CATALOG

air prep

FRLs and Accessories

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

Notes

The **FlexiBlok®** Advantage

While many other FRL combinations rely on couplings, spacers, adapters, and/or sealant to connect components together - which is not only costly, but lowers structural integrity and is more difficult to assemble - each modular **FlexiBlok®** component connects directly using just one o-ring seal and 2 button head screws - eliminating leakage, keeping flow integrity intact, and lowering cost since there are no extra brackets, tools, or other devices necessary.

The **FlexiBlok®** line is designed to be simple and economical...

- Service can be performed while the component is installed in the air line.
- 22, 32 and 42 Series bowls feature a unique locking tab bowl. Just pull the locking tab down, turn the bowl 45º, and pull down to remove.
- The unique design of the 22, 32 and 42 series bowls allows the o-ring to be held captive on the bowl, making it easy to check and replace if necessary.
- Delta pressure indicators are standard on all 22, 32 and 42 Series coalescers.
- Particulate filters feature a *standard* 5 micron element.
- Coalescing filters feature dual support cores which prevent rupture and collapse.
- CircleVision™ bowls allow the machine operator or manager a clear visual indication of the liquid level in a filter or lubricator bowl from up to 40 feet away.
- *Every* product is tested and approved for quality assurance.

Customize your **FlexiBlok®** Components

The 22, 32 and 42 Series **FlexiBlok®** components include a black template which can be customized by having your name and/or logo placed on it. This adds personalization to **FlexiBlok®** filters, regulators, piggybacks, lubricators, and solenoid soft start valves - ideal for OEM applications. Please contact your local distributor for information on custom templates.

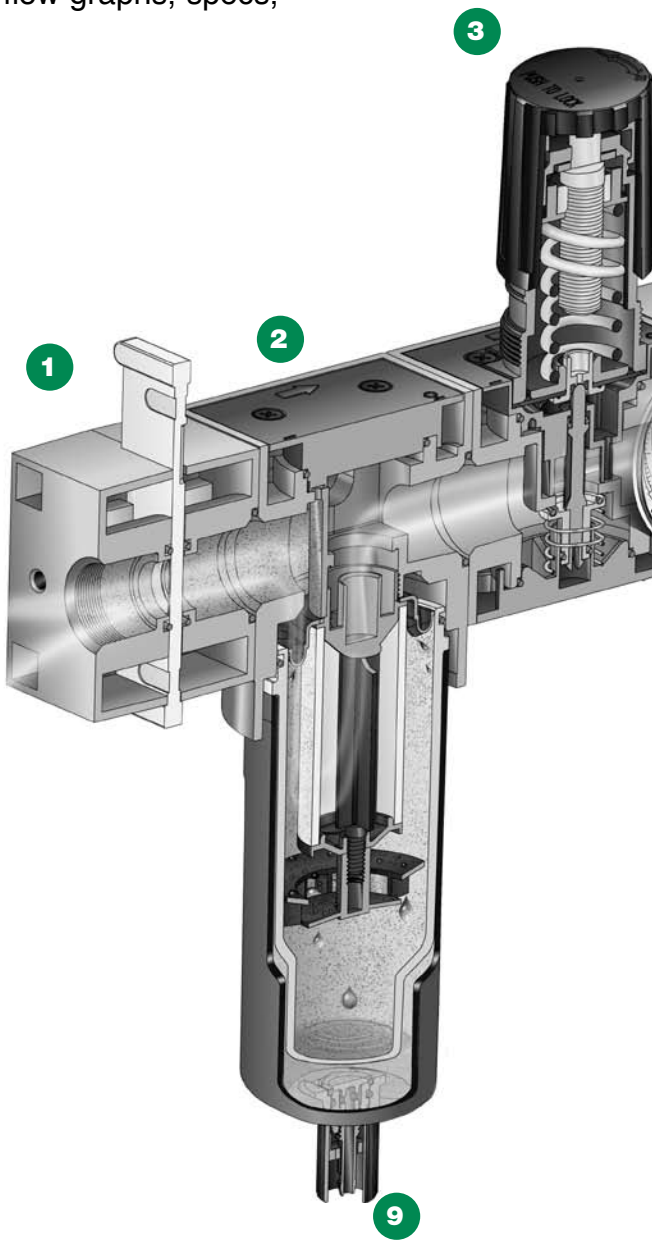
Keeping Customers Informed of New Products

Don't be left in the dark when it comes to new products. At Numatics, we offer plenty of literature for our products, including New Product Bulletins which are released for every new product and sent to our distributors and included on our website for download. They give detailed information about application, benefits, features, options, and how to order - as well as provide informative drawings, photos, and flow charts where applicable.

The **FlexiBlok**® Advantage

Made with lightweight but sturdy aluminum castings, the **FlexiBlok**® FRL Series offers the most reliable performance and durability of any FRL line. Most components can be modified with available options and accessories like metal bowls and easy-to-operate drains. Also, **FlexiBlok**® components are in stock and ready for order.

Let us show you how our **FlexiBlok**® products work and what they are capable of. In addition to the product descriptions below, please see the **FlexiBlok**® FRL Series section of this catalog for details, flow graphs, specs, and application notes.



1 Shutoff Valve

Manual shutoff used to relieve downstream pressure for servicing or maintenance. Security hole provided for lockout capabilities. May also be used as a stand-alone unit.

2 Filter

Particulate Filter: 5 micron filtration (shown) used as a primary filter to remove water, dust, and debris from air line. Water removal efficiency at 90% or better at rated flow.
Coalescing Filter: used as a secondary filter to remove up to 99.99% of oil and particles. Available with four different type elements - .1, .3, and .7 micron filtration and a vapor adsorbing element that utilizes activated carbon to deodorize compressed air.

3 Regulator

Reduces supply pressure to a required working pressure. Available in relieving or non-relieving styles and in four different pressure ratings.

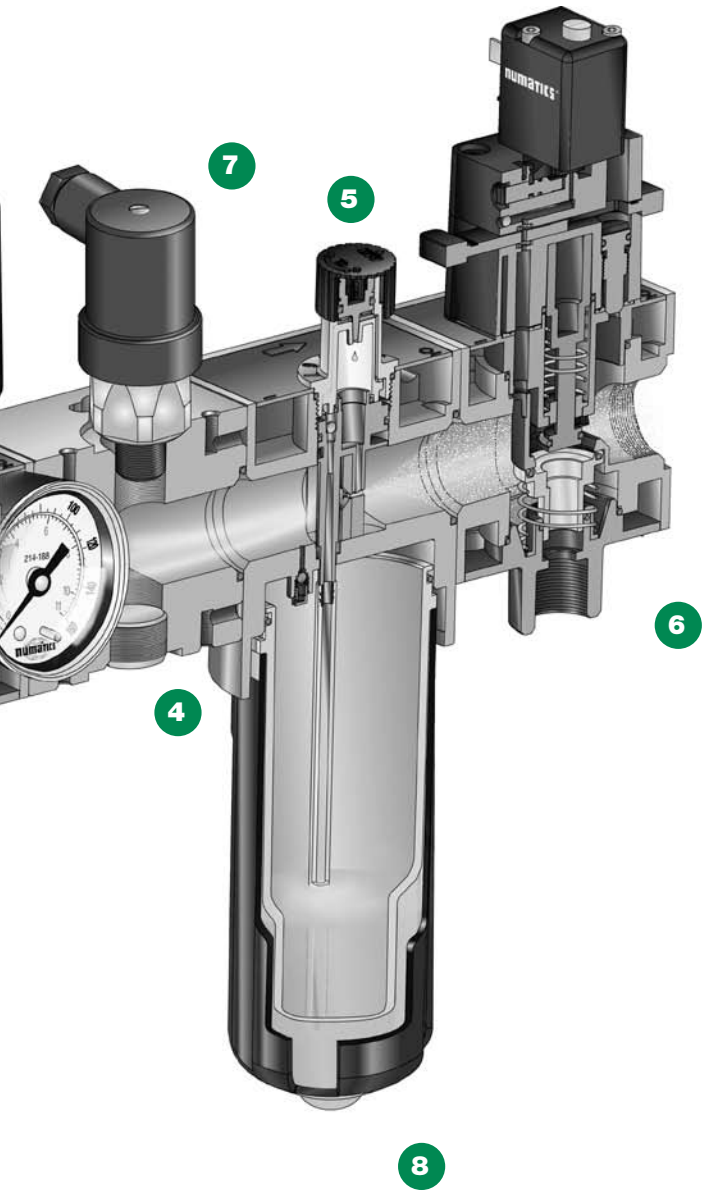
4 Diverter Block

Provides total versatility; mounts directly inline to allow additional components to be manifolded without excessive pressure drop.

5 Lubricator

Designed to meter oil aerosols into the air stream where lubrication is required. Tamper-resistant adjustment knob eliminates unauthorized adjustments.

The FlexiBlok® Advantage



6 Solenoid Soft Start Quick Exhaust Valve

When solenoid air pilot is energized, adjustable flow control allows system to be pressurized slowly. When downstream pressure reaches approximately 60% of upstream pressure, slow start shifts to full flow condition. When solenoid air pilot is de-energized, downstream pressure exhausts to atmosphere. Equipped with manual override and lockout.

7 Pressure Switch

Allows for remote monitoring of system pressure. An adjustable, tamper-resistant knob resists unauthorized changes.

8 Bowls

Three types available: polycarbonate bowl with guard (standard), metal bowl with sight glass, and CircleVision™ - a metal bowl wrapped in polycarbonate, allowing a 360º view of liquid level in bowl.

9 Drains

Five types available: Manual drain with internal barb fitting for drain tube (standard), automatic float drain, flexible drain, external pulse drain, metal manual drain, and manual lever drain. All feature unique characteristics suitable for many different applications.

High Flow

The Numatics FRL FLEXIBLOK® line is designed for high flows - with minimal pressure drop.

Product Connection

Each FLEXIBLOK® component is engineered to connect directly to the next without inserts or special tools, ensuring optimum stability and strength.

Integral Mounting Holes

FLEXIBLOK® components mount directly without the use of special brackets or inserts, allowing for individual component mounting for stand-alone units.

The **FlexiBlok**® Advantage

Numatics coalescing filters use a borosilicate glass fiber to remove contaminant from air lines. Air flows from the inside to the outside of the element through progressively larger openings in the media, trapping contaminant particles and forcing liquids to form into larger drops and drain to the bottom of the bowl. Numatics filters are used to remove hydrocarbon, oil, and more. The filters are made up of seven main features:

1 End Seals
Urethane end seals provide positive seal. Compatible with mineral base and synthetic lubricants

2 Optional Pleated Prefilter
3 micron media protects the fine borosilicate fibers, extending the life of the coalescing media

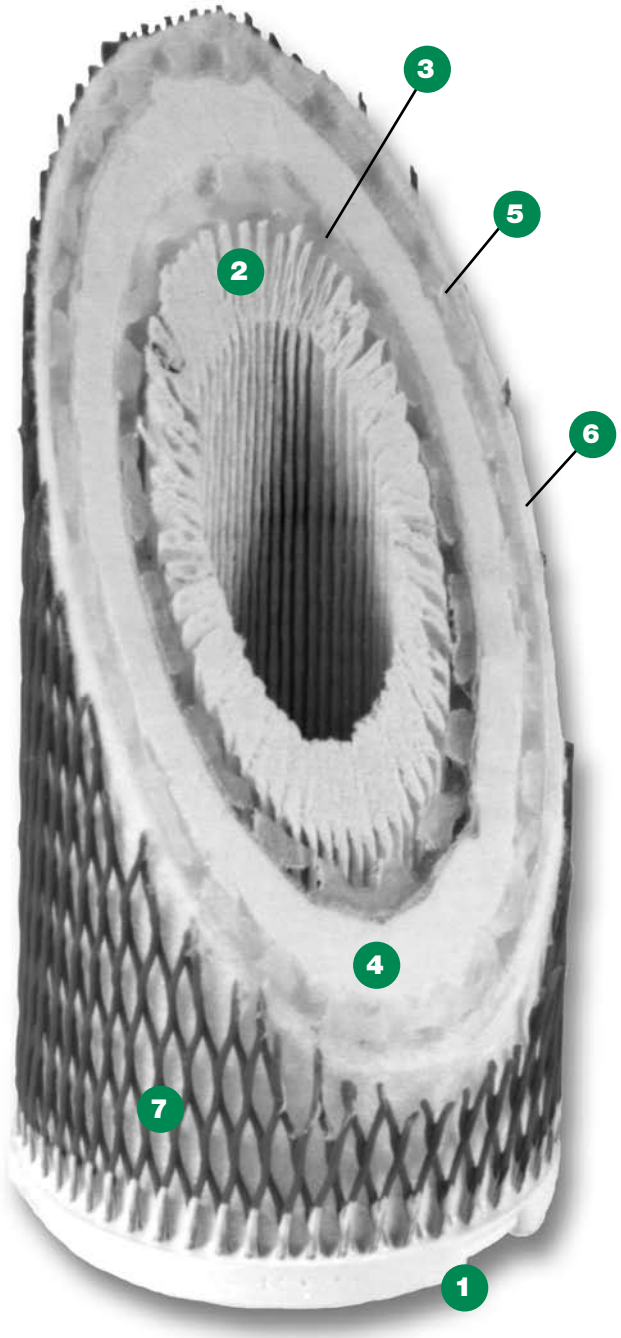
3 Inner Media Wrap - Inner Support Core
Allows crossflow of gas which initiates the coalescing process. Helps protect element from damage due to excessive pressure drop.

4 Media
Six media choices for best performance. Proprietary glass fiber blend combines low differential pressures and high efficiencies with maximum holding capacity

5 Outer Media Wrap - Outer Support Core
Allows crossflow of gas and improves performance. Helps protect element from damage due to excessive pressure drop.

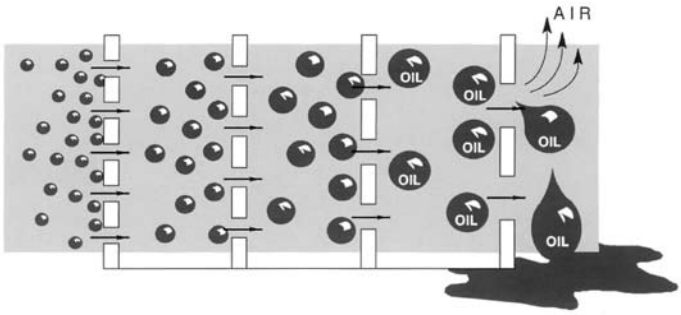
6 Drain Layer
Non-wicking fiber prevents reentrainment

7 Color-coded Webbing
Allows for easy identification of media type



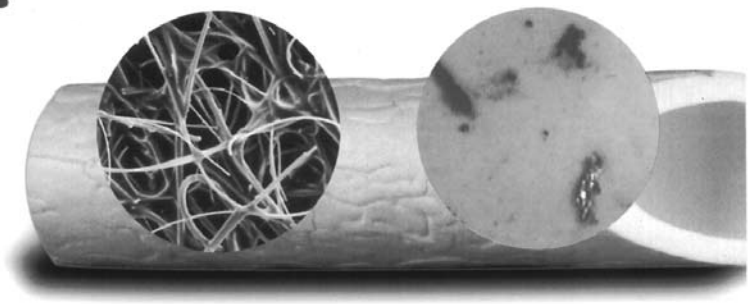
See next page for more information about our line of coalescing filters, including media grade information, application notes, and a helpful chart showing diameters of particles and aerosols in microns.

The **FlexiBlok®** Advantage



Air flows from the inside to the outside of the element through progressively larger openings in the media. As contamination moves through the element, solid particles are trapped and liquids are formed into large droplets. As the air exits the element, surface tension holds the liquids and allows them to drain to the bottom.

The Numatics 0.3 micron borosilicate glass fiber element, when magnified 228x (left), shows deep, tortuous paths and large air pockets which provide high performance contaminate removal and longer life.



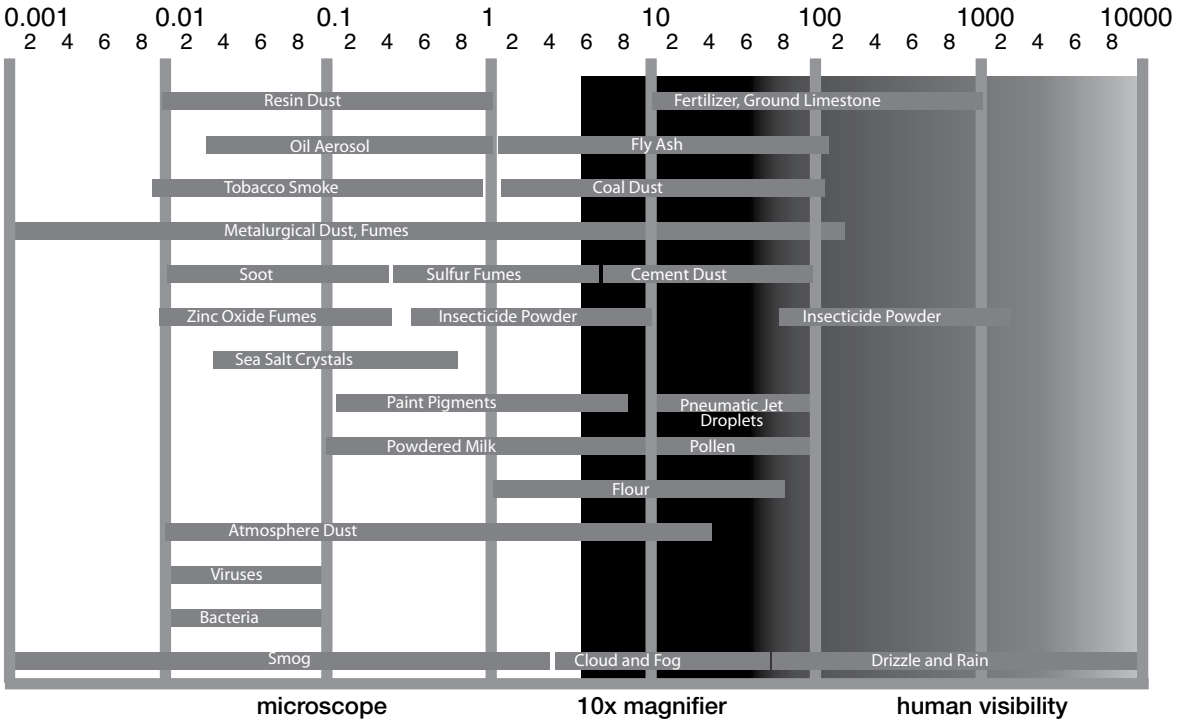
Scanning electron micrograph (at 228x)

Dirty filter magnification (at 40x)

Contamination removal from a typical compressed air line with 0.3 micron Numatics media is shown magnified 40x (right). The contamination contains hydrocarbon (black), oil (opaque drops), and metal fragments (shiny spots).

With Numatics elements like the one on the left installed in your system, the contamination on the right won't get to where it can cause damage. Your system lasts longer and costs less.

What you get is not always what you see



Endless Manifold Possibilities

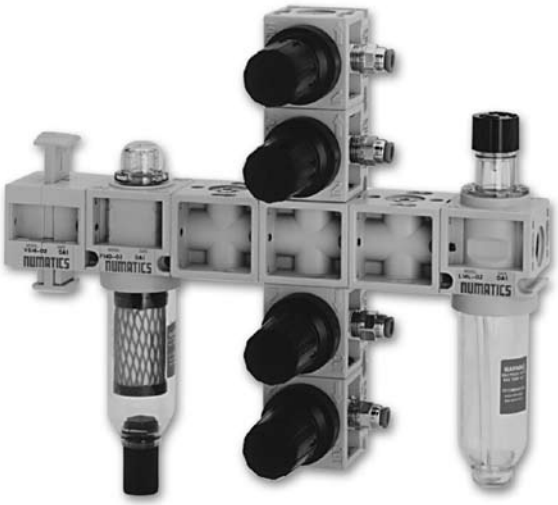
The **FlexiBlok**® 14 Series Manifold Regulator allows several regulators to be connected together in a line. Such a combination may be manifolded left to right or, using a 14 Series Diverter Block, up and down, providing an option for any mounting scenario.

The Manifold Regulator allows flexibility with any necessary pressure. The common P1 port through each regulator makes it possible for the 2nd, 3rd, and any other following inline regulator to provide independent pressure. For example, when 100 PSI enters the first manifold regulator, that pressure will continue to be carried across all following regulators, giving each regulator in the line 100 PSI primary pressure. The reduced pressure is taken from the gauge ports; either front or back!

A system equipped with the Manifold Regulator can help reduce operation costs, since several applications can use pressure supplied by a single FRL assembly.

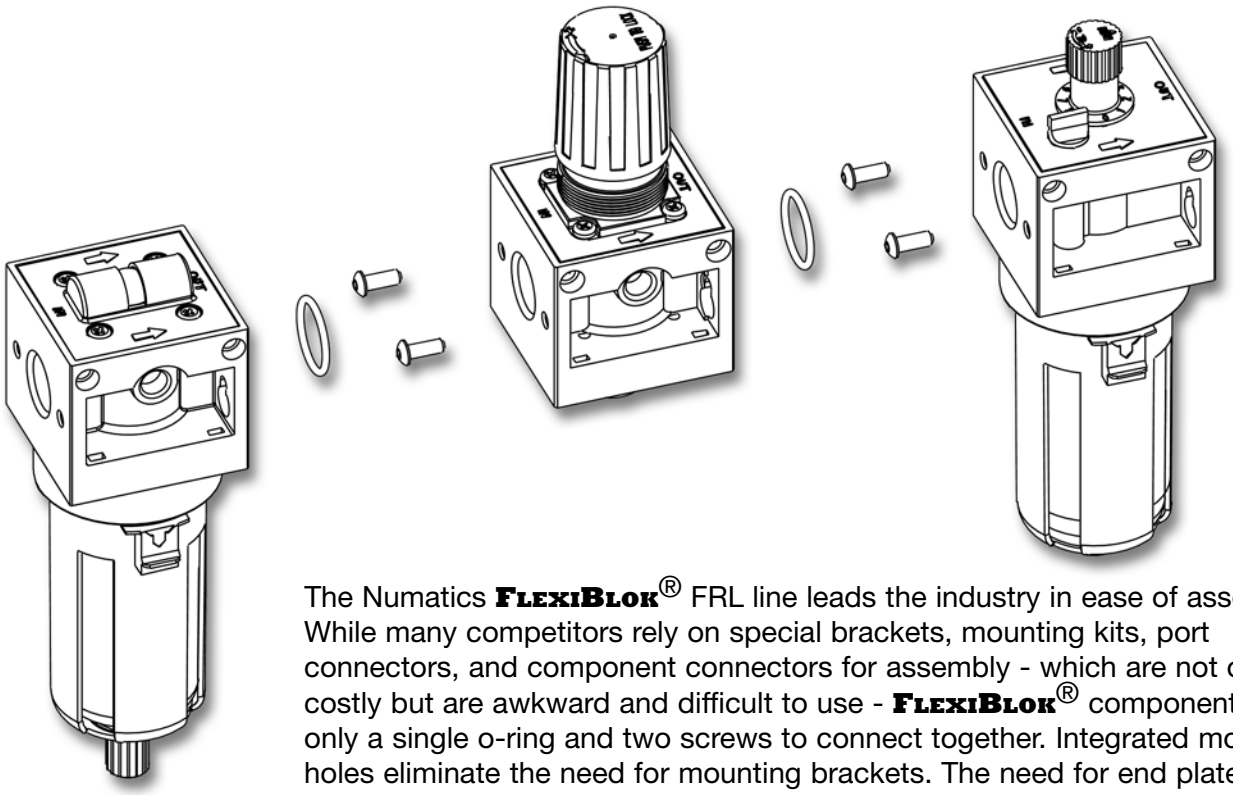
Numatics In-Fittings are the perfect solution for connecting tubing from a Maniforld Regulator to the application. For more information see the 'In-Fittings' section in this catalog.

No room to build left to right? Regulators can be manifolded vertically using 14 Series Diverter Blocks.



Vertical not an option? Manifold regulators are flexible enough to be built in any direction **(notice use of a standard regulator downstream of manifold regulators for reduced & stabilized pressure exiting the lubricator)!**

Endless Manifold Possibilities



The Numatics **FlexiBlok**® FRL line leads the industry in ease of assembly. While many competitors rely on special brackets, mounting kits, port connectors, and component connectors for assembly - which are not only costly but are awkward and difficult to use - **FlexiBlok**® components use only a single o-ring and two screws to connect together. Integrated mounting holes eliminate the need for mounting brackets. The need for end plates is eliminated, as the in/out ports of all components are tapped so that any unit can be used as a stand alone unit.

By eliminating the need for additional special components, the Numatics **FlexiBlok**® line keeps costs down and maintenance and assembly quick and easy.

Less is More with **FlexiBlok**®

The typical **FlexiBlok**® FRL assembly (filter/regulator/lubricator) uses a total of 9 pieces to connect the three components. Some competitor assemblies require as many as 29 individual pieces. Most of these necessary parts are built into **FlexiBlok**® components.

Numatics gained its worldwide reputation in the air valve industry with the invention of the multi-purpose precision lapped spool and sleeve assembly design. To compliment our valve line and air logic systems, Numatics began expanding its product line to include FRLs and numerous air preparation products in 1988. Today, Numatics leads the industry in air preparation equipment. Here's how Numatics can provide for all of your air preparation needs:

1 Air Numatics Drain Valve
Automatically expels water on timed sequence, eliminating the potential for water carryover.

2 Air Header and Air Drop
Should be installed in a closed loop around plant with a 1/4" per 10' slope to allow water to drain. Remove air from top of header to prevent moisture or contaminant from continuing toward application.

3 Drip Leg
Usually sized three times the diameter of the air drop. Collects moisture and contaminant.

4 Numatics Valves
Performs equally well with or without lubrication. The lapped spool and sleeve valve is the most reliable valve for dirty or clean environments. For maximum performance, filtration is recommended.

5 Numatics Cylinders
Performs equally well with or without lubrication. New seal design eliminates packing cylinder bore with grease to achieve non-lube function.

6 Numatics Lockout Valves
Allows system air to be exhausted quickly for safety or other maintenance functions. Large locking hole for trade locked or other security device prevents system from being accidentally turned on during maintenance. Meets OSHA specifications.

7 Electropneumatic Transducers
I-P/E-P Pressure Transducer uses critical orifices and components that may be damaged by oils or carryovers incompatible with circuitry.

8 Numatics FlexiBlok® Shut Off Valves
Relieving model allows bleed down of downstream air for maintenance functions. Can be locked out for security. Meets OSHA specifications.

9 Numatics FlexiBlok® Particulate Filters
Designed to remove accumulated condensation and particles. Recommended standard filtration is 5 micron. Optional automatic drain dispels liquid from bowl.

10 Numatics FlexiBlok® Regulator
Reduces system pressure to working pressure saving both compressed air costs and pressure fluctuation. Since increasing pressure does not necessarily increase speed, the lowest pressure required to perform the task will be the least expensive. Ask us about Numasizing!

11 Numatics FlexiBlok® Filter/Regulators ('Piggybacks')
Combination filter/regulator performs the duties of both components in one compact unit.

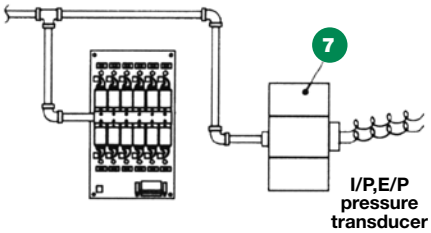
12 Numatics FlexiBlok® Diverter Block
Allows air to be diverted into multiple directions. Can be used in manifold or direct piped applications.

13 Numatics FlexiBlok® Lubricator
Allows precise amount of lubricant to atomize and be sent downstream in aerosol form. Useful for air motor or very high-cycle actuator applications.

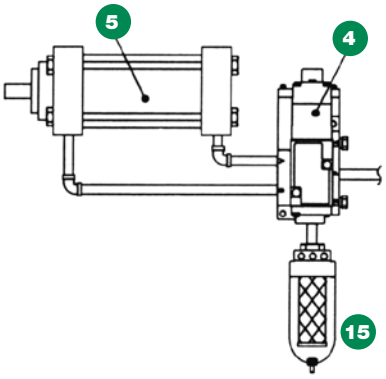
14 Numatics FlexiBlok® Solenoid Soft Start Quick Exhaust
Solenoid-activated soft start valve allows system to slowly ramp up to working pressure, preventing rapid acceleration from damaging components. Downstream pressure quickly exhausts when solenoid is de-energized.

15 Reclassifiers
Removes oil mist and reduces noise from exhaust ports on pneumatic valves, cylinders, and air control systems at extremely high flow rates

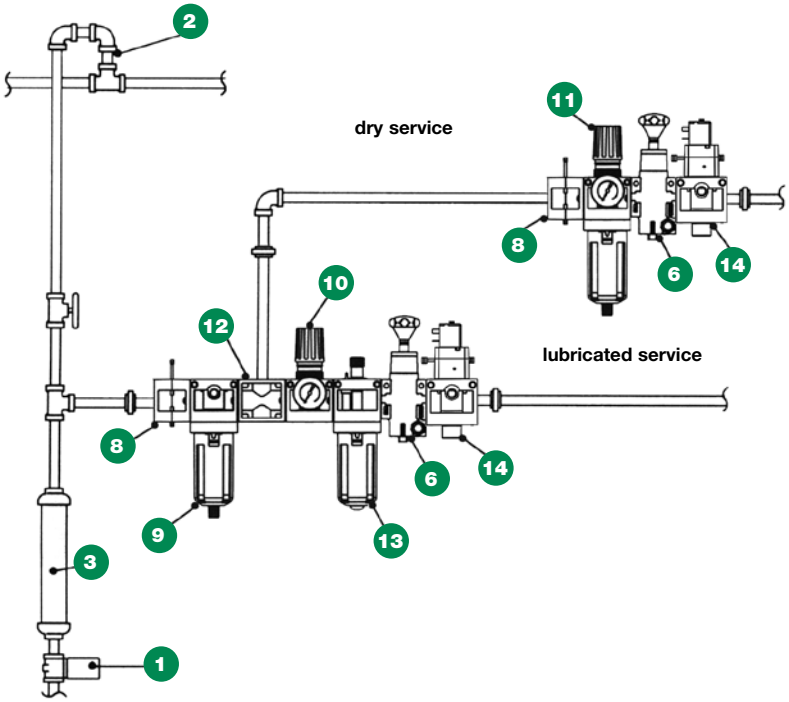
Instrument Circuit



Lubricated Cylinder Circuit



Modular Air Preparation System



CATALOG

air prep

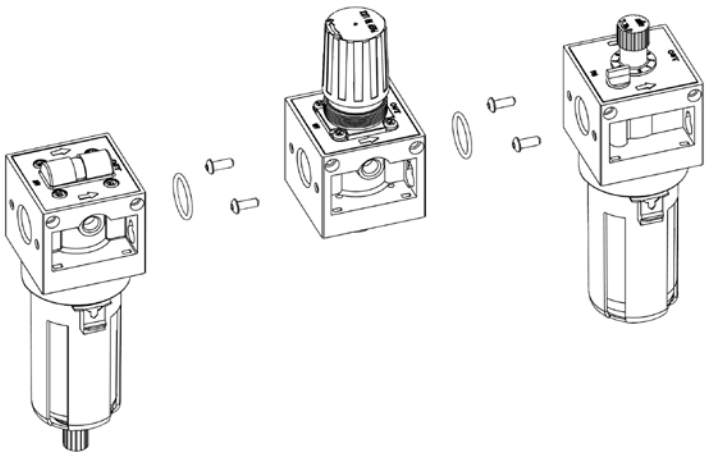
FlexiBlok® FRL Series

EMERSON
Industrial Automation

numatics®

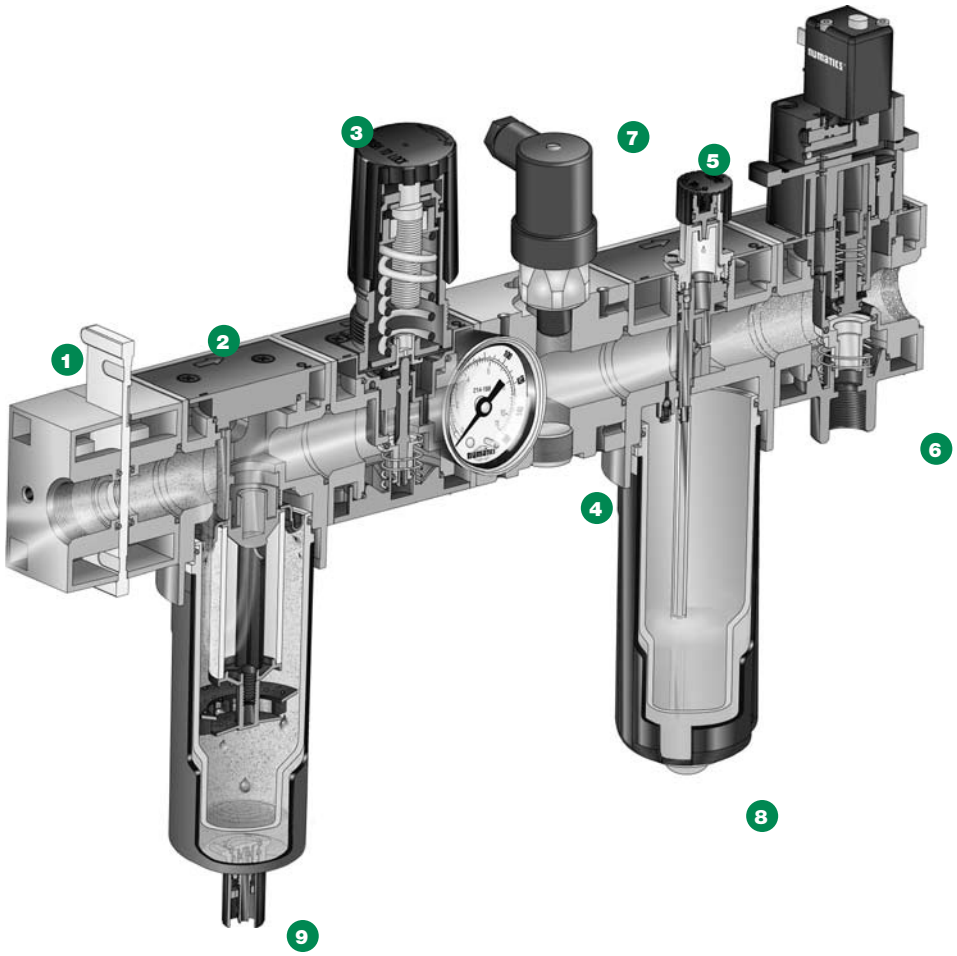
Table of Contents

numatics



The Numatics FLEXIBLOK® FRL line leads the industry in ease of assembly. While many competitors rely on special brackets, mounting kits, port connectors, and component connectors for assembly - which are not only costly but are awkward and difficult to use - FLEXIBLOK® components use only a single o-ring and two screws to connect together. Integrated mounting holes eliminate the need for mounting brackets. The need for end plates are eliminated, as the in/out ports of all components are tapped so that any unit can be used as a stand alone unit.

By eliminating the need for additional special components, the Numatics FLEXIBLOK® line keeps costs down and maintenance and assembly quick and easy.



1. Shutoff Valve
- Relieving/Non-Relieving

2. Filter
- 5 Micron particulate
- Three Coalescing Grades
- Adsorbing Grade

3. Regulator
- Multiple Pressure Ranges
- Relieving/Non-Relieving

4. Diverter Block
- Provides Versatility

5. Lubricator
- Siphon Tube Design Provides Accurate Oil Metering

6. Solenoid Soft Start Quick Exhaust Valve
- Solenoid Quick Exhaust and Air Pilot Versions

7. Pressure Switch
- Field Installable Connector or 12 mm Micro Styles

8. Bowls
- Polycarbonate, metal, CircleVision

9. Drains
- 6 Styles

StockBlok®

FRLs in standard combinations

StockBlok® assemblies utilize one model number for standard configurations, complete with gauges. Each component is factory assembled and tested.

Each of the standard **StockBlok®** combinations is a complete assembly. Bowl, drain, and fill options are available where applicable. Additional options are not available and, if required, components can be ordered as a **ModuBlok™** combination (see page 9).

To order any of the **StockBlok®** models without the Shut-Off Valve, replace the “V” in the part number with an “X” (i.e. M22-03XFCXX).

See individual component pages for specifications and dimensions.

*All **StockBlok®** model # assemblies on the next few pages are called out as NPT. For BSPP models replace the "-" with a "G". For BSPT models replace "-" with an "R"

Shut Off/Particulate Filter/Regulator/Lubricator w/ Gauge

* To order this **StockBlok®** model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFRLX).

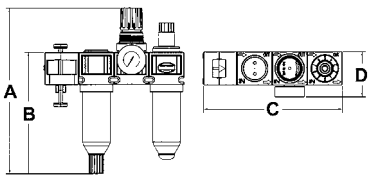
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	REGULATOR	LUBRICATOR	WEIGHT LBS.	WEIGHT KGS
M14-01VFRLX	VS14-01	F14B-01	R14R-01G	L14L-01	2.55	1.17
M14-02VFRLX	VS14-02	F14B-02	R14R-02G	L14L-02	2.55	1.17
M22-02VFRLX	VS22-02	F22B-02	R22R-02G	L22L-02	2.38	1.08
M22-03VFRLX	VS22-03	F22B-03	R22R-03G	L22L-03	2.38	1.08
M22-04VFRLX	VS22-04	F22B-04	R22R-04G	L22L-04	2.38	1.08
M32-04VFRLX	VS32-04	F32B-04	R32R-04G	L32L-04	4.78	2.17
M32-06VFRLX	VS32-06	F32B-06	R32R-06G	L32L-06	4.78	2.17
M42-06VFRLX	VSL42-06	F42B-06	R42R-06G	L42L-06	16.65	7.55
M42-08VFRLX	VSL42-08	F42B-08	R42R-08G	L42L-08	16.65	7.55

Options (*see page 46* for Drain Options)

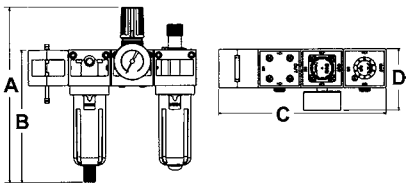
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



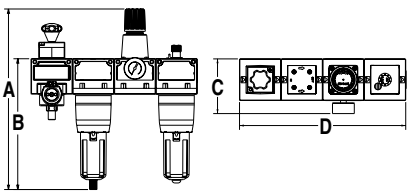
A 7.90 (200) **B** 5.84 (148) **C** 6.72 (172) **D** 3.1 (74)

22/32 Series



22 Series:
A 10.02 (255) **B** 7.62 (194) **C** 9.32 (237) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 11.25 (286) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 16.0 (406)

Shut Off/Filter-Regulator/Diverter Block/Lubricator w/ Gauge

* To order this STOCKBLOK® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08VPDLX).

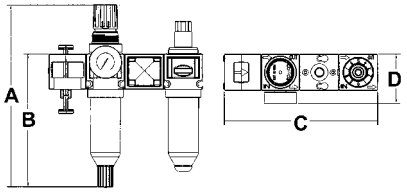
Components

MODEL #	SHUT OFF	FILTER/ REGULATOR	DIVERTER BLOCK	LUBRICATOR	WEIGHT LBS.	KGS
M14-01VPDLX	VS14-01	P14B-01G	DK14-02	L14L-01	2.50	1.13
M14-02VPDLX	VS14-02	P14B-02G	DK14-02	L14L-02	2.50	1.13
M22-02VPDLX	VS22-02	P22B-02G	DK22-03	L22L-02	2.26	1.03
M22-03VPDLX	VS22-03	P22B-03G	DK22-03	L22L-03	2.26	1.03
M22-04VPDLX	VS22-04	P22B-04G	DK22-03	L22L-04	2.26	1.03
M32-04VPDLX	VS32-04	P32B-04G	DK32-04	L32L-04	4.86	2.21
M32-06VPDLX	VS32-06	P32B-06G	DK32-04	L32L-06	4.86	2.21
M42-06VPDLX	VSL42-06	P42B-06G	DK42-06	L42L-06	15.85	7.19
M42-08VPDLX	VSL42-08	P42B-08G	DK42-08	L42L-08	15.85	7.19

Options (*see page 46* for Drain Options)

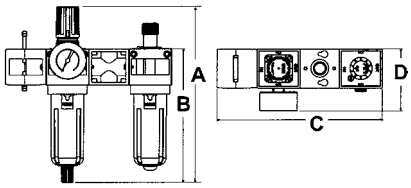
A = Auto Drain (22,32,42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



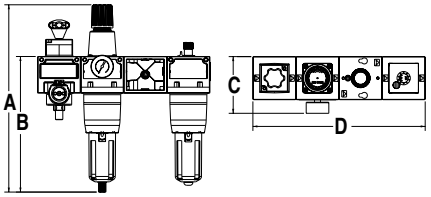
A 7.90 (200) **B** 5.84 (148) **C** 6.72 (172) **D** 3.1 (79)

22/32 Series



22 Series:
A 9.93 (252) **B** 7.62 (194) **C** 9.11 (231) **D** 3.41 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 11.25 (286) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 16.0 (406)

Shut Off/Particulate Filter/Coalescing Filter/Regulator w/ Gauge

* To order this STOCKBLOK® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFFRX).

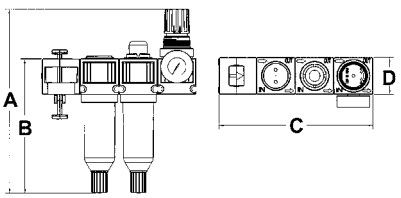
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	COALESCING FILTER	REGULATOR	WEIGHT LBS.	KGS
M14-01VFFRX	VS14-01	F14B-01	F14D-01	R14R-01G	2.60	1.20
M14-02VFFRX	VS14-02	F14B-02	F14D-02	R14R-02G	2.60	1.20
M22-02VFFRX	VS22-02	F22B-02	F22D-02	R22R-02G	2.38	1.08
M22-03VFFRX	VS22-03	F22B-03	F22D-03	R22R-03G	2.38	1.08
M22-04VFFRX	VS22-04	F22B-04	F22D-04	R22R-04G	2.38	1.08
M32-04VFFRX	VS32-04	F32B-04	F32D-04	R32R-04G	4.90	2.23
M32-06VFFRX	VS32-06	F32B-06	F32D-06	R32R-06G	4.90	2.23
M42-06VFFRX	VSL42-06	F42B-06	F42D-06	R42R-06G	16.65	7.55
M42-08VFFRX	VSL42-08	F42B-08	F42D-08	R42R-08G	16.65	7.55

Options (*see page 46* for Drain Options)

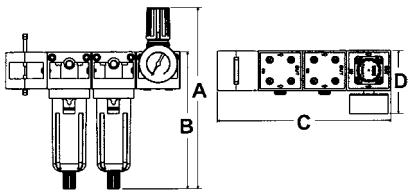
A = Auto Drain (22,32,42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



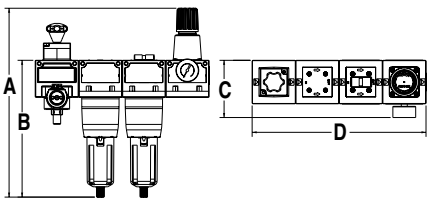
A 7.90 (200) **B** 5.84 (148) **C** 6.72 (172) **D** 3.1 (79)

22/32 Series



22 Series:
A 10.02 (255) **B** 7.62 (194) **C** 9.30 (237) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 11.25 (286) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 16.0 (406)

Shut Off/Coalescer-Regulator/Lubricator w/ Gauge

* To order this STOCKBLOK® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFRLX).

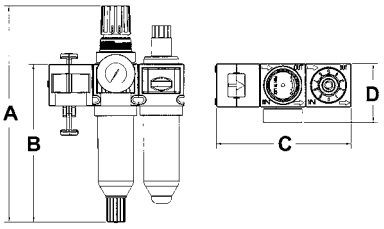
Components

MODEL #	SHUT OFF	COALESCER/ REGULATOR	LUBRICATOR	WEIGHT LBS.	KGS
M14-01VCLXX	VS14-01	C14D-01G	L14L-01	2.10	0.94
M14-02VCLXX	VS14-02	C14D-02G	L14L-02	2.10	0.94
M22-02VCLXX	VS22-02	C22D-02G	L22L-02	1.96	0.89
M22-03VCLXX	VS22-03	C22D-03G	L22L-03	1.96	0.89
M22-04VCLXX	VS22-04	C22D-04G	L22L-04	1.96	0.89
M32-04VCLXX	VS32-04	C32D-04G	L32L-04	3.93	1.79
M32-06VCLXX	VS32-06	C32D-06G	L32L-06	3.93	1.79
M42-06VCLXX	VSL42-06	C42D-06G	L42L-06	13.70	6.21
M42-08VCLXX	VSL42-08	C42D-08G	L42L-08	13.70	6.21

Options (*see page 46* for Drain Options)

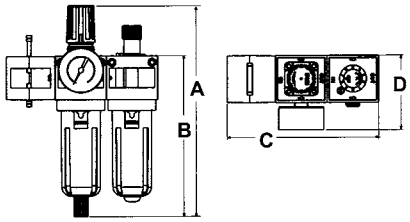
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
D = 3 Micron Internal Prefilter
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



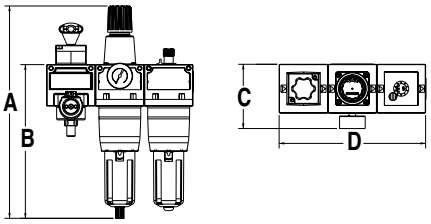
A 7.90 (200) **B** 5.84 (148) **C** 5.04 (129) **D** 3.1 (79)

22/32 Series



22 Series:
A 7.93 (252) **B** 7.62 (194) **C** 6.95 (177) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 8.25 (210) **D** 4.10 (103)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 12.0 (305)

Shut Off/Particulate Filter/Regulator/Diverter Block/Lubricator w/ Gauge

* To order this STOCKBLOK® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFRLX).

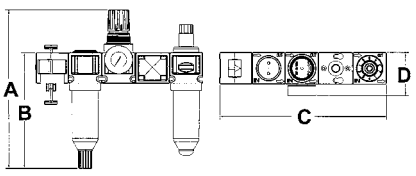
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	REGULATOR	DIVERTER BLOCK	LUBRICATOR	WEIGHT LBS.	KGS
M14-01VFRDL	VS14-01	F14B-01	R14R-01G	DK14-02	L14L-01	3.00	1.37
M14-02VFRDL	VS14-02	F14B-02	R14R-02G	DK14-02	L14L-02	3.00	1.37
M22-02VFRDL	VS22-02	F22B-02	R22R-02G	DK22-03	L22L-02	2.69	1.22
M22-03VFRDL	VS22-03	F22B-03	R22R-03G	DK22-03	L22L-03	2.69	1.22
M22-04VFRDL	VS22-04	F22B-04	R22R-04G	DK22-03	L22L-04	2.69	1.22
M32-04VFRDL	VS32-04	F32B-04	R32R-04G	DK32-04	L32L-04	5.72	2.60
M32-06VFRDL	VS32-06	F32B-06	R32R-06G	DK32-04	L32L-06	5.72	2.60
M42-06VFRDL	VSL42-06	F42B-06	R42R-06G	DK42-06	L42L-06	18.80	8.53
M42-08VFRDL	VSL42-08	F42B-08	R42R-08G	DK42-08	L42L-08	18.80	8.53

Options (*see page 46* for Drain Options)

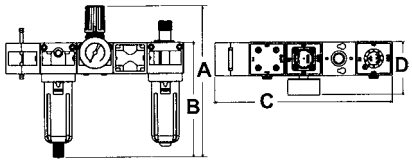
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



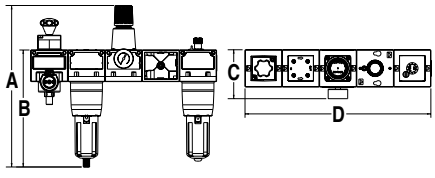
A 7.90 (200) **B** 5.84 (148) **C** 8.4 (215) **D** 3.1 (79)

22/32 Series



22 Series
A 10.02 (255) **B** 7.62 (193) **C** 11.50 (292) **D** 3.42 (87)
32 Series
A 12.32 (313) **B** 9.12 (232) **C** 14.25 (362) **D** 4.10 (103)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 20.0 (508)

Shut Off/Particulate Filter/Diverter Block/Coalescer-Regulator w/ Gauge

* To order this **StockBlok**® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFDCX).

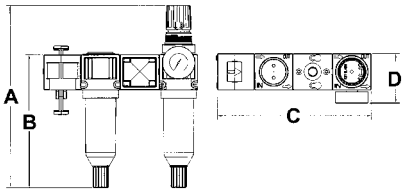
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	DIVERTER BLOCK	COALESCER/ REGULATOR	WEIGHT LBS.	KGS
M14-01VFDCX	VS14-01	F14B-01	DK14-02	C14D-01G	2.55	1.15
M14-02VFDCX	VS14-02	F14B-02	DK14-02	C14D-02G	2.55	1.15
M22-02VFDCX	VS22-02	F22B-02	DK22-03	C22D-02G	2.26	1.03
M22-03VFDCX	VS22-03	F22B-03	DK22-03	C22D-03G	2.26	1.03
M22-04VFDCX	VS22-04	F22B-04	DK22-03	C22D-04G	2.26	1.03
M32-04VFDCX	VS32-04	F32B-04	DK32-04	C32D-04G	4.87	2.21
M32-06VFDCX	VS32-06	F32B-06	DK32-04	C32D-06G	4.87	2.21
M42-06VFDCX	VSL42-06	F42B-06	DK42-06	C42D-06G	15.85	7.19
M42-08VFDCX	VSL42-08	F42B-08	DK42-08	C42D-08G	15.85	7.19

Options (*see page 46* for Drain Options)

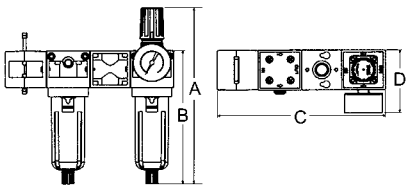
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
F = Lubricator Quick Fill (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



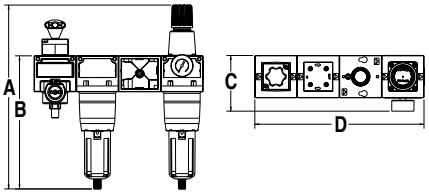
A 7.90 (200) **B** 5.84 (148) **C** 6.72 (172) **D** 3.1 (79)

22/32 Series



22 Series:
A 9.93 (252) **B** 7.61 (193) **C** 9.11 (231) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 11.25 (286) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 16.0 (406)

Shut Off/Filter-Regulator/Lubricator w/ Gauge

* To order this **StockBlok**® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XPLXX).

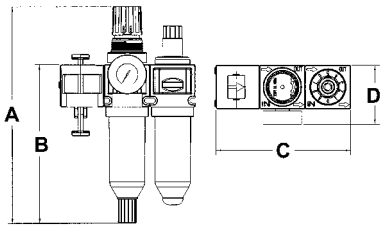
Components

MODEL #	SHUT OFF	PARTICULATE/ REGULATOR	LUBRICATOR	WEIGHT LBS.	KGS
M14-01VPLXX	VS14-01	P14B-01G	L14L-01	2.05	0.93
M14-02VPLXX	VS14-02	P14B-02G	L14L-02	2.05	0.93
M22-02VPLXX	VS22-02	P22B-02G	L22L-02	1.95	0.89
M22-03VPLXX	VS22-03	P22B-03G	L22L-03	1.95	0.89
M22-04VPLXX	VS22-04	P22B-04G	L22L-04	1.95	0.89
M32-04VPLXX	VS32-04	P32B-04G	L32L-04	3.92	1.78
M32-06VPLXX	VS32-06	P32B-06G	L32L-06	3.92	1.78
M42-06VPLXX	VSL42-06	P42B-06G	L42L-06	13.70	6.21
M42-08VPLXX	VSL42-08	P42B-08G	L42L-08	13.70	6.21

Options (*see page 46* for Drain Options)

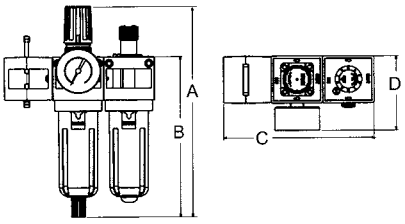
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



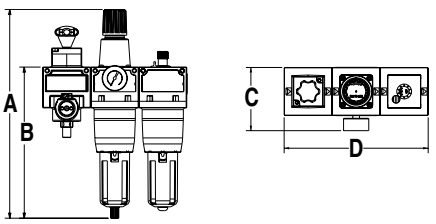
A 7.90 (200) **B** 5.84 (148) **C** 5.04 (129) **D** 3.1 (79)

22/32 Series



22 Series:
A 9.93 (252) **B** 7.62 (193) **C** 6.95 (177) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 8.25 (210) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 12.0 (305)

Shut Off/Particulate Filter/Diverter Block/Regulator/Lubricator w/ Gauge

* To order this StockBlok® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFDRL).

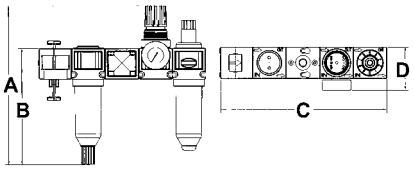
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	DIVERTER BLOCK	REGULATOR	LUBRICATOR	WEIGHT LBS.	WEIGHT KGS
M14-01VFDRL	VS14-01	F14B-01	DK14-02	R14R-01G	L14L-01	3.00	1.37
M14-02VFDRL	VS14-02	F14B-02	DK14-02	R14R-02G	L14L-02	3.00	1.37
M22-02VFDRL	VS22-02	F22B-02	DK22-03	R22R-02G	L22L-02	2.69	1.22
M22-03VFDRL	VS22-03	F22B-03	DK22-03	R22R-03G	L22L-03	2.69	1.22
M22-04VFDRL	VS22-04	F22B-04	DK22-03	R22R-04G	L22L-04	2.69	1.22
M32-04VFDRL	VS32-04	F32B-04	DK32-04	R32R-04G	L32L-04	5.72	2.60
M32-06VFDRL	VS32-06	F32B-06	DK32-04	R32R-06G	L32L-06	5.72	2.60
M42-06VFDRL	VSL42-06	F42B-06	DK42-06	R42R-06G	L42L-06	18.80	8.53
M42-08VFDRL	VSL42-08	F42B-08	DK42-08	R42R-08G	L42L-08	18.80	8.53

Options (*see page 46* for Drain Options)

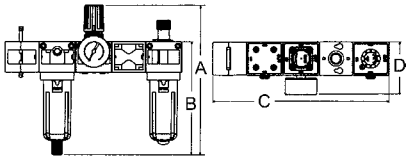
A = Auto Drain (22, 32, 42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
F = Lubricator Quick Fill
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



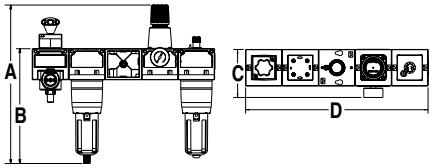
A 7.90 (200) **B** 5.84 (148) **C** 8.4 (215) **D** 3.1 (79)

22/32 Series



22 Series:
A 10.02 (255) **B** 7.62 (194) **C** 11.50 (292) **D** 3.42 (87)
32 Series:
A 12.32 (313) **B** 9.12 (232) **C** 14.25 (362) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 20.0 (508)

Shut Off/Particulate Filter/Coalescer-Regulator w/ Gauge

* To order this StockBlok® model without a shutoff valve, replace the "V" in the model number with an "X" (ie. M42-08XFCXX).

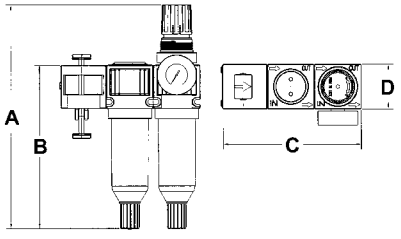
Components

MODEL #	SHUT OFF	PARTICULATE FILTER	COALESCER/ REGULATOR	WEIGHT LBS.	WEIGHT KGS
M14-01VFCXX	VS14-01	F14B-01	C14D-01G	2.10	0.95
M14-02VFCXX	VS14-02	F14B-02	C14D-02G	2.10	0.95
M22-02VFCXX	VS22-02	F22B-02	C22D-02G	1.95	0.89
M22-03VFCXX	VS22-03	F22B-03	C22D-03G	1.95	0.89
M22-04VFCXX	VS22-04	F22B-04	C22D-04G	1.95	0.89
M32-04VFCXX	VS32-04	F32B-04	C32D-04G	3.93	1.79
M32-06VFCXX	VS32-06	F32B-06	C32D-06G	3.93	1.79
M42-06VFCXX	VSL42-06	F42B-06	C42D-06G	13.70	6.21
M42-08VFCXX	VSL42-08	F42B-08	C42D-08G	13.70	6.21

Options (*see page 46* for Drain Options)

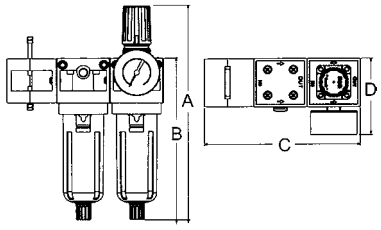
A = Auto Drain (22,32,42 Series only)
B = Flexible Drain
C = CircleVision™ Sight Bowl
E = Endplates (42 Series only)
J = External Pulse Drain
M = Metal Bowls w/ Sight Glass
Q = Metal Manual Drain
R = Manual Lever Drain

14 Series



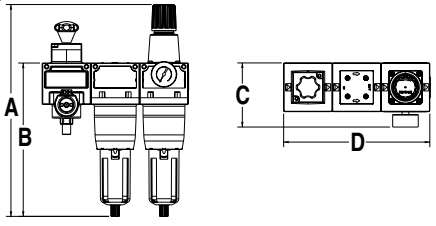
A 7.90 (200) **B** 5.84 (148) **C** 5.04 (129) **D** 3.1 (79)

22/32 Series



22 Series
A 9.93 (252) **B** 7.62 (193) **C** 6.95 (177) **D** 3.42 (87)
32 Series
A 12.32 (313) **B** 9.12 (232) **C** 8.25 (210) **D** 4.10 (104)

42 Series



A 17.4 (442) **B** 12.6 (320) **C** 5.3 (135) **D** 12.0 (305)

MODUBLOK™

Combination models

MOD22-08

STATION POSITION	DESCRIPTION	MODEL NUMBER
1	Shut-Off Valve	VS22-03
2	Particulate Filter	F22B-03
3	Coalescer w/ metal bowl and pulse drain	F22D-03JM
4	Diverter Block	DK22-03
4T	Regulator	R22R-03
4B	Pressure Switch	PS180CAN02
5	Regulator w/ gauge	R22R-03G
6	Lubricator	L22L-03

NEED MORE PARTS AND INFORMATION?

- *See page 46* for more information on available drain options.
- *See page 47 and 48* for information on ordering replacement parts.

About MODUBLOK™ *Assemblies*

The FLEXIBLOK® modular system is designed to connect individual components into a complete assembly. Sometimes it is necessary to order an assembly using additional or non-standard components or combinations. The MODUBLOK™ system makes it easy to order non-standard combinations.

As with all other components and combinations, all modular assemblies come factory tested and approved and assembled complete. For more information on flow, dimensions, options, and accessories, see individual component pages.

Because of the many possible combinations when utilizing modular systems, it is recommended that complex stations include a schematic drawing. When ordering, specify all components at each station, based on the example to the left.

How to label diverter blocks

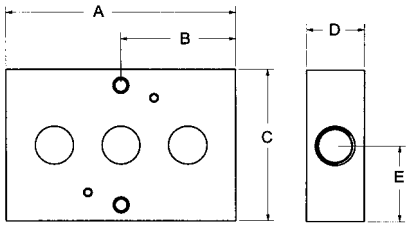
When using a diverter block, indicate all units at that station before continuing. If additional units are mounted above the diverter block, use the letter 'T' (for 'top') as well as a letter sequence (TA, TB, TC, etc.) starting from the diverter block, and continuing out. If units are placed below the diverter block, begin the two letter alphabetic sequence with the letter 'B' (for bottom) as well as a letter sequence (BA, BB, BC, etc.) starting with the diverter block and continuing outward. Continue in this pattern until all units are placed correctly.

Reducing Bushings

Reducing bushings may be required to connect some components (i.e. pressure switches, etc).

SERIES	SIZE
22	3/8 to 1/4 *or* 3/8 to 1/8
32	1/2 to 1/4 *or* 1/2 to 1/8
42	Not necessary as diverter block has 1/4 indicator ports.

L1 AND L2 Series Air Prep to Valve Adapter



Dimensions

Model #	A	B	C	D	E
L1A22	2.5 (64)	1.25 (32)	2 (51)	1 (25)	.75 (19)
L2A22	3 (76)	1.5 (38)	2 (51)	1 (52)	.75 (19)
L1A32	3 (76)	1.5 (38)	3 (76)	1.5 (38)	.75 (19)
L2A32	3 (76)	1.5 (38)	3 (76)	1.5 (38)	.75 (19)

Application

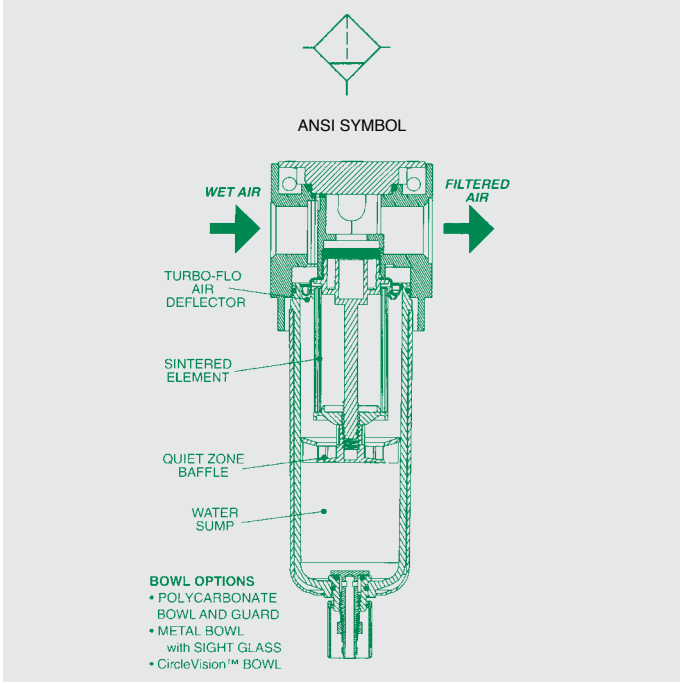
The Numatics L1 and L2 Series Valve Adapters, when used with a coalescing regulator ('piggyback') equipped with a pleated prefilter coalescing element and the specified valve, provides a low-cost, complete control package. This design eliminates fittings and potential air leaks - thus reducing cost, space, and installation time.

Features

- Modular adaptable to 22 or 32 Series FLEXIBLOK® products.
- Easy installation and service.

How to Order

MODEL NUMBER	DESCRIPTION
L1A22	L1 Series valve adapter for use with 22 Series air preparation products
L2A22	L2 Series valve adapter for use with 22 Series air preparation products
L1A32	L1 Series valve adapter for use with 32 Series air preparation products
L2A32	L2 Series valve adapter for use with 32 Series air preparation products



Particulate Filter

F14B, F22B, F32B, F42B Series

- Four convenient sizes
- 5 micron sintered elements standard
- Can be installed as modular or individual unit
- Includes screws and o-rings for modular connection
- Manual or automatic drain
- Polycarbonate bowl standard
- Optional metal bowl with sight glass
- Optional **CircleVision™** sight bowl
- Bowl seal held captive (22, 32 and 42 Series)

Specifications

BOWL	POLYCARBONATE BOWL	CIRCLEVISION™ BOWL	METAL BOWL
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Max. Pressure (PSIG)	150	250	200
Max. Pressure (BAR)	10	17	14
14 Series (Weight, lbs.)	.60	.80	.65
14 Series (Weight, kg)	.28	.36	.30
22 Series (Weight, lbs.)	.65	.86	1.25
22 Series (Weight, kg)	.30	.39	.57
32 Series (Weight, lbs.)	1.3	1.7	2.5
32 Series (Weight, kg)	.59	.77	1.14
42 Series (Weight, lbs.)	3.70	4.15	4.80
42 Series (Weight, kg)	1.68	1.88	2.18

How to Order

F 22 B – 04 AC

Model
F = Filter

Series
14 = 1.5 oz Bowl
22 = 3.8 oz Bowl
32 = 8.5 oz Bowl
42 = 8.5 oz Bowl

Element
B = 5 Micron Element

Threads
– = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

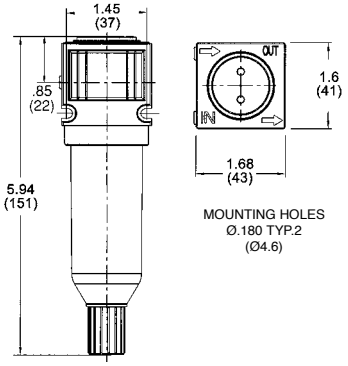
Options
A = Auto Drain (22, 32 and 42 Series)
B = Flexible Drain
C = CircleVision™ Sight Bowl
J = External Pulse Drain
M = Metal Bowl with Sight Glass
Q = Metal Manual Drain
R = Manual Lever Drain
U = Dp Indicator

Port Size
01 = 1/8 (14 Series only)
02 = 1/4 (14 or 22 Series only)
03 = 3/8 (22 Series only)
04 = 1/2 (22 or 32 Series only)
06 = 3/4 (32 or 42 Series only)
08 = 1 (42 Series only)

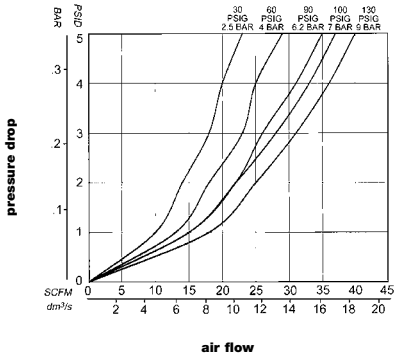
NEED MORE PARTS AND INFORMATION?

- *See page 46* for more information on available drain options.
- *See pages 47 & 48* for information on ordering replacement parts.

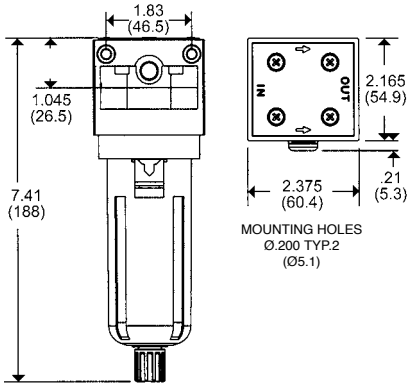
14 Series Particulate



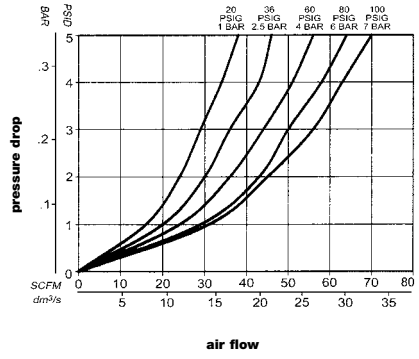
F14B-02 (5 micron particulate)



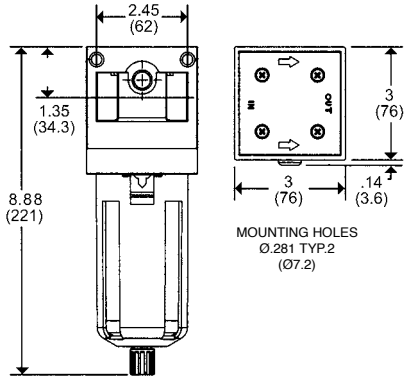
22 Series Particulate



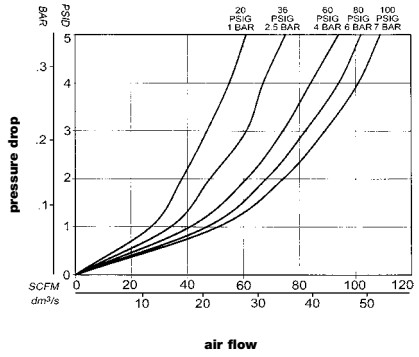
F22B-04 (5 micron particulate)



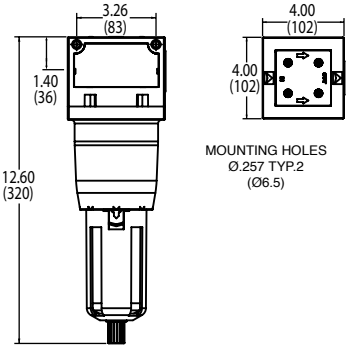
32 Series Particulate



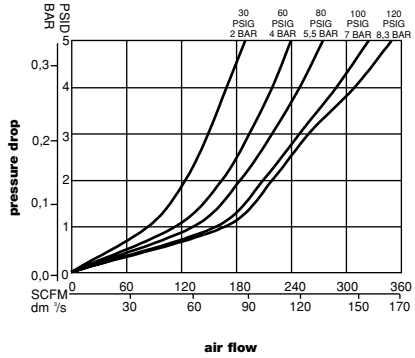
F32B-06 (5 micron particulate)

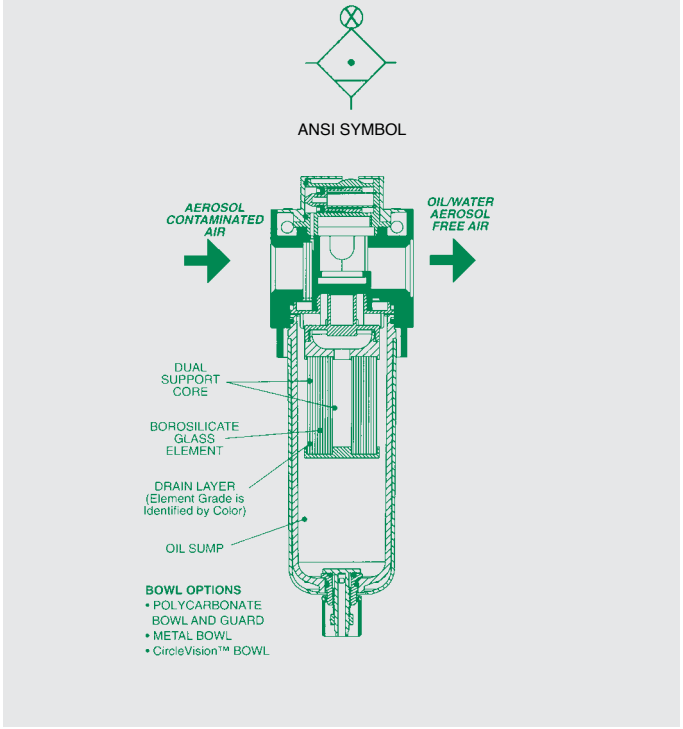


42 Series Particulate



F42B-08 (5 micron particulate)





Coalescing Filter

F14, F22, F32, F42 Series

- Four convenient sizes
- Cartridge element design
- Inner and outer support cores prevent element from crushing in either flow direction
- Available with manual or automatic drain
- Optional **CircleVision™** sight bowl
- Dp indicator standard on 14, 22, 32 and 42 Series

Recommended Uses

C grade element, identified by its blue drain layer, is a coarse filter for large amounts of water, rust, pipe scale, and liquid hydrocarbons. Excellent for environments that have severe contamination. Can be used for lubricated or 'dry' systems. Ideal for mainline filtration of plant air.
D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry'). Excellent filter for desiccant or regenerative style dryers.
E grade element, identified by its red drain layer, is an ultra fine filter for oil-free instrumentation air, blow molding, food and drug packaging, electronics applications, and other applications requiring maximum contamination removal.
F grade element, identified by its white drain layer, is an adsorbing filter that utilizes activated carbon to capture hydrocarbon vapor and deodorize compressed air. Typically it is used to protect worker environments, food and drug applications, breathing air, and instrumentation for analytical instruments. Life expectancy is approximately 3 months at rated flow.

Specifications

BOWL	POLYCARBONATE BOWL	CIRCLEVISION™ BOWL	METAL BOWL
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Max. Pressure (PSIG)	150	250	200
Max. Pressure (BAR)	10	17	14
14 Series (Weight, lbs.)	0.65	.82	0.70
14 Series (Weight, kg)	0.30	.37	0.32
22 Series (Weight, lbs.)	0.66	0.89	1.28
22 Series (Weight, kg)	0.30	0.40	0.58
32 Series (Weight, lbs.)	1.42	1.83	2.56
32 Series (Weight, kg)	0.65	0.83	1.16
42 Series (Weight, lbs.)	3.70	4.15	4.80
42 Series (Weight, kg)	1.68	1.88	2.18

How to Order

F 14 D - 02 AC

Model
F = Filter

Series
14 = 1.5 oz Bowl
22 = 3.8 oz Bowl
32 = 8.5 oz Bowl
42 = 8.5 oz Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.01 Micron Ultra Fine Coalescer
F = Vapor adsorber

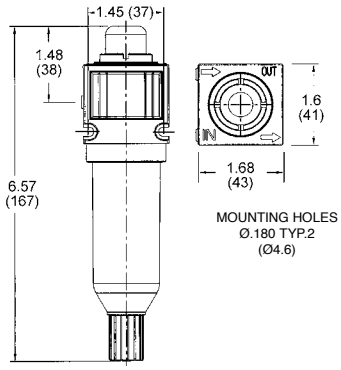
Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Options
A = Auto Drain (22, 32 and 42 Series)
B = Flexible Drain
C = Circlevision™ Sight Bowl
D = 3 Micron, Internal Pleated Prefilter
J = External Pulse Drain
M = Metal Bowl With Sight Glass
Q = Metal Manual Drain
R = Manual Lever Drain
U = No Dp Indicator

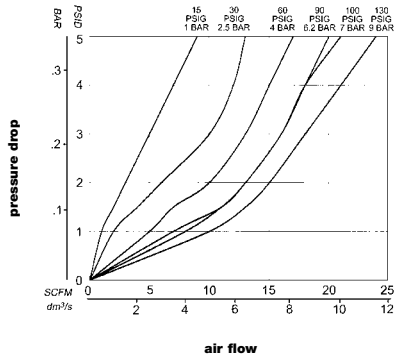
Port Size
01 = 1/8 (14 Series Only)
02 = 1/4 (14 or 22 Series Only)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series Only)
06 = 3/4 (32 or 42 Series Only)
08 = 1 (42 Series Only)

NEED MORE PARTS AND INFORMATION?
- *See page 46* for more information on available drain options.
- *See pages 47 & 48* for information on ordering replacement parts.

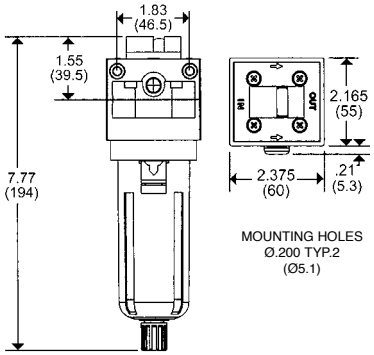
14 Series Coalescer



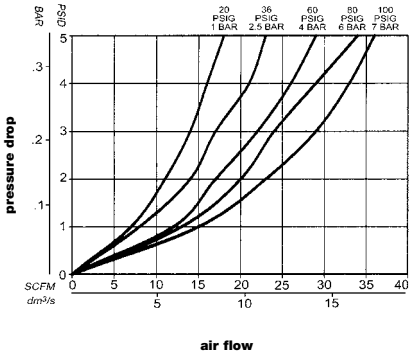
F14D-02 (0.3 micron coalescer)



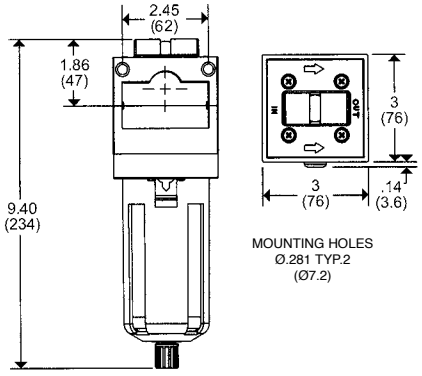
22 Series Coalescer



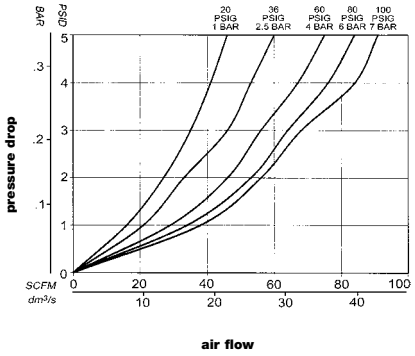
F22D-04 (0.3 micron coalescer)



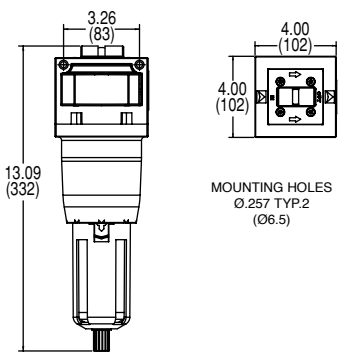
32 Series Coalescer



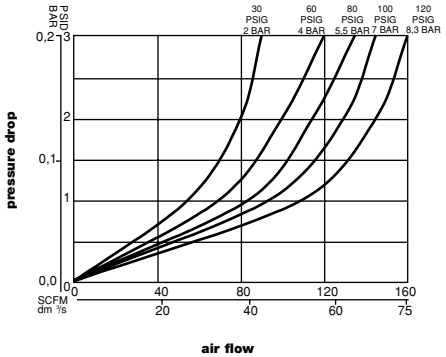
F32D-06 (0.3 micron coalescer)

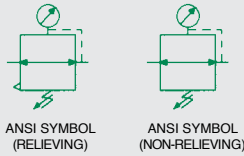


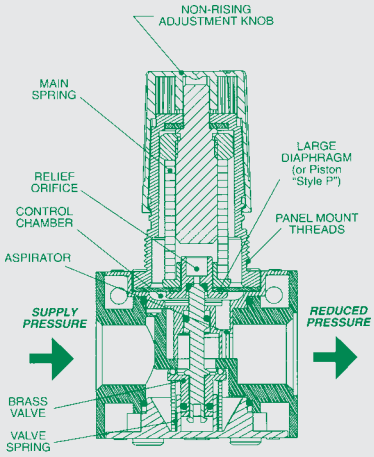
42 Series Coalescer



F42D-08 (0.3 micron coalescer)







Regulator

R14, R22, R32, R42 Series

- Four convenient sizes
- High flow in compact size
- Locking adjustment knob
- Four different pressure ratings available
- Relieving or non-relieving models
- Can be installed as modular or individual unit
- Standard output pressure 0-125 PSIG

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Temperature Range (°F)	40-120	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50	4-50
Max. Pressure (PSIG)	250	200	250	250
Max. Pressure (BAR)	17	14	14	17
Weight (lbs.)	0.65	0.69	1.37	4.30
Weight (kg)	0.30	0.31	0.62	1.95
Body Material	Zinc	Aluminum	Aluminum	Aluminum

How to Order

R 32 R - 04 GP

Model
R = Regulator

Series
14
22
32
42

Style
R = Relieving
N = Non-Relieving
K = Internal Check (22, 32, and 42 Series)
P = Piston Operator (22, 32 and 42 Series)

Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

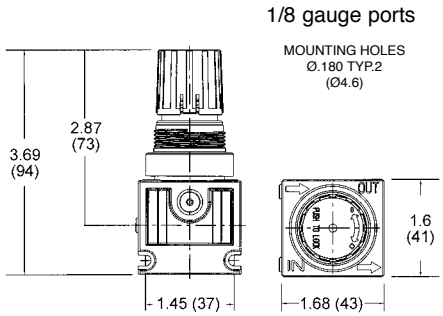
Options
G = Gauge
H = 0-200 PSIG Output (22, 32 or 42 Series)
I = 0-25 PSIG Output
L = 0-60 PSIG Output
P = Panel Mount Nut (14, 22, 32 Series)
S = Steel T Handle (42 Series)
T = Tamper Resistant

Port Size
01 = 1/8 (14 Series Only)
02 = 1/4 (14 or 22 Series Only)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series Only)
06 = 3/4 (32 or 42 Series Only)
08 = 1 (42 Series Only)

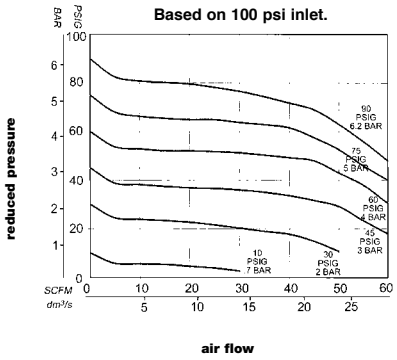
Notes:
- 42 Series "H" spring comes standard with Steel "T" Handle.
- "T" option tamper resistant cannot be used with high pressure "H" option with 42 Series.

NEED MORE PARTS AND INFORMATION?
- *See pages 47 & 48* for information on ordering replacement parts.

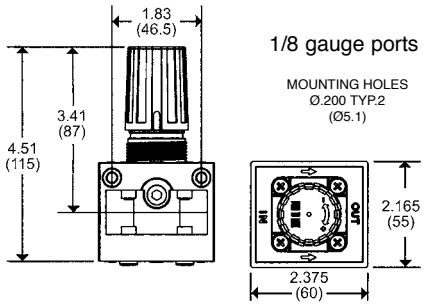
14 Series Regulator



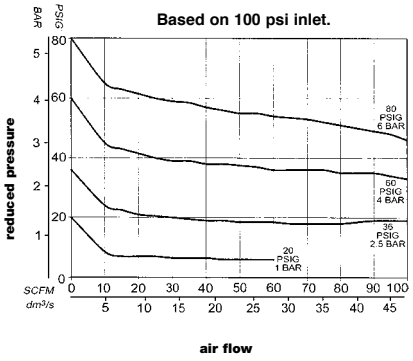
R14R-02 (14 Series Regulator)



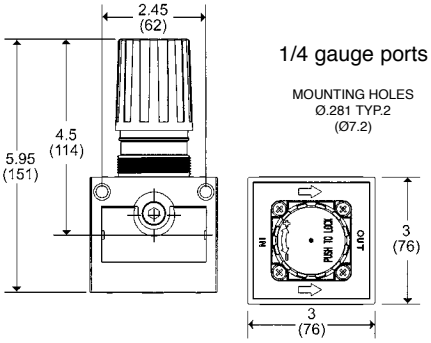
22 Series Regulator



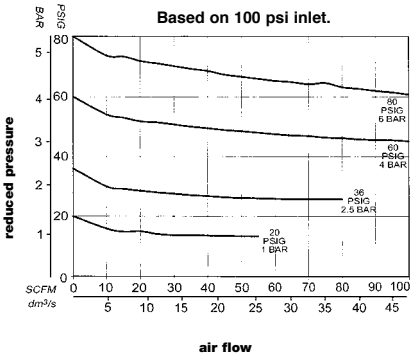
R22R-04 (22 Series Regulator)



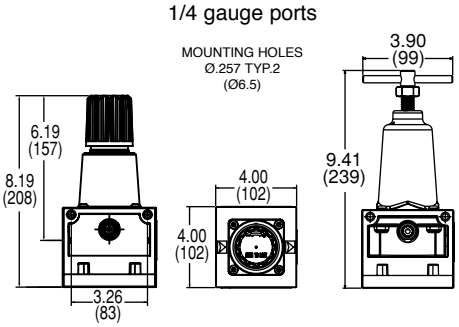
32 Series Regulator



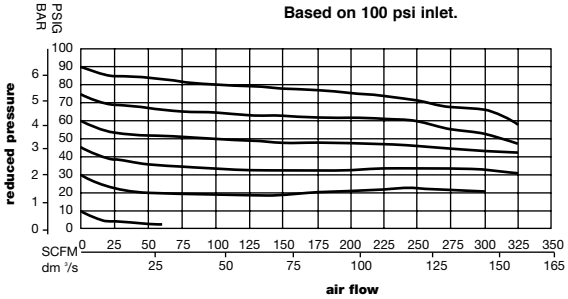
R32R-06 (32 Series Regulator)



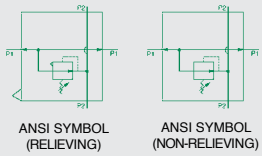
42 Series Regulator

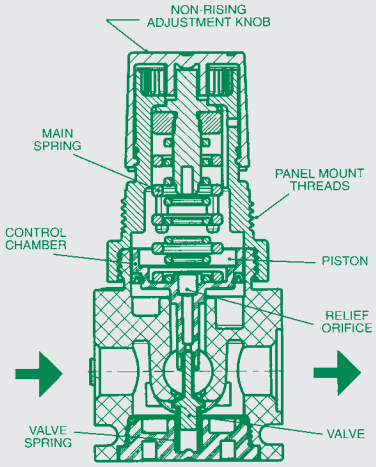


R42R-08 (42 Series Regulator)



Steel "T" Handle Option





Manifold Regulator

MR14 Series

The 14 Series Manifold Regulator allows several regulators to be chained together while maintaining a constant primary pressure to each regulator. This regulator features a dual spring design which covers any possible outlet setting without the need to indicate a specific spring, eliminating confusing options and part numbers. The regulator uses the inner spring for more precise, lower pressures, and the outer spring for middle to high pressures. As the smaller, inner spring is compressed, the larger, outer spring takes over for higher pressures.

Regulators consist of a piston which floats between the main springs (top) and a valve stem (bottom). By turning the adjustment knob clockwise, the main spring is forced onto the piston which, in turn, is pressed onto the valve stem. When the spring force becomes greater than the force of the air pressure in the control chamber below the piston, the valve is forced down and flow begins. As flow continues, the pressure begins to build and air, via the aspirator tube, fills the control chamber. When the underside piston force is greater than the main spring force, the piston is forced upward, causing the main valve to close. The cycle continues in a balanced process of reducing or increasing flow based upon the downstream pressure.

- High flow in compact size
- Locking adjustment knob
- Single pressure range suits any application
- Relieving or non-relieving models
- Can be installed as modular or individual unit
- Standard output pressure 0-125 PSIG

Specifications

	14 SERIES
Temperature Range (°F)	40-120
Temperature Range (°C)	4-50
Max. Pressure (PSIG)	250
Max. Pressure (BAR)	17
Weight (lbs.)	0.60
Weight (kg)	0.27
Body Material	Zinc

How to Order

MR 14 R - 02 GT

Model
MR= Manifold Regulator

Series
14

Style
R = Relieving
N = Non-Relieving

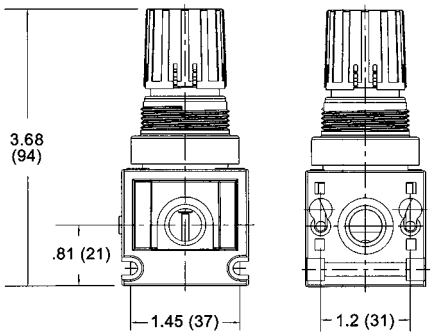
Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

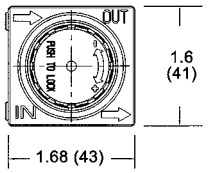
Port Size
02 = 1/4

Options
G = Gauge
I = 0-25 PSIG Output
L = 0-60 PSIG Output
P = Panel Mount Nut
T = Tamper Resistant

NEED MORE PARTS AND INFORMATION?
- *See pages 47 & 48* for information on ordering replacement parts.

14 Series Manifold Regulator

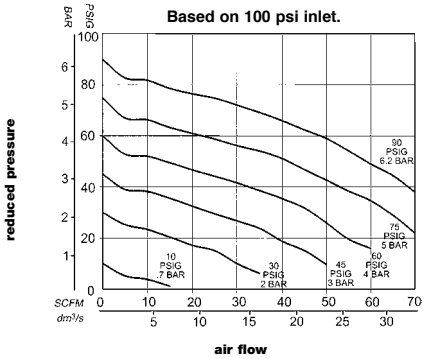




1/4 gauge ports

MOUNTING HOLES
Ø.300 TYP.2 (Ø7.6)

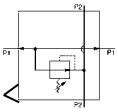
MR14R-02 (14 Series Manifold Regulator)



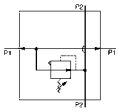
Miniature Manifold Regulator

MR02 Series

MR02R-01G pictured
shown assembled and individually



ANSI
SYMBOL
(Relieving)



ANSI
SYMBOL
(Non-Relieving)

Application

The MR02 Series Miniature Manifold Regulator offers the flexibility necessary for many of today's applications. The MR02 Series allows several regulators to be chained together while maintaining a constant primary pressure to each regulator.

A system equipped with the Miniature Manifold Regulator can help reduce operation costs by reducing unnecessary downstream pressures and improve efficiencies by keeping them in one, convenient location for easy adjustment.

Features

- Can be installed as an individual or manifold unit
- Standard output pressure 0 -125 PSIG
- 3 available outlet/gauge ports (one in front, one in back, and one in the bottom)
- Integral mounting holes allow for easy panel mounting
- Connects easily without adapters or independent manifold system
- Standard 5 mm tamper resistant adjustment
- High flow capability in relation to compact size (2.7" height x 1" square)
- Relieving or non-relieving models

Specifications

P1 Ports: 1/8 NPTF
Outlet/Gauge Ports: 10-32 UNF
Temperature Range: 40 -120 F (4-50 C)
Max Inlet Pressure: 200 PSIG (14 Bar)
Weight: .15 lbs (68 grams)
**SCFM w/100 PSI inlet set @ 75: 5 scfm
**SCFM w/100 PSI inlet set @ 60: 4 scfm
**SCFM w/100 PSI inlet set @ 40: 3 scfm
Body material: Aluminum

** based on a 25% pressure drop from set

Optional Accessories

ITEM	PART NO.
23mm Gauge "G" Option	NG23-M
10-32 - 1/8 NPTF Adapter	134-034
10-32 - 1/8 O.D Barb Fitting	134-236
10-32 - 1/4 O.D Barb Fitting	134-234

Each Regulator includes an R02K assembly kit which includes (1) 10-32 pipe plug, (1) 1/8 pipe plug, (1) P1 port o-ring, (2) connector screws

How to Order

MR 02 R - 01 G

Model
MR = Manifold Regulator

Series
02

Style
R = Relieving
N = Non-Relieving

Options
G = Gauge
I = 0-25 PSI
L = 0-60 PSI

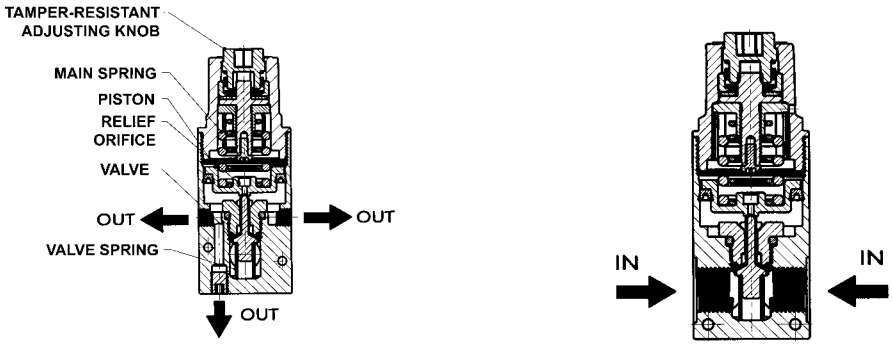
Port Size
01 = 1/8
P1 ports are 1/8,
outlet/gauge ports are 10-32

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Miniature Manifold Regulator

MR02 Series

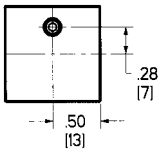
Product Cross Section



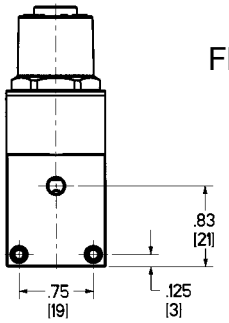
Dimensions

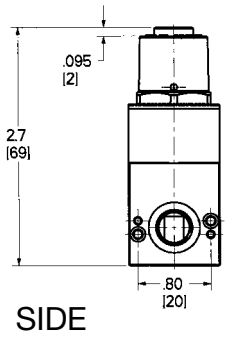
TOP

BOTTOM



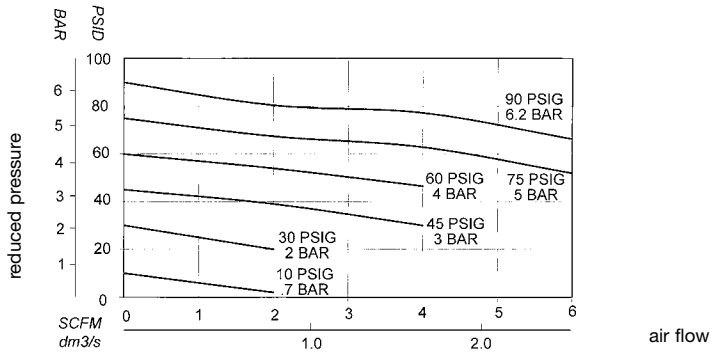
FRONT

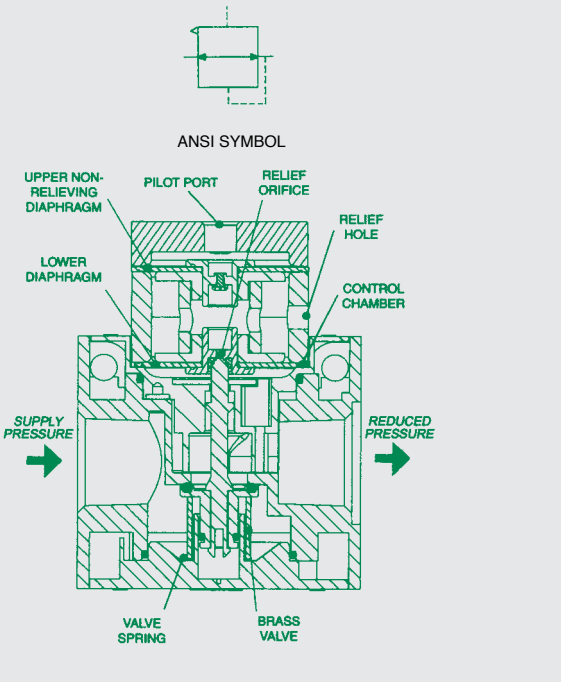




SIDE

Flow Ratings





Regulator - Pilot Operated

R22, R32, R42 Series

- Three convenient sizes
- High flow in compact size
- Can be installed as modular or individual unit
- Standard output pressure 0-125 PSIG
- Relieving or non-relieving models

Specifications

	22 SERIES	32 SERIES	42 SERIES
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Min. Pilot Pressure (PSI)	15	15	15
Min. Pilot Pressure (BAR)	1	1	1
Max.-Pilot Pressure (PSI)	150	150	200
Max. Pilot Pressure (BAR)	10.2	10.2	14
Max. Supply Pressure (PSI)	150	150	250
Max. Supply Pressure (BAR)	10.2	10.2	17.2
Weight (lbs.)	0.66	1.35	3.85
Weight (kg)	0.25	0.50	1.75
Body Material	Aluminum	Aluminum	Aluminum

How to Order

R 32 W - 04 G

Model
R = Regulator

Series
22
32
42

Style
W = All Pilot Operated Regulators

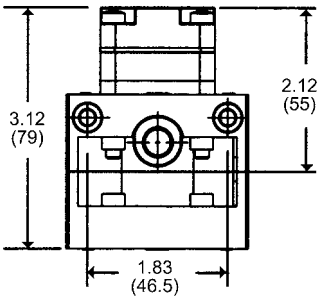
Threads
- = NPTF
G = GTap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Port Size
02 = 1/4 (22 Series Only)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series Only)
06 = 3/4 (32 and 42 Series Only)
08 = 1 (42 Series Only)

Options
G = Gauge
N = Non-Relieving

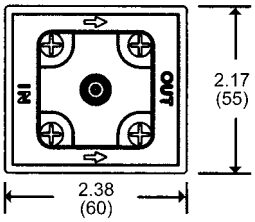
NEED MORE PARTS AND INFORMATION?
- *See pages 47 & 48* for information on ordering replacement parts.

22 Series Pilot Operated Regulator

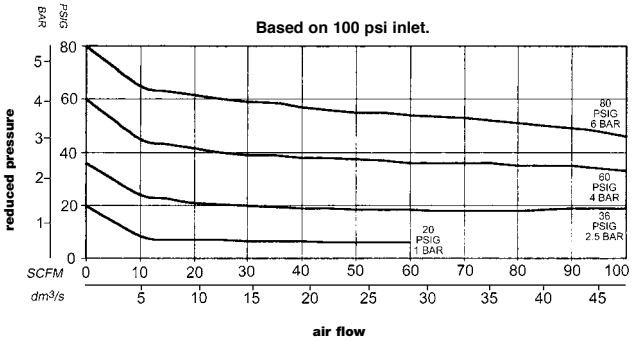


1/8 pilot port
1/8 gauge ports

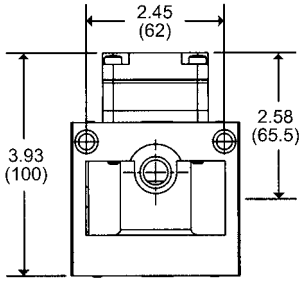
MOUNTING HOLES
Ø.200 TYP.2
(Ø5.1)



R22W-04 (Air Pilot Regulator)

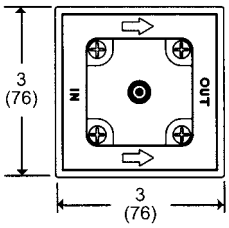


32 Series Pilot Operated Regulator

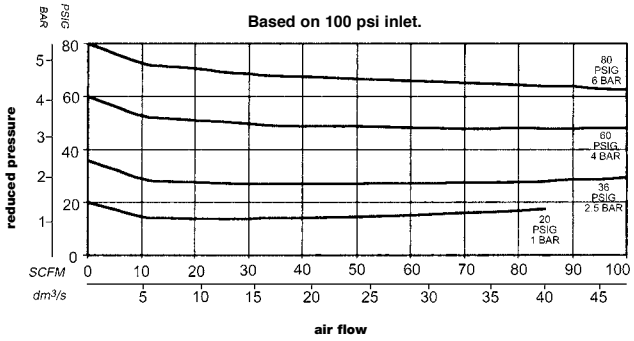


1/8 pilot port
1/4 gauge ports

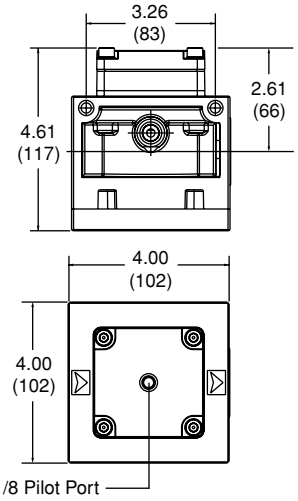
MOUNTING HOLES
Ø.281 TYP.2
(Ø7.2)



R32W-06 (Air Pilot Regulator)



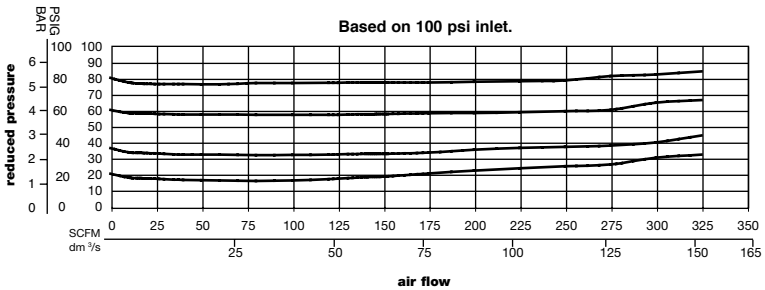
42 Series Pilot Operated Regulator

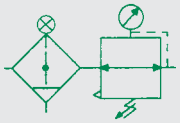


1/8 pilot port
1/4 gauge ports

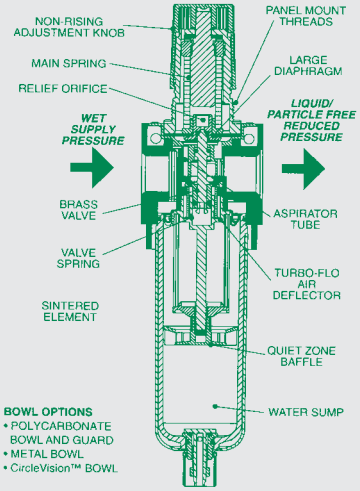
MOUNTING HOLES
Ø.257 TYP.2
(Ø6.5)

R42W-08 (Air Pilot Regulator)





ANSI SYMBOL



Particulate Filter/Regulator

P14B, P22B, P32B, P42B Series

- Four convenient sizes
- 5 micron element standard
- Can be installed as individual or modular unit
- Non-rising knob
- Optional **CircleVision**™ sight bowl
- Optional metal bowl with sight glass
- Standard output pressure 0-125 PSIG
- Bowl seal held captive (22, 32, and 42 Series)

Specifications

BOWL	POLYCARBONATE BOWL	CIRCLEVISION™ BOWL	METAL BOWL
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Max. Pressure (PSIG)	150	250	200
Max. Pressure (BAR)	10	17	14
14 Series (Weight, lbs.)	0.75	0.90	0.80
14 Series (Weight, kg)	0.34	0.40	0.37
22 Series (Weight, lbs.)	0.91	1.20	1.50
22 Series (Weight, kg)	0.41	0.55	0.68
32 Series (Weight, lbs.)	1.81	2.34	2.94
32 Series (Weight, kg)	0.82	1.06	1.34
42 Series (Weight, lbs)	5.05	5.50	6.15
42 Series (Weight, kg)	2.29	2.49	2.79

How to Order

P 14 B - 02 GIP

Model
P = Particulate/Regulator

Series
14 = 1.5 oz Bowl
22 = 3.8 oz Bowl
32 = 8.5 oz Bowl
42 = 8.5 oz Bowl

Element
B = 5 Micron Element

Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Port Size
01 = 1/8 (14 series only)
02 = 1/4 (14 or 22 series only)
03 = 3/8 (22 series only)
04 = 1/2 (22 or 32 series only)
06 = 3/4 (32 or 42 series only)
08 = 1 (42 series only)

Options
A* = Auto Drain (22, 32, and 42 Series)
B = Flexible Drain
C = CircleVision™ Sight Bowl
G = Gauge
H* = 0-200 PSIG Output (22, 32 and 42 Series)
I = 0-25 PSIG Output
J = External Pulse Drain
L = 0-60 PSIG Output (22, 32 and 42 Series)
M = Metal Bowl with Sight Glass
N = Non-Relieving
P = Panel Mount Nut (14, 22, and 32 Series)
Q = Metal Manual Drain
R = Manual Lever Drain
T = Tamper Resistant
S = Steel T Handle (42 Series)
V = Shut off valve

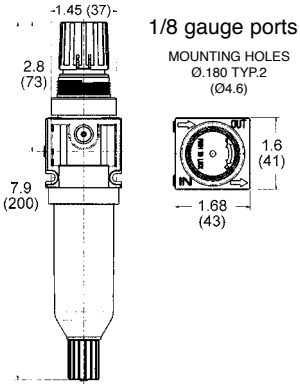
*"A" and "H" options cannot be used together.

Notes:
- To order a piston style particulate filter/regulator, add "P" to the model number.(example: P32BP-04GIP)
- "T" option tamper resistant cannot be used with high pressure "H" option with 42 Series.

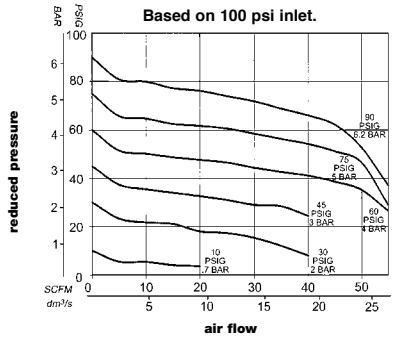
NEED MORE PARTS AND INFORMATION?

• *See pages 47 & 48* for information on ordering replacement parts. • *See page 34* for more information on available drain options.

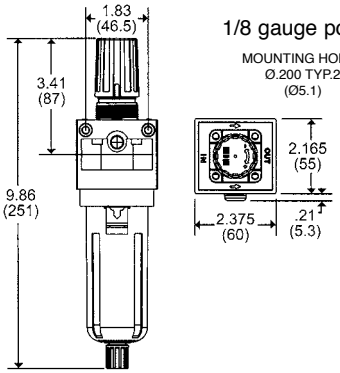
14 Series Filter/Regulator



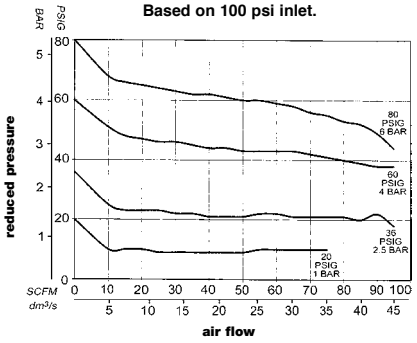
P14B-02 (5 micron particulate)



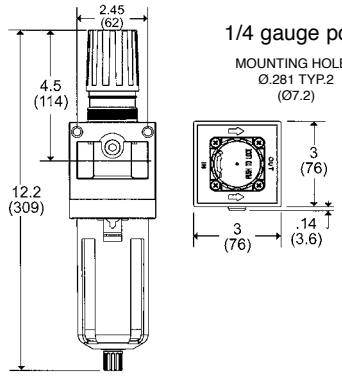
22 Series Filter/Regulator



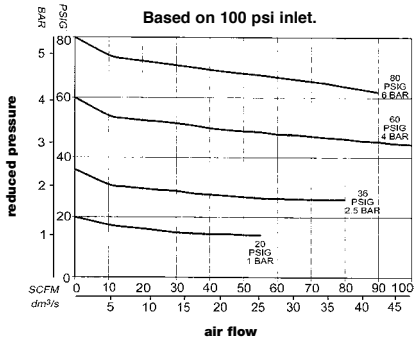
P22B-04 (5 micron particulate)



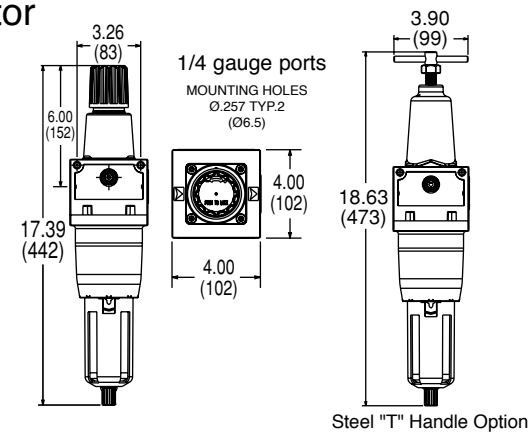
32 Series Filter/Regulator



P32B-06 (5 micron particulate)

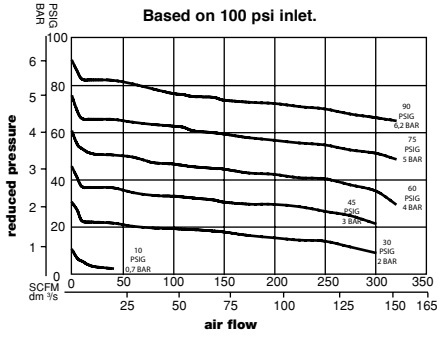


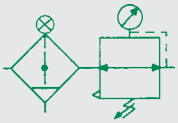
42 Series Filter/Regulator



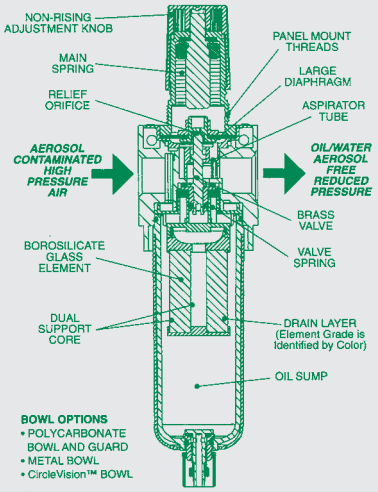
Steel "T" Handle Option

P42B-08 (5 micron particulate)





ANSI SYMBOL



Coalescing Filter/Regulator

C14, C22, C32, C42 Series

- Four convenient sizes
- Cartridge element design
- Inner/outer support cores prevent element from crushing in either flow direction
- Connects easily to FLEXIBLOK® Modular system
- Four element grades available

Recommended Uses

C grade element, identified by its blue drain layer, is a coarse filter for large amounts of water, rust, pipe scale, and liquid hydrocarbons. Excellent for environments that have severe contamination. Can be used for lubricated or 'dry' systems. Ideal for mainline filtration of plant air.
D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry'). Excellent filter for desiccant or regenerative style dryers.
E grade element, identified by its red drain layer, is an ultra fine filter for oil-free instrumentation air, blow molding, food and drug packaging, electronics applications, and other applications requiring maximum contamination removal.
F grade element, identified by its white drain layer, is an adsorbing filter that utilizes activated carbon to capture hydrocarbon vapor and deodorize compressed air. Typically it is used to protect worker environments, food and drug applications, breathing air, and instrumentation for analytical instruments. Life expectancy is approximately 3 months at rated flow.

Specifications

BOWL	POLYCARBONATE BOWL	CIRCLEVISION™ BOWL	METAL BOWL
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Max. Pressure (PSIG)	150	250	200
Max. Pressure (BAR)	10	17	14
14 Series (Weight, lbs.)	0.80	0.95	0.85
14 Series (Weight, kg)	0.35	0.43	0.38
22 Series (Weight, lbs.)	0.92	1.20	1.60
22 Series (Weight, kg)	0.42	0.55	0.73
32 Series (Weight, lbs.)	1.82	2.35	2.95
32 Series (Weight, kg)	0.83	1.07	1.34
42 Series (Weight, lbs.)	5.05	5.50	6.15
42 Series (Weight, kg)	2.29	2.49	2.79

How to Order

C 32 C - 06 AGNQ

Model
C = Coalescer/Regulator

Series
14 = 1.5 oz Bowl
22 = 3.8 oz Bowl
32 = 8.5 oz Bowl
42 = 8.5 oz Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.01 Micron Ultra Fine Coalescer
F = Vapor Adsorber

Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Port Size
01 = 1/8 (14 series only)
02 = 1/4 (14 or 22 series only)
03 = 3/8 (22 series only)
04 = 1/2 (22 or 32 series only)
06 = 3/4 (32 or 42 series only)
08 = 1 (42 series only)

Options
A* = Auto Drain (22, 32, and 42 series)
B = Flexible Drain
C = CircleVision™ Sight Bowl
D = 3 Micron, Internal Pleated Filter
G = Gauge
H* = 0-200 PSIG Output
I = 0-25 PSIG Output
J = External Pulse Drain
L = 0-60 PSIG Output
M = Metal Bowl with Sight Glass
N = Non-Relieving
P = Panel Mount Nut
Q = Metal Manual Drain
R = Manual Lever Drain
S = Steel T Handle (42 Series)
T = Tamper Resistant
V = Shut Off Valve

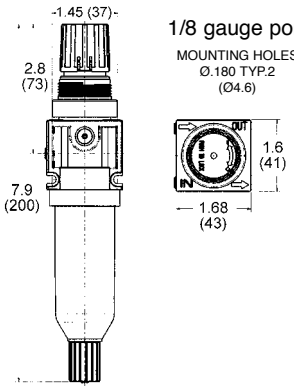
*'A' and 'H' options cannot be used together.

Note: To order a piston style coalescing/regulator, add "P" to the model number. (ie: C32CP-06AGQ)

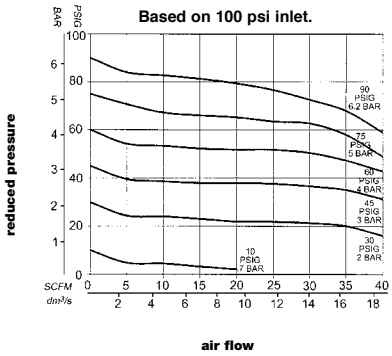
NEED MORE PARTS AND INFORMATION?

• *See page 46 for* more information on available drain options.
• *See pages 47 & 48 for information on ordering replacement parts.*

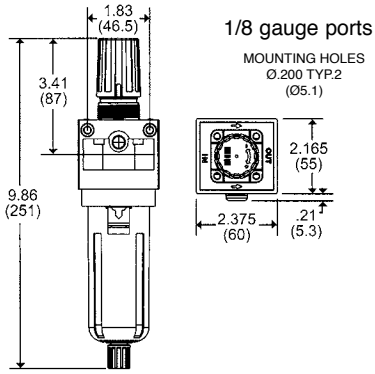
14 Series Coalescer/Regulator



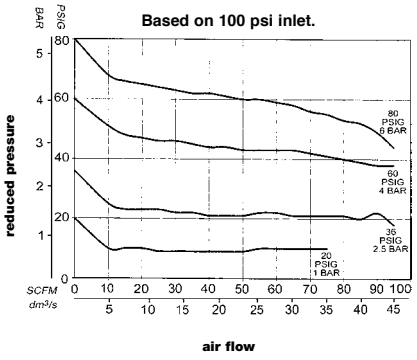
C14D-02 (0.3 micron coalescing)



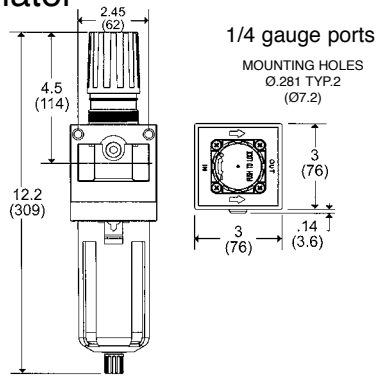
22 Series Coalescer/Regulator



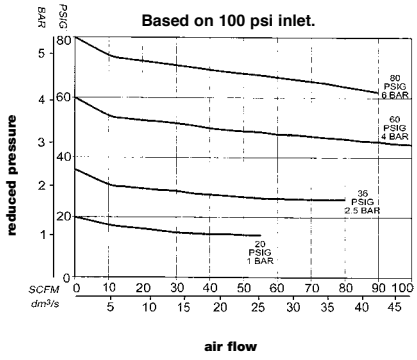
C22D-04 (0.3 micron coalescing)



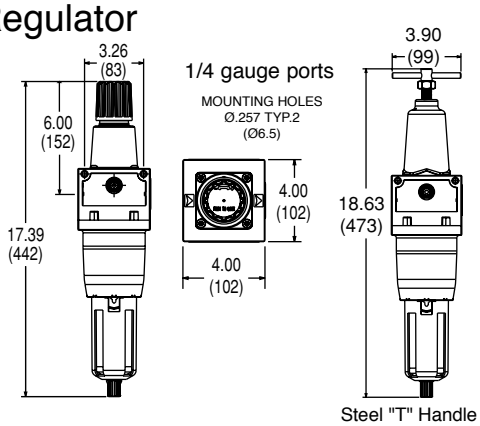
32 Series Coalescer/Regulator



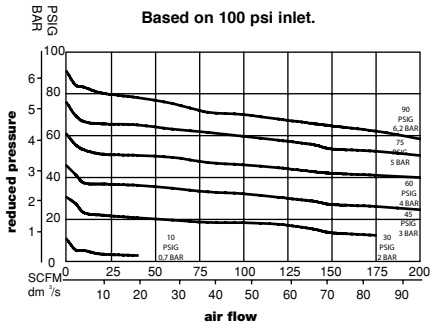
C32D-06 (0.3 micron coalescing)

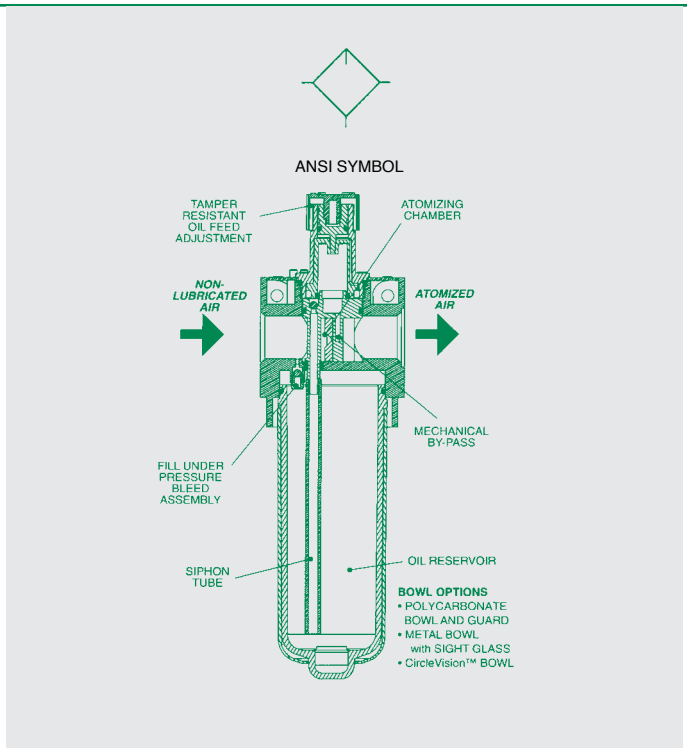


42 Series Coalescer/Regulator



C42D-08 (0.3 micron coalescing)





Lubricator

L14L, L22L, L32L, L42L Series

- Four convenient sizes
- Lubrication to begin at 2 SCFM
- Can be filled under pressure (32 and 42 series only)
- Tamper-resistant knob standard
- Optional CircleVision™ sight bowl
- Optional metal bowl with sight glass
- Can be mounted as individual or modular unit
- Button head fill optional on all sizes
- Atomizing chamber develops longer life aerosols

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Temperature Range (°F)	40-120	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50	4-50
Max. Pressure (PSIG)	200	200	200	200
Max. Pressure (BAR)	14	14	14	14
Weight (lbs.)	0.60	0.69	1.37	4.15
Weight (kg)	0.27	0.31	0.62	2.18
Body Material	Zinc	Aluminum	Aluminum	Aluminum

How to Order

L 22 L - 02 CF

Model
L = Lubricator

Series
14 = 1.5 oz Bowl
22 = 3.8 oz Bowl
32 = 8.5 oz Bowl
42 = 8.5 oz Bowl

Style
L = Standard Lubricators

Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

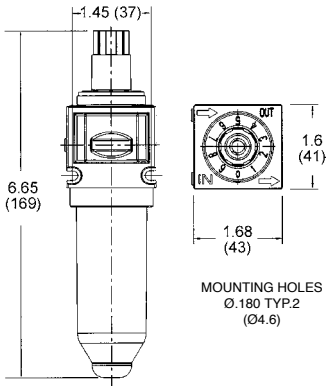
Options
C = CircleVision Sight Bowl
F = Button Head Fill
K = Drain on Bowl
M = Metal Bowl with Sight Glass

Port Size
01 = 1/8 (14 series only)
02 = 1/4 (14 or 22 series only)
03 = 3/8 (22 series only)
04 = 1/2 (22 or 32 series only)
06 = 3/4 (32 or 42 series only)
08 = 1 (42 series only)

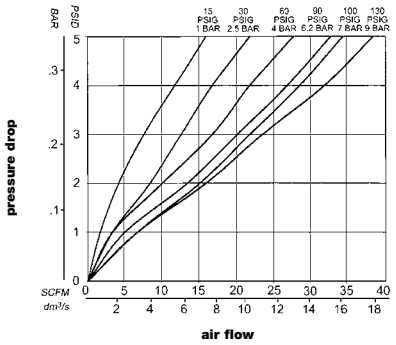
Note: F and K options cannot be used together.

NEED MORE PARTS AND INFORMATION?
- *See pages 47 & 48* for information on ordering replacement parts.

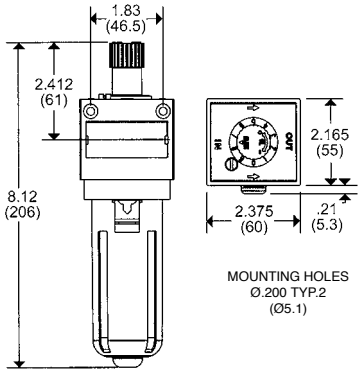
14 Series Lubricator



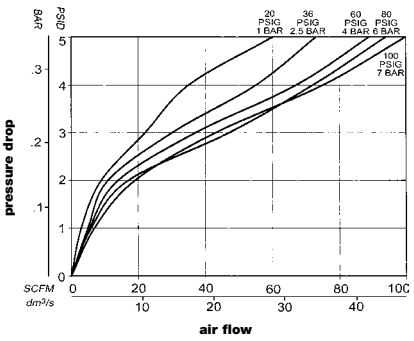
L14L-02 (14 Series Lubricator)



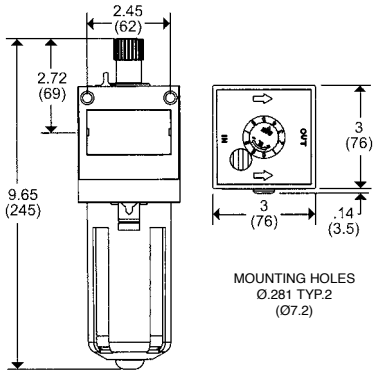
22 Series Lubricator



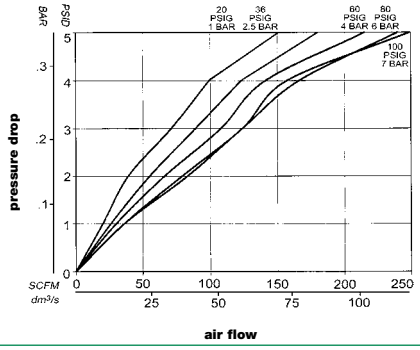
L22L-04 (22 Series Lubricator)



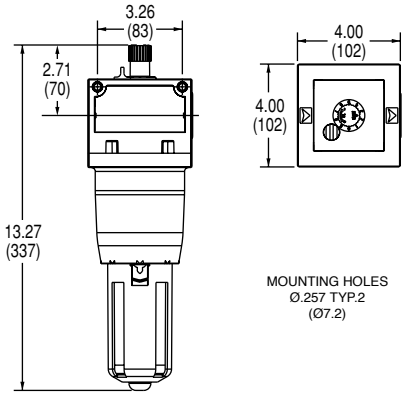
32 Series Lubricator



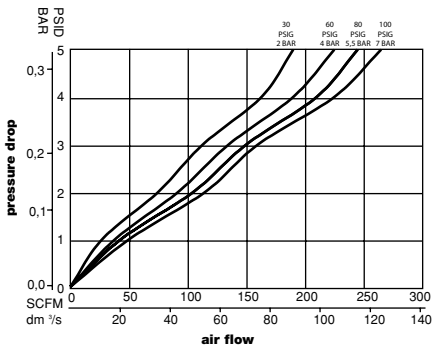
L32L-06 (32 Series Lubricator)

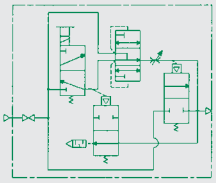


42 Series Lubricator

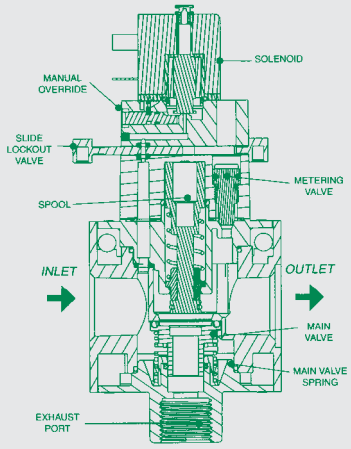


L42L-06 (42 Series Lubricator)





ANSI SYMBOL



Solenoid Soft Start Quick Exhaust Valve

S22C, S32C, S42C Series

- Three convenient sizes
- Lockout feature prevents unauthorized pressurization of system
- High exhaust capacity for quick depletion of pressure
- High inlet to outlet flow capability
- Connects easily to FLEXIBLOK® Modular system
- Incorporated metering valve controls how quickly downstream pressure is reached, which controls the slow start feature

Specifications

	22 SERIES	32 SERIES	42 SERIES
Exhaust Ports (NPTF)	1/2	1/2	3/8 (3 exh. ports)
Gauge Ports (NPTF)	1/8	1/4	1/4
Temperature Range (°F)	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50
Min. Pressure (PSI)	60	60	20
Min. Pressure (BAR)	4	4	1.38
Max.-Pressure (PSI)	150	150	150
Max. Pressure (BAR)	10	10	10
Weight, lbs. (kg.)	0.94 (0.43)	1.56 (0.71)	4.35 (1.97)
Body Material	Aluminum	Aluminum	Aluminum

Cv in-out/out-exh (22 Series, 1/4)	2 / 1.2
Cv in-out/out-exh (22 Series, 3/8)	2.87 / 1.38
Cv in-out/out-exh (22 Series, 1/2)	3.62 / 1.32
Cv in-out/out-exh (32 Series, 1/2)	5.24 / 3.01
Cv in-out/out-exh (32 Series, 3/4)	6.47 / 3.14
Cv in-out/out-exh (42 Series, 3/4)	7.5 / 5.0
Cv in-out/out-exh (42 Series, 1)	8.0 / 5.0

WATTAGE AND AMPERAGE	
110V AC	1.42 watts / 0.022 amps
230V AC	2.00 watts / 0.016 amps
24V AC	2.00 watts / 0.011 amps
24V DC	2.00 watts / 0.080 amps

How to Order

S 32 C - 06 BFGLM

Model
S = Solenoid Soft Start

Series
22
32
42

Style
C = Standard Solenoid Soft Start

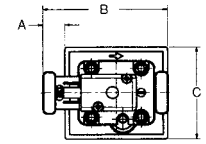
Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Options
B = Revision Level
E = 110V AC 50/60 Hz
F = 230V AC 50/60 Hz
G = Gauge
J = 24V AC 50/60 Hz Coil
K = 24V DC Coil
L = Plug with Light
M = Muffler
N = No manual Override
P = Black Plug Assembly
Q = 4 Pin Micro Connector
X = No Slide

Port Size
02 = 1/4 (22 Series Only)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series)
06 = 3/4 (32 or 42 Series Only)
08 = 1 (42 Series Only)

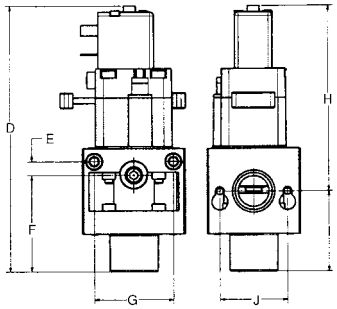
NEED MORE PARTS AND INFORMATION?
- *See pages 47 & 48* for information on ordering replacement parts.

22 Series Solenoid Soft Start

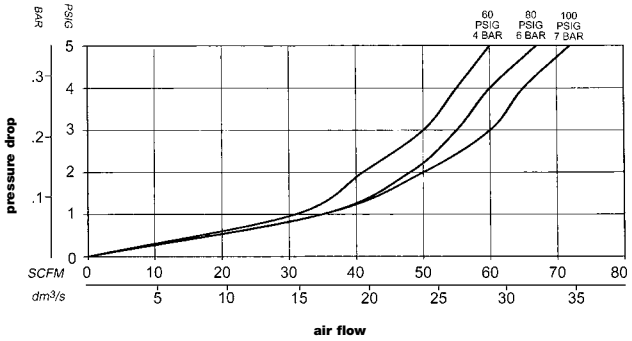


1/8 gauge ports

MOUNTING HOLES
Ø.200 TYP.2
(Ø5.1)



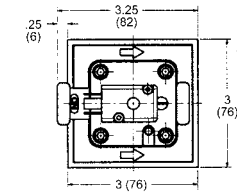
S22C-04B (22 Series Solenoid Soft Start Quick Exhaust Valve)



Dimensions

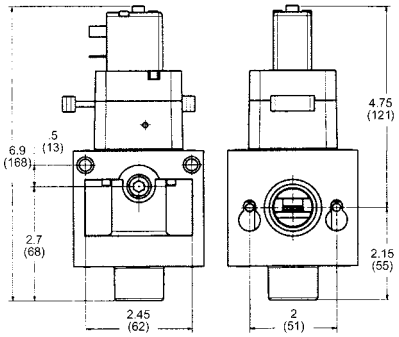
	A	B	C	D	E	F	G	H	I	J
22 Series	.51 (13)	2.9 (73)	2.1 (65)	6.3 (160)	.32 (8)	2.2 (58)	1.8 (46)	4.4 (112)	1.9 (48)	1.5 (40)

32 Series Solenoid Soft Start

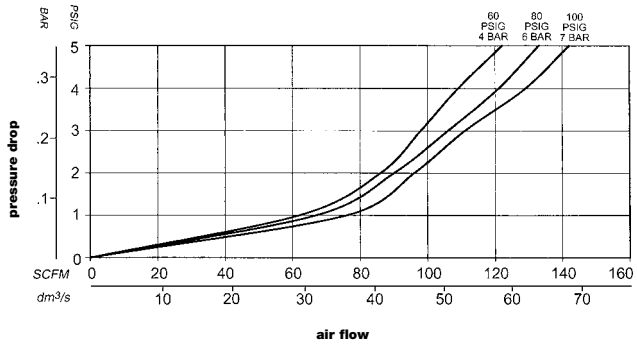


1/4 gauge ports

MOUNTING HOLES
Ø.281 TYP.2
(Ø7.2)

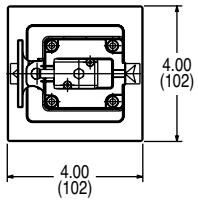


S32C-06B (32 Series Solenoid Soft Start Quick Exhaust Valve)



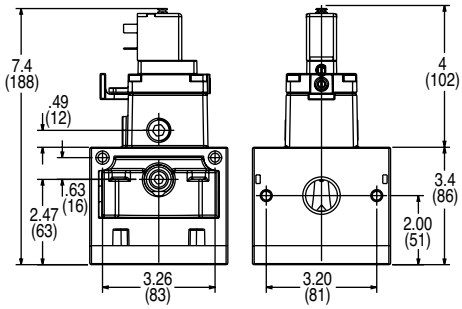
42 Series Solenoid Soft Start

* Muffler and plug not included

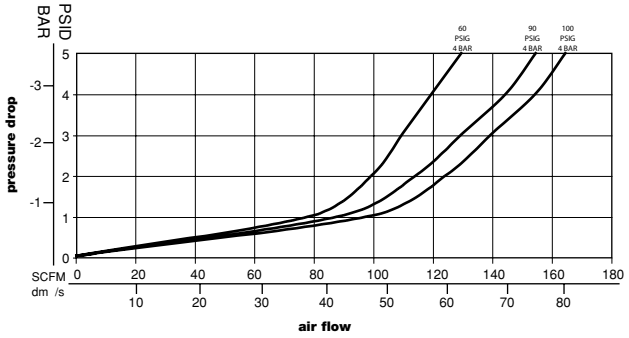


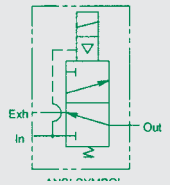
1/4 gauge ports

MOUNTING HOLES
Ø.257 TYP.2
(Ø6.5)

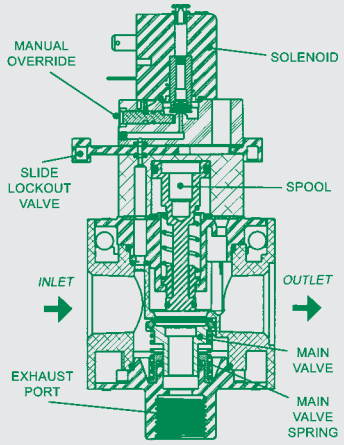


S42C-08B (42 Series Solenoid Soft Start Quick Exhaust Valve)





ANSI SYMBOL



Solenoid Quick Exhaust Valve

S14E, S22E, S32E, S42E Series

- Four convenient sizes
- Lockout feature (located in slide valve) prevents unauthorized pressurization of system (22, 32, and 42 Series)
- Standard manual override (or with no manual override option)
- Low-wattage coil prevents high-temperatures
- High exhaust capacity for quick depletion of pressure
- High inlet to outlet flow capability
- Connects easily to FLEXIBLOK® Modular system

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Exhaust Ports (NPTF)	1/8	1/2	1/2	3/4
Gauge Ports (NPTF)	10-32 UNF	1/8	1/4	1/4
Temperature Range (°F)	40-120	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50	4-50
Min. Pressure (PSI)	40	40	40	20
Min. Pressure (BAR)	2.76	2.76	2.76	1.38
Max.-Pressure (PSI)	150	150	150	150
Max. Pressure (BAR)	10	10	10	10
Weight, lbs. (kg.)	1.25 (0.57)	1.15 (0.53)	1.75 (0.79)	3.45 (1.56)
Body Material	Zinc	Aluminum	Aluminum	Aluminum

Cv in-out/out-exh (14 Series,1/8)	1.15 / 1.10
Cv in-out/out-exh (14 Series, 1/4)	1.55 / 1.10
Cv in-out/out-exh (22 Series,1/4)	2 / 1.2
Cv in-out/out-exh (22 Series, 3/8)	2.87 / 1.38
Cv in-out/out-exh (22 Series, 1/2)	3.62 / 1.32
Cv in-out/out-exh (32 Series, 1/2)	5.24 / 3.01
Cv in-out/out-exh (32 Series, 3/4)	6.47 / 3.14
Cv in-out/out-exh (42 Series, 3/4)	7.5 / 5.0
Cv in-out/out-exh (42 Series, 1)	8.0 / 5.0

WATTAGE AND AMPERAGE	
110V AC	1.42 watts / 0.022 amps
230V AC	2.00 watts / 0.016 amps
24V AC	2.00 watts / 0.011 amps
24V DC	2.00 watts / 0.080 amps

How to Order

S 32 E - 04 BFGLM

Model
S = Solenoid Quick Exhaust

Series
14
22
32
42

Style
E = Standard Solenoid Quick Exhaust Valve

Threads
- = NPTF
G = G Tap (BSPP (Conforms to ISO Standards 1179-1 and 228-1))
R = PT (BSPT)

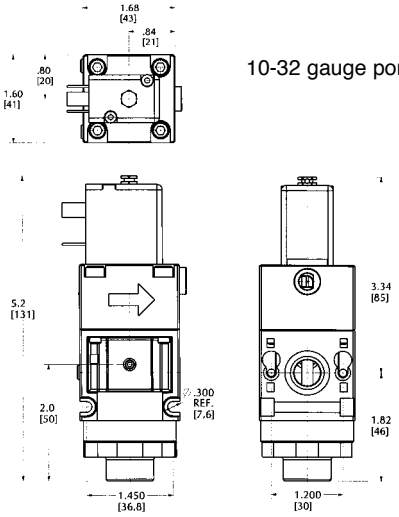
Options
B = Revision Level
E = 110V AC 50/60 Hz
F = 230V AC 50/60 Hz
G = Gauge
J = 24V AC 50/60 Hz Coil
K = 24V DC Coil
L = Plug with Light
M = Muffler
N = No manual Override
P = Standard Black Plug Assembly
Q = 4 Pin Micro Connector
X = No Slide

Port Size
01 = 1/8 (14 Series Only)
02 = 1/4 (14 or 22 Series)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series)
06 = 3/4 (32 or 42 Series Only)
08 = 1 (42 Series Only)

NEED MORE PARTS AND INFORMATION?

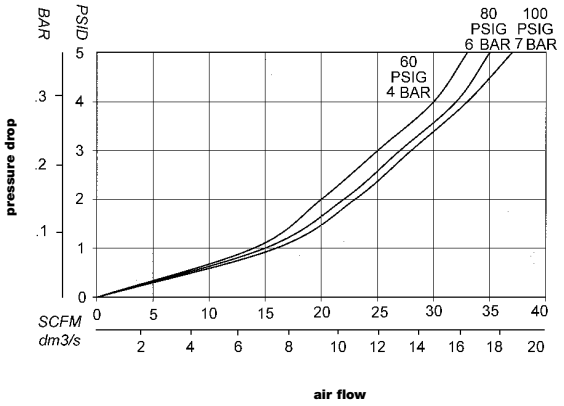
• *See pages 47 & 48* for information on ordering replacement parts.

14 Series Solenoid Quick Exhaust

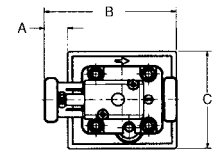


10-32 gauge ports

S14E-04B (14 Series Solenoid Quick Exhaust Valve)

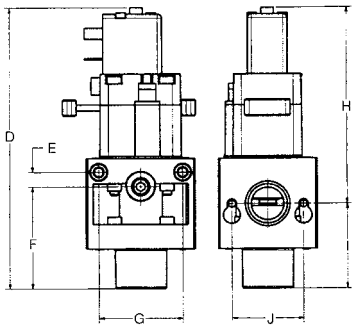


22 and 32 Series Solenoid Quick Exhaust

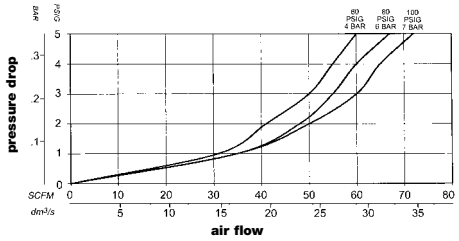


22: 1/8 gauge ports
32: 1/4 gauge ports

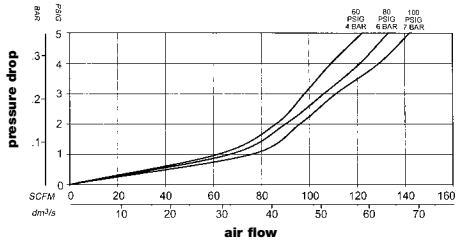
MOUNTING HOLES
22: Ø.200 TYP.2
(Ø5.1)
32: Ø.281 TYP.2
(Ø7.2)



S22E-04B (22 Series Solenoid Quick Exhaust Valve)



S32E-06B (32 Series Solenoid Quick Exhaust Valve)

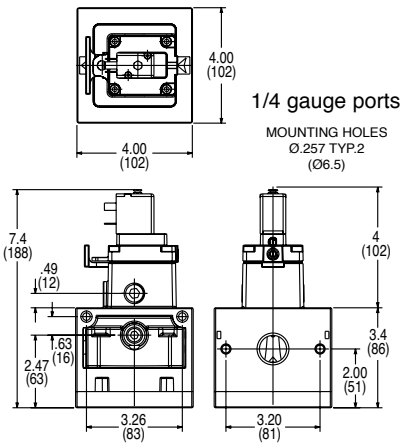


Dimensions

	A	B	C	D	E	F	G	H	I	J
22 Series	.51 (13)	2.9 (73)	2.1 (65)	6.3 (160)	.32 (8)	2.2 (58)	1.8 (46)	4.4 (112)	1.9 (48)	1.5 (40)
32 Series	.25 (6)	3.2 (82)	3.0 (76)	6.9 (168)	.5 (13)	2.7 (68)	2.4 (61)	4.7 (121)	2.1 (55)	2.0 (51)

42 Series Solenoid Quick Exhaust

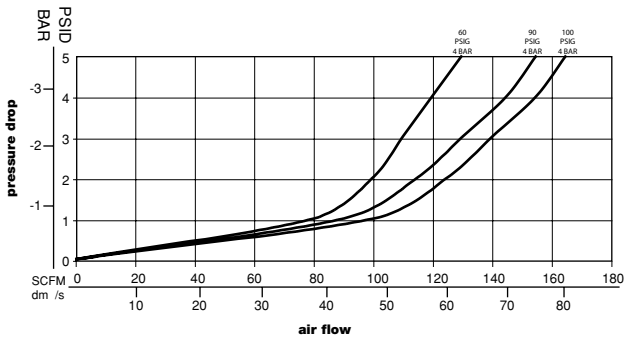
* Muffler and plug not included

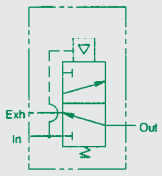


1/4 gauge ports

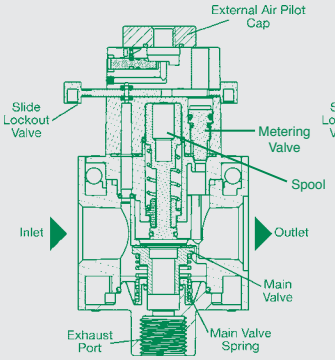
MOUNTING HOLES
Ø.257 TYP.2
(Ø6.5)

S42E-08B (42 Series Solenoid Soft Start Quick Exhaust Valve)

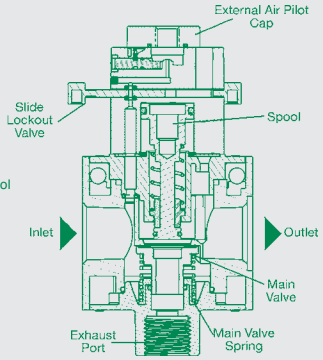




ANSI SYMBOL



Air Piloted Soft Start Quick Exhaust Valve



Air Piloted Quick Exhaust Valve

Internally/Externally Pilot Operated Quick Exhaust Valves

Pilot Operated "Soft Start" Quick Exhaust Valves

External Pilot - Style "C" – Available three series S22, S32 , S42 only

Pilot Operated "Soft Start" Quick Exhaust Valves

Internal Pilot - Style "P" – Available three series S22, S32 , S42 only

Pilot Operated "Quick Exhaust" Valves

External Pilot - Style "E" – Available four series S14, S22, S32 , S42

- Lockout feature (located in yellow slide valve) prevents unauthorized system pressurization. Available three series S22, S32 , S42 only
- High flow capacity Inlet to Outlet
- High exhaust capacity for quick depletion of downstream pressure
- Connects easily to FLEXIBLOK® Modular FRL systems

Specifications

	14 SERIES	22 SERIES	32 SERIES	42 SERIES
Exhaust Ports (NPTF)	1/4	1/2	1/2	3/4
Gauge Ports (NPTF)	10-32 UNF	1/8	1/4	1/4
Temperature Range (°F)	40-120	40-120	40-120	40-120
Temperature Range (°C)	4-50	4-50	4-50	4-50
Min. Pressure (PSI)	40	40	40	20
Min. Pressure (BAR)	2.76	2.76	2.76	1.38
Max.-Pressure (PSI)	150	150	150	150
Max. Pressure (BAR)	10	10	10	10
Weight, lbs. (kg.)	1.25 (0.57)	1.15 (0.53)	1.75 (0.79)	3.45 (1.56)
Body Material	Zinc	Aluminum	Aluminum	Aluminum

Cv in-out/out-exh (14 Series,1/8)	1.15 / 1.10
Cv in-out/out-exh (14 Series, 1/4)	1.55 / 1.10
Cv in-out/out-exh (22 Series,1/4)	2 / 1.2
Cv in-out/out-exh (22 Series, 3/8)	2.87 / 1.38
Cv in-out/out-exh (22 Series, 1/2)	3.62 / 1.32
Cv in-out/out-exh (32 Series, 1/2)	5.24 / 3.01
Cv in-out/out-exh (32 Series, 3/4)	6.47 / 3.14
Cv in-out/out-exh (42 Series, 3/4)	7.5 / 5.0
Cv in-out/out-exh (42 Series, 1)	8.0 / 5.0

How to Order

S 22 E - 04 BGMW

Model
S = Internally or Externally Pilot Operated Quick Exhaust Valves

Series
14
22
32
42

Style
C = Soft Start Quick Exhaust Valves (External Pilot 22, 32, 42 Series Only)
P = Soft Start Quick Exhaust Valves (Internal Pilot 22, 32, 42 Series Only)
E = Quick Exhaust Valves (External Pilot 14, 22, 32, 42 Series)

Threads
- = NPTF
G = G Tap (BSPP) (Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Port Size
01 = 1/8 (14 Series Only)
02 = 1/4 (14 or 22 Series)
03 = 3/8 (22 Series Only)
04 = 1/2 (22 or 32 Series)
06 = 3/4 (32 and 42 Series Only)
08 = 1 (42 Series Only)

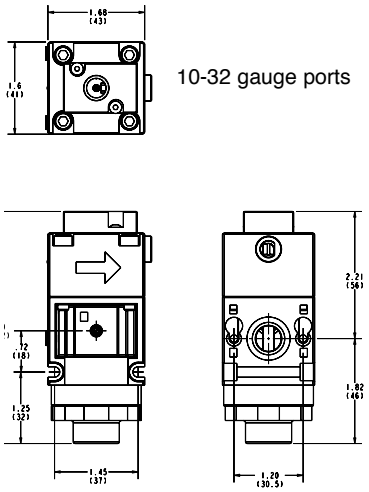
Options
B = Revision Level
G = Gauge
M = Muffler
W = External Air Pilot (Use for styles "C & E")
X = No Slide on Valve

NEED MORE PARTS AND INFORMATION?

- *See pages 47 & 48* for information on ordering replacement parts.

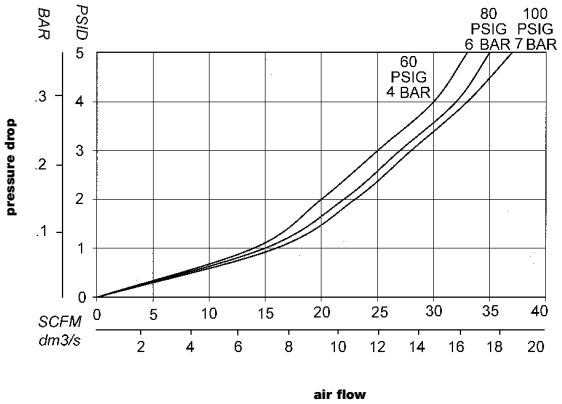
Note: How to order examples for the three different models:
"C" Externally Piloted Soft Start Quick Exhaust Valve: eg S22C-04BW
"P" Internally Piloted Soft Start Quick Exhaust Valve: eg S22P-04
"E" Externally Piloted Quick Exhaust Valve: eg S22E-04BW
" C & E "externally pilot operated valves are not field convertible to solenoid operated. Consult factory.

14 Series Internally/Externally Piloted Quick Exhaust Valve

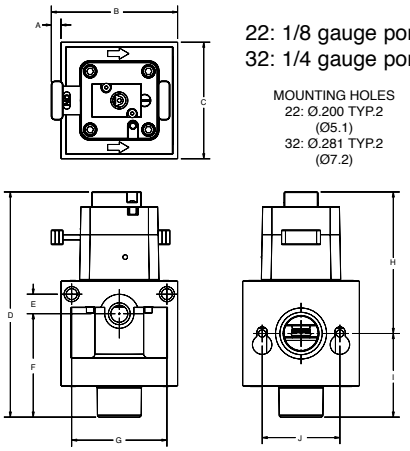


10-32 gauge ports

S14*-04BW (14 Series Pilot Operated Quick Exhaust Valve)



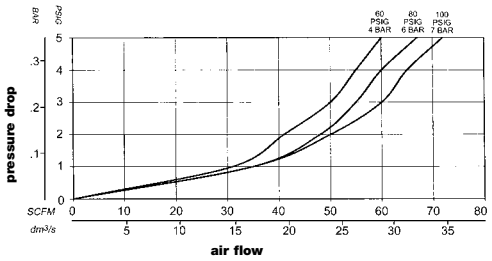
22 and 32 Series Internally/Externally Piloted Quick Exhaust Valve



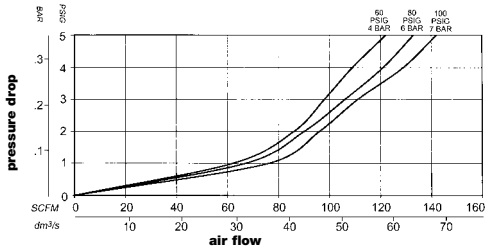
22: 1/8 gauge ports
32: 1/4 gauge ports

MOUNTING HOLES
22: Ø.200 TYP.2
(Ø5.1)
32: Ø.281 TYP.2
(Ø7.2)

S22*-04BW (22 Series Pilot Operated Soft Start Quick Exhaust Valve)



S32*-06BW (32 Series Pilot Operated Soft Start Quick Exhaust Valve)

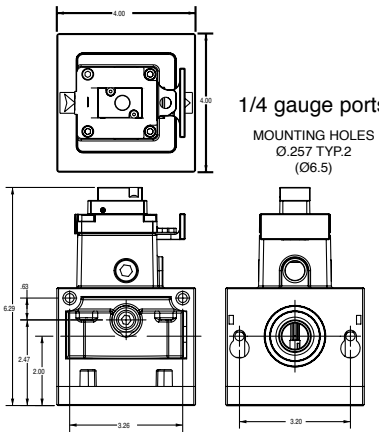


Dimensions

	A	B	C	D	E	F	G	H	I	J
22 Series	.51 (13)	2.9 (73)	2.1 (65)	5.2 (132)	.32 (8)	2.2 (58)	1.8 (46)	3.3 (84)	1.9 (48)	1.5 (38)
32 Series	.25 (6)	3.2 (82)	3.0 (76)	5.8 (147)	.5 (13)	2.7 (68)	2.4 (61)	3.6 (93)	2.6 (55)	2.0 (51)

42 Series Internally/Externally Piloted Quick Exhaust Valve

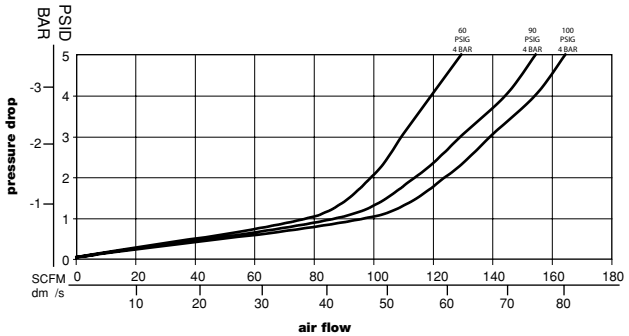
* Muffler not included



1/4 gauge ports

MOUNTING HOLES
Ø.257 TYP.2
(Ø6.5)

S42*-08BW (42 Series Pilot Operated Soft Start Quick Exhaust Valve)



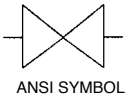
Shut-Off Valve

VS14, VS22, VS32, VSL42 Series

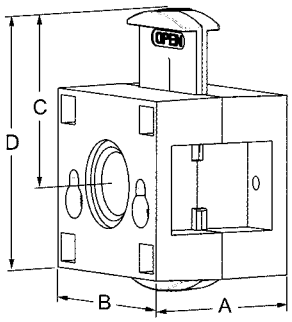
The **FLEXIBLOK®** Shut-Off Valve is an easy and inexpensive way to add shut off capability to an FRL. The valve includes a lockout feature designed for a padlock to prevent unauthorized downstream pressurization during maintenance. The shut off valve is usually mounted first in the assembly.

Max. inlet pressure: 200 PSI (13.7 bar)
250 PSI (17 bar) - 42 Series

- Relieves downstream pressure when closed
- Lockout feature prevents unauthorized pressurization of system
- Easy modular connection
- Can be used as individual component



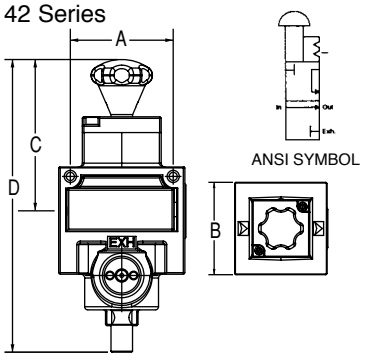
14, 22, 32 Series



	MODEL #S			DIMENSIONS				
	NPTF	BSPP	BSPT	A	B	C	D	PORTS
14	VS14-01	VS14G01	VS14R01	1.63 (41)	1.6 (41)	1.6 (41)	3 (76)	1/8
	VS14-02	VS14G02	VS14R02	1.63 (41)	1.6 (41)	1.6 (41)	3 (76)	1/4
22	VS22-02	VS22G02	VS22R02	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	1/4
	VS22-03	VS22G03	VS22R03	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	3/8
	VS22-04	VS22G04	VS22R04	2.0 (50)	2.16 (55)	1.86 (47)	3.1 (79)	1/2
32	VS32-04	VS32G04	VS32R04	2.25 (57)	3.0 (76)	2.57 (65)	4.2 (107)	1/2
	VS32-06	VS32G06	VS32R06	2.25 (57)	3.0 (76)	2.57 (65)	4.2 (107)	3/4
42	VSL42-06	VSL42G06	VSL42R06	3.2 (83)	4.0 (102)	4.8 (122)	9.3 (236)	3/4
	VSL42-08	VSL42G08	VSL42R08	3.2 (83)	4.0 (102)	4.8 (122)	9.3 (236)	1

NOTE: Add "N" to end of model number for non-relieving model (i.e. VS14-01***N***)
(Not available on 42 series models)

42 Series



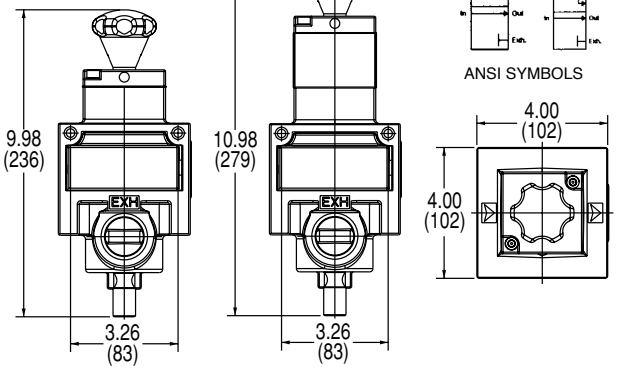
Quick Exhaust Lockout Valve

MVL42/MVT42 Series

- Rugged all metal design
- Placed last in an air preparation assembly. To be used as a system quick exhaust valve.

Specifications

Temperature Range: 40-120°F (4-50°C)
Max. Pressure: 250 PSIG (17 bar)
Weight: 4.95 lbs (2.25 kg)



CV Ratings

MODEL #	CV IN/OUT	CV OUT/EXH
MVL42-06Y	11.5	9
MVL42-08Y	12.5	10
MVT42-06Y	11.5	9
MVT42-08Y	12.5	10

MVL 42 – 08Y

Model
MVL = Standard
MVT = Slo-Start™ Feature

Series
42

Options
A = Metal Muffler (ie MVT42-08AY)
B = Scissor Lockout (ie MVT42-08BY)

Port Size
06 = 3/4
08 = 1

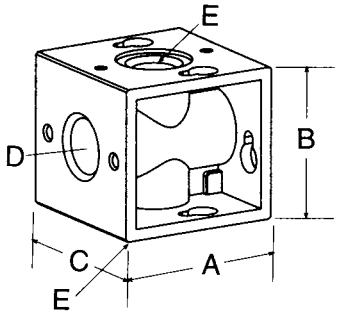
Threads
– = NPTF
G = G Tap (BSPP)
(Conforms to ISO Standards 1179-1 and 228-1)
R = PT (BSPT)

Diverter Block

DK14, DK22, DK32, DK42 Series

Designed to give FLEXIBLOK® components total versatility, the diverter block mounts directly inline with the FRL combination. Additional components can then be manifold mounted in a compact manner that doesn't cause excessive pressure drop. There are two available ports per unit; both are tapped for standard service.

Max. inlet pressure: 200 PSI (13.7 bar) (14, 22, 32 Series)
250 PSI (17 bar) (42 Series)



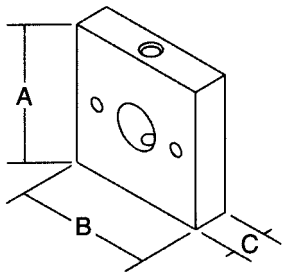
	MODEL #			DIMENSIONS					
SERIES	NPTF	BSPP	BSPT	A	B	C	D	E	PORTS
14	DK14-02	DK14G02	DK14R02	1.72 (44)	1.54 (39)	1.6 (41)	1/4	1/8	Tapped 1/4 NPTF In & Out with two 1/8 NPTF branches
22	DK22-03	DK22G03	DK22R03	2.16 (55)	2.00 (50)	2.16 (55)	1/2	3/8	Tapped 1/2 NPTF in & out with two 3/8 NPTF branches
32	DK32-04	DK32G04	DK32R04	3.00 (76)	2.70 (69)	3.00 (76)	3/4	1/2	Tapped 3/4 NPTF in & out with two 1/2 NPTF branches
42	DK42-06	DK42G06	DK42R06	4.00 (102)	3.40 (87)	4.00 (102)	3/4	3/4	In & Out and branches 3/4 with two 3/4 NPTF branches
42	DK42-08	DK42G08	DK42R08	4.00 (102)	3.40 (87)	4.00 (102)	1	1	In & Out and branches 1 with two 1 NPTF branches

Diverter Plates

HK14, HK22, HK32 Series

Diverter plates are designed to provide air signals in a compact space. Used individually or in combination, they can be used with gauges or switches to determine a pressure or Δ pressure signal.

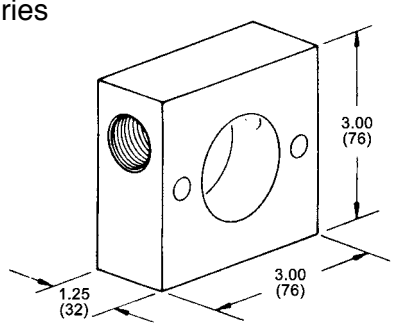
Max. inlet pressure: 200 PSI (13.7 bar)



	MODEL #			DIMENSIONS			OUTLET	
SERIES	NPTF	BSPP	BSPT	A	B	C	PORT	APPLICATION
14	HK14-01	HK14G01	HK14R01	1.54 (39)	1.50 (38)	.75 (19)	1/8	Mounts between two units
22	HK22-01	HK22G01	HK22R01	2.00 (51)	2.15 (55)	.75 (19)	1/8	Mounts between two units
32	HK32-01	HK32G01	HK32R01	3.00 (76)	3.00 (76)	.75 (19)	1/8	Mounts between two units

Rear-Ported End Plates

MR32 Series



Available only in the 32 Series, the Rear-Ported End Plate allows an FRL to be mounted flush with a surface and the piping to exit the rear of the combination.

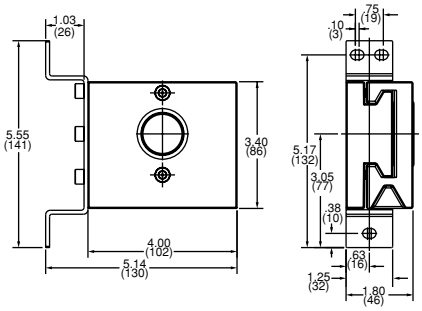
Max. inlet pressure: 200 PSI (13.7 bar)

How to Order

MODEL NUMBER	STYLE	NPTF	DESCRIPTION
MR32A	A	1/2	Left rear porting
MR32B	B	1/2	Right side rear porting
MR32AB	A/B	1/2	Both rear ported plates

End Plates

MK42 Series



The 42 series easy slide end plate and mounting bracket kit is a unique option allowing a full assembly to be quickly added or removed, giving the customer even greater versatility in its popular compact space.

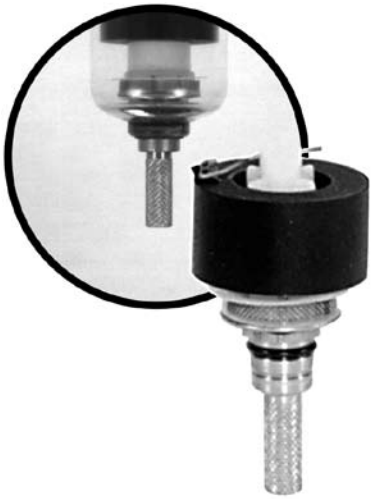
Max. inlet pressure: 250 PSI (17 bar)

How to Order

PORT SIZE	MODEL # NPTF	BSPP	BSPT
3/4	MK42AB-06	MK42ABG06	MK42ABR06
1	MK42AB-08	MK42ABG08	MK42ABR08

Drain Options

Automatic Float Drain - 'A' Option



The Auto Float Drain is installed into the bottom of the filter bowl. As the liquid level inside the bowl increases, the tire-like float lifts, allowing the liquid to drain. This drain should not be used in applications exceeding 175 PSI.

MODEL	FOR SERIES
AKF00	22, 32, 42 Series Autodrain only
AKF02	22, 32, 42 Series (inc. drain, bushing, o-ring)

Flexible Drain - 'B' Option

The Flexible Drain is as easy to use as pushing the stem to one side and allowing contents to expel. A popular option due to low cost and ease of use. This drain should not be used in applications exceeding 125 PSI.

MODEL	FOR SERIES
BKF02	14, 22, 32, 42 Series (inc. flexible rubber exterior and inner stem)

External Pulse Drain - 'J' Option

The External Pulse Drain is designed for use in the 12, 14 and 42 Series bowl but also works with the 22 and 32 Series. This inexpensive and reliable drain features an incorporated barbed fitting which fits 3/16 ID tubing for easy drainage of liquid and contaminant.

MODEL	FOR SERIES
JKF02	12,14, 22, 32, 42 Series (includes bushing kit)
IDF-01	drain only

Metal Manual Drain - 'Q' Option

The Metal Manual Drain is a newer drain option for the FLEXIBLOK® line. Simply turn the drain counter-clockwise to expel bowl contents. Standard on 50 and 70 Series.

MODEL	FOR SERIES
QKF02	14, 22, 32, 42 Series (inc. drain, retaining clip, bushing, o-ring)

Manual Lever Drain - 'R' Option

The Manual Lever Drain allows for convenience and ease of use. Press down on the white lever to manually drain bowl contents. Available for all FLEXIBLOK® filters.

MODEL	FOR SERIES
RKF02	14, 22, 32, 42 Series Filters (inc. drain, bushing, clip, o-ring)

FLEXIBLOK® Coalescing Filter

➤ Element Replacement Kits Filter/Regulators

includes filter element only

kit #	description
14 SERIES	
EKF12C	14 Series, 0.7 micron element
EKF12CD	14 Series, 0.7 micron element with prefilter
EKF12D	14 Series, 0.3 micron element
EKF12DD	14 Series, 0.3 micron element with prefilter
EKF12E	14 Series, 0.1 micron element
EKF12ED	14 Series, 0.1 micron element with prefilter
EKF12F	14 Series, adsorbing element
22 SERIES	
EKF22C	22 Series, 0.7 micron element
EKF22CD	22 Series, 0.7 micron element with prefilter
EKF22D	22 Series, 0.3 micron element
EKF22DD	22 Series, 0.3 micron element with prefilter
EKF22E	22 Series, 0.1 micron element
EKF22ED	22 Series, 0.1 micron element with prefilter
EKF22F	22 Series, adsorbing element
32 SERIES	
EKF32C	32 Series, 0.7 micron element
EKF32CD	32 Series, 0.7 micron element with prefilter
EKF32D	32 Series, 0.3 micron element
EKF32DD	32 Series, 0.3 micron element with prefilter
EKF32E	32 Series, 0.1 micron element
EKF32ED	32 Series, 0.1 micron element with prefilter
EKF32F	32 Series, adsorbing element
42 SERIES	
EKF42C	42 Series, .7 micron element
EKF42CD	42 Series, .7 micron element with prefilter
EKF42D	42 Series, .3 micron element
EKF42DD	42 Series, .3 micron element with prefilter
EKF42E	42 Series, .1 micron element
EKF42ED	42 Series, .1 micron element with prefilter
EKF42F	42 Series, adsorbing element

➤ Bowl Replacement Kits Filter/Regulators

includes bowl and o-ring

kit #	description
14 SERIES	
BKF12	14 Series, polycarbonate bowl
BKF12M	14 Series, metal bowl
22 SERIES	
BKF22	22 Series, polycarbonate bowl
BKF22C	22 Series, CircleVision™ bowl
BKF22M	22 Series, metal bowl
32 SERIES	
BKF32	32 Series, polycarbonate bowl
BKF32C	32 Series, CircleVision™ bowl
BKF32M	32 Series, metal bowl
42 SERIES	
BKF32	32 Series, polycarbonate bowl
BKF32C	32 Series, CircleVision™ bowl
BKF32M	32 Series, metal bowl

To order the bowl replacement kit with a drain, specify the drain suffix in the kit number (keeping suffixes in alphabetical order). For example, to order an flexible drain with a BKF12 kit, order as **BKF12B**. To order an external pulse drain with a BKF12M kit, order as **BKF12JM**. Drain suffixes are as follows: B=flexible drain, J=external pulse drain, Q=metal manual drain, R=manual lever drain. *See page 34* for additional drain option information.

➤ Bowl Replacement Kits Lubricated

includes bowl and o-ring

kit #	description
BKL12	14 Series, polycarbonate bowl
BKL12M	14 Series, metal bowl
BKL22	22 Series, polycarbonate bowl
BKL22C	22 Series, CircleVision™ bowl
BKL22M	22 Series, metal bowl
BKL32	32 Series, polycarbonate bowl
BKL32C	32 Series, CircleVision™ bowl
BKL32M	32 Series, metal bowl

To order the bowl replacement kit with a drain or buttonhead fill, specify the appropriate suffix in the kit number (keeping suffixes in alphabetical order). For example, to order a drain with a BKL12 kit, order as **BKF12K**. To order a buttonhead fill with a BKL22M kit, order as **BKL22FM**. Drain suffixes are as follows: F=buttonhead fill, K=drain.

➤ Replacement Drain Kits

kit #	description
AKF02	auto float drain kit (inc. drain, bushing, clip, o-ring)
BKF02	flexible drain (includes drain ass'y)
DKF02	standard drain (inc. drain ass'y)
QKF02	metal manual drain (inc. drain, bushing, clip, o-ring)
JKF02	external pulse drain (inc. drain, bushing, clip, o-ring)
RKF02	manual lever drain (inc. drain, bushing, clip, o-ring)

FLEXIBLOK® Particulate Filter

➤ Element Replacement Kits Filter/Regulators

includes filter element only

kit #	description
EKF12B	14 Series, 5 micron element
EKF22B	22 Series, 5 micron element
EKF32B	32 Series, 5 micron element
EKF42B	42 Series, 5 micron element

➤ Filter Repair Kits

includes Turbo-Flo, element retainer, quiet zone baffle, deflector retainer

kit #	description
RKF12B	14 Series, 5 micron element
RKF22B	22 Series, 5 micron element
RKF32B	32 Series, 5 micron element
RKF42B	42 Series, 5 micron element

FLEXIBLOK® Coalescing Filter

➤ DPI Replacement Kits

includes DPI assembly

kit #	description
UK600	14 Series DPI replacement kit
DP122	22 Series DPI replacement kit
DP132	32 Series DPI replacement kit
DPI42	42 Series, DPI replacement kit

FLEXIBLOK® Regulator - Filter-Regulator

➤ Regulator Repair Cage Kits Filter/Regulators

includes bonnet with main spring (0-125 psi), adjusting screw and adjusting knob

kit #	description
RKC14	14 Series
RKC22	22 Series
RKC32	32 Series
RKC42	42 Series

➤ Diaphragm Repair Kits

includes diaphragm, inner valve assembly and inner valve spring

kit #	description
RKR12R	14 Series, relieving kit
RKR22R	22 Series, relieving kit
RKR32R	32 Series, relieving kit
RKR42R	42 Series, relieving kit
RKR12N	14 Series, non-relieving kit
RKR22N	22 Series, non-relieving kit
RKR32N	32 Series, non-relieving kit
RKR42N	42 Series, non-relieving kit

➤ Piston Repair Kits

includes piston assembly, inner valve assembly and inner valve spring

kit #	description
PKR14R	14 Series, relieving kit
PKR22R	22 Series, relieving kit
PKR32R	32 Series, relieving kit
PKR42R	42 Series, relieving kit
PKR14N	14 Series, non-relieving kit
PKR22N	22 Series, non-relieving kit
PKR32N	32 Series, non-relieving kit
PKR42N	42 Series, relieving kit

➤ Replacement Adjustment Knob Kits

includes adjustment knob only

kit #	description
R12-03	14 Series, adjustment knob
R22-03B	22 Series, adjustment knob
R32-03	32 Series, adjustment knob
R32-03	42 Series, adjustment knob

FLEXIBLOK® Pilot Operated Regulators

➤ Diaphragm Repair Kits

includes upper & lower diaphragm, inner valve assembly and inner valve spring

kit #	description
RKW22	22 Series, relieving kit
RKW32	32 Series, relieving kit
RKW42	42 Series, relieving kit
RKW22N	22 Series, non-relieving kit
RKW32N	32 Series, non-relieving kit
RKW42N	42 Series, non-relieving kit

FLEXIBLOK® Lubricator

➤ Lubricator Dome Repair Kits

includes adjustment knob and adjustment assembly

kit #	description
RKL12T	14 Series, lub. dome repair kit or 22 Series, lub. dome repair kit or 32 Series, lub. dome repair kit 42 Series, lub. dome repair kit

➤ Replacement Adjustment Knob Kits

includes adjustment knob only

kit #	description
L32-06	14 Series, adjustment knob or 22 Series, adjustment knob or 32 Series, adjustment knob

FlexiBlok® Shut-Off Valve

➤ Shut-Off Valve Repair Kits

includes slide and 2 o-rings

kit #	description
RKSV14	14 Series, shut-off valve repair kit
RKSV22	22 Series, shut-off valve repair kit
RKSV32	32 Series, shut-off valve repair kit

➤ Mounting Brackets

includes bracket and panel nut

kit #	description
PK12	14 Series mounting bracket
PK22	22Series mounting bracket
PK32	32 Series mounting bracket

FlexiBlok® Sol. Soft Start Quick Exhaust

➤ Solenoid Replacement Kits

includes coil only (fits 22 or 32 Series)

NOTE: Numatics FRL does not recommend the disassembly of a solenoid soft start unit outside of our factory.

kit #	description
S32-44A	110V (22 or 32 Series)
S32-45A	230V (22 or 32 Series)
S32-46A	24V AC (22 or 32 Series)
S32-43A	24V DC (22 or 32 Series)

FlexiBlok® Screws & O-Rings

➤ Screw & O-Ring Replacement Kits

kit #	description
KG14	14 Series, inc. 2 screws, 1 o-ring (M4 x 12mm)
KGB14	14 Series bulk pack, inc. 100 screws, 50 o-rings (M4 x 12mm)
KG22	22 Series, inc. 2 screws, 1 o-ring (M5 x 12mm)
KGB22	22 Series bulk pack, inc. 100 screws, 50 o-rings (M5 x 12mm)
KG32	32 Series, inc. 2 screws, 1 o-ring (M6 x 16mm)
KGB32	32 Series bulk pack, inc. 100 screws, 50 o-rings (M6 x 16mm)➤
KG42	42 Series, inc. 2 screws, 1 o-ring (M8 x 1.25)
KGB42	42 Series bulk pack, inc. 100 screws, 50 o-rings (M8 x 1.25)

CATALOG

air prep

12 Series

Miniature FRLs

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

- Low Cost
- Lightweight
- Low Profile
- OEM Modification Available
- 1/8 or 1/4 NPT, G, or R Threads
- Diverter Block Available
- Compact Size
- Black Anodized Aluminum Heads
- Can Be Installed as Modular or Individual
- Variety of Bowls and Drains
- Shut-Off Available

F12B-02 pictured

Particulate Filter

F12B Series

Primary air filters are designed to separate liquid, water, rust, pipe scale, and debris from air lines. They should be installed upstream of the regulator and/or lubricator to prevent contamination from reaching other components.

Water is removed mechanically by the deflector which causes the air to move in a swirling motion. The condensed water droplets are then centrifugally impounded upon the ID of the bowl then fall down past the quiet zone baffle to the water sump. Dry air passes through the sintered element utilizing depth filtration and removes debris down to specified micron size.

ANSI SYMBOL

Features

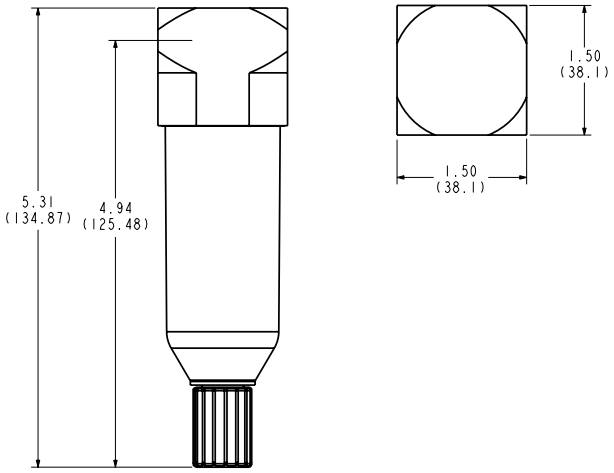
- 5 micron sintered elements standard
- Can be installed as modular or individual unit
- Includes screws and o-rings for modular connection
- Polycarbonate bowl standard

Specifications

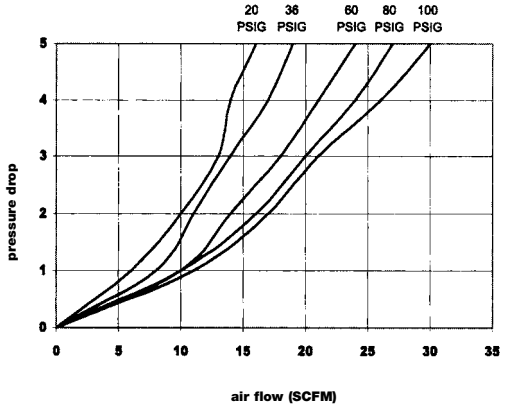
BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range (ºF)	40-120	40-120
Temperature Range (ºC)	4-50	4-50
Max. Pressure (PSIG)	150	200
Max. Pressure (BAR)	10	14
12 Series (Weight, lbs.)	0.22	0.25
12 Series (Weight, kg)	0.10	0.11

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates



How to Order

F 12 B - 01 JM _ _

Model
F = Filter

Series
12 = 1.5 oz Bowl

Element
B = 5 Micron Element

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Options
B = Flexible Drain
J = External Pulse Drain
M = Metal Bowl
Q = Metal Manual Drain
R = Manual Lever Drain

Port Size
01 = 1/8
02 = 1/4

NEED MORE PARTS AND INFORMATION?
• See page 59 for information on ordering replacement parts.

F12D-02 pictured

Coalescing Filter

F12 Series

The coalescing filter is utilized when either clean air is required or longer component life is desired. This type of filter removes water and oil aerosols. It works differently than the particulate filter; dirty air enters the element from the center and passes through a field of glass fibers which cause the aerosols to form into droplets which are heavier than the surrounding air. The droplets grow larger as they pass through the element and gravity causes the oil drops to drain to the sump of the bowl. With the harmful oil varnishes and contaminant that attack seals and gaskets removed, the valve or cylinder is much less likely to stick. To maximize the life of a coalescing filter it should always be used after a 5 micron particulate filter or with the optional prefilter.

ANSI SYMBOL

Features

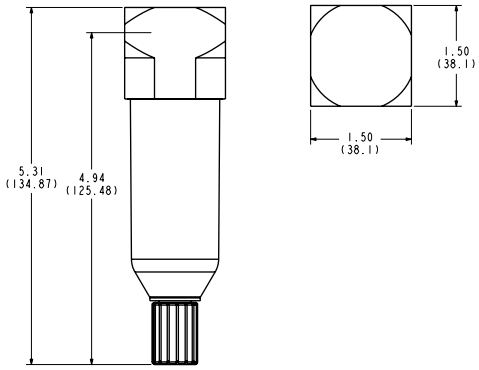
- Cartridge element design
- Inner and outer support cores prevent element from crushing in either flow direction
- Can be installed as modular or individual unit
- Includes screws and o-rings for modular connection
- Polycarbonate bowl standard

Specifications

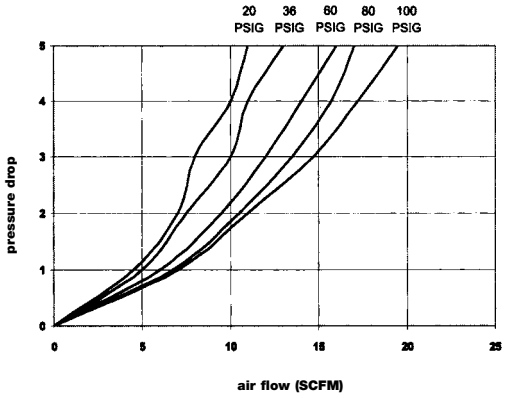
BOWL	POLYCARBONATE BOWL	METAL BOWL
Temperature Range (°F)	40-120	40-120
Temperature Range (°C)	4-50	4-50
Max. Pressure (PSIG)	150	200
Max. Pressure (BAR)	10	14
12 Series (Weight, lbs.)	0.23	0.26
12 Series (Weight, kg)	0.10	0.12

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates



How to Order

F 12 D - 02 DR _ _

Model
F = Filter

Series
12 = 1.5 oz Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.1 Micron Ultra Fine Coalescer
F = Vapor Adsorber

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Options
B = Flexible Drain
D = 3 Micron Internal Prefilter
J = External Pulse Drain
M = Metal Bowl
Q = Metal Manual Drain
R = Manual Lever Drain

Port Size
01 = 1/8
02 = 1/4

NEED MORE PARTS AND INFORMATION?
• See page 59 for information on ordering replacement parts.

Recommended Uses

C grade element, identified by its blue drain layer, is a coarse filter for large amounts of water, rust, pipe scale, and hydrocarbons. Excellent for environments that have severe contamination. Can be used for lubricated or 'dry' systems. Ideal for mainline filtration of plant air.
D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry'). Excellent filter for desiccant or regenerative style dryers.
E grade element, identified by its red drain layer, is an ultra fine filter for oil-free instrumentation air, blow molding, food and drug packaging, electronics applications, and other applications requiring maximum contamination removal.
F grade element, identified by its white drain layer, is an adsorbing filter that utilizes activated carbon to deodorize compressed air. Typically it is used to protect worker environments, food and drug applications, and instrumentation for analytical instruments. Life expectancy is approximately 3 months at rated flow.

Prefilter Option - Suffix 'D'

Models using the C, D, or E grade elements can be equipped with an optional 3 micron internal prefilter. The prefilter provides additional protection for the fine borosilicate fibers. For most applications, a separate 5 micron particulate filter is not required.

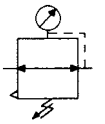
Regulator

R12 Series

R12R-02 pictured

Regulators are used to reduce pressure to a required working pressure. Utilizing optimum pressure can save companies both component life and many dollars in compressed air costs.

Regulators consist of a diaphragm which floats between a main spring (top) and a valve (bottom). By turning the adjustment handle clockwise, the main spring is forced onto the rubber diaphragm which, in turn, is pressed onto the valve stem. When the spring pressure becomes greater than the air pressure in the control chamber below the diaphragm, the valve is forced down and flow begins. As flow continues, the pressure begins to build and air, via the aspirator tube, fills the control chamber and forces the diaphragm upward. As forces balance, the small spring under the valve piston causes the valve to close. The cycle continues in a balanced process of reducing or increasing flow based upon the downstream pressure.



ANSI SYMBOL

Features

- High flow in compact size
- Locking adjustment knob
- Three different pressure ratings available
- Relieving or non-relieving models
- Can be installed as modular or individual unit
- Standard output pressure 0-125 PSIG

Piston Operator – Style 'P'

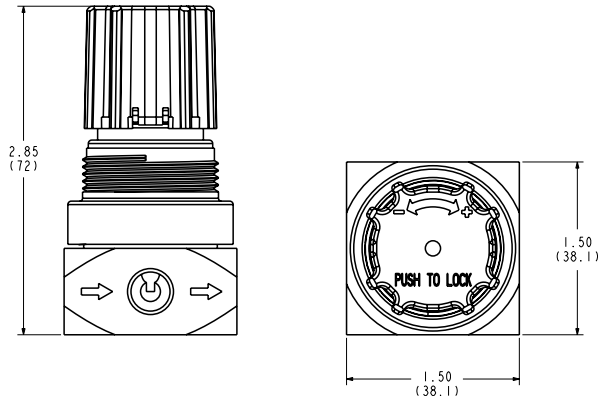
The 12 Series is offered with an optional Piston Operator. A Piston Regulator will achieve extremely high cycle rates with limited wear.

Specifications

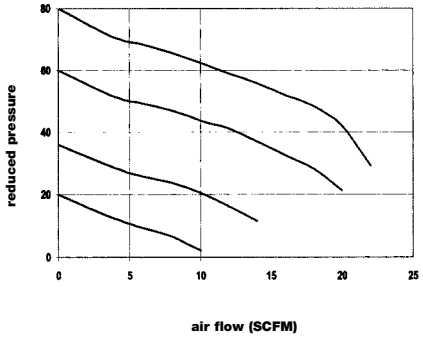
Temperature Range (ºF)	40-120
Temperature Range (ºC)	4-50
Max. Pressure (PSIG)	200
Max. Pressure (BAR)	14
12 Series (Weight, lbs.)	0.25
12 Series (Weight, kg)	0.11
Body Material	Aluminum

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates – based on 100psi inlet



How to Order

R 12 R - 01 GT _ _

Model
R = Regulator

Series
12 = 12 Series

Style
R = Relieving
N = Non-Relieving
P = Piston Operator

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Options
G = Gauge
I = 0-25 PSIG Output
L = 0-60 PSIG Output
P = Panel Mount Nut
T = Tamper Resistant

Port Size
01 = 1/8
02 = 1/4

NEED MORE PARTS AND INFORMATION?

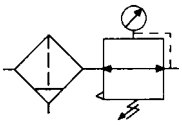
• See page 59 for information on ordering replacement parts.

P12B-02 pictured

Particulate Filter/Regulator

P12B Series

The integral part of the filter/regulator ('piggyback') is a two station component designed to filter and regulate compressed air when cost and space are of primary concern. As wet, dirty air enters, it immediately flows through the air deflector, causing the air to move in a swirling motion. After condensed water is centrifugally removed, air passes through the filter and into the regulator. The high pressure of the air is systematically reduced via the adjustment spring and valve and exits the housing as clean and dry air that is ready to work at the specified pressure.



ANSI SYMBOL

Features

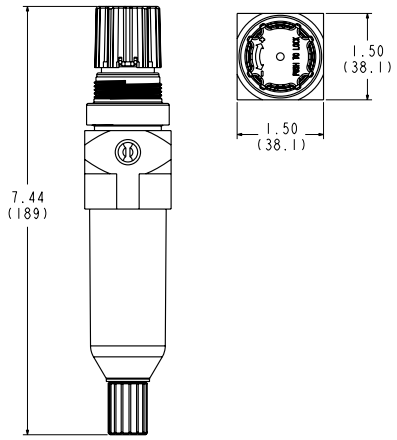
- 5 micron element standard
- Can be installed as individual or modular unit
- Non-rising knob
- Optional metal bowl
- Standard output pressure 0-125 PSIG

Specifications

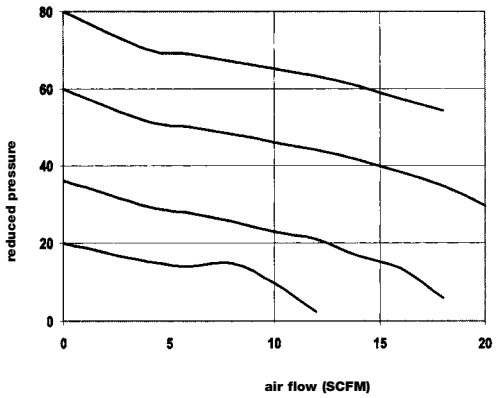
BOWL	POLYCARBONATE BOWL	METAL (ZINC) BOWL
Temperature Range (°F)	40-120	40-120
Temperature Range (°C)	4-50	4-50
Max. Pressure (PSIG)	150	200
Max. Pressure (BAR)	10	14
12 Series (Weight, lbs.)	0.34	0.36
12 Series (Weight, kg)	0.15	0.16

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates – based on 100psi inlet



How to Order

P 12 B - 02 GIP _

Model
P = Particulate/Regulator

Series
12 = 1.5 oz Bowl

Element
B = 5 Micron Element

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Options
B = Flexible Drain
G = Gauge
I = 0-25 PSIG Output
J = External Pulse Drain
L = 0-60 PSIG Output
M = Metal Bowl
N = Non-Relieving
P = Panel Mount Nut
Q = Metal Manual Drain
R = Manual Lever Drain
T = Tamper Resistant

Port Size
01 = 1/8
02 = 1/4

Note: To order a piston style filter/regulator, add "P" to the model number. (example: P12BP-02GIP)

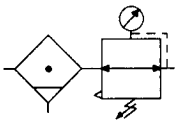
NEED MORE PARTS AND INFORMATION?
• See page 59 for information on ordering replacement parts.

C12D-02 pictured

Coalescing Filter/Regulator

C12 Series

The Numatics C Series Coalescer/ Regulator is a two station point of use air preparation system designed to provide superior filtration and regulation in one compact housing. The C Series combines a multiple support cartridge style borosilicate glass element with a pilot balanced regulator to assure the maximum performance of downstream components. Available with four different element grade choices, the C Series Coalescer/Regulator can be outfitted to attack and remove the exact type of contamination that is critical to a specific application.



ANSI SYMBOL

Features

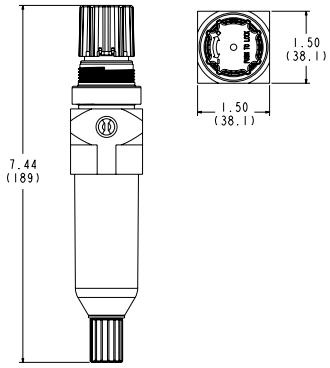
- Cartridge element design
- Inner/outer support cores prevent element from crushing in either flow direction
- Can be installed as individual or modular unit
- Four element grades available
- Non-rising knob

Specifications

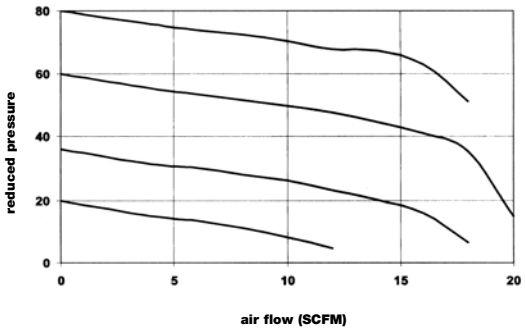
BOWL	POLYCARBONATE BOWL	METAL (ZINC) BOWL
Temperature Range (ºF)	40-120	40-120
Temperature Range (ºC)	4-50	4-50
Max. Pressure (PSIG)	150	200
Max. Pressure (BAR)	10	14
12 Series (Weight, lbs.)	0.35	0.16
12 Series (Weight, kg)	0.37	0.17

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates – based on 100psi inlet



How to Order

C 12 D - 01 DG _ _

Model
C = Coalescer/Regulator

Series
12 = 1.5 oz. Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.1 Micron Ultra Fine Coalescer
F = Vapor Adsorber

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Note: All BSPP (G tap) and BSPT (R tap) models use BSPT gauge threads.

Options
B = Flexible Drain
D = 3 Micron, Internal Pleated Prefilter
G = Gauge
I = 0-25 PSIG Output
J = External Pulse Drain
L = 0-60 PSIG Output
M = Metal Bowl
N = Non-Relieveing
P = Panel Mount Nut
Q = Metal Manual Drain
R = Manual Lever Drain
T = Tamper Resistant

Port Size
01 = 1/8
02 = 1/4

Note: To order a piston style filter/regulator, add "P" to the model number. (example: C12DP-01DG)

Recommended Uses

See 12 Series Miniature Coalescing Filter page (page 5) for element grade options and uses.

Prefilter Option – Suffix 'D'

Models using the C, D, or E grade elements can be equipped with an optional 3 micron internal prefilter. The prefilter provides additional protection for the fine borosilicate fibers. For most applications, a separate 5 micron particulate filter is not required.

NEED MORE PARTS AND INFORMATION?
• See page 59 for information on ordering replacement parts.

L12L-02 pictured

Lubricator

L12L Series

Usually mounted third in the FRL Series, the lubricator is designed to inject oil aerosols into the airstream of a pneumatic circuit. As air flows from the regulator, some air is diverted from the main orifice to pressurize the bowl. This forces oil up the siphon tube past a flow check and into the integral valve/sight dome. The oil film then drops through the valve and into the atomization chamber at a rate that is automatically proportional to the air flow. This virtually eliminates the need for readjustment.

ANSI SYMBOL

Features

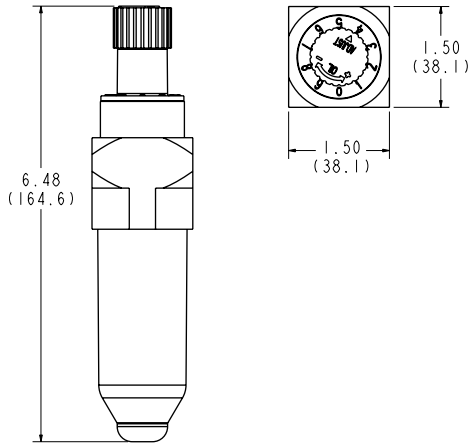
- Lubrication to begin at less than 2 SCFM
- Tamper-resistant knob standard
- Optional metal bowl
- Can be mounted as individual or modular unit
- Button head fill optional
- Atomizing chamber develops longer life aerosols

Specifications

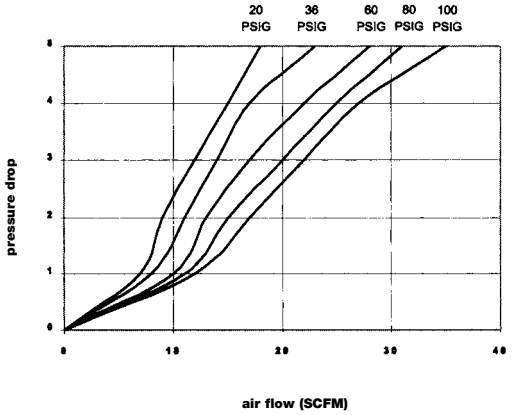
BOWL	POLYCARBONATE BOWL	METAL (ZINC) BOWL
Temperature Range (ºF)	40-120	40-120
Temperature Range (ºC)	4-50	4-50
Max. Pressure (PSIG)	150	200
Max. Pressure (BAR)	10	14
12 Series (Weight, lbs.)	0.25	0.27
12 Series (Weight, kg)	0.11	0.12
Body Material	Aluminum	Aluminum

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Flow Rates – based on 100psi inlet



How to Order

L 12 L - 02 M _ _ _

Model
L = Lubricator

Series
12 = 1.5 oz. Bowl

Style
L = Standard Lubricators

Threads
- = NPTF
G = G Tap (BSPP)
R = PT (BSPT)

Port Size
01 = 1/8
02 = 1/4

Options
F = Button Head Fill
K = Drain On Bowl
M = Metal Bowl

NEED MORE PARTS AND INFORMATION?
• See page 59 for information on ordering replacement parts.

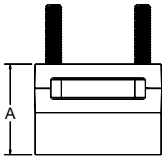
Shut-Off Valve

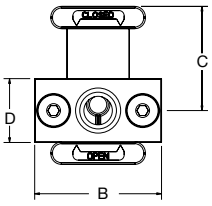
VS12 Series

ANSI SYMBOL

The 12 Series Shut-Off Valve is an easy and inexpensive way to add shut off capability to an FRL. The valve includes a lockout feature designed for a padlock to prevent unauthorized downstream pressurization during maintenance. The shut off valve is usually mounted first in the assembly.
Max. inlet pressure: 200 PSI (13.7 bar)

- Relieves downstream pressure when closed
- Lockout feature prevents unauthorized pressurization of system
- Can be mounted as individual or modular unit





SERIES	MODEL #S NPTF	BSPP	BSPT	DIMENSIONS A	B	C	D	PORTS
12	VS12-01	VS12G01	VS12R01	1.0 (25)	1.5 (38)	1.25 (32)	0.75 (19.0)	1/8
12	VS12-02	VS12G02	VS12R02	1.0 (25)	1.5 (38)	1.25 (32)	0.75 (19.0)	1/4
12	VS12-01E*	VS12G01E*	VS12R01E*	1.0 (25)	1.5 (38)	1.25 (32)	0.75 (19.0)	1/8
12	VS12-02E*	VS12G02E*	VS12R02E*	1.0 (25)	1.5 (38)	1.25 (32)	0.75 (19.0)	1/4

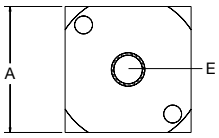
*NOTE: When ordering the 12 Series Shut Off Valve as a stand-alone component, add the suffix 'E' to the model number.

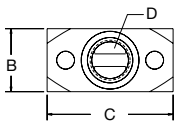
Diverter Block

DK12 Series

Designed to give FRLs total versatility, the diverter block mounts directly inline with the FRL combination. Additional components can then be manifold mounted in a compact manner that doesn't cause excessive pressure drop. There are two available ports per unit; both are tapped for standard service.

Max. inlet pressure: 200 PSI (13.7 bar)





SERIES	MODEL # NPTF	BSPP	BSPT	DIMENSIONS A	B	C	D	E	PORTS
12	DK12-02	DK12G02	DK12R02	1.50 (38.0)	0.75 (19.0)	1.50 (38.0)	1/4	1/8	Tapped 1/4 NPTF In & Out with two 1/8 NPTF branches

Coalescing Filter & Filter/Regulator

➤ Element Replacement Kits Filter/Regulators

includes filter element only

kit #	description
EKF12C	12 Series, 0.7 micron element
EKF12CD	12 Series, 0.7 micron element with prefilter
EKF12D	12 Series, 0.3 micron element
EKF12DD	12 Series, 0.3 micron element with prefilter
EKF12E	12 Series, 0.1 micron element
EKF12ED	12 Series, 0.1 micron element with prefilter
EKF12F	12 Series, adsorbing element

➤ Bowl Replacement Kits Filter & Filter/Regulators

includes bowl and o-ring

kit #	description
BKF12	12 Series, polycarbonate bowl
BKF12M	12 Series, metal bowl

To order the bowl replacement kit with a drain, specify the drain suffix in the kit number (keeping suffixes in alphabetical order). For example, to order an autodrain with a BKF12 kit, order as **BKF12B**. To order an external pulse drain with a BKF32M kit, order as **BKF12JM**. Drain suffixes are as follows: A=autodrain, B=flexible drain, J=external pulse drain, Q=metal manual drain, R=manual lever drain.

➤ Bowl Replacement Kits Lubricators

includes bowl and o-ring

kit #	description
BKL12	12 Series, polycarbonate bowl
BKL12M	12 Series, metal bowl

To order the bowl replacement kit with a drain or buttonhead fill, specify the appropriate suffix in the kit number (keeping suffixes in alphabetical order). For example, to order a drain with a BKL12 kit, order as **BKF12K**. To order a buttonhead fill with a BKL22M kit, order as **BKL22FM**. Drain suffixes are as follows: F=buttonhead fill, K=drain.

➤ Replacement Drain Kits

kit #	description
BKF02	flexible drain (includes drain ass'y)
DKF02	standard drain (inc. drain ass'y)
JKF02	external pulse drain (inc. drain, bushing, clip, o-ring)
QKF02	metal manual drain (inc. drain, bushing, clip, o-ring)
RKF02	manual lever drain (inc. drain, bushing, clip, o-ring)

Particulate Filter & Filter/Regulator

➤ Element Replacement Kits Filter/Regulators

includes filter element only

kit #	description
EKF12B	12 Series, 5 micron element

➤ Filter Repair Kits

includes Turbo-Flo, element retainer, quiet zone baffle, deflector retainer

kit #	description
RKF12B	12 Series, 5 micron element

FlexiBlok® Regulator

➤ Regulator Repair Kits Filter/Regulators

includes bonnet and adjustment knob

kit #	description
RKC12	12 Series, cage kit

➤ Diaphragm Repair Kits

includes diaphragm and inner valve

kit #	description
RKR12R	12 Series, relieving kit
RKR12N	12 Series, non-relieving kit

➤ Piston Repair Kits

includes piston, U-cup seal, relief seal

kit #	description
PKR12R	12 Series, relieving kit
PKR12N	12 Series, non-relieving kit

➤ Replacement Adjustment Knob Kits

includes adjustment knob only

kit #	description
R12-03	12 Series, adjustment knob

FlexiBlok® Lubricator

➤ Lubricator Dome Repair Kits

includes adjustment knob and adjustment assembly

kit #	description
RKL12T	12 Series, lub. dome repair kit

➤ Replacement Adjustment Knob Kits

includes adjustment knob only

kit #	description
L32-06	12 Series, adjustment knob

➤ Shut-Off Valve Repair Kits

includes slide and 2 o-rings

kit #	description
RKSV12	12 Series, shut-off valve repair kit

➤ Mounting Bracket

includes bracket and panel nut

kit #	description
PK12	12 Series mounting bracket

➤ Screw & O-Ring Replacement Kits

kit #	description
KAVS12-06	12 Series, inc. 2 81mm tie rods, 2 106mm tie rods, 4 nuts
BKAVS12-06	12 Series, inc. 20 81mm tie rods, 20 106mm tie rods, 40 nuts
KG12	12 Series, inc. 2 screws, 1 o-ring (M4 x 12mm)
KGB12	12 Series bulk pack, inc. 100 screws, 50 o-rings (M4 x 12mm)

Notes

CATALOG

air prep

Delta 901 Series

Premium Filters

C.R.N. Registered

EMERSON
Industrial Automation

numatics®

Notes

Table of Contents

numatics

numatics

Features and Benefits

The Numatics Delta Series™ offers premium filtration for applications which require high flows. The standard aluminum end caps on every element, premium manual drain, seals made of Fluorocarbon (FKM), and available 3 micron internal pleated prefilter sets the Delta Series™ apart from our competition.

Delta Series™ filters are ideal for use in many applications including industrial, process, medical, and are perfectly suited for compressor applications.

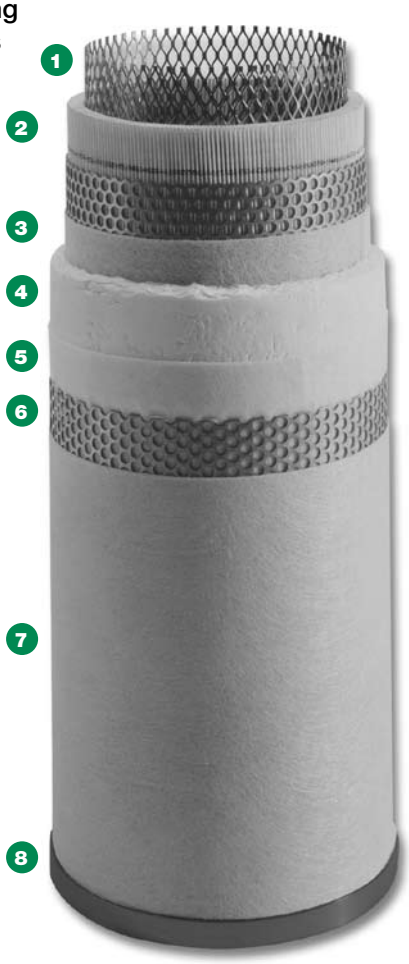
General Purpose Filtration
- Civil engineering
- Rock quarrying
- Shotblasting
- Prefiltration for oil removal on dryers
- Industrial

Oil-free Compressed Air Application
- Spray painting
- Air conveying
- Air motors
- Process control
- Blowmoldings
- Pre-filter for vacuum pumps

Critical Applications
- Breathing air
- Process air
- Food industry
- Breweries
- Hospital service
- Dryer
- Medical applications
- Film processing

C.R.N Registered
C.R.N. # 0H12256.5C
1/4" to 2" Inclusive Only
2-1/2" & 3" Registration Pending - Consult factory for availability

The Numatics **Delta Series™** coalescing filters use a borosilicate glass fiber to remove contaminant from air lines. Air flows from the inside to the outside of the element through a converging/diverging pore structure, trapping contaminant particles in the media (not just on the surface) and forcing liquids to form into larger drops and drain to the bottom of the bowl. Numatics filters are used to remove hydrocarbon, oil, liquid water, rust, and more. The coalescing filters are made up of eight main features:



1. Inner core
Prevents element from collapsing in backflow conditions

2. Optional internal pleated prefilter
3.0 micron media protects the fine borosilicate fibers from large particles, extending the life of the coalescing media

3. Inner media wrap
Allows crossflow of gas, which initiates the coalescing process

4. Media
Three coalescing media choices for best performance. Proprietary glass fiber blend combines low differential pressures and high efficiencies with maximum holding capacity (3 micron particulate and adsorbing grade also available)

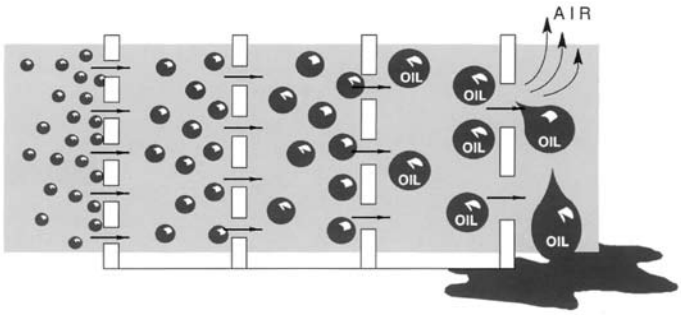
5. Outer media wrap
Allows crossflow of gas and improves performance

6. Metal retainers
Supports the media both inside and outside during pressure spikes or high differential pressures

7. Drain layer
Large pore fibers allow the large coalesced liquids to drain to the bottom of the bowl

8. End caps
Aluminum end caps provide sturdiness and durability. All elements are clearly engraved with its model number.

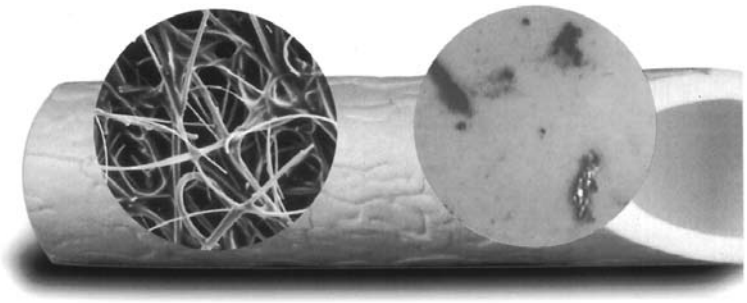
The science of coalescing filtration



Air flows from the inside to the outside of the element through progressively larger openings in the media. As contamination moves through the element, solid particles are trapped and liquids are formed into large droplets. As the air exits the element, surface tension holds the liquids and allows them to drain to the bottom.

The Numatics 0.01 micron borosilicate glass fiber element, when magnified 228x (left), shows deep, tortuous paths and large air pockets which provide high performance contaminate removal and longer life.

Contamination removal from a typical compressed air line with 0.01 micron Numatics media is shown magnified 40x (right). The contamination contains hydrocarbon (black), oil (opaque drops), and metal fragments (shiny spots).

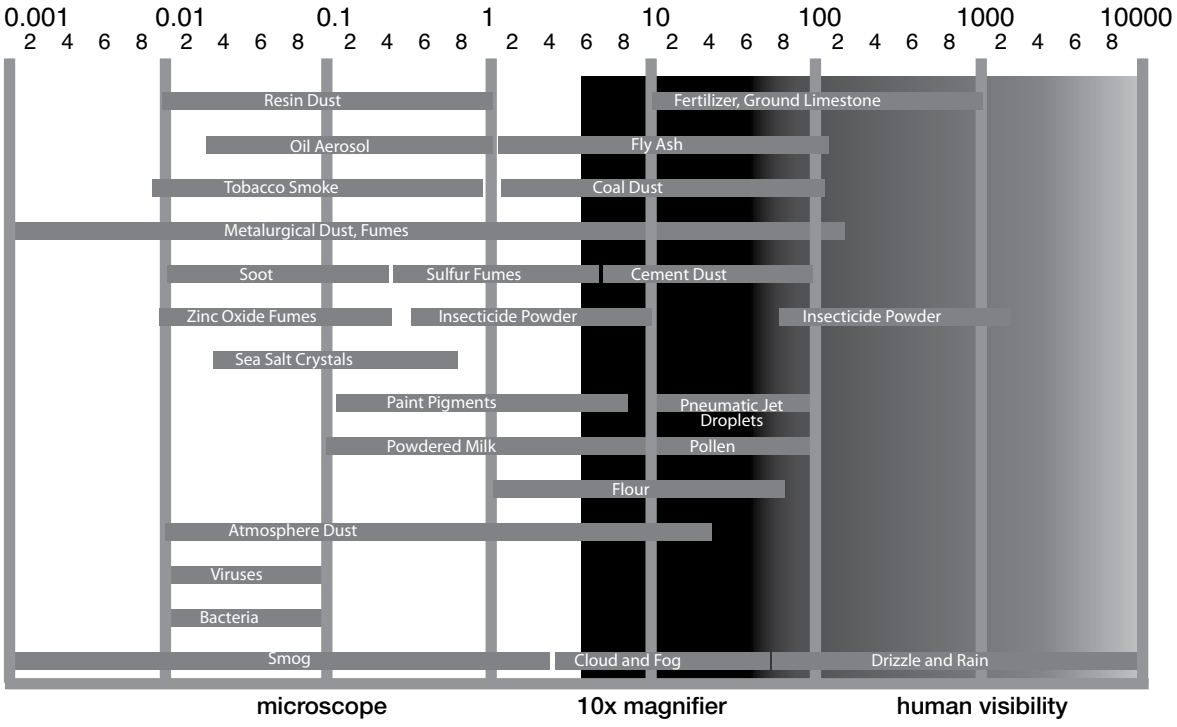


Scanning electron micrograph (at 228x)

Dirty filter magnification (at 40x)

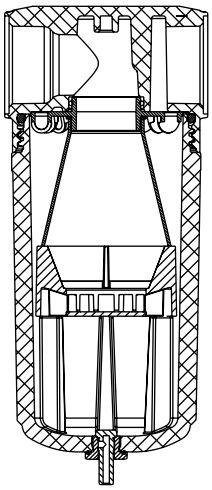
With Numatics® elements like the one on the left installed in your system, the contamination on the right won't get to where it can cause damage. Your system lasts longer and costs less.

What you get is not always what you see



numatics

F901X-12 pictured



Water Separator

F901X Series

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)

Application:

The water separator is an ideal solution where water contamination is present. Water can damage pneumatic components, degrade your final product, and cause valves and cylinders to stick.

The F901X series utilizes an internal spinner to remove large quantities of contamination by centrifugal action. Water, debris, and rust are spun outward to the inside diameter of the bowl. Gravity then sends the contaminant to the bottom of the bowl for discharge.

Recommended Uses:

- Bulk liquid and solid contamination removal
- Downstream from compressor/aftercoolers
- Protection for coalescing elements from large liquid loading
- Refrigerated compressed air dryers

Materials of Construction:

Head 1/4 - 3: A380.0 Cast Aluminum – Anodized
Bowl 1/4 - 3: A380.0 Cast Aluminum – Anodized
Internal Separator Components: A380.0 Cast Aluminum – Anodized
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901X-02	1/4	30	51	0.75 PSID
F901X-04	1/2	90	153	0.75 PSID
F901X-06	3/4	165	280	0.75 PSID
F901X-08	1	215	365	0.75 PSID
F901X-12	1-1/2	353	600	0.75 PSID
F901X-16	2	706	1200	0.75 PSID
F901X-24	3	1294	2200	0.75 PSID

Note: Maximum water removal efficiency occurs at stated flows

How to Order - Water Separators

F 901 X - 08 BN

Model
F = Filter

Series
901 = Delta Series™

Type
X = Water Separator

Threads
- = NPTF
G = G Tap (BSPP)

Options
A = Internal Auto Float Drain*
B = Mounting Brackets**
N = Electronic Drain Valve (120/60)
W = External Auto Drain***
Z = CRN Rating

Port Size

02	= 1/4	12	= 1-1/2
04	= 1/2	16	= 2
06	= 3/4	24	= 3
08	= 1		

* Applies to 1/4" to 2" Models Only
** Applies to 1/4" to 1-1/2" Models Only
*** Applies to 2" and 3" Models Only
For Option Combination " W " + " Z " - 2" Port Size Only
Consult Factory - CRN Registration Approval Pending

Pressure and Temperature Specifications - Water Separators

SEPARATOR OPTION TYPE - X	NONE	A FLOAT DRAIN	N ELECT. DRAIN	W EXT. DRAIN	Z CRN
PORT SIZE	ALL	1/4 to 2	1/4 to 3	2, 3	1/4 to 2
MAX. PRESSURE PSI (Bar)	250 (17)	250 (17)	250 (17)	230 (16)	200 (14)
MAX TEMPERATURE °F (°C)	200 (95)	150 (66)	130 (55)	120 (50)	180 (82)

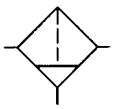
Note: Option combinations default to lower pressure and temperature rating.

F901G-08 pictured

ISO CLASS 3 ☐ ☐

F901G – 3.0 Micron Particulate Grade Filter

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)



ANSI SYMBOL

Application:

The particulate filter is designed for heavy dirt loading. Large particles such as rust, desiccant dust, and debris will rob the life of your pneumatic components. Contaminant is generated from desiccant type air dryers, older carbon steel pipes, and from the intake of a compressor.

The F901G series features a pleated design - folds of cellulose composite media which provide a large amount of surface area and extend the life of the element. When air flows - from the outside of the element to the inside - the particles are trapped in the space between the filter bowl and the element.

Recommended Uses:

- Solid bulk contamination removal
- Afterfilter to a desiccant dryer
- Protection for coalescers in heavy aerosol applications
- 3 micron particle removal in 'dry' systems

Specifications: { Per ISO 12500 at 33.2 ppm Inlet (40 mg/m^3) }

- Solid Particle Efficiency: 97.5%
- Maximum Solid Particle Size: 3 µm
- Maximum Solid Concentration: 1.0 mg/m^3 / (0.8375 ppm)
- Flow Path: Outside To Inside Of Element

Materials of Construction:

Filter Particulate:

Head 1/4 - 3: A380.0 Cast Aluminum
Bowl 1/4 - 1: A380.0 Cast Aluminum
Bowl 1-1/4 - 3: A356.0-T6 Cast Aluminum
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Note: Heads and Bowls – Anodized

Particulate Element:

End Caps: 6061-T6511 Anodized Aluminum
Element: Phenolic Cellulose Pleat
End Cap Bonding Material: Epoxy Resin
Support Cores: Galvanized Carbon Steel

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901G-02	1/4	52	88	1.5 PSID
F901G-03	3/8	67	114	1.5 PSID
F901G-04	1/2	86	146	1.5 PSID
F901G-06	3/4	190	323	1.5 PSID
F901G-08	1	305	518	1.5 PSID
F901G-10	1-1/4	495	841	1.5 PSID
F901G-12	1-1/2	606	1030	1.5 PSID
F901G-16	2	1155	1962	1.5 PSID
F901G-20	2-1/2	1485	2523	1.5 PSID
F901G-24	3	1856	3153	1.5 PSID

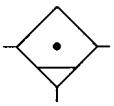
Note: Maximum efficiency occurs at stated flows

F901H-08 pictured

ISO CLASS 3 ☐ 4

F901H – 1.0 Micron Coarse Grade Coalescer

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)



ANSI SYMBOL

Application:

The coarse coalescing filter is utilized when low pressure drop or crude separation is required. The coarse filter element is preferred in low pressure and vacuum application so that the efficiency of the compressor or pump is not sacrificed. Also, the coalescing element will take out crude amounts of large liquid oil and water particles, specifically downstream of a compressor to protect a dryer. The F901H features a unique vacuum-formed process. It utilizes micro-glass fibers in raw form to create a seamless, depth-loading media. Combined with a rigid fiber-binding epoxy, the filter element has great strength, high efficiency, and superior life due to polyester drain layer.

Recommended Uses:

- Mainline plant filtration
- Prefilter to refrigerated air dryer
- 1 micron particle removal in 'dry' systems
- Heavy oil concentration removal

Specifications: { Per ISO 12500 at 33.2 ppm Inlet (40 mg/m^3) }

- Coalescing Efficiency = 95.0%
- Maximum Solid Particle Size: 1.0 µm
- Maximum Solid Concentration: 2.8 mg/m^3 / (2.3 ppm)
- Maximum Oil Concentration: 2.0 mg/m^3 / (1.66 ppm)
- Flow Path: Inside to Outside Of Element

Materials of Construction:

Filter Coalescing:

Head 1/4 - 3: A380.0 Cast Aluminum
Bowl 1/4 - 1: A380.0 Cast Aluminum
Bowl 1-1/4 - 3: A356.0-T6 Cast Aluminum
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Note: Heads and Bowls – Anodized

Coalescing Element:

End Caps: 6061-T6511 Anodized Aluminum
Element: Borosilcate Glass Fibers
End Cap Bonding Material: Epoxy Resin
Support Cores: Galvanized Carbon Steel
Drain Layer: Polyester

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901H-02	1/4	49	83	1.5 PSID
F901H-03	3/8	59	100	1.5 PSID
F901H-04	1/2	75	127	1.5 PSID
F901H-06	3/4	160	272	1.5 PSID
F901H-08	1	256	435	1.5 PSID
F901H-10	1-1/4	480	816	1.5 PSID
F901H-12	1-1/2	576	979	1.5 PSID
F901H-16	2	1120	1903	1.5 PSID
F901H-20	2-1/2	1440	2447	1.5 PSID
F901H-24	3	1800	3058	1.5 PSID

Note: Maximum efficiency occurs at stated flows

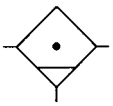
numatics

F901D-08 pictured

ISO CLASS 1 ☐ 1

F901D – 0.01 Micron Fine Grade Coalescer

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)



ANSI SYMBOL

Application:

The fine coalescing filter is utilized when clean air is required and longer component life is desired. It is recommended in most point-of-use applications for industrial use. Also, the fine coalescer removes small particles of oil, water, and rust that can create problems in painting and coating processes. The F901D features a unique vacuum-formed process. It utilizes micro-glass fibers in raw form to create a seamless, depth-loading media. Combined with a rigid fiber-binding epoxy, the filter element has great strength, high efficiency, and superior life due to polyester drain layer.

Recommended Uses:

- Paint spraying
- Pneumatic tools and instrumentation
- Robotics
- 0.01 micron particle removal in 'dry' systems
- Low oil concentration removal

Specifications: { Per ISO 12500 at 33.2 ppm Inlet (40 mg/m^3) }

- Coalescing Efficiency = 99.975%
- Maximum Solid Particle Size: 0.01 µm
- Maximum Solid Concentration: 0.1 mg/m^3 / (0.08 ppm)
- Maximum Oil Concentration: 0.01mg/m^3 / (0.008 ppm)
- Flow Path: Inside to Outside Of Element

Materials of Construction:

Filter Coalescing:

Head 1/4 - 3: A380.0 Cast Aluminum
Bowl 1/4 - 1: A380.0 Cast Aluminum
Bowl 1-1/4 - 3: A356.0-T6 Cast Aluminum
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Note: Heads and Bowls – Anodized

Coalescing Element:

End Caps: 6061-T6511 Anodized Aluminum
Element: Borosilcate Glass Fibers
End Cap Bonding Material: Epoxy Resin
Support Cores: Galvanized Carbon Steel
Drain Layer: Polyester

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901D-02	1/4	31	53	1.5 PSID
F901D-03	3/8	45	76	1.5 PSID
F901D-04	1/2	51	87	1.5 PSID
F901D-06	3/4	100	170	1.5 PSID
F901D-08	1	130	221	1.5 PSID
F901D-10	1-1/4	253	430	1.5 PSID
F901D-12	1-1/2	309	525	1.5 PSID
F901D-16	2	635	1079	1.5 PSID
F901D-20	2-1/2	828	1407	1.5 PSID
F901D-24	3	947	1609	1.5 PSID

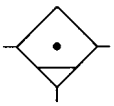
Note: Maximum efficiency occurs at stated flows

F901E-08 pictured

ISO CLASS 1 ☐ 1

F901E – 0.01 Micron Ultra Fine Grade Coalescer

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)



ANSI SYMBOL

Application:

The ultra fine coalescing filter is ideal where critically clean air is needed and pressure drop is not a concern. It is a polishing filter to clean up any remains of particles or oil that are left over from the compressor room filtration. It is mainly a point-of-use filter that is targeted specifically for critical processes. It is also used to protect and extend the life of membrane filters. The F901E features a unique vacuum-formed process. It utilizes micro-glass fibers in raw form to create a seamless, depth-loading media. Combined with a rigid fiber-binding epoxy, the filter element has great strength, high efficiency, and superior life due to polyester drain layer.

Recommended Uses:

- Blow molding plastics
- Semiconductor packaging
- Critical instrumentation
- 0.01 micron particle removal in 'dry' systems
- Low oil concentration removal

Specifications: { Per ISO 12500 at 33.2 ppm Inlet (40 mg/m^3) }

- Coalescing Efficiency = 99.99%
- Maximum Solid Particle Size: 0.01 µm
- Maximum Solid Concentration: 0.008 mg/m^3 / (0.006 ppm)
- Maximum Oil Concentration: 0.004 mg/m^3 / (0.003 ppm)
- Flow Path: Inside to Outside Of Element

Materials of Construction:

Filter Coalescing:

Head 1/4 - 3: A380.0 Cast Aluminum
Bowl 1/4 - 1: A380.0 Cast Aluminum
Bowl 1-1/4 - 3: A356.0-T6 Cast Aluminum
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Coalescing Element:

End Caps: 6061-T6511 Anodized Aluminum
Element: Borosilcate Glass Fibers
End Cap Bonding Material: Epoxy Resin
Support Cores: Galvanized Carbon Steel
Drain Layer: Polyester

Note: Heads and Bowls – Anodized

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901E-02	1/4	23	39	1.5 PSID
F901E-03	3/8	28	48	1.5 PSID
F901E-04	1/2	35	59	1.5 PSID
F901E-06	3/4	70	119	1.5 PSID
F901E-08	1	110	187	1.5 PSID
F901E-10	1-1/4	180	306	1.5 PSID
F901E-12	1-1/2	216	367	1.5 PSID
F901E-16	2	420	714	1.5 PSID
F901E-20	2-1/2	540	917	1.5 PSID
F901E-24	3	675	1147	1.5 PSID

Note: Maximum efficiency occurs at stated flows

F901F-08 pictured

ISO CLASS 4 ☐ 4

F901F – Vapor Adsorbing Grade Filter

C.R.N. Rated to 200 PSI at 180ºF (1/4 to 2" Inclusive)

Application:

The adsorbing filter removes oil and larger hydrocarbon vapor from the compressed air stream. Since it only removes vapor, a coalescing element, specifically the F901D, should be used immediately upstream of the adsorbing filter. Since optimum adsorption occurs at lower temperatures, it is recommended to apply the filter as close to the point-of-use as possible. The F901F features fine activated charcoal impregnated on polyester. The activated carbon particles have a high affinity to vapor and are extremely efficient due to the tremendous amount of surface area present. The adsorbing element and the coalescing element should be changed every 3 to 6 months depending on the application.

Recommended Uses:

- Breathing air applications
- Food and drug industries having direct product contact with exhaust air
- Odor-free air applications
- Heavier hydrocarbon vapor removal

Specifications:

- Efficiency: 90.0% at Maximum Flow
- Maximum Oil Vapor Concentration: 0.003 ppm based on 0.015 ppm Inlet
- Coalescing Prefilter Recommended
- Flow Path: Outside to Inside Of Element

Materials of Construction:

Filter Adsorbing:

Head 1/4 - 3: A380.0 Cast Aluminum
Bowl 1/4 - 1: A380.0 Cast Aluminum
Bowl 1-1/4 - 3: A356.0-T6 Cast Aluminum
Seals: Fluorocarbon (FKM)
Standard Manual Drain: Brass

Note: Heads and Bowls – Anodized

Adsorbing Element:

End Caps: 6061-T6511 Anodized Aluminum
Element: Activated Carbon
End Cap Bonding Material: Epoxy Resin
Support Cores: Galvanized Carbon Steel
Outer Drain Layer: Polyester

Flow Ratings:

MODEL NUMBER	SIZE	SCFM Based on 100 PSI (7 bar) inlet	m^3 / h	Δ P
F901F-02	1/4	29	49	1.5 PSID
F901F-03	3/8	63	107	1.5 PSID
F901F-04	1/2	79	134	1.5 PSID
F901F-06	3/4	120	204	1.5 PSID
F901F-08	1	182	309	1.5 PSID
F901F-10	1-1/4	300	510	1.5 PSID
F901F-12	1-1/2	360	612	1.5 PSID
F901F-16	2	700	1189	1.5 PSID
F901F-20	2-1/2	900	1529	1.5 PSID
F901F-24	3	1125	1911	1.5 PSID

Note: Maximum efficiency occurs at stated flows

How to Order - Filters: Particulate, Coalescing, Adsorbing

F 901 G - 04 AG

Model
F = Filter

Series
901 = Delta Series™

Element
G = 3.0 Micron Particulate Filter
H = 1.0 Micron Coarse Coalescer
D = 0.01 Micron Fine Coalescer
E = 0.01 Micron Ultra Fine Coalescer
F = Adsorbing Grade Element*****

Threads
- = NPTF
G = G Tap (BSPP)

Options
A = Internal Auto Float Drain *
B = Mounting Brackets**
D = Internal Pleated Prefilter***
G = Differential Pressure Gauge
N = Electronic Drain Valve (120/60)
W = External Auto Drain****
Z = CRN Rating

Port Size

02 = 1/4	10 = 1-1/4
03 = 3/8	12 = 1-1/2
04 = 1/2	16 = 2
06 = 3/4	20 = 2-1/2
08 = 1	24 = 3

* Applies to 1/4" to 2" Models Only
** Applies to 1/4" to 1-1/2" Models Only
*** Applies to Elements H, D and E Only
**** Applies to 2", 2-1/2" and 3" Models Only
For Option Combination " W " + " Z " - 2" Port Size Only
Consult Factory - CRN Registration Approval Pending
***** Element Type F Use Only Options B and/or Z Only

Optional Internal Pleated Prefilter (See Option D How to Order)

Numatics Delta Series™ filters are premium quality filters which include an optional 3.0 micron, internal pleated prefilter. This prefilter provides protection for the fine borosilicate fibers by removing over 97.5% of 3.0 micron and larger particles, extending the life of the filter element.

Pressure and Temperature Specifications – Particulate and Coalescing Grades

FILTER OPTION ELEMENTS - G,H,D,E	NONE	A FLOAT DRAIN	G DELTA P GAUGE	N ELECT. DRAIN	W EXT. DRAIN	Z CRN
PORT SIZE	ALL	1/4 to 2	1/4 to 3	1/4 to 3	2, 2-1/2, 3	1/4 to 2
MAX. PRESSURE PSI (Bar)	250 (17)	250 (17)	250 (17)	250 (17)	230 (16)	200 (14)
MAX TEMPERATURE °F (°C)	200 (95)	150 (66)	175 (80)	130 (55)	120 (50)	180 (82)

Note: Option combinations default to lower pressure and temperature rating.

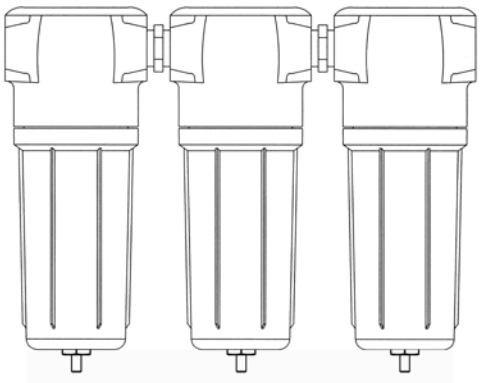
Pressure and Temperature Specifications – Adsorbing Grade

FILTER OPTION - ADSORBING ELEMENT GRADE - F	NONE	Z CRN
PORT SIZE	ALL	1/4 to 2
MAX. PRESSURE PSI (Bar)	250 (17)	200 (14)
MAX TEMPERATURE °F (°C)	200 (95)	180 (82)

Note: Option combinations default to lower pressure and temperature rating.

Recommended Filter Combinations - Industry Applications

Flow rates for filter combinations



ISO 8573 - The Compressed Air Quality Standard

CLASS	Maximum particle size (µm)	Solid Maximum Concentration** ppm	Solid Maximum Concentration** (mg/m^3)	Water Maximum Pressure Dewpoint °F (°C) ppm	Water Maximum Pressure Dewpoint °F (°C) (mg/m^3)	Oil Maximum Concentration** ppm	Oil Maximum Concentration** (mg/m^3)
1	0.1	0.08	(0.1)	-94	(-70)	0.008	0.01
2	1	0.8	(1)	-40	(-40)	0.08	0.01
3	5	4.2	(5)	-4	(-20)	0.83	1
4	15	6.7	(8)	37	(+3)	4.2	5
5	40	8.3	(10)	45	(+7)	21	25
6	–	–	–	50	(+10)	–	–

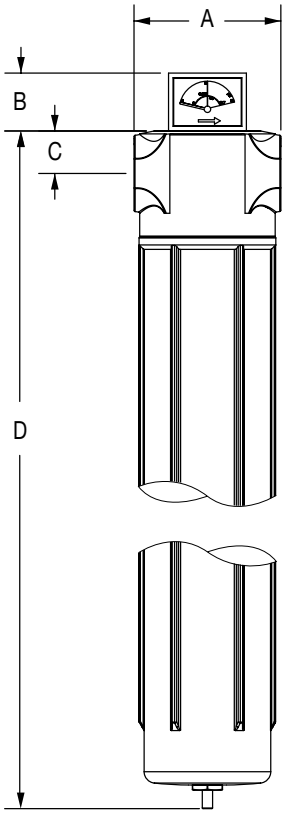
* Particle size is based on a filtration ratio 20. The minimum accuracy of the measuring method used is 20% of the limiting value of the class.
** At 14.7 PSI (1 bar) absolute pressure, +70ºF (+20ºC) and a relative humidity of 60%. It should be noted that at pressures above atmospheric the contaminant concentration is higher.

APPLICATIONS	RECOMMENDED FILTER ELEMENT COMBINATIONS	SIZE 1/4	3/8	1/2	3/4	1
		Based on 100 PSI (7 bar) inlet - Δ **P 1.5 PSID**				
Between aftercooler and dryer	X → H	32 (54)	N/A	65 (108)	132 (220)	196 (327)
Blow molding	G → D → F	20 (33)	32 (54)	38 (64)	71 (119)	100 (167)
Breathing air	G → D → F	" "	" "	" "	" "	" "
Compressed air measuring instruments	G → D	27 (44)	37 (62)	44 (73)	88 (148)	120 (200)
Compressed air motors	G → D	" "	" "	" "	" "	" "
Electronic	G → H → E	19 (32)	24 (39)	30 (50)	61 (101)	96 (160)
Film laboratories	G → D → F	20 (33)	32 (54)	38 (64)	71 (119)	100 (167)
Food packaging	G → D → F	" "	" "	" "	" "	" "
Hospital services	G → D → F	" "	" "	" "	" "	" "
Paint spraying systems	G → D	27 (44)	37 (62)	44 (73)	88 (148)	120 (200)
Paint spraying systems (critical)	G → D → F	20 (33)	32 (54)	38 (64)	71 (119)	100 (167)
Pharmaceutical industry	G → D → F	" "	" "	" "	" "	" "
Pneumatic control systems	G → D	27 (44)	37 (62)	44 (73)	88 (148)	120 (200)
Pneumatic conveying systems	G → D	" "	" "	" "	" "	" "
Pneumatic tools	G → D	" "	" "	" "	" "	" "
Precision analyzers	G → H → F	22 (38)	36 (60)	46 (77)	86 (143)	133 (223)
Process air	H → D → F	19 (32)	31 (52)	37 (62)	69 (116)	98 (163)
Surface treatment	G → H → D	23 (39)	32 (53)	38 (63)	77 (129)	108 (181)

APPLICATIONS	RECOMMENDED FILTER ELEMENT COMBINATIONS	SIZE 1 1/4	1-1/2	2	2-1/2	3
		Based on 100 PSI (7 bar) inlet - Δ **P 1.5 PSID**				
Between aftercooler and dryer	X → H	N/A	377 (630)	745 (1244)	N/A	1283 (2142)
Blow molding	G → D → F	180 (301)	219 (365)	436 (727)	564 (941)	675 (1126)
Breathing air	G → D → F	" "	" "	" "	" "	" "
Compressed air measuring instruments	G → D	225 (376)	275 (459)	556 (929)	723 (1207)	844 (1408)
Compressed air motors	G → D	" "	" "	" "	" "	" "
Electronic	G → H → E	160 (266)	192 (320)	372 (621)	479 (799)	598 (999)
Film laboratories	G → D → F	180 (301)	219 (365)	436 (727)	564 (941)	675 (1126)
Food packaging	G → D → F	" "	" "	" "	" "	" "
Hospital services	G → D → F	" "	" "	" "	" "	" "
Paint spraying systems	G → D	225 (376)	275 (459)	556 (929)	723 (1207)	844 (1408)
Paint spraying systems (critical)	G → D → F	180 (301)	219 (365)	436 (727)	564 (941)	675 (1126)
Pharmaceutical industry	G → D → F	" "	" "	" "	" "	" "
Pneumatic control systems	G → D	225 (376)	275 (459)	556 (929)	723 (1207)	844 (1408)
Pneumatic conveying systems	G → D	" "	" "	" "	" "	" "
Pneumatic tools	G → D	" "	" "	" "	" "	" "
Precision analyzers	G → H → F	226 (378)	273 (455)	528 (881)	679 (1133)	848 (1416)
Process air	H → D → F	179 (299)	217 (362)	434 (724)	561 (937)	672 (1122)
Surface treatment	G → H → D	204 (340)	248 (415)	498 (832)	646 (1079)	764 (1275)

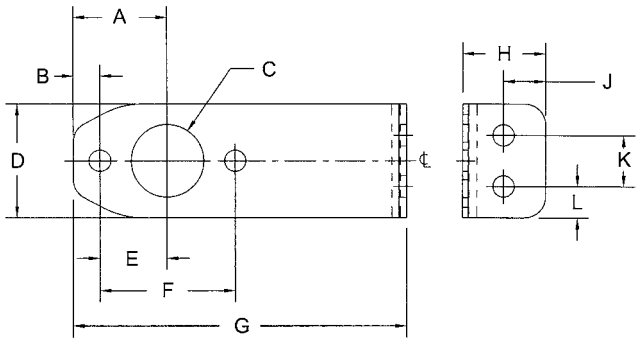
Filter element grades
X = water separator
G = 3.0 micron particulate filter
H = 1.0 micron coarse coalescer
D = 0.01 micron fine coalescer
E = 0.01 micron ultra fine coalescer
F = adsorbing grade filter

Separator and Filter Dimensions - Std Manual Drain / Mounting Bracket Dimensions



Mounting Bracket Kit

(Includes 2 brackets and required screws)



MODEL	A	B	C	D	E	F	G	H	J	K	L
BRK9001 (1/4-1/2 Models)	1.13 (29)	.32 (8)	Ø.88 (Ø22)	1.38 (35)	.82 (21)	1.63 (41)	4.0 (102)	1.0 (25)	.5 (13)	.62 (16)	.38 (10)
BRK9002 (3/4-1 1/2 Models)	1.5 (38)	.27 (7)	Ø1.94 (Ø42)	2.5 (64)	1.24 (31)	2.47 (63)	5.0 (127)	1.0 (25)	.4 (10)	1.5 (38)	.5 (13)

Separator Dimensions – inches (millimeters)

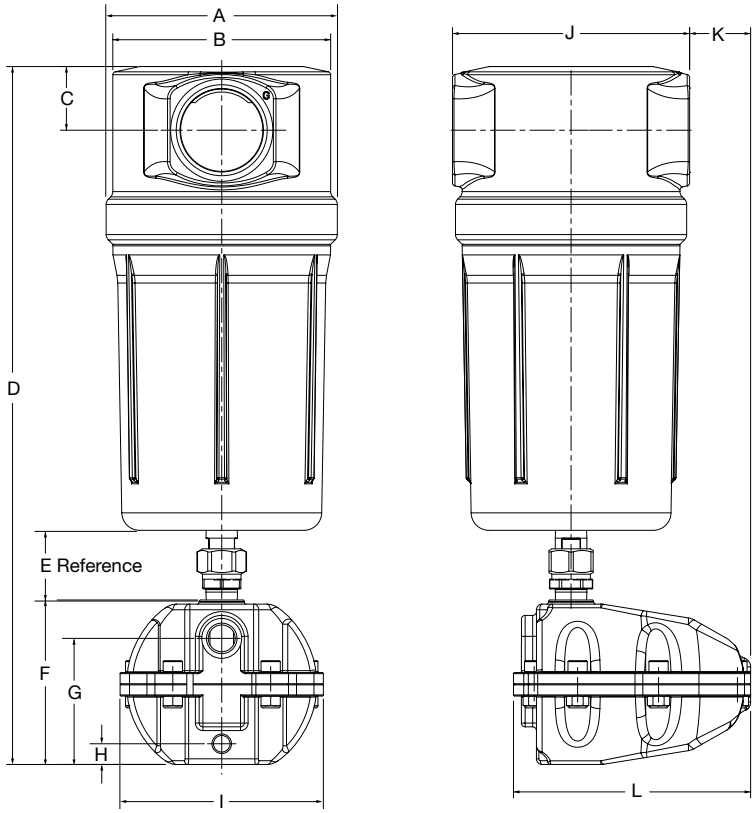
MODEL	PORT SIZE	WEIGHT lbs (kg)	A	B	C	D	E
F901X-02	1/4	2.9 (1.32)	3.7 (95)	N/A	0.79 (20)	9.4 (238)	1.5 (38)
F901X-04	1/2	2.9 (1.32)	3.7 (95)	N/A	0.79 (20)	9.4 (238)	1.5 (38)
F901X-06	3/4	5.4 (2.45)	4.6 (116)	N/A	1.32 (34)	10.8 (274)	1.5 (38)
F901X-08	1	5.4 (2.45)	4.6 (116)	N/A	1.32 (34)	10.8 (274)	1.5 (38)
F901X-12	1-1/2	5.4 (2.45)	4.6 (116)	N/A	1.32 (34)	10.8 (274)	1.5 (38)
F901X-16	2	12.05 (5.47)	6.3 (160)	N/A	1.70 (43)	13.0 (332)	2.0 (51)
F901X-24	3	36.0 (16.36)	11.0 (280)	N/A	2.9 (73)	17.3 (440)	2.0 (56)

*Notes:
"D" dimension includes manual drain.
The “E” dimension refers to the amount of space needed below the bottom of the bowl in order to remove the bowl.

Filter Dimensions – inches (millimeters)

MODEL	PORT SIZE	WEIGHT lbs (kg)	A	B	C	D	E
F901*-02	1/4	2.95 (1.34)	3.7 (95)	1.8 (46)	0.79 (20)	9.38 (238)	1.8 (46)
F901*-03	3/8	2.95 (1.34)	3.7 (95)	1.8 (46)	0.79 (20)	9.38 (238)	1.8 (46)
F901*-04	1/2	2.95 (1.34)	3.7 (95)	1.8 (46)	0.79 (20)	9.38 (238)	1.8 (46)
F901*-06	3/4	7.10 (3.22)	4.6 (116)	1.8 (46)	1.32 (34)	14.69 (373)	1.8 (46)
F901*-08	1	7.10 (3.22)	4.6 (116)	1.8 (46)	1.32 (34)	14.69 (373)	1.8 (46)
F901*-10	1-1/4	9.25 (4.20)	4.6 (116)	1.8 (46)	1.32 (34)	21.07 (535)	1.8 (46)
F901*-12	1-1/2	9.25 (4.20)	4.6 (116)	1.8 (46)	1.32 (34)	21.07 (535)	1.8 (46)
F901*-16	2	22.7 (10.30)	6.3 (160)	1.8 (46)	1.69 (43)	26.80 (681)	1.8 (46)
F901*-20	2-1/2	55.0 (25.0)	11.0 (280)	1.8 (46)	2.9 (73)	30.0 (762)	2.2 (56)
F901*-24	3	55.0 (25.0)	11.0 (280)	1.8 (46)	2.9 (73)	30.0 (762)	2.2 (56)

Separator and Filter Dimensions - Option "W" Included



Separator Dimensions – inches (millimeters)

MODEL	PORT SIZE	WEIGHT lbs (kg)	A	B	C	D	E	F	G	H	I	J	K	L
F901X-16	2	16.05* (7.3)	6.14 (156)	5.79 (147)	1.69 (43)	18.54 (471)	1.85 (47)	4.37 (111)	3.35 (85)	0.55 (14)	5.39 (137)	6.30 (160)	1.61 (41)	6.30 (160)
F901X-24	3	40.0* (18.2)	9.05 (230)	8.46 (215)	2.87 (73)	22.8 (579)	1.85 (47)	4.37 (111)	3.35 (85)	0.55 (14)	5.39 (137)	11.02 (280)	-0.75 (-19)	6.30 (160)

* Weight includes W option drain and bushing.

Filter Dimensions – inches (millimeters)

MODEL	PORT SIZE	WEIGHT lbs (kg)	A	B	C	D	E	F	G	H	I	J	K	L
F901*-16	2	26.7* (12.14)	6.14 (156)	5.79 (147)	1.69 (43)	26.06 (662)	1.85 (47)	4.37 (111)	3.35 (85)	0.55 (14)	5.39 (137)	6.30 (160)	1.61 (41)	6.30 (160)
F901*-20	2-1/2	59.0* (26.82)	9.05 (230)	8.46 (215)	2.87 (73)	35.53 (905)	1.85 (47)	4.37 (111)	3.35 (85)	0.55 (14)	5.39 (137)	11.02 (280)	-0.75 (-19)	6.30 (160)
F901*-24	3	59.0* (26.82)	9.05 (230)	8.46 (215)	2.87 (73)	35.53 (905)	1.85 (47)	4.37 (111)	3.35 (85)	0.55 (14)	5.39 (137)	11.02 (280)	-0.75 (-19)	6.30 (160)

* Weight includes W option drain and bushing.

Replacement Elements - 901 Series

Replacement Elements Kit

INCLUDES FILTER ELEMENT AND SEAL

KIT #	DESCRIPTION
1/4, 3/8, & 1/2 UNITS	
EKF9004G-B	901 Series, 3.0 micron micron particulate
EKF9004H-B	901 Series, 1.0 micron coarse coalescing
EKF9004HD-B	901 Series, 1.0 micron coarse coalescing w/ pleated prefilter
EKF9004D-B	901 Series, 0.01 micron fine coalescing
EKF9004DD-B	901 Series, 0.01 micron fine coalescing w/ pleated prefilter
EKF9004E-B	901 Series, 0.01 micron ultra fine coalescing
EKF9004ED-B	901 Series, 0.01 micron ultra fine coalescing w/ pleated prefilter
EKF9004F-B	901 Series, adsorbing

Element Only - Weight 0.35 lbs (.16 kg) for all sizes

3/4 & 1 UNITS	
EKF9008G-B	901 Series, 3.0 micron micron particulate
EKF9008H-B	901 Series, 1.0 micron coarse coalescing
EKF9008HD-B	901 Series, 1.0 micron coarse coalescing w/ pleated prefilter
EKF9008D-B	901 Series, 0.01 micron fine coalescing
EKF9008DD-B	901 Series, 0.01 micron fine coalescing w/ pleated prefilter
EKF9008E-B	901 Series, 0.01 micron ultra fine coalescing
EKF9008ED-B	901 Series, 0.01 micron ultra fine coalescing w/ pleated prefilter
EKF9008F-B	901 Series, adsorbing

Element Only - Weight 1.0 lbs (.45 kg) for all sizes

1 1/4 & 1 1/2 UNITS	
EKF9012G-B	901 Series, 3.0 micron particulate
EKF9012H-B	901 Series, 1.0 micron coarse coalescing
EKF9012HD-B	901 Series, 1.0 micron coarse coalescing w/ pleated prefilter
EKF9012D-B	901 Series, 0.01 micron fine coalescing
EKF9012DD-B	901 Series, 0.01 micron fine coalescing w/ pleated prefilter
EKF9012E-B	901 Series, 0.01 micron ultra fine coalescing
EKF9012ED-B	901 Series, 0.01 micron ultra fine coalescing w/ pleated prefilter
EKF9012F-B	901 Series, adsorbing

Element Only - Weight 1.85 lbs (.84 kg) for all sizes

2 UNITS	
EKF9016G-B	901 Series, 3.0 micron micron particulate
EKF9016H-B	901 Series, 1.0 micron coarse coalescing
EKF9016HD-B	901 Series, 1.0 micron coarse coalescing w/ pleated prefilter
EKF9016D-B	901 Series, 0.01 micron fine coalescing
EKF9016DD-B	901 Series, 0.01 micron fine coalescing w/ pleated prefilter
EKF9016E-B	901 Series, 0.01 micron ultra fine coalescing
EKF9016ED-B	901 Series, 0.01 micron ultra fine coalescing w/ pleated prefilter
EKF9016F-B	901 Series, adsorbing

Element Only - Weight 3.6 lbs (1.64 kg) for all sizes

2 1/2 & 3 UNITS	
EKF9024G-B	901 Series, 3.0 micron micron particulate
EKF9024H-B	901 Series, 1.0 micron coarse coalescing
EKF9024HD-B	901 Series, 1.0 micron coarse coalescing w/ pleated prefilter
EKF9024D-B	901 Series, 0.01 micron fine coalescing
EKF9024DD-B	901 Series, 0.01 micron fine coalescing w/ pleated prefilter
EKF9024E-B	901 Series, 0.01 micron ultra fine coalescing
EKF9024ED-B	901 Series, 0.01 micron ultra fine coalescing w/ pleated prefilter
EKF9024F-B	901 Series, adsorbing

Element Only - Weight 6.35 lbs (2.88 kg) for all sizes

Bowl Replacement

INCLUDES BOWL ONLY

BOWL #	DESCRIPTION
BKF9001-B	for 1/4, 3/8, & 1/2 units
BKF9002-B	for 3/4 & 1 units
BKF9004-B	for 1-1/4 & 1-1/2 units
BKF9005-B	for 2 unit
BKF9006-B	for 2-1/2 & 3 units

Separator Bowl

INCLUDES BOWL ONLY

BOWL #	DESCRIPTION
BKF9001-B	for 1/4 & 1/2 units
BKF9004S-B	for 3/4, 1, 1-1/2
BKF9005S-B	for 2 units
BKF9006S-B	for 3 units

Filter & Separator Head Replacement Seals

INCLUDES O-RING ONLY

FPHS9001-04	for 1/4, 3/8, & 1/2 units
FPHS9001-12	for 3/4, 1, 1-1/4, & 1-1/2 units
FPHS9001-16	for 2 units
FPHS9001-20	for 2-1/2 & 3 units

Note:

Replacement Elements

900 Delta Series (Previous Generation)

To order a replacement element for the original 900 Series filters choose the port size and element type from the listing on this page and remove the B suffix.

Ex: Replacement for a 1" 0.3 Micron Fine D Grade Coalescer without Internal Pleated Prefilter
901 Series EKF9008D-B becomes EKF9008D for 900 Series

Universal Replacement Elements

Fits 900 Delta Series (Previous Generation) and 901 Series
To order a universal replacement element designed to fit either housing, both 900 and 901 Series in the same port size. Choose the port size and element type from the listing on this page and change the suffix to A.

Ex: Replacement for a 2" 0.1 Micron Fine H Grade Coalescer with Internal Pleated Prefilter
901 Series EKF9016HD-B becomes EKF9016HD-A for both 900 and 901 Series

Options - Replacement Kits

Internal Auto Float Drain - Option "A"

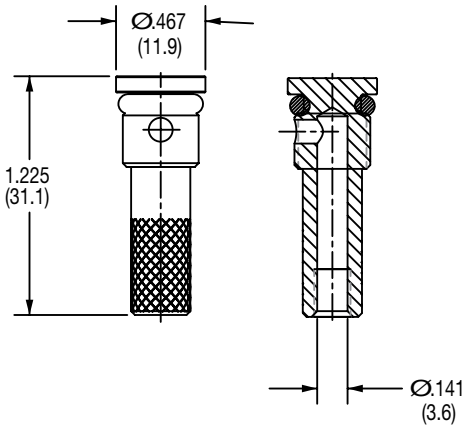
(for port sizes 1/4" through 2" inclusive only)

Model AKF60 (Includes float drain only)

Standard Manual Drain

(for port sizes 1/4" through 3")

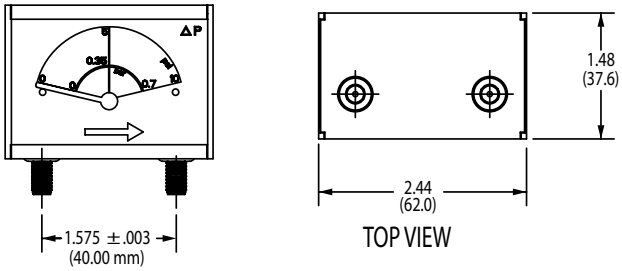
Model FP0050



Differential Pressure Gauge - Option "G"

(for port sizes 1/4" through 3")

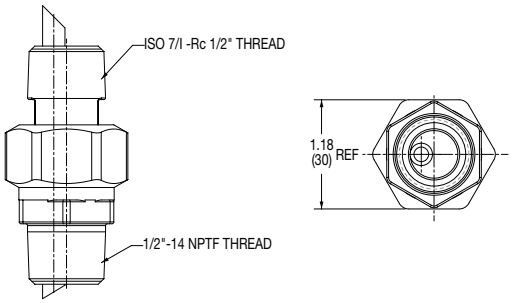
Model PDI92 (Includes mounting screws and O-rings)



External Auto Drain - Option "W" Adapter

(for port sizes 2" through 3" inclusive only)

Model AKF92AD (Includes adapter only)



External Auto Drain - Option "W" -

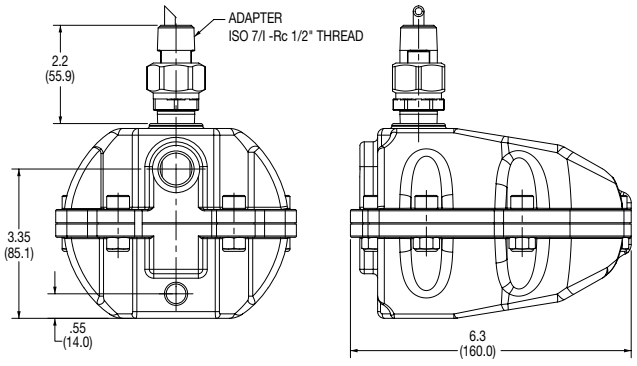
(for port sizes 2" through 3" inclusive only)

Model AKF92 (Includes external drain and adapter)

External Auto Drain - Option "W" - Dimensions

(for port sizes 2" through 3" inclusive only)

Weight - 4.0 lbs / 1.82 kg Including Adapter



CATALOG

air prep

50 Series

High Flow FRL Series

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

50 Series
High Flow FRL Series

- High Flow
- High Pressure
- T Handle Adjustment Regulator
- Pilot Regulators to 2-1/2 NPT
- Rugged Design
- Metal Bowls with Sight Glass
- 1/4 to 1-1/2 NPT Size Range
- Assemblies Available

numatics

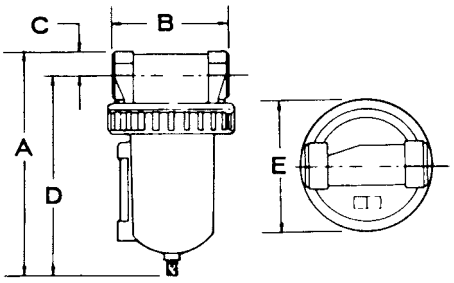
50 Series Filter
F50B Series

- Metal bowl with sight glass standard
- Manual or automatic drain

ANSI SYMBOL

Specifications

Temperature Range ºF (ºC)	40-150 (4.4-65)
Max. Pressure PSIG (BAR)	250 (17.2)
1/4 & 3/8 Weight, lbs. (kg.)	1.8 (.81)
1/2 Weight, lbs. (kg.)	2.8 (1.27)
3/4 & 1 Weight, lbs. (kg.)	6.3 (2.9)
1& 1 1/2 Weight, lbs. (kg.)	7.0 (3.2)



Flow Ratings

MODEL	MICRON RATING	PIPE SIZE	BOWL SIZE	SCFM
F50B-02	5	1/4	5 oz.	50
F50B-03	5	3/8	5 oz.	70
F50B-04	5	1/2	8 oz.	100
F50B-06	5	3/4	16 oz.	186
F50B-08	5	1	16 oz.	260
F50B-10	5	1 1/4	16 oz.	275
F50B-12	5	1 1/2	16 oz.	275

* Flow rates based on 100 PSIG inlet and a 5 PSID.

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SIZE	A	B	C	D	E
1/4 & 3/8	5.94 (150.0)	2.50 (64.0)	0.50 (12.0)	5.50 (140.0)	2.90 (74.0)
1/2	6.43 (174.0)	3.25 (83.0)	0.60 (15.0)	6.25 (159.0)	3.8 (96.0)
3/4 & 1	8.81 (224.0)	4.56 (116.0)	1.94 (24.0)	7.88 (200.0)	4.97 (126.0)
1 1/4	9.53 (242.0)	5.19 (132.0)	1.28 (33.0)	8.25 (210.0)	4.97 (126.0)
1 1/2	9.53 (242.0)	5.19 (132.0)	1.28 (33.0)	8.25 (210.0)	4.97 (126.0)

How To Order

F 50 B - 06 A

Model
F = Filter

Series
50 = High Flow

Element
B = 5 Micron (standard)

Threads
- = NPTF
G = G tap (BSPP)

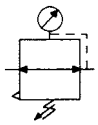
Options
A = Auto Float Drain

Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"
06 = 3/4"
08 = 1"
10 = 1 1/4"
12 = 1 1/2"

NEED MORE PARTS AND INFORMATION?
• *See page 88* for information on ordering replacement parts.

50 Series Regulator
R50 Series

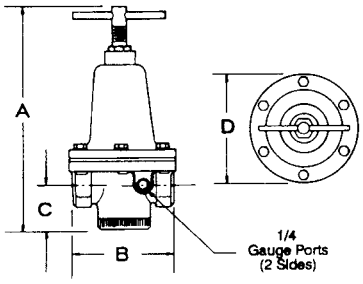
- Diaphragm-operated regulator
- T-handle standard
- Standard output pressure 0-125 PSIG



ANSI SYMBOL

Specifications

Temperature Range ºF (ºC)	40-120 (4.4-46.9)
Max. Pressure PSIG (BAR)	300 (20.7)
1/4 & 3/8 Weight, lbs. (kg.)	1.8 (.81)
1/2 Weight, lbs. (kg.)	2.8 (1.27)
3/4 & 1 Weight, lbs. (kg.)	6.2 (2.8)
1 & 1 1/2 Weight, lbs. (kg.)	7.2 (3.3)



Flow Ratings

MODEL	PIPE SIZE	SCFM* @ REDUCED PRESSURE OF		
		25 PSIG	60 PSIG	80 PSIG
R50R-02	1/4	60	80	90
R50R-03	3/8	70	90	100
R50R-04	1/2	160	180	200
R50R-06	3/4	370	385	395
R50R-08	1	370	385	395
R50R-10	1 1/4	370	385	395
R50R-12	1 1/2	370	385	395

* Flow rates based on 100 PSIG inlet and 25% PSID.

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SIZE	A	B	C	D
1/4 & 3/8	6.19 (157.0)	2.75 (70.0)	1.38 (35.0)	3.0 (76.0)
1/2	6.75 (171.0)	3.75 (83.0)	1.47 (37.0)	3.56 (90.0)
3/4 & 1	8.81 (224.0)	4.56 (116.0)	1.94 (24.0)	7.88 (200.0)
1 1/4	9.53 (242.0)	5.19 (132.0)	1.28 (33.0)	8.25 (210.0)
1 1/2	9.53 (242.0)	5.19 (132.0)	1.28 (33.0)	8.25 (210.0)

How To Order

R 50 R - 04 G

Model
R = Regulator

Series
50 = High Flow

Style
R = Relieving (standard)
N = Non-Relieving

Threads
- = NPTF
G = G tap (BSPP)

Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"
06 = 3/4"
08 = 1"
10 = 1 1/4"
12 = 1 1/2"

Options
G = Gauge
H = 0-250 Regulator Output

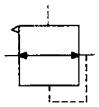
NEED MORE PARTS AND INFORMATION?
• *See page 88* for information on ordering replacement parts.

numatics

50 Series Pilot Operated Regulator

R50W Series

- High flow
- Reduced pressure within 5-7 PSIG of pilot pressure
- Relieving or non-relieving models



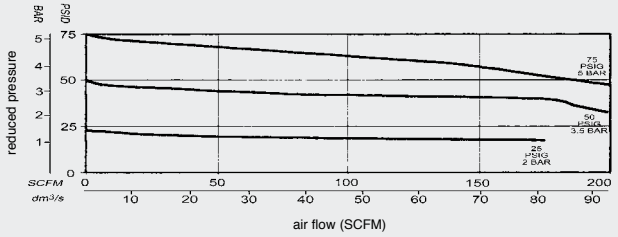
ANSI SYMBOL

Specifications

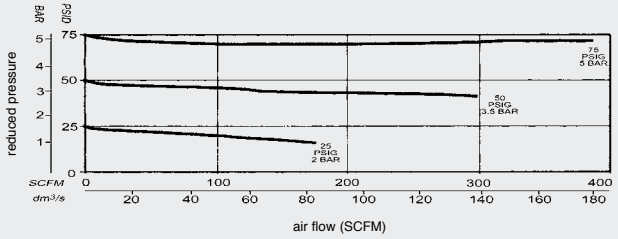
Temperature Range ºF (ºC)	40-120 (4.4-46.9)
Min. Pilot Pressure PSIG (BAR)	7 (.5)
Max Pilot Pressure PSIG (BAR)	300 (20)
Max. Supply pressure PSIG (BAR)	300 (20)
1/4 & 3/8 Weight, lbs. (kg.)	1.6 (.72)
1/2 Weight, lbs. (kg.)	2.6 (1.1)
3/4 & 1 Weight, lbs. (kg.)	5.2 (2.4)
1 1/4 & 1 1/2 Weight, lbs. (kg.)	5.6 (2.5)
2 & 2 1/2 Weight, lbs. (kg.)	15 (6.8)

Flow Rates (all flows based on 100 PSI inlet)

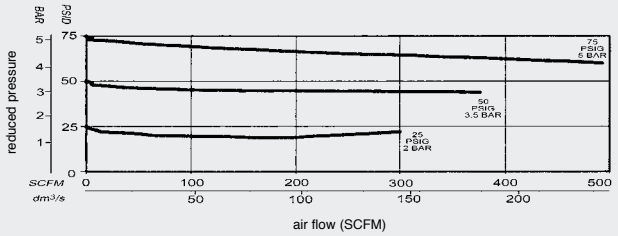
50 Series Pilot Operated Regulator (02, 03, 04)



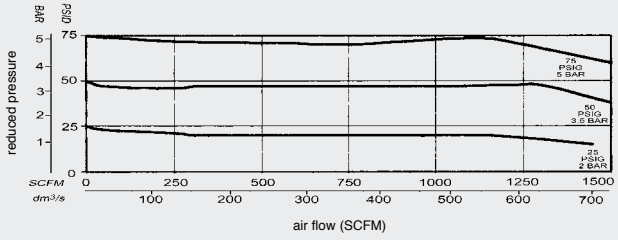
50 Series Pilot Operated Regulator (06, 08)



50 Series Pilot Operated Regulator (10, 12)



50 Series Pilot Operated Regulator (16, 20)



How To Order

R 50 W - 04 G _

Model
R = Regulator

Series
50 = High Flow

Style
W = All Pilot Operated Regulators

Threads
- = NPTF
G = G tap (BSPP)

Options
G = Gauge (0-160 PSIG)
N = Non-Relieving
(not available in 2 or 2 1/2 models)

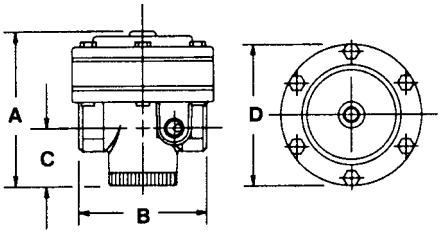
Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"
06 = 3/4"
08 = 1"
10 = 1 1/4"
12 = 1 1/2"
16 = 2"
20 = 2 1/2"

NEED MORE PARTS AND INFORMATION?
• *See page 88* for information on ordering replacement parts.

Dimensions

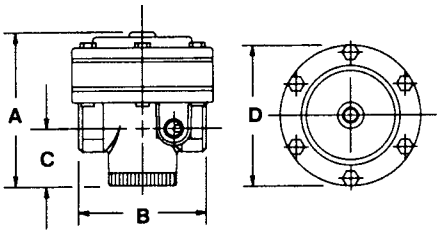
top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

50 Series Pilot Operated Regulator (02, 03, 04)



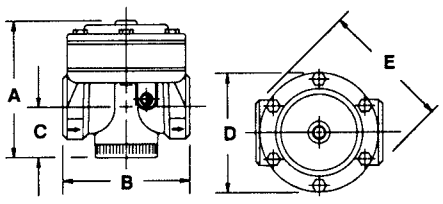
SIZE	A	B	C	D
1/4 & 3/8	3.38 (86.0)	2.75 (70.0)	1.38 (35.0)	3.0 (76.0)
1/2	3.88 (98.0)	3.25 (83.0)	1.47 (37.0)	3.56 (90.0)

50 Series Pilot Operated Regulator (06, 08)



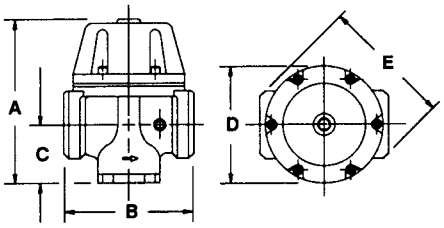
SIZE	A	B	C	D
3/4 & 1	4.84 (123.0)	4.44 (113.0)	1.93 (49.0)	4.68 (119.0)

50 Series Pilot Operated Regulator (10, 12)



SIZE	A	B	C	D	E
1 1/4 & 1 1/2	5.20 (132.0)	4.93 (125.0)	1.88 (48.0)	4.68 (119.0)	5.55 (141.0)

50 Series Pilot Operated Regulator (16, 20)



SIZE	A	B	C	D	E
2 & 2 1/2	8.88 (225.0)	7.31 (186.0)	3.09 (78.0)	6.63 (168.0)	8.0 (203.0)

*Pilot ports for all models are 1/4.

numatics

50 Series Lubricator

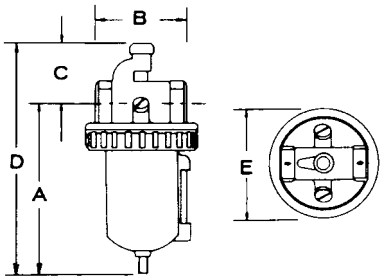
L50 Series

- High flow
- Numerical adjustment

ANSI SYMBOL

Specifications

	Std. Lub.	with "J" Option
Temperature Range ºF (ºC)	40-150 (4.4-65)	40-120 (4.4-49)
Max. Pressure PSIG (BAR)	250 (17.2)	150 (10.3)
1/4 & 3/8 Weight, lbs. (kg.)	2.2 (1.0)	N/A
1/2 Weight, lbs. (kg.)	3.3 (1.5)	N/A
3/4 & 1 Weight, lbs. (kg.)	4.2 (1.9)	7.2 (3.3)
1& 1 1/2 Weight, lbs. (kg.)	7.5 (3.4)	10 (4.5)



Flow Ratings

MODEL	PIPE SIZE	BOWL SIZE	SCFM*
L50L-02	1/4	5 oz.	60
L50L-03	3/8	5 oz.	90
L50L-04	1/2	8 oz.	130
L50L-06	3/4	16 oz.	300
L50L-08	1	16 oz.	325
L50L-10	1 1/4	16 oz.	500
L50L-12	1 1/2	16 oz.	570

* Flow rates based on 100 PSIG inlet and a 5 PSID.

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SIZE	A	B	C	D	E
1/4 & 3/8	7.06 (179)	2.50 (64)	2.22 (56)	4.84 (123)	2.90 (74)
1/2	7.9 (201)	3.25 (83)	2.31 (59)	5.59 (142)	3.80 (97)
3/4 & 1	9.88 (251)	4.06 (103)	2.63 (67)	7.25 (184)	4.97 (126)
1 1/4	10.47 (266)	4.81 (122)	2.84 (72)	7.63 (194)	4.97 (126)
1 1/2	10.47 (266)	4.81 (122)	2.84 (72)	7.63 (194)	4.97 (126)

How To Order

L 50 L - 06 F _

Model
L = Lubricator

Series
50 = High Flow

Element
L = Standard 16 oz. Bowl
J = 64 oz. (1.9 liter) Bowl (not available on 02, 03, or 04 models)

Threads
- = NPTF
G = G tap (BSPP)

Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"
06 = 3/4"
08 = 1"
10 = 1 1/4"
12 = 1 1/2"

Options
F = Button Head Fill
Q = Lubricator Autofill (not available on 02, 03 or 04 models)

NEED MORE PARTS AND INFORMATION?
• *See page 88* for information on ordering replacement parts.

50 Series Combinations – N50 Series

Filter/Regulator/Lubricator

MODEL NUMBER	PIPE SIZE NPTF	SCFM	FILTER	REGULATOR	LUBRICATOR
N50-02FRL	1/4	50	F50B-02	R50R-02	L50L-02
N50-03FRL	3/8	70	F50B-03	R50R-03	L50L-03
N50-04FRL	1/2	105	F50B-04	R50R-04	L50L-04
N50-06FRL	3/4	186	F50B-06	R50R-06	L50L-06
N50-08FRL	1	260	F50B-08	R50R-08	L50L-08
N50-10FRL	1 1/4	275	F50B-10	R50R-10	L50L-10
N50-12FRL	1 1/2	275	F50B-12	R50R-12	L50L-12

Filter/Lubricator

MODEL NUMBER	PIPE SIZE NPTF	SCFM	FILTER	LUBRICATOR
N50-02FLX	1/4	50	F50B-02	L50L-02
N50-03FLX	3/8	70	F50B-03	L50L-03
N50-04FLX	1/2	105	F50B-04	L50L-04
N50-06FLX	3/4	186	F50B-06	L50L-06
N50-08FLX	1	260	F50B-08	L50L-08
N50-10FLX	1 1/4	275	F50B-10	L50L-10
N50-12FLX	1 1/2	275	F50B-12	L50L-12

Filter/Coalescer/Regulator

MODEL NUMBER	PIPE SIZE NPTF	SCFM	FILTER	COALESCER	REGULATOR
N50-02FDR	1/4	22	F50B-02	F901D-02	R50R-02
N50-03FDR	3/8	33	F50B-03	F901D-03	R50R-03
N50-04FDR	1/2	50	F50B-04	F901D-04	R50R-04
N50-06FDR	3/4	80	F50B-06	F901D-06	R50R-06
N50-08FDR	1	100	F50B-08	F901D-08	R50R-08
N50-10FDR	1 1/4	220	F50B-10	F901D-10	R50R-10
N50-12FDR	1 1/2	250	F50B-12	F901D-12	R50R-12

How To Order

N 50 - 08 FRL A F G H

Model
Nippled Together

Series
50 = High Flow

Threads
- = NPTF
G = G tap (BSPP)

Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"
06 = 3/4"
08 = 1"
10 = 1 1/4"
12 = 1 1/2"

Options
A = Auto Float Drain
B = 40 Micron Filter Element
D = Pleated Prefilter on Coalescer
F = Lubricator Button Head Fill
G = Regulator Gauge
H = 0-250 PSIG Regulator Output
J = 64 oz. Lubricator Bowl (Not Available on 02, 03 or 04)
N = Non-Relieving Regulator
Q = Auto Fill Lubricator (Not Available on 02, 03 or 04)
R = Hex Nipple Connections
U = Coalescer Delta P Gauge

Combination
FRL = Filter/Regulator/Lubricator
FLX = Filter/Lubricator
FDR = Filter/Coalescer/Regulator

NEED MORE PARTS AND INFORMATION?
• *See page 88* for information on ordering replacement parts.

Replacement Kits

50 Series High Flow Filter

➤ Element Replacement Kits

includes filter element only

kit #	description
EKF50A-02	50 Series, 40 micron element, 1/4"-3/8"
EKF50B-03	50 Series, 5 micron element, 1/4"-3/8"
EKF48A	50 Series, 40 micron element, 1/2"
EKF48B	50 Series, 5 micron element, 1/2"
EKF50A	50 Series, 40 micron element, 3/4"-1-1/2"
EKF50B	50 Series, 5 micron element, 3/4"-1-1/2"

➤ Filter Repair Kits

includes Turbo-Flo, element retainer, quiet zone baffle, deflector retainer

kit #	description
RKF50	50 Series, filter repair kit

➤ Bowl Replacement Kits

includes bowl, o-ring, locking ring

kit #	description
BKF50A	50 Series, 02,03,04 Series bowl
BKF50B	50 Series, 06,08,10,12 Series bowl

➤ Sight Glass Repair Kit

includes tube and 2 o-rings

kit #	description
SKFL50	50 Series, sight glass repair kit

50 Series High Flow Regulator

➤ Regulator Repair Kits

includes diaphragm and inner valve

kit #	description
RKR48RA	for R50R-02, (relieving) *or* for R50R-03, (relieving)
RKR48RB	for R50R-04, (relieving)
RKR50RA	for R50R-06, (relieving) *or* for R50R-08, (relieving)
RKR50RB	for R50R-10, (relieving) *or* for R50R-12, (relieving)
RKR48NA	for R50N-02, (non-relieving) *or* for R50N-03, (non-relieving)
RKR48NB	for R50N-04, (non-relieving)
RKR50NA	for R50N-06, (non-relieving) *or* for R50N-08, (non-relieving)
RKR50NB	for R50N-10, (non-relieving) *or* for R50N-12, (non-relieving)

50 Series High Flow Pilot Operated Regulator

➤ Diaphragm Repair Kits

includes upper diaphragm, lower diaphragm, inner valve

kit #	description
RKW50RA	for R50W-02, (relieving) *or* for R50W-03, (relieving)
RKW50RB	for R50W-04, (relieving)
RKW50RC	for R50W-06, (relieving) *or* for R50W-08, (relieving)
RKW50RD	for R50W-10, (relieving) *or* for R50W-12, (relieving)
RKW50RE	for R50W-16, (relieving) *or* for R50W-20, (relieving)
RKW50NA	for R50W-02N, (non-relieving) *or* for R50W-03N, (non-relieving)
RKW50NB	for R50W-04N, (non-relieving)
RKW50NC	for R50W-06N, (non-relieving) *or* for R50W-08N, (non-relieving)
RKW50ND	for R50W-10N, (non-relieving) *or* for R50W-12N, (non-relieving)
RKW50NE	for R50W-16N, (non-relieving) *or* for R50W-20N, (non-relieving)

50 Series High Flow Lubricator

➤ Lubricator Repair Kits

includes needle adjustment ass'y, o-ring, adjustment cap

kit #	description
RKL50	50 Series, lubricator repair kit

➤ Bowl Replacement Kits

includes bowl, o-ring, locking ring

kit #	description
BKL50A	50 Series, 02,03,04 Series bowl
BKL50B	50 Series, 06,08,10,12 Series bowl

➤ Sight Glass Repair Kit

includes tube and 2 o-rings

kit #	description
SKFL50	50 Series, sight glass repair kit

➤ Replacement Adjustment Knob Kits

includes adjustment knob only

kit #	description
LP50	50 Series, adjustment knob

CATALOG

air prep

70 & 72 Series

Stainless Steel FRL Series

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

70 & 72 Series
Stainless Steel Series

- Two Series Available – High Flow and Miniature
- 316 Stainless Steel Construction
- All Viton Seals
- 5 Micron Particulate
- Three Grades Coalescing - One Adsorbing
- Meets NACE Specifications
- High Flow in a Compact Size

F72B-02 pictured

Particulate Filter
F72 Series

Particulate air filters are designed to separate liquid, water, rust, pipe scale, and debris from air lines. They should be installed upstream of the regulator to prevent contamination from reaching other components.

Water is removed mechanically by the deflector which causes the air to move in a swirling motion. The condensed water droplets are then centrifugally impounded upon the ID of the bowl then fall down past the quiet zone baffle to the water sump. Dry air passes through the sintered element utilizing depth filtration and removes debris down to specified micron size.

ANSI SYMBOL

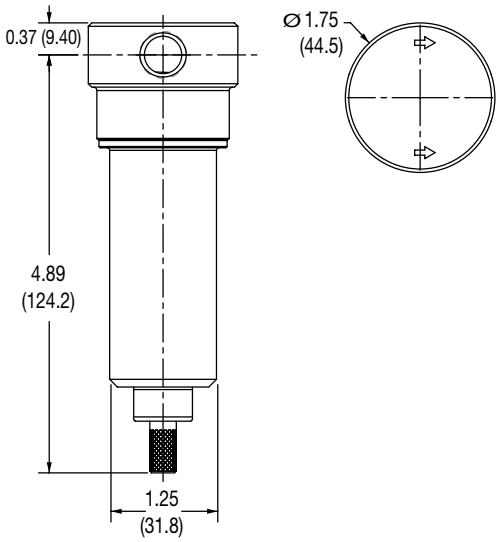
Features

- 316 stainless steel body construction
- All seals made of Flourocarbon (FKM)
- Meets NACE specifications
- Internal plastic parts
- Acetal and ABS
- Element Polyethelene

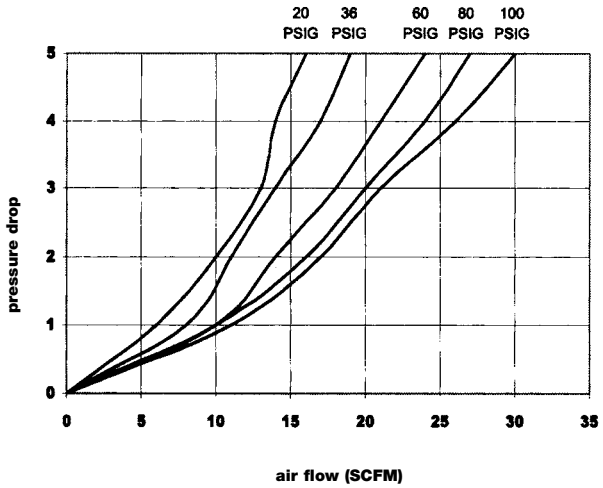
Specifications

Max. Pressure: 300 PSIG (20 bar)
Temperature Range: 40° to 180° F (4° to 82° C)

Dimensions in inches (mm)



Flow Rates



How to Order

F 72 B - 02

Model
F = Filter

Series
72 = 1.5 oz Bowl

Element
B = 5 Micron Element

Port Size
02 = 1/4

Threads
- = NPTF
G = G Tap (BSPP)

F72D-02 pictured

Coalescing Filter

F72 Series

The coalescing filter is utilized when either clean air is required or longer component life is desired. This type of filter removes water and oil aerosols. It works differently than the particulate filter; dirty air enters the element from the center and passes through a field of glass fibers which cause the aerosols to form into droplets which are heavier than the surrounding air. The droplets grow larger as they pass through the element and gravity causes the oil drops to drain to the sump of the bowl. To maximize the life of a coalescing filter it should always be used after a 5 micron particulate filter or with the optional prefilter.

ANSI SYMBOL

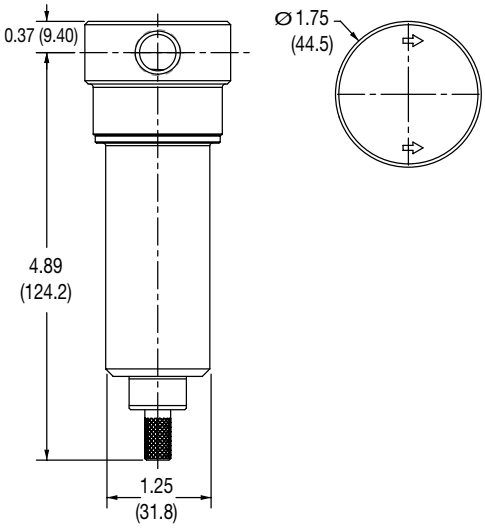
Features

- 316 stainless steel body construction
- All seals made of Flourocarbon (FKM)
- Meets NACE specifications
- Internal plastic parts
- Acetal and ABS
- Element: Vacuum formed borosilicate glass fibers
- Cartridge element design
- Inner and outer support cores prevent element from crushing in either flow direction

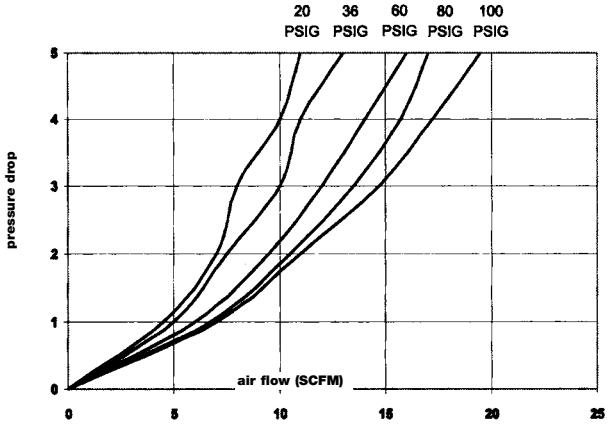
Specifications

Max. Pressure: 300 PSIG (20 bar)
Temperature Range: 40° to 180° F (4° to 82° C)

Dimensions in inches (mm)



Flow Rates



How to Order

F 72 D - 02 D

Model
F = Filter

Series
72 = 1.5 oz Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.1 Micron Ultra Fine Coalescer
F = Vapor Adsorber

Options
D = 3 Micron Internal Pleated Prefilter

Port Size
02 = 1/4

Threads
- = NPTF
G = G Tap (BSPP)

Recommended Uses

C grade element, identified by its blue drain layer, is a coarse filter for large amounts of water, rust, pipe scale, and hydrocarbons. Excellent for environments that have severe contamination. Can be used for lubricated or 'dry' systems.
D grade element, identified by its green drain layer, is a fine filter for cylinder or valves - especially when the circuit is being run without lubrication ('dry').
E grade element, identified by its red drain layer, is an ultra fine filter for oil-free instrumentation air, blow molding, food and drug packaging, electronics applications, and other applications requiring maximum contamination removal.
F grade element, identified by its white drain layer, is an adsorbing filter that utilizes activated carbon to deodorize compressed air. Typically it is used to protect worker environments, food and drug applications, and instrumentation for analytical instruments. Life expectancy is approximately 3 months at rated flow.

Prefilter Option - Suffix 'D'

Models using the C, D, or E grade elements can be equipped with an optional 3 micron internal prefilter. The prefilter provides additional protection for the fine borosilicate fibers. For most applications, a separate 5 micron particulate filter is not required.

numatics

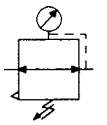
R72R-02 pictured

Stainless Steel Regulator

R72 Series

Regulators are used to reduce pressure to a required working pressure. Utilizing optimum pressure can save companies both component life and many dollars in compressed air costs.

Regulators consist of a diaphragm which floats between a main spring (top) and a valve (bottom). By turning the adjustment knob clockwise, the main spring is forced onto the rubber diaphragm which, in turn, is pressed onto the valve stem. When the spring pressure becomes greater than the air pressure in the control chamber below the diaphragm, the valve is forced down and flow begins. As flow continues, the pressure begins to build and air, via the aspirator tube, fills the control chamber and forces the diaphragm upward. As forces balance, the small spring under the valve piston causes the valve to close. The cycle continues in a balanced process of reducing or increasing flow based upon the downstream pressure.



ANSI SYMBOL

Features

- 316 stainless steel body construction
- All seals made of Flourocarbon (FKM)
- Standard output pressure 0-125 PSIG
- Meets NACE specifications
- Bonnet and Knob Acetal

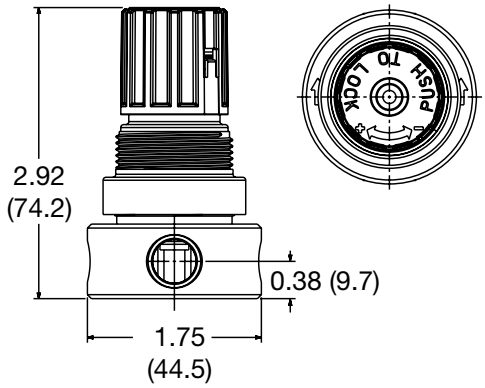
Internal Metal Parts

- Valve Stainless Steel
- Springs - Stainless Steel

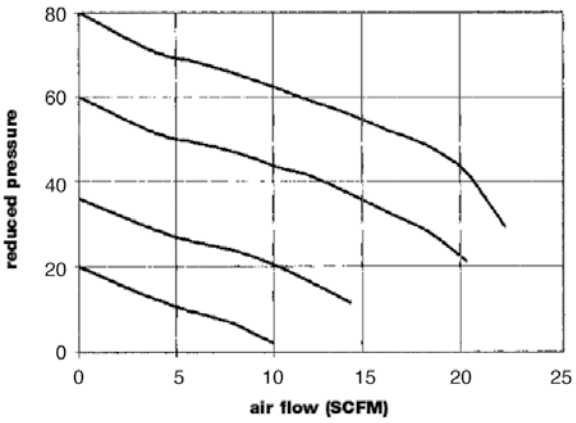
Specifications

Max. Pressure: 300 PSIG (20 bar)
Temperature Range: 40° to 180° F (4° to 82° C)

Dimensions in inches (mm)



Flow Rates



How To Order

R 72 R - 02 P

Model:
R = Regulator

Series:
72 = Stainless Steel

Style:
R = Relieving
N = Non-relieving

Options:
G = Gauge
P = Panel Nut (Plastic)

Port Size:
02 = 1/4

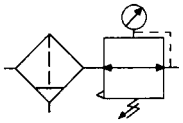
Threads:
- = NPTF
G = G tap (BSPP)

Note: All BSPP (G tap) models use BSPT gauge threads.

P72B-02 pictured

Stainless Steel Particulate Filter/Regulator

P72 Series



ANSI SYMBOL

Application

The integral filter/regulator ('piggyback') is a two station component designed to filter and regulate compressed air when cost and space are of primary concern. As wet, dirty air enters, it immediately flows through the air deflector, causing the air to move in a swirling motion. After condensed water is centrifugally removed, air passes through the filter and into the regulator. The high pressure of the air is systematically reduced via the adjustment spring and valve and exits the housing as clean and dry air that is ready to work at the specified pressure.

Features

- 316 stainless steel body construction
- All seals made of Flourocarbon (FKM)
- 0-125 PSI standard
- Meets NACE specifications
- Bonnet and Knob Acetal

Internal plastic parts

- Acetal and ABS
- Element Polyethelene

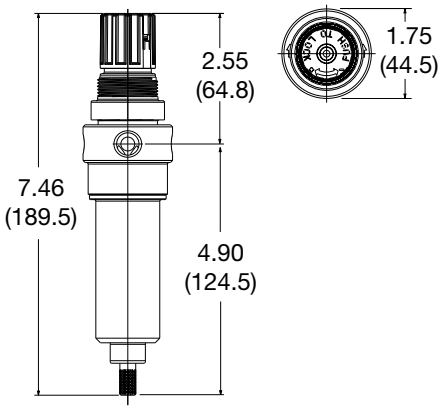
Internal Metal Parts

- Valve Stainless Steel
- Springs - Stainless Steel

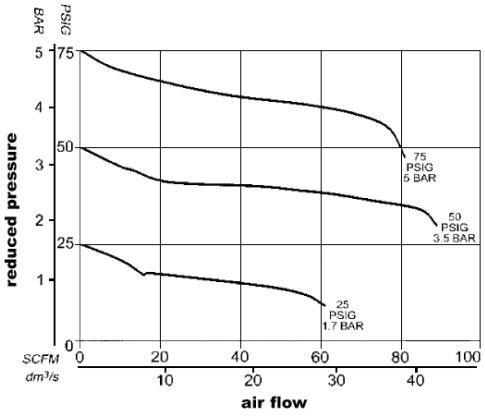
Specifications

Max. Pressure: 300 PSIG (20 bar)
Temperature Range: 40° to 180° F (4° to 82° C)

Dimensions in inches (mm)



Flow Rates



How To Order

P 72 B - 02 P

Model:
P = Filter/Regulator (Piggyback)

Series:
72 = Stainless Steel
1.5 oz bowl capacity

Element:
B = 5 micron (standard)

Port Size:
02 = 1/4

Threads:
- = NPTF
G = G tap (BSPP)

Options:
G = Gauge
N = Non-relieving
P = Panel Nut (Plastic)

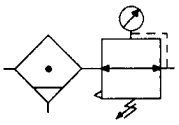
Note: All BSPP (G tap) models use BSPT gauge threads.

numatics

C72D-02 pictured

Coalescing Filter/Regulator

C72 Series



ANSI SYMBOL

The Numatics C Series Coalescer/ Regulator is a two station point of use air preparation system designed to provide superior filtration and regulation in one compact housing. The C Series combines a multiple support cartridge style borosilicate glass element with a regulator to assure the maximum performance of downstream components. Available with four different element grade choices, the C Series Coalescer/ Regulator can be outfitted to attack and remove the exact type of contamination that is critical to a specific application.

Features

- 316 stainless steel body construction
- All seals made of Flourocarbon (FKM)
- 0-125 PSI standard
- Meets NACE specifications
- Bonnet and Knob Acetal

Internal plastic parts

- Acetal and ABS
- Element: Vacuum formed borosilicate glass fibers

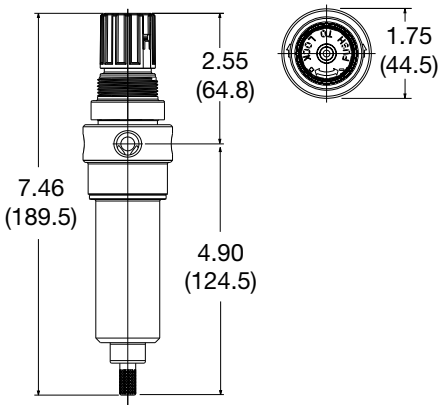
Internal Metal Parts

- Valve Stainless Steel
- Springs - Stainless Steel

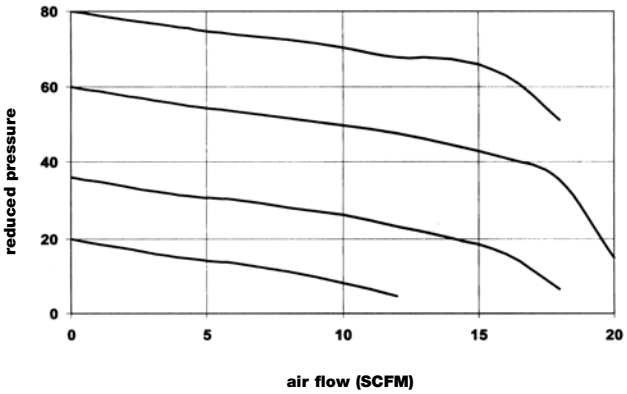
Specifications

Max. Pressure: 300 PSIG (20 bar)
Temperature Range: 40° to 180° F (4° to 82° C)

Dimensions in inches (mm)



Flow Rates – based on 100psi inlet



How to Order

C 72 D - 02 D

Model
C = Coalescer/Regulator (Piggyback)

Series
72 = 1.5 oz. Bowl

Element
C = 0.7 Micron Coarse Coalescer
D = 0.3 Micron Fine Coalescer
E = 0.1 Micron Ultra Fine Coalescer
F = Vapor Adsorber

Options
D = 3 Micron, Internal Pleated Prefilter
G = Gauge
N = Non-relieving
P = Panel Mount Nut

Port Size
02 = 1/4

Threads
- = NPTF
G = G Tap (BSPP)

Note: All BSPP (G tap) models use BSPT gauge threads.

Prefilter Option - Suffix 'D'

Models using the C, D, or E grade elements can be equipped with an optional 3 micron internal prefilter. The prefilter provides additional protection for the fine borosilicate fibers. For most applications, a separate 5 micron particulate filter is not required.

ANSI SYMBOL

Stainless Steel Particulate Filter

F70B Series

- 316 Stainless Steel Body Construction
- All Seals Made of Flourocarbon (FKM)
- 5 Micron Element Standard
- Meets NACE Specifications

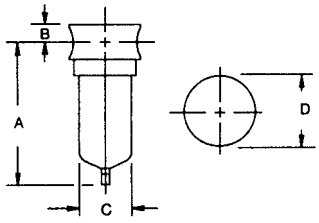
Specifications

Temperature Range ºF (ºC): 40°-180° (4°-82°)

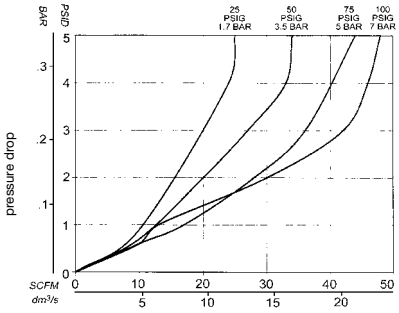
Max. Operating Pressure PSIG (BAR): 300 (20)

Weight, lbs. (kg.): 1.88 (.85)

Element: Sintered Polypropylene



Flow Ratings (based on 100 PSI inlet)



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SERIES	A	B	C	D
70	5.00 (127.0)	0.56 (14.0)	1.75 (44.0)	2.38 (60.0)

How To Order

F 70 B - 04 A _

Model
F = Filter

Series
70 = Stainless Steel 4.0 oz. (1.2 Liter) Bowl Capacity

Element
B = 5 Micron (Standard)

Threads
- = NPTF
G = G Tap (Bspp)

Port Size
04 = 1/2

Options
A = Auto Drain

numatics

ANSI SYMBOL

Stainless Steel Coalescing Filter

F70D Series

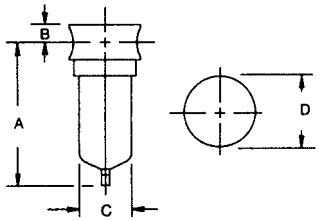
- 316 Stainless Steel Body Construction
- Complete Coalescing Filter Line
- All Seals Made of Flourocarbon (FKM)
- Meets NACE Specifications

Specifications

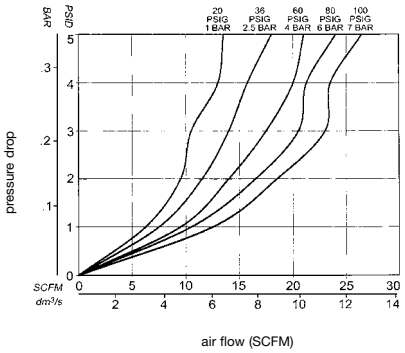
Temperature Range ºF (ºC): 40°-180° (4°-82°)

Max. Operating Pressure PSIG (BAR): 300 (20)

Weight, lbs. (kg.): 1.88 (.85)



Flow Rating (based on 100 PSI inlet)



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SERIES	A	B	C	D
70	5.00 (127.0)	0.56 (14.0)	1.75 (45.0)	2.38 (60.0)

How To Order

F 70 D - 04 A

Model
F = Filter

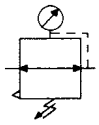
Series
70 = Stainless Steel 4.0 oz. (0.12 Liter) Bowl Capacity

Element
C = 0.7 Micron
D = 0.3 Micron (Standard)
E = 0.1 Micron
F = Adsorber

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
04 = 1/2

Options
A = Auto Drain
D = Pleated Prefilter



ANSI SYMBOL

Stainless Steel Regulator

R70 Series

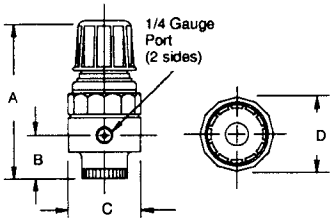
- 316 Stainless Steel Body Construction
- All Seals Made of Flourocarbon (FKM)
- 0-125 PSI Standard
- Meets NACE Specifications

Specifications

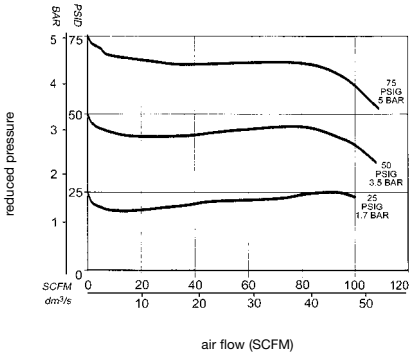
Temperature Range °F (°C): 40° to 150° (4° to 65°)

Max. Operating Pressure PSIG (BAR): 350 (24)

Weight, lbs. (kg.): 1.79 (.81)



Flow Ratings (based on 100 PSI inlet)



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SERIES	A	B	C	D
70	4.94 (125.0)	1.38 (35.0)	2.31 (59.0)	2.44 (62.0)

How To Order

R 70 R - 04 G

Model
R = Regulator

Series
70 = Stainless Steel

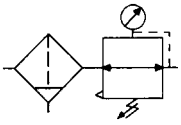
Element
N = Non-Relieving
R = Relieving (Standard)

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
04 = 1/2

Options
G = Regulator Gauge
H = 0-250 PSI
P = Regulator Panel Unit

numatics



ANSI SYMBOL

Stainless Steel Particulate Filter/ Regulator

P70 Series

- 316 Stainless Steel Body Construction
- All Seals Made of Flourocarbon (FKM)
- 0-125 PSI Standard
- Meets NACE Specifications

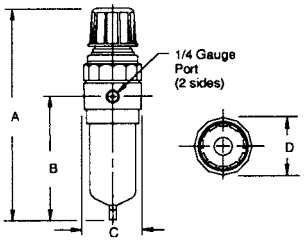
Specifications

Temperature Range °F (°C): 40° to 180° (4° to 82°)

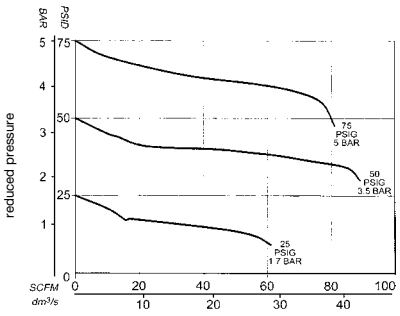
Max. Operating Pressure PSIG (BAR): 300 (20)

Weight, lbs. (kg.): 2.43 (1.1)

Element: Sintered Polypropylene



Flow Ratings (based on 100 PSI inlet)



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SERIES	A	B	C	D
70	8.50 (216.0)	4.94 (125.0)	2.38 (60.0)	2.44 (62.0)

How To Order

P 70 B - 04 H

Model
P = Filter/Regulator (Piggyback)

Series
70 = Stainless Steel 4.0 oz. (.12 Liter) Bowl Capacity

Element
B = 5 Micron (Standard)

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
04 = 1/2

Options
H = 0-250 PSI
N = Non-relieving

ANSI SYMBOL

Stainless Steel Lubricator

L70L Series

- 316 Stainless Steel Body Construction
- All Seals Made of Flourocarbon (FKM)
- Meets NACE Specifications

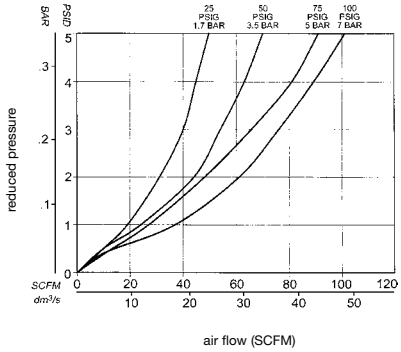
Specifications

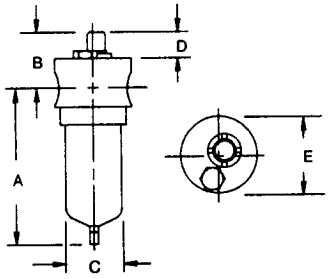
Temperature Range ºF (ºC): 40° to 150° (4° to 65°)

Max. Operating Pressure PSIG (BAR): 350 (24)

Weight, lbs. (kg.): 1.79 (.81)

Flow Ratings (based on 100 PSI inlet)





Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

SERIES	A	B	C	D	E
70	5.00 (126.0)	1.81 (46.0)	1.75 (45.0)	0.94 (24.0)	2.38 (60.0)

How To Order

L 70 L - 04

Model
L = Lubricator

Series
70 = Stainless Steel 4.0 oz. (.12 liter) Bowl Capacity

Element
L = All Lubricators

Port Size
04 = 1/2

Threads
- = NPTF
G = G Tap (BSPP)

Replacement Kits

70 Series Stainless Steel Particulate Filter

➤ Element Replacement Kits

includes filter element only

kit #	description
EKF20A	70 Series, 40 micron element
EKF20B	70 Series, 5 micron element

70 Series Stainless Steel Coalescing Filter

➤ Element Replacement Kits

includes filter element only

kit #	**description**
EKF20C	70 Series, 0.7 micron element EKF20CD
EKF20CD	70 Series, 0.7 micron element with prefilter
EKF20D	70 Series, 0.3 micron element
EKF20DD	70 Series, 0.3 micron element with prefilter
EKF20E	70 Series, 0.1 micron element
EKF20ED	70 Series, 0.1 micron element with prefilter
EKF20F	70 Series, adsorbing element

70 Series Stainless Steel Regulator

➤ Regulator Repair Kits

kit #	**description**
RKC70	70 Series, cage kit (inc. adjustment knob and spring cage)
RKR70R	70 Series, (inc. relieving diaphragm and inner valve)
RKR70N	70 Series, (inc. non-relieving diaphragm and inner valve)

70 Series Stainless Steel Lubricator

➤ Lubricator Repair Kits

includes adjustment assembly

kit #	**description**
RKL70	70 Series, lubricator repair kit

CATALOG

air prep

Proportional & Precision Regulator Instrumentation

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

Proportional & Precision Regulator Instrumentation 105-130

1. Economy Miniature Electro-Pneumatic Transducer – R84 Series
- I/P and E/P Versions
- Magnet Coil Technology

2. High Flow Precision Regulator – R88 Series
- R880 High Flow Regulator
- R881 Back Pressure Precision Regulator

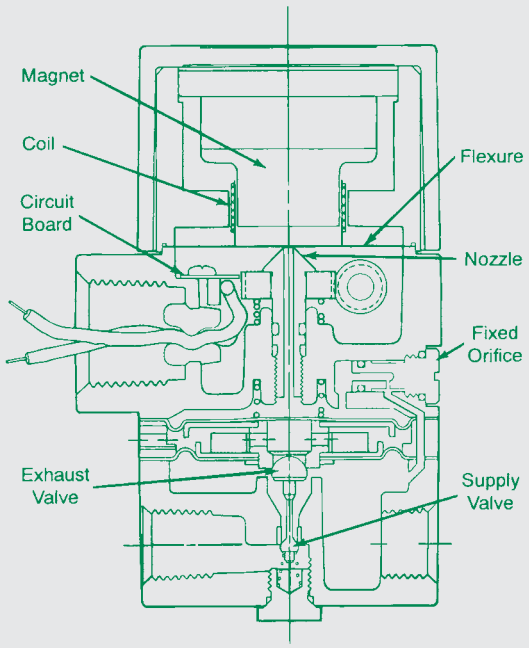
3. Ratio Relay Volume Booster – R87 Series
- Precision Air Pilot Regulator
- 1:1 and 1:6 Ratios Available

4. Instrument Air Regulator – R89 Series
- Precision Regulator
- Integral 5 Micron Filter – Manual Drain

5. Electro-Pneumatic Transducer – R83 Series
- I/P and E/P Versions
- Magnet Coil Technology

6. Precison Regulator – R80 Series
- R800 Standard Series
- R820 High Relief Series

7. Miniature Electro-Pneumatic Transducer – R85 Series
- I/P and E/P Versions
- Piezo Electric Technology



Electropneumatic Transducer
I/P, E/P R83 Series

Application

The Electropneumatic Transducer (I/P, E/P) converts a current or voltage input signal to a linearly proportional pneumatic output pressure. This versatile instrument is designed for control applications that require a high degree of reliability and repeatability at an economical cost. These units are used for applications that require the operation of valve actuators, pneumatic valve positioners, damper and louver actuators, final control elements, relays, air cylinders, web tensioners, clutches, and brakes.

Features

- Integral volume booster
- Compact size
- Low air consumption
- Field reversible
- Flexible zero and span adjustments
- Standard process inputs
- Split ranging
- FM - NEMA 4x
- CE Approved

Specifications

	LOW OUTPUT RANGE (UP TO 30 PSIG)	HIGH OUTPUT RANGE (UP TO 120 PSIG)
Min./Max. Supply Pressure:	minimum 3 PSIG (21 kPa) above maximum output maximum 100 PSIG (700 kPa)	minimum 5 PSIG (35 kPa) above maximum output maximum 150 PSIG (1050 kPa)
Supply Pressure Sensitivity	< +/- .1% of span per PSIG (< +/- .15% of span per 10 kPa)	< +/- .004% of span per 1.0 PSIG (7 kPa)
Terminal Based Linearity	< +/- .75% of span	< +/- 1.5% of span typ., +/- 2.0% max
Repeatability:	< .5% of span	< .5% of span
Hysteresis	< 1.0% of span	< .5% of span
Response Time	dependent on pressure range, typically less than .25 sec. for 3 - 15 PSIG units	dependent on pressure range, typically less than .25 sec. for 3 - 15 PSIG units
Flow Rate	4.5 SCFM (7.6 m3/hr ANR) at 25 PSIG (175 kPa) supply 12 SCFM (20 m3/hr ANR) at 100 PSIG (700 kPa) supply	20 SCFM (34 m3/hr ANR) at 150 PSIG (1050 kPa) supply
Relief Capacity	2.0 SCFM (3.4 m3/hr) at 5 PSIG (35 kPa) above set point	2.0 SCFM (3.4 m3/hr) at 5 PSIG (35 kPa)
Maximum Air Consumption	.03 SCFM (.07 m3/hr) typical	.05 SCFM (.14 m3/hr) typical
Media	oil free, clean dry air filtered to 0.3 micron	oil free, clean dry air filtered to 0.3 micron
Temp. Range (operating)	-20°F to 140°F (-30°C to 60°C)	-20°F to 140°F (-30°C to 60°C)

NOTE: This unit, as is, is a Class 1, Division 2 hazardous location item (non-incendive). With the proper barrier it is a Class 1,2,3; Division 1; Groups C,D,E,F,G item (applies only to 4-20 Ma I/P).

How To Order

R 83 1 – 02 F G

Model
R = Regulator

Series
83 = I/P, E/P Transducer

Style
1 = 4-20 Ma
2 = 0-5 VDC
3 = 0-10 VDC

Threads
– = NPTF
G = G tap (BSPP)

Port Size
02 = 1/4"

Output Range
B = 3-15 PSIG
(4-20 Ma Input Signal Available)
C = 3-27 PSIG
(4-20 Ma Input Signal Available)
E = 2-60 PSIG
(4-20 & 0-5 VDC Ma Input)
F = 3-120 PSIG
(4-20 & 0-10 VDC Ma Input Signal Available)

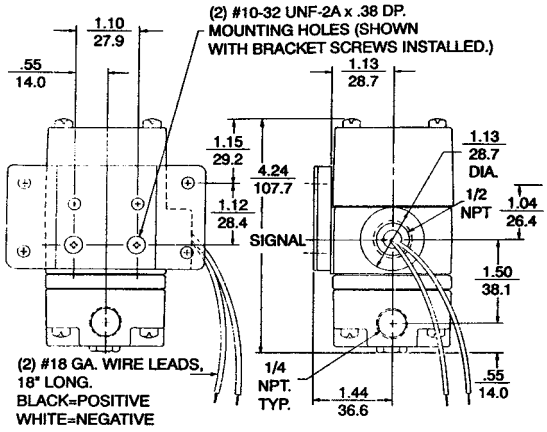
Options
G = Gauge

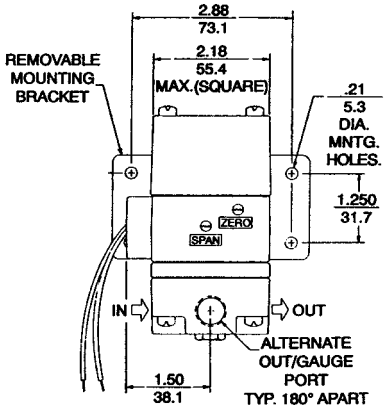
NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

Dimensions

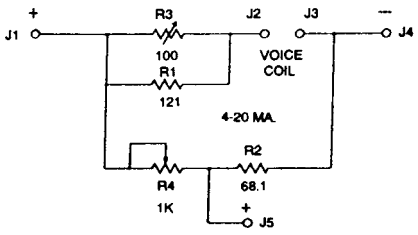
top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

R831-02B pictured



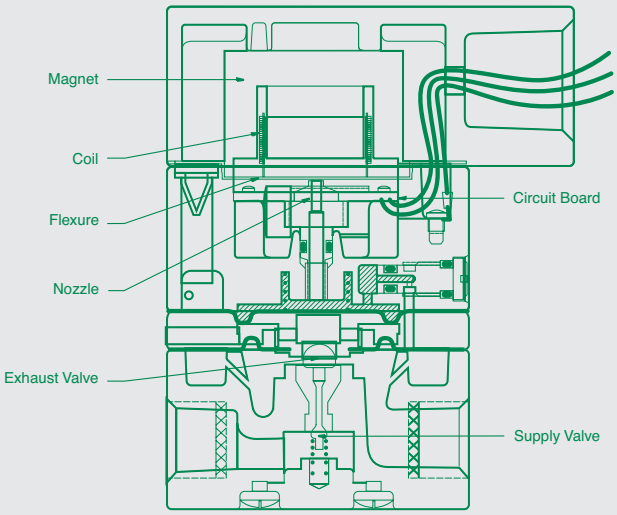


Electrical Schematic



NOTE: FOR 4-20MA AND 10-MA USE J1 AS POSITIVE INPUT.

NOTE: Bracket included with each unit.



Economy Miniature Electropneumatic Transducer

R84 Series

Application

The R84 Series I/P, E/P transducers are compact electronic pressure regulators that convert an electrical signal (current or voltage) to a proportional pneumatic output. Its compact design and flexible porting make it an ideal choice for space-constrained DIN rail or manifold applications. A NEMA-4X housing with RFI/EMI protection will allow it to be used in demanding industrial environments.
The operating principle of the R84 is based on a rugged, field-tested force-balance design. A coil is suspended in a magnetic field by a flexure. Varying the electrical signal through the coil positions the flexure to a nozzle. This creates a back pressure that acts as a pilot to an integral volume booster. This provides a high flow which increases control speed in critical applications.

Features

- Compact size
- NEMA-4X housing
- Low air consumption
- High flow capacity
- Accessible external orifice
- Input and output ports on both front and back
- RFI/EMI protection
- External zero and span adjustments
- Field reversible
- Wall, panel, pipe or DIN rail mounting
- No separate power supply required
- CE Approved

Specifications

	Economy Miniature Electropneumatic Transducer R84 Series
Linearity (independent)	> +/- 0.5% of span
Hysteresis and repeatability	>0.5% of span
Port sizes	Pneumatic = 1/4 Electric = 1/2 NPT
Media	Clean, dry, oil-free, air filtered to 0.3 micron
Mounting	Wall, panel (included), 2” pipe (included) or DIN rail (optional)
Materials	Housing: Chromate treated aluminum with baked paint Elastomers: Buna-N Trim: Stainless Steel, brass, zinc plated steel
Weight	1.3 lbs (.59 KG)
Inputs	4-20 mA, 0-5V DC, 0-10 V DC
Outputs	3-15 psig, 3-27 psig, 2-60 psig, 3-120 psig
Air Consumption	1.8 SCFH (0.05 m3/hr) at mid Range typical
Supply pressure: Note: Supply pressure must be a minimum of 5 psig (0.3 bar) above the maximum output pressure	Outputs up to 30 psi: 100 psig (7 bar) maximum Outputs to 120 psig: 150 psig (10 bar) maximum
Flow Capacity at mid range	4.5 SCFM (7.6 m3/hr) at 25 psig (1.7 Bar) supply 12 SCFM (20 m3/hr) at 100 psig (7 Bar) supply
Relief Capacity	2 SCFM (3.4 m3/hr) at 5 psig (35kPa) above set point
Temperature Range	-20 to + 150 F (- 30 to +65 C)

Notes:
Electrical Connections – For both I/P and E/P models, the 1/2" conduit electrical connections are made to the red (+) and black (-) leads. The green lead is used for case ground. For both I/P and E/P models, the 43650 DIN electrical connections are made to terminal 1 (+) and terminal 2 (-). Terminal 3 is not used. Ground is for case ground.

How To Order

R 84 1 - 02 E F R

Model
R = Regulator

Series
84 = I/P, E/P Economy Miniature Transducer

Input Signal
1 = 4-20 Ma
2 = 0-5 VDC
3 = 0-10 VDC

Threads
– = NPTF
G = G Tap (BSPP)

Port Size
02 = 1/4"

Output Range
B = 3-15 PSIG
C = 3-27 PSIG
E = 2-60 PSIG
F = 3-120 PSIG

Electrical Connection
A = 1/2 NPT Conduit w/ Pigtail
F = DIN 43650 Connector

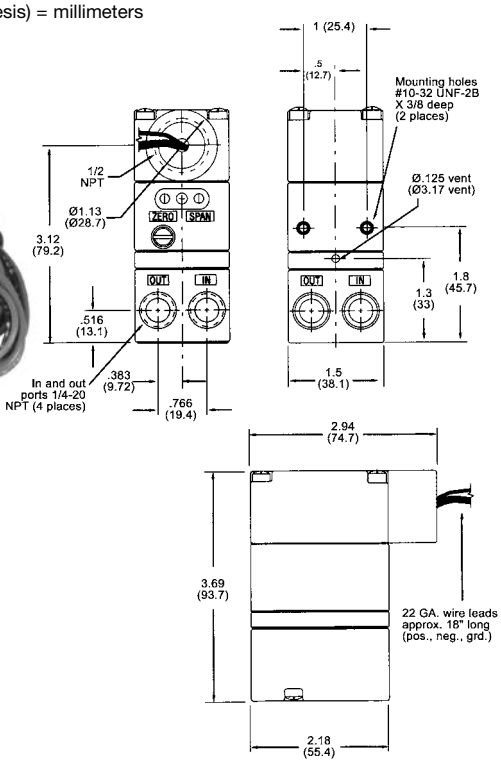
Options
G = Gauge
R = DIN Rail Mount

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

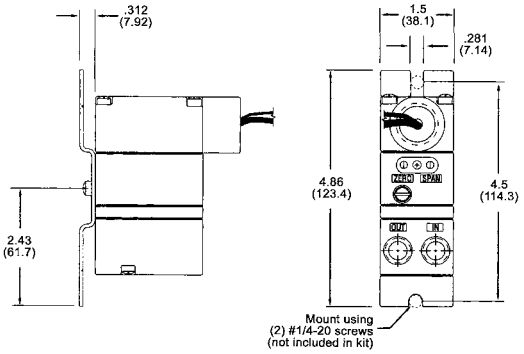
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

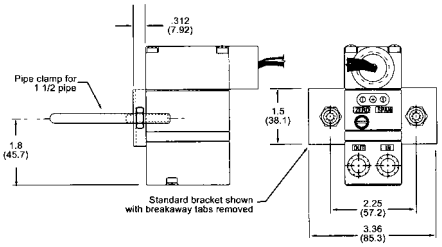
R841-02BA pictured



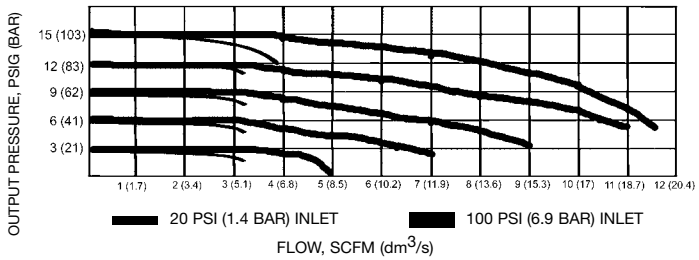
Panel Mounting (included with standard unit)

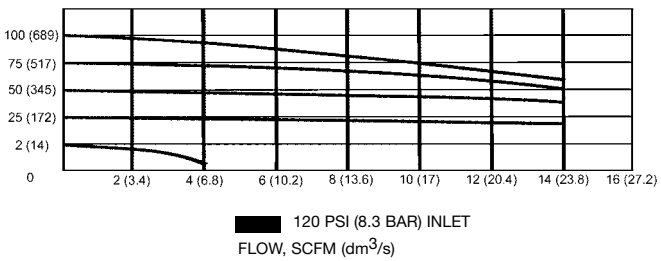


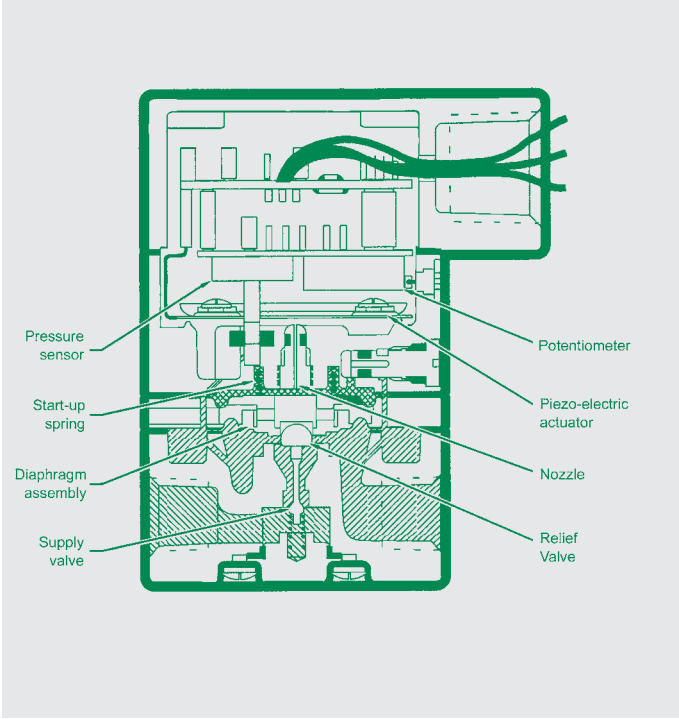
Pipe Mounting (included with standard unit)



Flow Ratings







Miniature Electropneumatic Transducer
I/P, E/P R85 Series

Application

The R85 Series I/P, E/P transducers are a series of compact electronic pressure regulators that convert an electrical signal (current or voltage) to a proportional pneumatic output. Utilizing internal solid-state feedback circuitry, the R85 provides precise, stable pressure outputs to final control elements. Immunity to the effects of vibration or mounting position, high tolerance to impure air, and low air consumption make this unit ideal for use in demanding applications.

The heart of this unique technology is a bimorph piezo actuator that is encapsulated in a protective skin. This protective skin provides defense against the humidity and contaminant often found in process operating environments.

Features

- Reliable in harsh environments
- Low air consumption - 3 SCFH typical
- High accuracy - +/-0.10% of span
- NEMA-4X (IP65) enclosure
- Vibration/position insensitive
- Compact size
- Wall, panel (included), pipe (included), or din rail mounting
- Supply pressures up to 100 PSIG
- Built-in volume booster - 10 SCFM flow
- Input/output ports on front and back
- Conduit fitting or din connector
- Split range operation
- Field reversible
- CE Approved

Specifications

	Miniature Electropneumatic Transducer I/P, E/P R85 Series	
Port sizes	Pneumatic: 1/4 Electric: 1/2 NPT	
Media	Clean, dry, oil-free, air filtered to 0.3 micron	
Mounting	Wall, Panel (included), 2” pipe (included), or DIN rail (optional)	
Materials	Housing: Chromate treated aluminum with baked paint. NEMA-4X (IP65) Elastomers: Buna-N Trim: Stainless steel, brass, zinc plated steel	
Weight:	13.0 oz (0.4 kg)	
Inputs	4-20mA	0-10 VDC 0-5 VDC
Outputs	3-15 PSIG 3-27 PSIG 2-60 PSIG 2-100 PSIG	0.21-1.03 BAR 0.21-1.86 BAR 0.14-4.14 BAR 0.14-6.89 BAR
Air Consumption	1.5 SCFH 0.04 m3/hr at mid range typical	
Supply pressure:	100 PSIG (7.0 BAR) maximum Note: Supply pressure must be at a minimum of 5 PSIG above maximum output	
Flow Capacity at mid range	4.5 SCFM (7.6 m3/hr) at 25 PSIG (1.7 BAR) supply 12 SCFM (20 m3/hr) at 100 PSIG (7 BAR) supply	
Relief Capacity	2.0 SCFM (3.4 m3/hr) at 5 PSIG (35 kPa) above set point	
Temperature limits	Operating: -40° to +160° F (-40° to +71° C) Storage: -40° to +200° F (-40° to +93° C)	
Loop load, I/P Transducer	7.5 VDC @ 20mA	
Supply Voltage, E/P Transducer	7-30 VDC, less than 3mA	
Signal impedance	7-30 VDC, less than 3mA	

Notes:
Electrical Connections – For both I/P and E/P models, the 1/2" conduit electrical connections are made to the red (+) and black (-) leads. The green lead is used for case ground. For both I/P and E/P models, the 43650 DIN electrical connections are made to terminal 1 (+) and terminal 2 (-). Terminal 3 is not used. Ground is for case ground.

How To Order

R 85 1 - 02 E A G

Model
R = Regulator

Series
85 = I/P, E/P Miniature Transducer with Pressure Feedback Control

Input Signal
1 = 4-20 Ma
2 = 0-5 VDC
3 = 0-10 VDC

Threads
– = NPTF
G = G Tap (BSPP)

Port Size
02 = 1/4"

Output Range
B = 3-15 PSIG
C = 3-27 PSIG
E = 2-60 PSIG
F = 2-100 PSIG

Electrical Connection
A = 1/2 NPT Conduit w/ Pigtail
F = DIN 43650 Connector

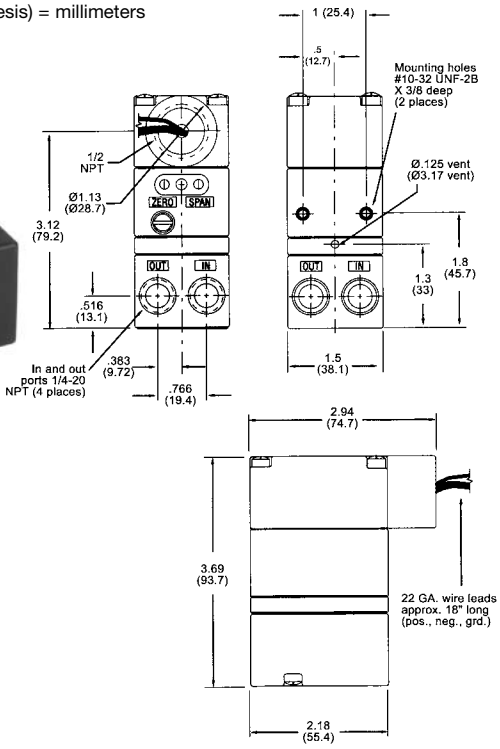
Options
G = Gauge
R = DIN Rail Mount

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

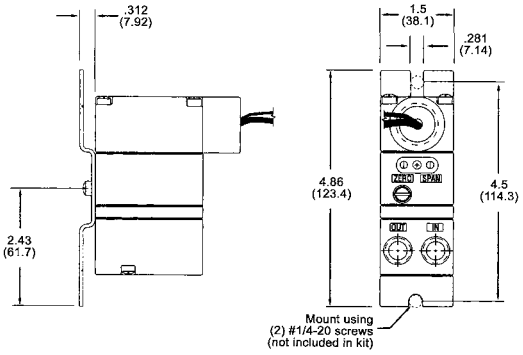
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

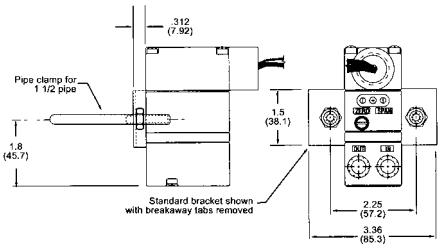
R851-02BF pictured



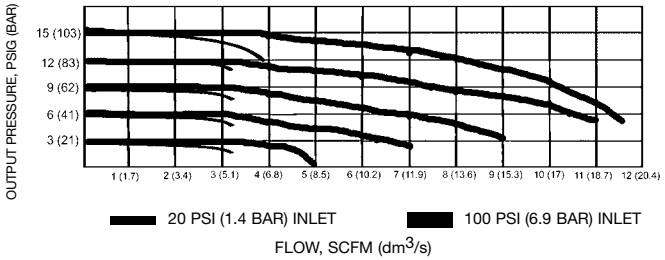
Panel Mounting (included with standard unit)

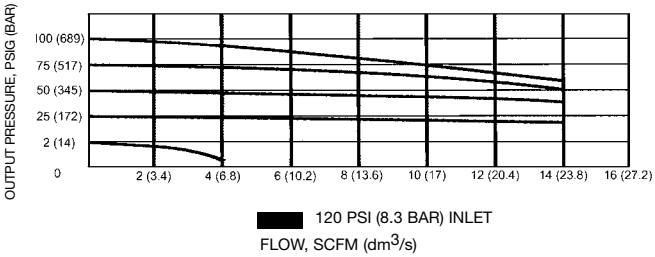


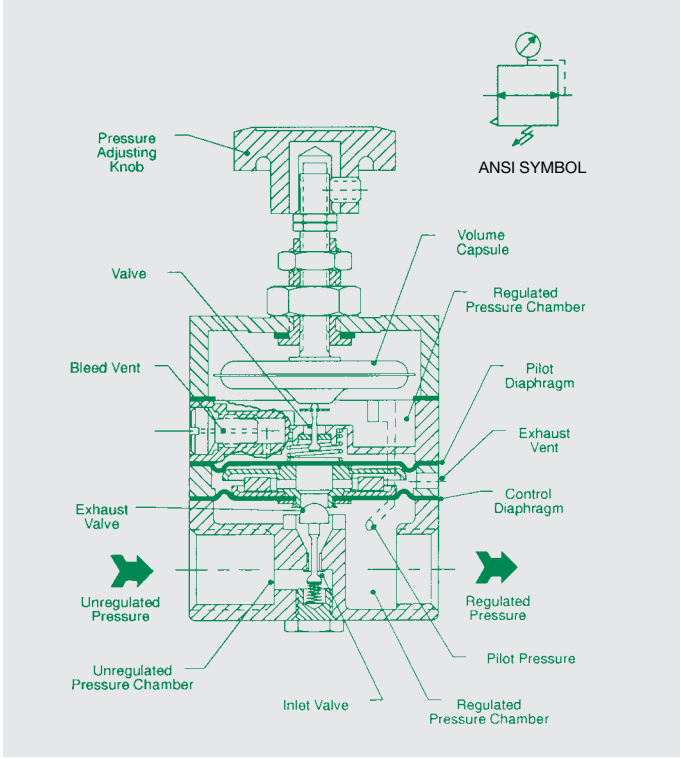
Pipe Mounting (included with standard unit)



Flow Ratings







Precision Regulator
R80/82 Series

Application

The 80 and 82 Series regulators are high-precision, multi-stage pressure regulators. The highest degree of regulation and repeatability are achievable by reacting to downstream pressure fluctuations as small as 0.01 PSIG (.07 kPa). Action occurs as downstream pressure is piloted to the control chamber to act on a finely tuned stainless steel volume capsule. A continuous bleed of less than 0.08 SCFM (.15 m^3/hr) adjusts the pilot diaphragm causing appropriate movement of the supply valve or relief valve. Relief flows of up to 10 SCFM can be achieved through the large exhaust port located in the control diaphragm. Exhaust is achieved through the exhaust vents located in the side of the body.

Recommended Uses

- Air Gauging
- Gas Mixing
- Web Tensioning
- Roll Loading
- Air Hoists

Specifications

	Precision Regulator R80/82 Series
Flow Capacity	14 SCFM (25m3/hr)
Exhaust Capacity	Model 80 - 2 to 3 SCFM (3.4 m3/hr) Model 82 - 10 to 11 SCFM (17.0 m3/hr)
Sensitivity	.125 inches (3.2 mm) water
Pilot Bleed Rate	.08 SCFM (.15 m3/hr)
Supply Pressure Variation	Less than .005 PSI (.03 kPa)@25 PSI variance
Maximum Supply Pressure	150 PSIG (1050 kPa)
Temperature Range	0 to + 150 F (-18 to +65 C)
Weight	1.4 lbs (.64 kg)
Materials	Body: Die Cast Zinc Diaphragms: Buna - N Knob: Phenolic Plastic

How To Order

R 80 0 – 02 F G

Model
R = Regulator

Series
80 = Standard
82 = High relief

Style
0 = all precision regulators

Threads
– = NPTF
G = G tap (BSPP)

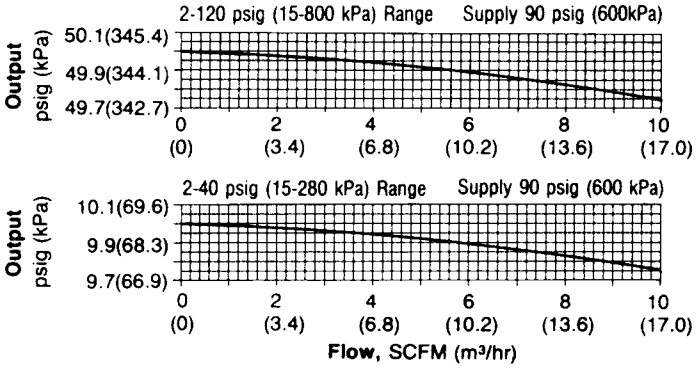
Port Size
02 = 1/4"
03 = 3/8"

Options
D = 2-40 PSIG (80 Series only)
E = 2-60 PSIG (80 Series only)
F = 2-120 PSIG
G = Gauge
M = Mounting Bracket
Q = Quiet Exhaust
T = Tamperproof

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

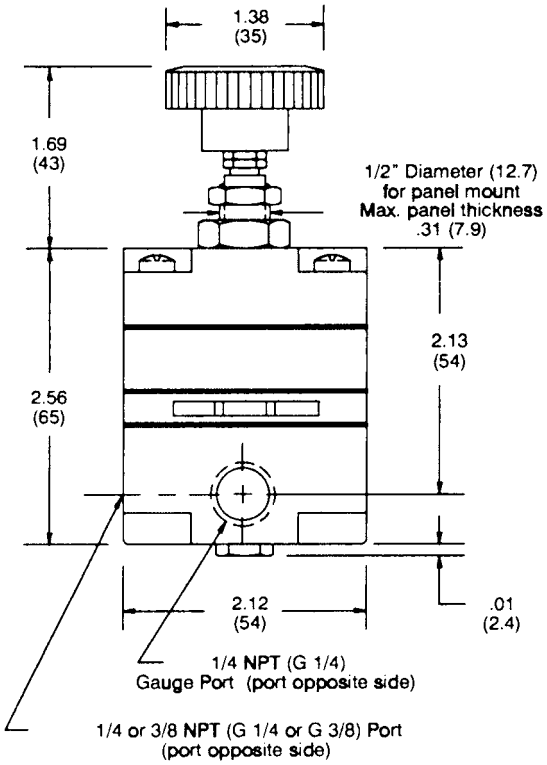
Flow Ratings (based on 100 PSIG inlet)

R800-02D pictured

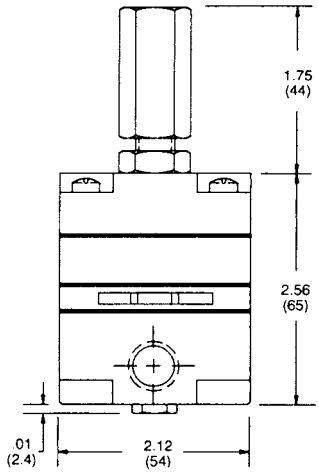


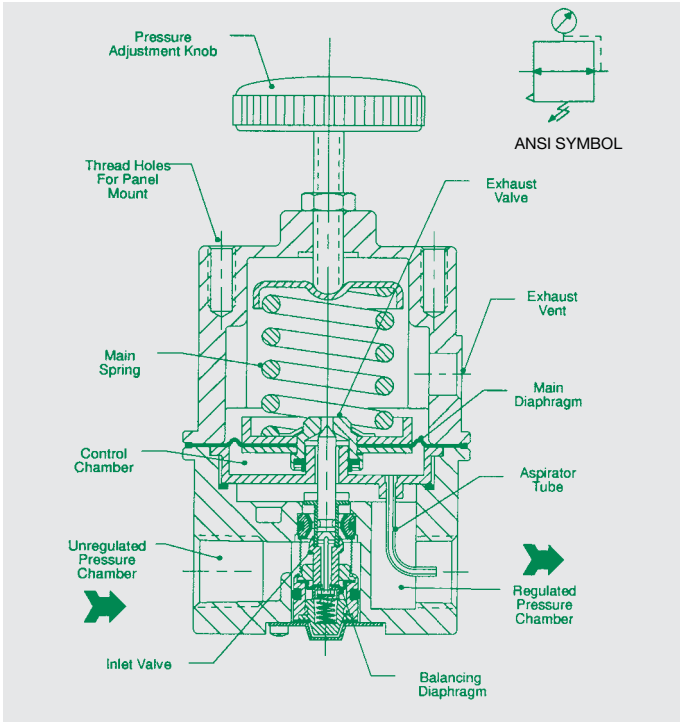
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



Tamperproof Model





R880 Pictured Above (NOT R881)

High Flow Precision Regulator
R88 Series

Application

The 880 Series pressure control regulator is designed for high flow and accurate pressure control utilizing a rolling diaphragm to insure a constant output pressure. The 88 model maintains stability even with wide supply pressure variations.

The 881 Series back pressure regulator is a high flow, highly accurate pneumatic relief valve with an adjustable set point. It's primary function is to provide protection against over pressurization in the downstream portion of a pneumatic system. This precision unit is capable of handling flows up to 50 SCFM. A rolling diaphragm provides the sensitivity that causes the unit to vent to atmosphere in response to the slightest upstream changes.

Recommended Uses

- Test Equipment
- Roll Loading
- Web Tensioning
- Actuators
- Gas Mixing
- Test Panels
- Clutch and Brake Controls

Specifications

	High Flow Precision Regulator R88 Series
Flow Capacity	see flow characteristics (next page)
Exhaust Capacity	4 SCFM (6.7 m3/hr)
Sensitivity	.25 inches (6.33 mm) of water
Total Air Consumption	1.0 to 12.5 SCFH (.03 to .37 m3/hr), depending on output pressure
Supply Pressure Variation	.1 PSI (.7 kPa) @ 100 PSI (700 kPa) change
Maximum Supply Pressure	250 PSIG (1750 kPa)
Temperature Range	-40 to +160 F (-40 to 71 C)
Weight	1.6 lbs (.74 kg)
Materials	Body: Die Cast Zinc Diaphragms: Buna - N Volume Capsule: Stainless Steel Knob: Phanolic Plastic

How To Order

R 88 0 – 02 F G _ _

Model
R = Regulator

Series
88 = High Flow Precision

Style
0 = Standard High Flow Precision Regulator
1 = Back Pressure Precision Regulator

Threads
– = NPTF (Style 880 and 881)
G = G tap (BSPP) {Style 880 Only}

Port Size
02 = 1/4"
03 = 3/8"
04 = 1/2"

Options
A = 0-2 PSIG (R880 only)
B = 0-15 PSIG
C = 0-30 PSIG
E = 1-60 PSIG
F = 2-150 PSIG
G = Gauge
M = Mounting Bracket
T = Tamperproof

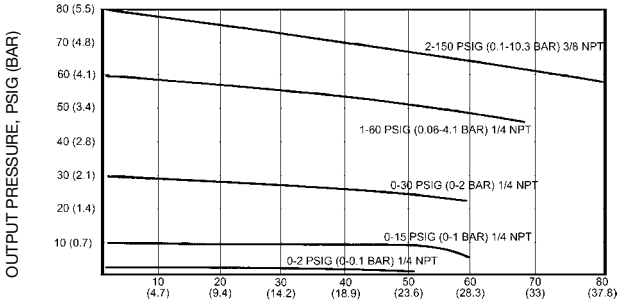
Note: R881 Series available in NPT only

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

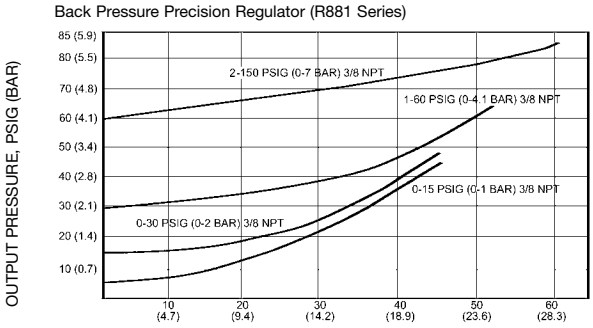
Flow Ratings (based on 100 PSIG inlet)

R880-02A pictured

Standard Precision Regulator (R880 Series)

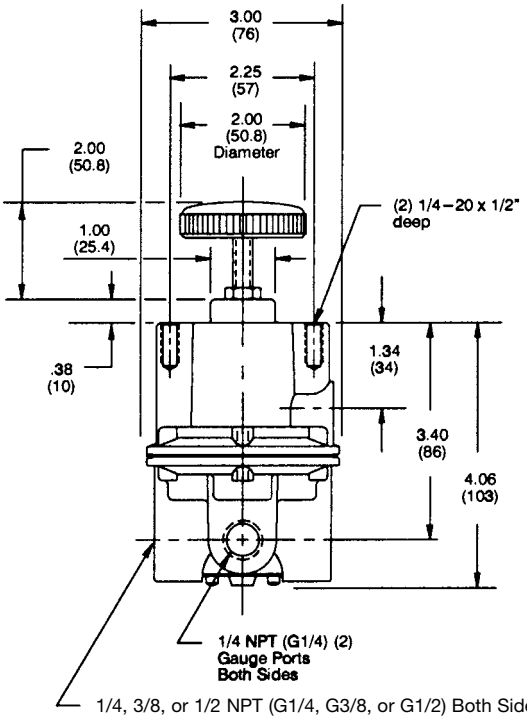


Back Pressure Precision Regulator (R881 Series)

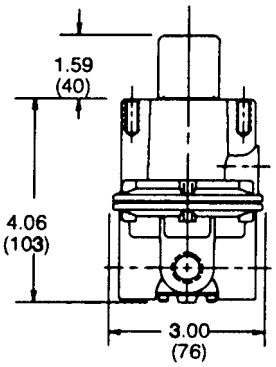


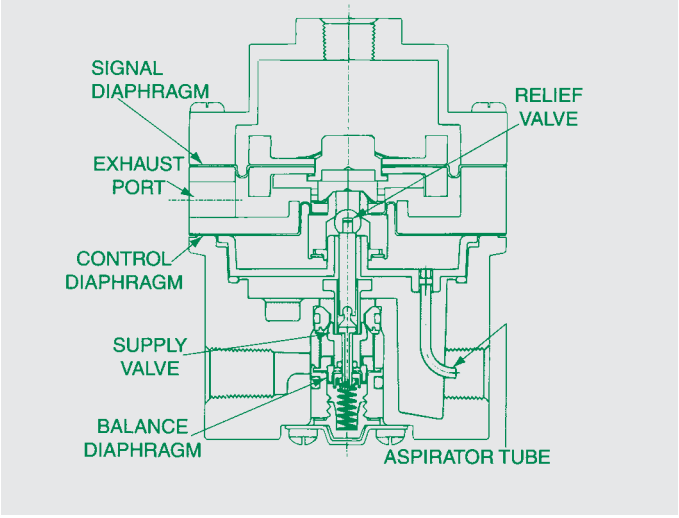
Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters



1/4, 3/8, or 1/2 NPT (G1/4, G3/8, or G1/2) Both Sides





Ratio Relay Volume Booster

Applications

The 87 Series Volume Boosters are used extensively for increased flow capacity, pressure amplification, or remote pressure control applications. This includes web tensioning, roll loading, control valve actuators, I/P volume boosting, cylinder actuation, clutch and brake control, and gas flow control.

Features

- High flow capacity - allows flows up to 50 SCFM
- Amplified output - available in a signal to output pressure ratio of 1:6
- High exhaust capacity - large relief provides 15 SCFM flow capacity
- Stable output - Venturi aspirator maintains output pressure under varying flow conditions
- Balanced supply valve - rolling diaphragm design makes unit immune to supply pressure variation
- Negative bias - 4 PSI negative bias option allows “zero” of I/Ps

Optional Fixed Negative Bias

The 87 Series Volume Booster is available with an optional 4±1 PSIG (30±7 kPa) less than the signal pressure (Z option).
This option allows zero output when utilizing I/P transducers that typically only are capable of providing pressures down to 3 PSI. Note that the negative bias has a tolerance of ±1 PSI. This means that actual bias will range from -3 PSI to -5 PSI. Use the zero adjustment of the I/P to reach desired setting.

Mounting Bracket

The mounting bracket for the R87 Series Ratio Relay Volume Booster, part number PK88, is included.

Specifications

	1:1 Ratio	1:6 Ratio
Flow capacity, SCFM (m3/hr) 100 PSIG (700 kPa) supply, 20 PSIG (140 kPa) output	50 (76.5)	50 (76.5)
Exhaust capacity, SCFM (m3/hr) Downstream 5 PSIG (35 kPa) above set pressure	15 (25.5)	7.5 (12.8)
Sensitivity, inches water (cm)	.25 (.64)	1.5 (3.8)
Ratio accuracy (%) of output span with 3-15 PSIG (20-105 kPa) signal	1.0	2.0
Zero error (%) - % of output span with 3-15 PSIG (21-105 kPa) signal	2.0	3.0
Effect of supply pressure change of 50 PSIG (350 kPa)	.1 PSI	.6 PSI
Maximum supply pressure, PSIG (kPa)	250 (1750)	250 (1750)
Maximum signal pressure, PSIG (kPa)	150 (1034)	25 (172)
Maximum Air Consumption	.03 SCFM (.07 m3/hr) typical	.05 SCFM (.14 m3/hr) typical
Ambient temperature limits, °F (°C)	-40 to 200 (-40 to 93)	-40 to 200 (-40 to 93)
Weight, lbs (gm)	1.4 (635)	1.4 (635)

How To Order

R 87 1 - 02 G _ _ _

Model
R = Regulator

Series
87 = Volume Booster

Style
1 = 1:1 Ratio
6 = 1:6 Ratio

Threads
- = NPTF
G = G tap (BSPP)

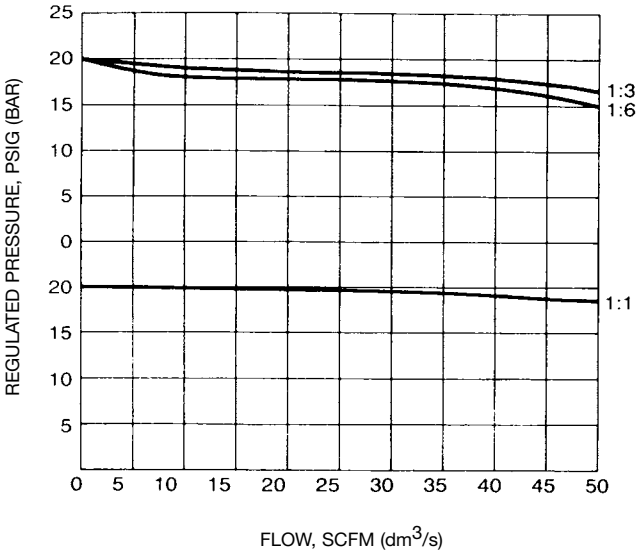
Port Size
02 = 1/4
03 = 3/8
04 = 1/2

Options
B = Mounting Bracket
G = Gauge
Z = Negative Bias

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

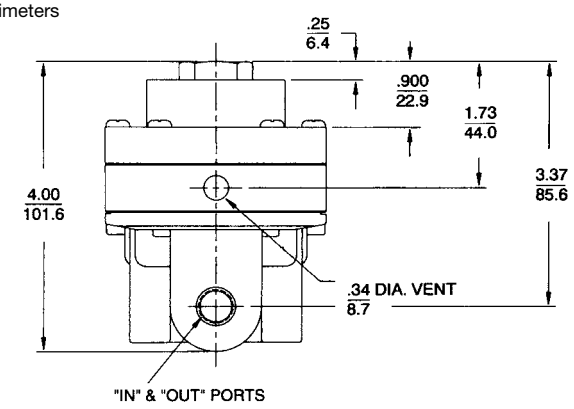
Flow Ratings

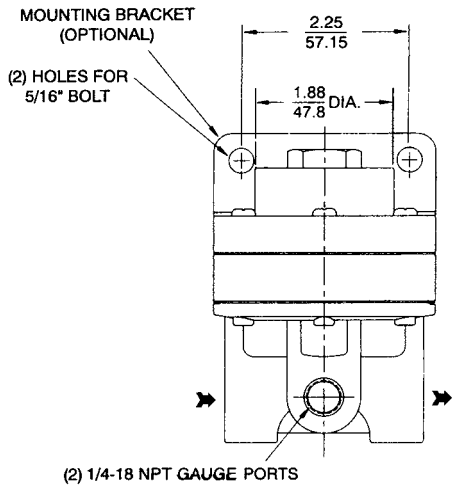
R871-02 pictured

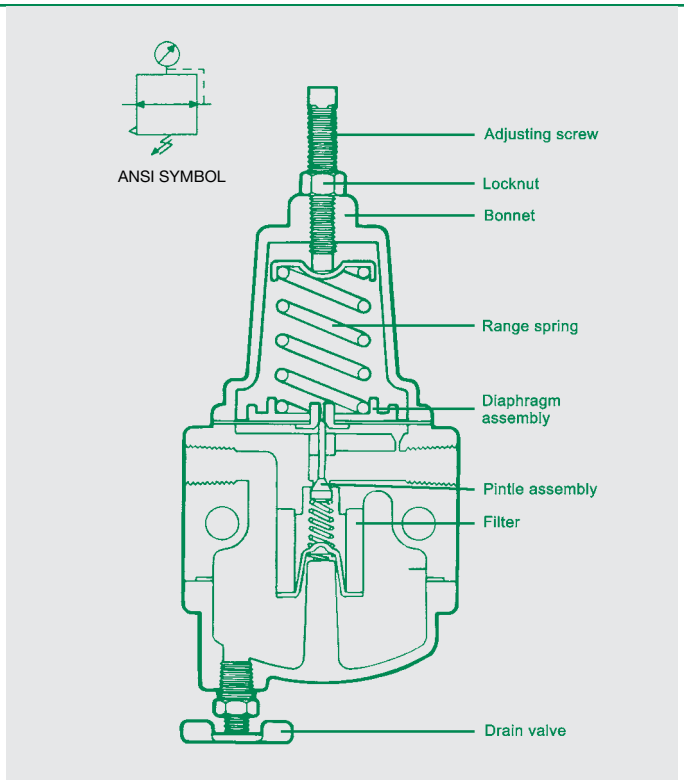


Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters







Instrument Air Regulator
R89 Series

Application
The Instrument Air Regulator is designed to provide clean, accurate air pressure to instruments, valves, and other automatic control equipment. It is used extensively to supply air to pneumatic controllers, transmitters, transducers, valve positioners, air cylinders, and a wide range of pneumatic control systems.

Features
- Stable output and repeatability
- Corrosion-resistant construction
- 5 micron depth filter
- Self-relieving
- Low droop at high flow levels
- Tight shut off

Materials of Construction
Body: die cast aluminum alloy, irridite, baked epoxy finish
Filter: 5 micron phenolic impregnated cellulose
Diaphragms: nitrile elastomer and nylon fabric
Valve Seat Plug: nitrile elastomer
Additional Materials: brass, zinc, plated steel, acetal

Mounting Bracket
The mounting bracket for the R89 Series Instrument Air Regulator, part number PK89, is available and sold separately.

Specifications

	Instrument Air Regulator R89 Series
Port Size	1/4 NPT
Standard Output Pressure	0 - 120 PSIG (0 - 800 kPa)
Maximum Supply Pressure	250 PSIG (1700 kPa)
Mounting	pipe or integral mounting
Flow Capacity	see flow characteristics (next page)
Exhaust Capacity	.1 SCFM (.17 m3/hr) @ 5 PSIG (35 kPa) above set point
Sensitivity	1” (2.5 cm) of water
Air Consumption	less than 5 SCFH (.17 m3/hr)
Effect of Supply Pressure Variation:	less than .2 PSIG (1.4 kPa) @ 25 PSI (170 kPa) change
Weight	1.6 lbs (.74 kg)

How To Order

R 89 0 – 02 F G _ _

Model
R = Regulator

Series
89 = Instrument Air Regulators

Style
0 = All Instrument Air Regulators

Threads
– = NPTF

Port Size
02 = 1/4"

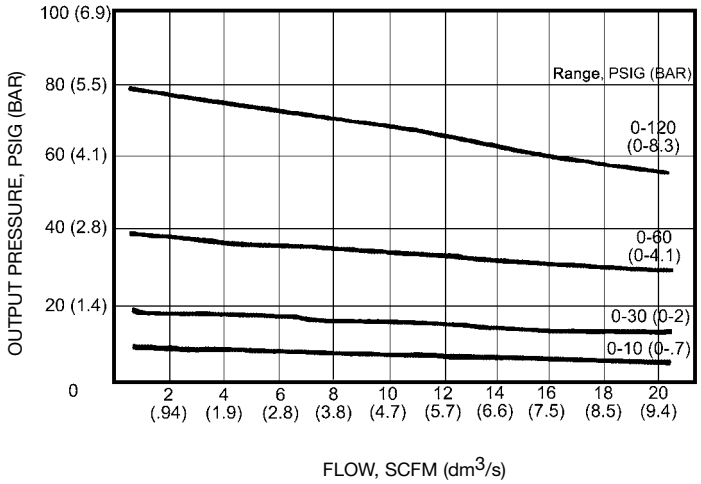
Options
B = 0-10 PSIG
C = 0-30 PSIG
E = 0-60 PSIG
F = 0-150 PSIG
G = Gauge
K = Knob
M = Mounting Bracket
N = Non-Relieving
P = Panel Mount

Note:R89 Series available in NPT only

NEED MORE PARTS AND INFORMATION?
• See page 120 for information on ordering replacement parts.

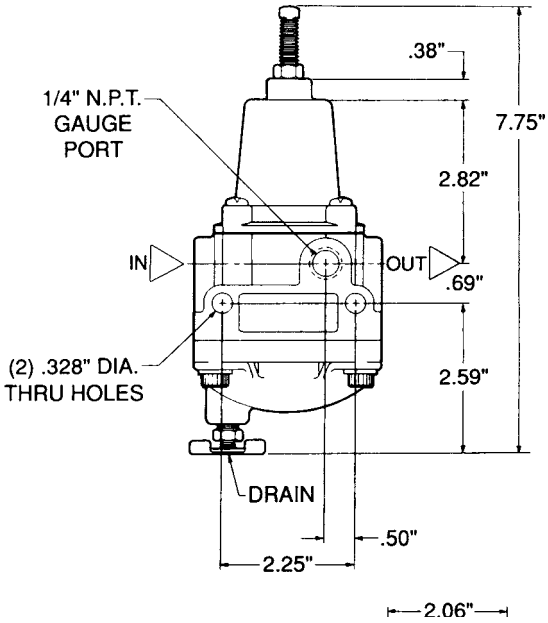
Flow Ratings (based on 100 PSIG inlet)

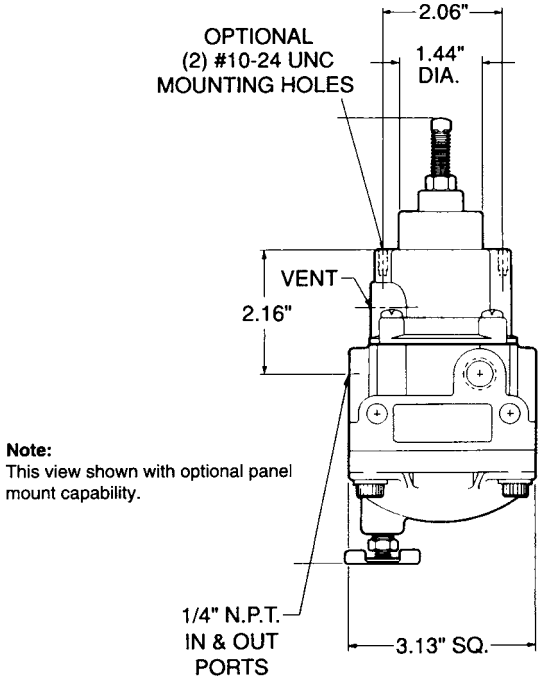
R890-02B pictured



Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters





Note:
This view shown with optional panel mount capability.

Replacement Kits

Precision Regulators

➤ Precision Regulator Repair Kits

kit #	description
RKR800D	for 2-40 pressure range models
RKR800E	for 2-60 pressure range models
RKR800F	for 2-120 pressure range models
RKR820F	for 2-120 pressure range models

➤ Replacement Adjustment Knob Kits

kit #	description
RP8002	for R800 and R820 models

Electropneumatic Transducers

➤ Electropneumatic Transducer Repair Kits

kit #	description
RKR831BC	for 3-15 and 3-27 pressure range models
RKR831EF	for 2-60 and 3-120 pressure range models

High Flow Precision Regulators

➤ High Flow Precision Regulator Repair Kits

kit #	description
RKR880A	for 0-2 pressure range models
RKR880B	for 0-15 pressure range models
RKR880C	for 0-30 pressure range models
RKR880E	for 1-60 pressure range models
RKR880F	for 2-150 pressure range models
RKR881	for back pressure regulator

➤ Replacement Adjustment Knob Kits

kit #	description
RP81	for R880 models

Mounting Brackets

➤ High Flow Precision Regulator

kit #	description
PK80	80 & 82 Series Bracket
PK88	87 & 82 Series Bracket
PK89	89 Series Bracket

Instrument Air Regulators

➤ Instrument Air Regulator Repair Kits

kit #	description
RKR89	for all models

CATALOG

air prep

Lockout Valve

Series

EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

Numatics Lockout and Shut Off Valves

Lockout valves prevent unauthorized pressurization of an air system during service or maintenance. Numatics lockout valves employ a unique, one piece center spool design that accommodates a user-supplied padlock in the closed position. When locked in the closed position, the system controlled by the lockout valve cannot be operated until the padlock is removed. Numatics lockout valves are available in several different designs, including manual, Slo-Start™, and Modular. Each lockout valve is equipped with an emergency shutoff feature that quickly exhausts the downstream air to atmosphere. An additional feature of the Slo-Start™ valves is their capability to gradually ramp up the downstream pressure before opening to full flow conditions.

Numatics VL / VT, MVL / MVT Inline and Modular Lockout Valves

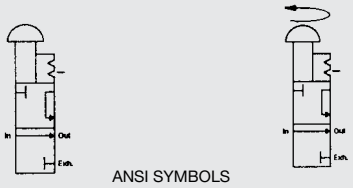
Recommended use:
Install the **Lockout Valve downstream** of FRL assembly or selected air preparation components so its exhaust capacity is not restricted by any upstream components.

Features:
- Emergency shut off – Full flow quick exhaust of downstream pressure
- Meets OSHA specifications
- Bright Yellow body with Red knob is easily identified as a lockout device
- Integrated hole in valve spool for Scissor “Trades” lock
- Sturdy construction
- Durable and long lasting
- Slo-Start™ feature allows operator to turn spool CCW to “ON” position gradually ramping up downstream pressure, prolonging the life of pneumatic components

Numatics VSL Modular Shut Off Valves

Recommended use:
Install the **Shut Off Valve upstream** of an FRL assembly or selected air preparation components. Restricted exhaust capacity prevents potential damage to FRL or air preparation components due to excessive pressure drop in the reverse flow direction. Provides a method to exhaust FRL or air preparation assembly, when components require service.

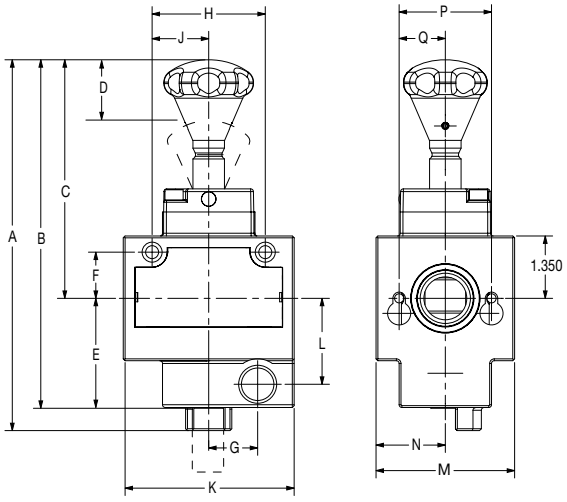
Features:
- Shut Off Valve – Restricted flow exhaust of downstream pressure
- Meets OSHA specifications
- Grey body with Red knob
- VSL32 with threaded exhaust provides alternative to VS32 Slide Plate style
- Integrated hole in valve spool for Scissor “Trades” lock
- Sturdy construction
- Durable and long lasting



Inline Manual Lockout Valves

VL32 Standard Series / VT32 Slo-Start™Feature

- High exhaust capability
- Detented spool
- Low-friction startup
- Meets OSHA specifications
- Surface mountable



VL Series Shown

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 150 PSIG (10 bar)
Flow Media: filtered air
Weight: VL32 Series 2.70 lbs (1.23 kg)
VT32 Series 3.05 lbs (1.39 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
VL32N03Y / VT32N03Y	5.0	5.5
VL32N04Y / VT32N04Y	6.0	6.0
VL32N06Y / VT32N06Y	8.3	6.0

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G	H
VL32	8.03 (204.0)	7.55 (191.8)	5.17 (131.3)	.960 (24.4)	2.36 (59.9)	1.0 (25.4)	1.06 (26.9)	8.03 (62.2)
VT32	9.34 (237.2)	8.86 (225.0)	6.47 (164.3)	1.05 (26.7)	2.36 (59.9)	1.0 (25.4)	1.06 (26.9)	1.00 (25.4)

	J	K	L	M	N	P	Q
VL32	1.225 (31.1)	3.66 (93.0)	1.86 (47.2)	3.00 (76.2)	1.50 (38.1)	2.00 (50.8)	1.00 (25.4)
VT32	1.225 (31.1)	3.66 (93.0)	1.86 (47.2)	3.00 (76.2)	1.50 (38.1)	2.00 (50.8)	1.00 (25.4)

How To Order

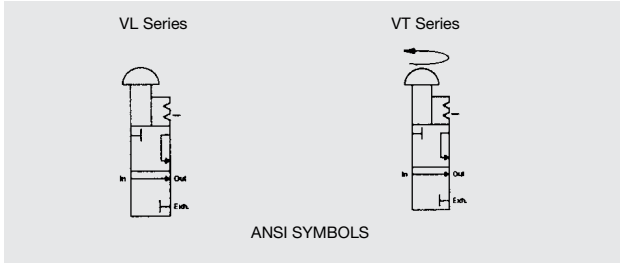
V L 32 N 03 Y

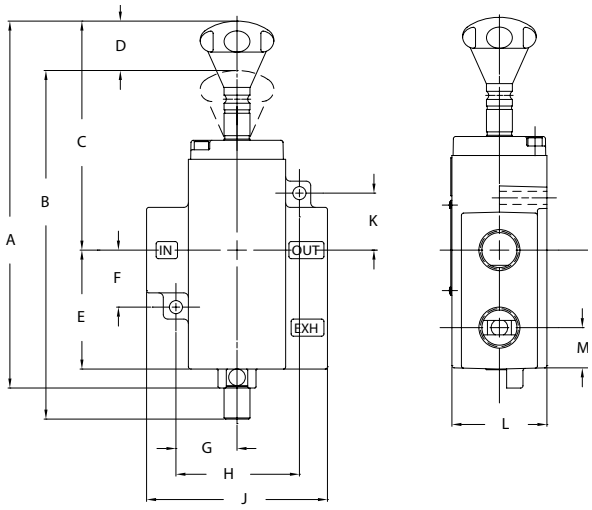
Model
L = Standard
T = Slo-Start™ Feature

Threads
N = NPTF
G = G Tap (BSPP)

Port Size
03 = 3/8 in/out, 1/2 exh.
04 = 1/2 in/out, 1/2 exh.
06 = 3/4 in/out, 1/2 exh.

Options
A = Metal Muffler (i.e. VL32N04AY)
B = Scissor “Trades” Lock (i.e. VL32N04BY)





VL Series Shown

Inline Manual Lockout Valves

VL40 Standard Series / VT40 Slo-Start™ Feature

- High exhaust capability
- Detented spool
- Low-friction startup
- Meets OSHA specifications
- Surface mountable

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 150 PSIG (10 bar)
Flow Media: filtered air
Weight: VL40 Series 4.40 lbs (2.00 kg)
VT40 Series 5.00 lbs (2.27 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
VL40N06Y / VT40N06Y	13.5	11.0
VL40N08Y / VT40N08Y	18.2	14.9
VL40N10Y / VT40N10Y	19.1	14.9
VL40N12Y / VT40N12Y	20.3	16.3

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G
VL40	9.75 (247.7)	9.27 (235.5)	6.12 (155.4)	1.30 (33)	3.13 (79.5)	1.50 (38.1)	1.62 (41.3)
VT40	11.45 (290.8)	10.97 (278.6)	7.82 (198.6)	1.30 (33)	3.13 (79.5)	1.50 (38.1)	1.62 (41.3)

	H	J	K	L	M	N
VL40	3.25 (82.6)	4.76 (120.9)	1.50 (38.1)	2.50 (63.5)	1.09 (27.7)	3.13 79.5
VT40	3.25 (82.6)	4.76 (120.9)	1.50 (38.1)	2.50 (63.5)	1.09 (27.7)	3.13 (79.5)

How To Order

V L 40 N 06 Y

Model
L = Standard
T = Slo-Start™ Feature

Threads
N = NPTF
G = G Tap (BSPP)

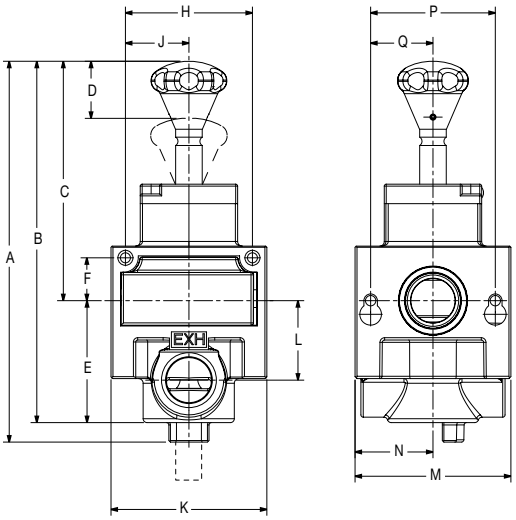
Port Size
06 = 3/4 in/out, 3/4 exh.
08 = 1 in/out, 1 exh.
10 = 1 1/4 in/out, 1 exh.
12 = 1 1/2 in/out, 1 exh.

Options
A = Metal Muffler (i.e. VL40N08AY)
B = Scissor “Trades” Lock (i.e. VL40N08BY)

Inline Manual Lockout Valves

VL42 Standard Series / VT42 Slo Start™ Feature

- High exhaust capability
- Detented spool
- Low-friction startup
- Meets OSHA specifications
- Surface Mountable



VL Series Shown

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 250 PSIG (17 bar) (42 Series Only)
Flow Media: filtered air
Weight: VL42 Series: 4.95lbs (2.25 kg)
VT42 Series: 5.5 lbs (2.5 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
VL42N06Y / VT42N06Y	11.5	9.0
VL42N08Y / VT42N08Y	12.5	10.0

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G	H	J	K	L	M
VL42	9.78 (248.4)	9.28 (235.7)	6.1 (154.9)	1.34 (34.0)	3.13 (80.0)	1.10 (28.0)	0.00 (0.0)	3.26 (63.5)	1.63 (41.0)	4.00 (102.0)	2.04 (52.0)	4.00 (102.0)
VT42	11.48 (291.6)	10.98 (278.9)	7.85 (199.4)	1.34 (34.0)	3.13 (80.0)	1.10 (28.0)	0.00 (0.0)	3.26 (63.5)	1.63 (41.0)	4.00 (102.0)	2.04 (52.0)	4.00 (102.0)

	N	P	Q
VT42	2.00 (51.0)	3.20 (81.0)	1.60 (41.0)
VT42	2.00 (51.0)	3.20 (81.0)	1.60 (41.0)

How To Order

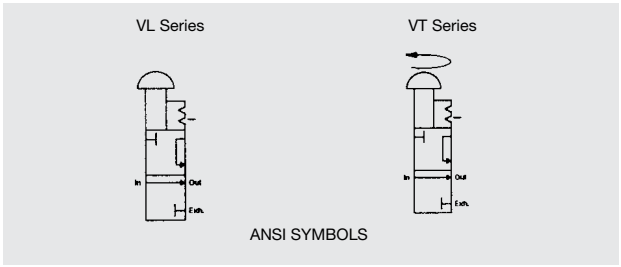
V L 42 N 06 Y

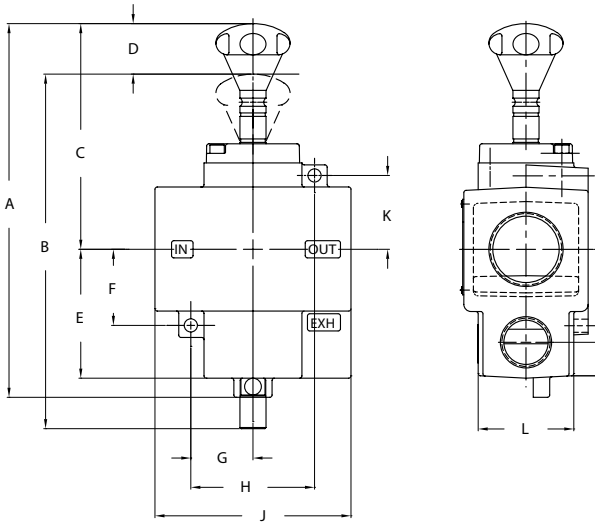
Model
L = Standard
T = Slo-Start™ Feature

Threads
N = NPTF
G = G Tap (BSPP)

Port Size
06 = 3/4 in/out, 1 exh.
08 = 1 in/out, 1 exh.

Options
A = Metal Muffler (i.e. VL42N08AY)
B = Scissor “Trades” Lock (i.e. VT42N08BY)





VL Series Shown

Inline High Flow Manual Lockout Valves

VL52 Standard Series / VT52 Slo-Start™Feature

- High flow
- High exhaust capability
- Detented spool
- Meets OSHA specifications
- Surface mountable

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 150 PSIG (10 bar)
Flow Media: filtered air
Weight: VL52 Series 4.125 lbs (1.87 kg)
VT52 Series 5.500 lbs (2.5 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
VL52N12Y / VT52N12Y	24	16
VL52N16Y / VT52N16Y	24	16

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G
VL52	9.77 (248.2)	9.27 (235.5)	5.90 (149.9)	1.32 (33.5)	3.38 (85.9)	2.00 (50.8)	1.63 (41.4)
VT52	11.47 (291.3)	10.97 (278.6)	7.59 (192.8)	1.32 (33.5)	3.38 (85.9)	2.00 (50.8)	1.63 (41.4)

	H	J	K	L	M	N
VL52	3.24 (82.6)	5.13 (120.9)	1.92 (38.1)	2.50 (63.5)	0.88 (27.7)	3.31 79.5
VT52	3.24 (82.6)	5.13 (120.9)	1.92 (38.1)	2.50 (63.5)	0.88 (27.7)	3.31 (79.5)

How To Order

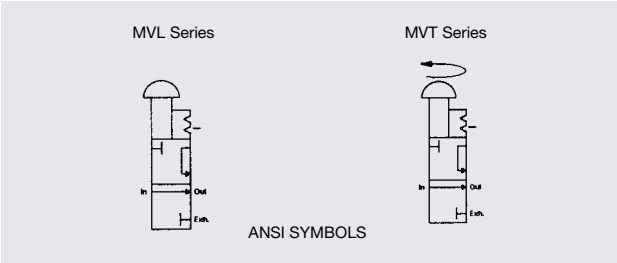
V L 52 N 12 Y

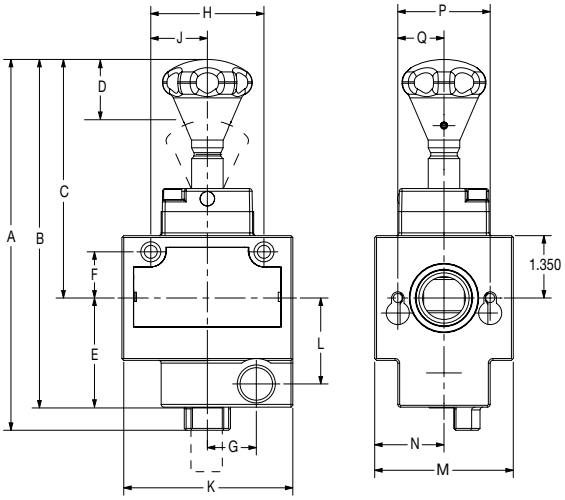
Model
L = Standard
T = Slo-Start™ Feature

Threads
N = NPTF
G = G Tap (BSPP)

Port Size
12 = 1 1/2 in/out, 1 exh
16 = 2 in/out, 1 exh

Options
A = Metal Muffler (i.e. VL52N12AY)
B = Scissor “Trade” Lock (i.e. VL52N12BY)





MVL Series Shown

FLEXIBLOK® Modular Lockout and Shut Off Valves

MVL32 Standard Series / MVT32 Slo-Start™Feature
VSL Shut Off Valve Restricted Exhaust

- High exhaust capability - MVL/MVT
- Detented spool
- Low-friction startup
- Meets OSHA specifications
- Surface mountable
- Modular adaptable to Numatics FLEXIBLOK® 32 series 1/2" & 3/4" products
- VSL Shut Off Valve Restricted Exhaust - Grey color

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 150 PSIG (10 bar)
Flow Media: filtered air
Weight: MVL32 Series 2.70 lbs (1.23 kg)
MVT32 Series 3.05 lbs (1.39 kg)
VSL32 Series 2.70 lbs (1.23 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
MVL32-04Y / MVT32-04Y	6.0	6.0
MVL32-06Y / MVT32-06Y	8.3	6.0
VSL32-04	6.0	0.3
VSL32-06	8.3	0.3

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G	H
MVL32 / VSL32	8.03 (204.0)	7.55 (191.8)	5.17 (131.3)	.960 (24.4)	2.36 (59.9)	1.0 (25.4)	1.06 (26.9)	8.03 (62.2)
MVT32	9.34 (237.2)	8.86 (225.0)	6.47 (164.3)	1.05 (26.7)	2.36 (59.9)	1.0 (25.4)	1.06 (26.9)	1.00 (25.4)

	J	K	L	M	N	P	Q
MVL32 / VSL32	1.225 (31.1)	3.66 (93.0)	1.86 (47.2)	3.00 (76.2)	1.50 (38.1)	2.00 (50.8)	1.00 (25.4)
MVT32	1.225 (31.1)	3.66 (93.0)	1.86 (47.2)	3.00 (76.2)	1.50 (38.1)	2.00 (50.8)	1.00 (25.4)

How To Order - Lockout Valve

MV L 32 - 04 Y

Model
L = Standard
T = Slo-Start™ Feature

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
04 = 1/2 in/out, 1/2 exh.
06 = 3/4 in/out, 1/2 exh.

Options
A = Metal Muffler (i.e. MVL32-04AY)
B = Scissor "Trades" Lock (i.e. MVL32-04BY)

How To Order - Shut Off Valve

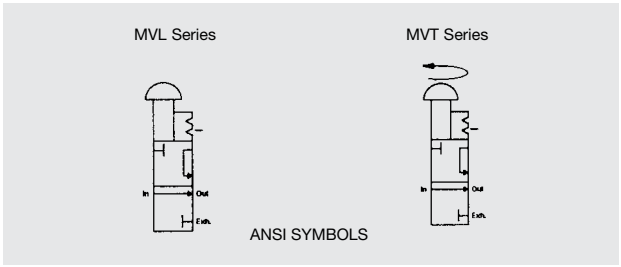
V S L 32 - 04

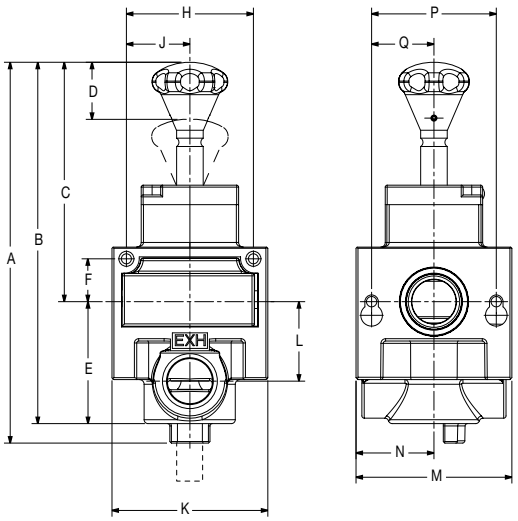
Model
VSL = Shut Off Valve Restricted Exhaust

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
04 = 1/2 in/out, 10-32 exh.
06 = 3/4 in/out, 10-32 exh.

Options
M = Metal Muffler (i.e. VSL32-04M)





MVL Series Shown

FLEXIBLOK® Modular Lockout and Shut Off Valves

MVL42 Standard Series / MVT42 Slo-Start™Feature
VSL Shut Off Valve Restricted Exhaust

- High exhaust capability - MVL/MVT
- Detented spool
- Low-friction startup
- Meets OSHA specifications
- Surface mountable
- Modular adaptable to Numatics FLEXIBLOK® 42 series 3/4" & 1" products
- VSL Shut Off Valve Restricted Exhaust - Grey color

Specifications

Temperature Range: 40ºF to 120º F (4.4º C to 46.9º C)
Maximum Pressure: 250 PSIG (17 bar) (42 Series Only)
Flow Media: filtered air
Weight: MVL42 Series 4.95 lbs (2.25 kg)
MVT42 Series 5.5 lbs (2.5 kg)
VSL42 Series 4.95 lbs (2.25 kg)

Cv Ratings

MODEL NUMBER	Cv IN-OUT	Cv OUT-EXH
MVL42-06Y / MVT42-06Y	11.5	9.0
MVL42-08Y / MVT42-08Y	12.5	10.0
VSL42-06	11.5	0.3
VSL42-08	12.5	0.3

Dimensions in inches (mm)

MODEL	A	B	C	D	E	F	G	H
MVL42 / VSL42	9.78 (248.4)	9.28 (235.7)	6.1 (154.9)	1.34 (34.0)	3.13 (80.0)	1.10 (28.0)	0.00 (0.0)	3.26 (63.5)
MVT42	11.48 (291.6)	10.98 (278.9)	7.85 (199.4)	1.34 (34.0)	3.13 (80.0)	1.10 (28.0)	0.00 (0.0)	3.26 (63.5)

	J	K	L	M	N	P	Q
MVL42 / VSL42	1.63 (41.0)	4.00 (102.0)	2.04 (52.0)	4.00 (102.0)	2.00 (51.0)	3.20 (81.0)	1.60 (41.0)
MVT42	1.63 (41.0)	4.00 (102.0)	2.04 (52.0)	4.00 (102.0)	2.00 (51.0)	3.20 (81.0)	1.60 (41.0)

How To Order - Lockout Valve

MV L 42 - 06 Y

Model
L = Standard
T = Slo-Start™ Feature

Threads
- = NPTF
G = G Tap (BSPP)

Port Size
06 = 3/4 in/out, 1 exh.
08 = 1" in/out, 1 exh.

Options
A = Metal Muffler (i.e. MVL42-08AY)
B = Scissor "Trades" Lock (i.e. MVL42-08BY)

How To Order - Shut Off Valve

V S L 42 - 06

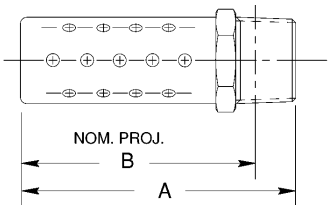
Model
VSL = Shut Off Valve Restricted Exhaust

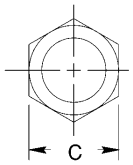
Threads
- = NPTF
G = G Tap (BSPP)

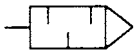
Port Size
06 = 3/4 in/out, 1/8 exh.
08 = 1 in/out, 1/8 exh.

Options
M = Metal Muffler (i.e. VSL42-08M)

M Series Metal Air Silencers







ANSI SYMBOL

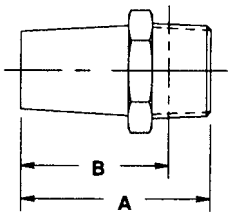
NPTF Male Dimensions

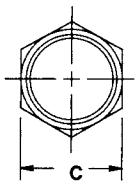
Model	NPTF	A	B	C	cv
M1MN	1/8	1.38 (34.9)	1.22 (31.0)	0.44 (11.1)	1.17
M2MN	1/4	1.75 (44.5)	1.53 (38.9)	0.56 (14.3)	2.54
M3MN	3/8	2.25 (57.2)	2.00 (50.8)	0.69 (17.5)	5.08
M4MN	1/2	2.72 (69.1)	2.41 (61.1)	0.88 (22.2)	7.32
M5MN	3/4	3.16 (80.2)	2.81 (71.4)	1.06 (27.0)	13.87
M6MN	1	3.88 (98.4)	3.47 (88.1)	1.31 (33.3)	19.53
M7MN	1 1/4	4.50 (114.3)	4.16 (105.6)	1.69 (42.9)	28.32
M8MN	1 1/2	5.00 (127.0)	4.59 (116.7)	2.00 (50.8)	38.09
M9MN	2	5.50 (139.7)	5.06 (128.6)	2.38 (60.3)	52.73

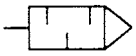
BSPT Male Dimensions

Model	NPTF	A	B	C	cv
M1MB	1/8	1.38 (34.9)	1.22 (31.0)	0.44 (11.1)	1.17
M2MB	1/4	1.75 (44.5)	1.53 (38.9)	0.56 (14.3)	2.54
M3MB	3/8	2.25 (57.2)	2.00 (50.8)	0.69 (17.5)	5.08
M4MB	1/2	2.72 (69.1)	2.41 (61.1)	0.88 (22.2)	7.32
M5MB	3/4	3.16 (80.2)	2.81 (71.4)	1.06 (27.0)	13.87
M6MB	1	3.88 (98.4)	3.47 (88.1)	1.31 (33.3)	19.53

P Series Porous Bronze Air Silencers







ANSI SYMBOL

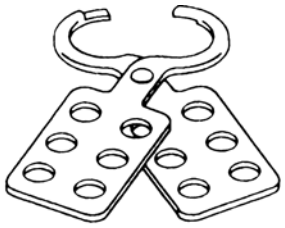
NPTF Male Dimensions

Model	NPTF	A	B	C	cv
P0MN	10-32	0.75 (19.1)	0.62 (15.7)	0.38 (9.5)	0.23
P1MN	1/8	0.84 (21.4)	0.69 (17.5)	0.44 (11.1)	1.07
P2MN	1/4	1.20 (30.6)	0.97 (24.6)	0.56 (14.3)	1.78
P3MN	3/8	1.45 (36.7)	1.20 (30.6)	0.69 (17.5)	2.30
P4MN	1/2	1.89 (48.0)	1.58 (40.1)	0.88 (22.2)	5.66
P5MN	3/4	2.12 (54.0)	1.78 (45.2)	1.06 (27.0)	9.67
P6MN	1	2.84 (72.2)	2.44 (61.9)	1.31 (33.3)	14.06
P7MN	1 1/4	3.44 (87.3)	3.00 (76.2)	1.69 (42.9)	20.51
P8MN	1 1/2	4.00 (101.6)	3.56 (90.5)	2.00 (50.8)	29.10
P9MN	2	4.75 (120.7)	4.31 (109.5)	2.38 (60.3)	44.92

BSPT Male Dimensions

Model	NPTF	A	B	C	cv
P1MB	1/8	0.84 (21.3)	0.69 (17.5)	0.44 (11.1)	1.07
P2MB	1/4	1.20 (30.5)	0.97 (24.6)	0.56 (14.3)	1.78
P3MB	3/8	1.45 (36.8)	1.20 (30.5)	0.69 (17.5)	2.30
P4MB	1/2	1.89 (48.0)	1.58 (40.1)	0.88 (22.2)	5.66
P5MB	3/4	2.12 (53.9)	1.78 (45.2)	1.06 (27.0)	9.67
P6MB	1	2.84 (72.1)	2.44 (62.0)	1.31 (33.3)	14.06

Scissor "Trades" Lock



The Scissor or “Trades” Lock clips into the lockout valve and can be locked with up to six locks, allowing maximum security.

Model Number: VB-1

CATALOG

air prep

280 Series

Digital Pressure / Vacuum Sensors

EMERSON
Industrial Automation

numatics®

Table of Contents

280 Series Digital Pressure / Vacuum Sensor

CE

DPS280

DVS280

Application

Numatics DPS / DVS 280 series digital sensors can be used as a digital pressure / vacuum gauge for accurate visual display of the current value. It can also be used as a controls device designed for applications requiring extremely accurate measurement of a specific value, then generating a digital input to the PLC or controls system. The large LCD display is easy to view. It changes color indicating the set point is achieved, causing the digital output to change state. Other features include quick response (2.5 ms or less), repeatable to ± 0.2 % of full scale ± 1 digit, raised set buttons for simple intuitive programming of the hysteresis or window comparator modes of operation.

Applications include verification of part present, quality assurance using decay leak testing, control of edges on film winding, clamping forces, evacuate and fill circuits, pump up and down circuits and many more.

Features

- Hysteresis and Window comparator modes of operation
- Large 7 segment LCD display
- Selectable Two Color Display (Red / Green or Green / Red)

  Large display changes color at set point achieved
- Selectable Single Color Only Display (Red or Green)

  "OUT" Displayed when digital output is "ON"
- Panel display shows - Selected units, operation mode, output type (n.o. / n.c.), setting mode and key lock
- Ease of wiring 8 mm 4 Pin Pico Connector (2M Mating cable included)
- CE Marked - RoHs Compliant

SPECIFICATIONS		DPS280 (PRESSURE)	DVS280 (VACUUM)
Rated pressure range		0 ~ 1000 kPa 0 ~ 145 PSIG	0.0 ~ - 101.3 kPa 0 ~ 29.9" Hg Vacuum
Operating / Set pressure range		-100 ~ 1000 kPa - 14.5 PSIG ~ + 145 PSIG	10.0 ~ - 101.3 kPa 1.45 PSIG ~ 29.9" Hg Vacuum
Maximum pressure		1500 kPa	300 kPa
(Exceeding max pressure could damage switch)		217.5 PSIG	43.5 PSIG
Fluid		Air, Non-corrosive gases, incombustible gases	
Set pressure resolution	kPa	1	0.1
	kgf/cm²	0.01	0.001
	bar	0.01	0.001
	psi	0.1	0.01
	InHg	-	0.1
	mmHg	-	1
Power supply voltage		12 to 24VDC ± 10 %, Ripple (P-P) 10 % or less	
Current consumption		≤ 45mA (with no load)	
Switch output		PNP open collector Max. load current: 125mA Max. supply voltage: 24VDC Residual voltage: ≤ 1.5V (load current 125mA)	NPN open collector Max. load current: 125mA Max. supply voltage: 30VDC Residual voltage: ≤ 1.5V (load current 125mA)
Repeatability (Switch output)		≤ ± 0.2 % F.S. ± 1 digit	
Hysteresis mode Window comparator mode		Adjustable	
Response time		≤ 2.5ms (chatter-proof function: 24ms, 250ms, 500ms, 1000ms and 1500ms selections)	
Output short circuit protection		Yes	
7 segment LCD display		Two color (red/green) display (sampling rate: 5 times/1sec.)	
Indicator accuracy		≤ ± 2.0 % F.S. ± 1 digit (ambient temp: 77°F ± 5°F / 25°C ± 3°C)	
Switch ON Indicator		Green OUT Indicator	
Environment	Enclosure	IP40	
	Ambient temp. range	Operation: 0°F ~ 122°F / 0°C ~ 50°C, Storage: 14°F ~ 140°F / -10°C ~ 60°C (no condensation or freezing)	
	Ambient humidity range	Operation/Storage: 35 ~ 85% RH (no condensation)	
	Withstand voltage	1000VAC in 1-min (between case and lead wire)	
	Insulation resistance	50Mohm min. (at 500 VDC, between case and lead wire)	
	Vibration	Total amplitude 1.5mm, 10Hz-55Hz-10Hz scan for 1 minute, two hours each direction of X,Y and Z	
	Shock	100m/s² (10G), 3 times each in direction of X,Y and Z	
Temperature characteristic		≤ ± 2% F.S. of detected pressure (77°F / 25°C) at temp. Range of 0°F ~ 122°F / 0°C ~ 50°C	
Port size		1/8" NPT Male x 10-32 UNF Female	
Lead wire		Oil-resistant cable (0.15 mm²)	
Weight		Approx *45g - Switch only Approx *90g - Switch with 2M mating cable	

How to Order

DPS 280P N Q8

Type
DPS = Digital Pressure Switch
DVS = Digital Vacuum Switch

Output Type
280P = PNP Digital Output Only
280N = NPN Digital Output Only

Port Type
N = 1/8 NPT Male X 10-32 Female

Electrical Connection
Q8 = 8mm Pico Quick Connect 4 Pin w/ 2M Mating Cable

Example: DPS280PNQ8 = Digital Pressure Switch - PNP - 1/8 NPT - 8mm Pico 4 Pin w/ 2M Mating Cable

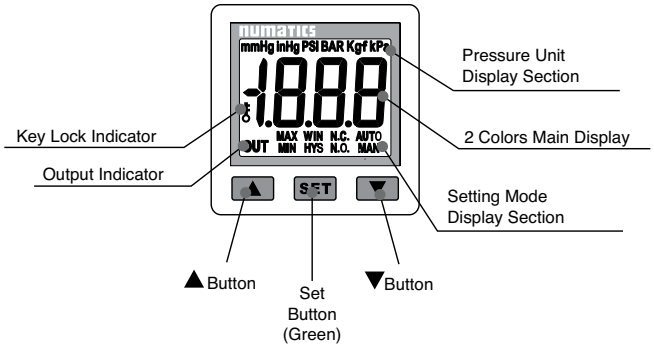
Accessory Numbers

Model	Accessory Description
DPS280-8-4-ST-2	Mating Cable 8 mm 4 Pin 2 Meter
DPS280-8-4-ST-5	Mating Cable 8 mm 4 Pin 5 Meter
PC0402MEETA03000	Patch Cable M8 4 Pin X M12 3 Pin 2 Meter

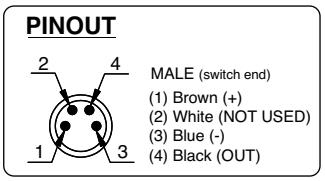
Model	Accessory Description
BRK280-1	Mounting Bracket (S)
BRK280-2	Mounting Bracket (L)
PMK280-C	Panel Mount Kit w/Cover

Mating Cable: Cable O.D. - 4.0mm
Conductor Gauge - 26 AWG

Panel Instructions



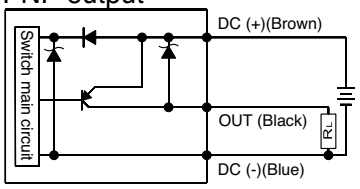
Switch Wiring



Output Circuit Wiring

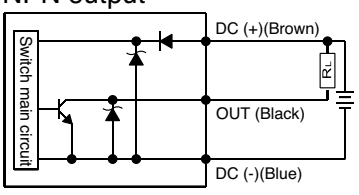
DPS / DVS280P

PNP output

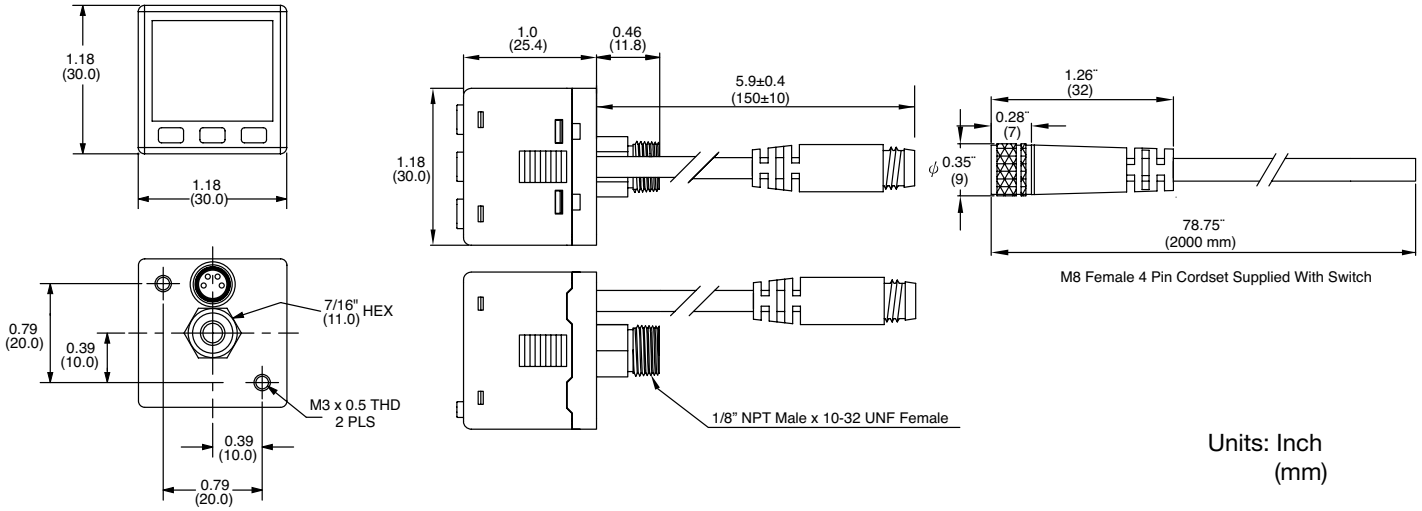


DPS / DVS280N

NPN output

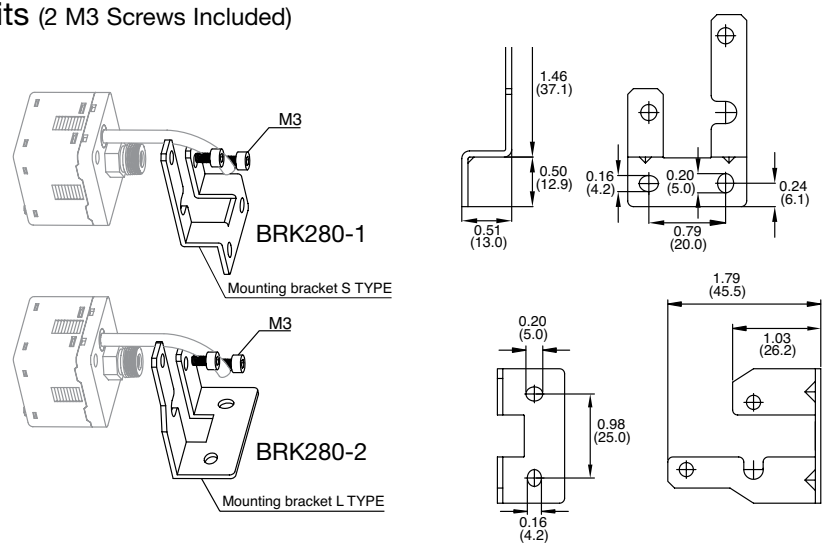


Dimensions



Units: Inch
(mm)

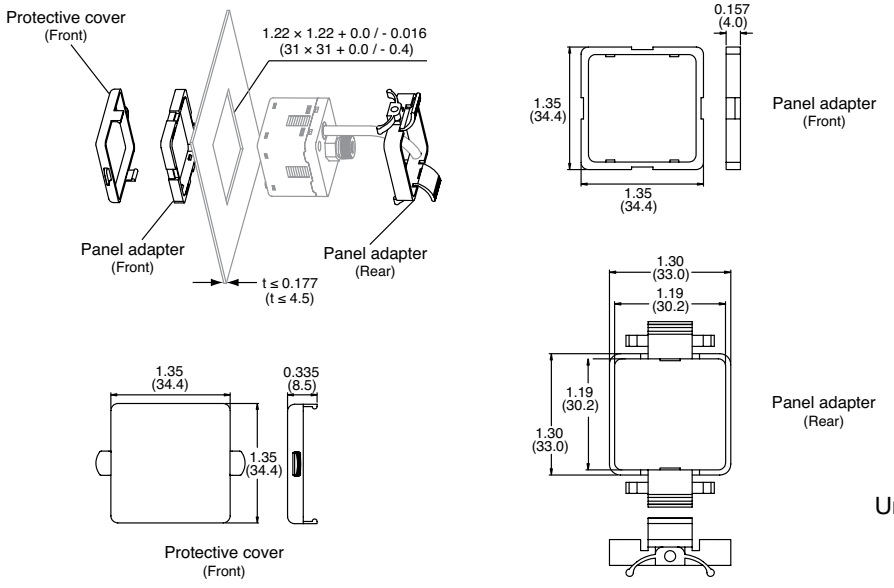
Mounting Bracket Kits (2 M3 Screws Included)



Units: Inch
(mm)

Panel Mounting Kit (Includes 2 adapters & 1 cover)

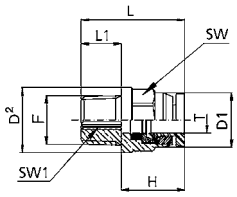
PMK280-C



Units: Inch
(mm)

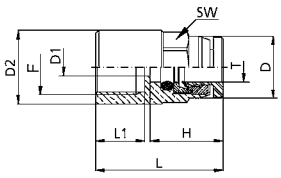
Inch Fittings (Nickel Plated Brass)

INB103 Male Connector



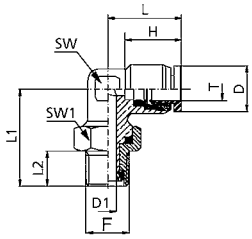
Model Number	Tube Diameter (T)	Thread (F)	D1	D2	L	L1	H	SW	SW1
INB103-108-036	1/8	10-32 UNF	0.370	0.370	0.697	0.165	0.472	/	5/64
INB103-532-036	5/32	10-32 UNF	0.394	0.394	0.717	0.165	0.492	/	5/64
INB103-104-036	1/4	10-32 UNF	0.472	0.472	0.772	0.165	0.531	/	5/64

INB105 Female Connector



Model Number	Tube Diameter (T)	Thread (F)	D	D1	D2	L	L2	H	SW
INB105-108-020	1/8	1/8 NPTF	0.370	0.094	0.551	0.945	0.335	0.472	3/8
INB105-532-020	5/32	1/8 NPTF	0.394	0.118	0.551	0.965	0.335	0.492	7/16
INB105-104-020	1/4	1/8 NPTF	0.472	0.157	0.551	0.965	0.335	0.531	1/2
INB105-516-020	5/16	1/8 NPTF	0.591	0.236	0.669	1.055	0.335	0.630	19/32

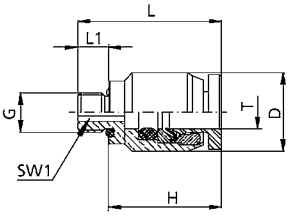
INB109 Swivel Elbow



Model Number	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INB109-108-036	1/8	10-32 UNF	0.394	0.087	0.638	0.630	0.165	0.472	0.354	0.354
INB109-532-036	5/32	10-32 UNF	0.394	0.087	0.657	0.630	0.165	0.492	0.354	0.354
INB109-104-036	1/4	10-32 UNF	0.472	0.087	0.740	0.709	0.165	0.531	0.433	0.354

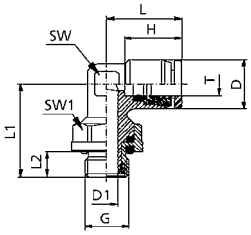
Metric Fittings (Nickel Plated Brass)

NB104 Male Connector without External Hex



Model Number	Tube Diameter (T)	Thread (G)	D	H	L	L1	SW1
NB104-004-005	4.0	M5	10.0	14.4	18.4	4.0	2
NB104-005-005	5.0	M5	11.0	14.7	18.7	4.0	2
NB104-006-005	6.0	M5	12.0	15.3	19.3	4.0	2

NB108 Swivel Elbow



Model Number	Tube Diameter (T)	Thread (G)	D	D1	H	L	L1	L2	SW	SW1
NB108-004-005	4.0	M5	9.9	2.3	12.2	16.6	16.5	4.0	9	9
NB108-005-005	5.0	M5	10.9	2.3	12.7	16.6	18.0	4.0	10	9
NB108-006-005	6.0	M5	11.9	2.3	13.3	19.1	18.5	4.0	11	9

CATALOG

accessories

FRL Accessories

Pressure Switches, Gauges and Options

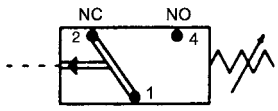
EMERSON
Industrial Automation

numatics®

Table of Contents

numatics

PS180 Pressure Switches



ANSI SYMBOL

Application

Numatics PS180 is a line of pressure switches designed for accurate indication that proper system pressure is being achieved. Available in 1/8 or 1/4 threads, it is easily incorporated into an air system using a **FlexiBlok**® diverter plate of other manifold.

Featuring a rugged housing made from zinc coated steel, the PS180 is designed for industrial multi-million cycle life applications. The four pin connector plug is included and contains a key way preventing accidental misconnection. Pressure adjustment is tamper resistant, hindering unauthorized changes. It can be wired in either normally open or normally closed configurations and includes a case ground pin.

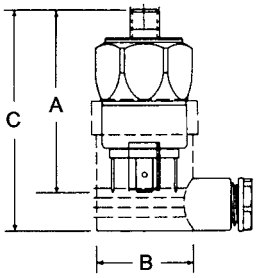
Specifications

Contact Rating: 4A @ 250 V AC
Protection: IP 65, terminals IP00
Maximum Operation: 200/min
Temperature Range: 0° F to 190° F (-15° C to 85° C)
Maximum Pressure: 300 PSI (20 bar)
Maximum Voltage: 250 V AC (200 DC)
Hysteresis Adjustment: 15%
Connector Material: polyamid
Diaphragm Material: Buna N
Housing Material: zinc plated steel

Dimensions in inches (millimeters in parenthesis)

NPTF Thread Dimensions

MODEL	A	B	C
PS180BAN01	2.5 (64)	1.0 (27)	3.1 (79)
PS180CAN01	2.5 (64)	1.0 (27)	3.1 (79)
PS180BAN02	2.5 (64)	1.0 (27)	3.1 (79)
PS180CAN02	2.5 (64)	1.0 (27)	3.1 (79)



BSPP Thread Dimensions

MODEL	A	B	C
PS180BAG02	2.3 (58)	1.0 (27)	2.9 (74)
PS180CAG02	2.3 (58)	1.0 (27)	2.9 (74)

NPTF Thread Model Selection

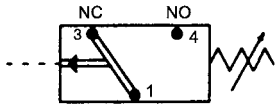
NPTF	MODEL	PSIG (BAR)
1/8	PS180BAN01	4-20 (.3-1.5)
1/8	PS180CAN01	14-150 (1-10)
1/4	PS180BAN02	4-20 (.3-1.5)
1/4	PS180CAN02	14-150 (1-10)

BSPP Thread Model Selection

BSPP	MODEL	PSIG (BAR)
1/4	PS180BAG02	4-20 (.3-1.5)
1/4	PS180CAG02	14-150 (1-10)

Use “G” suffix for gold plated terminals (for applications below 50 mA), i.e.PS180BAN02G

PS182 Pressure Switches



ANSI SYMBOL

Application

Numatics PS182 is the most rugged of the Numatics Pressure Switches. Available in 1/8 or 1/4 NPT and BSPP threads, it is easily incorporated into an air system using a FlexiBlok diverter plate or diverter block.

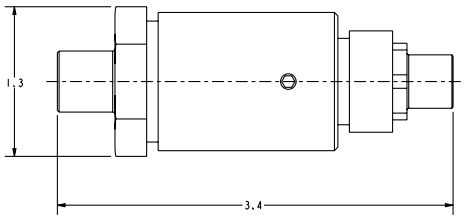
The unique 12 mm, micro connector makes it simple for electrical connection. The knurled knob with tamper resistant hex screw makes it the easiest pressure adjustment on the market. It can be wired in either a normally open or normally closed configuration.

Specifications

Hysteresis Adjustment	10%
Pressure Ranges:	2-10, 6-30, 20-130
Max Pressure:	600 psi
Set Point Tolerance:	+/- 1 Psi or 5%
*Contact Rating:	4A
Diaphragm Material:	Buna N
Max Operating Cycles:	200/min
Temperature Range:	-40 to 250 F (-40 to 121 C)
Voltage Range:	12 V DC to 250 V AC
Sealing/Protection:	IP 65
Housing Material:	Brass
Electrical Connection:	3-Pin Micro (12 mm)

*Comes standard with gold plated contacts.

Dimensions in inches (millimeters in parenthesis)



NPTF Thread Model Selection

NPTF	MODEL	PSIG (BAR)
1/8 NPT	PS182AAN01	2-10 (0.14–0.69)
1/8 NPT	PS182BAN01	6-30 (0.40-2.07)
1/8 NPT	PS182CAN01	20-130 (1.38-8.96)
1/4 NPT	PS182AAN02	2-10 (0.14–0.69)
1/4 NPT	PS182BAN02	6-30 (0.40-2.07)
1/4 NPT	PS182CAN02	20-130 (1.38-8.96)

BSPP Thread Model Selection

BSPP	MODEL	PSIG (BAR)
1/8 BSPP	PS182AAG01	2-10 (0.14–0.69)
1/8 BSPP	PS182BAG01	6-30 (0.40-2.07)
1/8 BSPP	PS182CAG01	20-130 (1.38-8.96)
1/4 BSPP	PS182AAG02	2-10 (0.14–0.69)
1/4 BSPP	PS182BAG02	6-30 (0.40-2.07)
1/4 BSPP	PS182CAG02	20-130 (1.38-8.96)

Female Single Ended Cordset

CONNECTOR TYPE	CONNECTOR LENGTH	MODEL NUMBER
90° Elbow	5 Meters	PS182-5-90
Straight	5 Meters	PS182-5-ST

Reclassifiers

H40-08 pictured

Application

The Numatics Reclassifier is an exhaust coalescing filter/silencer. Its design removes oil mist and reduces noise from exhaust ports on pneumatic air valves, cylinders, and air control systems at extremely high flow rates

The Numatics Reclassifier can be mounted to exhaust ports on any valve or manifold using a common exhaust base or by combining exhaust ports. Mounting it vertically fully utilizes the oil-catching sump surrounding the filter element and provides easy draining.

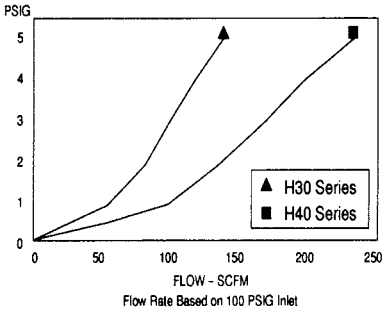
Features

- 99% oil removal efficiencies
- 25 dBA noise reduction
- high exhaust flow rates
- low differential back pressures
- top performer in automated paint systems
- 1 micron filtration
- manual or continuous drain option
- metric threads available

Specifications

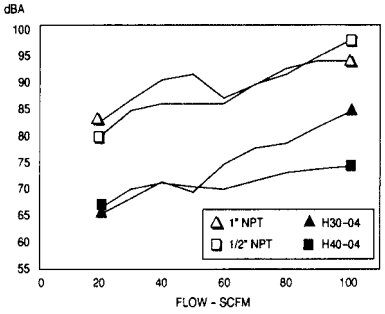
Maximum temperature: 125° F (52° C) CV rating (30 Series): 6
Maximum pressure: 100 PSIG (7 bar) CV rating (40 Series): 10

Air Flow vs. Back Pressure



Flow Rate Based on 100 PSIG Inlet

Air Flow vs. Sound Level



Reclassifiers

➤ Element Replacement Kits

includes filter element only

kit #	description
EKF30H	30 Series, 1 micron coalescer
EKF40H	40 Series, 1 micron coalescer

➤ Bowl Replacement Kits

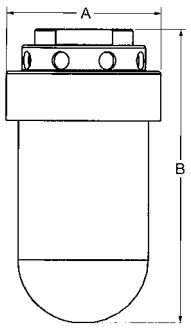
includes bowl and o-ring

kit #	description
BKF30	30 Series, polycarbonate bowl
BKF30C	30 Series, CircleVision™ bowl
BKF30M	30 Series, metal bowl
BKC40	40 Series, polycarbonate bowl

Dimensions

top dimensions = inches
bottom dimensions (in parenthesis) = millimeters

MODEL	A	B
H30-04	2.5 (64)	7 (178)
H30-06	2.5 (64)	7 (178)
H40-08	3.75 (95)	7.245 (184)
H40-10	3.75 (95)	7.245 (184)



How to Order

H 30 - 04 M

Series
H = Reclassifier

Series
30 = Cv 6.0
40 = Cv 10.0

Threads
- = NPTF
G = G Tap (BSPP)

Options
C = CircleVision™ Sight Bowl
M = Metal Bowl

Port Size
04 = 1/2 (30 Series Only)
06 = 3/4 (30 Series Only)
08 = 1 (40 Series Only)
06 = 1-1/4 (40 Series Only)

Electronic Drain Valves

EDV-04-110AC pictured

Application

Eliminate the manual draining of air lines with the EDV Series Electronic Drain Valve from Numatics. The EDV Series valve is designed to remove condensation from filters, receiver tanks, separators, drip legs, drain traps, and dryers in electronically controlled intervals. The EDV valve is available in 1/4, 3/8, and 1/2 sizes. The large orifice allows even the largest rust and pipe scale particles to be easily expelled. Standard model includes a 110 volt AC solenoid, 6 ft (2 m) power cord, and grounded plug. An EDV valve can be installed virtually anywhere.

Specifications

Valve

- Function: 2 way, NC, solenoid valve
- Valve Design: pilot operated diaphragm valve
- Port Sizes: 1/4, 3/8
- Orifice: 5/16" (8mm) 1.12 Cv 1/2" (12mm) 2.45 Cv
- Operating Pressure: 20-300 PSIG (1.3-20 bar)
- Solenoid: continuous duty
- Mounting: any position
- Body Material: brass

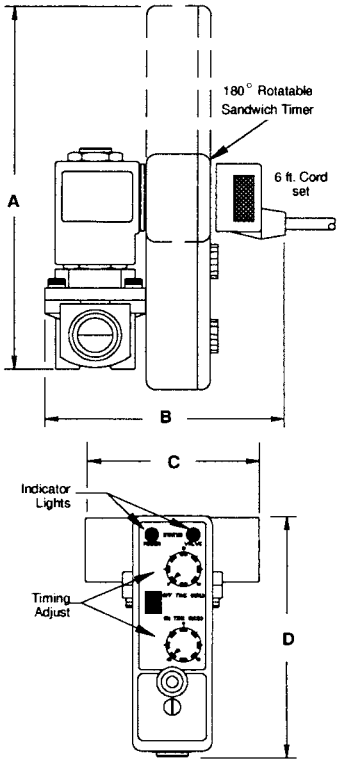
Timer

- Material: plastic polyamid
- Interval Timer: 1-45 min.
- 'On' Timer: .25-25 sec
- Voltage: 12-230 V AC/DC
- Frequency: 50/60 Hz
- Power Rating: 10 watt
- Enclosure: NEMA 4 / IP65
- Ambient Temp: 130° F (55° C)

Lights

- Left Indicator: power on
- Right Indicator: solenoid engineered

Dimensions



PORT SIZE	A	B	C	D
1/4,3/8	5.75 (146)	3.5 (89)	2.25 (57)	3.75 (95)
1/2	6.0 (152)	3.5 (89)	2.75 (70)	3.75 (95)

dimensions in inches (millimeters in parentheses)

How to Order

EDV - 04 - 110 AC

Model
EDV = Electronic Drain Valve

Threads
- = NPT
B = BSPT

Port Size
02 = 1/4
03 = 3/8
04 = 1/2

Current
AC
DC

Voltage
12
24
110
230

Connector
- = 6 ft. (2 Meter) Power Cord (with grounded plug)
X = Conduit Connector

Inline Filters

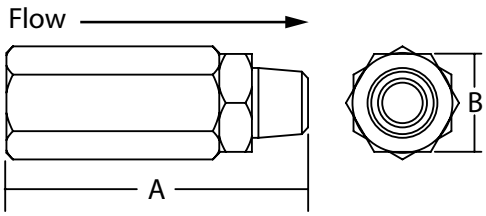
L Series

L Series in-line filters are designed to protect small air tools such as grinders, impact wrenches, nut runners, screwdrivers or pneumatic components. It will extend component life and reduces downtime by preventing foreign particles from entering the tool. Therefore eliminating expensive tool repair.

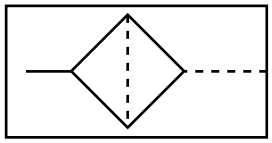
Its compact and lightweight anodized aluminum body can be easily installed directly inline before the tool or component.

L Series inline filters can also be used in low-pressure hydraulic applications. They can remove debris or contaminates, hence decrease tool wear and improve system efficiency. The 40-micron filter element insures minimum pressure drop and can be easily replaced or cleaned.

Drawings



ANSI Symbol



Specifications

Model		L1MN	L2MN	L3MN	L4MN	L5MN
Port Size		1/8”	1/4”	3/8”	1/2”	3/4”
Overall Length (A)		2-3/16”	2-3/16”	2-5/16”	3-13/16”	3-7/8”
HEX (B)		3/4”	3/4”	7/8”	1-1/2”	1-1/2”
Material	Body	Anodized Aluminum				
	Element	Sintered Bronze (40 micron standard)				
MAX Operating Pressure		300 PSI (21.1 ig./cm^2)				
Operating Temperature		35~200˚F (1.6~93.3˚C)				

Flow

Flow is based on 100 psi inlet and the Delta P shown below.

Model		5 PSID	4 PSID	3 PSID	2 PSID	1 PSID
L1MN	Flow SCFM	21	19	18	13	6
L2MN	Flow SCFM	37	24	20	15	10
L3MN	Flow SCFM	33	26	24	19	10
L4MN	Flow SCFM	150	95	80	50	20
L5MN	Flow SCFM	195	188	165	130	25

Element Kits

L1, L2, L3 MN	EKL123
L4, L5 MN	EKL45

Oxygen Concentrator Regulator

Application

The 03 series specialty miniature regulator is designed for applications requiring precision control at a very low cost. Used primarily in OEM applications, the 03 series can be applied in applications using air, nitrogen, oxygen, water, and other inert gases/fluids. Its lightweight all plastic design allows use in many specialty environments. This regulator has been applied successfully in many different markets including:
Oxygen: concentrators, analyzers, anesthesia
Adhesive: Applicators, metering equipment
Paint: spray systems, head control
Water service: filtration, control, aeration
Test equipment: leak test, air gauging, flow test

Features

- Flows accurate to 0.1 psi in low flow applications
- Four spring ranges available as a standard. 0-15 psi, 0-30 psi, 0-60 psi, 0-100psi.
- Relieving or non relieving models.
- Tamper-resistant or adjustable designs available.
- Body Design Features

101 /102 series

- Barb fitting outlet designed for use with 1/4 inch id tubing allows fast assembly.
- Threaded 1/8 supply is male eliminates extra fitting.
- Tamperproof or preset knob.

201 / 202 series

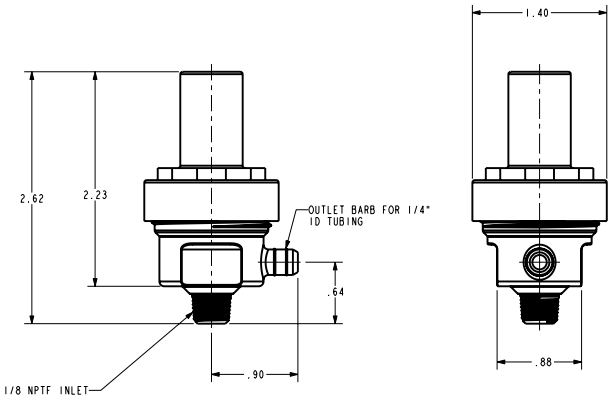
- Barb fitting outlet designed for use with 1/8 inch id tubing allows fast assembly.
- Manifold inlet and outlet ports.
- Quick assembly with fixed height dimension.
- Tamperproof or preset knob.

Specifications

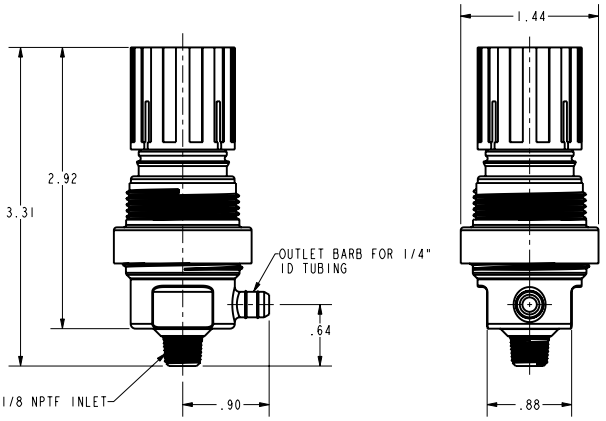
Temperature Range:	40-120F (4-50C)
Max inlet Pressure:	150 PSIG (10bar)
Weight:	
SCFM with 100psi inlet set at 75 psi: 70 lpm	
SCFM with 100psi inlet set at 60 psi: 50 lpm	
SCFM with 100psi inlet set at 40 psi: 30 lpm	
SCFM with 100psi inlet set at 10 psi: 10 lpm	
Body Material:	Delrin

Dimensions in inches (millimeters in parenthesis)

R03N-101



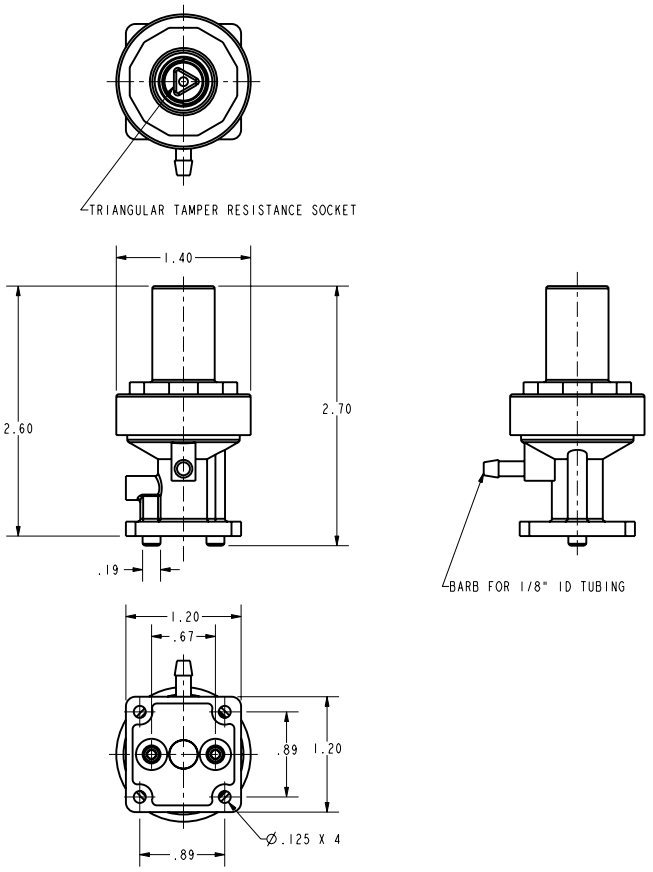
R03N-102



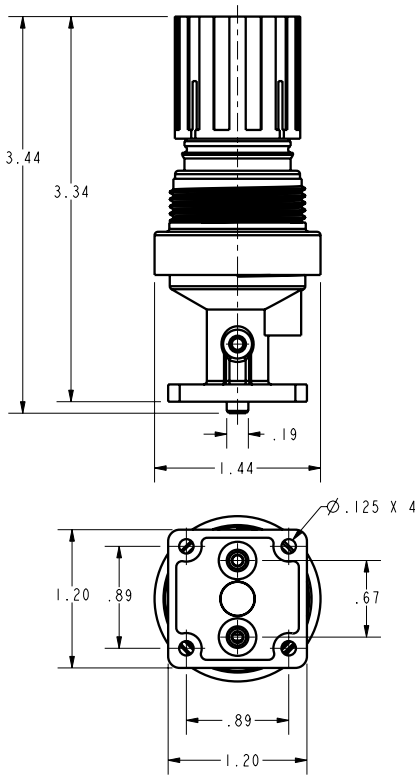
Oxygen Concentrator Regulator

Dimensions in inches (millimeters in parenthesis)

R03N-201



R03N-202



How to Order

R03 N - 101

Series
Oxygen Concentrator Regulator

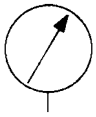
Style
R = Relieveing
N = Non-Relieveing

Model
101/102 = 1/8 NPT Bottom Connection (barb outlet, see drawings)
201/202 = Manifold Inlet/Outlet (see drawings)

Gauges

GA300 pictured

214-194 pictured



ANSI SYMBOL

Application

Numatics gauges are widely used on compressors, filter/regulators ('piggybacks'), water pumps, paint sprayers, and a variety of other applications for measuring the pressure of the air passing through the component.

Numatics Liquid Filled pressure gauges provide maximum service life for your pneumatic gauge applications. Each glycerine filled model is designed to prevent harmful environments or severe vibration from causing premature gauge failure.

Features

- Utilizes a Power Flex movement with polyester segment, contributing to longer gauge life.
- ABS (Acrylonitrile, Butadiene, Styrene) casing is ideal for rugged applications and harsh environmental conditions
- Full view polycarbonate window for better dial visibility.

Specifications

All Numatics Gauges
Sizes: 1.5", 2"
Case: Black ABS Composite
Ring: None
Window: Polycarbonate
Dial: Green, Red, and Black on White Background
Pointer: Black Aluminum
Socket: Brass
Liquid Filled Gauges
Liquid Used: Glycerine
Connection: Center Back Mount

Available Models

Numatics Gauges

MODEL	FACE DIAMETER	THREAD SIZE	PRESSURE RANGE (PSIG)	PRESSURE RANGE (BAR)
GB005	2.0"	1/4 NPT	0-5	0-0.5
RB005	2.0"	1/4 BSPT	0-5	0-0.5
GB015	2.0"	1/4 NPT	0-15	0-1.0
RB015	2.0"	1/4 BSPT	0-15	0-1.0
GA030	1.5"	1/8 NPT	0-30	0-2.0
RA030	1.5"	1/8 BSPT	0-30	0-2.0
GA060	1.5"	1/8 NPT	0-60	0-4.0
RA060	1.5"	1/8 BSPT	0-60	0-4.0
GA100	1.5"	1/8 NPT	0-100	0-7.0
RA100	1.5"	1/8 BSPT	0-100	0-7.0
GA160	1.5"	1/8 NPT	0-160	0-11.0
RA160	1.5"	1/8 BSPT	0-160	0-11.0
GA300	1.5"	1/8 NPT	0-300	0-20.0
RA300	1.5"	1/8 BSPT	0-300	0-20.0
GB030	2.0"	1/4 NPT	0-30	0-2.0
RB030	2.0"	1/4 BSPT	0-30	0-2.0
GB060	2.0"	1/4 NPT	0-60	0-4.0
RB060	2.0"	1/4 BSPT	0-60	0-4.0
GB100	2.0"	1/4 NPT	0-100	0-7.0
RB100	2.0"	1/4 BSPT	0-100	0-7.0
GB160	2.0"	1/4 NPT	0-160	0-11.0
RB160	2.0"	1/4 BSPT	0-160	0-11.0
GB300	2.0"	1/4 NPT	0-300	0-20.0
RB300	2.0"	1/4 BSPT	0-300	0-20.0

Numatics 14 Series Manifold Regulator Gauges

MODEL	FACE DIAMETER	THREAD SIZE	PRESSURE RANGE (PSIG)	PRESSURE RANGE (BAR)
GB060A	1.5"	1/4 NPT	0-60	0-4.0
RB060A	1.5"	1/4 BSPT	0-60	0-4.0
GB160A	1.5"	1/4 NPT	0-160	0-11.0
RB160A	1.5"	1/4 BSPT	0-160	0-11.0

Numatics Liquid-Filled Gauges

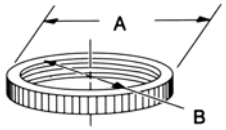
MODEL	FACE DIAMETER	THREAD SIZE	PRESSURE RANGE (PSIG)	PRESSURE RANGE (BAR)
214-194	1.5"	1/8	0-160	0-11
214-195	2.0"	1/4	0-160	0-11
214-196	1.5"	1/8	0-60	0-4

Mounting Brackets

Application

Mounting brackets are used to fix a regulator, piggyback or **FlexiBlok®** assembly to a panel as an alternative to the integral mounting holes located in the 22, 32 and 42 Series **FlexiBlok®** heads. They are also used as an alternative to a hard piped mounting system for the 12, 50, 70 and 72 Series filter product lines.

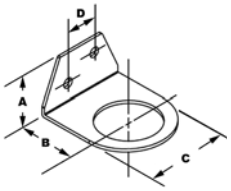
Panel Mount Nuts



Panel mount nuts thread onto the bonnet of the regulator to secure the unit against the mounting bracket.

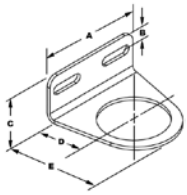
MODEL	SERIES	A	B	HOLE DIA.
PN12	12 Series FlexiBlok 72 Series Stainless	1.5 (38)	1-3/16-16	1.25 (32)
PN22	22 Series FlexiBlok	1.5 (38)	1-1/4-16	1.31 (33)
PN32P	32 Series FlexiBlok	2.05 (52)	1-3/4-16	1.77 (45)
PN70S	70 Series Stainless Steel	2.0 (51)	1-3/4-18 UNS-2B	1.75 (44)

Models and Dimensions



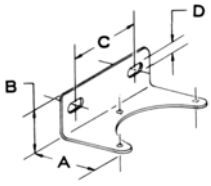
PK12, PK22 Mounting Bracket *for* 12 *and* 22 Series FlexiBlok® Regulator and Piggyback
includes bracket and panel mount nut *(see panel mount nut dimensions below)*

Series	Model #	Dimensions			
		A	B	C	D
12,22	PK12 & PK22	1.05 (27)	1.19 (30)	1.75 (44)	.625 (16)



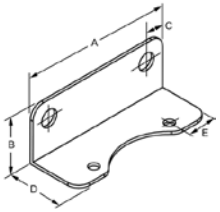
PK32 Mounting Bracket *for* 32 Series FlexiBlok® Regulator and Piggyback
includes bracket and panel mount nut *(see panel mount nut dimensions below)*

Series	Model #	Dimensions				
		A	B	C	D	E
32	PK32	2.75 (70)	.41 (10)	1.19 (30)	1.5 (38)	2.67 (68)



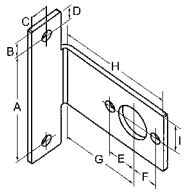
PK50, PK50A, PK50B Mounting Bracket *for* 50 Series High Flow Regulator
includes one bracket

Port Size	Kit #	Dimensions			
		A	B	C	D
1/4 & 3/8	PK50A	2.25 (57)	1.19 (30)	1.88 (48)	.27 (7)
1/2	PK50B	2.25 (57)	1.06 (27)	1.88 (48)	.27 (7)
3/4 - 1 1/2	PK50	2.94 (75)	1.75 (44)	3.25 (83)	.33 (8)



PK89* Mounting Bracket *for* 89 Series Instrument Air Regulator
includes one bracket

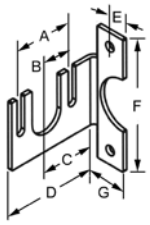
Kit #	Dimensions				
	A	B	C	D	E
PK89	3 (76)	1.13 (29)	.375 (10)	1.12 (28)	.625 (16)



BRK14AB Mounting Bracket *for* 14 Series FlexiBlok® Regulator and Piggyback
includes left and right brackets, 2 left side bolts, and 2 right side nuts *(see dimensions below)*

Kit #	Dimensions								
	A	B	C	D	E	F	G	H	I
BRK14AB	2.78 (71)	.35 (9)	.4 (10)	.35 (9)	.6 (15)	.6 (15)	1.8 (46)	2.62 (67)	.73 (19)

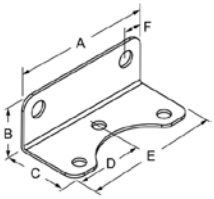
The right bracket mounts using the bolts that are included with the unit the bracket is being mounted to.



BRK22AB Mounting Bracket *for* 22 Series FlexiBlok®
includes left bracket, right bracket, 2 right side bolts, 2 right side nuts

Kit #	Dimensions						
	A	B	C	D	E	F	G
BRK22AB	1.57 (39)	.785 (20)	1.45 (37)	2.9 (74)	.4 (10)	3.5 (89)	1 (25)

dimensions shown for BRK22A. BRK22B is a mirror of BRK22A
Drawing and/or dimensions subject to change



PK88* Mounting Bracket *for* R87 Series Ratio Relay Volume Booster *and* R88 Series High Flow Precision Regulator
includes one bracket

Kit #	Dimensions					
	A	B	C	D	E	F
PK88	3 (76)	1.13 (29)	1.38 (35)	1.5 (38)	3 (76)	.4 (10)

Modular Air Systems

NOTE: Lockout valve must be placed downstream of filtration equipment, which will prevent damage to components from backflow.

Applications

The modular concept offers custom design capabilities for compact air control systems. This design eliminates fittings and potential air leaks, thus reducing cost, space, and installation time.

Features

- Modular adaptable to **FLEXIBLOK**® 32 Series 3/4 port sizes (06)
- Easy installation and service
- High exhaust capacity
- Low friction startup
- Brad Harrison connection (optional)
- Exhaust reclassifier (optional)
- Slow Start Valve (optional)
- Meets OSHA specifications
- Lockable venting supply slide valve
- Common exhaust

To Order

Purchase as individual components from the selections below, or for a complete list of Numatics modular air preparation products, consult your local representative.

32 Series Modular Air Systems How to Order

Shut Off Valve

Model Number
VS32-06 = inlet port

Air Prep Selection

Description	Examples
filter/regulator/lubricator	M32-06XFRLX
filter-regulator	P32B-06
coalescer/regulator	C32D-06
filter-regulator/lubricator	M32-06XPLXX

(see "FlexiBlok® FRL Series" section for complete product listing)

Modular Lockout

Description	Model No.
standard modular lockout	MVL32-06Y
Slo-Start™ modular lockout	MVT32-06Y

Adapter

Description	Kit No.
125 Series adapter	219-316
250 Series	*not required*
ISO 2 common exhaust adapter	219-317
MARK 55 adapter	219-315

Valve Sub-Base

Description	Model no.
125 Series dual exhaust	103-762
250 Series common exhaust	103-765
ISO 2 dual exhaust	203-880
MARK 55 common exhaust	
with plugin	203-877
without plugin	203-876

Valve

Valve Series
- 125 Series
- 250 Series
- ISO 2
- MARK 55

(see Numatics catalog for complete list of valve product lines)

CATALOG

accessories

In-Fittings, Flow Controls & Mufflers

EMERSON
Industrial Automation

numatics®

Table of Contents

In-Fittings, Flow Controls & Mufflers 151-191

How to Order

INWB 103 – 104 – 022

Fitting Series
INWB = World Thread Inch Tube (All Brass)
NW = World Thread Metric Tube (All Brass)

Fitting Style
103 = Straight
109 = Swivel Elbow
109E = Extended Swivel Elbow
114 = Swivel Branch Tee
116 = Swivel Run Tee

Options
(Blank) = BUNA-N O-Ring
F = Viton "O" Ring

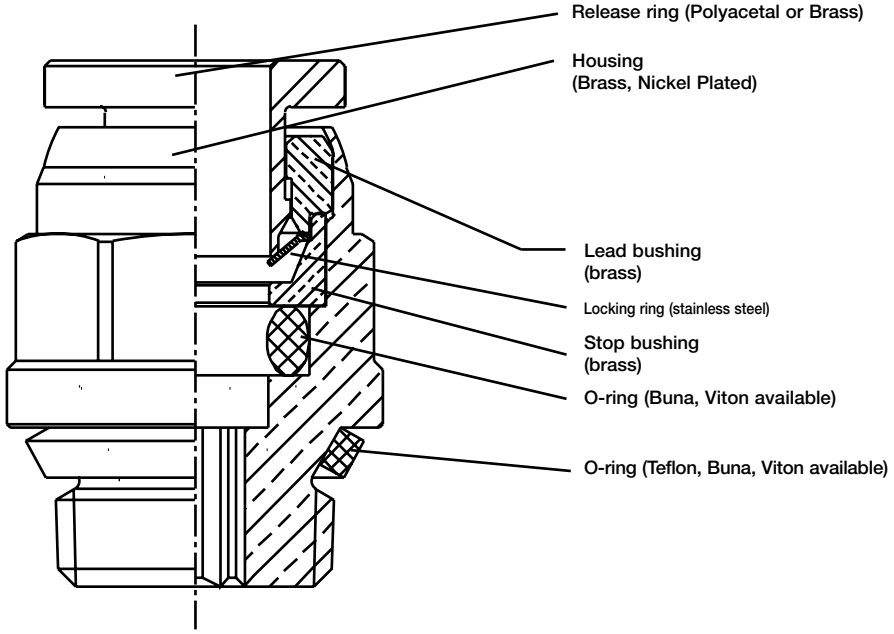
INW Thread Size			NW Thread Size		
020	=	1/8	000	=	1/8
021	=	1/4	001	=	1/4
022	=	3/8	002	=	3/8
023	=	1/2	003	=	1/2

Tube Size

Inch			Metric		
108	=	1/8"	004	=	4mm
532	=	5/32"	005	=	5mm
104	=	1/4"	006	=	6mm
516	=	5/16"	008	=	8mm
308	=	3/8"	010	=	10mm
102	=	1/2"	012	=	12mm

* See Fitting Style Charts on pgs 162-165 for available Tube and Thread Configurations

- Pressure Rating to 265 psi
- Temperature range: -20°F to +176°F (BUNA N O-ring)
  +230°F (Viton O-ring)
- Tube diameter: 1/8" to 1/2"
  4mm to 12mm
- Thread size: 1/8" to 1/2"

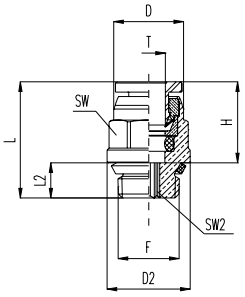


Numatics' World Thread™ IN-Fittings provide extreme versatility in use, which no longer requires the management of different fittings for different thread types or application.

- Extremely versatile – One fitting design for multiple thread types
- Rapid assembly – Requires fewer turns to tighten and seal
- Re-usable – Fittings can be used several times without gasket deterioration
- Reliable seal – Helical thread profile and PTFE gasket ensure proper seal
- Maximum working pressure: 265 PSIG at 68°F (18 bar at 20°C)
- Conductor compatibility – Nylon, Polyurethane, Polyethylene

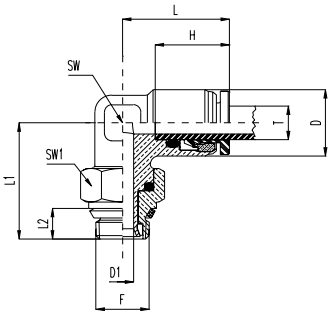
Numatics' World Tread™ is designed with a helical thread design that represents the envelope for the profile of the NPTF, ISO 228/1(BSPP), (G-Tap), ISO 7/1(BSPT), (JIS B 0202) and (JIS B 0203) thread types. In conjunction with the thread design the seal between the male and female threads is created with a PTFE gasket, housed in a groove at the rear of the thread. This gasket seal meets UNI 571-65 standards.

INWB103 Male Connector/Inch Tube



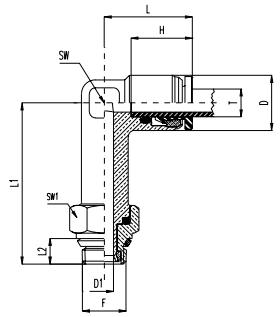
Brass Release Ring	Part Number	Tube Diameter (T)	Thread (F)	D	D2	L	L2	H	SW	SW2
INWB	103-108-020	1/8	1/8	0.370	0.472	0.709	0.217	0.472	0.375	0.063
INWB	103-108-021	1/8	1/4	0.370	0.591	0.787	0.303	0.472	0.375	0.063
INWB	103-532-020	5/32	1/8	0.390	0.512	0.709	0.217	0.492	0.438	0.063
INWB	103-532-021	5/32	1/4	0.390	0.591	0.795	0.303	0.492	0.438	0.063
INWB	103-104-020	1/4	1/8	0.465	0.552	0.799	0.217	0.531	0.500	0.156
INWB	103-104-021	1/4	1/4	0.465	0.591	0.886	0.303	0.531	0.500	0.156
INWB	103-104-022	1/4	3/8	0.465	0.748	0.906	0.323	0.531	0.500	0.156
INWB	103-516-020	5/16	1/8	0.689	0.787	0.925	0.323	0.650	0.594	0.156
INWB	103-516-021	5/16	1/4	0.689	0.945	1.004	0.406	0.650	0.594	0.219
INWB	103-516-022	5/16	3/8	0.807	0.866	1.004	0.303	0.650	0.594	0.219
INWB	103-308-020	3/8	1/8	0.807	0.866	1.043	0.323	0.669	0.688	0.156
INWB	103-308-021	3/8	1/4	0.807	0.945	1.043	0.406	0.669	0.688	0.219
INWB	103-308-022	3/8	3/8	0.807	0.866	1.071	0.323	0.669	0.688	0.250
INWB	103-308-023	3/8	1/2	0.807	0.945	1.161	0.406	0.669	0.688	0.250
INWB	103-102-021	1/2	1/4	0.807	0.945	1.142	0.406	0.728	0.813	0.250
INWB	103-102-022	1/2	3/8	0.807	0.866	1.181	0.323	0.728	0.813	0.250
INWB	103-102-023	1/2	1/2	0.807	0.945	1.220	0.406	0.728	0.813	0.375

INWB109 Swivel Elbow/Inch Tube



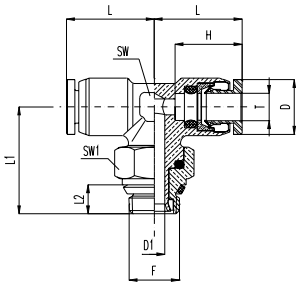
Brass Release Ring	Part Number	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	SW	SW1
INWB	109-108-020	1/8	1/8	0.394	0.157	0.650	0.768	0.472	0.217	0.354	0.500
INWB	109-108-021	1/8	1/4	0.394	0.157	0.650	0.768	0.472	0.303	0.354	0.594
INWB	109-532-021	5/32	1/4	0.394	0.157	0.669	0.874	0.492	0.303	0.354	0.594
INWB	109-104-020	1/4	1/8	0.472	0.157	0.768	0.799	0.531	0.217	0.433	0.500
INWB	109-104-021	1/4	1/4	0.472	0.236	0.768	0.8155	0.531	0.303	0.433	0.594
INWB	109-516-020	1/4	1/8	0.472	0.236	0.768	0.906	0.531	0.323	0.433	0.750
INWB	109-516-021	5/16	1/4	0.591	0.157	0.945	0.878	0.650	0.217	0.551	0.500
INWB	109-308-020	3/8	1/8	0.689	0.157	1.063	0.929	0.669	0.217	0.630	0.500
INWB	109-308-021	3/8	1/4	0.689	0.236	1.063	0.945	0.669	0.303	0.630	0.594
INWB	109-308-022	3/8	3/8	0.689	0.315	1.063	1.039	0.669	0.323	0.630	0.750
INWB	109-308-023	3/8	1/2	0.689	0.315	1.063	1.197	0.669	0.406	0.630	0.938
INWB	109-102-021	1/2	1/4	0.827	0.236	1.201	1.059	0.728	0.303	0.688	0.594
INWB	109-102-022	1/2	3/8	0.827	0.315	1.201	1.122	0.728	0.323	0.688	0.750
INWB	109-102-023	1/2	1/2	0.827	0.315	1.201	1.280	0.728	0.406	0.688	0.938

INWB109E Extended Swivel Elbow/Inch Tube



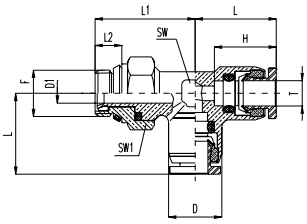
Brass Release Ring	Part Number	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INWB	109E-108-020	1/8	1/8	0.709	0.236	1.043	2.067	0.512	0.531	0.591	0.591
INWB	109E-108-021	1/8	1/4	0.748	0.315	1.043	2.106	0.512	0.531	0.591	0.709
INWB	109E-532-020	5/32	1/8	0.394	0.157	0.638	1.461	0.374	0.472	0.354	0.512
INWB	109E-532-021	5/32	1/4	0.394	0.157	0.638	1.598	0.512	0.472	0.354	0.591
INWB	109E-104-020	1/4	1/8	0.394	0.157	0.657	1.457	0.374	0.492	0.354	0.512
INWB	109E-104-021	1/4	1/4	0.394	0.157	0.657	1.594	0.512	0.492	0.354	0.591
INWB	109E-104-022	1/4	3/8	0.472	0.157	0.740	1.575	0.374	0.531	0.433	0.512
INWB	109E-516-020	5/16	1/8	0.472	0.236	0.740	1.693	0.512	0.531	0.433	0.591
INWB	109E-516-021	5/16	1/4	0.472	0.236	0.740	1.732	0.512	0.531	0.433	0.709
INWB	109E-516-022	5/16	3/8	0.591	0.157	0.925	1.772	0.374	0.531	0.551	0.512
INWB	109E-308-020	3/8	1/8	0.591	0.236	0.925	1.909	0.512	0.531	0.551	0.591
INWB	109E-308-021	3/8	1/4	0.630	0.315	0.925	1.969	0.512	0.531	0.551	0.709
INWB	109E-308-022	3/8	3/8	0.669	0.157	1.043	1.929	0.374	0.531	0.591	0.512

INWB114 Swivel Branch Tee/Inch Tube



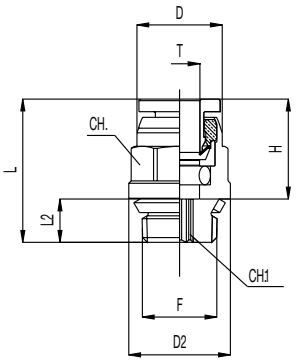
Brass Release Ring	Part Number	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	SW	SW1
INWB	114-108-020	1/8	1/8	0.394	0.157	0.650	0.768	0.472	0.217	0.354	0.500
INWB	114-108-021	1/8	1/4	0.394	0.157	0.650	0.787	0.472	0.303	0.354	0.594
INWB	114-532-020	5/32	1/8	0.394	0.157	0.669	0.768	0.492	0.217	0.354	0.500
INWB	114-104-020	1/4	1/8	0.472	0.157	0.768	0.886	0.531	0.217	0.433	0.500
INWB	114-104-021	1/4	1/4	0.472	0.236	0.768	0.906	0.531	0.303	0.433	0.594
INWB	114-104-022	1/4	3/8	0.472	0.236	0.768	0.965	0.531	0.323	0.433	0.750
INWB	114-516-020	5/16	1/8	0.591	0.157	0.945	0.874	0.650	0.217	0.551	0.500
INWB	114-516-021	5/16	1/4	0.591	0.236	0.945	0.886	0.650	0.303	0.551	0.594
INWB	114-308-020	3/8	1/8	0.689	0.157	1.063	0.925	0.669	0.217	0.630	0.500
INWB	114-308-021	3/8	1/4	0.689	0.236	1.063	0.945	0.669	0.303	0.630	0.594
INWB	114-308-022	3/8	3/8	0.689	0.315	1.063	1.043	0.669	0.323	0.630	0.750
INWB	114-308-023	3/8	1/2	0.689	0.315	1.063	1.201	0.669	0.406	0.630	0.938
INWB	114-102-021	1/2	1/4	0.827	0.236	1.201	1.063	0.728	0.303	0.688	0.594
INWB	114-102-022	1/2	3/8	0.827	0.315	1.201	1.122	0.728	0.323	0.688	0.750
INWB	114-102-023	1/2	1/2	0.827	0.315	1.201	1.280	0.728	0.406	0.688	0.938

INWB116 Swivel Run Tee/Inch Tube



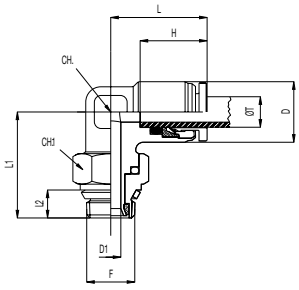
Brass Release Ring	Part Number	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	SW	SW1
INWB	116-108-020	1/8	1/8	0.394	0.157	0.650	0.768	0.472	0.217	0.354	0.500
INWB	116-532-020	5/32	1/8	0.394	0.157	0.650	0.768	0.492	0.217	0.354	0.500
INWB	116-532-021	5/32	1/4	0.394	0.157	0.638	0.787	0.492	0.303	0.354	0.594
INWB	116-104-020	1/4	1/8	0.472	0.157	0.638	0.886	0.531	0.217	0.433	0.500
INWB	116-104-021	1/4	1/4	0.472	0.236	0.657	0.906	0.531	0.303	0.433	0.594
INWB	116-104-022	1/4	3/8	0.472	0.236	0.657	0.965	0.531	0.323	0.433	0.750
INWB	116-516-020	5/16	1/8	0.591	0.157	0.740	0.874	0.650	0.217	0.551	0.500
INWB	116-516-021	5/16	1/4	0.591	0.236	0.740	0.886	0.650	0.303	0.551	0.594
INWB	116-308-021	3/8	1/4	0.689	0.236	0.925	0.945	0.669	0.303	0.630	0.594
INWB	116-308-022	3/8	3/8	0.689	0.315	0.925	1.043	0.669	0.323	0.630	0.750
INWB	116-308-023	3/8	1/2	0.689	0.315	0.925	1.201	0.669	0.406	0.630	0.938
INWB	116-102-021	1/2	1/4	0.827	0.236	1.043	1.063	0.728	0.303	0.688	0.594
INWB	116-102-022	1/2	3/8	0.827	0.315	1.043	1.122	0.728	0.323	0.688	0.750
INWB	116-102-023	1/2	1/2	0.827	0.315	1.043	1.280	0.728	0.406	0.688	0.938

NWB103 Male Connector/Metric Tube



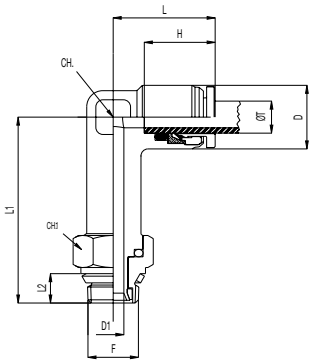
NWB103	Tube Diameter (T)	Thread (F)	D	D2	L	L2	H	CH	CH1
NWB103-004-000	4	1/8	10.0	12	17.5	5.5	12.5	10	3
NWB103-004-001	4	1/4	10.0	15	20.5	7.7	12.5	10	3
NWB103-005-000	5	1/8	11.0	12	18.5	5.5	13.0	11	3
NWB103-005-001	5	1/4	11.0	15	21.0	7.7	13.0	11	3
NWB103-006-000	6	1/8	12.0	14	19.0	5.5	13.5	12	4
NWB103-006-001	6	1/4	12.0	15	21.0	7.7	13.5	12	4
NWB103-008-000	8	1/8	15.0	16	23.5	5.5	16.0	15	5
NWB103-008-001	8	1/4	15.0	16	23.5	7.7	16.0	15	6
NWB103-008-002	8	3/8	15.0	19	24.5	8.2	16.0	15	6
NWB103-010-001	10	1/4	17.5	20	27.0	7.7	17.0	18	6
NWB103-010-002	10	3/8	17.5	20	25.0	8.2	17.0	18	7
NWB103-010-003	10	1/2	17.5	24	28.5	10.3	17.0	18	7
NWB103-012-001	12	1/4	20.5	22	28.0	7.7	19.0	20	6
NWB103-012-002	12	3/8	20.5	22	28.5	8.2	19.0	20	8
NWB103-012-003	12	1/2	20.5	24	31.0	10.3	19.0	20	9

NWB109 Swivel Elbow/Metric Tube



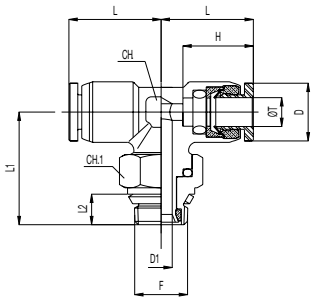
NWB109	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	CH	CH1
NWB109-004-000	4	1/8	10.0	4	16.5	19.5	12.5	5.5	9	13
NWB109-004-001	4	1/4	10.0	4	16.5	20.0	12.5	7.7	9	15
NWB109-005-000	5	1/8	11.0	4	16.5	21.0	13.0	5.5	10	13
NWB109-005-001	5	1/4	11.0	4	16.5	21.5	13.0	7.7	10	15
NWB109-006-000	6	1/8	12.0	4	19.0	20.5	13.5	5.5	11	13
NWB109-006-001	6	1/4	12.0	4	19.0	21.0	13.5	7.7	11	15
NWB109-008-000	8	1/8	15.0	4	23.5	22.5	16.0	5.5	14	13
NWB109-008-001	8	1/4	15.0	6	23.5	23.0	16.0	7.7	14	15
NWB109-008-002	8	3/8	15.0	8	23.5	25.5	16.0	8.2	14	19
NWB109-010-001	10	1/4	17.5	6	26.5	23.7	17.0	7.7	16	15
NWB109-010-002	10	3/8	17.5	8	26.5	26.4	17.0	8.2	16	19
NWB109-010-003	10	1/2	17.5	8	26.5	30.5	16.8	11.8	16	19
NWB109-012-001	12	1/4	20.5	6	29.1	27.1	18.6	7.7	17	15
NWB109-012-002	12	3/8	20.5	8	29.1	28.5	18.6	8.2	17	19
NWB109-012-003	12	1/2	20.5	8	29.1	32.5	17.0	8.2	15	19

NWB109E Extended Swivel Elbow/Metric Tube



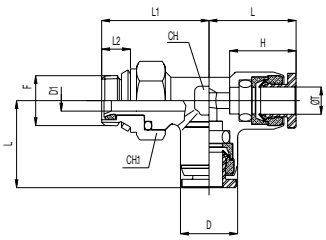
NWB109E	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	CH	CH1
NWB109E-004-000	4	1/8	10.0	4	16.5	34.5	12.5	5.5	9	13
NWB109E-004-001	4	1/4	10.0	4	16.5	35	12.5	7.7	9	15
NWB109E-006-000	6	1/8	12.0	4	19	37.5	13.5	5.5	11	13
NWB109E-006-001	6	1/4	12.0	6	19	38	13.5	7.7	11	15
NWB109E-008-000	8	1/8	15.0	4	23.5	42.5	16	5.5	14	13
NWB109E-008-001	8	1/4	15.0	6	23.5	42.5	16	7.7	14	15
NWB109E-008-002	8	3/8	15.0	8	23.5	45.2	16	8.2	14	19
NWB109E-010-001	10	1/4	17.5	6	26.5	46.5	17	7.7	15	15
NWB109E-010-002	10	3/8	17.5	8	26.5	49	17	8.2	14	19

NWB114 Swivel Branch Tee/Metric Tube



NWB114	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	SW	SW1
NWB114-004-000	4	1/8	10.0	4	16.5	19.5	12.5	5.5	9	13
NWB114-005-000	5	1/8	11.0	4	16.5	21.0	13.0	5.5	10	13
NWB114-006-000	6	1/8	12.0	4	19.0	22.7	13.5	5.5	11	13
NWB114-006-001	6	1/4	12.0	6	19.0	23.6	13.5	7.7	11	15
NWB114-008-000	8	1/8	15.0	4	23.5	22.3	16.0	5.5	14	13
NWB114-008-001	8	1/4	15.0	6	23.5	22.5	16.0	7.7	14	15
NWB114-008-002	8	3/8	15.0	8	23.5	25.2	16.0	8.2	14	19
NWB114-010-001	10	1/4	17.5	6	26.5	23.7	17.0	7.7	15	15
NWB114-010-002	10	3/8	17.5	8	26.5	28.5	17.0	8.2	15	19
NWB114-010-003	10	1/2	17.5	8	26.5	26.5	16.8	8.2	16	19
NWB114-012-001	12	1/4	20.5	6	29.1	27.1	17.0	7.7	15	15
NWB114-012-002	12	3/8	20.5	8	29.1	28.5	17.0	8.2	15	19
NWB114-012-003	12	1/2	20.5	8	29.1	32.5	17.0	8.2	15	19

NWB116 Swivel Run Tee/Metric Tube



NWB116	Tube Diameter (T)	Thread (F)	D	D1	L	L1	H	L2	SW	SW1
NWB116-004-000	4	1/8	10.0	4	16.5	19.5	12.5	5.5	9	13
NWB116-005-000	5	1/8	11.0	4	16.5	19.6	13.0	5.5	10	13
NWB116-006-000	6	1/8	12.0	4	19.0	22.3	13.5	5.5	11	13
NWB116-006-001	6	1/4	12.0	6	19.0	23.6	13.5	7.7	11	15
NWB116-008-000	8	1/8	15.0	4	23.2	22.3	16.0	5.5	14	13
NWB116-008-001	8	1/4	15.0	6	23.2	22.5	16.0	7.7	14	15
NWB116-008-002	8	3/8	15.0	8	23.4	25.2	16.0	8.2	14	19
NWB116-010-001	10	1/4	17.5	6	26.5	23.7	17.0	7.7	15	15
NWB116-010-002	10	3/8	17.5	8	26.5	26.4	17.0	8.2	15	19
NWB116-010-003	10	1/2	17.5	8	26.5	26.5	16.8	8.2	16	19
NWB116-012-001	12	1/4	20.5	6	29.1	27.1	17.0	7.7	15	15
NWB116-012-002	12	3/8	20.5	8	29.1	28.5	17.0	8.2	15	19
NWB116-012-003	12	1/2	20.5	8	29.1	32.5	17.0	8.2	15	19

How to Order

INB 109 – 104 – 022

Fitting Series
INB = NPTF/Inch Table (Brass Release Ring)
*IN = NPTF/Inch Tube

Fitting Style
100 = Union
101 = Bulkhead Union
103 = Male Connector
105 = Female Connector
106 = Union Elbow
107 = Fixed Elbow
109 = Swivel Elbow
109E = Extended Swivel Elbow
110 = Union Tee
114 = Swivel Branch Tee
116 = Swivel Run Tee
*118 = Plug
*119 = Double Male Union
*120 = Stem Adapter
121 = Reducer
122 = Single Banjo
123 = Double Banjo
*124 = Single Manifold
*125 = Double Manifold
131 = Union Y
132 = Male Y

Options
(Blank) = BUNA-N O-Ring
F = Viton "O" Ring

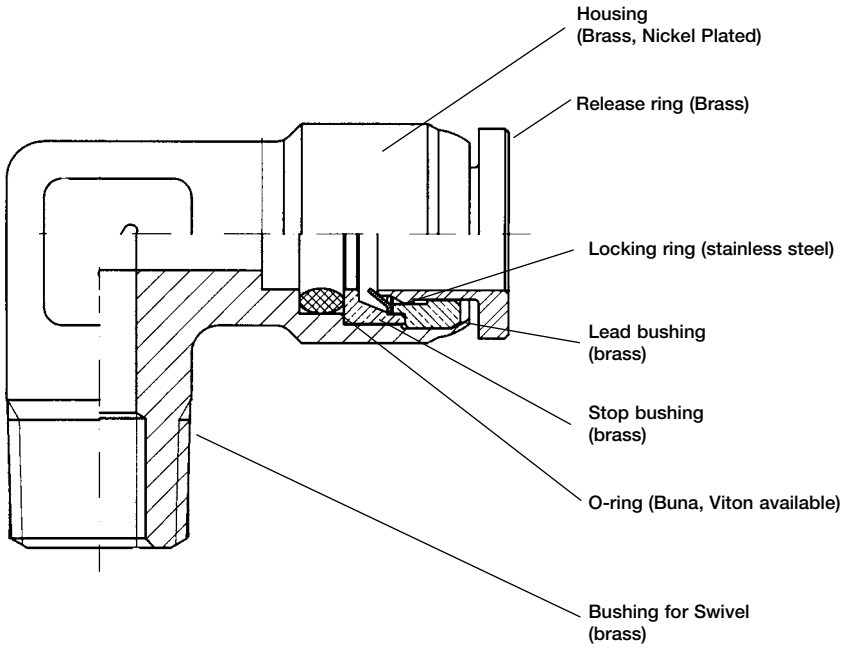
Thread Size
000 = No Thread
036 = 10-32 UNF
020 = 1/8 NPTF
021 = 1/4 NPTF
022 = 3/8 NPTF
023 = 1/2 NPTF

Tube Size
108 = 1/8"
532 = 5/32"
104 = 1/4"
516 = 5/16"
308 = 3/8"
102 = 1/2"
000 = No Tube

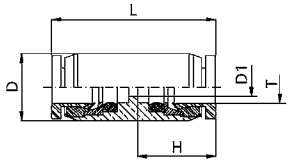
* See Fitting Style Charts on pgs 167-172 for available Tube and Thread Configurations

*Fittings with asterisk only available in "IN" Fitting Series.
All other styles only available in "INB" Fitting Series

- **Pressure Rating to 265 psi**
- **Temperature range: -20°F to +176°F (BUNA N O-ring) +230°F (Viton O-ring)**
- **Push-in fittings with NPTF Threads**
- **Teflon thread sealant**
- **Tube diameter: 1/8" to 1/2"**
- **Thread size: 10-32 UNF to 1/2 NPTF**

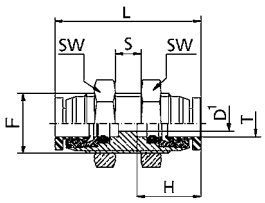


INB100 Union



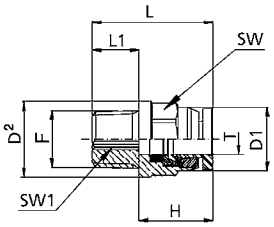
Brass Release Ring	INB100	Tube Diameter (T)	D	D1	L	H
INB	100-108-000	1/8	0.394	0.094	0.984	0.472
INB	100-532-000	5/32	0.394	0.118	1.024	0.492
INB	100-104-000	1/4	0.472	0.157	1.110	0.531
INB	100-516-000	5/16	0.591	0.236	1.299	0.630
INB	100-308-000	3/8	0.709	0.276	1.398	0.669
INB	100-102-000	1/2	0.787	0.413	1.575	0.748

INB101 Bulkhead Union



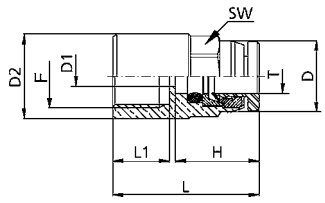
Brass Release Ring	INB101	Tube Diameter (T)	Thread (F)	D1	L	H	SW	S MAX
INB	101-108-000	1/8	M11x1	0.094	1.091	0.472	0.551	0.197
INB	101-532-000	5/32	M12x1	0.118	1.130	0.492	0.551	0.236
INB	101-104-000	1/4	M13x1	0.157	1.244	0.531	0.630	0.315
INB	101-516-000	5/16	M16x1	0.236	1.437	0.630	0.748	0.315
INB	101-308-000	3/8	M19x1	0.276	1.614	0.669	0.866	0.433
INB	101-102-000	1/2	M22x1	0.413	1.850	0.748	1.024	0.591

INB103 Male Connector



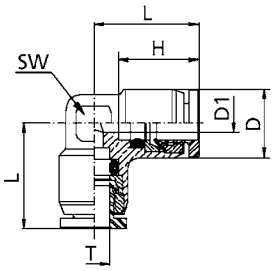
Brass Release Ring	INB103	Tube Diameter (T)	Thread (F)	D1	D2	L	L1	H	SW	SW1
INB	103-108-036	1/8	10-32 UNF	0.370	0.370	0.697	0.165	0.472	/	5/64
INB	103-108-020	1/8	1/8 NPTF	0.370	0.472	0.854	0.374	0.472	3/8	5/64
INB	103-108-021	1/8	1/4 NPTF	0.370	0.551	0.992	0.512	0.472	3/8	5/64
INB	103-532-036	5/32	10-32 UNF	0.394	0.394	0.717	0.165	0.492	/	5/64
INB	103-532-020	5/32	1/8 NPTF	0.394	0.512	0.866	0.374	0.492	7/16	5/64
INB	103-532-021	5/32	1/4 NPTF	0.394	0.551	1.004	0.512	0.492	7/16	5/64
INB	103-104-036	1/4	10-32 UNF	0.472	0.472	0.772	0.165	0.531	/	5/64
INB	103-104-020	1/4	1/8 NPTF	0.472	0.551	0.886	0.374	0.531	1/2	5/32
INB	103-104-021	1/4	1/4 NPTF	0.472	0.551	1.024	0.512	0.531	1/2	5/32
INB	103-104-022	1/4	3/8 NPTF	0.472	0.709	1.024	0.512	0.531	1/2	5/32
INB	103-516-020	5/16	1/8 NPTF	0.591	0.669	1.055	0.374	0.630	19/32	7/32
INB	103-516-021	5/16	1/4 NPTF	0.591	0.669	1.173	0.512	0.630	19/32	7/32
INB	103-516-022	5/16	3/8 NPTF	0.591	0.709	1.173	0.512	0.630	19/32	7/32
INB	103-308-020	3/8	1/8 NPTF	0.669	0.787	1.114	0.374	0.669	11/16	7/32
INB	103-308-021	3/8	1/4 NPTF	0.669	0.787	1.232	0.512	0.669	11/16	1/4
INB	103-308-022	3/8	3/8 NPTF	0.669	0.787	1.232	0.512	0.669	11/16	1/4
INB	103-308-023	3/8	1/2 NPTF	0/669	0.866	1.390	0.709	0.669	11/16	1/4
INB	103-102-021	1/2	1/4 NPTF	0.827	0.906	1.339	0.512	0.748	13/16	1/4
INB	103-102-022	1/2	3/8 NPTF	0.827	0.906	1.339	0.512	0.748	13/16	3/8
INB	103-102-023	1/2	1/2 NPTF	0.827	0.906	1.496	0.709	0.748	13/16	3/8

INB105 Female Connector



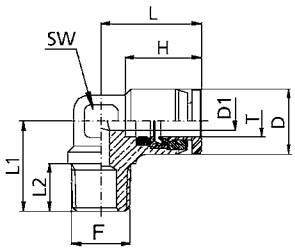
Brass Release Ring	INB105	Tube Diameter (T)	Thread (F)	D	D1	D2	L	L2	H	SW
INB	105-108-020	1/8	1/8 NPTF	0.370	0.094	0.551	0.945	0.335	0.472	3/8
INB	105-108-021	1/8	1/4 NPTF	0.370	0.094	0.669	1.102	0.472	0.472	3/8
INB	105-532-020	5/32	1/8 NPTF	0.394	0.118	0.551	0.965	0.335	0.492	7/16
INB	105-532-021	5/32	1/4 NPTF	0.394	0.118	0.669	1.122	0.472	0.492	7/16
INB	105-104-020	1/4	1/8 NPTF	0.472	0.157	0.551	0.965	0.335	0.531	1/2
INB	105-104-021	1/4	1/4 NPTF	0.472	0.157	0.669	1.142	0.472	0.531	1/2
INB	105-516-020	5/16	1/8 NPTF	0.591	0.236	0.669	1.055	0.335	0.630	19/32
INB	105-516-021	5/16	1/4 NPTF	0.591	0.236	0.669	1.213	0.472	0.630	19/32
INB	105-308-021	3/8	1/4 NPTF	0.669	0.276	0.866	1.248	0.472	0.669	3/4
INB	105-308-022	3/8	3/8 NPTF	0.669	0.276	0.866	1.366	0.495	0.669	11/16

INB106 Union Elbow



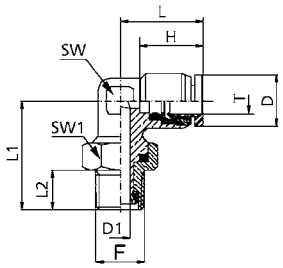
Brass Release Ring	INB106	Tube Diameter (T)	D	D1	L	H	SW
INB	106-108-000	1/8	0.394	0.094	0.638	0.472	0.354
INB	106-532-000	5/32	0.394	0.118	0.657	0.492	0.354
INB	106-104-000	1/4	0.472	0.157	0.740	0.531	0.433
INB	106-516-000	5/16	0.591	0.236	0.858	0.630	0.551
INB	106-308-000	3/8	0.709	0.295	1.004	0.669	0.630
INB	106-102-000	1/2	0.827	0.413	1.161	0.748	0.685

INB107 Fixed Elbow



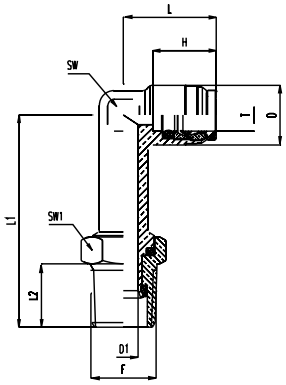
Brass Release Ring	INB107	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW
INB	107-532-020	5/32	1/8 NPTF	0.394	0.118	0.657	0.650	0.374	0.492	0.354
INB	107-532-021	5/32	1/4 NPTF	0.394	0.118	0.657	0.787	0.512	0.492	0.354
INB	107-104-020	1/4	1/8 NPTF	0.472	0.157	0.740	0.693	0.374	0.531	0.433
INB	107-104-021	1/4	1/4 NPTF	0.472	0.157	0.740	0.831	0.512	0.531	0.433
INB	107-308-021	3/8	1/4 NPTF	0.709	0.295	1.004	0.945	0.512	0.685	0.630
INB	107-308-022	3/8	3/8 NPTF	0.709	0.295	1.004	1.945	0.512	0.685	0.630

INB109 Swivel Elbow



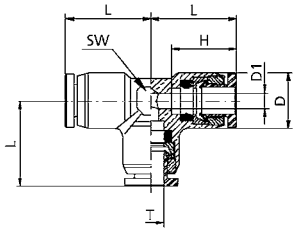
Brass Release Ring	INB109	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INB	109-108-036	1/8	10-32 UNF	0.394	0.087	0.638	0.630	0.165	0.472	0.354	0.354
INB	109-108-020	1/8	1/8 NPTF	0.394	0.157	0.638	0.874	0.374	0.472	0.354	0.512
INB	109-108-021	1/8	1/4 NPTF	0.394	0.157	0.638	1.008	0.512	0.472	0.354	0.591
INB	109-532-036	5/32	10-32 UNF	0.394	0.087	0.657	0.630	0.165	0.492	0.354	0.354
INB	109-532-020	5/32	1/8 NPTF	0.394	0.157	1.657	0.874	0.374	0.492	0.354	0.512
INB	109-532-021	5/32	1/4 NPTF	0.394	0.157	1.657	1.008	0.512	0.492	0.354	0.591
INB	109-104-036	1/4	10-32 UNF	0.472	0.087	0.740	0.709	0.165	0.531	0.433	0.354
INB	109-104-020	1/4	1/8 NPTF	0.472	0.157	0.740	0.906	0.374	0.531	0.433	0.512
INB	109-104-021	1/4	1/4 NPTF	0.472	0.236	0.740	1.031	0.512	0.531	0.433	0.591
INB	109-104-022	1/4	3/8 NPTF	0.472	0.236	0.740	1.071	0.512	0.531	0.433	0.709
INB	109-516-020	5/16	1/8 NPTF	0.591	0.157	0.925	0.984	0.374	0.630	0.551	0.512
INB	109-516-021	5/16	1/4 NPTF	0.591	0.236	0.925	1.122	0.512	0.630	0.551	0.591
INB	109-516-022	5/16	3/8 NPTF	0.591	0.315	0.925	1.181	0.512	0.630	0.551	0.709
INB	109-308-020	3/8	1/8 NPTF	0.709	0.157	1.043	1.043	0.374	0.669	0.630	0.512
INB	109-308-021	3/8	1/4 NPTF	0.709	0.236	1.043	1.181	0.512	0.669	0.630	0.591
INB	109-308-022	3/8	3/8 NPTF	0.709	0.315	1.043	1.220	0.512	0.669	0.630	0.709
INB	109-308-023	3/8	1/2 NPTF	0.709	0.315	1.043	1.358	0.709	0.669	0.630	0.866
INB	109-102-021	1/2	1/4 NPTF	0.827	0.236	1.181	1.299	0.512	0.748	0.685	0.591
INB	109-102-022	1/2	3/8 NPTF	0.827	0.315	1.181	1.299	0.512	0.748	0.685	0.709
INB	109-102-023	1/2	1/2 NPTF	0.827	0.315	1.181	1.476	0.709	0.748	0.685	0.866

INB109E Extended Swivel Elbow



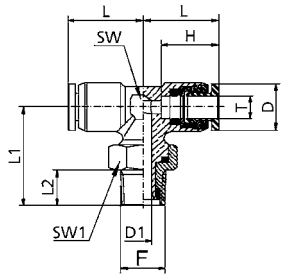
Brass Release Ring	INB109E	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INB	109E-108-020	1/8	1/8 NPTF	0.394	0.157	0.638	1.461	0.374	0.472	0.354	0.512
INB	109E-108-021	1/8	1/4 NPTF	0.394	0.157	0.638	1.598	0.512	0.472	0.354	0.591
INB	109E-532-020	5/32	1/8 NPTF	0.394	0.157	0.657	1.457	0.374	0.492	0.354	0.512
INB	109E-104-020	1/4	1/8 NPTF	0.472	0.157	0.740	1.575	0.374	0.531	0.433	0.512
INB	109E-104-021	1/4	1/4 NPTF	0.472	0.236	0.740	1.693	0.512	0.531	0.433	0.591
INB	109E-104-022	1/4	3/8 NPTF	0.472	0.236	0.740	1.732	0.512	0.531	0.433	0.709
INB	109E-516-021	5/16	1/4 NPTF	0.591	0.236	0.925	1.909	0.512	0.531	0.551	0.591
INB	109E-308-020	3/8	1/8 NPTF	0.669	0.157	1.043	1.929	0.374	0.531	0.591	0.512
INB	109E-308-021	3/8	1/4 NPTF	0.709	0.236	1.043	2.067	0.512	0.531	0.591	0.591
INB	109E-308-022	3/8	3/8 NPTF	0.748	0.315	1.043	2.106	0.512	0.531	0.591	0.709

INB110 Union Tee



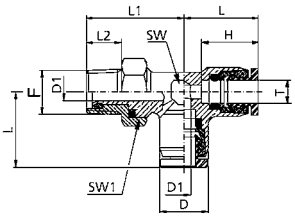
Brass Release Ring	INB110	Tube Diameter (T)	D	D1	L	H	SW
INB	110-108-000	1/8	0.394	0.094	0.638	0.472	0.354
INB	110-532-000	5/32	0.394	0.118	0.657	0.492	0.354
INB	110-104-000	1/4	0.472	0.157	0.740	0.531	0.433
INB	110-516-000	5/16	0.591	0.236	0.858	0.630	0.551
INB	110-308-000	3/8	0.709	0.295	1.004	0.669	0.630
INB	110-102-000	1/2	0.827	0.413	1.161	0.748	0.685

INB114 Swivel Branch Tee



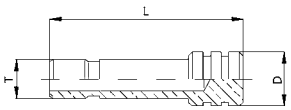
Brass Release Ring	INB114	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INB	114-108-036	1/8	10-32 UNF	0.394	0.087	0.638	0.630	0.165	0.472	0.354	0.354
INB	114-108-020	1/8	1/8 NPTF	0.394	0.157	0.638	0.874	0.374	0.472	0.354	0.512
INB	114-108-021	1/8	1/4 NPTF	0.394	0.157	0.638	1.008	0.512	0.472	0.354	0.591
INB	114-532-036	5/32	10-32 UNF	0.394	0.087	0.657	0.630	0.165	0.492	0.354	0.354
INB	114-532-020	5/32	1/8 NPTF	0.394	0.157	0.657	0.874	0.374	0.492	0.354	0.512
INB	114-532-021	5/32	1/4 NPTF	0.394	0.157	0.657	1.008	0.512	0.492	0.354	0.591
INB	114-104-020	1/4	1/8 NPTF	0.472	0.157	0.740	0.996	0.374	0.531	0.433	0.512
INB	114-104-021	1/4	1/4 NPTF	0.472	0.236	0.740	1.142	0.512	0.531	0.433	0.591
INB	114-104-022	1/4	3/8 NPTF	0.472	0.236	0.740	1.181	0.512	0.531	0.433	0.709
INB	114-516-020	5/16	1/8 NPTF	0.591	0.157	0.925	0.984	0.374	0.630	0.551	0.512
INB	114-516-021	5/16	1/4 NPTF	0.591	0.236	0.925	1.122	0.512	0.630	0.551	0.591
INB	114-308-020	3/8	1/8 NPTF	0.709	0.157	1.043	1.043	0.374	0.669	0.630	0.709
INB	114-308-021	3/8	1/4 NPTF	0.709	0.236	1.043	1.181	0.512	0.669	0.630	0.591
INB	114-308-022	3/8	3/8 NPTF	0.709	0.315	1.043	1.220	0.512	0.699	0.630	0.709
INB	114-308-023	3/8	1/2 NPTF	0.709	0.315	1.043	1.394	0.709	0.699	0.630	0.866
INB	114-102-021	1/2	1/4 NPTF	0.827	0.236	1.181	1.299	0.512	0.748	0.685	0.591
INB	114-102-022	1/2	3/8 NPTF	0.827	0.315	1.181	1.299	0.512	0.748	0.685	0.709
INB	114-102-023	1/2	1/2 NPTF	0.827	0.315	1.181	1.476	0.709	0.748	0.685	0.866

INB116 Swivel Run Tee



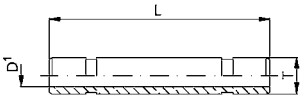
Brass Release Ring	INB116	Tube Diameter (T)	Thread (F)	D	D1	L	L1	L2	H	SW	SW1
INB	116-108-036	1/8	10-32 UNF	0.394	0.087	0.638	0.630	0.165	0.472	0.354	0.354
INB	116-108-020	1/8	1/8 NPTF	0.394	0.157	0.638	0.874	0.374	0.472	0.354	0.512
INB	116-108-021	1/8	1/4 NPTF	0.394	0.157	0.638	1.008	0.512	0.472	0.354	0.591
INB	116-532-036	5/32	10-32 UNF	0.394	0.087	0.657	0.630	0.165	0.492	0.354	0.354
INB	116-532-020	5/32	1/8 NPTF	0.394	0.157	0.657	0.874	0.374	0.492	0.354	0.512
INB	116-532-021	5/32	1/4 NPTF	0.394	0.157	0.657	1.008	0.512	0.492	0.354	0.591
INB	116-104-020	1/4	1/8 NPTF	0.472	0.157	0.740	0.996	0.374	0.531	0.433	0.512
INB	116-104-021	1/4	1/4 NPTF	0.472	0.236	0.740	1.142	0.512	0.531	0.433	0.591
INB	116-104-022	1/4	3/8 NPTF	0.472	0.236	0.740	1.181	0.512	0.531	0.433	0.709
INB	116-516-020	5/16	1/8 NPTF	0.591	0.157	0.925	0.984	0.374	0.630	0.551	0.512
INB	116-516-021	5/16	1/4 NPTF	0.591	0.236	0.925	1.122	0.512	0.630	0.551	0.591
INB	116-308-020	3/8	1/8 NPTF	0.709	0.157	1.043	1.043	0.374	0.669	0.630	0.512
INB	116-308-021	3/8	1/4 NPTF	0.709	0.236	1.043	1.181	0.512	0.669	0.630	0.591
INB	116-308-022	3/8	3/8 NPTF	0.709	0.315	1.043	1.220	0.512	0.699	0.630	0.709
INB	116-308-023	3/8	1/2 NPTF	0.709	0.315	1.043	1.394	0.709	0.699	0.630	0.866
INB	116-102-021	1/2	1/4 NPTF	0.827	0.236	1.181	1.299	0.512	0.748	0.685	0.591
INB	116-102-022	1/2	3/8 NPTF	0.827	0.315	1.181	1.299	0.512	0.748	0.685	0.709
INB	116-102-023	1/2	1/2 NPTF	0.827	0.315	1.181	1.476	0.709	0.748	0.685	0.866

IN118 Plug



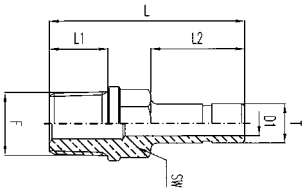
IN118	T	D	L
IN118-108-000	1/8	0.197	0.827
IN118-532-000	5/32	0.236	0.906
IN118-104-000	1/4	0.315	0.984
IN118-516-000	5/16	0.394	1.063
IN118-308-000	3/8	0.472	1.102
IN118-102-000	1/2	0.591	1.260

IN119 Double Male Union



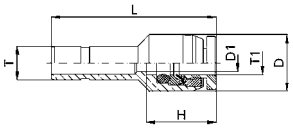
IN119	T	D1	L
IN119-108-000	1/8	0.063	1.102
IN119-532-000	5/32	0.079	1.181
IN119-104-000	1/4	0.157	1.260
IN119-516-000	5/16	0.236	1.535
IN119-308-000	3/8	0.295	1.614
IN119-102-000	1/2	0.394	1.811

IN120 Stem Adapter



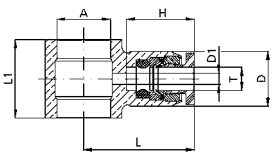
IN120	T	Thread (F)	D1	L	L1	L2	SW
IN120-108-020	1/8	1/8 NPTF	0.063	1.181	0.374	0.531	3/8
IN120-108-021	1/8	1/4 NPTF	0.063	1.358	0.512	0.531	1/2
IN120-532-020	5/32	1/8 NPTF	0.079	1.201	0.374	0.551	3/8
IN120-532-021	5/32	1/4 NPTF	0.079	1.378	0.512	0.551	1/2
IN120-104-020	1/4	1/8 NPTF	0.157	1.252	0.374	0.602	3/8
IN120-104-021	1/4	1/4 NPTF	0.157	1.429	0.512	0.602	1/2
IN120-516-020	5/16	1/8 NPTF	0.236	1.358	0.374	0.709	3/8
IN120-516-021	5/16	1/4 NPTF	0.236	1.535	0.512	0.709	1/2
IN120-308-021	3/8	1/4 NPTF	0.276	1.654	0.512	0.827	1/2
IN120-308-022	3/8	3/8 NPTF	0.276	1.673	0.512	0.827	19/32
IN120-102-022	1/2	3/8 NPTF	0.394	1.752	0.512	0.906	19/32
IN120-102-023	1/2	1/2 NPTF	0.394	1.949	0.709	0.906	11/16

INB121 Reducer



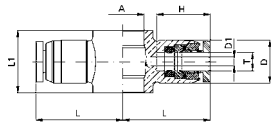
Brass Release Ring	INB121	T	T1	D	D1	L	H
INB	121-104-108	1/4	1/8	0.394	0.094	1.082	0.472
INB	121-104-532	1/4	5/32	0.394	0.118	1.142	0.492
INB	121-308-104	3/8	1/4	0.472	0.157	1.339	0.531
INB	121-102-104	1/2	1/4	0.472	0.157	1.417	0.531
INB	121-102-308	1/2	3/8	0.669	0.295	1.673	0.669

INB122 Single Banjo



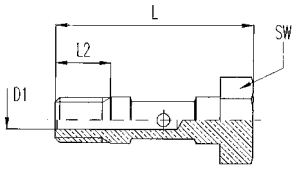
Brass Release Ring	IN122	Tube Diameter (T)	A	D	D1	L	L1	H
INB	122-532-036	5/32	10-32 UNF	0.394	0.110	0.748	0.472	0.492
INB	122-532-020	5/32	1/8 NPTF	0.394	0.118	0.795	0.571	0.492
INB	122-308-021	3/8	1/4 NPTF	0.709	0.295	1.067	0.709	0.669

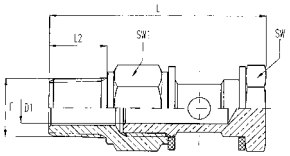
INB123 Double Banjo



Brass Release Ring	INB123	Tube Diameter (T)	A	D	D1	L	L1	H
INB	123-532-036	5/32	10-32 UNF	0.394	0.118	0.748	0.472	0.492
INB	123-104-020	1/4	1/8 NPTF	0.472	0.157	0.811	0.571	0.531
INB	123-104-021	1/4	1/4 NPTF	0.472	0.157	0.890	0.689	0.531
INB	123-308-021	3/8	1/4 NPTF	0.709	0.295	1.067	0.709	0.669

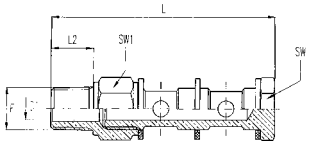
IN124 Single Manifold





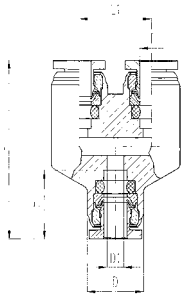
IN124	Thread (F)	L	L2	D1	SW	SW1
IN124-000-036	10-32 UNF	0.827	0.223	0.079	0.315	-
IN124-000-020	1/8 NPTF	1.634	0.374	0.197	0.551	0.551
IN124-000-021	1/4 NPTF	2.067	0.512	0.276	0.669	0.669

IN125 Double Manifold



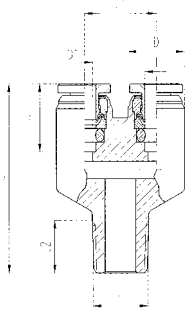
IN125	Thread (F)	L	L2	D1	SW	SW1
IN125-000-020	1/8 NPTF	2.187	0.374	0.197	0.551	0.551
IN125-000-021	1/4 NPTF	2.715	0.512	0.276	0.669	0.669

INB131 Union Y



Brass Release Ring	IN131	Tube Diameter (T)	L	H	L1	D	D1
INB	131-108-000	1/8	1.240	0.472	0.512	0.394	0.094
INB	131-532-000	5/32	1.280	0.492	0.512	0.394	0.118
INB	131-104-000	1/4	1.398	0.531	0.598	0.472	0.157

INB132 Male Y



Brass Release Ring	INB132	Tube Diameter (T)	Thread (F)	L2	L	H	L1	D	D1
INB	132-108-020	1/8	1/8 NPTF	0.374	1.339	0.472	0.512	0.394	0.094
INB	132-532-020	5/32	1/8 NPTF	0.374	1.350	0.492	0.512	0.394	0.118
INB	132-104-020	1/4	1/8 NPTF	0.165	1.319	0.472	0.512	0.394	0.094

How to Order

NB 102 – 006 – 001

Fitting Series
*N = Metric
NB = Metric (Brass Release Ring)

Thread Size
100 = Union
101 = Bulkhead Union
102 = Male Connector
104 = Male Connector
105 = Female Connector w/o external box
106 = Union Elbow
108 = Swivel Elbow
110 = Union Tee
113 = Swivel Branch Tee
115 = Swivel Run Tee
117 = Union Cross
*118 = Plug
*119 = Double Male Union
*120 = Stem Adapter
121 = Reducer
122 = Single Banjo
123 = Double Banjo
*124 = Single Manifold
*125 = Double Manifold

Options
(Blank) = BUNA-N O-Ring
F = Viton "O" Ring

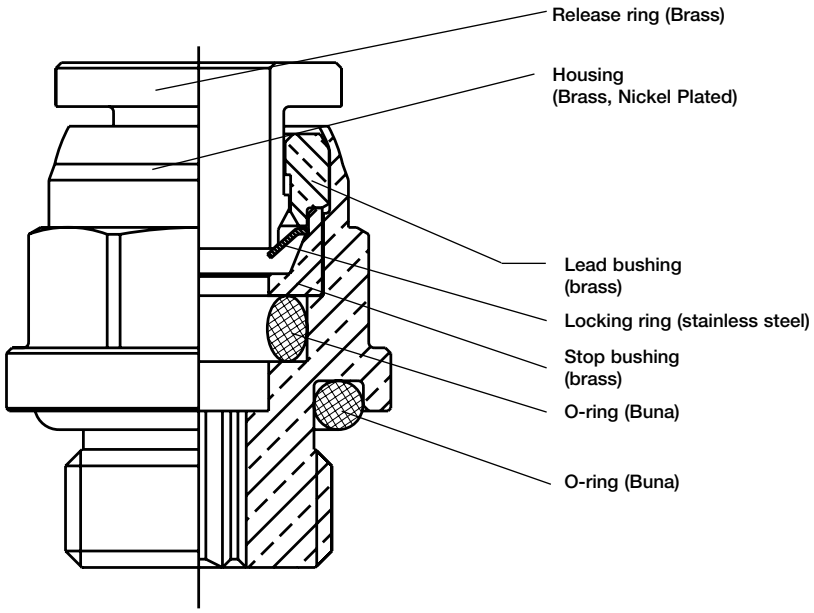
Thread Size
000 = 1/8 G
001 = 1/4 G
002 = 3/8 G
003 = 1/2 G
005 = M5

Tube Size
004 = 4mm
005 = 5mm
006 = 6mm
008 = 8mm
010 = 10mm
012 = 12mm
000 = No tube

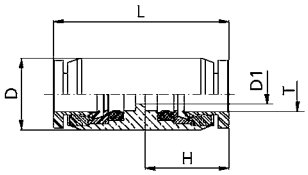
* See Fitting Style Charts on pgs 174-178 for available Tube and Thread Configurations

*Fittings with asterisk only available in "N" Fitting Series.
All other styles only available in "NB" Fitting Series

- **Pressure Rating to 265 psi**
- **Temperature range: -20°F to +176°F (BUNA N O-ring) +230°F (Viton O-ring)**
- **Push-in fittings with G Threads**
- **Tube diameter: 4mm to 12mm**
- **Thread size: M5 to 1/2 G**

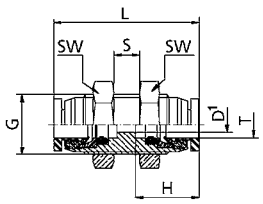


NB100 Union



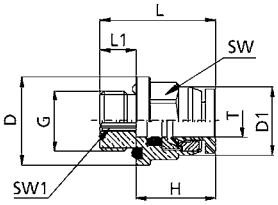
NB100	Tube Diameter (T)	D	D1	H	L
NB100-004-000	4.0	10.0	2.0	12.2	26.0
NB100-005-000	5.0	11.0	3.0	12.7	27.0
NB100-006-000	6.0	12.0	4.0	13.3	28.0
NB100-008-000	8.0	15.0	6.0	15.8	33.0
NB100-010-000	10.0	18.0	8.0	16.8	35.5
NB100-012-000	12.0	20.0	10.0	18.9	41.0

NB101 Bulkhead Union



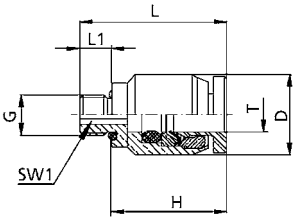
NB101	Tube Diameter (T)	External Thread (G)	D1	H	L	min. S	max. S	SW
NB101-004-000	4.0	M11	2.0	12.2	28.7	0	6	14
NB101-005-000	5.0	M12	3.0	12.7	29.2	0	6	15
NB101-006-000	6.0	M13	4.0	13.3	31.6	0	8	16
NB101-008-000	8.0	M16	6.0	15.8	36.5	0	8	19
NB101-010-000	10.0	M19	8.0	16.8	41.6	0	11	22
NB101-012-000	12.0	M22	10.0	18.9	48.0	0	15	26

NB102 Male Connector



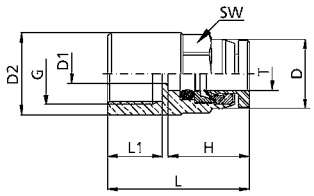
NB102	Tube Diameter (T)	Thread (G)	D	D1	H	L	L1	SW	SW1
NB102-004-000	4.0	1/8	14.0	9.9	12.2	18.1	5.7	10	3
NB102-004-001	4.0	1/4	17.0	9.9	12.2	18.8	6.0	10	3
NB102-005-000	5.0	1/8	14.0	10.9	12.7	18.8	5.7	11	3
NB102-005-001	5.0	1/4	17.0	10.9	12.7	19.2	6.0	11	3
NB102-006-000	6.0	1/8	14.0	11.9	13.3	19.0	5.7	12	4
NB102-006-001	6.0	1/4	17.0	11.9	13.3	19.8	6.0	12	4
NB102-008-000	8.0	1/8	17.0	15.0	15.8	24.5	5.7	15	6
NB102-008-001	8.0	1/4	19.0	15.0	15.8	22.0	6.0	16	6
NB102-008-002	8.0	3/8	21.0	15.0	15.8	22.7	6.5	16	6
NB102-010-001	10.0	1/4	20.0	17.4	16.8	25.3	6.0	18	7
NB102-010-002	10.0	3/8	22.0	17.4	16.8	23.3	6.5	18	7
NB102-010-003	10.0	1/2	26.0	17.4	16.8	28.3	9.5	18	7
NB102-012-001	12.0	1/4	22.0	20.0	18.9	27.4	6.0	20	7
NB102-012-002	12.0	3/8	22.0	20.0	18.9	28.0	6.0	20	7
NB102-012-003	12.0	1/2	26.0	20.0	18.9	31.5	9.5	20	9

NB104 Male Connector without External Hex



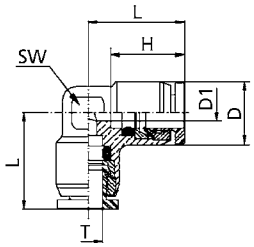
NB104	Tube Diameter (T)	Thread (G)	D	H	L	L1	SW1
NB104-004-005	4.0	M5	10.0	14.4	18.4	4.0	2
NB104-005-005	5.0	M5	11.0	14.7	18.7	4.0	2
NB104-006-005	6.0	M5	12.0	15.3	19.3	4.0	2

NB105 Female Connector



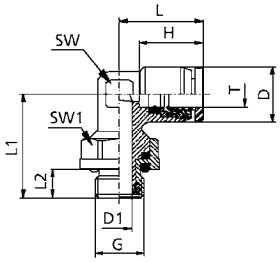
NB105	Tube Diameter (T)	Thread (G)	D	D1	D2	H	L	L1	SW
NB105-004-005	4.0	M5	9.9	2.0	8.0	12.2	19.4	5.5	10
NB105-004-000	4.0	1/8	9.9	2.0	12.0	12.2	22.4	8.5	10
NB105-005-005	5.0	M5	10.9	3.0	8.0	12.7	19.7	5.5	11
NB105-005-001	5.0	1/4	10.9	3.0	17.0	12.7	24.7	10.5	11
NB105-006-000	6.0	1/8	11.9	4.0	12.0	13.3	23.3	8.5	12
NB105-006-001	6.0	1/4	11.9	4.0	17.0	13.3	25.3	10.5	12
NB105-008-000	8.0	1/8	15.0	6.0	12.0	15.8	25.8	8.5	15
NB105-008-001	8.0	1/4	15.0	6.0	17.0	15.8	28.3	10.5	15
NB105-010-001	10.0	1/4	17.4	8.0	17.0	16.8	29.3	10.5	18
NB105-010-002	10.0	3/8	17.4	8.0	20.0	16.8	30.3	11.5	18
NB105-012-001	12.0	1/4	20.0	10.0	22.0	18.9	32.0	10.5	20
NB105-012-002	12.0	3/8	20.0	10.0	22.0	18.9	33.0	11.5	20
NB102-012-003	12.0	1/2	20.0	10.0	26.0	18.9	37.4	16.0	20

NB106 Union Elbow



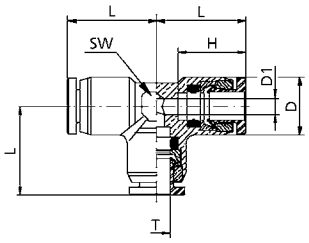
NB106	Tube Diameter (T)	D	D1	H	L	SW
NB106-004-000	4.0	9.9	2.0	12.2	16.6	9
NB106-005-000	5.0	10.9	3.0	12.7	16.6	10
NB106-006-000	6.0	11.9	4.0	13.3	19.1	11
NB106-008-000	8.0	15.0	6.0	15.8	21.8	14
NB106-010-001	10.0	17.4	8.0	16.8	25.3	16
NB106-012-000	12.0	20.4	10.0	18.9	29.1	17

NB108 Swivel Elbow



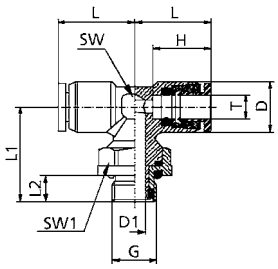
NB108	Tube Diameter (T)	Thread (G)	D	D1	H	L	L1	L2	SW	SW1
NB108-004-005	4.0	M5	9.9	2.3	12.2	16.6	16.5	4.0	9	9
NB108-004-000	4.0	1/8	9.9	4.0	12.2	16.6	19.8	5.7	9	13
NB108-004-001	4.0	1/4	9.9	4.0	12.2	16.6	20.0	6.0	9	15
NB108-005-005	5.0	M5	10.9	2.3	12.7	16.6	18.0	4.0	10	9
NB108-005-000	5.0	1/8	10.9	4.0	12.7	16.6	20.0	5.7	10	13
NB108-005-001	5.0	1/4	10.9	4.0	12.7	16.6	20.2	6.0	10	15
NB108-006-005	6.0	M5	11.9	2.3	13.3	19.1	18.5	4.0	11	9
NB108-006-000	6.0	1/8	11.9	4.0	13.3	19.1	20.9	5.7	11	13
NB108-006-001	6.0	1/4	11.9	6.0	13.3	19.1	21.0	6.0	11	15
NB108-008-000	8.0	1/8	15.0	4.0	15.8	23.3	22.7	5.7	14	13
NB108-008-001	8.0	1/4	15.0	6.0	15.8	23.3	22.7	6.0	14	15
NB108-008-002	8.0	3/8	15.0	8.0	15.8	23.3	25.2	6.5	14	18
NB108-010-000	10.0	1/8	17.4	4.0	16.8	26.5	24.0	5.7	16	13
NB108-010-001	10.0	1/4	17.4	6.0	16.8	26.5	24.1	6.0	16	15
NB108-010-002	10.0	3/8	17.4	8.0	16.8	26.5	26.4	6.5	16	18
NB108-010-003	10.0	1/2	17.4	8.0	16.8	26.5	30.4	9.5	16	18
NB108-012-001	12.0	1/4	20.0	6.0	18.9	29.1	27.3	6.0	17	15
NB108-012-002	12.0	3/8	20.0	8.0	18.9	29.1	29.5	6.5	17	18
NB108-012-003	12.0	1/2	20.0	8.0	18.9	29.1	33.5	9.5	17	18

NB110 Union Tee



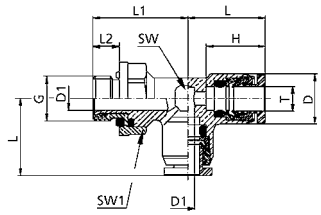
NB110	Tube Diameter (T)	D	D1	H	L	SW
NB110-004-000	4.0	9.9	2.0	12.2	16.6	9
NB110-005-000	5.0	10.9	3.0	12.7	16.6	10
NB110-006-000	6.0	11.9	4.0	13.3	19.1	11
NB110-008-000	8.0	15.0	6.0	15.8	21.8	14
NB110-010-000	10.0	17.4	8.0	16.8	25.3	16
NB110-012-000	12.0	20.4	10.0	18.9	29.1	17

NB113 Swivel Branch Tee



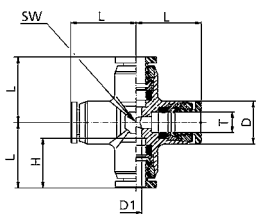
NB113	Tube Diameter (T)	Thread (G)	D	D1	H	L	L1	L2	SW	SW1
NB113-004-000	4.0	1/8	9.9	4.0	12.2	16.6	19.8	5.7	9	13
NB113-006-000	6.0	1/8	11.9	4.0	13.3	19.1	20.9	5.7	11	13
NB113-006-001	6.0	1/4	11.9	6.0	13.3	19.1	21.5	6.0	11	15
NB113-008-000	8.0	1/8	15.0	4.0	15.8	23.3	22.7	5.7	14	13
NB113-008-001	8.0	1/4	15.0	6.0	15.8	23.3	22.7	6.0	14	15
NB113-008-002	8.0	3/8	15.0	8.0	15.8	23.3	25.2	6.5	14	18
NB113-010-001	10.0	1/4	17.4	6.0	16.8	26.5	24.1	6.0	16	15
NB113-010-002	10.0	3/8	17.4	8.0	16.8	26.5	26.4	6.5	16	18
NB113-010-003	10.0	1/2	17.4	8.0	16.8	26.5	30.4	9.0	16	18
NB113-012-001	12.0	1/4	20.0	6.0	18.9	29.1	27.3	6.0	17	15
NB113-012-002	12.0	3/8	20.0	8.0	18.9	29.1	29.5	6.5	17	18
NB113-012-003	12.0	1/2	20.0	8.0	18.9	29.1	33.5	8.5	17	18

NB115 Swivel Run Tee



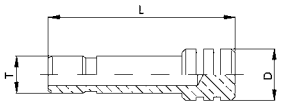
NB115	Tube Diameter (T)	Thread (G)	D	D1	H	L	L1	L2	SW	SW1
NB115-004-000	4.0	1/8	9.9	4.0	12.2	16.6	19.8	5.7	9	13
NB115-005-000	5.0	1/8	10.9	4.0	12.7	16.6	20.0	5.7	10	13
NB115-006-000	6.0	1/8	11.9	4.0	13.3	19.1	20.9	5.7	11	13
NB115-006-001	6.0	1/4	11.9	6.0	13.3	19.1	21.5	6.0	11	15
NB115-008-000	8.0	1/8	15.0	4.0	15.8	23.3	22.7	5.7	14	13
NB115-008-001	8.0	1/4	15.0	6.0	15.8	23.3	22.7	6.0	14	15
NB115-008-002	8.0	3/8	15.0	8.0	15.8	23.3	25.2	6.5	14	18
NB115-010-001	10.0	1/4	17.4	6.0	16.8	26.5	24.1	6.0	16	15
NB115-010-002	10.0	3/8	17.4	8.0	16.8	26.5	26.4	6.5	16	18
NB115-010-003	10.0	1/2	17.4	8.0	16.8	26.5	30.4	9.5	16	18
NB115-012-002	12.0	3/8	20.0	8.0	18.9	29.1	29.5	6.5	17	18
NB115-012-003	12.0	1/2	20.0	8.0	18.9	29.1	33.5	9.5	17	18

NB117 Union Cross



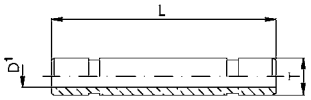
NB117	Tube Diameter (T)	D	D1	H	L	SW
NB117-004-000	4.0	9.9	2.0	12.2	16.6	9
NB117-005-000	5.0	10.9	3.0	12.7	16.6	10
NB117-006-000	6.0	11.9	4.0	13.3	19.1	11
NB117-008-000	8.0	15.0	6.0	15.8	21.8	14
NB117-010-000	10.0	17.4	8.0	16.8	25.3	16
NB117-012-000	12.0	20.4	10.0	18.9	29.1	17

N118 Plug



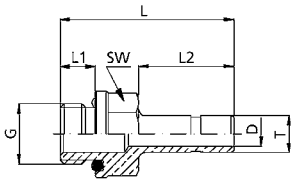
N118	Tube Diameter (T)	D	L
N118-004-000	4.0	6.0	23.1
N118-005-000	5.0	7.0	25.1
N118-006-000	6.0	8.0	25.1
N118-008-000	8.0	10.0	27.1
N118-010-000	10.0	12.0	28.1
N118-012-000	12.0	14.0	32.0

N119 Double Male Union



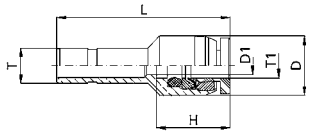
N119	Tube Diameter (T)	D	L
N119-004-000	4.0	2.0	30.0
N119-006-000	6.0	4.0	32.0
N119-008-000	8.0	6.0	38.0
N119-010-000	10.0	8.0	41.0
N119-012-000	12.0	10.0	46.0

N120 Stem Adapter



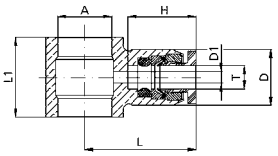
N120	Tube Diameter (T)	Thread (G)	D	L	L1	L2	SW
N120-004-005	4.0	M5	2.0	23.0	4.0	14.0	9
N120-004-000	4.0	1/8	2.0	26.7	5.7	14.0	12
N120-004-001	4.0	1/4	2.0	27.0	6.0	14.0	15
N120-005-000	5.0	1/8	3.0	27.7	5.7	15.0	12
N120-006-005	6.0	M5	2.0	24.3	4.0	15.3	9
N120-006-000	6.0	1/8	4.0	28.0	5.7	15.3	12
N120-006-001	6.0	1/4	4.0	28.3	6.0	15.3	15
N120-008-000	8.0	1/8	6.0	30.7	5.7	18.0	12
N120-008-001	8.0	1/4	6.0	31.0	6.0	18.0	15
N120-010-001	10.0	1/4	8.0	34.0	6.0	21.0	15
N120-010-002	10.0	3/8	8.0	35.0	6.5	21.0	18
N120-010-003	10.0	1/2	8.0	40.0	9.5	21.0	18
N120-012-001	12.0	1/4	10.0	36.0	6.0	23.0	15
N120-012-003	12.0	1/2	10.0	42.0	9.5	23.0	18

NB121 Reducer



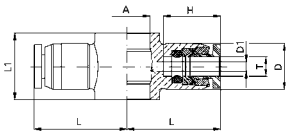
NB121	from Tube Diameter (T)	to Tube Diameter (T1)	D	D1	H	L
NB121-005-000	5.0	4.0	10.0	3.0	12.2	28.2
NB121-006-000	6.0	4.0	10.0	3.0	12.2	29.2
NB121-006-001	6.0	5.0	11.0	3.0	12.7	29.6
NB121-008-000	8.0	4.0	10.0	2.0	12.2	32.2
NB121-008-001	8.0	5.0	11.0	3.0	12.7	32.5
NB121-008-002	8.0	6.0	12.0	4.0	13.3	33.1
NB121-010-002	10.0	6.0	12.0	4.0	13.3	25.9
NB121-010-003	10.0	8.0	15.0	6.0	15.8	38.3
NB121-012-002	12.0	6.0	12.0	4.0	13.3	36.3
NB121-012-003	12.0	8.0	15.0	6.0	15.8	40.3
NB121-012-004	12.0	10.0	18.0	8.0	16.8	42.8

NB122 Single Banjo



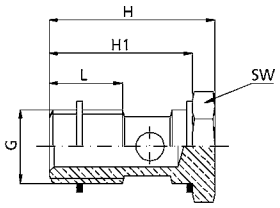
NB122	Tube Diameter (T)	for Banjo Bolts (A)	D	D1	H	L	L1
NB122-004-000	4.0	1/8	10.0	2.0	12.2	20.2	14.5
NB122-006-005	6.0	M5	12.0	4.0	13.3	20.6	12.0
NB122-006-000	6.0	1/8	12.0	4.0	13.3	20.6	14.5
NB122-006-001	6.0	1/4	12.0	4.0	13.3	22.6	14.5
NB122-008-000	8.0	1/8	15.0	6.0	15.8	23.8	17.5
NB122-008-001	8.0	1/4	15.0	6.0	15.8	25.8	17.5
NB122-010-001	10.0	1/4	17.6	8.0	16.8	27.1	18.0

NB123 Double Banjo



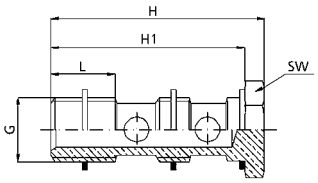
NB123	Tube Diameter (T)	for Banjo Bolts (A)	D	D1	H	L	L1
NB123-004-005	4.0	M5	10.0	2.0	12.2	19.0	12.0
NB123-004-000	4.0	1/8	10.0	2.0	12.2	20.2	14.5
NB123-006-005	6.0	M5	12.0	4.0	13.3	20.6	12.0
NB123-006-000	6.0	1/8	12.0	4.0	13.3	20.6	14.5
NB123-006-001	6.0	1/4	12.0	4.0	13.3	22.6	14.5
NB123-008-001	8.0	1/4	15.0	6.0	15.8	25.8	17.5

N124 Single Manifold



N124	Thread (F)	L	L2	D1	SW	SW1
N124-000-036	10-32 UNF	0.827	0.223	0.079	0.315	-
N124-004-000	1/8 NPTF	1.634	0.374	0.197	0.551	0.551
N124-000-001	1/4 NPTF	2.067	0.512	0.276	0.669	0.669

N125 Double Manifold



N125	Thread (G)	H	H1	L	SW
N125-000-000	1/8	43.0	39.0	8.0	14
N125-000-001	1/4	45.5	41.0	11.0	17

How to Order

INP 109 – 104 – 022

Fitting Series
INP =NPTF/Inch Plastic Tube

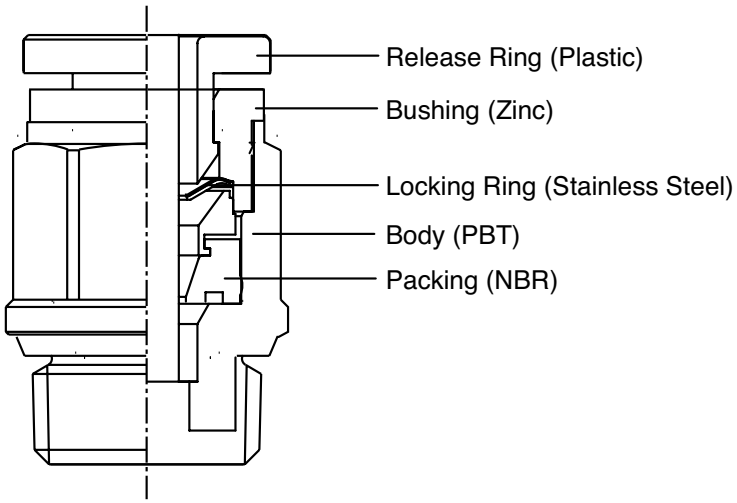
Fitting Style
100 = Union
103 = Male Connector
106 = Union Elbow
109 = Swivel Elbow
110 = Union Tee
114 = Swivel Branch Tee
116 = Swivel Run Tee
131 = Union Y
132 = Male Y

Thread Size
000 = No Thread
036 = 10-32 UNF
020 = 1/8 NPTF
021 = 1/4 NPTF
022 = 3/8 NPTF
023 = 1/2 NPTF

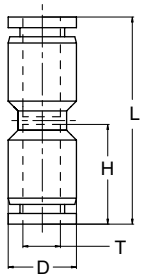
Tube Size
532 = 5/32"
104 = 1/4"
516 = 5/16"
308 = 3/8"
102 = 1/2"

* See Fitting Style Charts on pgs 180-182 for available Tube and Thread Configurations

- **Pressure Rating to 215 psi**
- **Vacuum Rating to 29 Inches of Mercury**
- **Temperature range: -20°F to +140˚F**
- **Push-in fittings with NPTF Threads**
- **Teflon thread sealant**
- **Tube diameter: 1/8" to 1/2"**
- **Thread size: 10-32 UNF to 1/2 NPTF**
- **Body made of PBT Resin**

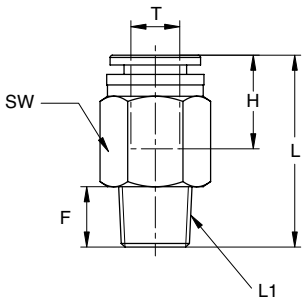


INP100 Union



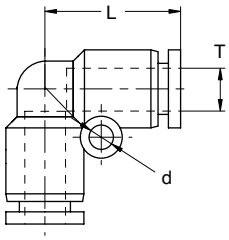
INP100	Tube Diameter (T)	D	L	H
INP100-532-000	5/32	0.433	1.197	0.555
INP100-104-000	1/4	0.528	1.358	0.624
INP100-516-000	5/16	0.583	1.500	0.713
INP100-308-000	3/8	0.724	1.843	0.823
INP100-102-000	1/2	0.854	1.874	0.870

INP103 Male Connector



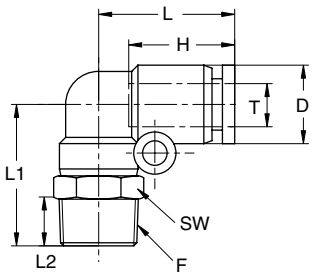
INP103	Tube Diameter (T)	Thread (F)	L	L1	H	SW
INP103-532-020	5/32	1/8 NPTF	0.795	0.315	0.516	7/16
INP103-532-021	5/32	1/4 NPTF	0.772	0.433	0.516	9/16
INP103-104-020	1/4	1/8 NPTF	0.982	0.315	0.585	1/2
INP103-104-021	1/4	1/4 NPTF	0.982	0.433	0.585	9/16
INP103-104-022	1/4	3/8 NPTF	0.904	0.472	0.585	11/16
INP103-516-020	5/16	1/8 NPTF	1.047	0.315	0.654	9/16
INP103-516-021	5/16	1/4 NPTF	1.047	0.433	0.654	9/16
INP103-308-020	3/8	1/8 NPTF	1.173	0.315	0.764	11/16
INP103-308-021	3/8	1/4 NPTF	1.311	0.433	0.764	11/16
INP103-308-022	3/8	3/8 NPTF	1.193	0.472	0.764	11/16
INP103-308-023	3/8	1/2 NPTF	1.213	0.591	0.764	7/8
INP103-102-021	1/2	1/4 NPTF	1.350	0.433	0.831	7/8
INP103-102-022	1/2	3/8 NPTF	1.390	0.472	0.831	7/8
INP103-102-023	1/2	1/2 NPTF	1.350	0.591	0.831	7/8

INP106 Union Elbow



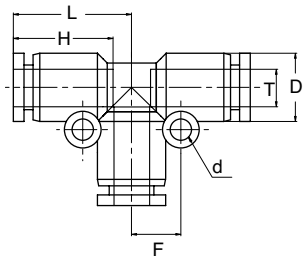
INP106	Tube Diameter (T)	L	d
INP106-532-000	5/32	0.638	-
INP106-104-000	1/4	0.766	0.126
INP106-516-000	5/16	0.878	0.126
INP106-308-000	3/8	1.067	0.165
INP106-102-000	1/2	1.154	0.169

INP109 Swivel Elbow



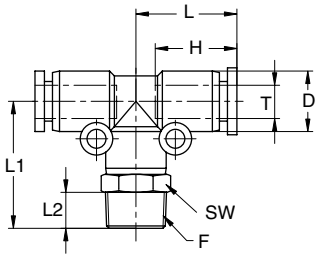
INP109	Tube Diameter (T)	Thread (F)	D	L	L1	L2	H	SW
INP109-532-036	5/32	10-32 UNF	0.433	0.638	0.669	0.157	0.535	7/16
INP109-532-020	5/32	1/8 NPTF	0.433	0.638	0.965	0.315	0.535	7/16
INP109-532-021	5/32	1/4 NPTF	0.433	0.638	1.122	0.433	0.535	9/16
INP109-104-036	1/4	10-32 UNF	0.528	0.766	0.689	0.157	0.624	1/2
INP109-104-020	1/4	1/8 NPTF	0.528	0.766	1.063	0.315	0.624	1/2
INP109-104-021	1/4	1/4 NPTF	0.528	0.766	1.201	0.433	0.624	9/16
INP109-104-022	1/4	3/8 NPTF	0.528	0.766	1.260	0.472	0.624	11/16
INP109-516-020	5/16	1/8 NPTF	0.583	0.878	1.181	0.315	0.713	9/16
INP109-516-021	5/16	1/4 NPTF	0.583	0.878	1.299	0.433	0.713	9/16
INP109-308-020	3/8	1/8 NPTF	0.724	1.067	1.370	0.315	0.803	11/16
INP109-308-021	3/8	1/4 NPTF	0.724	1.067	1.488	0.433	0.803	11/16
INP109-308-022	3/8	3/8 NPTF	0.724	1.067	1.528	0.472	0.803	11/16
INP109-308-023	3/8	1/2 NPTF	0.724	1.067	1.665	0.591	0.803	7/8
INP109-102-021	1/2	1/4 NPTF	0.854	1.154	1.594	0.433	0.870	7/8
INP109-102-022	1/2	3/8 NPTF	0.854	1.154	1.634	0.472	0.870	7/8
INP109-102-023	1/2	1/2 NPTF	0.854	1.154	1.752	0.591	0.870	7/8

INP110 Union Tee



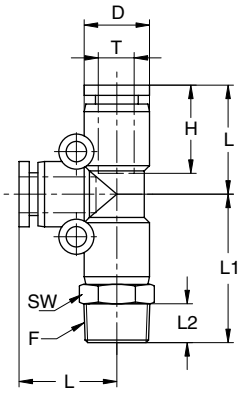
INP110	Tube Diameter (T)	D	L	H	F	d
INP110-532-000	5/32	0.433	0.677	0.555	0.276	0.126
INP110-104-000	1/4	0.528	0.774	0.624	0.327	0.126
INP110-516-000	5/16	0.583	0.876	0.693	0.354	0.126
INP110-308-000	3/8	0.724	1.094	0.823	0.472	0.165
INP110-102-000	1/2	0.854	1.154	0.870	0.543	0.169

INP114 Swivel Branch Tee



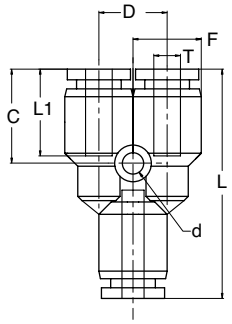
INP114	Tube Diameter (T)	Thread (F)	D	L	L1	L2	H	SW
INP114-532-036	5/32	10-32 UNF	0.433	0.638	0.886	0.157	0.535	7/16
INP114-532-020	5/32	1/8 NPTF	0.433	0.638	0.965	0.315	0.535	7/16
INP114-532-021	5/32	1/4 NPTF	0.433	0.638	1.122	0.433	0.535	9/16
INP114-104-036	1/4	10-32 UNF	0.528	0.766	0.925	0.157	0.624	1/2
INP114-104-020	1/4	1/8 NPTF	0.528	0.766	1.063	0.315	0.624	1/2
INP114-104-021	1/4	1/4 NPTF	0.528	0.766	1.201	0.433	0.624	9/16
INP114-104-022	1/4	3/8 NPTF	0.528	0.766	1.260	0.472	0.624	11/16
INP114-516-020	5/16	1/8 NPTF	0.583	0.878	1.181	0.315	0.713	9/16
INP114-516-021	5/16	1/4 NPTF	0.583	0.878	1.299	0.433	0.713	9/16
INP114-308-021	3/8	1/4 NPTF	0.724	1.067	1.488	0.433	0.803	11/16
INP114-308-022	3/8	3/8 NPTF	0.724	1.067	1.528	0.472	0.803	11/16
INP114-308-023	3/8	1/2 NPTF	0.724	1.067	1.665	0.591	0.803	7/8
INP114-102-021	1/2	1/4 NPTF	0.854	1.154	1.594	0.433	0.870	7/8
INP114-102-022	1/2	3/8 NPTF	0.854	1.154	1.634	0.472	0.870	7/8
INP114-102-023	1/2	1/2 NPTF	0.854	1.154	1.752	0.591	0.870	7/8

INP116 Swivel Run Tee



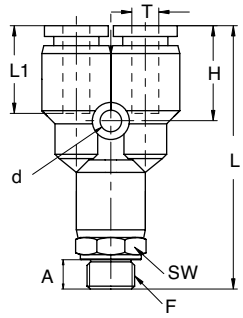
INP116	Tube Diameter (T)	Thread (F)	D	L	L1	L2	H	SW
INP116-532-036	5/32	10-32 UNF	0.433	0.638	0.886	0.157	0.535	7/16
INP116-532-020	5/32	1/8 NPTF	0.433	0.638	0.965	0.315	0.535	7/16
INP116-532-021	5/32	1/4 NPTF	0.433	0.638	1.122	0.433	0.535	9/16
INP116-104-036	1/4	10-32 UNF	0.528	0.766	0.925	0.157	0.624	1/2
INP116-104-020	1/4	1/8 NPTF	0.528	0.766	1.063	0.315	0.624	1/2
INP116-104-021	1/4	1/4 NPTF	0.528	0.766	1.201	0.433	0.624	9/16
INP116-104-022	1/4	3/8 NPTF	0.528	0.766	1.260	0.472	0.624	11/16
INP116-516-020	5/16	1/8 NPTF	0.583	0.878	1.181	0.315	0.713	9/16
INP116-516-021	5/16	1/4 NPTF	0.583	0.878	1.299	0.433	0.713	9/16
INP116-308-021	3/8	1/4 NPTF	0.724	1.067	1.488	0.433	0.803	11/16
INP116-308-022	3/8	3/8 NPTF	0.724	1.067	1.528	0.472	0.803	11/16
INP116-308-023	3/8	1/2 NPTF	0.724	1.067	1.665	0.591	0.803	7/8
INP116-102-021	1/2	1/4 NPTF	0.854	1.154	1.594	0.433	0.870	7/8
INP116-102-022	1/2	3/8 NPTF	0.854	1.154	1.634	0.472	0.870	7/8
INP116-102-023	1/2	1/2 NPTF	0.854	1.154	1.752	0.591	0.870	7/8

INP131 Union Y



INP131	Tube Diameter (T)	D	L	L1	C	F	d
INP131-532-000	5/32	0.433	1.295	0.433	0.535	0.394	0.126
INP131-104-000	1/4	0.528	1.433	0.528	0.604	0.413	0.126
INP131-516-000	5/16	0.583	1.551	0.591	0.673	0.528	0.126
INP131-308-000	3/8	0.724	1.917	0.709	0.783	0.610	0.165
INP131-102-000	1/2	0.854	2.051	0.846	0.870	0.630	0.165

INP132 Male Y



INP132	Tube Diameter (T)	Thread (F)	L	L1	A	H	d	SW
INP132-532-020	5/32	1/8 NPTF	1.622	0.433	0.394	0.535	0.126	7/16
INP132-532-021	5/32	1/4 NPTF	1.780	0.433	0.394	0.535	0.126	9/16
INP132-104-020	1/4	1/8 NPTF	1.732	0.528	0.413	0.604	0.126	1/2
INP132-104-021	1/4	1/4 NPTF	1.870	0.528	0.413	0.604	0.126	9/16
INP132-516-020	5/16	1/8 NPTF	1.854	0.591	0.528	0.673	0.126	9/16
INP132-516-021	5/16	1/4 NPTF	1.972	0.591	0.528	0.673	0.126	9/16
INP132-308-021	3/8	1/4 NPTF	2.339	0.709	0.610	0.783	0.165	11/16
INP132-308-022	3/8	3/8 NPTF	2.378	0.709	0.610	0.783	0.165	11/16
INP132-102-022	1/2	3/8 NPTF	2.531	0.846	0.630	0.870	0.165	7/8

How to Order

NP 109 – 104 – 022

Fitting Series
NP = Metric Plastic Fittings

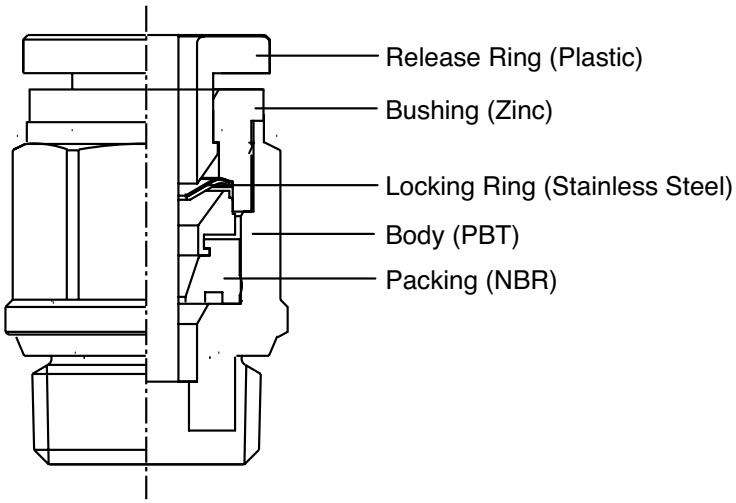
Fitting Style
100 = Union
102 = Male Connector
106 = Union Elbow
108 = Swivel Elbow
110 = Union Tee
113 = Swivel Branch Tee
115 = Swivel Run Tee
131 = Union Y
132 = Male Y

Thread Size
000 = 1/8 G
001 = 1/4 G
002 = 3/8 G
003 = 1/2 G
005 = M5

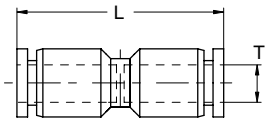
Tube Size
004 = 4mm
006 = 6mm
008 = 8mm
010 = 10mm
012 = 12mm

* See Fitting Style Charts on pgs 184-185 for available Tube and Thread Configurations

- **Pressure Rating to 215 psi**
- **Vacuum Rating to 29 Inches of Mercury**
- **Temperature range: -20°F to +140°F**
- **Push-in fittings with G Threads**
- **Tube diameter: 4mm to 12mm**
- **Thread size: M5 to 1/2 G**
- **Body made of PBT Resin**

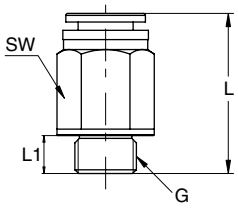


NP100 Union



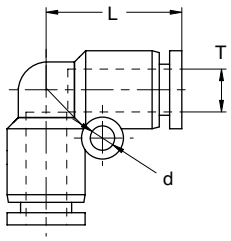
NP100	Tube Diameter (T)	L
NP100-004-000	4.0	33.0
NP100-006-000	6.0	35.2
NP100-008-000	8.0	39.1
NP100-010-000	10.0	47.8
NP100-012-000	12.0	49.2

NP102 All-Composite Straight Connector



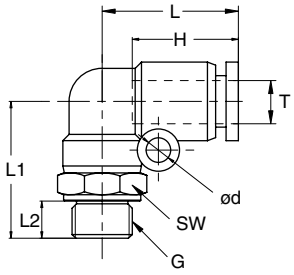
NP102	Tube Diameter (T)	Thread (G)	L	L1	SW
NP102-006-000	6.0	1/8	25.0	5.5	12
NP102-006-001	6.0	1/4	24.0	7.5	14
NP102-008-000	8.0	1/8	26.6	5.5	14
NP102-008-001	8.0	1/4	25.6	7.5	14
NP102-008-002	8.0	3/8	23.8	8.5	17
NP102-010-001	10.0	1/4	33.3	7.5	17
NP102-010-002	10.0	3/8	29.8	8.5	17
NP102-010-003	10.0	1/2	30.8	11.0	21
NP102-012-002	12.0	3/8	30.6	8.5	21
NP102-012-003	12.0	1/2	33.6	11.0	21

NP106 Union Elbow



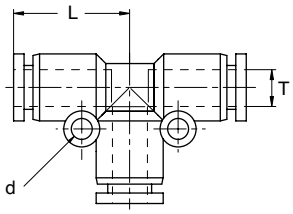
NP106	Tube Diameter (T)	L	d
NP106-004-000	4.0	17.5	-
NP106-006-000	6.0	19.0	3.2
NP106-008-000	8.0	22.8	3.2
NP106-010-000	10.0	27.6	4.2
NP106-012-000	12.0	29.6	4.3

NP108 Swivel Elbow



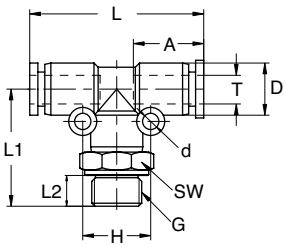
NP108	Tube Diameter (T)	Thread (G)	H	L	L1	L2	SW
NP108-004-005	4.0	M5	15.1	17.5	17.0	4.0	10
NP108-004-000	4.0	1/8	15.1	17.7	24.5	5.5	14
NP108-004-001	4.0	1/4	15.1	17.7	27.0	7.5	17
NP108-006-005	6.0	M5	16.0	19.0	17.5	4.0	12
NP108-006-000	6.0	1/8	16.0	19.3	25.7	5.5	14
NP108-006-001	6.0	1/4	16.0	19.3	28.2	7.5	17
NP108-006-002	6.0	3/8	16.0	19.3	29.7	8.5	20
NP108-008-000	8.0	1/8	18.1	22.8	29.0	5.5	14
NP108-008-001	8.0	1/4	18.1	22.8	31.5	7.5	17
NP108-008-002	8.0	3/8	18.1	22.8	33.0	8.5	20
NP108-010-000	10.0	1/8	20.4	27.6	33.8	5.5	17
NP108-010-001	10.0	1/4	20.4	27.6	35.8	7.5	17
NP108-010-002	10.0	3/8	20.4	27.6	37.3	8.5	20
NP108-010-003	10.0	1/2	20.4	27.6	41.3	11.0	24
NP108-012-001	12.0	1/4	23.2	29.6	38.0	7.5	21
NP108-012-002	12.0	3/8	23.2	29.6	39.0	8.5	21
NP108-012-003	12.0	1/2	23.2	29.6	43.0	11.0	24

NP110 Union Tee



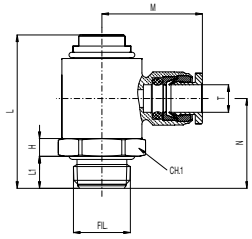
NP110	Tube Diameter (T)	L	d
NP110-004-000	4.0	18.5	3.2
NP110-006-000	6.0	19.3	3.2
NP110-008-000	8.0	22.75	3.2
NP110-010-000	10.0	28.3	4.2
NP110-012-000	12.0	29.6	4.3

NP113 Swivel Branch Tee



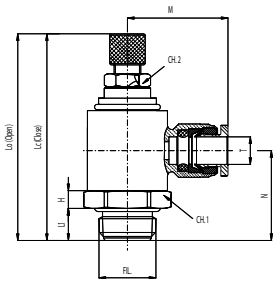
NP113	Tube Diameter (T)	Thread (G)	D	A	H	L	L1	L2	d	SW
NP113-004-005	4.0	M5	11.0	14.0	15.1	37.4	22.5	4.0	3.2	10
NP113-004-000	4.0	1/8	11.0	14.0	15.1	37.4	25.5	5.5	3.2	14
NP113-006-005	6.0	M5	13.0	16.0	16.0	39.2	23.5	4.0	3.2	12
NP113-006-000	6.0	1/8	13.0	16.0	16.0	39.2	26.0	5.5	3.2	14
NP113-006-001	6.0	1/4	13.0	16.0	16.0	39.2	28.5	7.5	3.2	17
NP113-008-000	8.0	1/8	14.8	18.0	18.1	45.5	29.0	29.0	3.2	14
NP113-008-001	8.0	1/4	14.8	18.0	18.1	45.5	31.5	31.5	3.2	17
NP113-008-002	8.0	3/8	14.8	18.0	18.1	45.5	33.0	33.0	3.2	20
NP113-010-001	10.0	1/4	18.4	24.0	20.4	56.3	36.5	36.5	4.2	17
NP113-010-002	10.0	3/8	18.4	24.0	20.4	56.3	38.0	38.0	4.2	20
NP113-010-003	10.0	1/2	18.4	24.0	20.4	56.3	42.0	42.0	4.2	24
NP113-012-001	12.0	1/4	21.0	27.0	23.2	59.2	38.0	38.0	4.2	21
NP113-012-002	12.0	3/8	21.0	27.0	23.2	59.2	39.0	39.0	4.2	21
NP113-012-003	12.0	1/2	21.0	27.0	23.2	59.2	43.0	43.0	4.2	24

INWB1391C World Thread Flow Control – Inch Tube



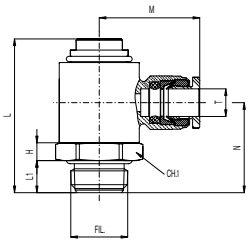
Brass Release Ring	INWB1391C	Tube Diameter (T)	Thread (F)	L	M	N	L1	CH.1	H
INB	1391C-108-020	1/8	1/8	42.4	20.5	24.0	4.9	14	6
INB	**1391C-532-020**	5/32	1/8	42.4	21.0	24.0	4.9	14	6
INB	1391C-104-020	1/4	1/8	42.4	21.5	24.0	4.9	14	6
INB	1391C-104-021	1/4	1/4	37.5	23.0	23.2	7.2	17	7
INB	1391C-516-021	5/16	1/4	37.5	26.0	23.2	7.2	17	7
INB	1391C-308-021	3/8	1/4	37.5	27.5	23.2	7.2	17	7
INB	1391C-516-022	5/16	3/8	42.2	28.0	26.0	7.6	20	8
INB	1391C-308-022	3/8	3/8	42.2	29.5	26.0	7.6	20	8

INWB139C World Thread Flow Control with Knob – Inch Tube



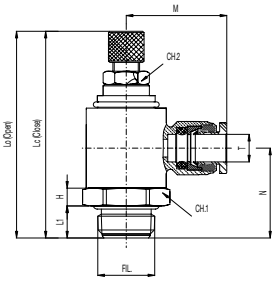
Brass Release Ring	INWB139C	Tube Diameter (T)	Thread (F)	Lc	Lo	M	N	L1	CH.1	H	CH.2
INB	139C-108-020	1/8	1/8	54.5	61.0	20.5	24.0	4.9	14	6	7
INB	139C-532-020	5/32	1/8	54.5	61.0	21.0	24.0	4.9	14	6	7
INB	139C-104-020	1/4	1/8	54.5	61.0	21.5	24.0	4.9	14	6	7
INB	139C-104-021	1/4	1/4	50.0	54.5	23.0	23.2	7.2	17	7	9
INB	139C-516-021	5/16	1/4	50.0	54.5	26.0	23.2	7.2	17	7	9
INB	139C-308-021	3/8	1/4	50.0	54.5	27.5	23.2	7.2	17	7	9
INB	139C-516-022	5/16	3/8	56.8	60.3	28.0	26.0	7.6	20	8	11
INB	139C-308-022	3/8	3/8	56.8	60.3	29.5	26.0	7.6	20	8	11

NWB1391C World Thread Flow Control – Metric Tube



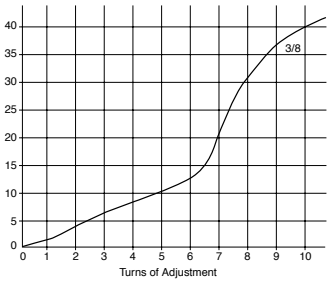
NWB1391C	Tube Diameter (T)	Thread (F)	L	M	N	L1	CH.1	H
NWB1391C-004-020	4mm	1/8	42.4	20.5	24.0	4.9	14	6
NWB1391C-006-020	6mm	1/8	42.4	21.0	24.0	4.9	14	6
NWB1391C-006-021	6mm	1/4	37.5	23.0	23.2	7.2	17	7
NWB1391C-008-021	8mm	1/4	37.5	26.5	23.2	7.2	17	7
NWB1391C-010-021	10mm	1/4	37.5	27.5	23.2	7.2	17	7
NWB1391C-008-022	8mm	3/8	42.2	28.0	26.0	7.6	20	8
NWB1391C-010-022	10mm	3/8	42.2	29.5	26.0	7.6	20	8

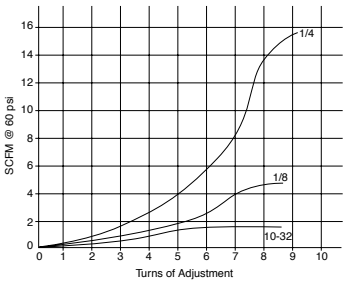
NWB139C World Thread Flow Control with Knob – Metric Tube



NWB1391C	Tube Diameter (T)	Thread (F)	Lc	Lo	M	N	L1	CH.1	H	CH.2
NWB139C-004-020	4mm	1/8	54.5	61.0	20.5	24.0	4.9	14	6	7
NWB139C-006-020	6mm	1/8	54.5	61.0	21.0	24.0	4.9	14	6	7
NWB139C-006-021	6mm	1/4	50.0	54.5	23.0	23.2	7.2	17	7	9
NWB139C-008-021	8mm	1/4	50.0	54.5	26.5	23.2	7.2	17	7	9
NWB139C-010-021	10mm	1/4	50.0	54.5	27.5	23.2	7.2	17	7	9
NWB139C-008-022	8mm	3/8	56.8	60.3	28.0	26.0	7.6	20	8	11
NWB139C-010-022	10mm	3/8	56.8	60.3	29.5	26.0	7.6	20	8	11

OEM Flow Controls



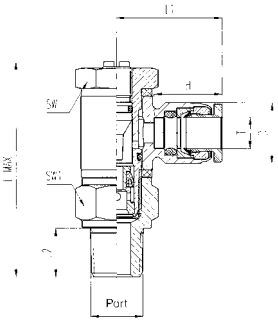


Features
Knob adjust, screwdriver adjust

Specifications
Temperature Range: 0° to 176°F
Maximum Operating Pressure: 265 psi

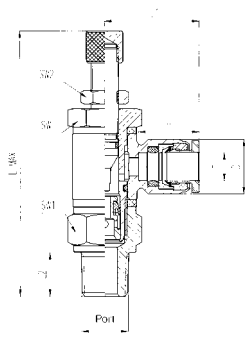
Materials of Construction
Body: brass-nickel plated; screw: stainless steel; seals: Buna; release button: oil or brass; adjustment needle: brass

INB135C Flow control



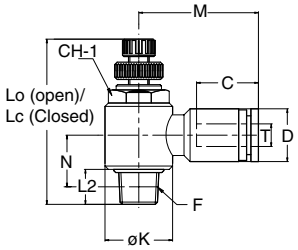
Brass Release Ring	135C	Tube Diameter (T)	PORTS NPTF	L MAX	L1	L2	H	D	DIMENS SW	DIMENS SW1
INB	135C-108-036	1/8	10-32	.945	0.748	0.217	0.472	0.394	0.315	/
INB	**135C-108-020**	1/8	1/8	1.665	0.748	0.374	0.472	0.394	0.551	0.551
INB	135C-532-036	5/32	10-32	.945	0.748	0.217	0.492	0.394	0.315	/
INB	135C-532-020	5/32	1/8	1.673	0.795	0.374	0.492	0.394	0.551	0.551
INB	135C-104-020	1/4	1/8	1.673	0.881	0.374	0.531	0.472	0.551	0.551
INB	135C-104-021	1/4	1/4	2.126	0.890	0.512	0.531	0.472	0.669	0.669
INB	135C-308-021	3/8	1/4	2.126	1.067	0.512	0.669	0.709	0.669	0.669
INB	135C-308-022	3/8	3/8	2.333	1.220	0.512	0.669	0.709	0.748	0.866

INB136C Flow Control with Knob



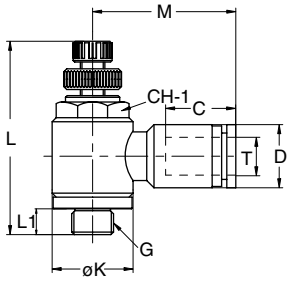
Brass Release Ring	136C	Tube Diameter (T)	PORTS NPTF	L MAX	L1	L2	H	D	DIMENS SW	DIMENS SW1
INB	136C-108-036	1/8	10-32	.945	0.748	0.217	0.472	0.394	0.315	/
INB	**136C-108-020**	1/8	1/8	1.665	0.748	0.374	0.472	0.394	0.551	0.551
INB	136C-532-036	5/32	10-32	.945	0.748	0.217	0.492	0.394	0.315	/
INB	136C-532-020	5/32	1/8	1.673	0.795	0.374	0.492	0.394	0.551	0.551
INB	136C-104-020	1/4	1/8	1.673	0.881	0.374	0.531	0.472	0.551	0.551
INB	136C-104-021	1/4	1/4	2.126	0.890	0.512	0.531	0.472	0.669	0.669
INB	136C-308-021	3/8	1/4	2.126	1.067	0.512	0.669	0.709	0.669	0.669
INB	136C-308-022	3/8	3/8	2.333	1.220	0.512	0.669	0.709	0.748	0.866

INP136C Composite Tube Flow Control with Knob



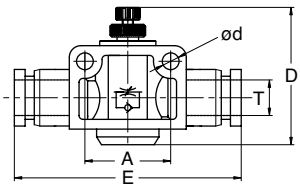
INP136C	Tube Diameter (T)	Thread (F)	D	Lc	Lo	M	N	L1	C	K	CH.1
INP136C-532-036	5/32	10-32 UNF	0.433	1.220	1.449	1.063	0.413	0.157	0.535	0.567	7/16
INP136C-532-020	5/32	1/8 NPTF	0.433	1.378	1.606	1.063	0.413	0.315	0.535	0.567	7/16
INP136C-104-036	1/4	10-32 UNF	0.528	1.220	1.449	0.896	0.421	0.157	0.604	0.567	1/2
INP136C-104-020	1/4	1/8 NPTF	0.528	1.378	1.606	0.896	0.421	0.315	0.604	0.567	7/16
INP136C-104-021	1/4	1/4 NPTF	0.528	1.646	1.890	0.976	0.461	0.433	0.604	0.720	9/16
INP136C-516-020	5/16	1/8 NPTF	0.583	1.378	1.606	0.988	0.445	0.315	0.713	0.567	7/16
INP136C-516-021	5/16	1/4 NPTF	0.583	1.646	1.890	1.108	0.492	0.433	0.713	0.720	9/16
INP136C-308-021	3/8	1/4 NPTF	0.724	1.646	1.890	1.254	0.559	0.433	0.803	0.720	9/16
INP136C-308-022	3/8	3/8 NPTF	0.724	1.870	2.106	1.236	0.583	0.472	0.803	0.866	3/4
INP136C-102-022	1/2	3/8 NPTF	0.854	1.870	2.106	1.402	0.648	0.472	0.870	0.866	3/4
INP136C-102-023	1/2	1/2 NPTF	0.854	2.047	2.283	1.476	0.695	0.591	0.870	1.102	1

NP136C Composite Flow Control with Knob



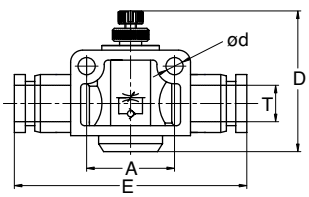
NP136C	Tube Diameter (T)	Thread	D	L	M	L1	C	K	CH.1
NP136C-004-005	4.0	M5	10.0	28.2	20.0	4.0	15.1	14.4	8
NP136C-004-000	4.0	1/8	10.0	41.1	22.5	5.7	15.1	14.4	14
NP136C-006-005	6.0	M5	12.0	28.2	21.9	5.700	16.0	14.4	14
NP136C-006-000	6.0	1/8	12.0	41.1	23.4	5.7	16.0	14.4	14
NP136C-006-001	6.0	1/4	12.0	48.8	25.5	8.3	16.0	18.3	17
NP136C-008-000	8.0	1/8	14.0	41.1	25.6	5.7	18.1	14.4	14
NP136C-008-001	8.0	1/4	14.0	48.8	28.7	8.3	18.1	18.3	17
NP136C-010-001	10.0	1/4	17.0	48.8	32.3	8.3	20.4	18.3	17
NP136C-010-002	10.0	3/8	17.0	54.5	32.9	13.9	20.4	22.0	21
NP136C-012-002	12.0	3/8	20.0	54.5	35.6	13.9	23.2	22.0	21
NP136C-012-003	12.0	1/2	20.0	60.0	36.6	11.0	23.2	28.0	24

INP139 Composite Inline Flow Control with Knob - Inch Tube



INP139	Tube Diameter (T)	D	A	E	d
INP139C-532-000	5/32	25.7	14.0	39.5	3.2
INP139C-104-000	1/4	41.9	20.0	47.3	4.3
INP139C-516-000	5/16	45.6	22.0	52.6	4.3
INP139C-308-000	3/8	52.3	26.0	62.9	4.3
INP139C-102-000	1/2	55.0	32.0	73.7	4.3

NP139 Composite Inline Flow Control with Knob - Metric Tube



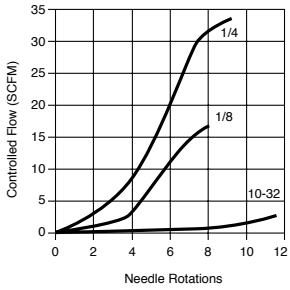
NP139	Tube Diameter (T)	D	A	E	d
NP139C-004-000	4 mm	25.7	14.0	39.5	3.2
NP139C-006-000	6 mm	41.9	20.0	47.6	4.3
NP139C-008-000	8 mm	45.6	22.0	52.6	4.3
NP139C-010-000	10 mm	52.3	26.0	63.1	4.3
NP139C-012-000	12 mm	55.0	32.0	74.2	4.3

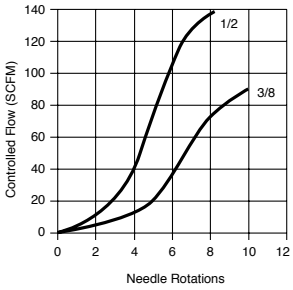
Flow Controls

Features
Body swivels 360°, provides accurate speed control in a compact size and eliminates need for fitting.

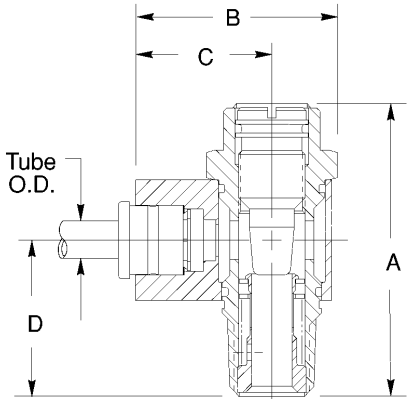
Specifications
Temperature Range: 0° to 160° F
Maximum Operating Pressure: 175 PSIG (12 bar)

Materials of Construction
Body: anodized aluminum; cartridge: nickel plated brass; screw: stainless steel; spring: stainless steel; seals: Buna N



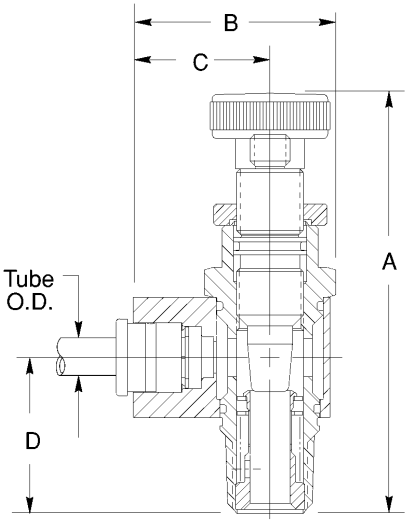


Standard Flow Control (with and without push-in fitting)



Ports NPTF	Without Push-In	With Push-In	Tube Diameter (T)	DIMENSIONS A	B	C	D
10-32	0FCRN	0FPRN4 0FPRN5	1/8 5/32	.89	.62	.43	.69
1/8	1FCRN	1FPRN8 1FPRN5	1/4 5/32	1.46	.98	.65	1.00
1/4	2FCRN	2FPRN8 2FPRN12	1/4 3/8	1.78	1.28	.91	1.03
3/8	3FCRN	3FPRN12 3FPRN16	3/8 1/2	2.23	1.45	1.02	1.30
1/2	4FCRN	4FPRN12 4FPRN16	3/8 1/2	2.82	1.84	1.28	1.40

Knob Adjust Flow Control (with and without push-in fitting)

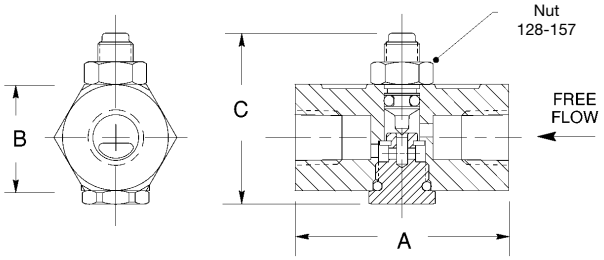


Ports NPTF	Without Push-In	With Push-In	Tube Diameter (T)	DIMENSIONS A	B	C	D
10-32	0FCTN	0FPTN4 0FPTN5	1/8 5/32	1.21	.62	.43	.69
1/8	1FCTN	1FPTN8 1FPTN5	1/4 5/32	2.21	.98	.65	1.00
1/4	2FCTN	2FPTN8 2FPTN12	1/4 3/8	2.50	1.28	.91	1.03
3/8	3FCTN	3FPTN12 3FPTN16	3/8 1/2	3.23	1.45	1.02	1.30
1/2	4FCTN	4FPTN12 4FPTN16	3/8 1/2	3.96	1.84	1.28	1.40

Metric Flow Controls

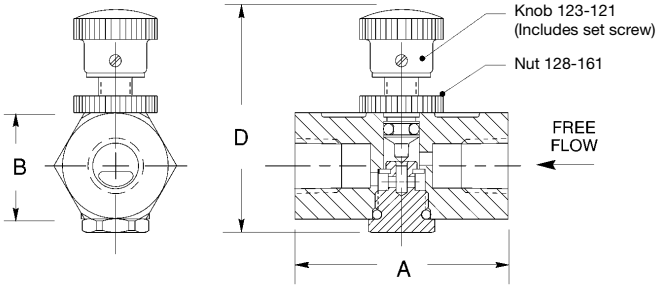
How to Order
Change “N” to “G” in part number for BSPP Thread or Tube option.
For example, change 0FCTN to 0FCTG or change 0FTPTN4 to 0FTPTG4.

1FC1 Inline Flow controls

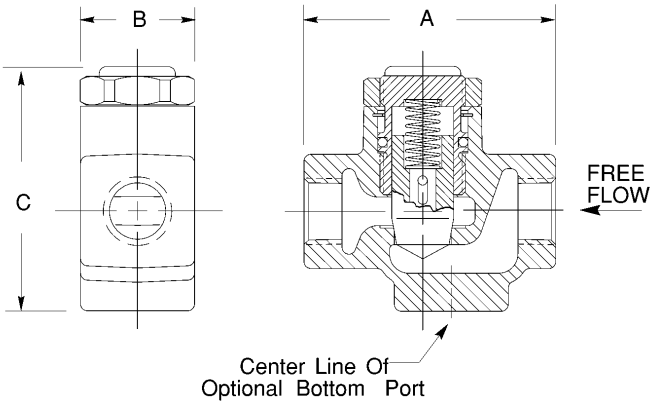


Ports NPTF	Without Knurled Knob	With Knurled Knob	DIMENSIONS				
			Cv	A	B	C	D
1/8	1FC1	1FC1K	.22	1.50	.75	1.08	1.66
1/4	2FC1	2FC1K	.22	1.50	.75	1.08	1.66

Optional Knurled Knob (suffix K)



FC2 Inline Flow Controls

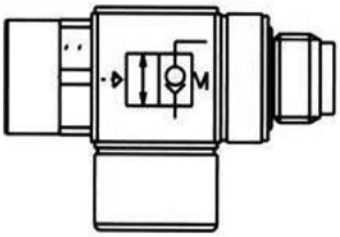


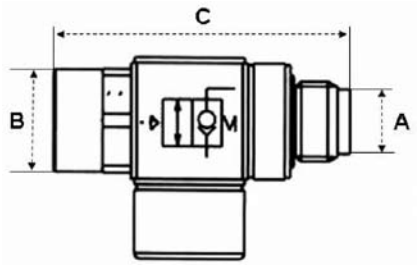
Ports NPTF	Without Bottom Port	With Bottom Port	DIMENSIONS			
			Cv	A	B	C
1/4	2FC2	2FC2B	2.3	2.34	1.06	2.21
3/8	3FC2	3FC2B	2.7	2.34	1.06	2.21

Ports NPTF	Without Bottom Port	With Bottom Port	DIMENSIONS			
			Cv	A	B	C
1/2	4FC3	4FC3B	6.0	3.28	1.50	3.17
3/4	5FC3	5FC3B	7.5	3.28	1.50	3.17

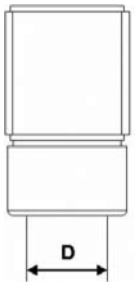
Pilot Operated Check Valves

- NPTF threads have thread sealant applied
- Temperature range: 15˚F to 160˚F
- Operating pressure range: 15 psi to 150 psi



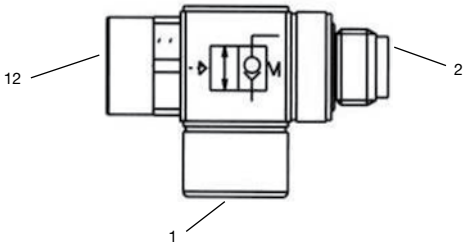


threaded banjo

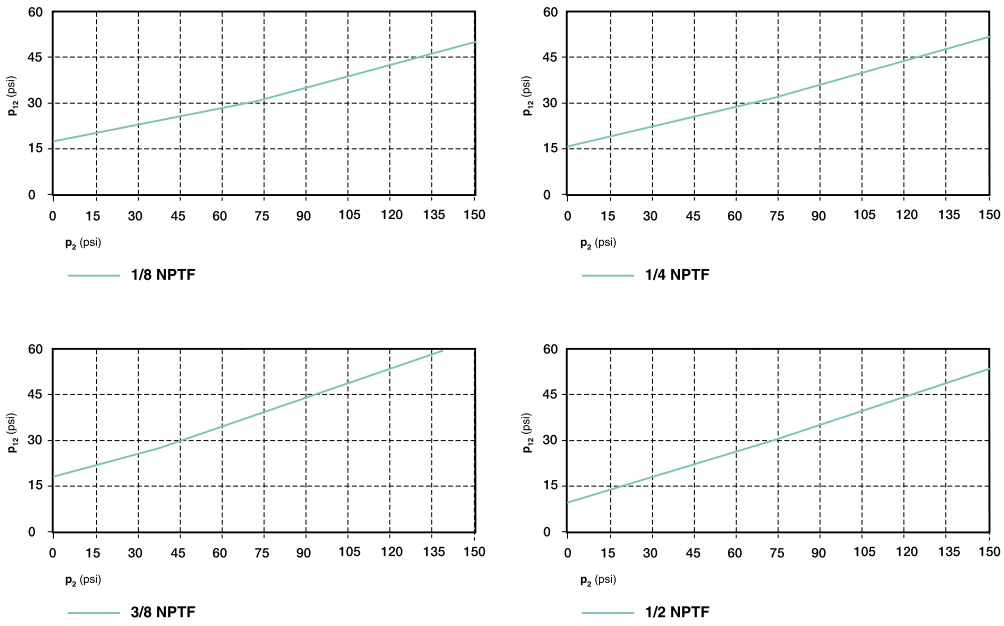


Part Number	A	B	C	Max Tightening Torque		D	Pilot Port
NCPGG-020-020	1/8" NPTF	SW13	1.164	7 Nm	5.1 lbs/ft	1/8" NPTF	10-32 UNF
NCPGG-021-021	1/4" NPTF	SW17	1.890	15 Nm	11.0 lbs/ft	1/4" NPTF	10-32 UNF
NCPGG-022-022	3/8" NPTF	SW22	2.165	20 Nm	14.7 lbs/ft	3/8" NPTF	1/8" NPTF
NCPGG-023-023	1/2" NPTF	SW27	2.579	20 Nm	14.7 lbs/ft	1/2" NPTF	1/8" NPTF

Flow Characteristics



Minimum signal pressure p_{12} to open the valve

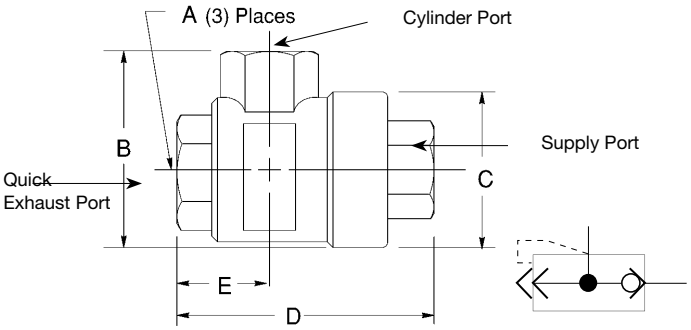


SEV Quick Exhaust Valve

Specifications

Quick exhaust valve, line mounting

Temperature Range: -40° to 165° F
Pressure range: 3.9 to 145 PSI



Ports NPTF	SEV_BN	DIMENSIONS				
		A	B	C	D	E
1/8	SEV10BN	1/8	1.30	1.10	1.65	0.55
1/4	SEV25BN	1/4	1.58	1.30	2.05	0.71
3/8	SEV38BN	3/8	1.70	1.30	2.16	0.75
1/2	SEV50BN	1/2	2.17	1.69	2.80	1.06
3/4	SEV75BN	3/4	2.45	1.93	3.55	1.42

Ports G Tap	SEV_	DIMENSIONS				
		A	B	C	D	E
1/8	SEV10B	G1/8	33	28	42	14
1/4	SEV25B	G1/4	40	33	52	18
1/2	SEV50B	G1/2	55	43	71	27
3/4	SEV75B	G3/4	74	64	90	42
1	SEV100B	G1	88	80	108	48

NOTE: Service parts are available, please consult the factory.

IN530 Slide Valve

Features

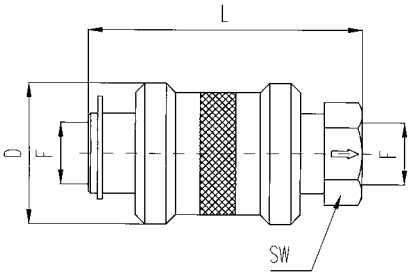
The IN530 Slide Valve allows easy isolation of downstream components by dumping circuit pressure.

Specifications

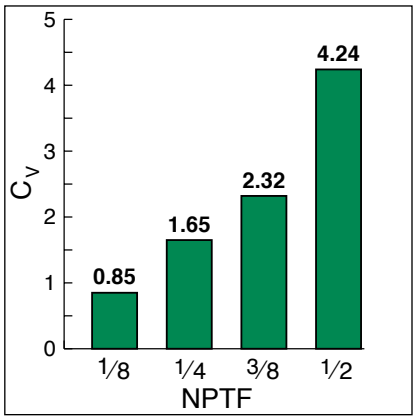
Temperature Range: 0° to 160° F
Maximum Operating Pressure: 150 PSIG (10 bar)
Pipe Sizes: 1/8, 1/4, 3/8 1/2 NPTF

Materials of Construction

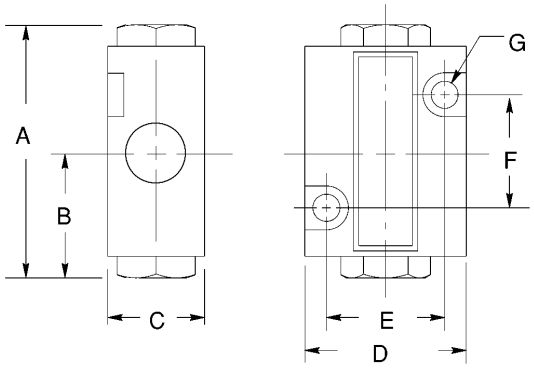
Sleeve: Aluminum
Body: Chrome Plated Brass
Seal: Buna
Snap Ring: Steel



F NPTF	Part Number	DIMENSIONS		
		L	D	SW
1/8	IN530-020-020	1.89	0.98	0.55
1/4	IN530-021-021	2.28	1.18	0.75
3/8	IN530-022-022	2.76	1.38	0.87
1/2	IN530-023-023	3.15	1.57	1.06



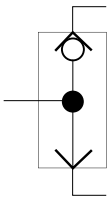
OA22-1 Shuttle Valve



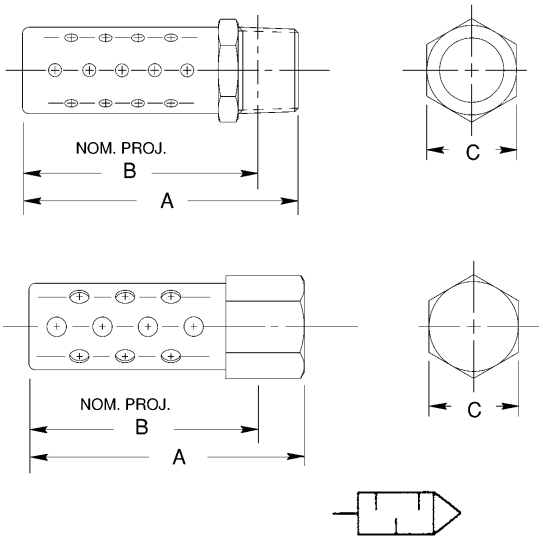
Specifications

Temperature Range: -4° to 194° F
Pressure Range: 3.9 to 145 PSI

Ports NPTF	OA22-1	DIMENSIONS						
		A	B	C	D	E	F	G
1/8	OA22-1	1.93	.95	.75	1.26	.91	.87	.20



M Series Metal Air Silencers



ANSI SYMBOL

NPTF Male Dimensions

Model	NPTF	A	B	C	cv
M1MN	1/8	1.38 (34.9)	1.22 (31.0)	0.44 (11.1)	1.17
M2MN	1/4	1.75 (44.5)	1.53 (38.9)	0.56 (14.3)	2.54
M3MN	3/8	2.25 (57.2)	2.00 (50.8)	0.69 (17.5)	5.08
M4MN	1/2	2.72 (69.1)	2.41 (61.1)	0.88 (22.2)	7.32
M5MN	3/4	3.16 (80.2)	2.81 (71.4)	1.06 (27.0)	13.87
M6MN	1	3.88 (98.4)	3.47 (88.1)	1.31 (33.3)	19.53
M7MN	1 1/4	4.50 (114.3)	4.16 (105.6)	1.69 (42.9)	28.32
M8MN	1 1/2	5.00 (127.0)	4.59 (116.7)	2.00 (50.8)	38.09
M9MN	2	5.50 (139.7)	5.06 (128.6)	2.38 (60.3)	52.73

NPTF Female Dimensions

Model	NPTF	A	B	C	cv
M1FN	1/8	1.38 (34.9)	1.22 (31.0)	0.50 (12.7)	1.17
M2FN	1/4	1.75 (44.5)	1.53 (38.9)	0.62 (15.9)	2.54
M3FN	3/8	2.25 (57.2)	2.00 (50.8)	0.75 (19.1)	5.08
M4FN	1/2	2.72 (69.1)	2.41 (61.1)	0.94 (23.8)	7.32

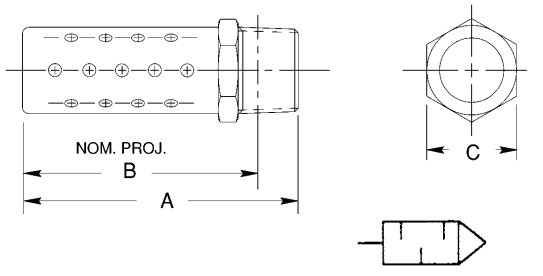
BSPT Male Dimensions

Model	NPTF	A	B	C	cv
M1MB	1/8	1.38 (34.9)	1.22 (31.0)	0.44 (11.1)	1.17
M2MB	1/4	1.75 (44.5)	1.53 (38.9)	0.56 (14.3)	2.54
M3MB	3/8	2.25 (57.2)	2.00 (50.8)	0.69 (17.5)	5.08
M4MB	1/2	2.72 (69.1)	2.41 (61.1)	0.88 (22.2)	7.32
M5MB	3/4	3.16 (80.2)	2.81 (71.4)	1.06 (27.0)	13.87
M6MB	1	3.88 (98.4)	3.47 (88.1)	1.31 (33.3)	19.53

Application:

The M Series muffler softly exhausts air and disperses it over a 360º pattern. Constructed of a corrosion resistant metal, it can withstand shock and continuous, heavy duty use under many conditions. This muffler is ideal for use on the 22/32 Series Solenoid Soft Start Quick Exhaust Valve, Lockout Valves, valve exhaust ports, single acting cylinders, and many other applications.

SSM Series Stainless Steel Air Silencers



ANSI SYMBOL

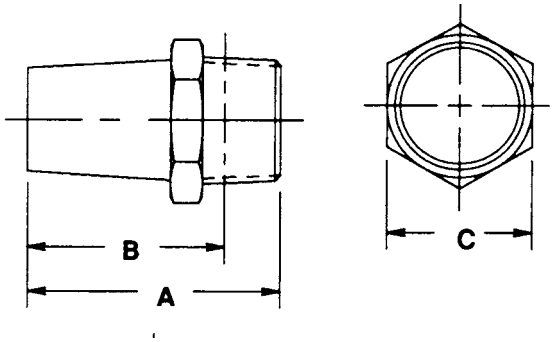
NPTF Male Dimensions

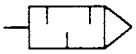
Model	NPTF	A	B	C	cv
SSM1MN	1/8	1.38 (34.9)	1.22 (31.0)	0.44 (11.1)	1.17
SSM2MN	1/4	1.75 (44.5)	1.53 (38.9)	0.56 (14.3)	2.54
SSM3MN	3/8	2.25 (57.2)	2.00 (50.8)	0.69 (17.5)	5.08
SSM4MN	1/2	2.72 (69.1)	2.41 (61.1)	0.88 (22.2)	7.32
SSM5MN	3/4	3.16 (80.2)	2.81 (71.4)	1.06 (27.0)	13.87
SSM6MN	1	3.88 (98.4)	3.47 (88.1)	1.31 (33.3)	19.53

Application:

The SSM Series Muffler is constructed with 300 Series stainless steel. Resistant to atmospheric corrosion, sterilizing solutions, organic chemicals, and many inorganic chemicals makes this a terrific product for dairy and food plants. The SSM Series Muffler softly exhausts air and disperses if over a 360° pattern. Because of its heavy-duty construction, it can withstand shock and continuous cycling.

P Series Porous Bronze Air Silencers





ANSI SYMBOL

NPTF Male Dimensions

Model	NPTF	A	B	C	cv
P0MN	10-32	0.75 (19.1)	0.62 (15.7)	0.38 (9.5)	0.23
P1MN	1/8	0.84 (21.4)	0.69 (17.5)	0.44 (11.1)	1.07
P2MN	1/4	1.20 (30.6)	0.97 (24.6)	0.56 (14.3)	1.78
P3MN	3/8	1.45 (36.7)	1.20 (30.6)	0.69 (17.5)	2.30
P4MN	1/2	1.89 (48.0)	1.58 (40.1)	0.88 (22.2)	5.66
P5MN	3/4	2.12 (54.0)	1.78 (45.2)	1.06 (27.0)	9.67
P6MN	1	2.84 (72.2)	2.44 (61.9)	1.31 (33.3)	14.06
P7MN	1 1/4	3.44 (87.3)	3.00 (76.2)	1.69 (42.9)	20.51
P8MN	1 1/2	4.00 (101.6)	3.56 (90.5)	2.00 (50.8)	29.10
P9MN	2	4.75 (120.7)	4.31 (109.5)	2.38 (60.3)	44.92

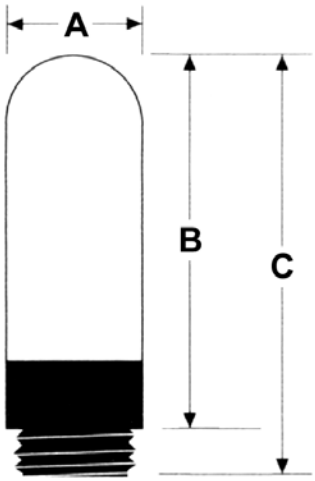
BSPT Male Dimensions

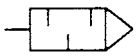
Model	NPTF	A	B	C	cv
P1MB	1/8	0.84 (21.3)	0.69 (17.5)	0.44 (11.1)	1.07
P2MB	1/4	1.20 (30.5)	0.97 (24.6)	0.56 (14.3)	1.78
P3MB	3/8	1.45 (36.8)	1.20 (30.5)	0.69 (17.5)	2.30
P4MB	1/2	1.89 (48.0)	1.58 (40.1)	0.88 (22.2)	5.66
P5MB	3/4	2.12 (53.9)	1.78 (45.2)	1.06 (27.0)	9.67
P6MB	1	2.84 (72.1)	2.44 (62.0)	1.31 (33.3)	14.06

Application:

The P Series muffler is perfect for limited space applications due to its compact size. This silencer can be used to muffle air valve exhaust noise, intake filtration, coalescing of oil mist exhaust, pressure or vacuum equalization, or on any other liquid vapor.

E Series Polyethylene Air Silencers





ANSI SYMBOL

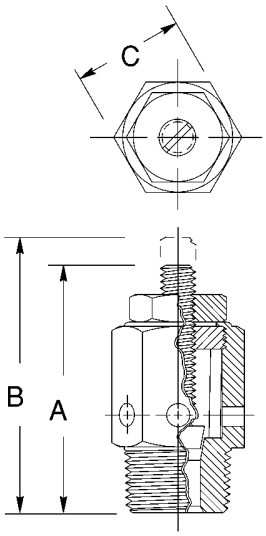
NPTF Male Dimensions

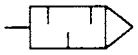
Model	NPTF	A	B	C
E1MN	1/8	0.49 (12.5)	1.1 (28.3)	1.3 (34.0)
E2MN	1/4	0.61 (15.5)	1.4 (35.5)	1.7 (42.5)
E3MN	3/8	0.73 (18.5)	2.2 (56.0)	2.7 (67.5)
E4MN	1/2	0.93 (23.5)	2.6 (67.0)	3.1 (78.0)
E5MN	3/4	1.50 (38.5)	4.9 (123.5)	5.5 (140.0)
E6MN	1	1.90 (49.0)	5.5 (140.5)	6.3 (160.0)

Application:

Combining a sturdy nylon thread with a polyethylene body, the E Series silencer gives a low-cost, light weight alternative to heavier, metal-based mufflers while reducing decibel levels to an OSHA approved level. It is perfect for robotic arm applications, low-traffic or enclosed areas, or where cost is of primary concern.

Bronze Speed Control Muffler





ANSI SYMBOL

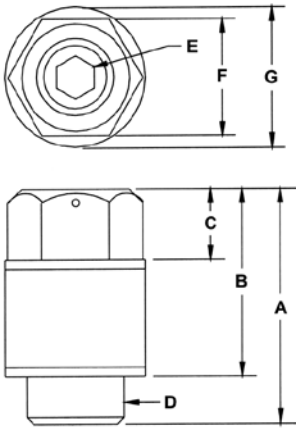
Model Selection

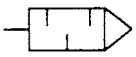
Port Size	Models NPT	Cv	DIMENSIONS		
			A	B	C
1/8	A1MN	0.35	1.12 (28.0)	1.31 (33.0)	0.50 (13.0)
1/4	A2MN	0.67	1.42 (36.0)	1.56 (40.0)	0.63 (16.0)
3/8	A3MN	0.90	1.47 (32)	1.63 (41.0)	0.69 (18.0)
1/2	A4MN	1.35	1.75 (44)	2.00 (51.0)	0.88 (22.0)
3/4	A5MN	1.67	2.00 (51)	2.38 (60.0)	1.06 (27.0)
1	A6MN	2.32	2.25 (57)	2.50 (63.0)	1.31 (33.0)

Application:

The Numatics Bronze Speed Control Muffler provides infinite metering of air flow. The sintered bronze is encased by an outer metal shroud. With linear adjusting capability, the speed of the cylinder can be decreased by adjusting the integrated screw. When optimal exhaust rate is reached, the locknut may be adjusted to prevent accidental adjustments due to vibration or other means. Maximum Operating Pressure: 300 PSI Temperature Range: 35º-300ºF (1.7º-149ºC)

Polyethylene Speed Control Muffler





ANSI SYMBOL

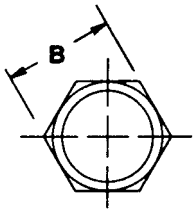
Model Selection

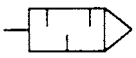
Port Size	Models NPT	DIMENSIONS						
		A	B	C	D	E	F	G
M5	S0MN	0.52 (16.0)	0.36 (11.0)	0.36 (11.0)	M5	0.05 (1.5)	3.1 (79.0)	0.30 (9.2.0)
1/8	S1MN	0.69 (21.0)	0.49 (15.0)	0.16 (5.0)	1/8 NPT	0.08 (2.5)	5.1 (130.0)	0.49 (15.0)
1/4	S2MN	0.95 (29.0)	0.72 (22.0)	0.23 (7.0)	1/4 NPT	0.13 (4.0)	5.9 (150.0)	0.59 (18.0)
3/8	S3MN	1.2 (38.0)	0.98 (30.0)	0.36 (11.0)	3/8 NPT	0.20 (6.0)	7.9 (200.0)	0.79 (24.0)
1/2	S4MN	1.6 (50.0)	1.3 (40.0)	0.49 (15.0)	1/2 NPT	0.26 (8.0)	8.4 (213.0)	0.98 (30.0)

Application:

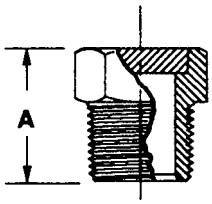
The Polyethylene Speed Control Muffler is designed to give fine adjustment to the low end of the flow range, followed by more coarse control as flow is increased toward the maximum. The body is made of highly versatile and cost-effective nylon. The adjusting screw is made of high tensile steel and is coated with electroplated zinc. The S Series muffler reduces decibel levels to an OSHA approved level.

Breather Vent Silencer





ANSI SYMBOL



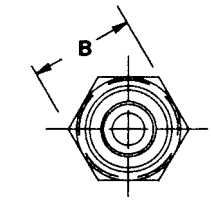
Model Selection

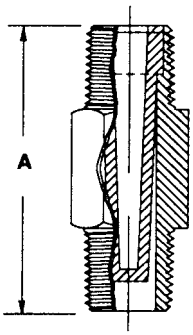
Port Size	Models		Cv	DIMENSIONS	
	NPT	BSPT		A	B
1/8	B1MN	B1MB	0.44	0.44 (11.0)	0.44 (11.0)
1/4	B2MN	B2MB	0.65	0.63 (16.0)	0.56 (14.0)
3/8	B3MN	B3MB	1.12	0.75 (19.0)	0.68 (17.0)
1/2	B4MN	B4MB	1.77	0.88 (22.0)	0.88 (22.0)
3/4	B5MN	B5MB	4.72	1.00 (25.0)	1.06 (27.0)
1	B6MN	B6MB	7.30	1.31 (33.0)	1.31 (33.0)
1 1/4	B7MN	B7MB	10.63	1.41 (50.0)	1.68 (43.0)
1 1/2	B8MN	B8MB	12.72	1.50 (38.0)	2.00 (51.0)

Application:

The Breather Vent offers some noise reduction, but is better suited for keeping contaminant out of valve exhaust ports, single-acting cylinder ports, or any other threaded port open to atmosphere which needs flow relief. It is also used on gear boxes, storage tanks, or wherever pressure equalization is needed. The Breather Vent is compact and inexpensive. Maximum Operating Pressure: 150 PSI Operating Temperature: 35º-300ºF (1.7º-149ºC)

Inlet Filter Strainer





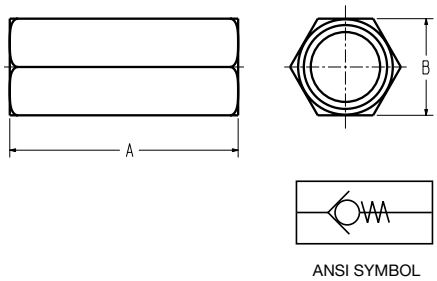
Model Selection

Port Size	Models NPT	Cv	DIMENSIONS	
			A	B
1/8	C1MN	0.31	1.25 (32.0)	0.43 (11.0)
1/4	C2MN	0.78	1.50 (38.0)	0.56 (14.0)
3/8	C3MN	1.0	1.75 (44.0)	0.69 (17.0)
1/2	C4MN	2.0	2.00 (51.0)	0.88 (22.0)

Application:

Ideal for air, oil, or water, the C Series Inlet Filter Strainer is compact and light weight - perfect for point of use application. It features a brass fitting which contains a cone-shaped, sintered bronze, 40 micron filter. It is used as a prefilter which eliminates bulk contamination from air lines, extending the life of filter elements and other downstream components.

CV Series Check Valves



ANSI SYMBOL

Specifications

Operating Temperature: 0° to 140° F (5° to 60°C)
Operating Pressure: 3.5 to 213 PSIG (0.24 to 14.69 bar)

Materials of Construction

Body: Nickel Plated Brass
Valve: Brass

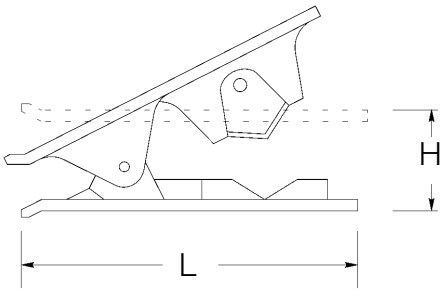
Model Selection

Port Size	Models NPT	DIMENSIONS A	DIMENSIONS B
1/8	CV1FN	1.75	9/16" Hex
1/4	CV2FN	2.00	11/16" Hex
3/8	CV3FN	2.00	7/8" Hex
1/2	CV4FN	2.50	1" Hex

Application:

Numatics CV Series Check Valves are used in fluid systems to permit free flow of air in on direction and prevent the flow in the opposite direction. Each check valve is clearly marked with a direction arrow to prevent accidental misconnection.

QR300071 Tube Cutter



This tool will cut all composite tubes (e.g. nylon, teflon, polyurethane, braided polyethylene, soft rubber, etc.) from 1/8" to 1/2" diameter inclusive. It is designed to give a clean cut at right angles to tube axis. A spring maintains the cutter in the closed position.

Model No.	Height	Length
QR3000 71 00	.98	3.11

Tubing How to Order

QR T N 12 GN 1000

Tubing

Tube Diameter
T = Inch
M = Metric

Material
E = Low Density Polyethylene
U = Polyurethane
N = Nylon
W = Weld Splatter Resistant

Length (in Feet)
100
250
500
1,000

Color
CL = Clear
BK = Black
RD = Red
GN = Green
BU = Blue
YW = Yellow

Tube Size

Imperial			Metric		
12	=	1/8"	04	=	04mm
16	=	5/32"	06	=	06mm
19	=	3/16"	08	=	08mm
25	=	1/4"	10	=	10mm
31	=	5/16"	12	=	12mm
38	=	3/8"			
50	=	1/2"			

Polyurethane 95 Tubing

Application
Polyurethane tubing is ideal for compressed air and vacuum systems. This rigid wall tubing is compatible with push to connect pneumatic fittings.

Features
Has excellent abrasion resistance and shape retention while working in high humidity and low temperatures. Withstands salt water, ages well, has good vibration absorption, and excellent tear resistance.

Specifications
- Vacuum to 28" Hg
- Temperature Range: -40° to 165° F
- UV Stabilized
- Shore 95 A
- NSF61 Compliant
- Meets UL94HB
- Dimensional Tolerance
  - Imperial ±.005 in.
  - Metric ±.127 mm

Inch

MODEL NUMBER*	O.D. (in.)	I.D. (in.)	WALL (in.)	MIN. BEND RADIUS	WORKING PRESSURE (PSIG) @ 75°F	@ 100°F	@ 125°F	@ 150°F	WEIGHT lbs/100'
QRTU12__	1/8	.066	.030	1/4	233	172	140	117	0.5
QRTU16__	5/32	.093	.031	3/8	176	130	106	88	0.7
QRTU19__	3/16	.107	.040	3/8	150	111	90	75	1.0
QRTU25__	1/4	.160	.045	1/2	148	110	89	74	1.5
QRTU31__	5/16	.216	.048	3/4	133	98	80	67	3.9
QRTU38__	3/8	.245	.065	7/8	147	109	88	74	3.4
QRTU50__	1/2	.375	.090	1-1/8	140	104	84	70	5.1

Metric

MODEL NUMBER*	O.D. (mm)	I.D. (mm)	WALL (mm)	MIN. BEND RADIUS	WORKING PRESSURE (PSIG) @ 75°F	@ 100°F	@ 125°F	@ 150°F	WEIGHT lbs/100'
QRMU04__	4	.2.4	0.8	3/8	176	130	106	88	0.7
QRMU06__	6	4.0	1.0	1/2	145	107	87	73	1.3
QRMU08__	8	5.0	1.5	3/4	155	115	93	78	2.6
QRMU10__	10	6.5	1.75	7/8	149	110	89	75	3.9
QRMU12__	12	8.0	2.0	1-1/8	133	98	80	67	5.3

*See page 43 for complete model number information.

Polyurethane Tubing for Numatrol™ Series

Application
This highly flexible tubing allows easy connection to “barbed” fittings with sharp bends possible in less than one inch. Many Numatrol™ installations that previously required the use of nylon tubing for high pressure, clamp functions for example, can now be easily accomplished with this tubing.

Features
Numatrol™ polyurethane tubing offers superior performance to other composite tubing with regard to kink resistance. Low temperature flexibility, higher working pressures, and resistance to ambient ozone oil, grease, fuels and most chemicals.

Specifications
- Vacuum to 28" Hg
- Temperature Range: -0° to 200° C
- Shore 83 A

MODEL NUMBER	O.D. (in.)	I.D. (in.)	WALL (in.)	TOLERANCE O.D.	TOLERANCE I.D.	WORKING PRESSURE (PSIG) @ 0°C	@ 40°C	@ 80°C	@ 120°C	@ 160°C	@ 200°C	ROLL LENGTH
135-124	1/4	1/8	.031	±.008	±.005	180	135	97	60	48	22	1000 ft.
135-125	1/4	1/8	.031	±.008	±.005	180	135	97	60	48	22	100 ft.
135-127	1/8	1/16	.015	±.005	±.005	180	135	97	60	48	22	1000 ft.
135-126	1/8	1/16	.015	±.005	±.005	180	135	97	60	48	22	100 ft.

Low-Density Polyethylene Tubing

- Lightweight and flexible
- Superior dielectric properties
- Easily heat sealed
- Tasteless and odorless
- Impermeable to gasses and moisture

LDPE is extruded to close tolerances from high quality low density polyethylene resins. All colors except red, comply with FDA regulation 21 CFR 177.1520(c) for food contact applications. LDPE has a water absorption rate of 0.15% per ASTM D-570 standards.

Specifications

- Temperature Range: All Diameters: -40° to 150°F
- Vacuum Rating: to 28" Hg.
- Diameter Tolerances: +.004"
- Hardness: LDPE: 44 Shore D
- Tube Markings: FW Specifications
- Working Pressure: 3:1 Safety Factor
- Base Resin Compliance: FDA (except red) NSF51(LLDPE)
- Recommended Fittings: LDPE: Push-In, Compression

Inch

MODEL NUMBER	O.D. (in.)	I.D. (in.)	WALL (in.)	Working Pressure (PSIG)		Bend Radius (in)
				@75°F	@150°F	
QRTE12	1/8	.062	.031	305	120	1/2
QRTE16	5/32	.106	.025	175	70	1
QRTE25	1/4	.170	.040	200	80	1-1/4
QRTE31	5/16	.187	.062	230	90	1-1/2
QRTE38	3/8	.250	.062	190	75	2
QRTE50	1/2	.375	.062	135	55	2-1/2

Metric

MODEL NUMBER	O.D. (mm)	I.D. (mm)	WALL (mm)	Working Pressure (PSIG)		Bend Radius (mm)
				@75°F	@150°F	
QRME04	4	2.7	.65	175	70	25.2
QRME06	6	4	1	175	70	31.8
QRME08	8	6	1	140	55	38
QRME10	10	8	1	115	45	51
QRME12	12	9	1.5	135	55	63.5

Nylon 11 Tubing

Application

Flexible nylon tubing used for air and lubrication lines, instrumentation and process lines for chemicals and solvents. Contact factory for specific applications.

Features

Has excellent resistance to a wide range of chemicals including petroleum products, soaps, salt solutions and bases.

Specifications

- Temperature Range: -60° to 200°F
- Vacuum Rating: to 28" Hg.
- Diameter Tolerances: .002", -.004"
- Metric: +.051 mm, -.1 mm
- Hardness: 78 Rockwell R
- Working Pressure: 4:1 Safety Factor
- UV Stabilized: Yes
- Base Resin Compliance: Meets UL94HB Testing Requirements
- Recommended Fitting: Push-In, compression

Inch

MODEL NUMBER	O.D. (in.)	I.D. (in.)	WALL (in.)	Min. Bend Radius	Working Pressure (PSIG)			
					@75°F	@100°F	@125°F	@150°F
QRTN12__	1/8	.093	.017	3/8	225	168	133	125
QRTN16__	5/32	.106	.025	1/2	275	200	169	160
QRTN19__	3/16	.138	.024	5/8	225	158	120	113
QRTN25__	1/4	.180	.035	1	250	183	160	140
QRTN31__	5/16	.232	.040	1-1/4	220	170	141	121
QRTN38__	3/8	.275	.050	1-1/2	220	165	148	128
QRTN50__	1/2	.375	.062	2	200	145	133	125

Metric

MODEL NUMBER	O.D. (mm)	I.D. (mm)	WALL (mm)	Min. Bend Radius	Working Pressure (PSIG)			
					@75°F	@100°F	@125°F	@150°F
QRMN04__	4	2.7	.6	12.7	350	263	228	210
QRMN06__	6	4	1	17	340	255	221	200
QRMN08__	8	6	1	38	250	187.5	162.5	150
QRMN10__	10	8	1	51	190	142.5	123.5	110
QRMN12__	12	10	1	76	150	112.5	97.5	90

Weld Spatter Resistant

Features

- Protects tube from incidental weld splatter contact
- Flexible with an excellent bend radius
- Resistant to kink damage
- Broad range of chemical resistance
- Can be formed into retractable coils

Specifications

- Temperature Range: All Diameters: -40°F to +165°F
- Vacuum Rating: to 28" Hg.
- Diameter Tolerances: +/- .005" Inner
- Working Pressure: 3:1 Safety Factor
- Base Resin Compliance:
  Outer Jacket: Meets UL94VO Testing Requirements
  Inner Tube: Meets UL94HB Testing Requirements
- Recommended Fittings: Push-In, Compression

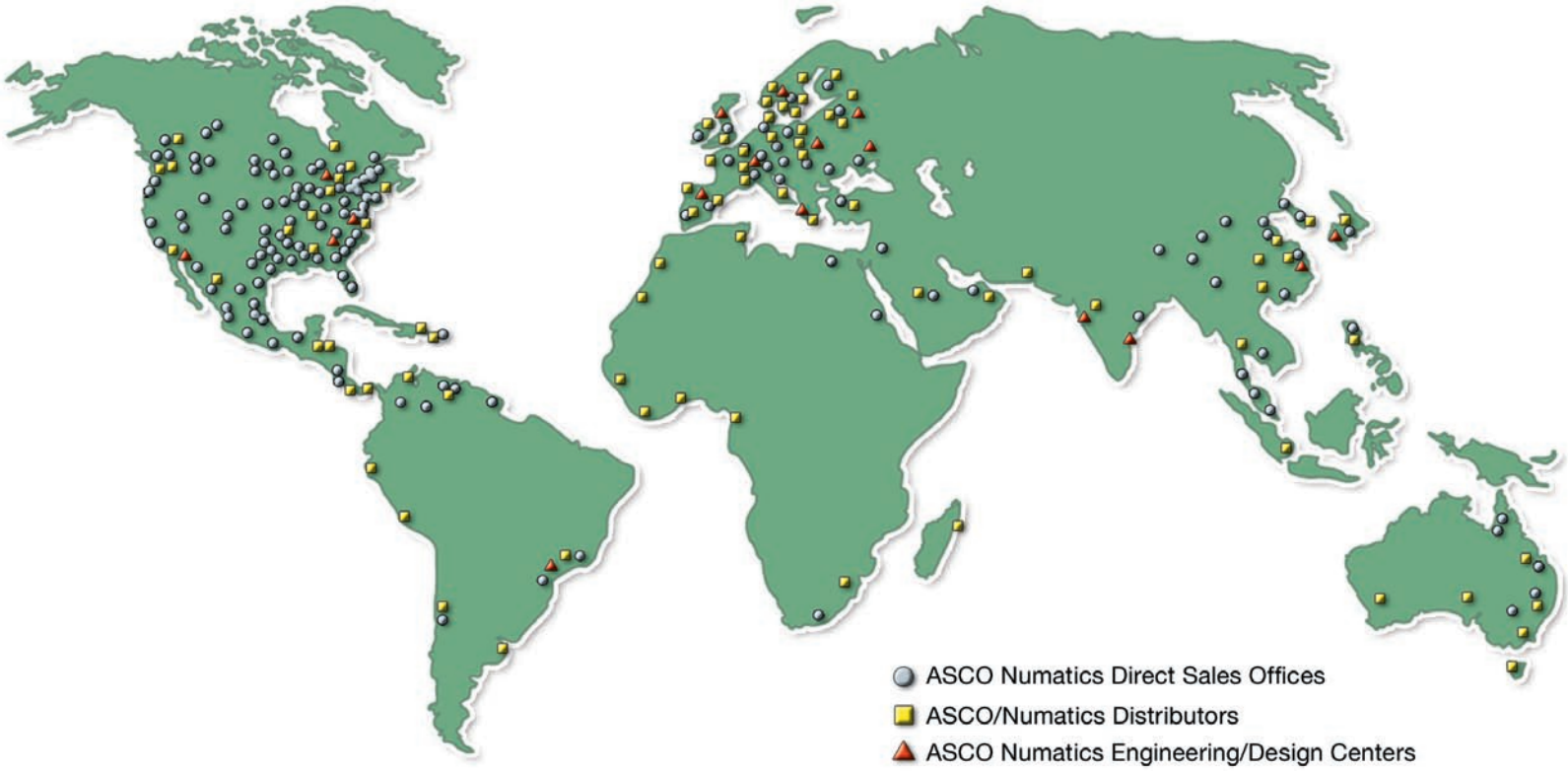
Metric

MODEL NUMBER	O.D. (mm)	I.D. (mm)	Working Pressure (PSIG) @25°F	Working Pressure (PSIG) @65°F	Weight (lbs/100ft)	Bend Radius (mm)
QRMW06	6	4	160	65	2.59	12.7
QRMW08	8	5	190	75	4.15	19
QRMW10	10	6.5	170	70	5.71	22.2
QRMW12	12	8	155	60	7.43	28.6

Notes

numatics

World Class Supplier of Pneumatic Components



WORLD HEADQUARTERS

USA
Numatics, Incorporated

46280 Dylan Drive
Novi, Michigan 48377

P: 1-888-Numatics
1-888-686-2842

Canada
Numatics, Ltd

P: 519-452-1777

Mexico
Numatics de Mexico S.A. de C.V.

P: 52-222-284-6176

For a comprehensive listing of all Numatics production and distribution facilities worldwide, visit:

www.numatics.com

LT-FRLPROD-4 Rev 09/10
10M-IPC-06/10