pressure (bar)	Temperature (°C)	Thread standard	Dimension No.	Model
	G1/8	6011	Mini	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	1	601112118
	G1/4	6011	Mini	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	1	601112128
	G3/8	6011	Mini	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	1	601112138
	G1/2	6011	Mini	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	1	601112148
	G1/8	6011	Mini *1)	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	2	601112218
	G1/4	6011	Mini *1)	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	2	601112228
	G3/8	6011	Mini *1)	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	2	601112238
	G1/2	6011	Mini *1)	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 10	-10 ... +90	ISO 228/1	2	601112248
	Rp1/4	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	602112128
	Rp3/8	6021	Standard	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 40	-20 ... +60	ISO 7/1	3	602112138
	Rp1/2	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	602112148
	Rp3/4	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	602112168
	Rp1	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	602112188
	Rp1 1/4	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	6021121A8
	Rp1 1/2	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	6021121B8
	Rp2	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	6021121C8
	Rp2 1/2	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	6021121D8
	Rp3	6021	Standard	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	3	6021121E8
	Rp1/4 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	4	602112228
	Rp3/8 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/NBR	-0,4 ... 40	-20 ... +60	ISO 7/1	4	602112238
	Rp1/2 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	4	602112248
	Rp3/4 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	4	602112268
	Rp1 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	4	602112288
	Rp1 1/4 (R)	6021	Standard *1)	Brass/Nickel plated	PTFE (virgin)/ EPDM + HNBR	-0,4 ... 40	-15 ... +90	ISO 7/1	4	6021122A8
	Rp1/4	6021	Three way	Brass/Nickel plated	PTFE/PTFE EPM	0 ... 25	-15 ... +120	ISO 7/1	5	602114428
	Rp3/8	6021	Three way	Brass/Nickel plated	PTFE/PTFE EPM	0 ... 25	-15 ... +120	ISO 7/1	5	602114438
	Rp1/2	6021	Three way	Brass/Nickel plated	PTFE/PTFE EPM	0 ... 25	-15 ... +120	ISO 7/1	5	602114448
	Rp3/4	6021	Three way	Brass/Nickel plated	PTFE/PTFE EPM	0 ... 16	-15 ... +120	ISO 7/1	5	602114468
	Rp1/4	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	602113128EX
	Rp3/8	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	602113138EX
	Rp1/2	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	602113148EX
	Rp3/4	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	602113168EX
	Rp1	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	602113188EX
	Rp1 1/4	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	6021131A8EX
	Rp1 1/2	6021	Exhausting	Brass/Nickel plated	PTFE (virgin)/PTFE	0,5 ... 12	0 ... +60	ISO 7/1	6	6021131B8EX
	G1/4	6018	Lockable exhausting	Brass/Nickel plated	PTFE glass filled/PTFE carbon filled	0 ... 14	-10 ... +100	ISO 228/1	7	601812128
	G3/8	6018	Lockable exhausting	Brass/Nickel plated	PTFE glass filled/PTFE carbon filled	0 ... 14	-10 ... +100	ISO 228/1	7	601812138
	G1/2	6018	Lockable exhausting	Brass/Nickel plated	PTFE glass filled/PTFE carbon filled	0 ... 14	-10 ... +100	ISO 228/1	7	601812148
	G3/4	6018	Lockable exhausting	Brass/Nickel plated	PTFE glass filled/PTFE carbon filled	0 ... 14	-10 ... +100	ISO 228/1	7	601812168
	G1	6018	Lockable exhausting	Brass/Nickel plated	PTFE glass filled/PTFE carbon filled	0 ... 14	-10 ... +100	ISO 228/1	7	601812188
	G1/4	6251	Heavy duty	Steel/Zinc phosphate	PTFE (reinforced)/PTFE (reinforced)	-0,8 ... 138	-28 ... +218	ISO 228/1	8	625112128
	G3/8	6251	Heavy duty	Steel/Zinc phosphate	PTFE (reinforced)/PTFE (reinforced)	-0,8 ... 138	-28 ... +218	ISO 228/1	8	625112138
	G1/2	6251	Heavy duty	Steel/Zinc phosphate	PTFE (reinforced)/PTFE (reinforced)	-0,8 ... 138	-28 ... +218	ISO 228/1	8	625112148
	G3/4	6251	Heavy duty	Steel/Zinc phosphate	PTFE (reinforced)/PTFE (reinforced)	-0,8 ... 138	-28 ... +218	ISO 228/1	8	625112168
	G1	6251	Heavy duty	Steel/Zinc phosphate	PTFE (reinforced)/PTFE (reinforced)	-0,8 ... 138	-28 ... +218	ISO 228/1	8	625112188

Typical applications.

6011: Light duty in-line brass ball valves suitable for a wide variety of low pressure industrial uses.

6018: Medium duty in-line brass exhausting ball valves. Venting action & lockout design adds safety feature to valve.

6021: Medium duty in-line brass ball valves for most applications. Available as a standard valve, a three way diverting valve or with a downstream exhaust option.

6251: Heavy duty ball valve, two piece bar stock construction.

*1) Male/female thread.

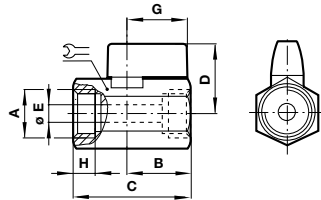
BALL VALVES

60 series Rp1/8 ... Rp3, G1/8 ... G1

● Dimensions

6011 series, mini ball

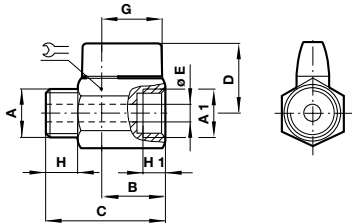
1



Reduced bore, female/female

A	B	C	D	Ø E	G	H		Weight (kg)	Model
G1/8	18	36	22	5,5	19	9	19	0,08	601112118
G1/4	18	36	22	5,5	19	9	19	0,07	601112128
G3/8	21	41	24	8	19	9	21	0,09	601112138
G1/2	25	48	30	10	22	10	25	0,14	601112148

2

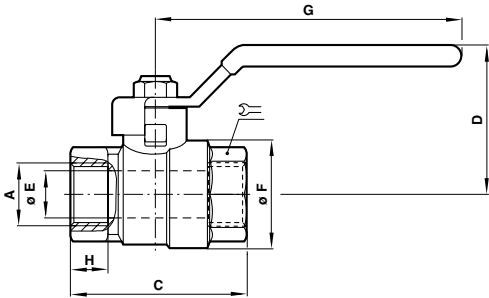


Reduced bore, male/female

A	A1	B	C	D	Ø E	G	H	H1		Weight (kg)	Model
G1/8	G1/8	20	37	22	5,5	19	9	9	19	0,6	601112218
G1/4	G1/4	20	37	22	5,5	19	9	9	19	0,6	601112228
G3/8	G3/8	21	41	24	8	19	9	9	21	0,8	601112238
G1/2	G1/2	25	48	30	10	22	11	11	25	0,13	601112248

6021 series, Standard ball valves

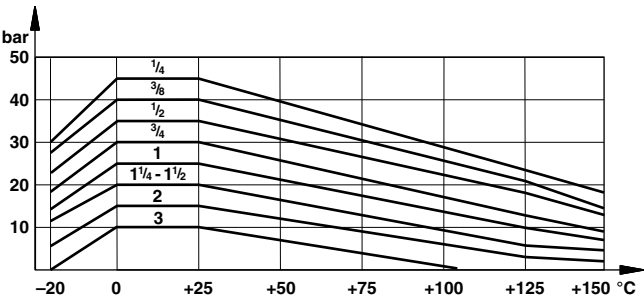
3



Full bore, female/female

A	C	D	Ø E	Ø F	G	H		Weight (kg)	Model
Rp1/4	48	36	8	23	85	12	18	0,13	602112128
Rp3/8	49	36	10	24	85	12	21	0,15	602112138
Rp1/2	60	40	15	30	85	15	25	0,20	602112148
Rp3/4	69	47	20	38	105	16,3	31	0,34	602112168
Rp1	83	51	25	46	105	19,1	38	0,47	602112188
Rp1 1/4	96	63	32	58	130	21,4	47	0,80	6021121A8
Rp1 1/2	106	69	40	70	130	22	54	1,14	6021121B8
Rp2	129	83	50	86	165	25,7	66	2,03	6021121C8
Rp2 1/2	159	99	65	111	248	30,2	85	3,85	6021121D8
Rp3	182	110	80	135	248	33,3	100	6,00	6021121E8

Pressure/temperature diagram

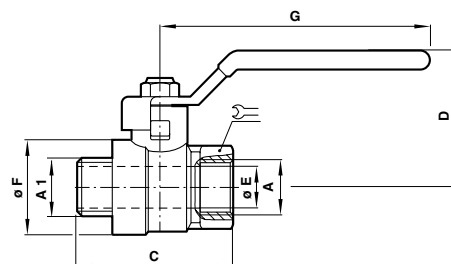


BALL VALVES

60 series Rp1/8 ... Rp3, G1/8 ... G1

6021 series, Standard ball valves

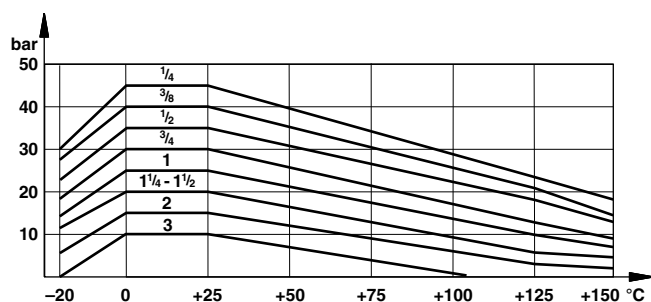
4



Full bore, male/female

A	A1	C	D	Ø E	Ø F	G		Weight (kg)	Model
Rp1/4	Rp1/4	50	36	8	23	85	18	0,13	602112228
Rp3/8	Rp3/8	54	36	10	24	85	21	0,16	602112238
Rp1/2	Rp1/2	65	40	15	30	85	25	0,22	602112248
Rp3/4	Rp3/4	75	47	20	38	105	31	0,37	602112268
Rp1	Rp1	86	51	25	46	105	38	0,51	602112288
Rp1 1/4	Rp1 1/4	99	63	32	58	130	47	0,87	6021122A8

Pressure/temperature diagram

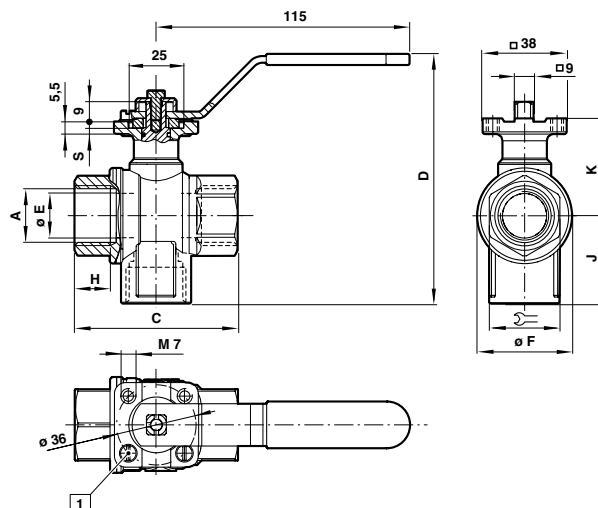


BALL VALVES

60 series Rp1/8 ... Rp3, G1/8 ... G1

6021 series, 3-way ball valve conforms to ISO 5211

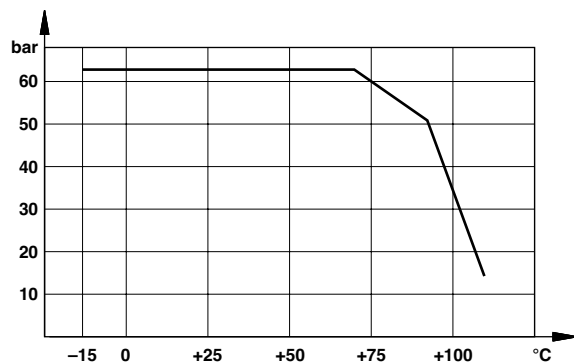
5



3-way full bore

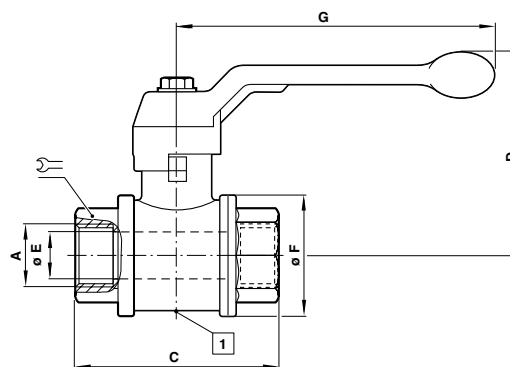
A	C	D	ØF	H	J	K		Weight (kg)	Model
Rp1/4	52	60	28	11	26	29	22	0,33	602114428
Rp3/8	52	60	28	11,5	26	29	22	0,31	602114438
Rp1/2	64	62	34,5	15	33,5	32	27	0,43	602114448
Rp3/4	74	43	43	16	39,5	42	32	0,57	602114468

Pressure/temperature diagram



6021 series, Exhausting ball valve

6



Full bore, female/female

A	C	D	ØE	ØF	G		Weight (kg)	Model
Rp1/4	52	61	8	29	100	22	0,26	602113128EX
Rp3/8	54	61	10	29	100	22	0,23	602113138EX
Rp1/2	69	64	15	36	100	27	0,37	602113148EX
Rp3/4	77	76	20	45	120	33	0,63	602113168EX
Rp1	89	80	25	54	120	40	0,91	602113188EX
Rp1 1/4	103	98	32	65	150	50	1,55	6021131A8EX
Rp1 1/2	114	104	40	79	150	-	2,30	6021131B8EX

BALL VALVES

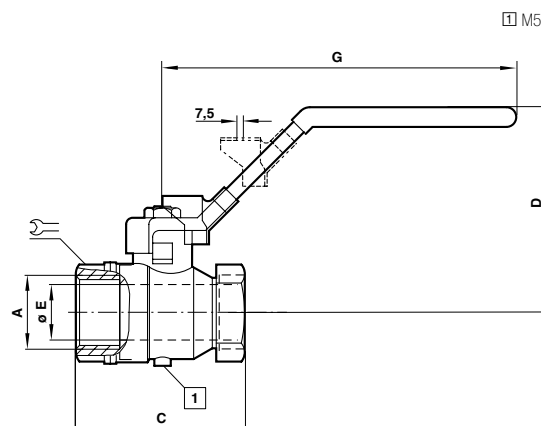
60 series Rp1/8 ... Rp3, G1/8 ... G1

6018 series, Lockable exhausting ball valve

7



Full bore, female/female



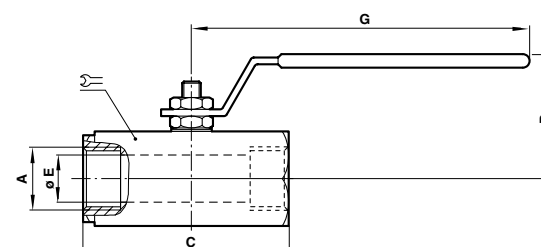
A	C	D	Ø E	G		Weight (kg)	Model
G1/4	44	45	8	93	20	0,17	601812128
G3/8	44	45	9	93	20	0,16	601812138
G1/2	58	50	14	93	24	0,24	601812148
G3/4	64	57	19	114	30	0,37	601812168
G1	81	61	24	114	40	0,62	601812188

Lever lockable only in closed position. Standard handle accepts Ø 7 mm shackle.

Test specification differs from standard. Please consult our Technical Service for further details.

6251 series, Carbon steel ball valve

8



A	C	D	Ø E	G		Weight (kg)	Model
G1/4	50	41	10	96	25	0,27	625112128
G3/8	50	41	10	99	25	0,27	625112138
G1/2	63	43	13	96	32	0,36	625112148
G3/4	75	52	17	129	37	0,64	625112168
G1	88	58	22	129	44	1,09	625112188

To order 'Tee' handled version change 4th character to 2.

BALL VALVES

T10 series G1/4 or interface version

- Low operating forces
- High durability
- Easy installation, simple operation and maintenance free
- Full bore passage to maximise flow rate
- Wide pressure and temperature range

Technical Data

Medium:

Compressed air, water, inert gases and any other fluid compatible with the valve materials

Operating pressure:

0 ... 12 bar

Port size:

1/4 and interface, alternative port sizes on request

Interface valve with position switch

Switching element:

Microswitch

Voltage:

250 V a.c. max

Current:

6 A max

Protection class:

IP65 (DIN 40 050) with connector

Electrical connection:

DIN EN 175301-803

(DIN 43650) Form A

Fluid/Ambient temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body and end connectors: Aluminium

Handle: Zinc alloy

Seat: PTFE

'O' rings: Synthetic rubber



Models - Standard options

Symbol	Port size	Version	Position indicator	Weight (kg)	Dimension No.	Model
	G1/4	exhausting	none	0,2	1	T10-210-D2BG *1)
	G1/4	full bore	none	0,3	2	T10-220-D2BG
	Interface	exhausting	none	0,4	3	T10-N10-D2BN
	Interface	exhausting	integrate	0,5	4	T10-N30-D2BN

Note:

Different sizes and locking/latching lever handles available on request.

*1) Maybe 2/2 function achievable by plugging exhaust ports.

Accessories

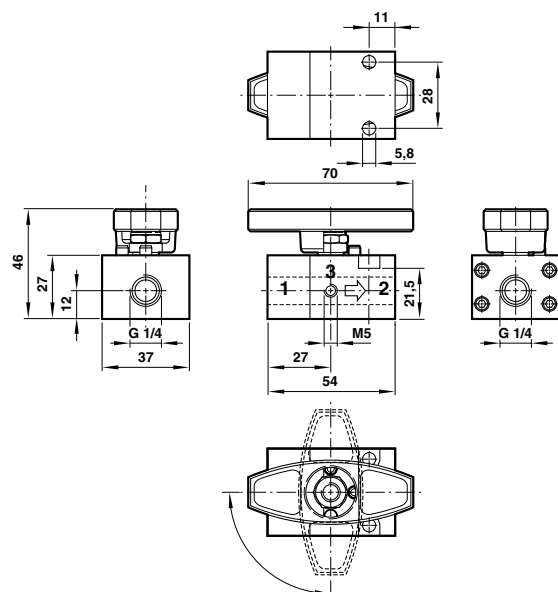
Silencer	Plug Maybe 2/2 function achievable by plugging exhaust ports	Connector	Connector with moulded cable
T40C0500 (M5)	160050005	0570275	M/P 43315/1 (1 m)
T40C2800 (G1/4)			M/P 43315/3 (3 m)
MS002A (1/4 NPT)			

BALL VALVES

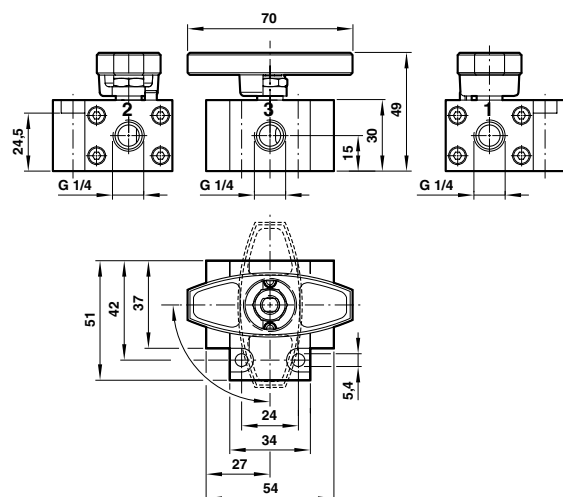
T10 series G1/4 or interface version

● Dimensions

1 G1/4 thread



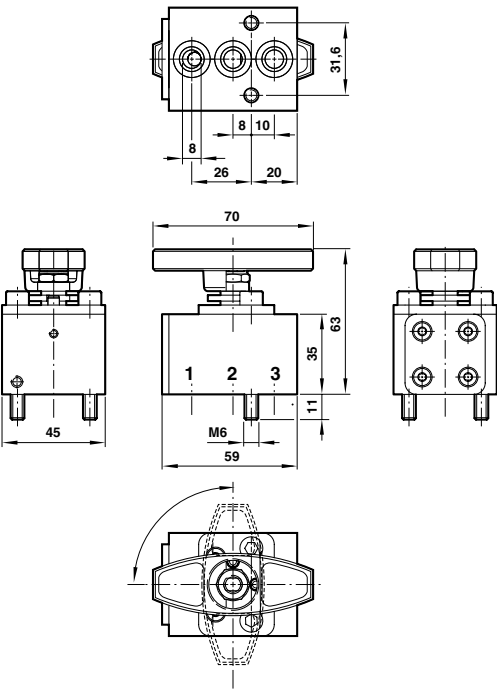
2 G1/4 thread, full bore



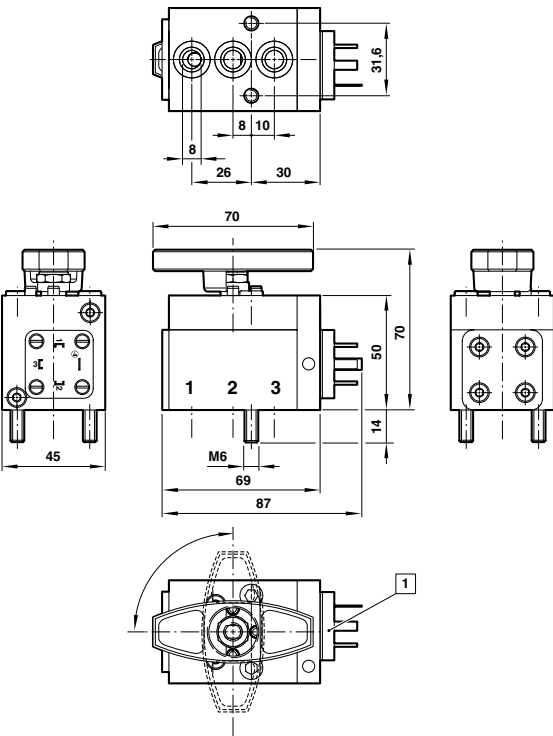
BALL VALVES

T10 series G1/4 or interface version

3 Interface



4 Interface with position switch



1 Corresponding to
DIN EN 175301-803 (DIN 43650)
Form A

2 Open valve
3 Closed valve
1 Common

BALL VALVES

VT20 ... 50 series 1/2" ... 1 1/4" or interface version

- NF F 11 806 compliant *1)
- Leak tight design
- Wide pressure and temperature range
- High durability
- Different handle options
- High corrosion resistance
- Easy to maintain
- Different monitoring options

*1) Interface ball valve does not fulfill required flow due to dimension restriction of the standard

Technical Data

Medium:

Compressed air, water, inert gases and any other fluid compatible with the valve materials

Maximum operating pressure:

0 ... 12 bar

Handle options:

Lever handle, Latching handle, Latching handle with locking (all options available in white, red, yellow and black)

Monitoring options:

Open position, Close position

Open/close position,

Open/open position *2),

Close/close position *2)

*2) Interface version with two switches, Inline version with DPDT switch

Ambient/Media temperature:

-40°C ... +85°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Storage temperature:

-55°C ... +85°C

Materials

Body and end connectors and handles: Aluminium

Seat: PTFE

Elastomers: NBR

'O' rings: Synthetic Rubber

Ball, Stem: Brass

Screws: Steel



Models

Symbol	Port size	Version 3/2 valve	Position Indicator	Weight (kg)	Dimension No.	Model
	G1/2	Inline	No	0,4	1	VT20-410-F2JG
	G3/4			0,7	1	VT30-610-F2JG
	G1			1	1	VT40-810-F2JG
	G1 1/4			1,8	1	VT50-A10-F2JG
	G1/2	Inline	Close/close position	0,5	1	VT20-450-F2JG
	G3/4			0,9	1	VT30-650-F2JG
	G1			1,2	1	VT40-850-F2JG
	G1 1/4			2	1	VT50-A50-F2JG
	DN 15		No	0,6	2	VT20-N10-D2JN
	DN 25			1,4	3	VT40-N10-D2JN
	DN 15	Interface	Close position	1	2	VT20-N30-D2JN
	DN 25			1,7	3	VT40-N30-D2JN

Compliant Standards:

Interface version complying with NF F 11 101

Working complying with NF F 11 806 *3)

Protection grades against external agents NF F 11 102

- Against exterior solid bodies: S6

- Ice protection: G1

- Against mechanical chocks by impact: M9

- Against corrosion: C5 (1000 hours)

- Against throwing ballast: K7 (VT20, VT30) & K9 (VT40, VT50) *4)

Shock & vibration: EN 61373 category 1, class A&B; MIL-STD-810G; GOST 17516.1; GOST 30631

Fire&Smoke: EN 45545, NFPA -130, NF F 16-101

*3) Interface ball valve does not fulfill required flow due to dimension restriction of the standard.

*4) The valve retain structural & sealing integrity.

BALL VALVES

VT20 ... 50 series 1/2" ... 1 1/4" or interface version

Electrical parameters

Inline valve with position switch

Switching element:

Microswitch with roller plunger

Interface valve with position switch

Switching element:

Microswitch

Voltage:

250 V a.c. max

Current:

Inline: 5 A

Interface: 6 A

Protection class:

IP65 (DIN 40050) with appropriate connector

Electrical connection:

Single switch:

DIN EN 175301-803 (DIN 43650)

Form A

Double switch:

DIN EN 175201-804 (DIN 43651)

free cable

Inline:

Free cable end

Option selector

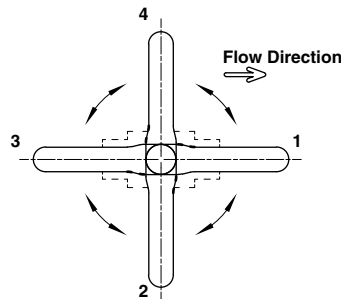
VT★★-★★★-★2★★

Series size	Substitute
DN 15	20
DN 20	30
DN 25	40
DN 32	50
Thread size	Substitute
1/2" (DN 15)	4
3/4" (DN 20)	6
1" (DN 25)	8
1 1/4" (DN 32)	A
No thread (DN 15, DN 25)	N
Monitoring option	Substitute
No monitoring	1
Open Position	2
Close Position	3
Open/Open Position	4
Close/Close Position	5
Close/Close Position	6
Handle position	Substitute
1 open; 2 close	0
1 close; 2 open	1
3 open; 4 close	2
4 close; 1 open	3

Thread type	Substitute
PTF	A
ISO Rc	B
G thread	G
No thread	N
Handle	Substitute
No handle	N
Lever handle	
White	H
Black	J
Red	K
Yellow	L
Latching handle	
White	O
Black	P
Red	R
Yellow	S
Port and locking	Substitute
Inline	
No Lock	F
Lock closed	T
Lock closed and open	H
Interface	
No lock	D
Lock closed	E
Lock closed and open	C

Other options available upon request

Handle position selector



BALL VALVES

VT20 ... 50 series 1/2" ... 1 1/4" or interface version

Spark quenching with d.c. voltage

1. Diode D in parallel to inductive load.

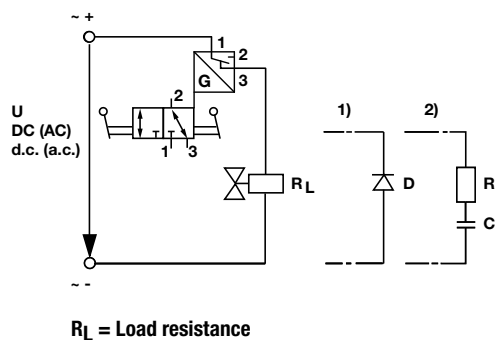
Observance of correct polarity (positive pole to cathode).

Dimensioning specifications for quenching diode:

Rated reverse voltage at diode: $U_D \geq 1,5 \times U \text{ d.c.} - 2 \times U \text{ a.c.}$

Rated current at diode: $I_N \geq I_{Load}$

Selection of a quick switching diode (recovery time $t_{rr} \leq 200 \text{ ns}$).



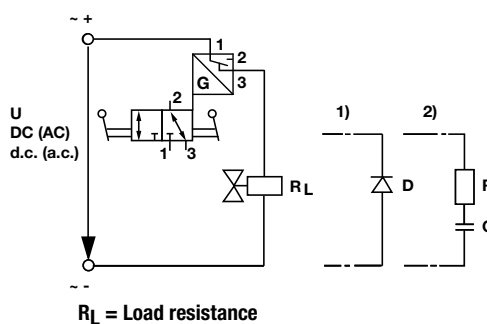
2. RC link in parallel to load in parallel to switching contact.

Suited for d.c. and a.c. voltage.

Dimensioning principles:

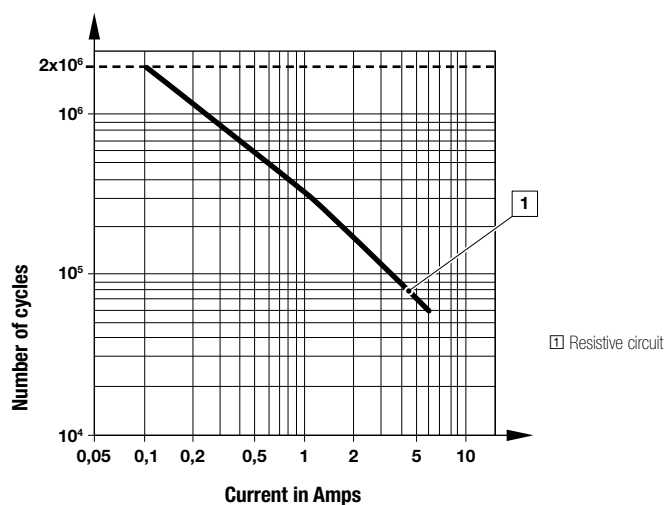
$R \text{ in } \Omega \approx 0,2 \times R_{Load} \text{ in } \Omega$

$C \text{ in } [\mu F] \approx I_{Load} \text{ in } [A]$



Lifetime expectancy

Interface version: Lifetime expectancy curve 250 V a.c.



Inline version: Mechanical life 5 M cycles min. at 60 CPM, Electrical life: 1A 110 V d.c. 500,000 cycles applicable for NC circuit

BALL VALVES
VT20 ... 50 series 1/2" ... 1 1/4" or interface version

● **Accessories**

Connector 0570110		Connector 0660689		Seal kit		Handle kit		External switch kit
								
0570110		0660689		VT**-KITAN		VT**-KITB**		VTXX-KITE *5)

*5) Available for inline version only.

For exact PN please use the following option selectors.

● **Option selector**

Seal kit

Series size	Substitute
DN 15	20
DN 20	30
DN 25	40
DN 32	50

VT★★-KITA★

Interface	Substitute
Inline	T
Manifold	N

Handle kit

Series size	Substitute
DN 15	20
DN 20	30
DN 25	40
DN 32	50
Type of handle	Substitute
Lever handle kit	B
Latching handle kit	C
Latching handle + locking kit	D

VT★★-KIT★★★

Handle position	Substitute
1 open; 2 close	A
1 close; 2 open	B
3 open; 4 close/4 close; 1 open	C
Handle colour	Substitute
White	W
Black	B
Red	R
Yellow	Y

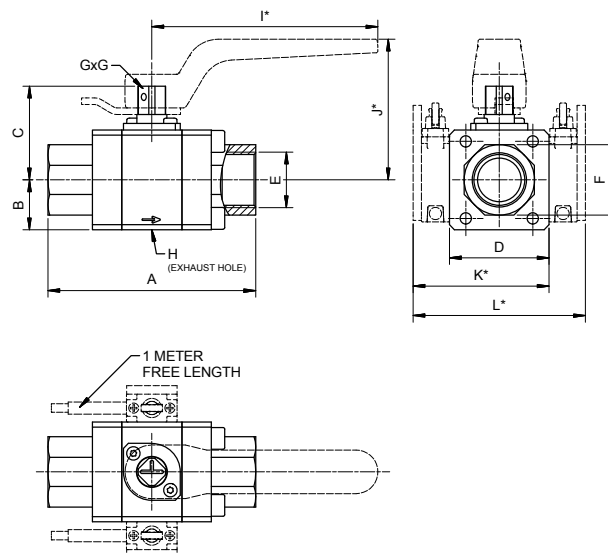
BALL VALVES

VT20 ... 50 series 1/2" ... 1 1/4" or interface version

Dimensions

Inline series

1



1 m free length

Inline ball valves without monitoring

Series	Size	A	B	C	D	E	F	GxG	H *	I *1)	J *1)	K *1)	L *1)
VT20-41X-XXXX	DN 15	84	20	39	40	G1/2" - 15	28	12x12	Ø5	82	59	-	-
VT30-61X-XXXX	DN 20	114	26	44	55	G3/4" - 18	36	12x12	Ø6,5	114	68	-	-
VT40-81X-XXXX	DN 25	124	30	54	60	G1" - 20	42	14x14	Ø6,5	135	82	-	-
VT50-A1X-XXXX	DN 32	140	40	62	79	G1 1/4" - 20	55	18x18	Ø9	155	90	-	-

* Exhaust port not threaded

*1) Dimensions with levers and monitoring.

Inline ball valves with monitoring

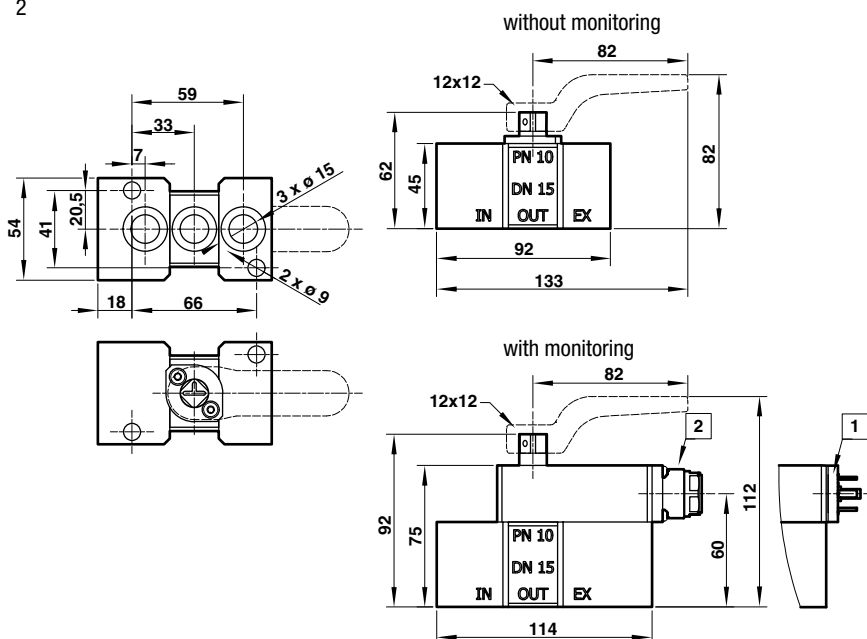
Series	Size	A	B	C	D	E	F	GxG	H *	I *1)	J *1)	K *1)	L *1)
VT20-4XX-XXXX	DN 15	84	20	43	40	G1/2" - 15	28	12x12	Ø5	82	63	70	100
VT30-6XX-XXXX	DN 20	114	26	48	55	G3/4" - 18	36	12x12	Ø6,5	114	72	77	99
VT40-8XX-XXXX	DN 25	124	30	56	60	G1" - 20	42	14x14	Ø6,5	135	84	82	104
VT50-AXX-XXXX	DN 32	140	40	66	79	G1 1/4" - 20	55	18x18	Ø9	155	94	101	123

* Exhaust port not threaded

*1) Dimensions with levers and monitoring.

VT20-N series

2



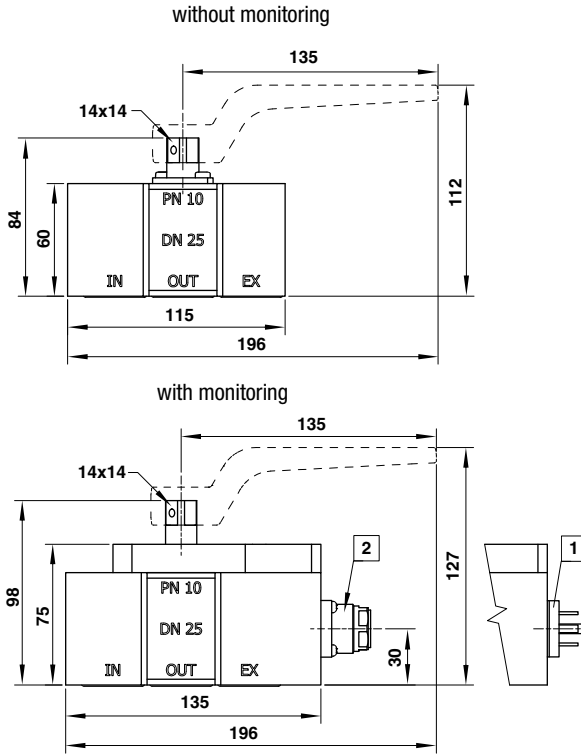
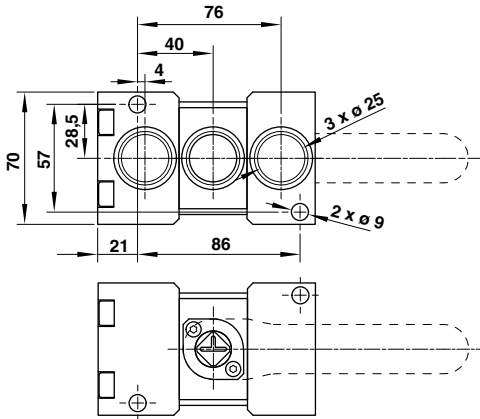
□ DIN EN 175301-803 (DIN 43650) Form A
 □ DIN EN 175201-804 (DIN 43651)

BALL VALVES

VT20 ... 50 series 1/2" ... 1 1/4" or interface version

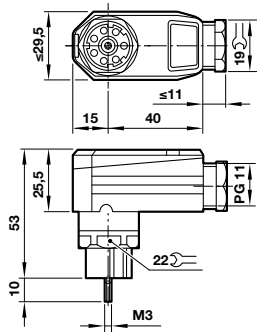
VT40-N series

3



□ DIN EN 175301-803 (DIN 43650) Form A
 □ DIN EN 175201-804 (DIN 43651)

Pin connector
 Model: 0660689



SINTERED BRONZE SILENCERS

T40 M5, 1/8" ... 1"

- Reduce the noise levels of pneumatic equipment
- Compact and efficient
- Screw directly into the exhaust port
- Prevent the ingress of dirt
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated and non-lubricated, vacuum, Inert gases

Operation:

Exhaust silencer or inlet filter

Operating pressure:

10 bar

Mounting:

Directly in exhaust or vent port

Ambient/Media temperature:

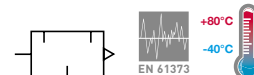
-40°C ... +80°C max

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Element: Sintered bronze

Body: Brass



Models

Symbol	Port size	Flow factor Cv	Kv *1)	Continuous sound pressure level *2)		Weight		Model with ISO G-threads BSPP	Model with ISO R-threads BSPT
				0,7 bar	6 bar	kg	lb		
	M5	0,2	0,21	56	70	0,004	0.009	T40M0500	—
	1/8"	0,54	0,53	66	75	0,01	0.022	T40C1800	T40B1800
	1/4"	1,6	1,34	68	78	0,02	0.044	T40C2800	T40B2800
	3/8"	3,5	2,98	75	84	0,045	0.099	T40C3800	T40B3800
	1/2"	5,1	4,47	75	88	0,07	0.154	T40C4800	T40B4800
	3/4"	9	7,88	87	96	0,13	0.287	T40C6800	T40B6800
	1"	11,6	10,22	93	100	0,2	0.441	T40C8800	T40B8800

*1) Measured in m³/h.

*2) SPL in dBA at 1 m from unit.

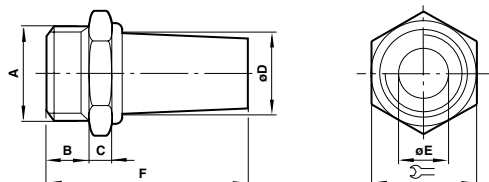
Option selector

T40★★★00

Thread form	Substitute	Port size	Substitute
Metric	A	M5	05
ISO-BSPT	B	1/8"	18
ISO-BSPP	C	1/4"	28
		3/8"	38
		1/2"	48
		3/4"	68
		1	88

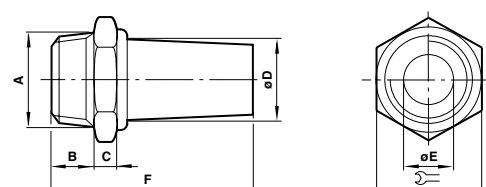
Dimensions

T40M



A	B	C	Ø D	Ø E	F	G	Model
M5	5	15	5	2,5	20	7	T40M0500
G1/8B	6	18	9,5	6	24	13	T40C1800
G1/4B	8	25	12	8,5	33	17	T40C2800
G3/8B	10	34	17	12	44	22	T40C3800
G1/2B	12	44	20	14,5	56	27	T40C4800
G3/4B	14	66	26	19	80	32	T40C6800
G1B	16	66	31	25	82	41	T40C8800

T40B



A	B	C	Ø D	Ø E	F	G	Model
R1/8	9,5	18	9,5	6	27,5	13	T40B1800
R1/4	11	25	12	8,5	36	17	T40B2800
R3/8	12,5	34	17	12	46,5	22	T40B3800
R1/2	16	44	20	14,5	60	27	T40B4800
R3/4	19	66	26	19	85	32	T40B6800
R1	22,5	66	31	25	88,5	41	T40B8800

HEAVY DUTY SILENCERS

MA & MB series 1/8" ... 2"

- Reduce the noise levels of pneumatic equipment
- High flow capacity with low back pressure
- Brass mesh screen and aluminium construction
- Provide improved flow, longer life and cleanable element
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Compressed air, filtered, lubricated and non-lubricated, Inert gases

Operation:

Exhaust silencer

Operating pressure:

20 bar max.

Ambient/Media temperature:

-40°C ... +80°C max

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium and shell

Filter element: Brass mesh



Models

Male thread

Port size	Flow factor Cv	C*1	Kv*2	Weight (kg)	Model ISO R	Model NPT
1/8	2	8,2	1,75	0,03	MB001B	MB001A
1/4	2,2	9	1,92	0,03	MB002B	MB002A
3/8	2,94	12	2,56	0,03	MBP03B	MBP03A
3/8	4,78	19,5	4,16	0,10	MB003B	MB003A
1/2	5,49	22,4	4,78	0,09	MB004B	MB004A
3/4	5,49	22,4	4,78	0,09	MBP06B	MBP06A
3/4	12,5	51	10,78	0,45	MB006B	MB006A
1	15,68	64	13,65	0,40	MB008B	MB008A
1 1/4	16,67	68	14,5	0,40	MBP10B	MBP10A

*1) Measured in dm³/(s.bar).

*2) Measured in m³/h.

Female thread

Port size	Flow factor Cv	C*1	Kv*2	Weight (kg)	Model ISO Rc	Model NPT
1/8	2	8,2	1,75	0,03	MA001B	MA001A
1/4	2,57	10,5	1,29	0,03	MA002B	MA002A
3/8	5,83	23,8	5,07	0,10	MA003B	MA003A
1/2	5,71	23,3	4,97	0,09	MA004B	MA004A
3/4	16,18	66	14,07	0,45	MA006B	MA006A
1	16,67	68	14,5	0,40	MA008B	MA008A

Port size	Flow factor Cv	C*1	Kv*2	Weight (kg)	Model ISO G	Model NPT
1 1/4	26,7	110	23,45	0,62	MA010C	MA010A
1 1/2	40,93	167	35,6	0,60	MA012C	MA012A
2	53,9	220	46,9	0,76	MA016C	MA016A

HEAVY DUTY SILENCERS

MA & MB series 1/8" ... 2"

Option selector

Male thread

MB★★★★

Port size	Substitute
1/8"	001
1/4"	002
3/8"	P03*
3/8"	003
1/2"	004
3/4"	P06*
3/4"	006
1"	008
1 1/4"	P10*

* Compact size.

Thread form	Substitute
NPT	A
ISO R	B

Female thread

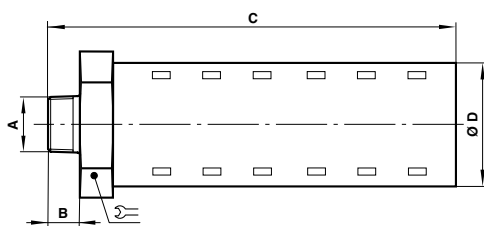
MA★★★★

Port size	Substitute
1/8"	001
1/4"	002
3/8"	003
1/2"	004
3/4"	006
1"	008
1 1/4"	010
1 1/2"	012
2"	016

Thread form	Substitute
NPT	A
ISO Rc	B *1)
ISO G parallel	C *1)

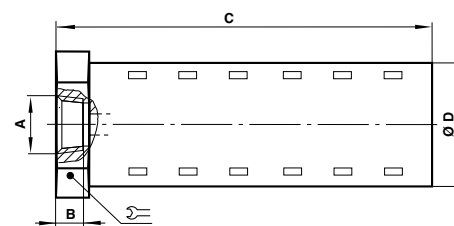
*1) See model on technical data table.

Dimensions



A	B	C	D		Model
1/8 inch	9	51	21	21	MB001#
1/4 inch	13	55	21	21	MB002#
3/8 inch	13	55	21	21	MBP03#
3/8 inch	13	88	32	32	MB003#
1/2 inch	17	92	32	32	MB004#
3/4 inch	17	92	32	32	MBP06#
3/4 inch	20	134	51	51	MB006#
1 inch	23	138	51	51	MB008#
1 1/4 inch	26	140	51	51	MBP10#

Thread form: A = NPT, B = ISO R



A	B	C	Ø D		Model
1/8 inch	6	42	21	21	MA001#
1/4 inch	9	45	21	21	MA002#
3/8 inch	9	78	32	32	MA003#
1/2 inch	12	83	32	32	MA004#
3/4 inch	12	118	51	51	MA006#
1 inch	15	118	51	51	MA008#
1 1/4 inch	15	144	64	64	MA010#
1 1/2 inch	15	144	64	64	MA012#
2 inch	16	168	76	76	MA016#

Thread form: A = NPT, B = ISO Rc, C = 1 1/4" ... 2" only

EXHAUST FILTER

M/1500 G1/8 ... G1

- Prevent the ingress of dirt with minimal flow restriction
- Robust and compact
- Screw directly into the exhaust port
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:
Compressed air, filtered, lubricated and non-lubricated, Inert gases

Operation:
Exhaust silencer

Mounting:
Directly in the exhaust port

Operating pressure:
10 bar max.

Ambient/Media temperature:
-40°C ... +80°C max
Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium alloy
Element: Sintered bronze

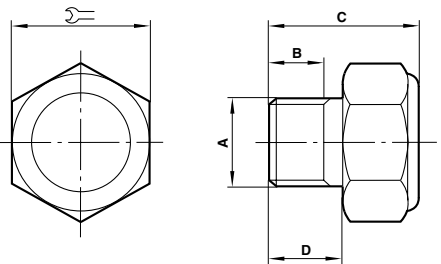


Models

	Port size	Flow factor		Weight		Model
		Cv	Kv *1)	kg	lb	
	G1/8	0,49	0,426	0,006	0.013	M/1511
	G1/4	1,37	1,19	0,018	0.040	M/1512
	G1/2	2,75	2,39	0,030	0.066	M/1514
	G3/4	5,05	4,39	0,050	0.110	M/1516
	G1	6,47	5,62	0,091	0.200	M/1518

*1) Measured in m³/h.

Dimensions



A	B	C	D		Model
G1/8	6	16	8	15	M/1511
G1/4	8	22	10	23,5	M/1512
G1/2	10,5	25	13	30,5	M/1514
G3/4	14	31	16	42,5	M/1516
G1	15	35	19	47	M/1518

EXHAUST GUARD

0613422, 0613423 1/4" & 1/2"

- Prevent the ingress of dirt with minimal flow restriction
- Robust and compact
- Screw directly into the exhaust port
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Lubricated or non-lubricated compressed air, inert gases

Operation:

The non-return function protects the spring chamber of pneumatic actuators in particular against aggressive ambient air

Operating pressure:

10 bar max.

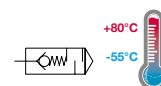
Operating temperature:

-55°C ... +80°C max

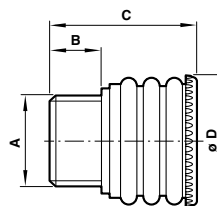
Materials

Housing: POM

'O'-rings: VMQ



● Dimensions



A	Suitable for	B	C	Ø D	Weight	Model
1/4"	G1/4, 1/4 NPT	10	26,5	21	5 g	0613422
1/2"	G1/2, 1/2 NPT	12	33,5	29	11 g	0613423

STRAINER

0310000 G1/4 ... G2

- Compact design
- Wide temperature range
- Shock and vibration resistant to EN 61373, Category 1, class A and B

Technical Data

Medium:

Neutral, semi-neutral and acid/alkaline gases and liquids

Application:

Strainers are built into pipelines upstream of controls, measuring instruments etc, to protect the equipment against clogging and breakdown.

Operating pressure:

0 ... 16 and 0 ... 100 bar

Operating viscosity:

160 mm²/s max.

Flow direction:

Indicated by arrow

Mounting position:

Filter element tilted downwards

Fluid/Ambient temperature:

-40°C ... +100°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

See table



Models

Strainer for neutral and semi-neutral gases and liquids

Symbol	Port size	Orifice (mm)	Operating pressure (bar)	Mesh size (mm)	Materials Body	Plug	Seals	Mesh	Weight (kg)	Spare filters	Model
	G1/4	6	0 ... 16	0,15	Brass	Brass	NBR	1.4301	0,43	1105085	0310040
	G1/4	6	0 ... 16	0,35	Brass	Brass	NBR	1.4301	0,43	1105086	0310041
	G3/8	10	0 ... 16	0,15	Brass	Brass	NBR	1.4301	0,41	1105085	0310140
	G3/8	10	0 ... 16	0,35	Brass	Brass	NBR	1.4301	0,41	1105086	0310141
	G1/2	12	0 ... 16	0,15	Brass	Brass	NBR	1.4301	0,37	1105085	0310240
	G1/2	12	0 ... 16	0,35	Brass	Brass	NBR	1.4301	0,37	1105086	0310241
	G3/4	20	0 ... 16	0,15	Brass	Brass	NBR	1.4301	1,17	1105091	0310340
	G3/4	20	0 ... 16	0,35	Brass	Brass	NBR	1.4301	1,17	1105092	0310341
	G1	25	0 ... 16	0,15	Brass	Brass	NBR	1.4301	1,03	1105091	0310440
	G1	25	0 ... 16	0,35	Brass	Brass	NBR	1.4301	1,03	1105092	0310441
	Rp1 1/4	32	0 ... 16	0,25	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	1,12	1105184	0311702
	Rp1 1/4	32	0 ... 16	0,50	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	1,12	1105181	0311701
	Rp1 1/2	40	0 ... 16	0,25	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	1,38	1105185	0311802
	Rp1 1/2	40	0 ... 16	0,50	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	1,38	1105182	0311801
	Rp2	50	0 ... 16	0,25	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	2,51	1105186	0311902
	Rp2	50	0 ... 16	0,50	Brass, nickel plated	Brass, nickel plated	NBR	1.4401	2,51	1105183	0311901

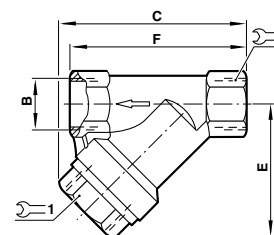
Strainer for acid and alkaline gases and liquids

Symbol	Port size	Orifice (mm)	Operating pressure (bar)	Mesh size (mm)	Materials Body	Plug	Seals	Mesh	Weight (kg)	Spare filters	Model
	G1/2	12	0 ... 100	0,05	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	0,37	1102066	0313252
	G1/2	12	0 ... 100	0,15	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	0,37	1102067	0313250
	G1/2	12	0 ... 100	0,35	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	0,37	1102068	0313251
	G3/4	20	0 ... 100	0,05	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	1,17	1102069	0313352
	G3/4	20	0 ... 100	0,15	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	1,17	1102070	0313350
	G3/4	20	0 ... 100	0,35	Brass, nickel plated	Brass, nickel plated	FKM/PTFE	1.4301	1,17	1102071	0313351

STRAINER

0310000 G1/4 ... G2

● Dimensions



B	C	E *	F	1	1	Model
G1/4	83	57	80	27	24	0310040
G1/4	83	57	80	27	24	0310041
G3/8	83	57	80	27	24	0310140
G3/8	83	57	80	27	24	0310141
G1/2	83	57	80	27	24	0310240
G1/2	83	57	80	27	24	0310241
G3/4	110	82	105	41	41	0310340
G3/4	110	82	105	41	41	0310341
G1	110	82	105	41	41	0310440
G1	110	82	105	41	41	0310441
Rp1 1/4	110	76	110	50	30	0311702
Rp1 1/4	110	76	110	50	30	0311701
Rp1 1/2	120	84	120	55	30	0311802
Rp1 1/2	120	84	120	55	30	0311801
Rp2	150	102	150	70	36	0311902
Rp2	150	102	150	70	36	0311901

* Sufficient clearance (pipe center to floor 2x dimension 'E') must be allowed for removal of the filter element.

STRAINER

0310000 G1/4 ... G2

● Resistance list

Fluid	Chemical formula	Concentration %	Temperature °C	+ = qualified
Aeroshell Fluid 4	-	100	80	+
Ethanol	C ₂ H ₅ OH	96	60	+
Äthylglykol	C ₂ H ₅ -O-CH ₂ -CH ₂ OH	100	60	+
Ethylene glykol	(CH ₂ OH) ₂	100	60	+
Amylalkohol	C ₅ H ₁₁ OH	100	60	+
Barium hydroxide	Ba(OH) ₂	all	80	+
Benzine	-	-	20	+
Benzol	C ₆ H ₆	100	80	+
Benzyl alcohol	C ₆ H ₅ CH ₂ OH	100	80	+
Borax	Na ₂ B ₄ O ₇ ·10H ₂ O	all	80	+
Brake fluid such as ATE-SL	-	100	80	+
Butane	C ₄ H ₁₀	100	20	+
Butadiene	H ₂ C=CH-CH=CH ₂	100	20	+
n-butanol	C ₄ H ₉ OH	100	60	+
Chloroform	CHCl ₃	100	60	+
Diesel	-	-	150	+
Pressure air	-	-	180	+
Formaldehyd	HCHO	37	20	+
Freon				
R 11	CCl ₃ F	100	60	+
R 12	CCl ₂ F ₂	100	60	+
R 13	CClF ₃	100	20	+
R 14	CF ₄	100	20	+
R 113	CCl ₂ F-CClF ₂	100	20	+
R 114	CClF ₂ -CClF ₂	100	80	+
R 115	CClF ₂ -CF ₃	100	60	+
Fyrquel	-	100	-	+
Glycerin	C ₃ H ₇ (OH) ₃	100	120	+
Gear fluid ATF	-	100	130	+
Helium	He	100	200	+
Fued oil	-	100	150	+
Hexane	C ₆ H ₁₄	100	20	+
Methanol	CH ₃ OH	100	60	+
Pertroleum	-	-	150	+
Sodium carbonate	Na ₂ CO ₃	20	80	+
Caustic soda	NaOH	10	20	+
Sodium sulphate	Na ₂ SO ₄	20	60	+
Perchloräthylene	CCl ₂ =CCl ₂	100	80	+
Phenol	C ₆ H ₅ OH	90	80	+
Propane	C ₃ H ₈	100	20	+
n-Propanol	C ₃ H ₇ OH	100	80	+
Dioxygen ¹⁾	O ₂	100	20	+
Toluol	C ₆ H ₅ CH ₃	100	20	+
Trichloräthylene	CHCl = CCl ₂	100	80	+
Water	H ₂ O	-	100	+
Water vapour	H ₂ O	-	120	+
Hydrogen peroxide	H ₂ O ₂	30	20	+
Xylol	C ₆ H ₄ (CH ₃) ₂	100	60	+

1) Oil and grease free.

Equipment life may be influenced by operation in different pressure, temperature and concentration ranges and by additives, contamination and deposits. If in doubt, tests should be carried out under operating conditions. Enquiries or orders for equipment should include precise details of the media and operating conditions whenever possible.

No warranty is implied by the information provided in the resistance table.

PNEUMATIC VISUAL INDICATORS

74749-60, 74749-61 1/4

- Port size: 1/4" (ISO G/NPT)
- Indicate the presence or absence of a pneumatic signal
- Contrasting colour combinations for positive identification

Technical Data

Medium:

Compressed air, filtered, dry or lubricated

Pressure ranges:

See table below

Port size:

G1/4 or 1/4 NPT

Ambient/Media temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Stainless steel with clear plastic sleeve

Spring: Stainless steel

Elastomers: NBR

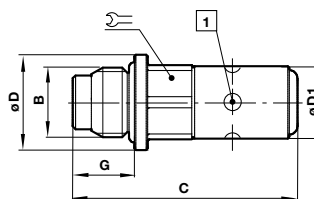


Models

Symbol	Port size	Operation pressure (bar)	On rising pressure - Colour change		On decreasing pressure - Colour change		Colours		Model
			Begins at (bar)	Fully changed at (bar)	begins at (bar)	Fully changed at (bar)	Normal	Actuated	
	1/4 NPT	1 ... 10	1,8 (± 0,5)	3,0 (± 0,5)	2,0 (± 0,5)	1,2 (± 0,5)	Red	Green	74749-60
	G 1/4	1 t 10	1,8 (± 0,5)	3,0 (± 0,5)	2,0 (± 0,5)	1,2 (± 0,5)	Red	Green	74749-61

Dimensions

Visual colour
Red (unactuated)
Green (actuated)



B	C	Ø D	Ø D1	G		Weight (g)	Model
G 1/4	42	18	14	11,5	14	35	74749-61
1/4 NPT	42	18	14	16	14	35	74749-60

GENERAL PURPOSE FILTER

A1401-07 Flange interface

- Wide temperature range
- Easy installation and maintenance
- Shock and vibration tested to EN 61373, Category 1, Class A and B

Technical Data

Medium:

Compressed air only

Operation:

General purpose filter

Maximum operating pressure:

17 bar

Filter element:

40 µm

Mounting:

Flange

Flow:

3300 l/min

Ambient/Media temperature:

-40°C ... +80°C

Air supply must be dry enough to avoid ice formation at temperatures below +2°C

Materials

Body: Aluminium anodized

Element: Sintered bronze

Seals: FKM, NBR

Plug: Brass



Models

Symbol	Port size	Filter element (µm)	Weight (kg)	Model
	Flange interface	40	0,42	A1401-07

Service Kit

Replacement elements

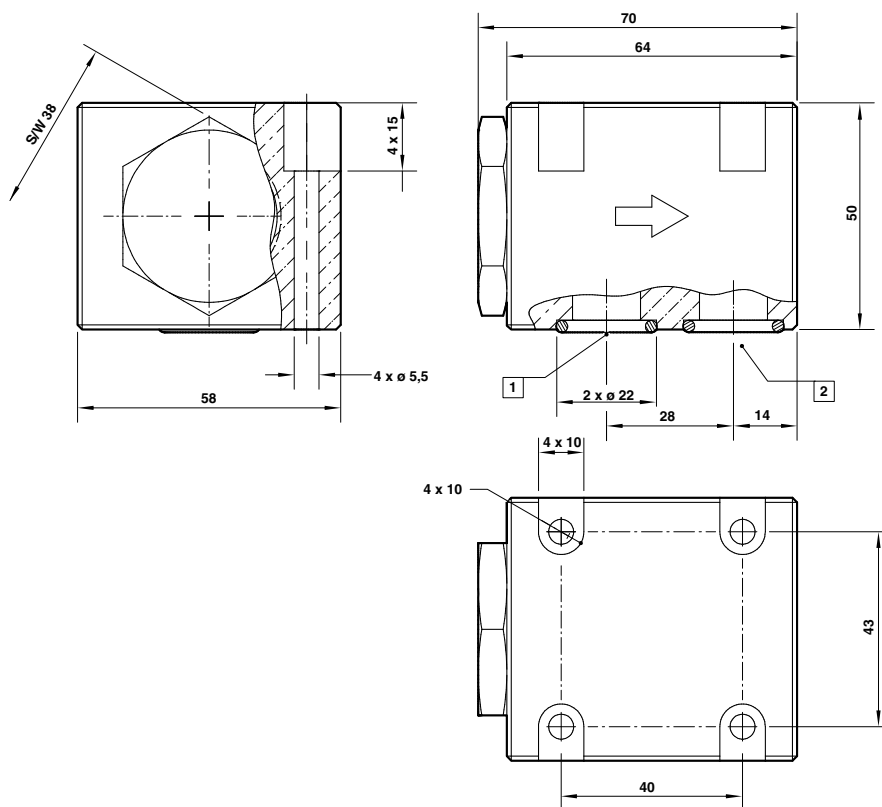


5 µm: available on request

25 µm: available on request

40 µm: 6266-01

Dimensions



1 Port 1
2 Port 2

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1

ACTUATORS

DOUBLE ACTING PROFILE
CYLINDERS
DOUBLE ACTING CYLINDERS
HEAVY DUTY IMPERIAL
CYLINDERS

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NON-RETURN VALVES
SHUTTLE VALVES

BALL VALVES
SILENCERS
STRAINER
PNEUMATIC VISUAL INDICATOR
FLANGED FILTER



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