WILKERSON®

08, 18, 28, 90 SERIES FRL PRODUCTS

CATALOG 605-1

Compact, Intermediate & Standard Modular Air Preparation Systems

the total systems approach to air preparation

WILKERSON®

First incorporated in August of 1948, Wilkerson manufactures a complete line of compressed air treatment and control products to meet a wide variety of applications. Today, Wilkerson serves over 500 different industries throughout the world.

Over the years, Wilkerson facilities, manufacturing and engineering technology have kept pace with increased sales volume, the growing need to satisfy customers' specific requirements and the demands placed on production.

Wilkerson's growing leadership in the industry is due to our determined commitment to quality; quality of products, services and people. Our dedication to the total quality management process assures our customers that we can consistently provide the highest levels of product quality and customer service needs.

From the very beginning, Wilkerson has sold its products through a world-wide, independent distributor network. We currently have 200 distributors throughout North America, plus an expanding network of international distributors in over 40 countries. Our distributors, with many years of experience in compressed air treatment and control, offer excellent product knowledge, technical assistance and local inventory. As a result of representing other complimentary products, they are able to satisfy their customers' total requirements.

Today's broad line of Wilkerson products is the result of continuing product innovations and technology advancements which frequently become industry standards. Wilkerson is dedicated to designing and manufacturing innovative products with features and operating characteristics that meet customer requirements for quality, performance, reliability, serviceability, safety and value.

⚠WARNING

Suggested Lubricant - Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

⚠WARNING

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THE PRODUCTS AND/OR SYSTEMS DESCRIBED HEREIN OR RELATED ITEMS CAN CAUSE DEATH, PERSONAL INJURY AND PROPERTY DAMAGE.

This document and other information from The Company, its subsidiaries and authorized distributors provide product and/or system options for further investigation by users having technical expertise. It is important that you analyze all aspects of your application including consequences of any failure, and review the information concerning the product or system in the current product catalog. Due to the variety of operating conditions and applications for these products or systems, the user, through its own analysis and testing, is solely responsible for making the final selection of the products and systems and assuring that all performance, safety and warning requirements of the application are met.

The products described herein, including without limitation, product features, specifications, designs, availability and pricing, are subject to change by The Company and its subsidiaries at any time without notice.

Offer of Sale

The items described in this document are hereby offered for sale by The Company, its subsidiaries or its authorized distributors. This offer and its acceptance are governed by the provisions stated on the separate page of this document "Offer of Sale".

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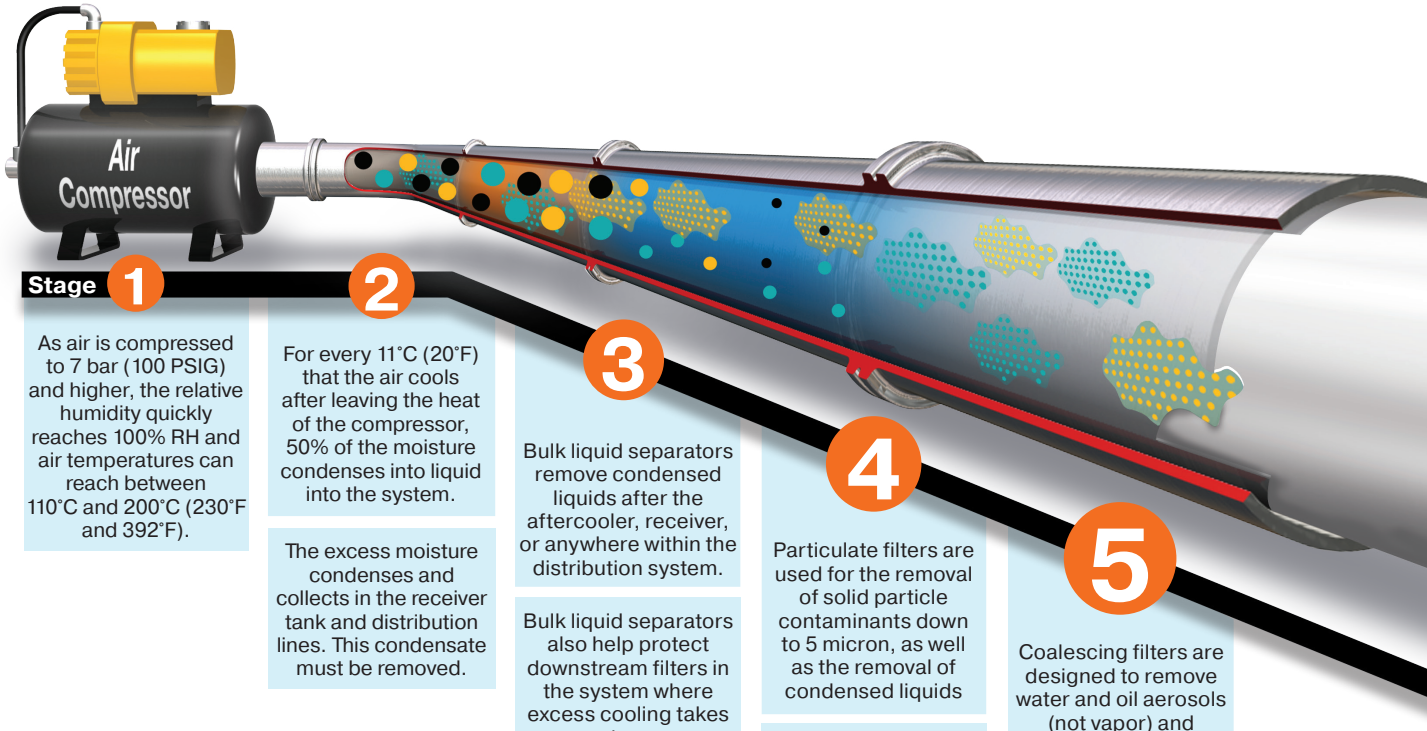
Together we can power your application with clean, dry air

Fast cycle times, high product quality, and low downtime all require a clean, dry pneumatic system to function properly. Wilkerson has what it takes to make sure pneumatic systems perform at their best.

Clean, dry pneumatic systems with Wilkerson Air Preparation



Stage 1

As air is compressed to 7 bar (100 PSIG) and higher, the relative humidity quickly reaches 100% RH and air temperatures can reach between 110°C and 200°C (230°F and 392°F).

2

For every 11°C (20°F) that the air cools after leaving the heat of the compressor, 50% of the moisture condenses into liquid into the system.

The excess moisture condenses and collects in the receiver tank and distribution lines. This condensate must be removed.

3

Bulk liquid separators remove condensed liquids after the aftercooler, receiver, or anywhere within the distribution system.

Bulk liquid separators also help protect downstream filters in the system where excess cooling takes place.

4

Particulate filters are used for the removal of solid particle contaminants down to 5 micron, as well as the removal of condensed liquids

Note: Water and oil, in vapor form, pass through general purpose particulate filters.

This type of filter should be used as a prefilter for the coalescing (oil removal) filter.

5

Coalescing filters are designed to remove water and oil aerosols (not vapor) and particulate from air streams down to 0.01 micron in size.

Installed in pairs, Particulate and Coalescing filters ensure a continuous supply of high quality air.

Key

- **Particulate**
- **Oil**
- **Water**
- **Oil Vapor**
- **Water Vapor**

						
Stages	1 2	3	4	5	6	7
Function	**Air Compressor**	**Bulk Liquid Removal**	**Particulate Filtration**	**Coalescing Filtration**	**Air Dryers**	**Hydrocarbon Removal**
Application	All pneumatic systems	Basic pneumatic systems	Basic pneumatic systems	Systems requiring highest quality air.	Systems requiring air with reduced moisture content	Systems requiring highest quality air for critical applications
Description	Air leaving the compressor room at 93ºC (200ºF) releases 95% of its moisture into the piping system when it cools to 38ºC (100ºF)	Removes bulk liquid contamination and protects filters where excess cooling takes place in the distribution piping	Removes solid particulates down to 5 micron, and the separation of bulk contaminants.	Removes liquid aerosols and submicron particulates (not vapor) down to 0.01 micron.	Removes water vapor from air stream. Dew point reduced down to 4ºC (40ºF) (refrigeration) or -40ºC (-40ºF) (desiccant).	Removal of odors and trace vapors for critical applications.
Wilkerson Air Preparation Solution	Customer supplied	WSO, WSA Bulk Liquid Separator	08, 18, 28 Particulate Filter	08, 18, 28 Coalescing Filter	Refrigeration Dryer, TW Regenerative Desiccant Dryer	18, 28 Activated Carbon (Adsorber) Filter

RoHS COMPLIANT

DECLARATION OF COMPLIANCE (ROHS)

European Directive 2011/65/EU – RoHS (Restriction us of certain Hazardous Substances in electrical and electronic equipment), restricts the use of the 6 substances in the manufacture of specified electrical equipment.

Lead: Product containing lead and its compound (except for applications of lead as an alloying element by weight in steel up to 0.35%, in aluminum up to 0.4% and in copper alloys up to 4% and in circuit board solder) must not exceed 0.1% by weight

Mercury: The concentration level must not exceed 0.1% by volume

Cadmium: The concentration level must not exceed 0.01% by volume

Hexavalent Chromiou:

This is a corrosive protective finish used on our product line. Where this finish is utilized the Chromate solution is Hexavalent (Chrome 6) free.

Polybrominated Biphenyls (PBB):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.

Polybrominated Diphenyl Esters (PBDE):

The concentration level must not exceed 0.1% by weight. This substance is not know to be in any of our products.

CE

Global Air Preparation products supplied by Parker Hannifin have been designed and manufactured in accordance with “sound engineering practice”, as defined by Article 3 of Pressure Equipment Directive 97/23/EC.

REACh Compliant

Global Air Preparation product range is in compliance with REACH to ensure continued compliance additions to the list of SVHC (Substance of Very High Concern) are reviewed periodically.

Suggested Lubricant
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Ex ATEX

Following Ignition Hazard Assessments performed on the non-electrical Global Air Preparation products they are in accordance with the requirements of EN 13463-1:2009, it was considered that the equipment does not contain its own source of ignition, and therefore is not within the scope of directive 94/9/EC.

The products can be used in a Group II Category 2 environment assuming that the ATEX Directive and the following conditions are complied with:

- Installation and maintenance of the product must be undertaken by qualified personnel.
- Do not mount the products in an area where impact may occur.
- Filters must be used to limit the introduction of particles and to capture particles generated in service.
- Supply air quality must be within ISO 8573-1:2010 Class 1.4.2.
- Maximum working temperature to be as stated on product label.
- WARNING – pulsating pressure and/or a closed circuit can generate heat.
- Deposits of dust on the product must not exceed 5mm thickness. Refer to technical file for surface areas of plastics. The unit must be earthed via the compressed air supply line.
- The unit must not come into contact with liquid solvents, acids or alkalis Refer to technical file for chemicals known to be incompatible. Product cleaning must be undertaken using a method complying with the specifications of the ATEX zone, preferably by using mild soap and water or antistatic products.
- Regulators, Filter Regulators: Do not use Regulators or Filter Regulators within systems that can create vibration within the Regulator / Filter Regulator unit.
- Solenoid Operated Valves: Are suitable for use in an ATEX environment, (Group II Category 2) providing ATEX approved solenoids are fitted.
- Technical file available on request.

ISO

Global Air Preparation product range has been designed and tested in accordance with ISO flow testing, envelope integrity, and catalog data presented.

- Filters – ISO 5782-1 & ISO 5782-2: 1997
- Regulators – ISO 6953-1 & ISO 6953-2: 2000
- Lubricators – ISO 6301-1 & ISO 6301-2: 2009

Global Air Preparation product range has been third party Shock & Vibration tested independently in accordance to EN 61373 : 1999, Category 2

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Compact Modular 08 Series

Filter

The F08 compact filter features a 5 micron particulate element, quick disconnect plastic bowl with bowl guard and a manual pipe away type manual drain. Quick disconnect metal bowls and piston automatic drains are additional available options. Wilkerson F08 filters meet or exceed ISO class 3 for maximum particle size retention and removal.

Regulator

The R08 compact regulator features a balanced valve for superior regulation characteristics, two gauge ports, and a bottom plug for ease of maintenance serviceability. The unique flush-mounted pressure gauge is available as an option.

Coalescing Filter

The M08 compact coalescing filter provides high efficiency removal of water, oil aerosols and solid particulate contaminates down to .01 micron in size. The M08 comes standard with quick disconnect plastic bowl with bowl guard and a manual pipe away type manual drain. Quick disconnect metal bowls and piston automatic drains are additional available options.

Lubricator

The L08 compact lubricator features an integral clear sight dome and adjustment knob for quick setting of the lubrication rate. The L08 can also be replenished with oil while under pressure by using the 1/8" fill plug at the top of the unit.

Filter / Regulator

The B08 compact integral filter / regulator combines all the advanced features and functions of the standard filter and regulator into a single, space saving, high performance unit.

Filter / Regulator - Lubricator Combination

The D08 compact modular combination model brings together all the superior features and functions of the 08 series modular FRL product line into a compact, lightweight assembly.

Compact Modular 08 Series

Accessories and Options

Diverter Block

For increased design flexibility, the N08 diverter block is available with 1/4" threaded inlet / outlet ports. The diverter block can be mounted anywhere in the FRL system. The unit comes with two, 1/4" or 1/8" threaded auxiliary ports.

Modular Lockout Valve

The V40 modular lockout valve is a 40mm ball valve style with the ability to modularly mount into any standard 08 series assembly. It provides shut off line pressure with a non-sticking 90° turn handle to prevent unauthorized adjustment.

Metal Bowl and Automatic Piston Drain

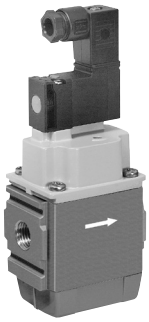
The 08 series has both optional metal bowl and automatic cyclic piston drain to meet your application needs.

Combined Soft Start / Dump Valve

The E09 series combined soft start / dump valve provides for the safe introduction of pressure to machines or systems. Soft start / dump valves when set, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

Flush Mount Pressure Gauge

The 08 &18 series Regulator features an attractive, square-housing, flush mount pressure gauge (0-160 PSIG) that can be mounted on either side of the regulator for piping convenience. Standard 1/8" NPT gauge ports and gauges are also available.



Dump Valve

The Q09 series dump valves 3-way, 2-position function automatically dumps downstream pressure on the loss of pilot signal. It features both solenoid or air pilot options. Silencer included.

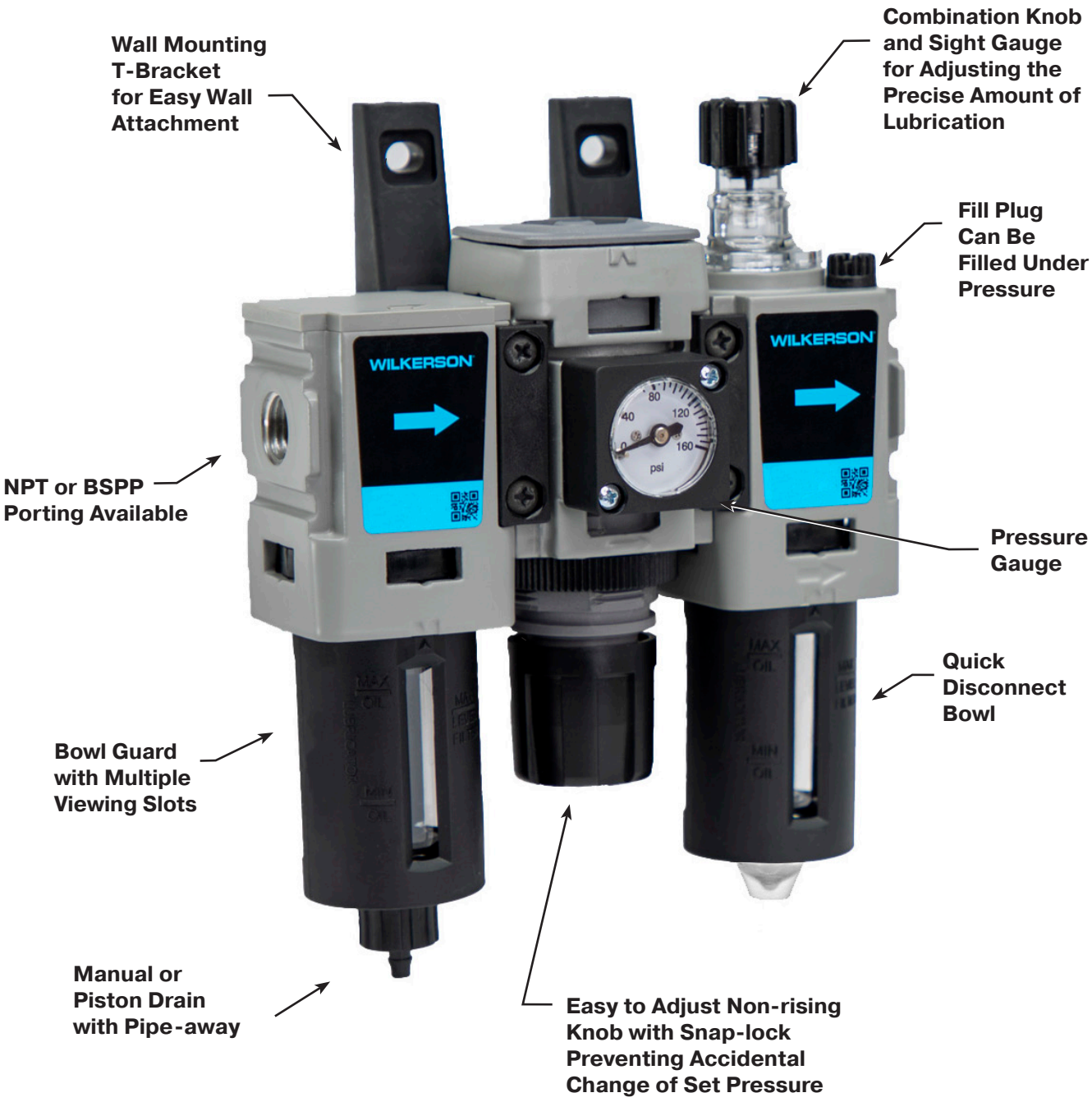
Modular Brackets and Joiner Assembly

A wide choice of unit mounting brackets and joiner assemblies allow for easy unit installation, assembly, and mounting.

Proportional Pressure Regulators

The ER09 proportional pressure regulators provide all the advantages of a closed circuit regulated system. When a set value is defined via the input signal (e.g. 0-10 V), the pressure regulator sets the corresponding output pressure (e.g. 0-150 PSI / 0-10 bar). At the same time the integrated pressure sensor measures the actual pressure at the unit's outlet (actual value).

Compact Modular 08 Series



Filter / Regulator / Lubricator Combination Units

The C08 modular FRL combination model integrates components of the advanced “08” product line into a compact, lightweight, ready-to-mount assembly. The units come standard with pressure gauge and are pre-assembled utilizing our modular T-bracket / joiner assembly for easy installation and mounting.

Notes

Particulate Filter Numbering System

= "Most Popular"

Unit Function	Family			Thread Type	Pipe Size		Filter Element	Bowls / Drains	Options	Options	Level
F	1	8	-	0	3	-	S	K	0	0	B

Unit Function
F Filter

Family
08 Miniature
18 Compact
28 Standard

Thread Type
0 NPT
C BSPP [1]

Filter Element
S 5 Micron

Code	Pipe Size	Series		
		08	18	28
2	1/4"	X	X	
3	3/8"		X	X
4	1/2"		X	X
6	3/4"			X

Options
0 None
L Differential Pressure Indicator (18 & 28 Only)
R Electronic DPI (18 & 28 Only)
V Fluorocarbon Seals (18 & 28 Only)

Options
0 None
R Electronic DPI (18 & 28 Only)
V Fluorocarbon Seals (18 & 28 Only)

Code	Series
B	08
B	18
B	28

	Bowls		
Drains	**Plastic w/ Guard**	**Metal w/ No Sight Gauge**	**Metal w/ Sight Gauge[2]**
1/8 NPT Female 2 (18 & 28 Only)	E	U	F
Automatic Drain [3] (18, 28 Only)	**G**	A	H
Manual Drain	**K**	—	L
Piston Drain (08 Series Only)	**R**	—	S

1 ISO, R228 (G Series)

2 F08 Filter has an all Metal Bowl (no sight gauge)

3 Operating range 15 to 250 PSIG (1 to 17 bar)

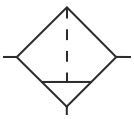
"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

NOTE: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

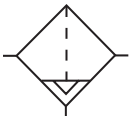
Note: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, and 9. For example:

F 1 8 - 0 3 - S K 0 0 B

Particulate Filter
F08



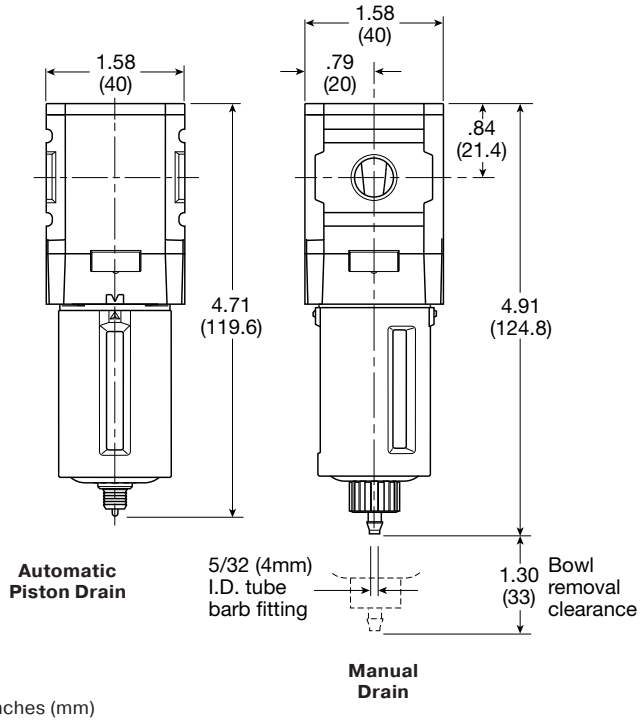
Manual Drain



Auto Drain

Features

- Standard 5 Micron Filtration
- Quick-disconnect Bowl
- Bowl Guard
- High Flow Capacity



Inches (mm)

Specifications

Flow Capacity*	1/4	42 SCFM (20 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl Metal Bowl	150 PSIG (10.3 bar) 250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl Metal Bowl	14˚ to 125˚F (-10˚ to 52˚C) 14˚ to 150˚F(-10˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4
Bowl Capacity		0.6 oz
Standard Filtration		5 Micron
Weight		0.24 lb. (0.11 kg)

* Inlet pressure 91.3 psig (6.3 bar). Pressure drop 4.9 psig (0.34 bar).

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Materials of Construction

Baffle		Acetal
Body		Aluminum
Body Cap		ABS
Bowl	Plastic Bowl Metal Bowl	Polycarbonate Aluminum
Bowl Guard		Nylon
Element Retainer		Acetal
Filter Element		Sintered Polyethylene
Seals	Plastic Bowl Metal Bowl	Nitrile Nitrile

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl, Manual Drain GRP-96-714

Plastic Bowl / Bowl Guard, Manual Drain..... GRP-96-712

Replacement Element Kit and Bowl Seal

Type "A", 5 Micron.....FRP-96-729

Accessories

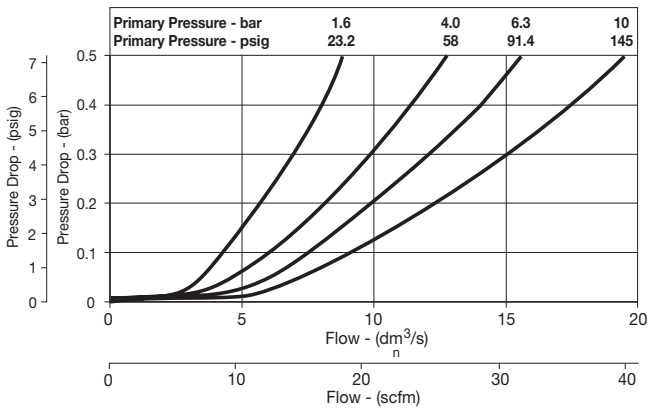
Automatic Piston Drain..... GRP-96-716

Wall Mounting Bracket –

C-Type.....GPA-97-010

T-Type GPA-96-737

F08 1/4" Filter

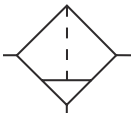


Ordering Information

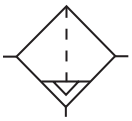
Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl (No Sight Gauge)
Manual Drain	1/4	F08-02-SK00B	F08-02-SL00B
Automatic Piston Drain	1/4	F08-02-SR00B	F08-02-SS00B

Options - To order an option supplied with the unit model, Add the appropriate coded suffix letter in the designated position of the model number.

Particulate Filter
F18



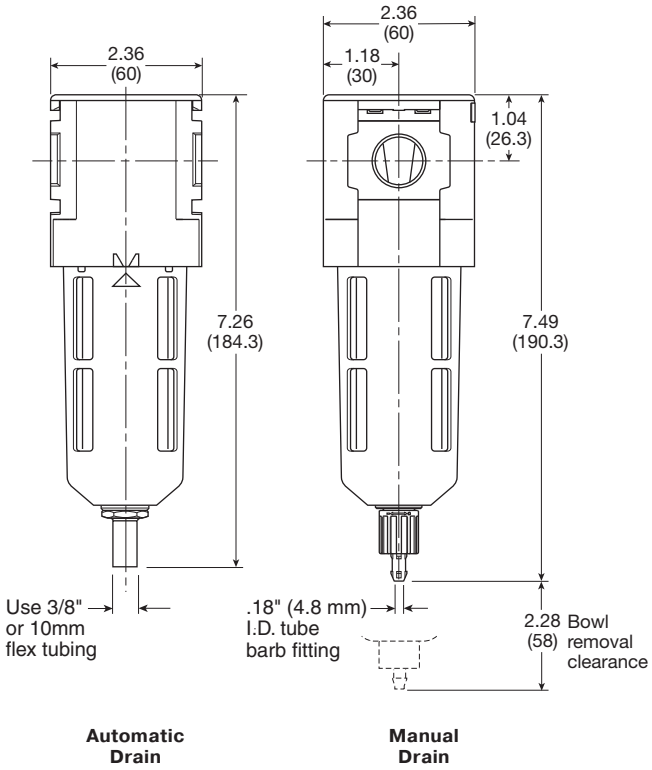
Manual Drain



Auto Drain

Features

- Standard 5 Micron Filtration
- High Flow Capacities
- 1/2" NPT / BSPP-G Over-port
- Quick-disconnect Bowl
- Bowl Guard
- Light Weight
- Barbed Manual Drain Connection with Pipe-away



Inches (mm)

Specifications

Flow Capacity*	1/4	50 SCFM (24 dm^3/s, ANR)
	3/8	78 SCFM (37 dm^3/s, ANR)
	1/2	82 SCFM (39 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F(-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Bowl Capacity		1.72 oz
Standard Filtration		5 Micron
Weight		0.62 lb. (0.28 kg)

* Inlet pressure 91.3 psig (6.3 bar). Pressure drop 4.9 psig (0.34 bar).

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Bowl Guard		Nylon
Deflector		Polypropylene
Element Retainer / Baffle		Acetal
Filter Element		Sintered Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge,
Automatic Float Drain GRP-96-637

Metal Bowl with Sight Gauge, Manual Drain GRP-96-636

Plastic Bowl –
Bowl Guard, Auto Drain GRP-96-635
Bowl Guard, Manual Drain GRP-96-634

Replacement Element Kits and Bowl Seal

Type "A", 5 Micron Element..... FRP-96-639

Type "A", 5 Micron with Retainer, Deflector,
and Bowl O-ring FRP-96-641

Accessories

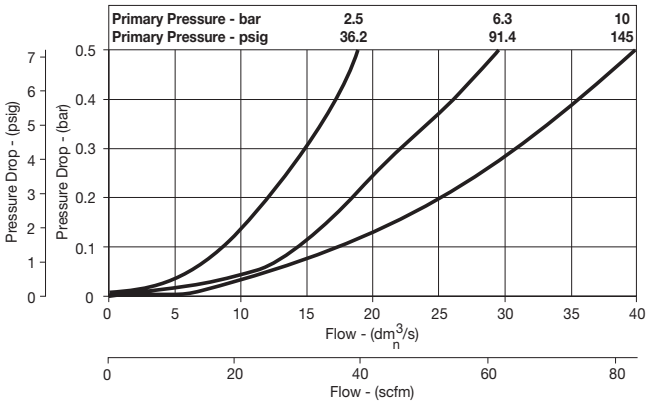
Automatic Drain –
Fluorocarbon GRP-95-981
Nitrile GRP-95-973

Manual Drain..... GRP-96-685

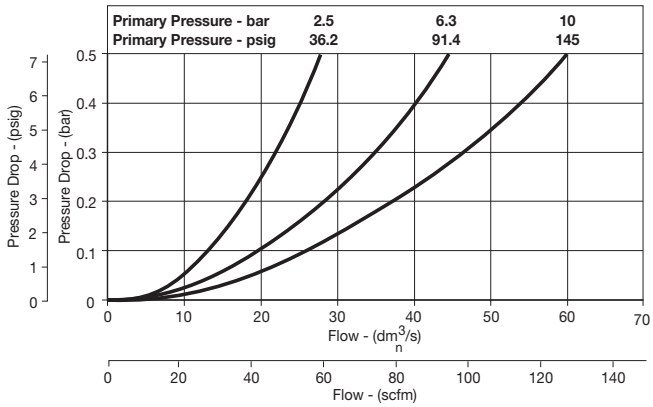
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
L-Type..... GPA-96-604
T-Type GPA-96-602

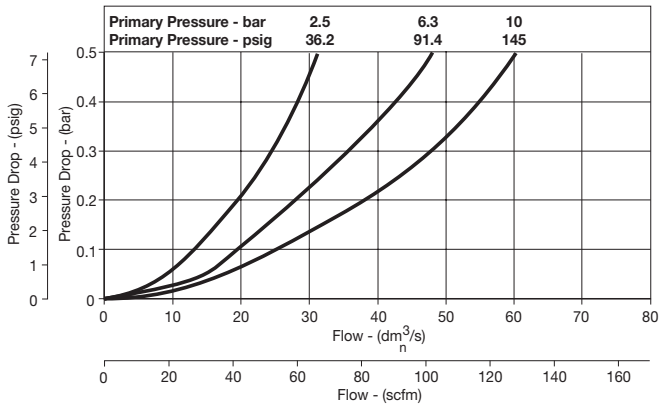
F18 1/4" Filter



F18 3/8" Filter



F18 1/2" Filter

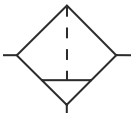


Ordering Information

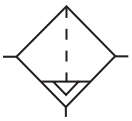
Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl / Sight Gauge
Manual Drain	1/4	F18-02-SK00B	F18-02-SL00B
	3/8	F18-03-SK00B	F18-03-SL00B
	1/2	F18-04-SK00B	F18-04-SL00B
Automatic Drain	1/4	F18-02-SG00B	F18-02-SH00B
	3/8	F18-03-SG00B	F18-03-SH00B
	1/2	F18-04-SG00B	F18-04-SH00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Particulate Filter
F28



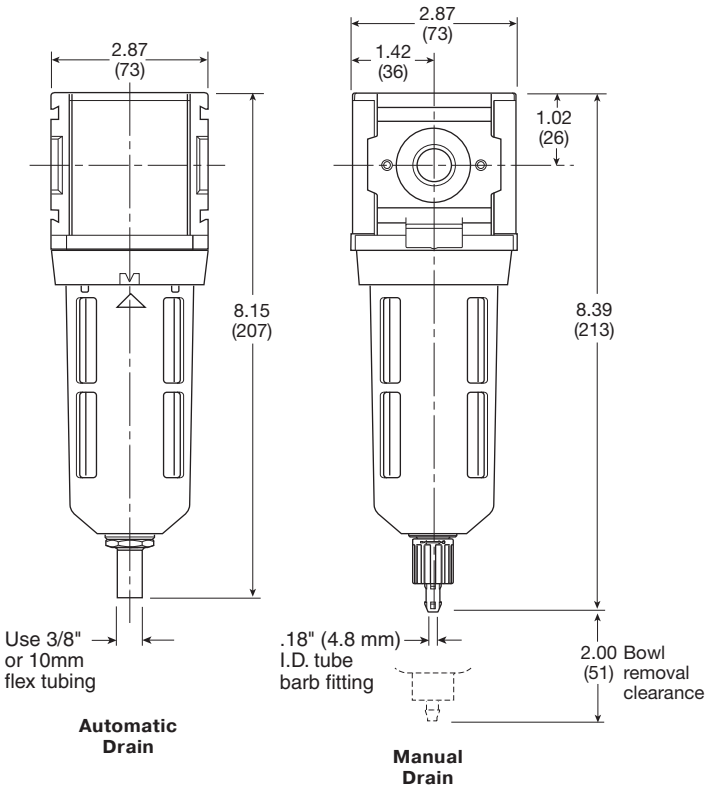
Manual Drain



Auto Drain

Features

- Standard 5 Micron Filtration
- High Flow Capacities
- 3/4" NPT / BSPP-G Over-port
- Quick-disconnect Bowl
- Bowl Guard
- Light Weight
- Barbed Manual Drain Connection with Pipe-away



Inches (mm)

Specifications

Flow Capacity*	3/8	115 SCFM (54 dm^3/s, ANR)
	1/2	120 SCFM (57 dm^3/s, ANR)
	3/4	145 SCFM (68 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Bowl Capacity		2.87 oz
Standard Filtration		5 Micron
Weight		1.01 lb. (0.46 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 4.9 PSID (.34 bar).

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Bowl Guard		Nylon
Deflector		Polypropylene
Element Retainer / Baffle		Acetal
Filter Element		Sintered Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Air quality:
Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge,
Automatic Float Drain GRP-96-645

Metal Bowl with Sight Gauge, Manual Drain GRP-96-644

Plastic Bowl –
Bowl Guard, Auto Drain GRP-96-643
Bowl Guard, Manual Drain GRP-96-642

Replacement Element Kits and Bowl Seal

Type "A", 5 Micron with Element..... FRP-96-653

Type "A", 5 Micron with Retainer, Deflector,
and Bowl O-ring FRP-96-283

Accessories

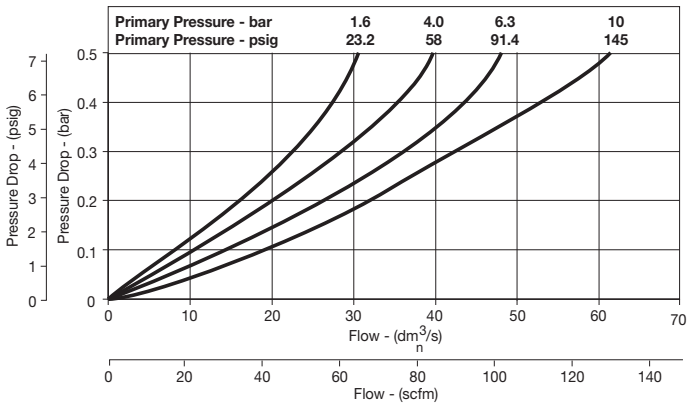
Automatic Drain –
Fluorocarbon GRP-95-981
Nitrile GRP-95-973

Manual Drain..... GRP-96-685

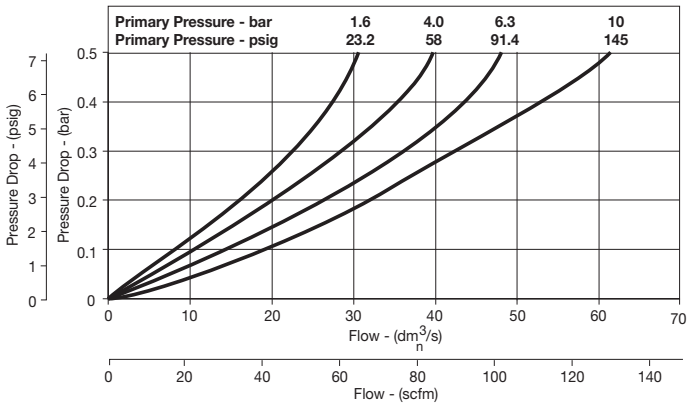
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
L-Type..... GPA-96-605
T-Type GPA-96-602

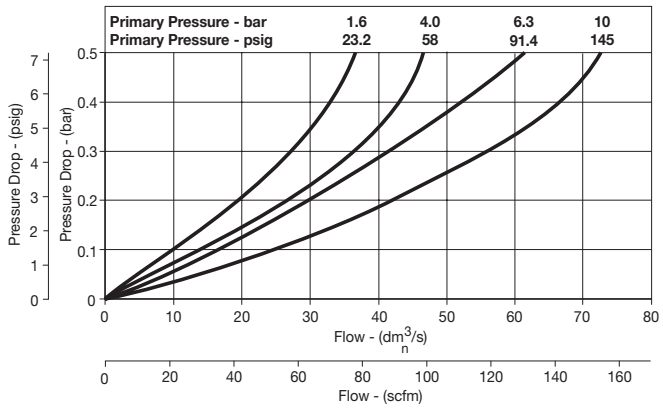
F28 3/8" Filter



F28 1/2" Filter



F28 3/4" Filter



Ordering Information

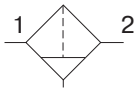
Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl / Sight Gauge
Manual Drain	3/8	F28-03-SK00B	F28-03-SL00B
	1/2	F28-04-SK00B	F28-04-SL00B
	3/4	F28-06-SK00B	F28-06-SL00B
Automatic Drain	3/8	F28-03-SG00B	F28-03-SH00B
	1/2	F28-04-SG00B	F28-04-SH00B
	3/4	F28-06-SG00B	F28-06-SH00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

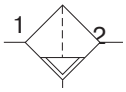
Particulate Filter
F90

= **"Most Popular"**

Symbols



Manual drain



Auto drain

- Integral 3/4" or 1" ports (NPT & BSPP)
- High efficiency particulate element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Low temperature -40˚ with combined manual / semi-auto drain as standard

F90 - 0 6 - S H 0 0

Series	
Filter	F90

Thread type*	
NPT	0
BSPP	C

Port size	
3/4	6
1	8

Element	
5 micron	S

Bowl / drain type	
H	Metal bowl / sight gauge & auto drain
L	Metal bowl / sight gauge / manual & semi auto drain

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Ordering Information

Port size	Description	Flow‡ scfm	Max. bar (psig)	Min temp ˚C (˚F)	Max temp ˚C (˚F)	Bowl capacity cm³ (oz)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number†
3/4"	Combined manual / semi auto drain	170	17.5 (254)	-40 (-40)	60 (140)	130 (4.4)	244 (9.6)	90 (3.5)	94 (3.7)	0.9 (1.98)	**F90-06-SL00**
3/4"	Auto drain	170	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	244 (9.6)	90 (3.5)	94 (3.7)	0.9 (1.98)	F90-06-SH00
1"	Combined manual / semi auto drain	170	17.5 (254)	-40 (-40)	60 (140)	130 (4.4)	244 (9.6)	90 (3.5)	94 (3.7)	0.9 (1.98)	**F90-08-SL00**
1"	Auto drain	170	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	244 (9.6)	90 (3.5)	94 (3.7)	0.9 (1.98)	F90-08-SH00

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 6.3 bar (91.4 psig) inlet pressure and 0.5 (7.3 psig) pressure drop.

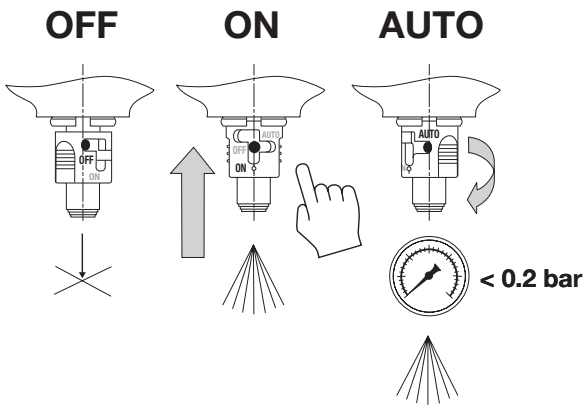
Specifications

Fluid		Compressed air
Maximum inlet pressure*		17.5 bar (254 psig)
Temperature range*:	Auto drain Combined drain	-10°C to 60°C (14°F to 140°F) -40°C to 60°C (-40°F to 140°F)
Particle removal		5 micron
Air quality		Within ISO 8573-1: 1991 Class 3 and 5 (particulates) Within ISO 8573-1: 2001 Class 6 and 7 (particulates)
Typical flow 5 micron element 6.3 bar (91.4 psig) inlet pressure and 0.5 bar (7.3 psig) pressure drop		1" port 170 scfm
Manual / semi-auto drain		Closed at 0.8 bar (11.6 psig) G1/8 thread male
Auto drain bowl pressure to close drain		0.8 bar (11.6 psig)
Operating range manual override facility		0.8 bar (11.6 psig) to 17.5 bar (254 psig)
Bowl capacity		130 cm³ (4.4 US oz)

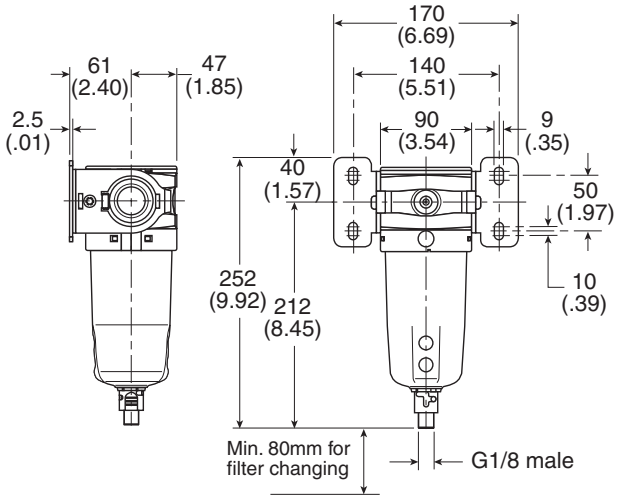
* Air supply must be dry enough to avoid ice formation at temperatures below 2°C (35.6°F).

Material Specifications

Body		Aluminum
Sight glass		Polypropylene
Body cover		ABS
Element		Sintered P.E.
Seals		Nitrile NBR
Drains	Manual / semi-auto:	Acetal
	Automatic:	PA / Ø 10mm brass connection

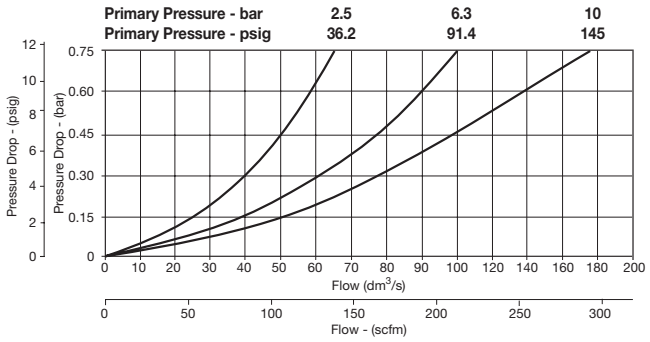


Dimensions mm (inches)

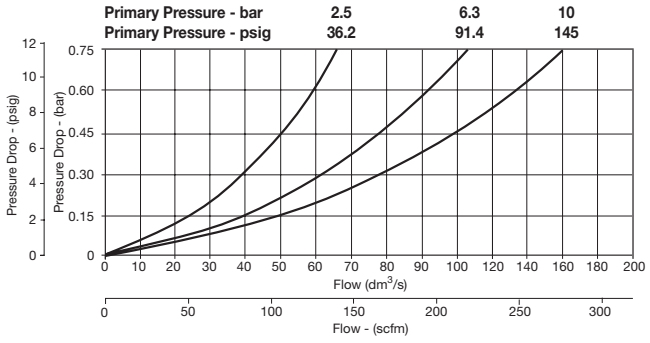


Flow Characteristics

(3/4") Filter



(1") Filter



Service Kits

5 micron element kit P3YKA00ESE

40 micron element kit P3YKA00ESG

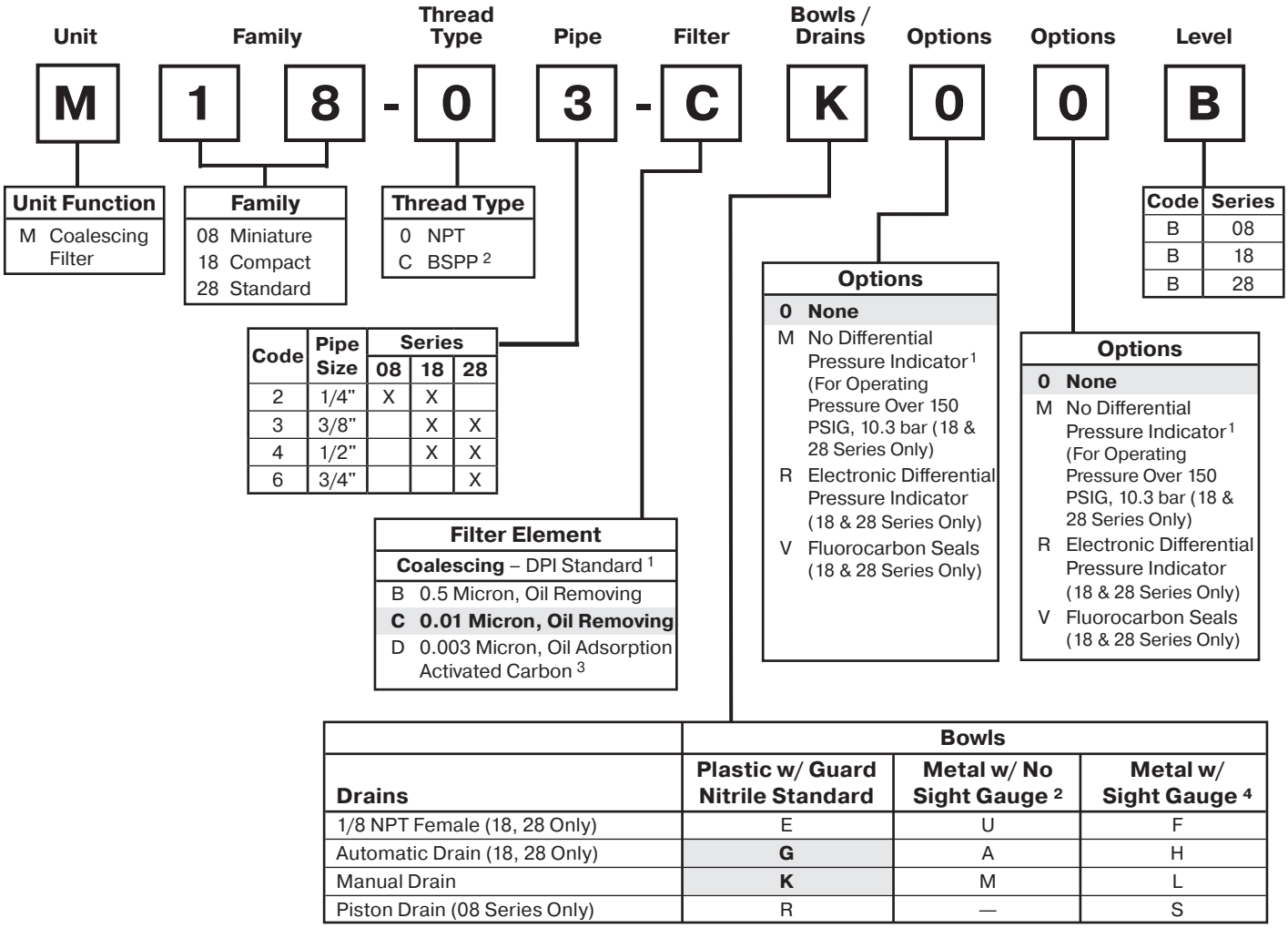
Bowl kit with combined manual / semi auto drain..... P3YKA00BSC

Bowl kit with auto drain P3YKA00BSA

Notes

Coalescing (Oil Removal) Numbering System

= "Most Popular"



Drains	Bowls: Plastic w/ Guard Nitrile Standard	Bowls: Metal w/ No Sight Gauge 2	Bowls: Metal w/ Sight Gauge 4
1/8 NPT Female (18, 28 Only)	E	U	F
Automatic Drain (18, 28 Only)	**G**	A	H
Manual Drain	**K**	M	L
Piston Drain (08 Series Only)	R	—	S

1 "M" Option not available on 08 Series.

2 ISO, R228 (G Series)

3 Only C, D, K, and L bowl / drain configurations available.

4 M08 filter has an all metal bowl (no sight gauge).

"M" Series Coalescing Filters, with Type "B" 0.5 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "B" 0.5 micron elements **exceed ISO** Class 2 for maximum particle size and concentration of solid contaminants, and exceed Class 3 on maximum oil content (ppm/wt).

"M" Series Coalescing Filters, with Type "C" 0.01 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "C" 0.01 micron elements **exceed ISO** Class 1 for maximum particle size and concentration of solid contaminants, and exceed Class 1 on maximum oil content (ppm/wt).

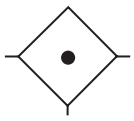
"M" Series Adsorption Filters, with Type "D" activated carbon elements: All Wilkerson Type "M" adsorption filters with Type "D" 0.003 micron activated carbon elements **exceed ISO** Class 1 on maximum oil content (ppm/wt).

NOTE: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

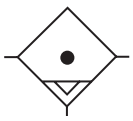
Note: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, and 9. For example:

M 1 8 - 0 3 - C K 0 0 B

Coalescing Filter M08



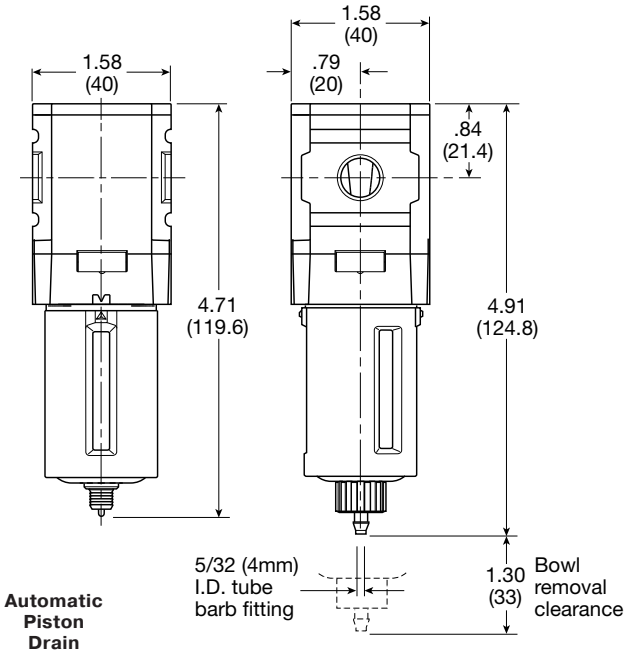
Coalescing Filter



Auto Drain

Features

- High-efficiency Removal of Water, Oil Aerosols, and Solid Particulate Contaminants Down to 0.01 ppm / wt with Minimum Pressure Drop
- Modern Design and Appearance
- Light Weight
- High Flow Capacity
- Bowl Guard
- Quick-disconnect Bowl



Inches (mm)

Specifications

Flow Capacity*		
1.0 Micron Coalescing		12.0 SCFM (5.5 dm^3/s, ANR)
0.01 Micron Coalescing		7.5 SCFM (3.6 dm^3/s, ANR)
Activated Carbon Adsorber		12.7 SCFM (6 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10 bar)
	Metal Bowl	250 PSIG (17 bar)
Operating Temperature	Plastic Bowl	14˚ to 125˚F (-10˚ to 52˚C)
	Metal Bowl	14˚ to 150˚F (-10˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4
Bowl Capacity		0.4 oz
Standard Filtration	Micron	(B) .5, (C) 0.01 (D) 0.003 ppm wt**
Weight		0.24 lb. (0.11 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 3 PSIG (0.2 bar).

**Filtration temperature of 70˚F (21˚C) @ 100 PSIG (6.9 bar) with typical compressor lubricating oil and protected by Type C filter.

"M" Series Coalescing Filters, with Type "B" 0.5 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "B" 0.5 micron elements exceed ISO Class 2 for maximum particle size and concentration of solid contaminants, and exceed Class 3 on maximum oil content (ppm/wt).

"M" Series Coalescing Filters, with Type "C" 0.01 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "C" 0.01 micron elements exceed ISO Class 1 for maximum particle size and concentration of solid contaminants, and exceed Class 1 on maximum oil content (ppm/wt).

"M" Series Adsorption Filters, with Type "D" 0.003 micron activated carbon elements: All Wilkerson Type "M" adsorption filters with Type "D" 0.003 micron activated carbon elements exceed ISO Class 1 on maximum oil content (ppm/wt).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowl	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Filter Element	Type "B", "C"	Borosilicate Cloth
	Type "D"	Activated Carbon
Seals		Nitrile

Notes: To optimize the life of the coalescing element, it is advisable to install a pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of the adsorber element, it is advisable to install a coalescing 0.01 micron filter upstream of the adsorber filter.

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl, Manual Drain GRP-96-714

Plastic Bowl / Bowl Guard, Manual Drain..... GRP-96-712

Replacement Element Kits

Type "B", 0.5 Micron MSP-96-732

Type "C", 0.01 Micron MTP-96-649

Type "D", 0.003 Micron, Activated Carbon.....MXP-96-222

Accessories

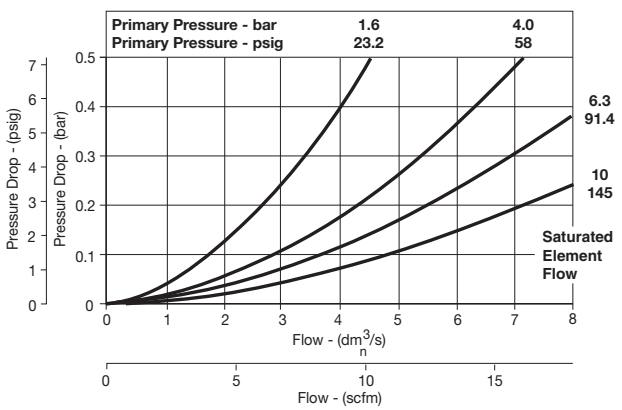
Automatic Piston Drain..... GRP-96-716

Wall Mounting Bracket –

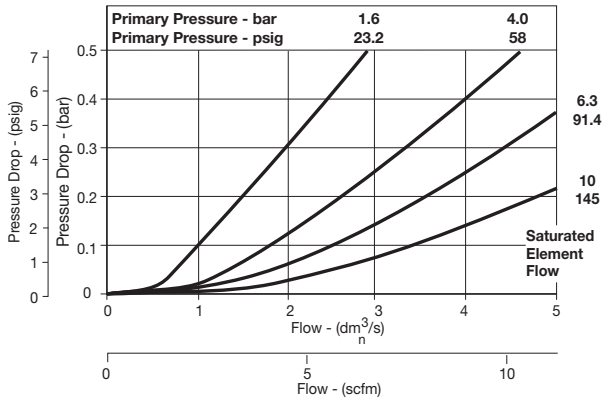
C-Type.....GPA-97-010

T-Type GPA-96-737

M08 1/4" Filter, 1.0 Micron



M08 1/4" Filter, 0.01 Micron

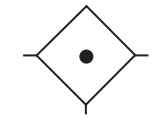


Ordering Information

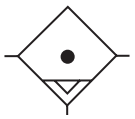
Model Type	Port Size	Plastic Bowl / Bowl Guard / C Element	Plastic Bowl / Bowl Guard / B Element	Plastic Bowl / Bowl Guard / D Element	Metal Bowl / C Element	Metal Bowl / B Element	Metal Bowl / D Element
Manual Drain	1/4	M08-02-CK00B	M08-02-BK00B	M08-02-DK00B	M08-02-CL00B	M08-02-BL00B	M08-02-DL00B
Automatic Piston Drain	1/4	M08-02-CR00B	M08-02-BR00B	M08-02-DR00B	M08-02-CS00B	M08-02-BS00B	M08-02-DS00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Coalescing Filter M18



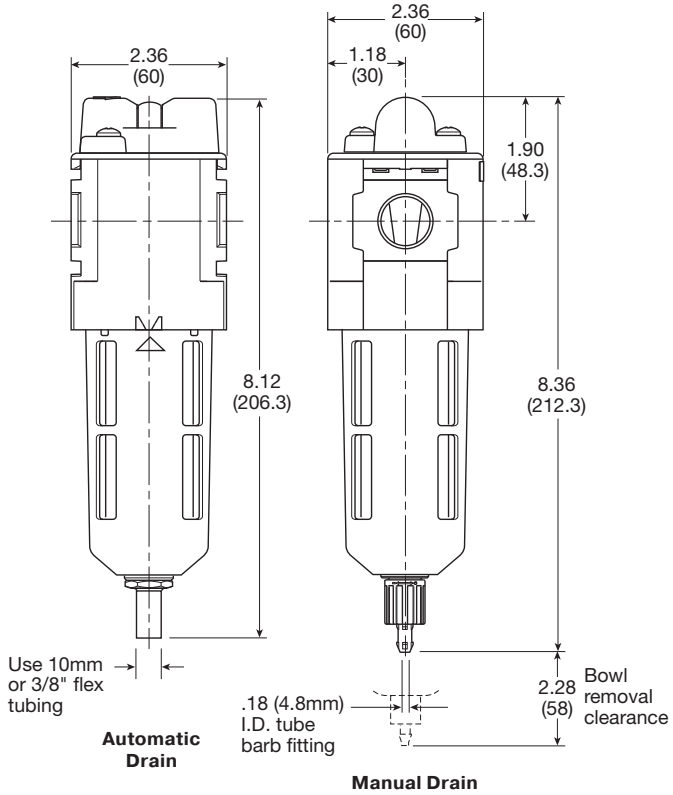
Coalescing Filter



Auto Drain

Features

- High-efficiency Removal of Water, Oil Aerosols, and Solid Particulate Contaminants Down to 0.01 ppm / wt with Minimum Pressure Drop
- Modern Design and Appearance
- Light Weight
- High Flow Capacity
- Bowl Guard
- Quick-disconnect Bowl



Inches (mm)

Specifications

Flow Capacity*		
1.0 Micron Coalescing		53 SCFM (25 dm^3/s, ANR)
0.01 Micron Coalescing		36 SCFM (17 dm^3/s, ANR)
Activated Carbon Adsorber		85 SCFM (40 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10 bar)†
	Metal Bowl w/ DPI	150 PSIG (10 bar)†
	Metal Bowl w/o DPI	250 PSIG (17 bar)†
Operating Temperature	Plastic Bowl	-13° to 125°F (-25° to 52°C)
	Metal Bowl	-13° to 150°F (-25° to 65.5°C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Bowl Capacity		1.72 oz
Standard Filtration	Micron	(B) 0.5, (C) 0.01 (D) 0.003 ppm wt**
Weight		0.71 lb (0.32 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 3 PSIG (0.2 bar).

** Filtration temperature of 70°F (21°C) @ 100 PSIG (6.9 bar) with typical compressor lubricating oil and protected by Type C filter.

† Without pressure indicator — max. supply pressure for metal bowl version is 250 PSIG (17.2 bar).

"M" Series Coalescing Filters, with Type "B" 0.5 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "B" 0.5 micron elements **exceed ISO** Class 2 for maximum particle size and concentration of solid contaminants, and exceed Class 3 on maximum oil content (ppm/wt).

"M" Series Coalescing Filters, with Type "C" 0.01 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "C" 0.01 micron elements **exceed ISO** Class 1 for maximum particle size and concentration of solid contaminants, and exceed Class 1 on maximum oil content (ppm/wt).

"M" Series Adsorption Filters, with Type "D" 0.003 micron activated carbon elements: All Wilkerson Type "M" adsorption filters with Type "D" 0.003 micron activated carbon elements **exceed ISO** Class 1 on maximum oil content (ppm/wt).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowl	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Filter Element	Type "B", "C"	Borosilicate Cloth
	Type "D"	Activated Carbon
Seals		Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Notes: To optimize the life of the coalescing element, it is advisable to install a pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of the adsorber element, it is advisable to install a coalescing 0.01 micron filter upstream of the adsorber filter.

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge,
Automatic Float Drain GRP-96-637

Metal Bowl with Sight Gauge, Manual Drain GRP-96-636

Plastic Bowl –
Bowl Guard, Auto Drain GRP-96-635
Bowl Guard, Manual Drain GRP-96-634

Replacement Element Kits

Type "B", 0.5 Micron MSP-96-647

Type "C", 0.01 Micron MTP-96-646

Type "D", 0.003 Micron Activated Carbon..... MXP-96-650

Accessories

Automatic Drain –
Fluorocarbon GRP-95-981
Nitrile GRP-95-973

DPI Replacement Kit..... DP8-01-000

Electronic DPI Conversion Kit..... GRP-96-823
(Converts visual DPI to electronic DPI)

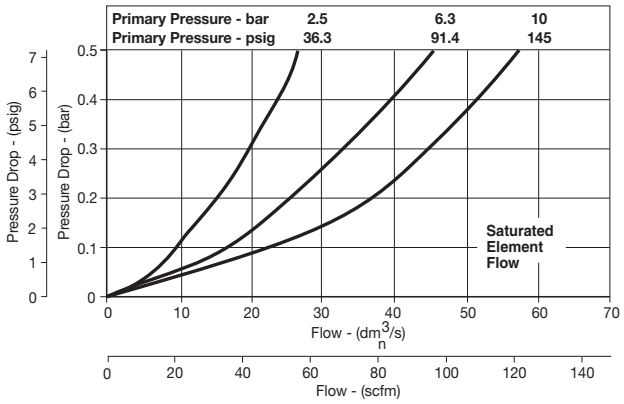
Electronic DPI Replacement Kit..... GRP-96-824

Manual Drain..... GRP-96-685

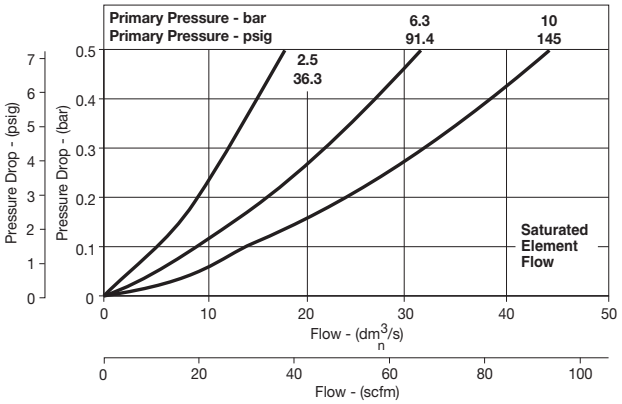
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
L-Type..... GPA-96-604
T-Type GPA-96-602

M18 1/2" Filter, 1.0 Micron



M18 1/4" Filter, 0.01 Micron

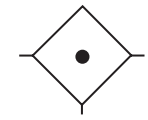


Ordering Information

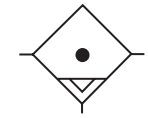
Model Type	Port Size	Plastic Bowl / Bowl Guard / C Element	Plastic Bowl / Bowl Guard / B Element	Plastic Bowl / Bowl Guard / D Element	Metal Bowl / Sight Gauge / C Element	Metal Bowl / Sight Gauge / B Element	Metal Bowl / Sight Gauge / D Element
Manual Drain	1/4	M18-02-CK00B	M18-02-BK00B	M18-02-DK00B	M18-02-CL00B	M18-02-BL00B	M18-02-DL00B
	3/8	M18-03-CK00B	M18-03-BK00B	M18-03-DK00B	M18-03-CL00B	M18-03-BL00B	M18-03-DL00B
	1/2	M18-04-CK00B	M18-04-BK00B	M18-04-DK00B	M18-04-CL00B	M18-04-BL00B	M18-04-DL00B
Automatic Drain	1/4	M18-02-CG00B	M18-02-BG00B	N/A	M18-02-CH00B	M18-02-BH00B	N/A
	3/8	M18-03-CG00B	M18-03-BG00B	N/A	M18-03-CH00B	M18-03-BH00B	N/A
	1/2	M18-04-CG00B	M18-04-BG00B	N/A	M18-04-CH00B	M18-04-BH00B	N/A

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Coalescing Filter M28



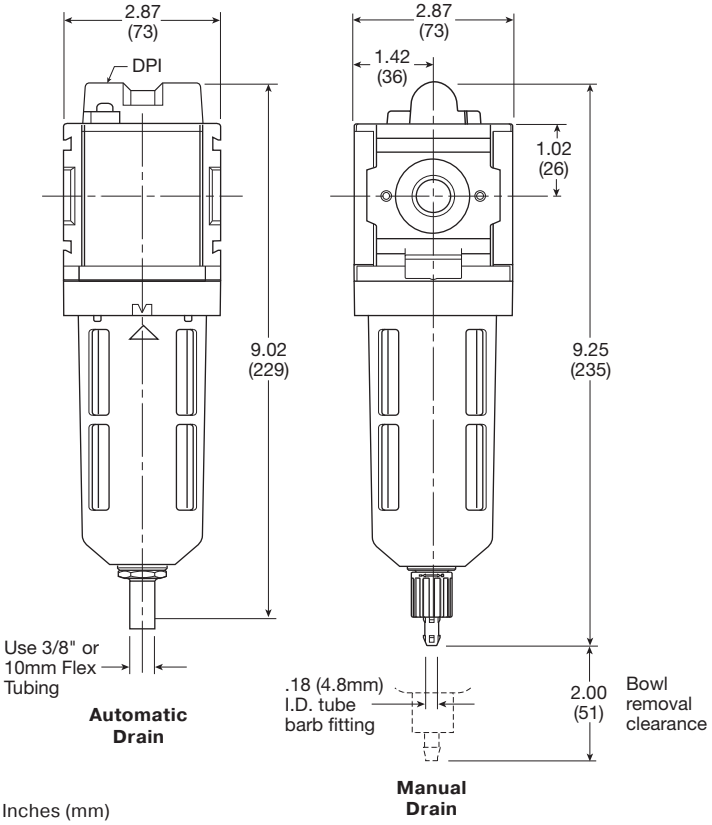
Coalescing Filter



Auto Drain

Features

- High-efficiency Removal of Water, Oil Aerosols, and Solid Particulate Contaminants Down to 0.01 ppm / wt with Minimum Pressure Drop
- Modern Design and Appearance
- Light Weight
- High Flow Capacity
- Bowl Guard
- Quick-disconnect Bowl



Inches (mm)

Specifications

Flow Capacity*		
1.0 Micron Coalescing		68 SCFM (32 dm^3/s, ANR)
0.01 Micron Coalescing		42 SCFM (20 dm^3/s, ANR)
Activated Carbon Adsorber		72 SCFM (34 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)†
	Metal Bowl	150 PSIG (10.3 bar)†
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Bowl Capacity		2.87 oz
Standard Filtration	Micron	(B) 0.5, (C) 0.01 (D) 0.003 ppm wt**
Weight		1.10 lb. (0.5 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 3 PSIG (0.2 bar).

** Filtration temperature of 70˚F (21˚C) @ 100 PSIG (6.9 bar) with typical compressor lubricating oil and protected by Type C filter.

† Without pressure indicator — max. supply pressure for metal bowl version is 250 PSIG (17.2 bar)

"M" Series Coalescing Filters, with Type "B" 0.5 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "B" 0.5 micron elements **exceed ISO** Class 2 for maximum particle size and concentration of solid contaminants, and exceed Class 3 on maximum oil content (ppm/wt).

"M" Series Coalescing Filters, with Type "C" 0.01 micron elements: All Wilkerson Type "M" Oil Removal (Coalescing) Filters with Type "C" 0.01 micron elements **exceed ISO** Class 1 for maximum particle size and concentration of solid contaminants, and exceed Class 1 on maximum oil content (ppm/wt).

"**M" Series Adsorption Filters, with Type "D" 0.003 micron activated carbon elements:** All Wilkerson Type "M" adsorption filters with Type "D" 0.003 micron activated carbon elements **exceed ISO** Class 1 on maximum oil content (ppm/wt).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Filter Element	Type "B", "C"	Borosilicate Cloth
	Type "D"	Activated Carbon
Seals		Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Notes: To optimize the life of the coalescing element, it is advisable to install a pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of the adsorber element, it is advisable to install a coalescing 0.01 micron filter upstream of the adsorber filter.

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge,
Automatic Float Drain GRP-96-645

Metal Bowl with Sight Gauge, Manual Drain GRP-96-644

Plastic Bowl –
Bowl Guard, Auto Drain GRP-96-643
Bowl Guard, Manual Drain GRP-96-642

Replacement Element Kits

Type "B", 0.5 Micron MSP-96-649

Type "C", 0.01 Micron MTP-96-648

Type "D", 0.003 Micron Activated Carbon..... MXP-96-651

Accessories

Automatic Drain –
Fluorocarbon GRP-95-981
Nitrile GRP-95-973

DPI Replacement Kit..... DP8-01-000

Electronic DPI Conversion Kit..... GRP-96-823
(Converts visual DPI to electronic DPI)

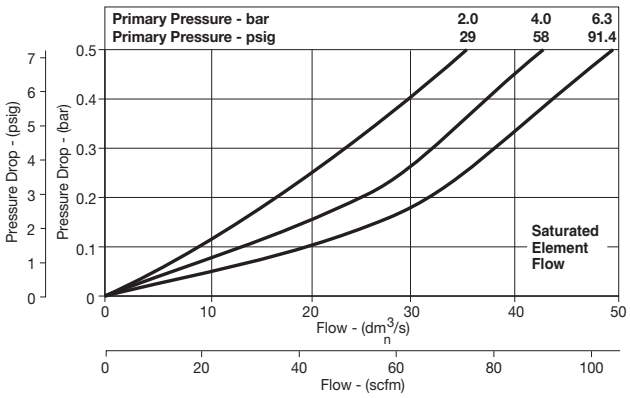
Electronic DPI Replacement Kit..... GRP-96-824

Manual Drain..... GRP-96-685

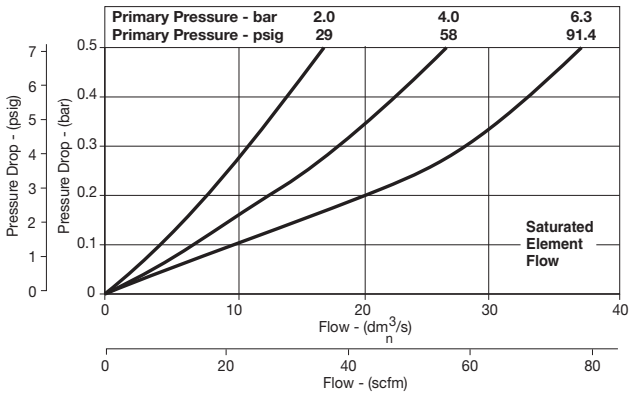
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket–
L-Type..... GPA-96-605
T-Type GPA-96-602

M28 3/4" Filter, 1.0 Micron



M28 3/4" Filter, 0.01 Micron



Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard / C Element	Plastic Bowl / Bowl Guard / B Element	Plastic Bowl / Bowl Guard / D Element	Metal Bowl / Sight Gauge / C Element	Metal Bowl / Sight Gauge / B Element	Metal Bowl / Sight Gauge / D Element
Manual Drain	3/8	M28-03-CK00B	M28-03-BK00B	M28-03-DK00B	M28-03-CL00B	M28-03-BL00B	M28-03-DL00B
	1/2	M28-04-CK00B	M28-04-BK00B	M28-04-DK00B	M28-04-CL00B	M28-04-BL00B	M28-04-DL00B
	3/4	M28-06-CK00B	M28-06-BK00B	M28-06-DK00B	M28-06-CL00B	M28-06-BL00B	M28-06-DL00B
Automatic Drain	3/8	M28-03-CG00B	M28-03-BG00B	N/A	M28-03-CH00B	M28-03-BH00B	N/A
	1/2	M28-04-CG00B	M28-04-BG00B	N/A	M28-04-CH00B	M28-04-BH00B	N/A
	3/4	M28-06-CG00B	M28-06-BG00B	N/A	M28-06-CH00B	M28-06-BH00B	N/A

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Coalescing Filter M90

= **"Most Popular"**

- Extended high efficiency filter element provides greater filtration surface area.
- Integral 3/4" or 1" ports (BSPP & NPT)
- Removes liquid aerosols and sub micron particles
- Oil free air for critical applications, such as air gauging, pneumatic instrumentation and control
- Adsorber activated carbon element removes oil vapors and most hydrocarbons
- Robust but lightweight aluminum construction

Notes: To optimize the life of the coalescing element, it is advisable to install a F90 pre-filter with a 5 micron element upstream of the coalescing filter.

To optimize the life of the adsorber element, it is advisable to install a 90 Series coalescing 0.01 micron filter upstream of the adsorber filter.

M90 - 0 6 - C L 0 0

Series	
Coalescing Filter	M90

Thread type*	
NPT	0
BSPP	C

Port size	
3/4	6
1	8

Element	
C	0.01 micron element with DPI
D	Adsorber

Bowl / drain type	
H	Metal bowl / sight gauge & auto drain
L	Metal bowl / sight gauge / manual & semi auto drain

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Ordering Information

Port size	Description	Flow‡ scfm	Max. bar (psig)	Min temp °C (°F)	Max temp °C (°F)	Bowl capacity cm³ (oz)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number†
3/4"	Coalescing filter 0.01 micron, combined manual / semi auto drain	275	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	340 (13.4)	90 (3.5)	94 (3.7)	1.6 (3.5)	**M90-06-CL00**
3/4"	Coalescing filter 0.01 micron, auto drain	275	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	340 (13.4)	90 (3.5)	94 (3.7)	1.6 (3.5)	M90-06-CH00
1"	Coalescing filter 0.01 micron, combined manual / semi auto drain	307	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	340 (13.4)	90 (3.5)	94 (3.7)	1.6 (3.5)	**M90-08-CL00**
1"	Coalescing filter 0.01 micron, auto drain	307	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	340 (13.4)	90 (3.5)	94 (3.7)	1.6 (3.5)	M90-08-CH00

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 6.3 bar (91.4 psig) inlet pressure and 0.5 (7.3 psig) pressure drop.

Specifications

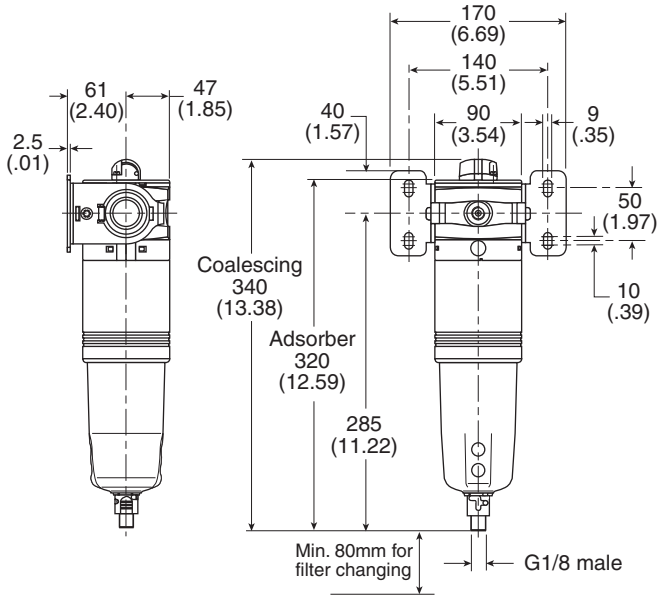
Fluid	Compressed air
Maximum inlet pressure*	17.5 bar (254 psig)
Temperature range*	-10°C to 60°C (14°F to 140°F)
Media specifications (Coalescer): Coalescing efficiency Max. oil carryover	 99.97% (0.3 to 0.6 micron particles) 0.008 mg/m³
Typical flow element @ 6.3 bar (91.4 psig) inlet pressure and 0.5 bar (7.3 psig) pressure drop	0.01 micron element 1" port 307 scfm
Media specifications (Adsorber): Max. oil carryover (PPM w/w)	 0.008 mg/m³
Manual / semi-auto drain	Closed at 0.8 bar (11.6 psig) G1/8 thread male
Auto drain bowl pressure to close drain	0.8 bar (11.6 psig)
Operating range manual override facility	0.8 bar (11.6 psig) to 17.5 bar (254 psig)
Bowl capacity	130 cm³ (4.4 US oz)

* Air supply must be dry enough to avoid ice formation at temperatures below 2°C (35.6°F).

Material Specifications

Body		Aluminum
Sight glass		Polypropylene
Filter cover		ABS
Coalescing element		Borosilicate & nano fibers
Top & bottom end cap (Coalescing)		Aluminum
Adsorber element		Activated carbon
Top & bottom end cap (Adsorber)		Glass filled nylon
Support cylinders		Grade 430 stainless steel
Support media		Polypropylene
Anti re-entrainment barrier		Polyester
Encapsulate		Epoxy resin / hardener
Seals		Nitrile NBR
Drains	Manual / semi-auto:	Acetal
	Automatic:	PA / Ø 10mm brass connection
Differential pressure indicator		
	Body	Acetal
	Internal parts	Acetal
	Spring	Stainless steel
	Seals	Nitrile NBR
	Support plate	ABS
	Screws	Steel / zinc plated

Dimensions mm (inches)



Service Kits

0.01 micron element kit.....P3YKA00ESC

Adsorber element kit P3YKA00ESA

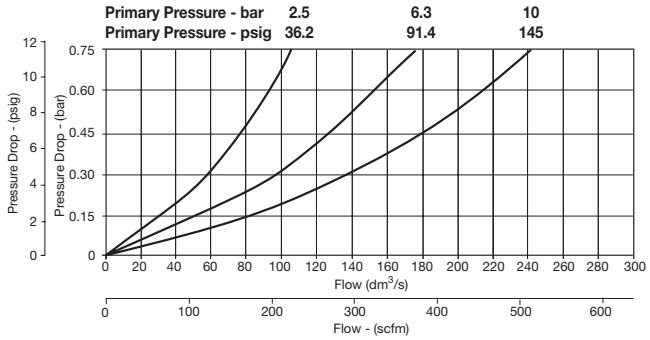
Bowl kit with combined manual / semi auto drain..... P3YKA00BSC

Bowl kit with auto drain P3YKA00BSA

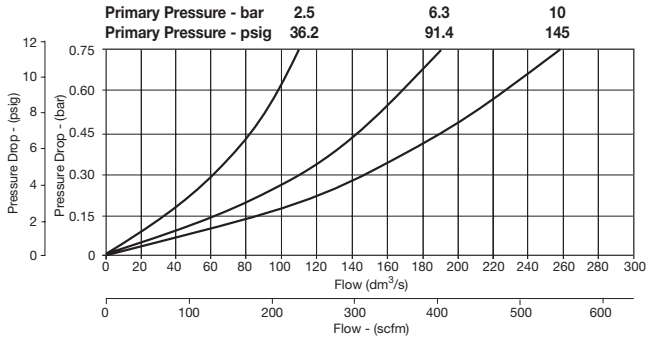
Differential pressure indicator kit P3YKA00RQ

Flow Characteristics

(3/4") 0.01 Micron Coalescing Filter Saturated



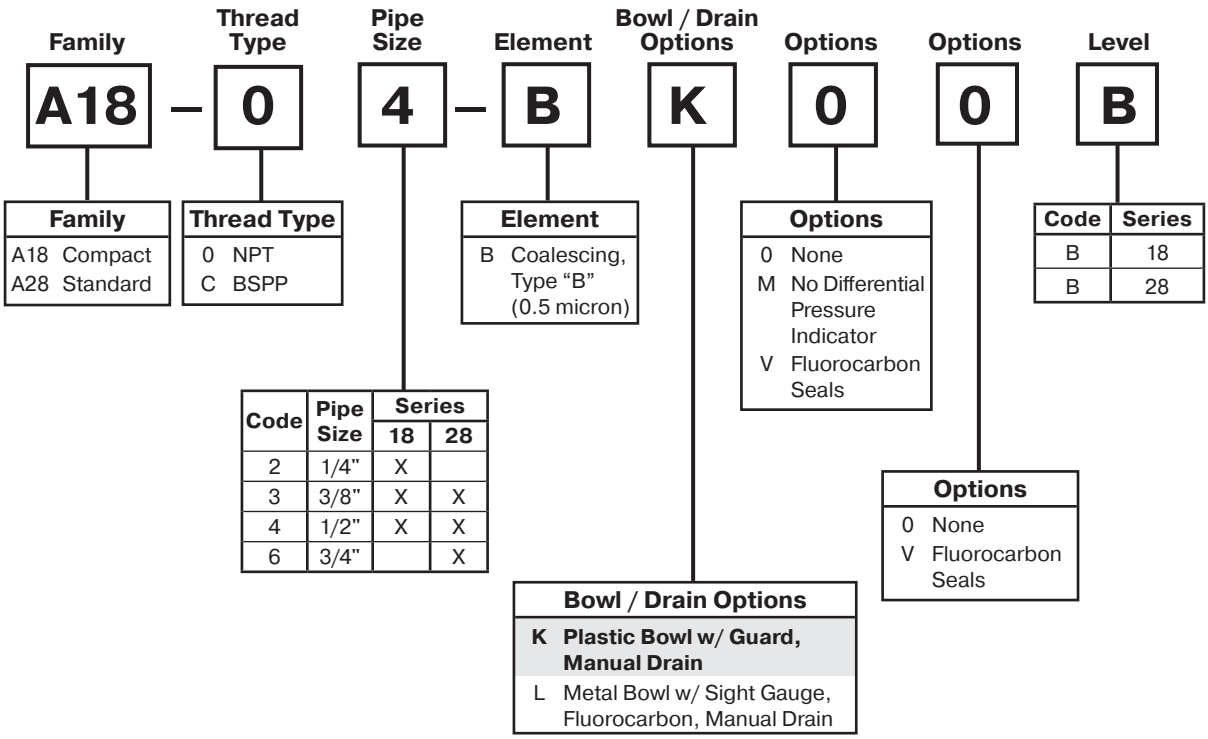
(1") 0.01 Micron Coalescing Filter Saturated



Notes

Afterfilter Numbering System

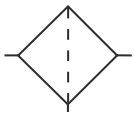
= **"Most Popular"**



NOTE: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

If more than one option is desired, arrange them in alphabetical order in positions 6, 7, and 8.

Afterfilter A18



Afterfilter

= **"Most Popular"**

Specifications

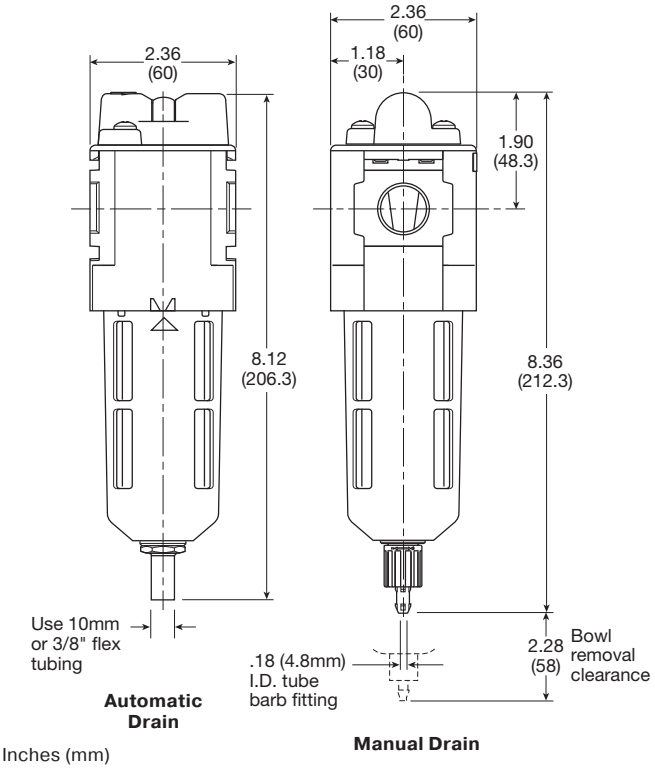
Flow Capacity*	1/4	50 SCFM (23.6 dm^3/s)
	3/8	60 SCFM (28.3 dm^3/s)
	1/2	67 SCFM (31.6 dm^3/s)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13° to 125°F (-25° to 52°C)
	Metal Bowl	-13° to 150°F (-25° to 65.5°C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Standard Filtration		0.5 Micron
Weight		0.71 lb. (0.32 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 3 PSID (0.2 bar).

"A18" Series Afterfilters, with Type "B" 0.5 micron elements: All Wilkerson Type "AF" Afterfilters with Type "B" 0.5 micron elements **exceed ISO** Class 2 for maximum particle size and concentration of solid contaminants, and **exceed** Class 3 on maximum oil content (ppm/wt).

Features

- Modern Design and Appearance
- 0.5 Micron Element
- Light Weight
- High Flow Capacity with Minimal Pressure Drop



Inches (mm)

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Filter Element	Type "B"	Borosilicate Fiber
Seals		Nitrile
Sight Gauge	Metal Bowl	Nylon

Replacement Bowl Kits

Metal Bowl with Sight Gauge, Manual Drain GRP-96-636

Plastic Bowl / Bowl Guard, Manual Drain GRP-96-634

Plastic Bowl, Plastic Guard, No Drain GRP-96-638

Replacement Element Kit

Type "B", 0.5 Micron MSP-96-647

Accessories

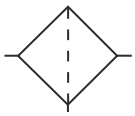
Wall Mounting Bracket –
L-Type GPA-96-604
T-Type GPA-96-602

Ordering Information

Model Type	Port Size	Polycarbonate Bowl / Bowl Guard / "B" Element	Metal Bowl / Sight Gauge / "B" Element
Type "B" Element is Standard (Manual Drain)	1/4	A18-02-BK00B	A18-02-BL00B
	3/8	A18-03-BK00B	A18-03-BL00B
	1/2	A18-04-BK00B	A18-04-BL00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Afterfilter A28



Afterfilter

= **"Most Popular"**

Specifications

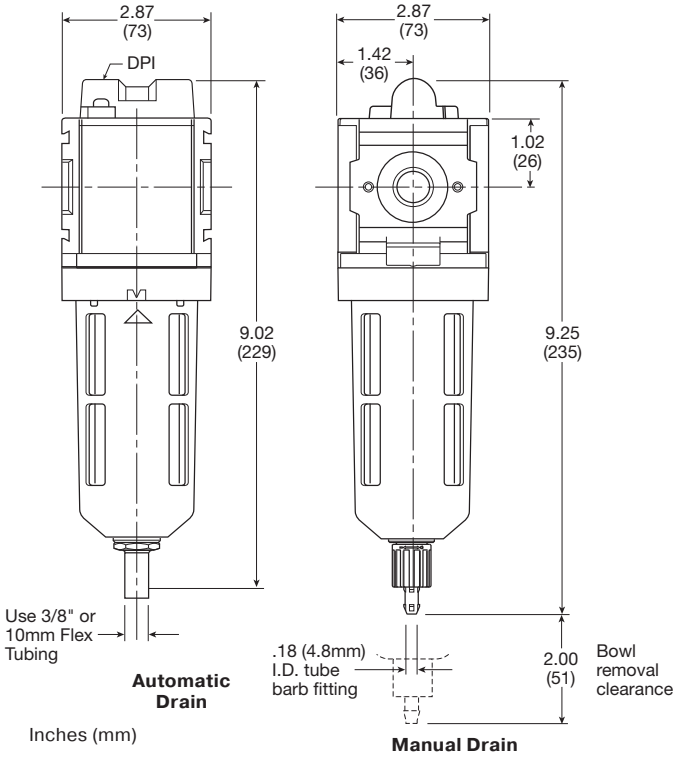
Flow Capacity*	3/8	82 SCFM (38.7 dm^3/s)
	1/2	90 SCFM (42.5 dm^3/s)
	3/4	98 SCFM (46.3 dm^3/s)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13° to 125°F (-25° to 52°C)
	Metal Bowl	-13° to 150°F (-25° to 65.5°C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Standard Filtration		0.5 Micron
Weight		1.01 lb. (0.46 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 3 PSID (0.2 bar).

"A28" Series Afterfilters, with Type "B" 0.5 micron elements: All Wilkerson Type "AF" Afterfilters with Type "B" 0.5 micron elements **exceed ISO** Class 2 for maximum particle size and concentration of solid contaminants, and **exceed** Class 3 on maximum oil content (ppm/wt).

Features

- Modern Design and Appearance
- 0.5 Micron Element
- Light Weight
- High Flow Capacity with Minimal Pressure Drop
- Bowl Guard
- Quick-Disconnect Bowl



Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Filter Element	Type "B"	Borosilicate Fiber
Seals		Nitrile
Sight Gauge	Metal Bowl	Nylon

Replacement Bowl Kits

Metal Bowl with Sight Gauge, Manual Drain GRP-96-644

Plastic Bowl / Bowl Guard, Manual Drain GRP-96-642

Plastic Bowl, Plastic Guard, No Drain GRP-96-652

Replacement Element Kit

Type "B", 0.5 Micron MSP-96-649

Accessories

Wall Mounting Bracket –

L-Type GPA-96-605

T-Type GPA-96-602

Ordering Information

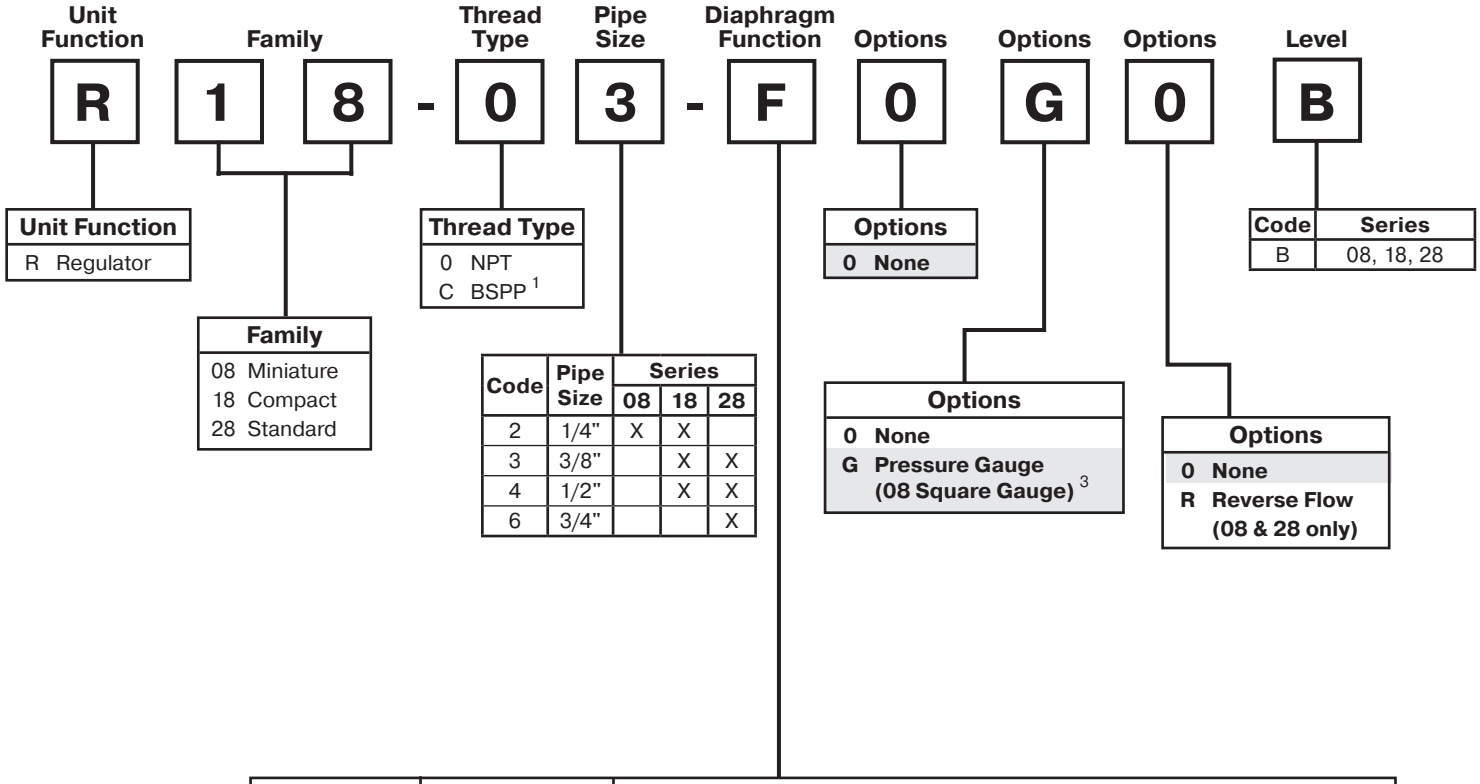
Model Type	Port Size	Polycarbonate Bowl / Bowl Guard / "B" Element	Metal Bowl / Sight Gauge / "B" Element
Type "B" Element is Standard (Manual Drain)	3/8	A28-03-BK00B	A28-03-BL00B
	1/2	A28-04-BK00B	A28-04-BL00B
	3/4	A28-06-BK00B	A28-06-BL00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Notes

Regulator Numbering System

= "Most Popular"



Diaphragm Function	Fluorocarbon (28 Series Only)	Spring Range			
		0 to 30 PSIG (0 to 2 bar)	0 to 60 PSIG (0 to 4 bar)	0 to 125 PSIG (0 to 8 bar)	0 to 250 PSIG[2] (0 to 17 bar)
Relieving	No	C	D	**F**	G
	Yes	J	K	L	M
Non-relieving	No	P	W	R	S
	Yes	V	X	Y	Z

[1] ISO, R228 (G Series).

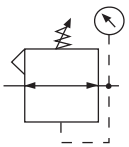
[2] R08 series operating range 0 to 232 PSIG (1 to 16 bar).

[3] Square gauge is included with all R08

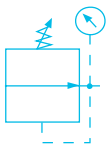
NOTE: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, and 9. For example:

R 0 8 - 0 2 - F 0 G 0 B

Regulator R08



Relieving



Non-Relieving

Specifications

Flow Capacity*	1/4	73 SCFM (34 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2 bar) 0 to 60 PSIG (0 to 4 bar) 0 to 125 PSIG (0 to 8 bar) 0 to 232 PSIG (0 to 16 bar)
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature†		-4° to 150°F (-20° to 65.5°C)
Port Size	NPT / BSPP-G	1/4
Weight		0.37 lb. (0.17 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 100 psig (6.9 bar) and 14.5 psig (1 bar) pressure drop.
† Units with square gauges: 5°F to 150°F (-15°C to 65.5°C)

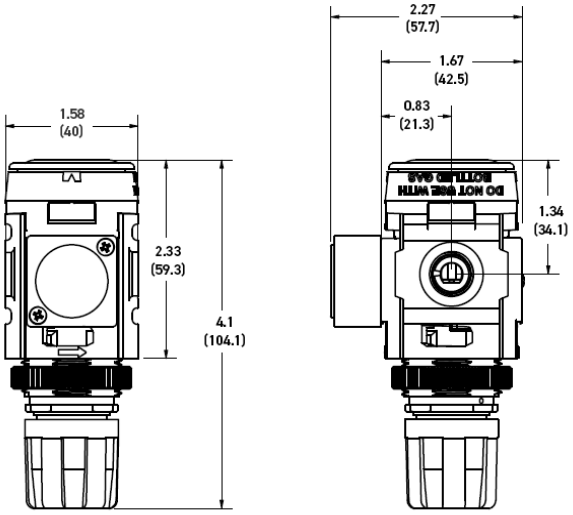
Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Features

- Balanced Valve Design
- Unique Flush-mounted Pressure Gauge
- Light Weight
- Modern Modular Design and Appearance

Materials of Construction

Adjustment Knob	Acetal
Body	Aluminum
Bottom Cap	Glass-filled Nylon
Bonnet	Glass-filled Nylon
Diaphragm Assembly	Stainless Steel / Nitrile
Panel Nut	Acetal
Seals	Nitrile
Springs	Steel
Valve Assembly	Acetal / Nitrile



Inches (mm)

NOTE: 1.20 in. (30mm) hole required for panel nut mounting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Kits

Adjusting Knob GRP-96-792

Accessories

Panel Mount Nut –
- Aluminum RPA-96-773
- Plastic RPA-96-734

Pressure Gauge– (*see note below)

Square flush mount gauge
- 0-4 bar..... GRP-96-791-04B
- 0-11 bar.....GRP-96-791-11B
- 0-20 bar..... GRP-96-791-20B
- 0-60 PSIG GRP-96-791-060
- 0-160 PSIG.....GRP-96-791-160
- 0-290 PSIG GRP-96-791-290

*For R08/R09 Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.

Square flush mount gauge
- 0-4 bar.....K4511SCR04B
- 0-11 bar.....K4511SCR11B
- 0-60 PSIG K4511SCR060
- 0-160 PSIG..... K4511SCR160

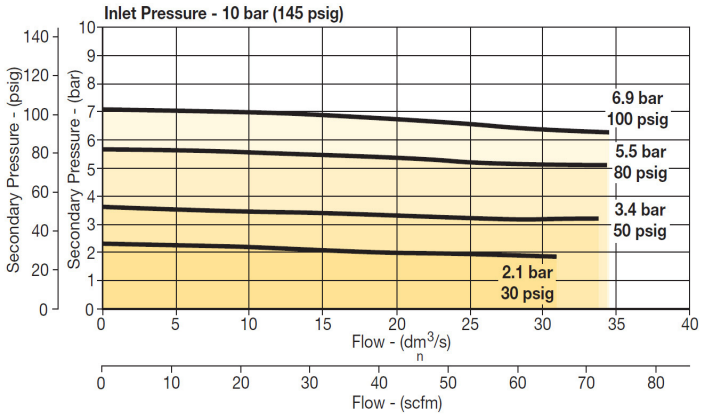
Square with adapter kit
- 0-4 bar.....P6G-PR10040
- 0-11 bar.....P6G-PR10110
- 0-60 PSIG P6G-PR90060
- 0-160 PSIG.....P6G-PR90160

50mm (2") round 1/4" center back mount
- 0-30 PSIG / 0-2 bar..... K4520N14030
- 0-60 PSIG / 0-4 bar..... K4520N14060
- 0-160 PSIG / 0-11 bar..... K4520N14160
- 0-300 PSIG / 0-20 bar..... K4520N14300

1-3/4" Digital Round 1/4" NPT
- 0 to 160 PSIG K4517N14160D

Tamperproof Lock and Cover Kit
(lock not included)..... RPA-96-736B

Wall Mounting Bracket –
- C-Type.....GPA-97-010
- L-Type..... GPA-96-739
- T-Type GPA-96-737

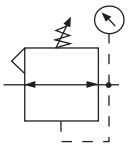


Ordering Information

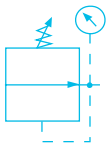
Model Type	Port Size	With Gauge 0 to 125 PSIG (0 to 8.6 bar)	With Gauge 0 to 30 PSIG (0 to 2.1 bar)	With Gauge 0 to 60 PSIG (0 to 4.1 bar)
Relieving	1/4	R08-02-F0G0B	R08-02-C0G0B	R08-02-D0G0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Regulator R18



Relieving



Non-Relieving

Features

- Balanced Valve Design
- Spring-loaded Diaphragm
- 4 Adjusting Pressure Ranges Available
- 1/2" NPT / BSPP-G Over-port
- 2 Gauge Ports
- Regulator will Reverse-flow as Standard

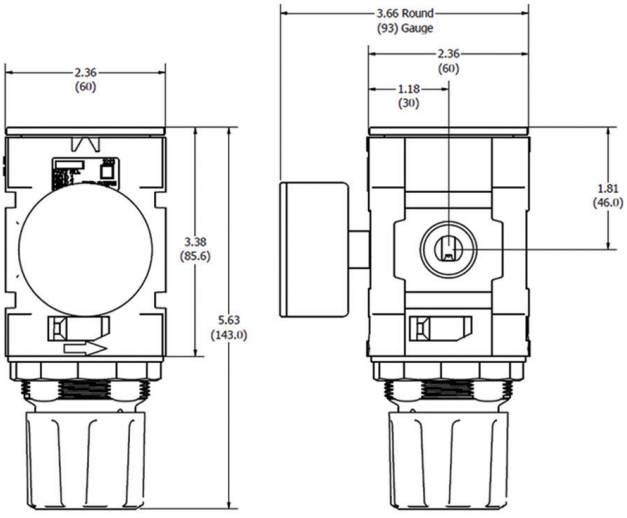
Specifications

Flow Capacity*	1/4	179 SCFM (84 dm^3/s, ANR)
	3/8, 1/2	201 SCFM (94 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2 bar) 0 to 60 PSIG (0 to 4 bar) 0 to 125 PSIG (0 to 8 bar) 0 to 250 PSIG (0 to 17 bar)
Gauge Port (2 ea.)	NPT / BSPP-G	1/4
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature		-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Weight		1.24 lb (0.56 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 80 psig (5.5 bar).

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Body Cap		ABS
Bonnet		33% glass-filled nylon
Diaphragm Assembly		Nitrile / Stainless Steel
Valve Assembly		Acetal / Nitrile
Panel Nut		Acetal
Seals		Nitrile
Springs	Main Regulating Valve	Steel Stainless Steel



Inches (mm)

NOTE: 1.90 in. (48mm) hole required for panel nut mounting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Kits

Adjusting Knob RRP-96-655

Spring, Regulating –
- 0 to 30 PSIG (0 to 2.1 bar) RRP-96-659B
- 0 to 60 PSIG (0 to 4.1 bar) RRP-96-660B
- 0 to 125 PSIG (0 to 8.6 bar) RRP-96-661B
- 0 to 250 PSIG (0 to 17.2 bar) RRP-96-662B

Accessories

Panel Mount Nut –
- Aluminum RRP-96-673
- Plastic RRP-96-675B

Gauge, Pressure –

Square with adapter kit
- 0-4 bar P6G-PR10040
- 0-11 bar P6G-PR10110
- 0-60 PSIG P6G-PR90060
- 0-160 PSIG P6G-PR90160

50mm (2") round 1/4" center back mount
- 0-30 PSIG / 0-2 bar K4520N14030
- 0-60 PSIG / 0-4 bar K4520N14060
- 0-160 PSIG / 0-11 bar K4520N14160
- 0-300 PSIG / 0-20 bar K4520N14300

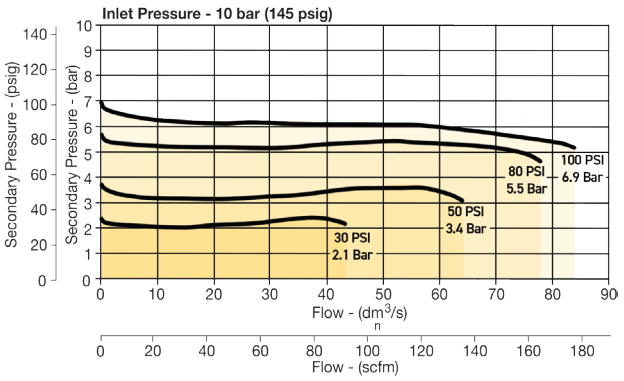
1-3/4" Digital Round 1/4" NPT
- 0 to 160 PSIG K4517N14160D

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

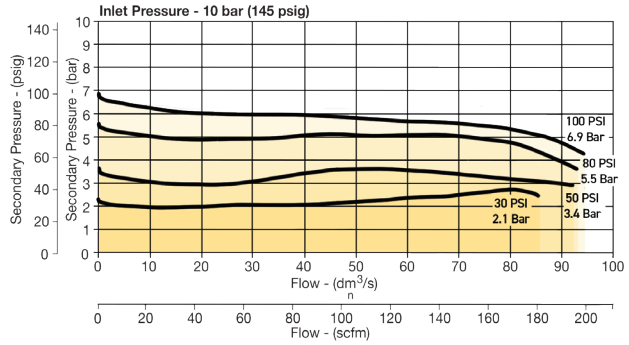
Tamperproof Lock and Cover Kit RPA-96-737B

Wall Mounting Bracket –
- L-Type GPA-96-606
- T-Type GPA-96-602

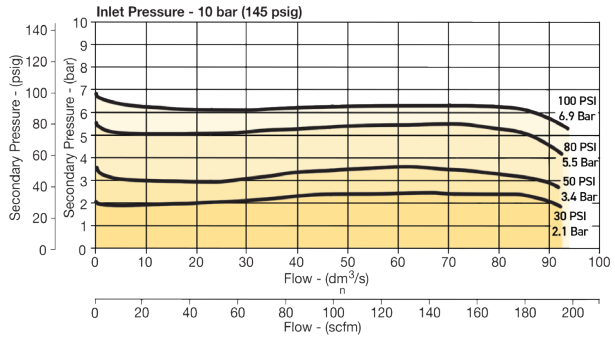
R18 1/4" Regulator



R18 3/8" Regulator



R18 1/2" Regulator

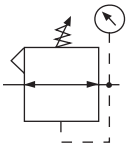


Ordering Information

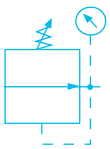
Model Type	Port Size	With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)	With Gauge 10 to 250 PSIG (0.7 to 17.2 bar)	With Gauge 3 to 60 PSIG (0.2 to 4.1 bar)	Without Gauge 5 to 125 PSIG (0.4 to 8.6 bar)
Relieving	1/4	R18-02-F0G0B	R18-02-G0G0B	R18-02-D0G0B	R18-02-F000B
	3/8	R18-03-F0G0B	R18-03-G0G0B	R18-03-D0G0B	R18-03-F000B
	1/2	R18-04-F0G0B	R18-04-G0G0B	R18-04-D0G0B	R18-04-F000B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Regulator R28



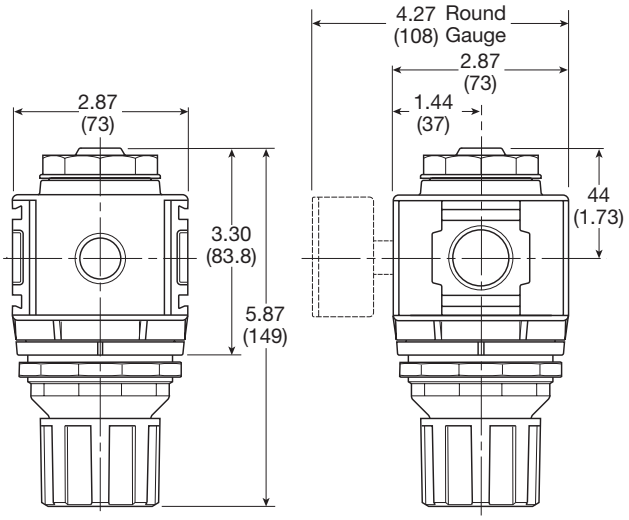
Relieving



Non-Relieving

Features

- Balanced Valve Design
- Spring-loaded Diaphragm
- 4 Adjusting Pressure Ranges Available
- 3/4" NPT / BSPP-G Over-port
- Reverse-flow Available
- 2 Gauge Ports



Inches (mm)

NOTE: 2.40 in. (61mm) hole required for panel nut mounting.

Specifications

Flow Capacity*	3/8	228 SCFM (108 dm^3/s, ANR)
	1/2	233 SCFM (110 dm^3/s, ANR)
	3/4	233 SCFM (110 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2 bar) 0 to 60 PSIG (0 to 4 bar) 0 to 125 PSIG (0 to 8 bar) 0 to 250 PSIG (0 to 17 bar)
Gauge Port (2 ea.)	NPT / BSPP-G	1/4
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature		-13° to 150°F (-25° to 65.5°C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Weight		1.37 lb. (0.62 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 91.3 psig (6.3 bar) and 14.5 psig (1 bar) pressure drop.

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Body Cap		ABS
Bonnet		33% Glass-filled Nylon
Diaphragm Assembly Nitrile / Zinc		
Panel Nut		Acetal
Seals		Nitrile
Springs	Main Regulating Valve	Steel Stainless Steel
Valve Assembly		Brass / Nitrile / Acetal

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Kits

Diaphragm Assembly –
- Non-relieving RRP-96-987
- Relieving RRP-96-986

Valve Assembly RRP-96-049

Adjusting Knob RRP-16-341-000

Spring, Regulating
- 0 to 30 PSIG (0 to 2.1 bar) RRP-96-163
- 0 to 60 PSIG (0 to 4.1 bar) RRP-96-164
- 0 to 125 PSIG (0 to 8.6 bar) RRP-96-165
- 0 to 250 PSIG (0 to 17.2 bar) RRP-96-166

Accessories

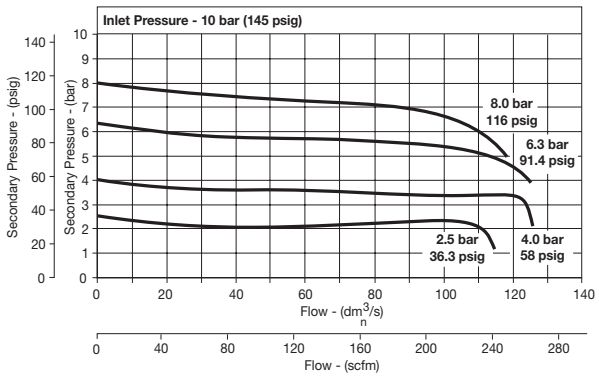
Panel Mount Nut –
- Aluminum RRP-96-674
- Plastic RRP-96-676

Gauge, Pressure –
- 50mm (2") round 1/4" center back mount
  - 0-30 PSIG / 0-2 bar K4520N14030
  - 0-60 PSIG / 0-4 bar K4520N14060
  - 0-160 PSIG / 0-11 bar K4520N14160
  - 0-300 PSIG / 0-20 bar K4520N14300
- 0 to 160 PSIG, 1-3/4" Digital Round, 1/4" NPT K4517N14160D

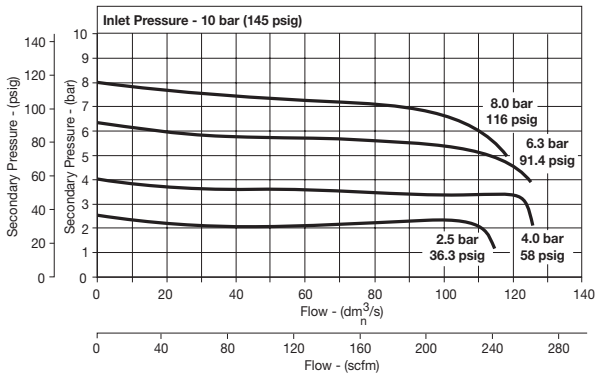
Tamper Resistant Kit RRP-96-672

Wall Mounting Bracket
- L-Type GPA-96-607
- T-Type GPA-96-602

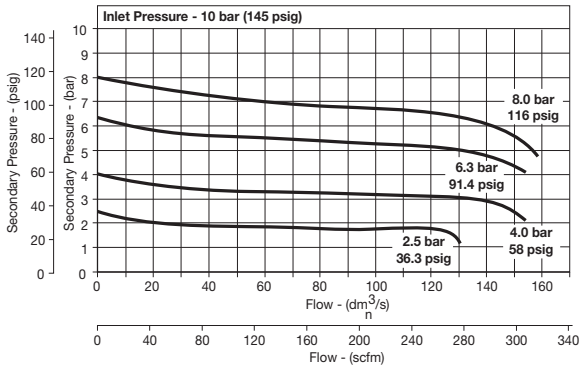
R28 3/8" Regulator



R28 1/2" Regulator



R28 3/4" Regulator



Ordering Information

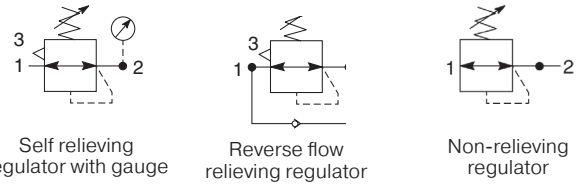
Model Type	Port Size	With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)	With Gauge 10 to 250 PSIG (0.7 to 17.2 bar)	With Gauge 3 to 60 PSIG (0.2 to 4.1 bar)	Without Gauge 5 to 125 PSIG (0.4 to 8.6 bar)
Relieving	3/8	R28-03-F0G0B	R28-03-G0G0B	R28-03-D0G0B	R28-03-F000B
	1/2	R28-04-F0G0B	R28-04-G0G0B	R28-04-D0G0B	R28-04-F000B
	3/4	R28-06-F0G0B	R28-06-G0G0B	R28-06-D0G0B	R28-06-F000B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Regulator R90

= **"Most Popular"**

Symbols



Self relieving regulator with gauge

Reverse flow relieving regulator

Non-relieving regulator

Features

- Integral 3/4" or 1" ports (BSPP & NPT)
- Robust but lightweight aluminum construction
- Secondary pressure ranges 12 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus rolling diaphragm provides quick response and accurate pressure regulation
- Optional tamperproof regulator padlock
- Reverse flow / relieving option
- Low temperature -40˚

R90 - 0 6 - A 0 0 0

Series	
Regulator	R90

Thread type*	
NPT	0
BSPP	C

Port size	
3/4	6
1	8

Function / pressure range	
A	Relieving / 0 to 174 PSI
H	Relieving / 0 to 232 PSI

Option	
0	None
G	Pressure Gauge
A†	Lockable type
R	Reverse Flow

Notes:
* For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
† Not field convertible.
Bold items are most common.

Ordering information

Port size	Description	Flow‡ scfm	Max. bar (psig)	Min temp ˚C (˚F)	Max temp ˚C (˚F)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number†
3/4"	12 bar relieving	380	17.5 (254)	-40 (-40)	60 (140)	182 (7.2)	90 (3.5)	94 (3.7)	1.08 (2.4)	**R90-06-A000**
3/4"	12 bar relieving + pressure gauge	380	17.5 (254)	-10 (14)	60 (140)	182 (7.2)	90 (3.5)	94 (3.7)	1.13 (2.5)	**R90-06-AG00**
1"	12 bar relieving	550	17.5 (254)	-40 (-40)	60 (140)	182 (7.2)	90 (3.5)	94 (3.7)	1.08 (2.4)	**R90-08-A000**
1"	12 bar relieving + pressure gauge	550	17.5 (254)	-10 (14)	60 (140)	182 (7.2)	90 (3.5)	94 (3.7)	1.19 (2.6)	**R90-08-AG00**

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 6.3 bar (91.4 psig) inlet pressure and 0.5 (7.3 psig) pressure drop.

Specifications

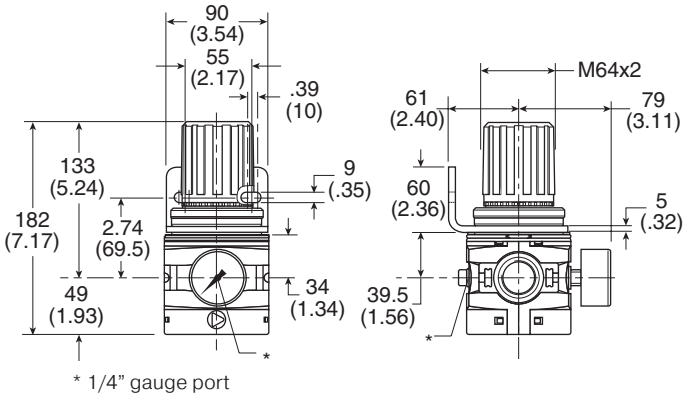
Fluid	Compressed air
Maximum inlet pressure*	17.5 bar (254 psig)
Temperature range*	-40°C to 60°C (-40°F to 140°F)
Typical flow with 10 bar (145 psig) inlet pressure and 6.3 bar (91 psig) set pressure and 0.5 bar (7.3 psig) pressure drop	1" size 550 scfm
Gauge port (x 2)	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below 2°C (35.6°F).

Material Specifications

Body	Aluminum
Bonnet	Glass filled polyamide
Regulator cover	ABS
Control knob	Glass filled polyamide
Valve	Brass / NBR
Seals	Nitrile NBR
Screws	Steel / zinc plated

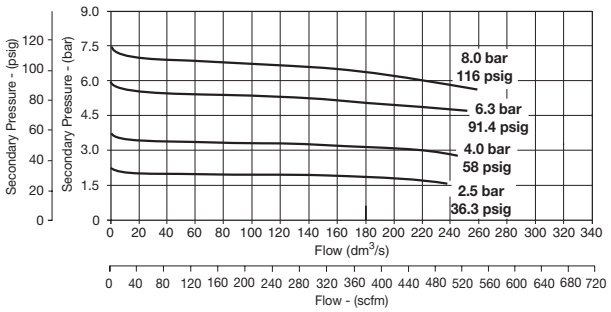
Dimensions mm (inches)



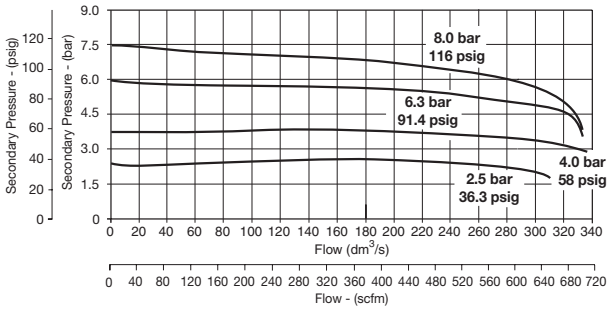
* 1/4" gauge port

Flow Characteristics

(3/4") Regulator



(1") Regulator



Service Kits

Angle bracket + metal lock ring P3YKA00MS
Panel mounting nut..... P3YKA00MM
Diaphragm kit (relieving type).....P3YKA00RR
Diaphragm kit (non-relieving type)..... P3YKA00RN
Gauge - 1/4" port
0 to 10 bar (0 to 160 psig) K4520N14160
0 to 20 bar (0 to 300 psig) K4520N14300

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

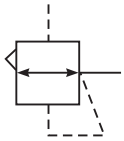
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Pilot Operated Regulator R90

= **"Most Popular"**

Symbol



Features

- Integral 3/4" or 1" ports (BSPP & NPT)
- Pilot controlled regulators can be mounted "out of reach" with pilot regulator installed in a convenient location
- Constant pilot bleed control for accurate pressure control
- Balanced poppet provides quick response
- High flow

R90 - 0 6 - R 0 0 0

Series	
Regulator	R90

Thread type*	
NPT	**0**
BSPP	C

Port size	
3/4	**6**
1	**8**

Function	
R	**Pilot Operated**

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Ordering Information

Port size	Description	Flow‡ scfm	Max. bar (psig)	Min temp °C (°F)	Max temp °C (°F)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number†
3/4"	Pilot operated regulator	550	17.5 (254)	-10 (14)	60 (140)	105.5 (4.15)	90 (3.54)	90 (3.54)	1.2 (2.6)	**R90-06-R000**
1"	Pilot operated regulator	550	17.5 (254)	-10 (14)	60 (140)	105.5 (4.15)	90 (3.54)	90 (3.54)	1.2 (2.6)	**R90-08-R000**

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.4 psig) set pressure and 1 bar (14.5 psig) pressure drop.

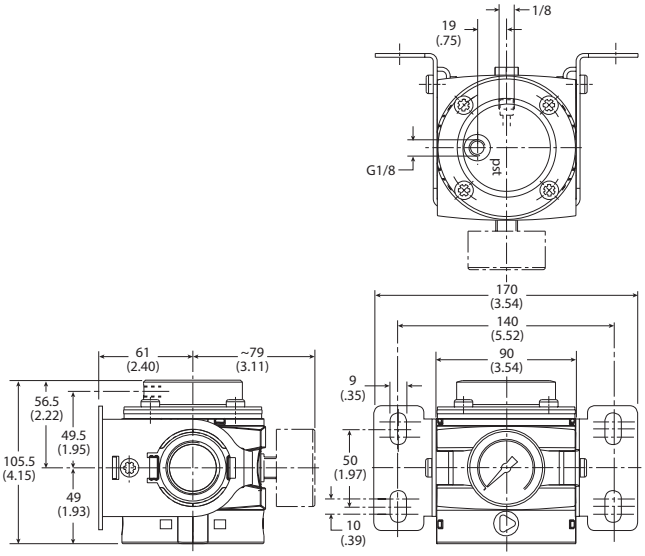
Specifications

Fluid	Compressed air
Max. pressure air pilot operated	17.5 bar (254 psig)
Operating temperature	-10°C to 60°C (14°F to 140°F)
Weight	3/4" 1.2 kg (2.6 lb)
	1" 1.2 kg (2.6 lb)

Material Specifications

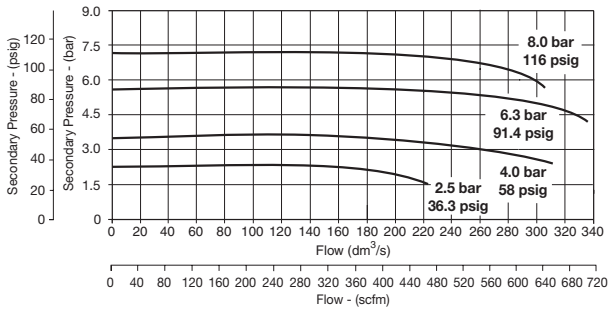
Body	Aluminum
Body cover	ABS
Valve	Brass / NBR composite
Pilot valve booster	Aluminum
Seals	Nitrile NBR
Screws	Zinc plated steel

Dimensions mm (inches)



Flow Characteristics

3/4" and 1" Pilot Regulator



⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

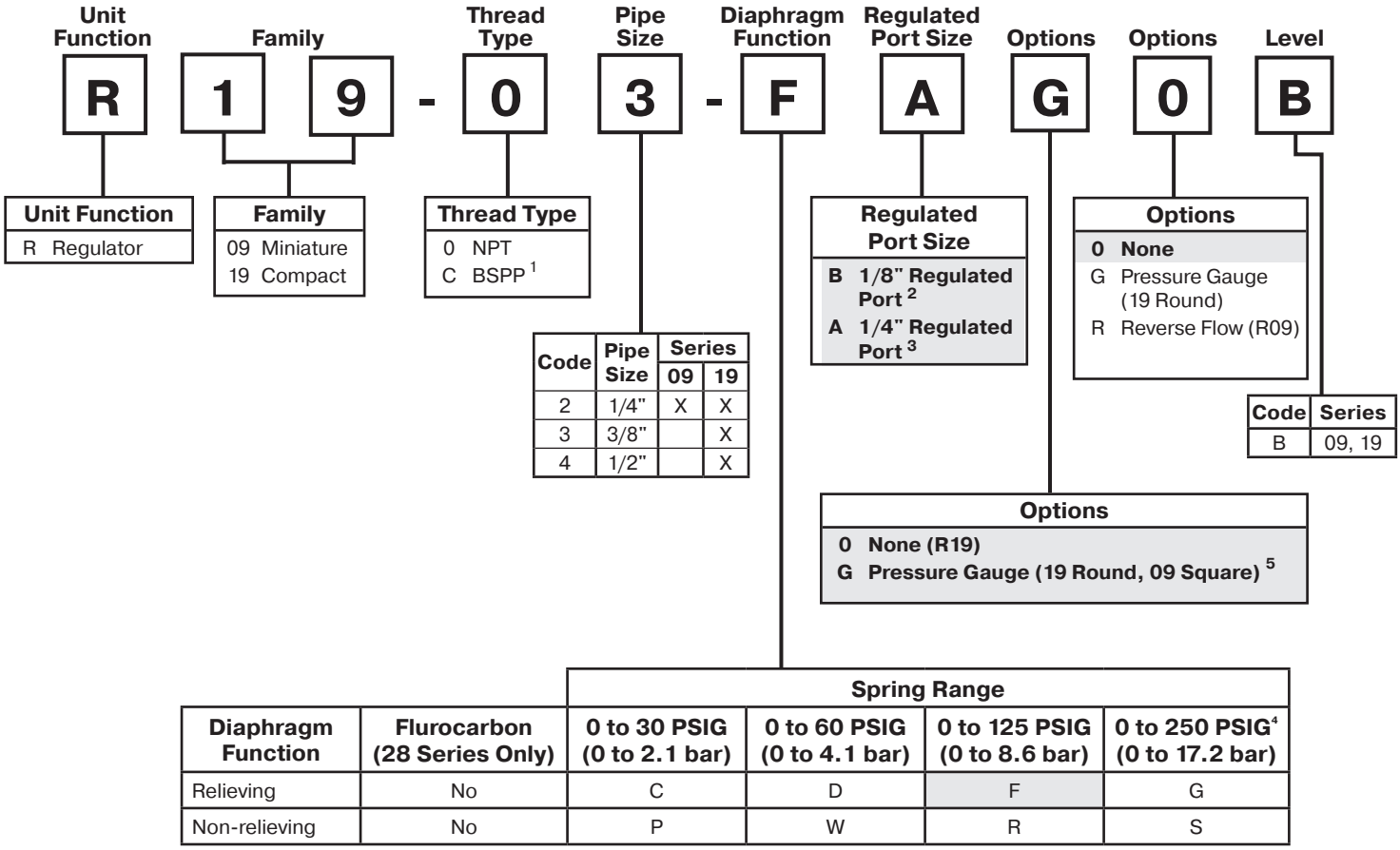
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Notes

Common-P1 Regulator Numbering System

= "Most Popular"



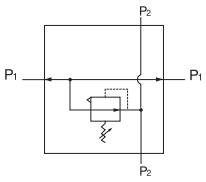
Diaphragm Function	Flurocarbon (28 Series Only)	Spring Range 0 to 30 PSIG (0 to 2.1 bar)	0 to 60 PSIG (0 to 4.1 bar)	0 to 125 PSIG (0 to 8.6 bar)	0 to 250 PSIG[4] (0 to 17.2 bar)
Relieving	No	C	D	F	G
Non-relieving	No	P	W	R	S

1 ISO, R228 (G Series)
2 Not available on R19
3 Not available on R09
4 R09 series operating range 0 to 232 PSIG (1 to 16 bar)
5 Square gauge is included with all R09

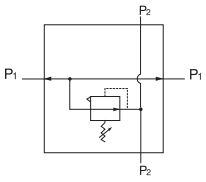
Note: When selecting from the options columns, please enter letters in alphabetical order, for example:

R 0 9 - 0 2 - F A G 0 B

Common-P1 Regulator R09



Relieving



Non-Relieving

Specifications

Flow Capacity*	1/4	64 SCFM (31 dm^3/s)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2.1 bar) 0 to 60 PSIG (0 to 4.1 bar) 0 to 125 PSIG (0 to 8.6 bar)
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature		-4˚ to 150˚F (-20˚ to 65.5˚C)
P1 Port Size (Inlet / Outlet)	NPT / BSPP-G	1/4
P2 Regulated Ports (2 ea.)	NPT / BSPP-G	1/8
Weight		0.37 lb (0.17 kg)

* Inlet pressure 145 PSIG (10 bar). Secondary pressure 100 PSIG (6.9 bar).

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Features

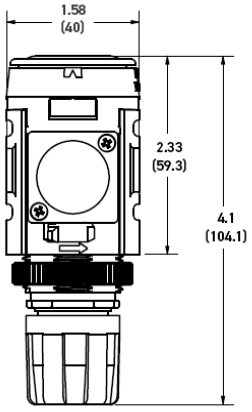
- Balanced Valve Design
- 2 Regulated Ports
- Light Weight
- Modern Modular Design and Appearance

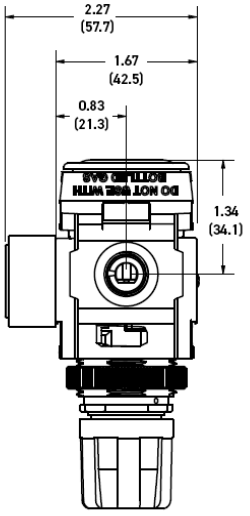
Materials of Construction

Adjustment Knob	Acetal
Body	Aluminum
Bottom Cap	Glass-filled Nylon
Bonnet	Glass-filled Nylon
Diaphragm Assembly	Stainless Steel / Nitrile
Valve Assembly	Acetal / Nitrile

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.





Inches (mm)

NOTE: 1.90 in. (48mm) hole required for panel nut mounting.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Kits

Adjusting Knob GRP-96-792

Accessories

Panel Mount Nut –
- Aluminum RPA-96-773
- Plastic RPA-96-734

Pressure Gauge– (*see note below)

Square flush mount gauge
- 0-4 bar.....GRP-96-791-04B
- 0-11 bar.....GRP-96-791-11B
- 0-20 bar.....GRP-96-791-20B
- 0-60 PSIG GRP-96-791-060
- 0-160 PSIG.....GRP-96-791-160
- 0-290 PSIG GRP-96-791-290

*For R08/R09 Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.

Square flush mount gauge
- 0-4 bar.....K4511SCR04B
- 0-11 bar.....K4511SCR11B
- 0-60 PSIG K4511SCR060
- 0-160 PSIG.....K4511SCR160

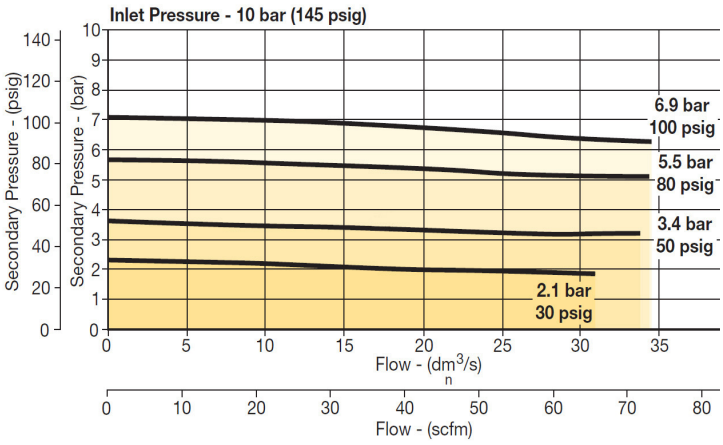
Square with adapter kit
- 0-4 bar.....P6G-PR10040
- 0-11 bar.....P6G-PR10110
- 0-60 PSIG P6G-PR90060
- 0-160 PSIG.....P6G-PR90160

50mm (2") round 1/4" center back mount
- 0-30 PSIG / 0-2 bar..... K4520N14030
- 0-60 PSIG / 0-4 bar..... K4520N14060
- 0-160 PSIG / 0-11 bar..... K4520N14160
- 0-300 PSIG / 0-20 bar..... K4520N14300

1-3/4" Digital Round 1/4" NPT
- 0 to 160 PSIG K4517N14160D

Tamperproof Lock and Cover Kit
(lock not included)..... RPA-96-736B

Wall Mounting Bracket –
- C-Type.....GPA-97-010
- L-Type..... GPA-96-739
- T-Type GPA-96-737



Typical Application

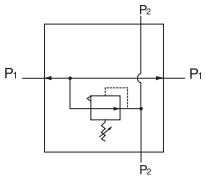
Ordering Information

All P2 Regulated Ports are 1/8" Ports

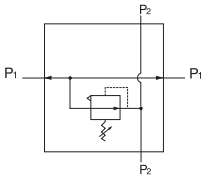
Model Type	P1 Port Size	With Gauge 0 to 125 PSIG (0 to 8.6 bar)	With Gauge 0 to 30 PSIG (0 to 2.1 bar)	With Gauge 0 to 60 PSIG (0 to 4.1 bar)
Relieving	1/4	R09-02-FBG0B	R09-02-CBG0B	R09-02-DBG0B
Non-relieving	1/4	R09-02-RBG0B	R09-02-PBG0B	R09-02-WBG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Common-P1 Regulator R19



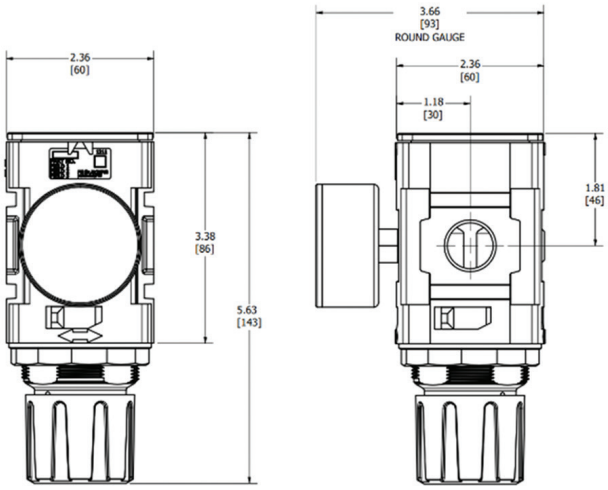
Relieving



Non-Relieving

Features

- Balanced Valve Design
- Spring-loaded Diaphragm
- 4 Adjusting Pressure Ranges Available
- 1/2" NPT / BSPP-G Over-port
- 2 Regulated Ports



NOTE: 1.90 in. (48mm) hole required for panel nut mounting.

Inches (mm)

Specifications

Flow Capacity*	1/4, 3/8, 1/2	94.0 SCFM (44 dm^3/s)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2.1 bar) 0 to 60 PSIG (0 to 4.1 bar) 0 to 125 PSIG (0 to 8.6 bar) 0 to 250 PSIG (0 to 17.2 bar)
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature		-13˚ to 150˚F (-25˚ to 65.5˚C)
P1 Port Size (Inlet / Outlet)	NPT / BSPP-G	1/4, 3/8, 1/2
P2 Regulated Ports (2 ea.)	NPT / BSPP-G	1/4
Weight		1.21 lb (0.55 kg)

* Inlet pressure 100 PSIG (6.9 bar). Secondary pressure 80 PSIG (5.5 bar) and 14.5 psig (1 bar) pressure drop.

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Body Cap		ABS
Bonnet		33% Glass-filled Nylon
Bottom Plug		33% Glass-filled Nylon
Diaphragm Assembly		Nitrile / Stainless Steel
Panel Nut		Acetal
Seals		Nitrile
Springs	Main Regulating Valve	Steel Stainless Steel
Valve Assembly		Acetal / Nitrile

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Kits

Spring, Regulating–
- 0 to 30 PSIG (0 to 2.1 bar) RRP-96-659B
- 0 to 60 PSIG (0 to 4.1 bar) RRP-96-660B
- 0 to 125 PSIG (0 to 8.6 bar) RRP-96-661B
- 0 to 250 PSIG (0 to 17.2 bar)..... RRP-96-662B

Accessories

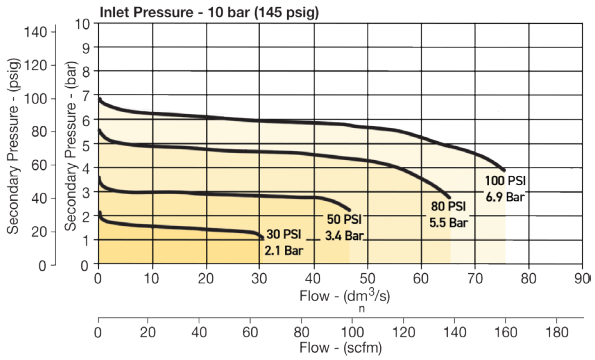
Gauge, Pressure –
- 50mm (2") round 1/4" center back mount
  - 0-30 PSIG / 0-2 bar..... K4520N14030
  - 0-60 PSIG / 0-4 bar..... K4520N14060
  - 0-160 PSIG / 0-11 bar..... K4520N14160
  - 0-300 PSIG / 0-20 bar..... K4520N14300
  - 0 to 160 PSIG, 1-3/4" Digital Round, 1/4" NPT K4517N14160D

Panel Mount Nut –
- Aluminum RRP-96-673
- Plastic RRP-96-675

Tamper Resistant Kit..... RRP-96-671

Wall Mounting Bracket –
- L-Type..... GPA-96-606
- T-Type GPA-96-603

R19 Common Port Regulator



Typical Application

Ordering Information

All units shown with 1/4" regulated ports.

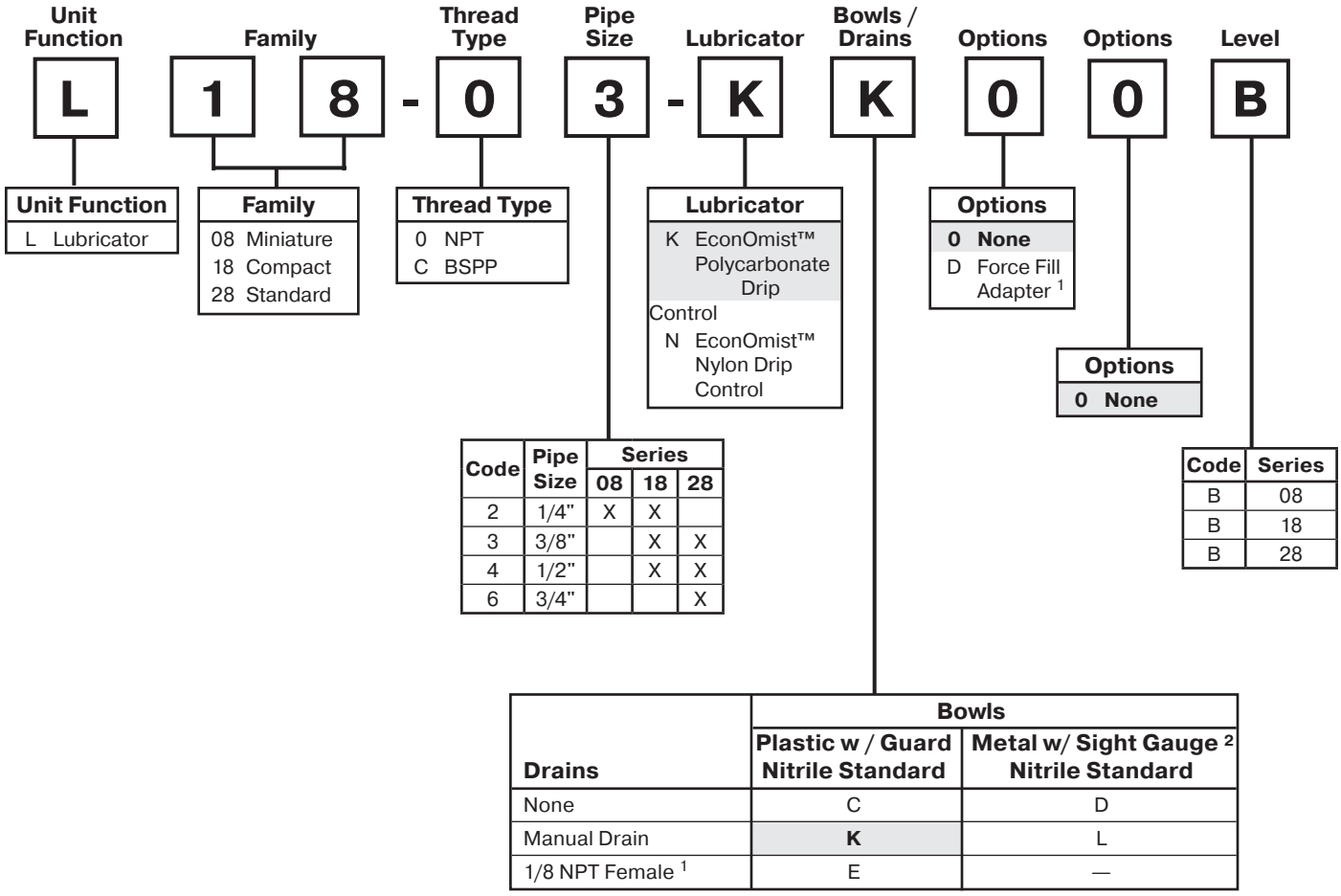
Model Type	P1 Port Size	5-125 PSIG (0.4 to 8.6 bar)	10-250 PSIG (0.7 to 7.2 bar)	3-60 PSIG (0.2 to 4.1 bar)
Relieving	1/4	R19-02-FA00B	R19-02-G700B	R19-02-DA00B
	3/8	R19-03-FA00B	R19-03-G700B	R19-03-DA00B
	1/2	R19-04-FA00B	R19-04-G700B	R19-04-DA00B
Non-relieving	1/4	R19-02-RA00B	R19-02-S700B	R19-02-WA00B
	3/8	R19-03-RA00B	R19-03-S700B	R19-03-WA00B
	1/2	R19-04-RA00B	R19-04-S700B	R19-04-WA00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Notes

Lubricator Numbering System

= **"Most Popular"**



Unit Function
L Lubricator

Family
08 Miniature
18 Compact
28 Standard

Thread Type
0 NPT
C BSPP

Lubricator
K EconOmist™ Polycarbonate Drip Control
N EconOmist™ Nylon Drip Control

Options
0 None
D Force Fill Adapter [1]

Options
0 None

Code	Series
B	08
B	18
B	28

Code	Pipe Size	Series 08	Series 18	Series 28
2	1/4"	X	X	
3	3/8"		X	X
4	1/2"		X	X
6	3/4"			X

Drains	Bowls: Plastic w / Guard Nitrile Standard	Bowls: Metal w/ Sight Gauge [2] Nitrile Standard
None	C	D
Manual Drain	**K**	L
1/8 NPT Female [1]	E	—

[1] Not available on L08

[2] No sight gauge on L08

Note: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, and 9. For example:

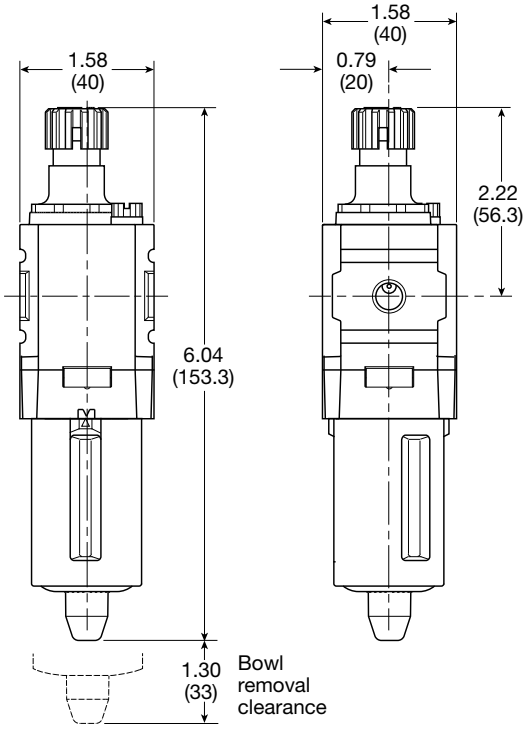
L 1 8 - 0 3 - K K 0 0 B

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Lubricator
L08 EconOmist™

Features

- Integral Sight Dome and Adjustment Knob
- Fill-under Pressure Design
- Modern Design and Appearance
- Light Weight
- High Flow Capacity
- Quick-disconnect Bowl



Inches (mm)

Specifications

Flow Capacity*	1/4	52 SCFM (25 dm^3/s, ANR)
Initial Drip Flow		1.3 SCFM
Maximum Supply Pressure	Plastic Bowl Metal Bowl	150 PSIG (10.3 bar) 250 PSIG (17.2 bar)
Minimum Flow for Lubrication		1.3 SCFM @ 100 PSIG
Operating Temperature	Plastic Bowl Metal Bowl	14˚ to 125˚F (-10˚ to 52˚C) 14˚ to 150˚F (-10˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4
Bowl Capacity		0.6 oz
Weight		0.29 lb. (0.13 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 4.9 PSID (0.34 bar).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl Metal Bowl	Polycarbonate Aluminum
Pick-up Filter		Sintered Bronze
Seals	Plastic Bowl Metal Bowl	Nitrile Nitrile
Sight Dome		Polycarbonate

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl –
- Manual Drain GRP-96-714
- No Drain Port GRP-96-715

Plastic Bowl –
- Bowl Guard, Manual Drain LRP-96-736
- Bowl Guard, No Drain Port LRP-96-713

Replacement Kits

Bowl O-ring –
- Fluorocarbon GRP-96-711
- Nitrile GRP-96-710

Fill Plug Kit LRP-96-730

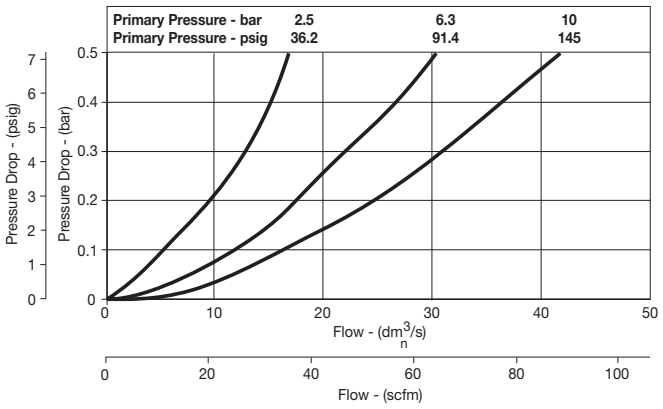
Sight Dome Assembly –
- Nylon LRP-96-720
- Polycarbonate, L08-XX-**K**XXX LRP-96-725

Siphon Tube Assembly LRP-96-731

Accessories

Wall Mounting Bracket –
- C-Type GPA-97-010
- T-Type GPA-96-737

L08 1/4" Lubricator

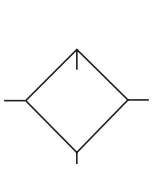


Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl / No Sight Gauge
No Drain	1/4	L08-02-KC00B	L08-02-KD00B
Manual Drain	1/4	L08-02-KK00B	L08-02-KL00B

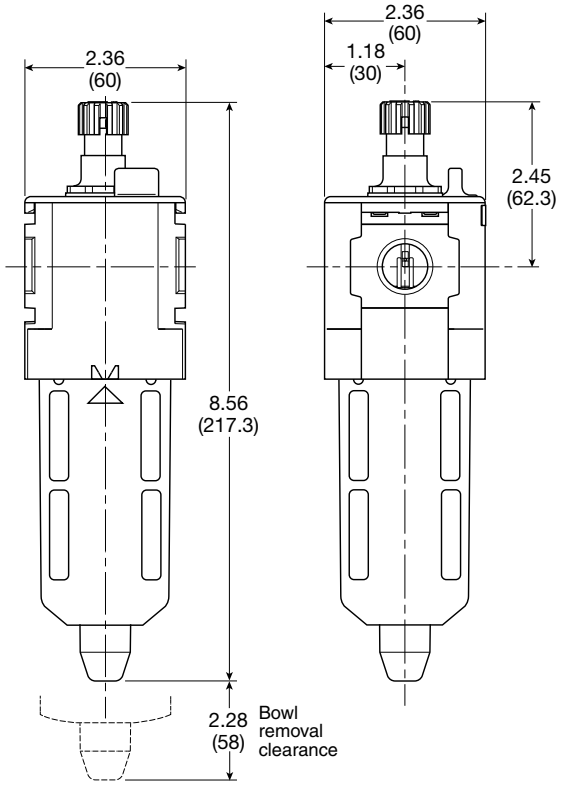
Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Lubricator
L18 EconOmist™



Features

- Integral Sight Dome and Adjustment Knob
- 1/2" NPT / BSPP-G Over-port
- Can be Filled while Under Pressure
- Quick-disconnect Bowl / Bowl Guard
- Manual Drain
- High Flow Capacities



Inches (mm)

Specifications

Flow Capacity*	1/4	88 SCFM (42 dm^3/s, ANR)
	3/8	90 SCFM (43 dm^3/s, ANR)
	1/2	96 SCFM (45 dm^3/s, ANR)
Initial Drip Flow		0.68 SCFM
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Minimum Flow for Lubrication		.7 SCFM @ 100 PSIG
Operating Temperature	Plastic Bowl	14˚ to 125˚F (-10˚ to 52˚C)
	Metal Bowl	14˚ to 150˚F (-10˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Bowl Capacity		4 oz
Weight		0.68 lb. (0.31 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 4.9 PSID (0.34 bar).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Pick-up Filter		Sintered Bronze
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge, Manual Drain GRP-96-636

Plastic Bowl / Bowl Guard, Manual Drain..... LRP-96-701

Replacement Kits

Bowl O-ring –
- Fluorocarbon GRP-96-754
- Nitrile GRP-96-640

Bypass Assembly LRP-96-678

Fill Plug Kit LRP-96-679

Sight Dome Assembly –
- Nylon..... LRP-96-720
- Polycarbonate, L18-XX-**K**K00 ..... LRP-96-725

Siphon Tube Assembly..... LRP-96-677

Accessories

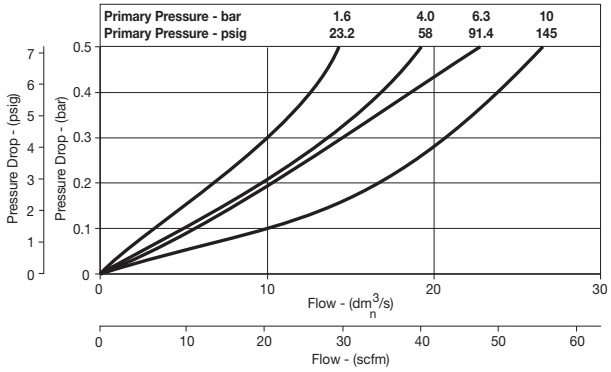
Force Fill Adapter LRP-96-704

Manual Drain..... GRP-96-685

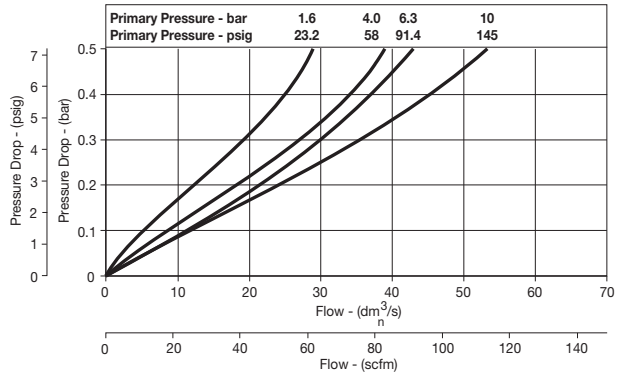
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
- L-Type GPA-96-604
- T-Type GPA-96-602

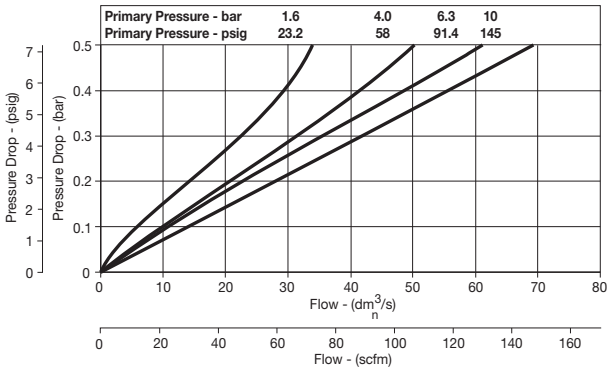
L18 1/4" Lubricator



L18 3/8" Lubricator



L18 1/2" Lubricator

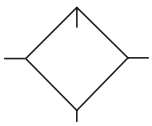


Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl / Sight Gauge
No Drain	1/4	L18-02-KC00B	L18-02-KD00B
	3/8	L18-03-KC00B	L18-03-KD00B
	1/2	L18-04-KC00B	L18-04-KD00B
Manual Drain	1/4	L18-02-KK00B	L18-02-KL00B
	3/8	L18-03-KK00B	L18-03-KL00B
	1/2	L18-04-KK00B	L18-04-KL00B

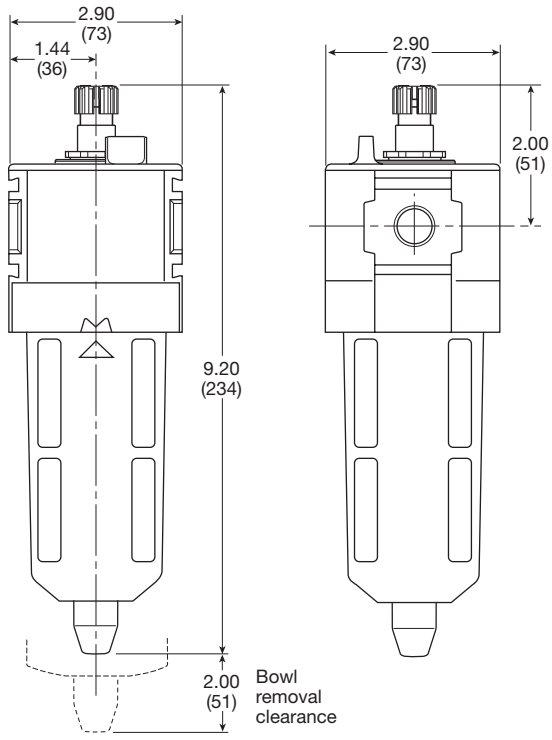
Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Lubricator
L28 EconOmist™



Features

- Integral Sight Dome and Adjustment Knob
- 3/4" NPT / BSPP-G Over-port
- Can be Filled while Under Pressure
- Quick-disconnect Bowl / Bowl Guard
- High Flow Capacities



Inches (mm)

Specifications

Flow Capacity*	3/8	110 SCFM (52 dm^3/s, ANR)
	1/2	110 SCFM (52 dm^3/s, ANR)
	3/4	150 SCFM (71 dm^3/s, ANR)
Initial Drip Flow		1.26 SCFM
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Minimum Flow for Lubrication		1.3 SCFM@ 100 PSIG
Operating Temperature	Plastic Bowl	14˚ to 125˚F (-10˚ to 52˚C)
	Metal Bowl	14˚ to 150˚F (-10˚ to 65.5˚C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Bowl Capacity		6 oz
Weight		1.04 lb. (0.47 kg)

* Inlet pressure 91.3 PSIG (6.3 bar). Pressure drop 4.9 PSID (0.34 bar).

Materials of Construction

Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Pick-up Filter		Sintered Bronze
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge	Metal Bowl	Polyamide (Nylon)

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl with Sight Gauge, Manual Drain GRP-96-644

Plastic Bowl / Bowl Guard, Manual Drain.....LRP-96-702

Replacement Kits

Bowl O-ring, Nitrile GRP-96-654

Bowl O-ring, Fluorocarbon..... GRP-96-755

Bypass Assembly LRP-96-678

Fill Plug Kit LRP-96-679

Sight Dome Assembly –
Nylon.....LRP-96-720
Polycarbonate, L28-XX-**K**K00.....LRP-96-725

Siphon Tube Assembly.....LRP-96-681

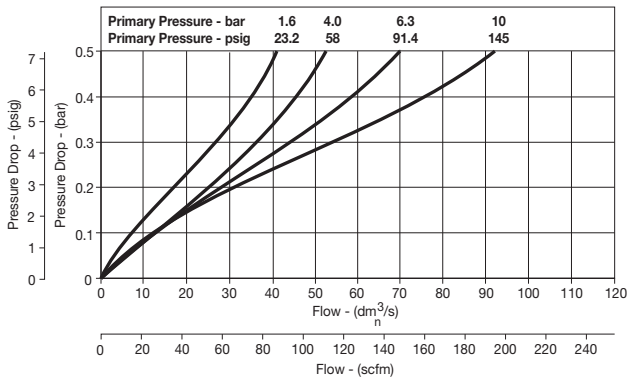
Accessories

Force Fill Adapter LRP-96-704

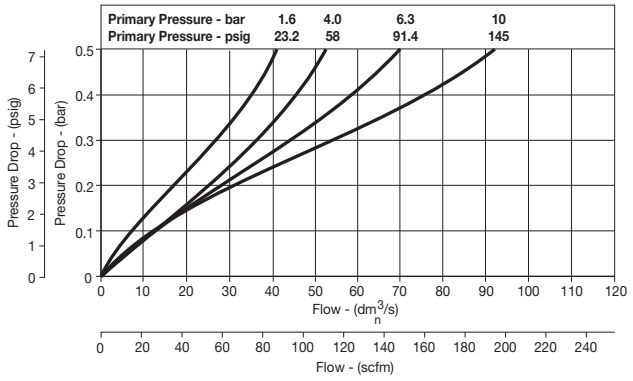
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
L-Type..... GPA-96-605
T-Type GPA-96-602

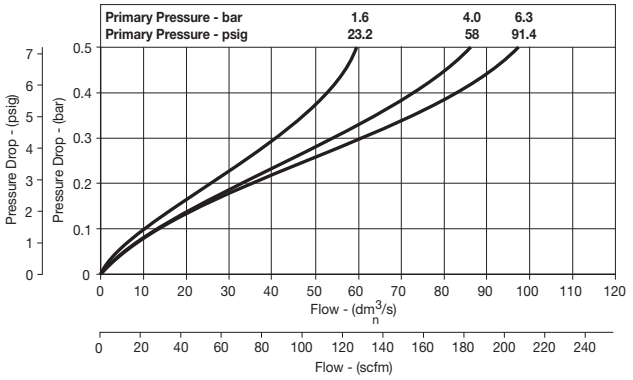
L28 3/8" Lubricator



L28 1/2" Lubricator



L28 3/4" Lubricator



Ordering Information

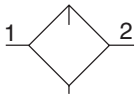
Model Type	Port Size	Plastic Bowl / Bowl Guard	Metal Bowl / Sight Gauge
No Drain	3/8	L28-03-KC00B	L28-03-KD00B
	1/2	L28-04-KC00B	L28-04-KD00B
	3/4	L28-06-KC00B	L28-06-KD00B
Manual Drain	3/8	L28-03-KK00B	L28-03-KL00B
	1/2	L28-04-KK00B	L28-04-KL00B
	3/4	L28-06-KK00B	L28-06-KL00B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Lubricator
L90

= **"Most Popular"**

Symbol



Lubricator
with drain

Features

- Integral 3/4" or 1" ports (BSPP & NPT)
- Robust but lightweight aluminum construction
- Proportional oil delivery over a wide range of air flows
- Possible to fill under system pressure eliminating down time
- Large oil reservoir

L90 - 0 6 - L D 0 0

Series	
Lubricator	L90

Thread type*	
NPT	**0**
BSPP	C

Port size	
3/4	**6**
1	**8**

Lubricator	
L	**EconOmist™**

Bowl / drain	
D	**Metal bowl / sight gauge, no drain**

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Ordering Information

Port size	Description	Flow ‡ scfm	Max. bar (psig)	Min temp °C (°F)	Max temp °C (°F)	Bowl capacity cm^3 (oz)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number †
3/4"	Oil mist, fill under pressure	315	17.5 (254)	-10 (14)	60 (140)	500 (16.9)	247 (9.7)	90 (3.5)	94 (3.7)	0.8 (1.8)	**L90-06-LD00**
1"	Oil mist, fill under pressure	390	17.5 (254)	-10 (14)	60 (140)	500 (16.9)	247 (9.7)	90 (3.5)	94 (3.7)	0.8 (1.8)	**L90-08-LD00**

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 6.3 bar (91.4 psig) inlet pressure and 0.5 (7.3 psig) pressure drop.

Specifications

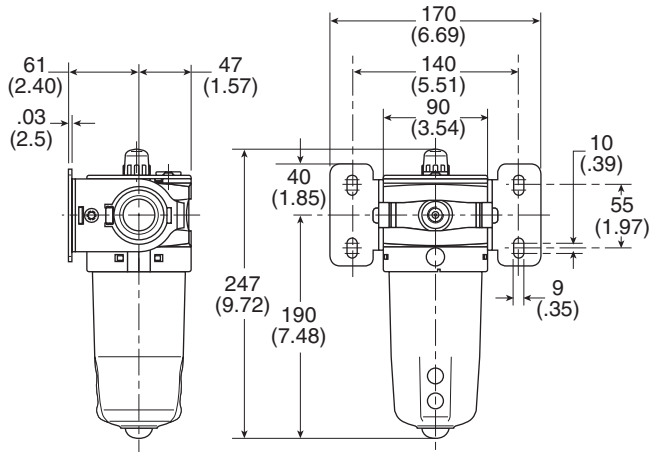
Fluid	Compressed air
Maximum inlet pressure*	17.5 bar (254 psig)
Temperature range*	-10°C to 60°C (14°F to 140°F)

* Air supply must be dry enough to avoid ice formation at temperatures below 2°C (35.6°F).

Low flow start point (lubrication pick-up): at 6.3 bar (91.4 psig) inlet pressure 0.5 dm^3/s (1.1 scfm).

Flow with 6.3 bar (91.4 psig) inlet pressure and 0.5 bar (7.3 psig) pressure drop.

Dimensions mm (inches)



Service kits

Bowl kit P3YKA00BSN

Refill plug P3YKA00PL

Lubricator oil F442002

Material specifications

Body	Aluminum
Sight glass	Polypropylene
Sight dome	Polyamide
Lubricator cover	ABS
Top & bottom end cap	Glass filled nylon
Bayonet support	Nylon
Seals	Nitrile NBR

Suggested Lubricant

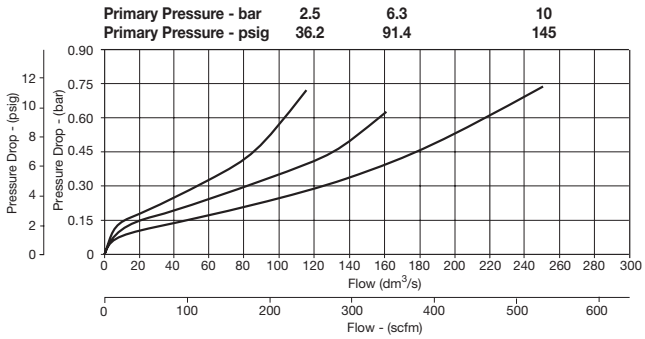
Airline Oil F442001

Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F

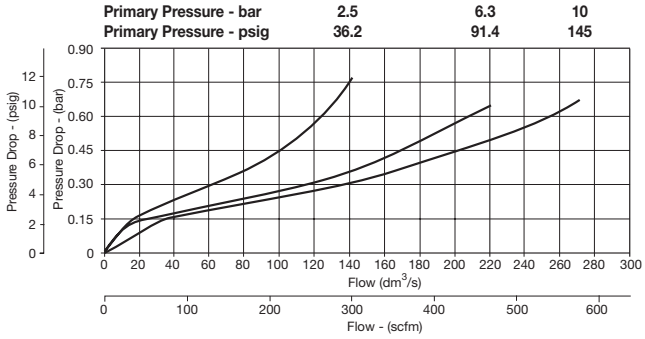
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Flow characteristics

(3/4") Lubricator



(1") Lubricator



Notes

Filter / Regulator Numbering System

= "Most Popular"

Unit Function	Family			Thread Type	Pipe Size		Filter / Regulator Combo	Bowls / Drains	Options	Options	Level
B	1	8	-	0	3	-	F	K	G	0	B

Unit Function

B	Filter / Regulator Combination

Family

08	Miniature
18	Compact
28	Standard

Thread Type

0	NPT
C	BSPP [1]

Code	Pipe Size	Series 08	Series 18	Series 28
2	1/4"	X	X	
3	3/8"		X	X
4	1/2"		X	X
6	3/4"			X

Options

0	None

Code	Series
B	08, 18, 28

Options

0	None
G	Round Pressure Gauge (18, 28) Square Pressure Gauge (08) [3]

Drains	Bowls: Plastic w / Guard	Bowls: Metal w/ No Sight Gauge	Bowls: Metal w/ Sight Gauge [2]
1/8 NPT Female (28 Only)	E	U	F
Automatic Drain (18, 28 Only)	**G**	A	H
Manual Drain (Sight gauge on 18, 28 Only)	**K**	M	L
Piston Drain (08 Only)	**R**	S	—

Diaphragm Function	Fluorocarbon (28 Series Only)	Spring Range: 0 to 30 PSIG (0 to 2 bar)	0 to 60 PSIG (0 to 4 bar)	0 to 125 PSIG (0 to 8 bar)	0 to 250 PSIG [4] (0 to 17 bar)
Relieving	No	C	D	**F**	G
	Yes	J	K	L	M
Non-relieving	No	P	W	R	S
	Yes	V	X	Y	Z

1 ISO, R228 (G Series)
2 B08 Filter / Regulator has an all metal bowl (no sight gauge)
3 Square gauge included with B08
4 B08 series operating range 0 to 232 PSIG (1 to 16 bar)

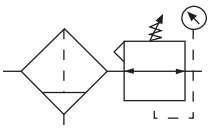
NOTE: When selecting from the options columns, please enter letters in alphabetical order, for positions 7, 8, 9. For example:

B 1 8 - 0 3 - F K 0 0 B

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

NOTE: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

Filter / Regulator B08

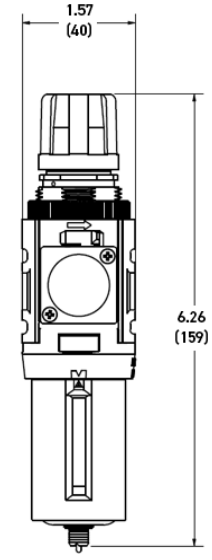


Features

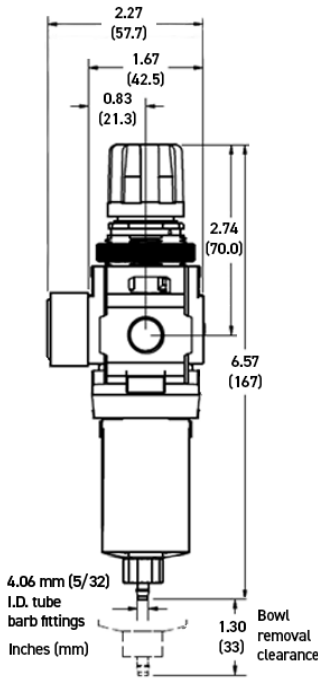
- Space-Saving Integral Filter / Regulator Design
- Unique Flush-mounted Pressure Gauge Available
- Balanced Valve Design
- Modern Design and Appearance
- Light Weight
- High Flow Capacities
- Quick-Disconnect Bowl / Bowl Guard

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.



Automatic Piston Drain



Manual Drain

Inches (mm)

Specifications

Flow Capacity*	1/4	73 SCFM (35 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2 bar) 0 to 60 PSIG (0 to 4 bar) 0 to 125 PSIG (0 to 8 bar) 0 to 232 PSIG (0 to 16 bar)
Gauge Ports (2)**	NPT	1/8
Maximum Supply Pressure	Plastic Bowl Metal Bowl	150 PSIG (10.3 bar) 250 PSIG (17.2 bar)
Operating Temperature†	Plastic Bowl Metal Bowl	14° to 125°F (-10° to 52°C) 14° to 150°F (-10° to 65.5°C)
Port Size	NPT / BSPP-G	1/4
Bowl Capacity		0.4 oz
Standard Filtration		5 Micron
Weight		0.42 lb. (0.19 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 100 psig (6.9 bar) and 14.5 psig (1 bar) pressure drop.

† Units with square gauges: 5°F to 150°F (-15°C to 65.5°C)

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Air quality: Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Bottom Cap		Glass-filled Nylon
Bonnet		Glass-filled Nylon
Bowl	Plastic Bowl Metal Bowl	Polycarbonate Aluminum
Bowl Guard		Nylon
Diaphragm Assembly		Stainless Steel / Nitrile
Filter Element		Polyethylene
Panel Nut		Acetal
Seals	Plastic Bowl Metal Bowl	Nitrile Nitrile
Springs		Steel
Valve Assembly		Acetal / Nitrile

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Accessories

Automatic Piston Drain..... GRP-96-716

Panel Mount Nut –
- Aluminum RPA-96-773
- Plastic RPA-96-734

Pressure Gauge– (*see note below)

Square flush mount gauge
- 0-4 bar..... GRP-96-791-04B
- 0-11 bar..... GRP-96-791-11B
- 0-20 bar..... GRP-96-791-20B
- 0-60 PSIG GRP-96-791-060
- 0-160 PSIG..... GRP-96-791-160
- 0-290 PSIG GRP-96-791-290

*For B08 Filter Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.

Square flush mount gauge
- 0-4 bar.....K4511SCR04B
- 0-11 bar.....K4511SCR11B
- 0-60 PSIG K4511SCR060
- 0-160 PSIG..... K4511SCR160

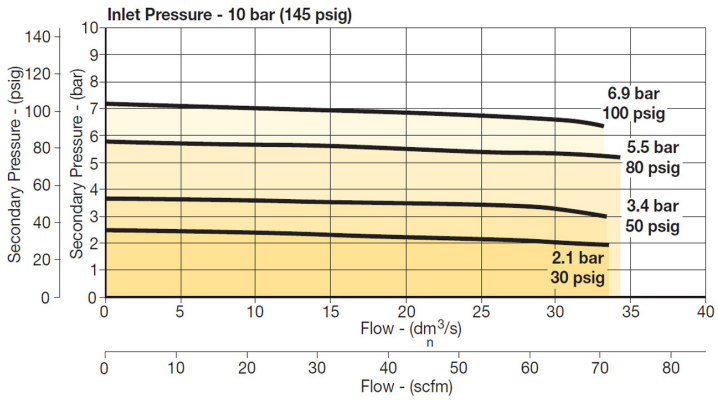
Square with adapter kit
- 0-4 bar.....P6G-PR10040
- 0-11 bar.....P6G-PR10110
- 0-60 PSIG P6G-PR90060
- 0-160 PSIG.....P6G-PR90160

50mm (2") round 1/4" center back mount
- 0-30 PSIG / 0-2 bar..... K4520N14030
- 0-60 PSIG / 0-4 bar..... K4520N14060
- 0-160 PSIG / 0-11 bar..... K4520N14160
- 0-300 PSIG / 0-20 bar..... K4520N14300

1-3/4" Digital Round 1/4" NPT
- 0 to 160 PSIG K4517N14160D

Tamperproof Lock and Cover Kit
(lock not included)..... RPA-96-736B

Wall Mounting Bracket –
- C-Type.....GPA-97-010
- L-Type..... GPA-96-739
- T-Type GPA-96-737



Replacement Bowl Kits

Metal Bowl, Manual Drain GRP-96-714

Plastic Bowl / Bowl Guard, Manual Drain..... GRP-96-712

Replacement Element Kit

Type "A", 5 Micron.....FRP-96-729

Replacement Kits

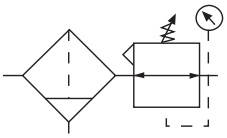
Adjusting Knob..... GRP-96-792

Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard / Manual Drain / With Gauge 0 to 125 PSIG (0 to 8.6 bar)	Plastic Bowl / Bowl Guard / Manual Drain / With Gauge 0 to 30 PSIG (0 to 2.0 bar)	Plastic Bowl / Bowl Guard / Automatic Piston / With Gauge 0 to 125 PSIG (0 to 8.6 bar)
Relieving	1/4	B08-02-FKG0B	B08-02-CKG0B	B08-02-FRG0B
Non-relieving	1/4	B08-02-RKG0B	B08-02-PKG0B	B08-02-RRG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Filter / Regulator B18

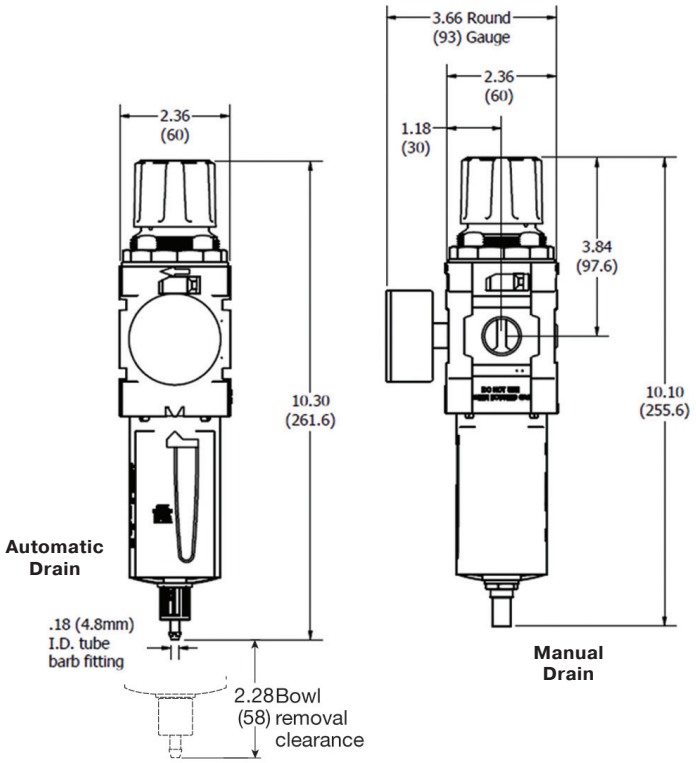


Features

- 5 Micron Filtration
- Balanced Valve Design
- Spring Loaded Diaphragm
- 1/2" NPT / BSPP-G Over-Ported
- Quick-Disconnect Bowl / Bowl Guard
- Light Weight
- High Flow Capacities

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.



Inches (mm)

Specifications

Flow Capacity*	1/4	166 SCFM (78 dm^3/s, ANR)
	3/8, 1/2	178 SCFM (84 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2 bar) 0 to 60 PSIG (0 to 4 bar) 0 to 125 PSIG (0 to 8 bar) 0 to 250 PSIG (0 to 17 bar)
Gauge Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13° to 125°F (-25° to 52°C)
	Metal Bowl	-13° to 150°F (-25° to 65.5°C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Bowl Capacity		1.72 oz
Standard Filtration		5 Micron
Weight		1.37 lb. (0.62 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 80 psig (5.5 bar).

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Air quality: Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Body Cap		ABS
Bowl	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Bowl Guard		Nylon
Diaphragm Assembly		Nitrile / Stainless Steel
Element Retainer / Baffle		Acetal
Filter Element		Sintered Polyethylene
Panel Nut		Acetal
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)
Springs	Main Regulating / Valve	Steel / S.S.
Valve Assembly		Acetal / Nitrile

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl –
- Sight Gauge, Automatic Drain GRP-96-637
- Sight Gauge, Manual Drain GRP-96-636

Plastic Bowl –
- Bowl Guard, Automatic Drain GRP-96-635
- Bowl Guard, Manual Drain GRP-96-634

Replacement Element Kits

Type "A", 5 Micron FRP-96-639
Retainer, Deflector, and Element Kit FRP-96-641

Replacement Kits

Adjusting Knob RRP-96-655

Spring, Regulating –
- 0 to 30 PSIG (0 to 2.1 bar) RRP-96-659B
- 0 to 60 PSIG (0 to 4.1 bar) RRP-96-660B
- 0 to 125 PSIG (0 to 8.6 bar) RRP-96-661B
- 0 to 250 PSIG (0 to 17.2 bar) RRP-96-662B

Accessories

Automatic Drain –
- Fluorocarbon GRP-95-981
- Nitrile GRP-95-973

Drain, Manual Override GRP-96-001

Manual Drain GRP-96-685

Panel Mount Nut –
- Aluminum RRP-96-673
- Plastic RRP-96-675B

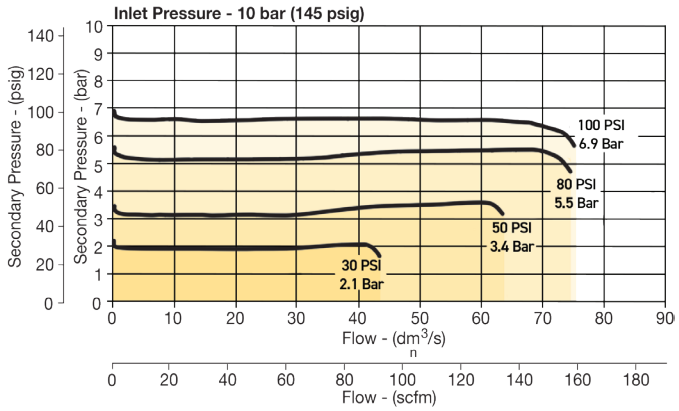
Gauge, Pressure –
- 50mm (2") round 1/4" center back mount
  - 0-30 PSIG / 0-2 bar K4520N14030
  - 0-60 PSIG / 0-4 bar K4520N14060
  - 0-160 PSIG / 0-11 bar K4520N14160
  - 0-300 PSIG / 0-20 bar K4520N14300
- 0 to 160 PSIG, 1-3/4" Digital Round, 1/4" NPT.. ..... K4517N14160D

Tamperproof Lock & Cover Kit RPA-96-737B

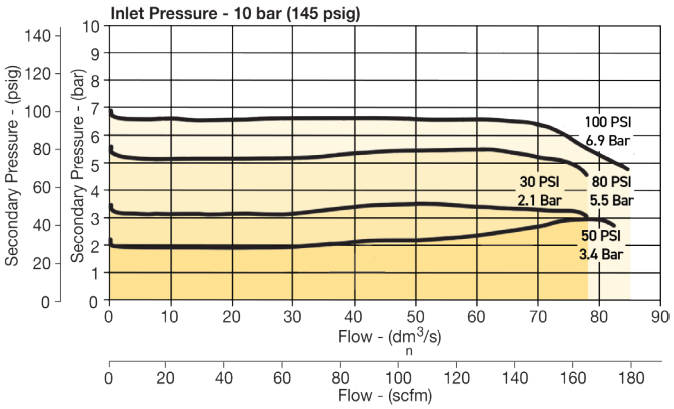
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket
- L-Type (Body) GPA-96-604
- L-Type (Bonnet). GPA-96-606
- T-Type GPA-96-602

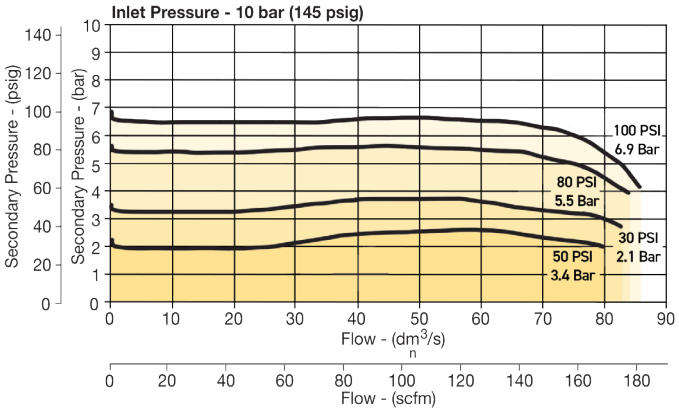
B18 1/4" Regulator



B18 3/8" Regulator



B18 1/2" Regulator

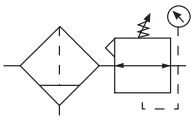


Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)	Metal Bowl / Sight Gauge With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)
Manual Drain	1/4	B18-02-FKG0B	B18-02-FLG0B
	3/8	B18-03-FKG0B	B18-03-FLG0B
	1/2	B18-04-FKG0B	B18-04-FLG0B
Automatic Drain	1/4	B18-02-FGG0B	B18-02-FHG0B
	3/8	B18-03-FGG0B	B18-03-FHG0B
	1/2	B18-04-FGG0B	B18-04-FHG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Filter / Regulator
B28

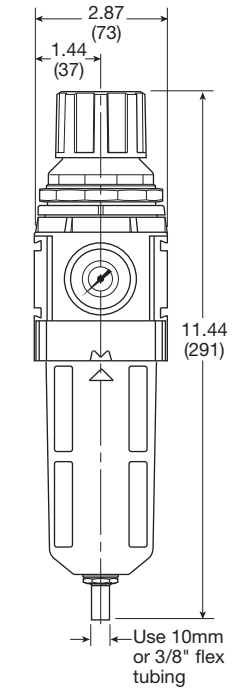


Features

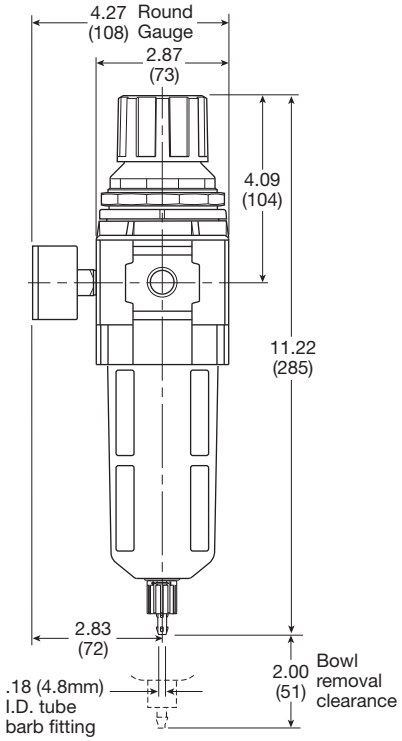
- 5 Micron Filtration
- Balanced Valve Design
- Spring Loaded Diaphragm
- 3/4" NPT / BSPP-G Over-Ported
- Quick-Disconnect Bowl / Bowl Guard
- Light Weight
- High Flow Capacities

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.



Automatic Drain



Manual Drain

Inches (mm)

Specifications

Flow Capacity*	3/8	200 SCFM (94 dm^3/s, ANR)
	1/2	200 SCFM (94 dm^3/s, ANR)
	3/4	235 SCFM (109 dm^3/s, ANR)
Adjusting Range Pressure		0 to 30 PSIG (0 to 2.1 bar) 0 to 60 PSIG (0 to 4.1 bar) 0 to 125 PSIG (0 to 8.6 bar) 0 to 250 PSIG (0 to 17.2 bar)
Gauge Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Bowl Capacity		2.87 oz
Standard Filtration		5 Micron
Weight		1.87 lb. (0.85 kg)

* Inlet pressure 145 psig (10 bar). Secondary pressure 91.3 psig (6.3 bar) and 14.5 psig (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Air quality: Within ISO 8573-1: 1991 Class 3 (Particulates)
Within ISO 8573-1: 2001 Class 6 (Particulates)

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Materials of Construction

Adjustment Knob		Acetal
Body		Aluminum
Body Cap		ABS
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Diaphragm Assembly		Nitrile / Zinc
Element Retainer / Baffle		Acetal
Filter Element		Sintered Polyethylene
Panel Nut		Acetal
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Gauge	Metal Bowl	Polyamide (Nylon)
Springs	Main Regulating / Valve	Steel / S.S.
Valve Assembly		Brass / Nitrile

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

= **"Most Popular"**

Replacement Bowl Kits

Metal Bowl –
- Sight Gauge, Automatic Drain GRP-96-645
- Sight Gauge, Manual Drain GRP-96-644

Plastic Bowl –
- Bowl Guard, Automatic Drain GRP-96-643
- Bowl Guard, Manual Drain GRP-96-642

Replacement Element Kits

Type" A", 5 Micron FRP-96-653

Element, Deflector, Retainer kit FRP-96-283

Replacement Kits

Adjusting Knob RRP-16-341-000

Diaphragm Assembly –
- Non-relieving RRP-96-987
- Relieving RRP-96-986

Spring, Regulating –
- 0 to 30 PSIG (0 to 2.1 bar) RRP-96-163
- 0 to 60 PSIG (0 to 4.1 bar) RRP-96-164
- 0 to 125 PSIG (0 to 8.6 bar) RRP-96-165
- 0 to 250 PSIG (0 to 17.2 bar) RRP-96-166

Valve Assembly RRP-96-049

Accessories

Automatic Drain –
- Fluorocarbon GRP-95-981
- Nitrile GRP-95-973

Manual Drain GRP-96-685

Panel Mount Nut –
- Aluminum RRP-96-674
- Plastic RRP-96-676

Gauge, Pressure –

50mm (2") round 1/4" center back mount
- 0-30 PSIG / 0-2 bar K4520N14030
- 0-60 PSIG / 0-4 bar K4520N14060
- 0-160 PSIG / 0-11 bar K4520N14160
- 0-300 PSIG / 0-20 bar K4520N14300

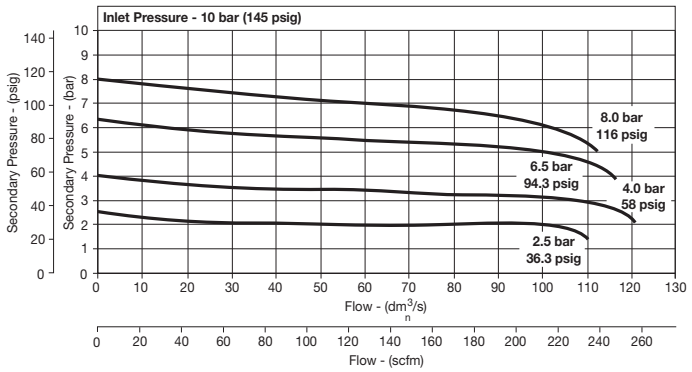
0 to 160 PSIG, 1-3/4" Digital Round, 1/4" NPT K4517N14160D

Tamper Resistant Kit RRP-96-672

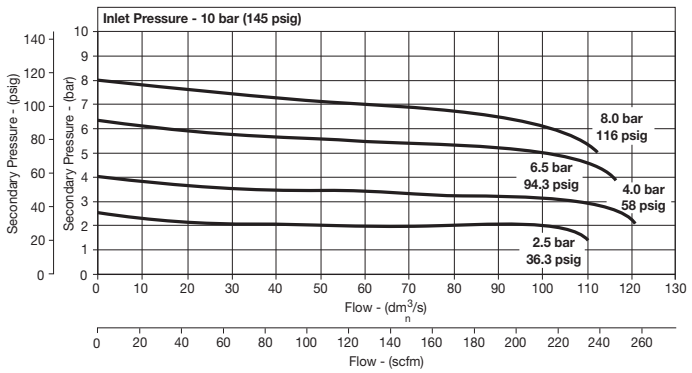
Sight Gauge Kit GRP-96-825

Wall Mounting Bracket –
- L-Type (Body) GPA-96-605
- L-Type (Bonnet) GPA-96-607
- T-Type GPA-96-602

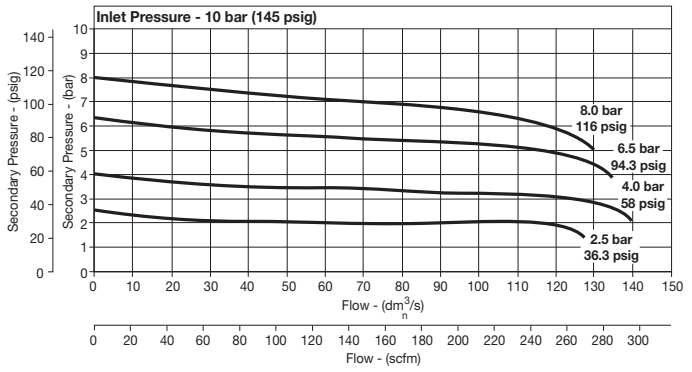
B28 3/8" Filter / Regulator



B28 1/2" Filter / Regulator



B18 3/8" Filter / Regulator



Ordering Information

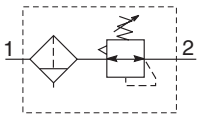
Model Type	Port Size	Plastic Bowl / Bowl Guard With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)	Metal Bowl / Sight Gauge With Gauge 5 to 125 PSIG (0.4 to 8.6 bar)
Manual Drain	3/8	B28-03-FKG0B	B28-03-FLG0B
	1/2	B28-04-FKG0B	B28-04-FLG0B
	3/4	B28-06-FKG0B	B28-06-FLG0B
Automatic Drain	3/8	B28-03-FGG0B	B28-03-FHG0B
	1/2	B28-04-FGG0B	B28-04-FHG0B
	3/4	B28-06-FGG0B	B28-06-FHG0B

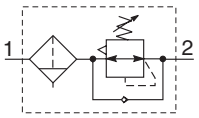
Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Filter / Regulator B90

= **"Most Popular"**

Symbols





Features

- Integral 3/4" or 1" ports (BSPP or NPT)
- High efficiency element as standard
- Excellent water removal efficiency
- Robust but lightweight aluminum construction
- Secondary pressure ranges 12 and 16 bar
- Rolling diaphragm for extended life
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Reverse flow / relieving option
- Low temperature -40˚ with combined manual / semi-auto drain as standard

B90 - 0 6 - A H 0 0

Series	
Filter / Regulator Combination	**B90**

Thread type*	
NPT	**0**
BSPP	C

Port size	
3/4	**6**
1	**8**

Function / pressure range	
A	**Relieving / 0 to 174 PSI**
H	Relieving / 0 to 232 PSI

Bowl / drain type	
H	**Metal bowl / sight gauge & auto drain**
L	**Metal bowl / sight gauge / manual & semi auto drain**

Option	
0	**None**
G	**Pressure Gauge**
A†	Lockable type

Notes:
* For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
† Not field convertible.
Bold items are most common.

Ordering information

Port size	Description	Flow‡ scfm	Max. bar (psig)	Min temp ˚C (˚F)	Max temp ˚C (˚F)	Bowl capacity cm^3 (oz)	Height mm (inches)	Width mm (inches)	Depth mm (inches)	Weight kg (lb)	Part number†
3/4"	12 bar, relieving, combined manual / semi auto drain	335	17.5 (254)	-40 (-40)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	**B90-06-AL00**
3/4"	12 bar, relieving, auto drain	335	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-06-AH00
3/4"	12 bar, relieving, gauge, combined manual / semi auto drain	335	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-06-ALG0
3/4"	12 bar, relieving, gauge, auto drain	335	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-06-AHG0
1"	12 bar, relieving, combined manual / semi auto drain	465	17.5 (254)	-40 (-40)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	**B90-08-AL00**
1"	12 bar, relieving, auto drain	465	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-08-AH00
1"	12 bar, relieving, gauge, combined manual / semi auto drain	465	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-08-ALG0
1"	12 bar, relieving, gauge, auto drain	465	17.5 (254)	-10 (14)	60 (140)	130 (4.4)	345 (13.5)	90 (3.5)	94 (3.7)	1.5 (3.3)	B90-08-AHG0

† **Standard part numbers shown in bold. For other models refer to Options chart above.**
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.4 psig) set pressure and 1 bar (14.5 psig) pressure drop.
Lockable regulators will require key lock kit (opposite page).

Specifications

Fluid	Compressed air
Maximum inlet pressure*	17.5 bar (254 psig)
Temperature range*: Auto drain Combined drain	-10°C to 60°C (14°F to 140°F) -40°C to 60°C (-40°F to 140°F)
Particle removal	5 micron
Air quality	Within ISO 8573-1: 1991 Class 3 and 5 (particulates) Within ISO 8573-1: 2001 Class 6 and 7 (particulates)
Typical flow with 10 bar (145 psig) inlet pressure and 6.3 bar (91 psig) set pressure and 0.5 bar (7.3 psig) pressure drop	1" size 465 scfm
Manual / semi-auto drain	Closed at 0.8 bar (11.6 psig) G1/8 thread male
Auto drain bowl pressure to close drain	0.8 bar (11.6 psig)
Operating range manual override facility	0.8 bar (11.6 psig) to 17.5 bar (254 psig)
Bowl capacity	130 cm³ (4.4 US oz)
Gauge ports (x2)	1/4"

* Air supply must be dry enough to avoid ice formation at temperatures below 2°C (35.6°F).

Material Specifications

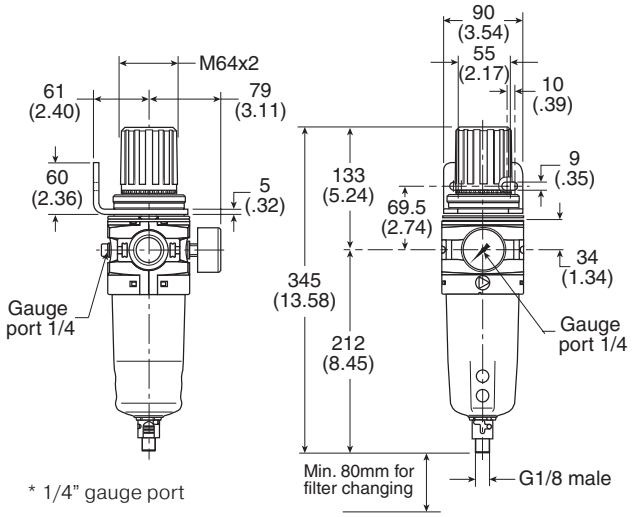
Body		Aluminum
Sight glass		Polypropylene
Body cover		ABS
Element		Sintered polypropylene
Seals		Nitrile NBR
Drains	Manual / semi-auto:	Acetal
	Automatic:	PA / Ø 10mm brass connection
Bonnet		Glass filled polyamide
Control knob		Glass filled polyamide
Valve		Brass / NBR
Screws		Steel / zinc plated

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Dimensions mm (inches)



Service Kits

5 micron element kit P3YKA00ESE

Bowl kit
- Manual/semi auto drain (combined) P3YKA00BSC
- Auto drain P3YKA00BSA

Key lock kit..... P3XKA00AS

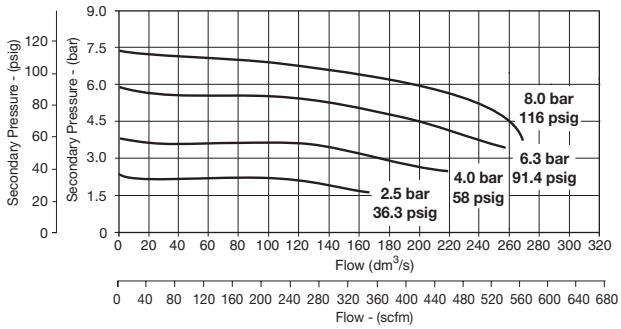
Diaphragm kit
- Relieving type P3YKA00RR
- Non-relieving type..... P3YKA00RN

Angle bracket + metal lock ring P3YKA00MS

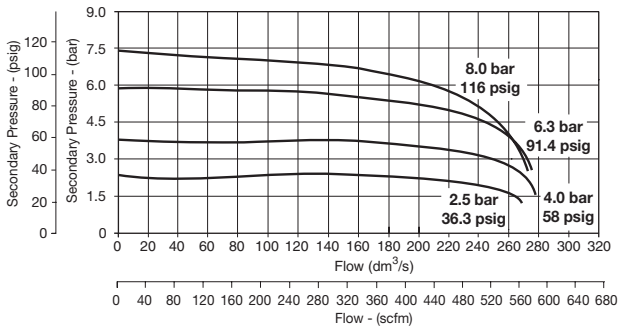
Panel mount nut P3YKA00MM

Flow Characteristics

(3/4") 5 Micron Filter / Regulator



(1") 5 Micron Filter / Regulator



Notes

Filter / Regulator-Lubricator Numbering System

= "Most Popular"

Unit Function	Family			Thread Type	Pipe Size		Filter / Reg - Lubricator	Bowls / Drains	Options	Options	Level
D	1	8	-	0	3	-	F	K	G	0	B

Unit Function

D	Filter / Regulator Combination and Lubricator

Family

08	Miniature
18	Compact
28	Standard

Thread Type

0	NPT
C	BSPP [1]

Code	Pipe Size	Series 08	Series 18	Series 28
2	1/4"	X	X	
3	3/8"		X	X
4	1/2"		X	X
6	3/4"			X

Code	Series
B	08, 18, 28

Options

0	**None**
B	Add End Blocks
G	**Pressure Gauge (18 & 28 Round)**
N	Lubricator with No Drain

Options

0	**None**
B	Add End Blocks
G	**Pressure Gauge (08 Square)[2], (18 & 28 Round)**
N	Lubricator with No Drain

Diaphragm Function	Fluorocarbon (28 Series Only)	Spring Range 0 to 30 PSIG (0 to 2.1 bar)	0 to 60 PSIG (0 to 4.1 bar)	0 to 125 PSIG (0 to 8.6 bar)	0 to 250 PSIG [4] (0 to 17.2 bar)
Relieving	No	C	D	**F**	G
	Yes	J	K	L	M
Non-relieving	No	P	W	R	S
	Yes	V	X	Y	Z

Drains	Bowls: Plastic w / Guard Nitrile Standard	Bowls: Metal w/ Sight Gauge [3] Nitrile Standard
Automatic Drain (18 & 28 Series Only)	**G**	H
Manual Drain	**K**	L
Piston Drain (08 Series Only)	R	S

1 ISO, R228 (G Series)
2 Square gauge included with all D08
3 08 series has all metal bowl (no sight gauge)
4 08 series operating range 0 to 232 PSIG (1 to 16 bar)

NOTE: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, 9. For example:

D 1 8 - 0 3 - F K G 0 B

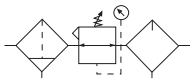
"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Note: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

Suggested Lubricant

Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Combination D08



Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Flush-Mount Pressure Gauge and Modular T-Bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard

Specifications

Flow Capacity*	1/4	28 SCFM (14 dm^3/s, ANR)
Gauge Port (2)**	NPT	1/8
Maximum Supply Pressure	Plastic Bowl Metal Bowl	150 PSIG (10.3 bar) 250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl Metal Bowl	14° to 125°F (-10° to 52°C) 14° to 150°F (-10° to 65.5°C)
Port Size	NPT / BSPP-G	1/4
Standard Filtration		5 Micron
Weight		1.43 lb. (0.6 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 100 PSIG (6.9 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Materials of Construction

Body		Aluminum
Bonnet		Glass-filled Nylon
Bowls	Plastic Bowl Metal Bowl	Polycarbonate Aluminum
Diaphragm Assembly		Stainless Steel / Nitrile
Filter Element		Polyethylene
Knob		Acetal
Seals	Plastic Bowl Metal Bowl	Nitrile Nitrile
Sight Dome		Polycarbonate
Springs		Steel
Valve		Brass / Nitrile

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

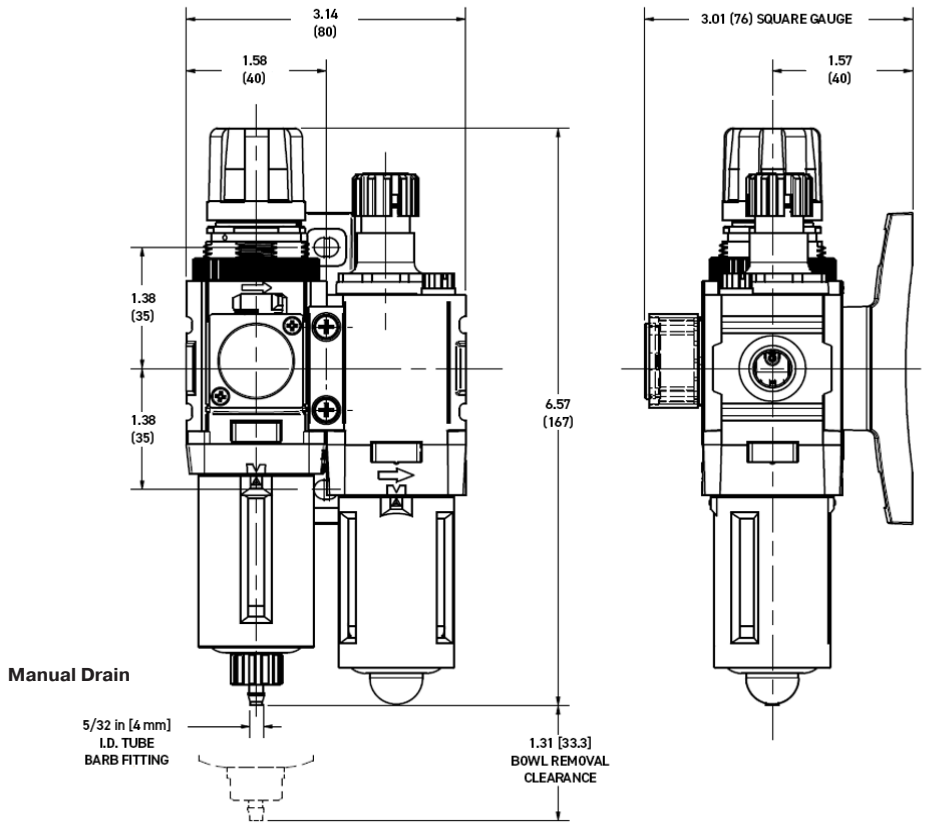
Ordering Information

Model	Port Size	Plastic Bowl w / Plastic Bowl Guard 0 to 125 PSI (0 to 8.6 bar) With Gauge	Metal Bowl w / 0 to 125 PSI (0 to 8.6 bar) With Gauge
Manual Drain	1/4	D08-02-FKG0B	D08-02-FLG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.



Inches (mm)

CAUTION:

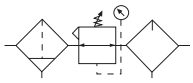
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

Combination D18



Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Pressure Gauge and Modular T-Bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Specifications

Flow Capacity*	1/4	45 SCFM (22 dm^3/s, ANR)
	3/8	70 SCFM (33 dm^3/s, ANR)
	1/2	90 SCFM (43 dm^3/s, ANR)
Gauge Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Standard Filtration		5 Micron
Weight		2.98 lb. (1.3 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 91.3 PSIG (6.3 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

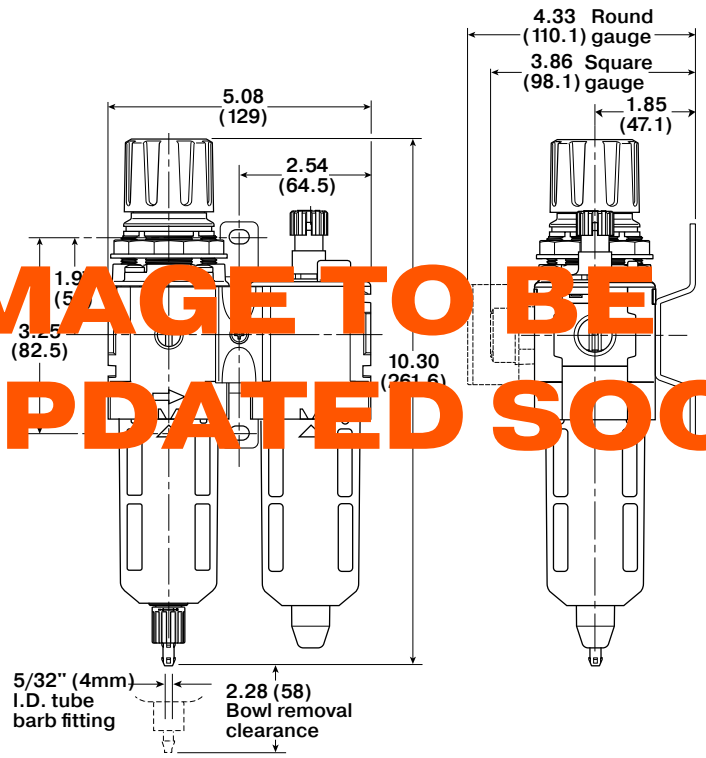
Materials of Construction

Body		Aluminum
Body Cap		ABS
Bonnet / Knob		Nylon / Acetal
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Diaphragm Assembly		Nitrile / Stainless Steel
Element Retainer / Baffle and Deflector		Acetal Polypropylene
Filter Element	5 micron	Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge		Polyamide (Nylon)
Springs	Main Regulating Valve	Steel Stainless Steel
Valve Assembly		Acetal / Nitrile

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.



Manual Drain

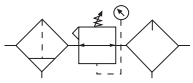
Inches (mm)

Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard Without Gauge 0 to 125 PSI (0 to 8.6 bar)	Plastic Bowl / Bowl Guard With Gauge 0 to 125 PSI (0 to 8.6 bar)
Manual Drain	1/4	D18-02-FK00B	D18-02-FKG0B
	3/8	D18-03-FK00B	D18-03-FKG0B
	1/2	D18-04-FK00B	D18-04-FKG0B
Automatic Drain	1/4	D18-02-FG00B	D18-02-FGG0B
	3/8	D18-03-FG00B	D18-03-FGG0B
	1/2	D18-04-FG00B	D18-04-FGG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Combination D28



Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Pressure Gauge and Modular T-Bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Specifications

Flow Capacity*	3/8	110 SCFM (52 dm^3/s, ANR)
	1/2	110 SCFM (52 dm^3/s, ANR)
	3/4	150 SCFM (71 dm^3/s, ANR)
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT/BSPP-G	3/8, 1/2, 3/4
Standard Filtration		5 Micron
Weight		4.65 lb. (2.1 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 91.3 PSIG (6.3 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

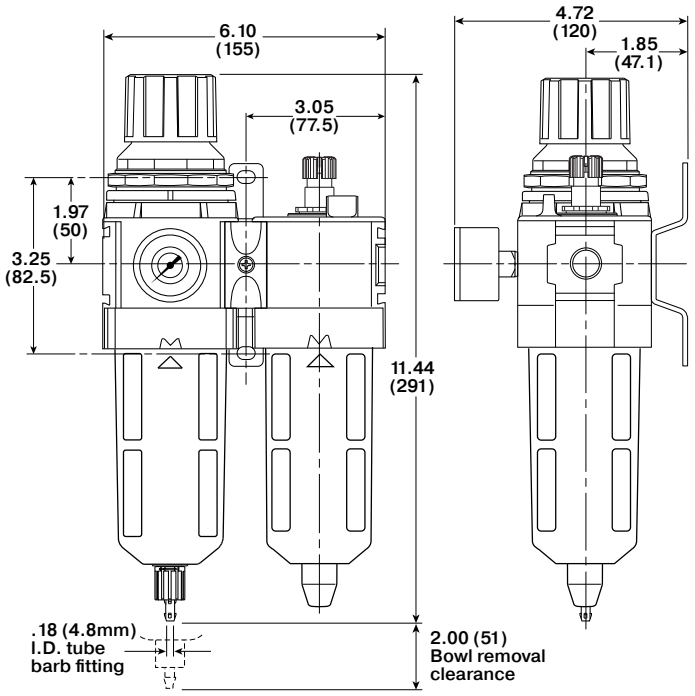
Materials of Construction

Body		Aluminum
Body Cap		ABS
Bonnet / Knob		Nylon / Acetal
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Diaphragm Assembly		Nitrile / Zinc
Element Retainer / Baffle and Deflector		Acetal Polypropylene
Filter Element		Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge	Metal Bowl	Polyamide (Nylon)
Springs	Main Regulating Valve	Steel Stainless Steel
Valve Assembly		Brass / Nitrile / Acetal

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.



Manual Drain

Inches (mm)

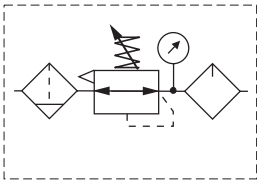
Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard With Gauge 0 to 125 PSI (0 to 8.6 bar)	Metal Bowl / Sight Gauge With Gauge 0 to 125 PSI (0 to 8.6 bar)	Plastic Bowl / Bowl Guard With Gauge & End Blocks 0 to 125 PSI(0 to 8.6 bar)
Manual Drain	3/8	D28-03-FKG0B	D28-03-FLG0B	D28-03-FKBGB
	1/2	D28-04-FKG0B	D28-04-FLG0B	D28-04-FKBGB
	3/4	D28-06-FKG0B	D28-06-FLG0B	D28-06-FKBGB
Automatic Drain	3/8	D28-03-FGG0B	D28-03-FHG0B	D28-03-FGBGB
	1/2	D28-04-FGG0B	D28-04-FHG0B	D28-04-FGBGB
	3/4	D28-06-FGG0B	D28-06-FHG0B	D28-06-FGBGB

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Combination
D90

= **"Most Popular"**



Options

D90	-	0	6	-	A	H	G	M
Unit function		**Thread type***	**Port size**		**Regulator function / pressure**	**Bowl / drain type**	**Option**	**Option**
Filter / Regulator + Lubricator **D90**		**NPT 0** BSPP C	**3/4 6** **1 8**		**A Relieving / 0-174 PSI**	**H Metal bowl with sight gauge / auto drain** **L Metal bowl with sight gauge / manual drain**	G Gauge	M Mounting bracket

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Filter / Regulator + Lubricator Combinations
5 micron element, 12 bar (174 psig) regulator + gauge and wall mounting bracket

Ordering information

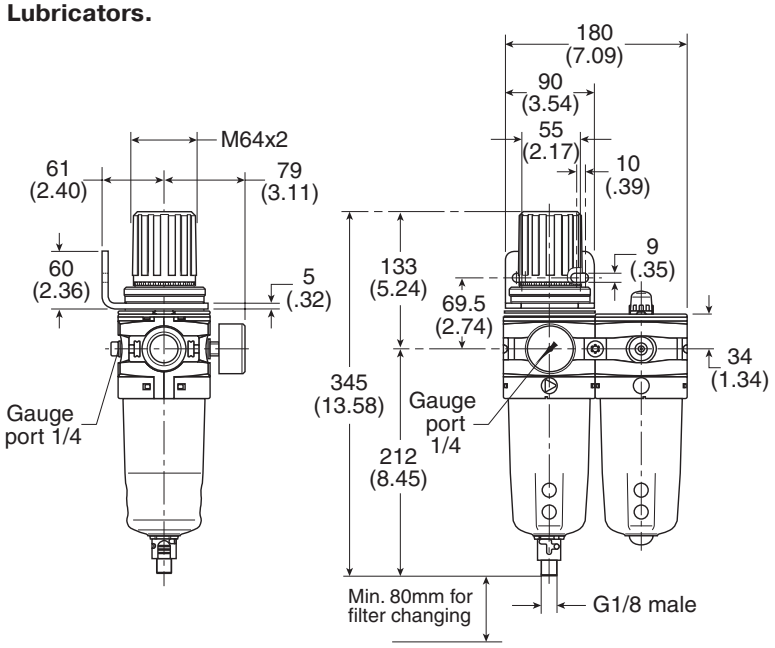
Port size	Flow‡ scfm	Weight kg (lb)	Combined manual / semi-auto drain part number†	Auto drain part number†
3/4"	315	2.8 (6.2)	**D90-06-ALGM**	**D90-06-AHGM**
1"	340	2.8 (6.2)	**D90-08-ALGM**	**D90-08-AHGM**

† **Standard part numbers shown in bold. For other models refer to Options chart below.**
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.4 psig) set pressure and 1 bar (14.5 psig) pressure drop.

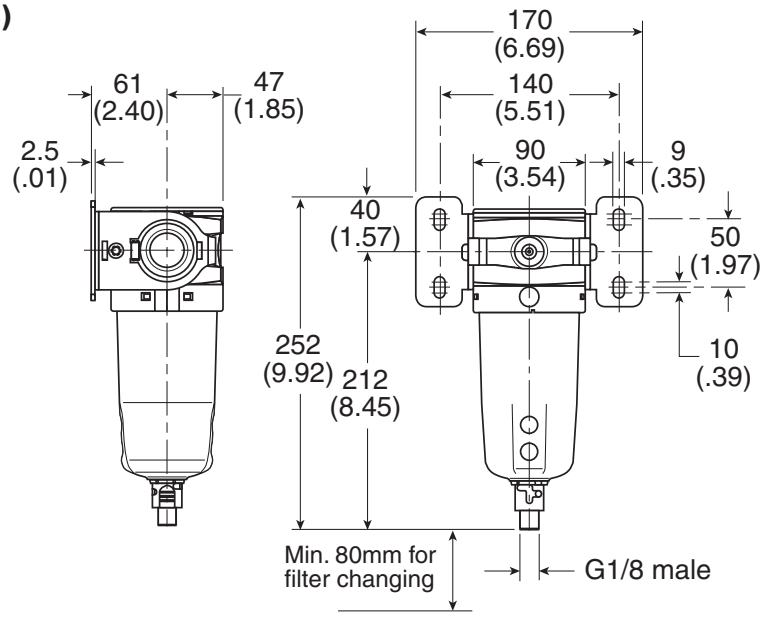
Suggested Lubricant

Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.



Dimensions mm (inches)



⚠WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Notes

Combination Numbering System

= "Most Popular"

Unit Function	Family			Thread Type	Pipe Size		F-R-L Trio	Bowls / Drains	Options	Options	Level
C	1	8	-	0	3	-	F	K	G	0	B

Unit Function
C F-R-L Trio

Family
08 Miniature
18 Compact
28 Standard

Thread Type
0 NPT
C BSPP [1]

Code	Pipe Size	Series 08	Series 18	Series 28
2	1/4"	X	X	
3	3/8"		X	X
4	1/2"		X	X
6	3/4"			X

Code	Series
B	08
B	18
B	28

Options
0 None
L Differential Pressure Indicator (18 & 28 Only)
N Lubricator with No Drain

Diaphragm Function	Fluorocarbon (28 Series Only)	Spring Range 0 to 30 PSIG (0 to 2.1 bar)	0 to 60 PSIG (0 to 4.1 bar)	0 to 125 PSIG (0 to 8.6 bar)	0 to 250 PSIG [4] (0 to 17.2 bar)
Relieving	No	C	D	**F**	G
	Yes	J	K	L	M
Non-relieving	No	P	W	R	S
	Yes	V	X	Y	Z

Wilkerson combination models are offered with the T-bracket(s) as standard.

Options
0 None
B Add End Blocks
G Pressure Gauge (08 Square) [2] (18 & 28 Round)
L Differential Pressure Indicator (18 & 28 Only)
N Lubricator with No Drain

Drains	Bowls: Plastic w / Guard Nitrile Standard	Bowls: Metal w/Sight Gauge [3] Nitrile Standard
Automatic Drain (18 & 28 Series Only)	**G**	H
Manual Drain	**K**	L
Piston Drain (08 Series Only)	R	S

1 ISO, R228 (G Series)
2 Square gauge included with all C08
3 08 series has all metal bowl (no sight gauge).
4 08 series operating range 0 to 232 PSIG (1 to 16 bar).

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

NOTE: All classes above refer to International Standards Organization (ISO) standard 8573-1, pertaining to maximum particle size and concentration of solid contaminants, and maximum oil content.

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.

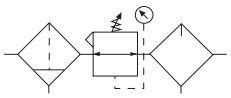
NOTE: When selecting from the options columns, please enter letters in alphabetical order for positions 7, 8, 9. For example:

C 1 8 - 0 3 - F K G 0 B

Suggested Lubricant

Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Combination C08



Specifications

Flow Capacity*	1/4	27 SCFM (13 dm^3/s, ANR)
Gauge Port** (2)	NPT	1/8
Maximum Supply Pressure	Plastic Bowl Metal Bowl	150 PSIG (10.3 bar) 250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl Metal Bowl	14° to 125°F (-10° to 52°C) 14° to 150°F (-10° to 65.5°C)
Port Size	NPT / BSPP-G	1/4
Standard Filtration		5 Micron
Weight		1.96 lb. (0.9 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 100 PSIG (6.9 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Gauge supplied with every part. Gauge can be installed on the front or back of the regulator. If no gauge is installed, both seal screws must be installed.

Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Flush-Mount Pressure Gauge and Modular T-bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard

Materials of Construction

Body		Aluminum
Bonnet		Glass-filled Nylon
Bowl	Plastic Bowl Metal Bowl	Polycarbonate Aluminum
Bowl Guard		Nylon
Diaphragm Assembly		Nitrile / Stainless Steel
Filter Element		Polyethylene
Knob		Acetal
Seals	Plastic Bowl Metal Bowl	Nitrile Nitrile
Sight Dome		Polycarbonate
Springs		Steel
Valve		Acetal / Nitrile

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

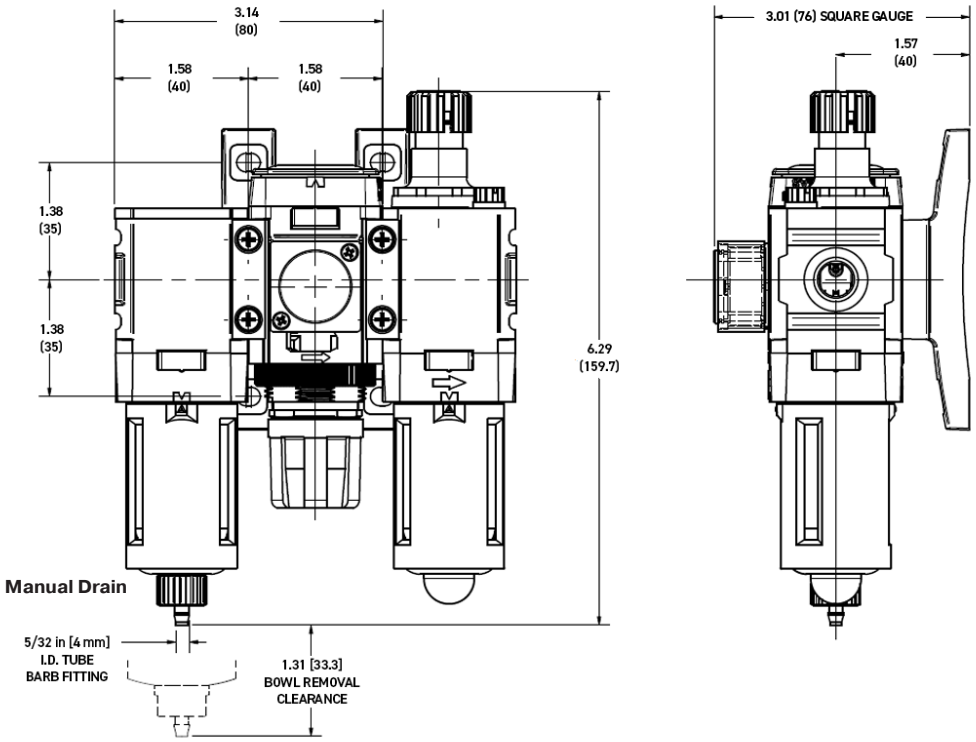
Ordering Information

Model Type	Port Size	Plastic Bowl /Bowl Guard / With Gauge 0 to 125 PSI (0 to 8.6 bar)	Metal Bowl /With Gauge 0 to 125 PSI (0 to 8.6 bar)
Manual Drain	1/4	C08-02-FKG0B	C08-02-FLG0B

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.



Inches (mm)

⚠ WARNING

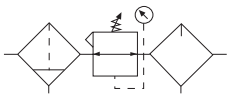
Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Combination C18



Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Pressure Gauge and Modular T-Bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard

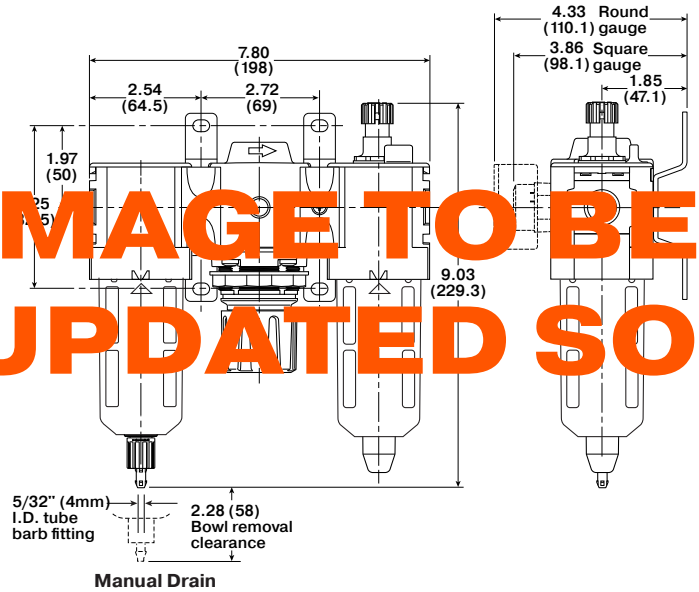


IMAGE TO BE UPDATED SOON!

Inches (mm)

Specifications

Flow Capacity*	1/4	42 SCFM (20 dm^3/s, ANR)
	3/8	68 SCFM (32 dm^3/s, ANR)
	1/2	85 SCFM (40 dm^3/s, ANR)
Gauge Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	1/4, 3/8, 1/2
Standard Filtration		5 Micron
Weight		4.04 lb. (1.83 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 91.3 PSIG (6.3 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Materials of Construction

Body		Aluminum
Bonnet / Knob		Nylon / Acetal
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Diaphragm Assembly		Nitrile / Stainless Steel
Filter Element		Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge	Metal Bowl	Polyamide (Nylon)
Springs	Main Regulating Valve	Steel Stainless Steel
Valve		Acetal / Nitrile

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

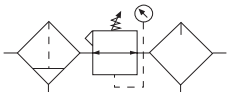
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard / With Gauge 0 to 125 PSI (0 to 8.6 bar)	Metal Bowl / Sight Gauge / With Gauge 0 to 125 PSI (0 to 8.6 bar)	Plastic Bowl / Bowl Guard / With Gauge & End Blocks 0 to 125 PSI (0 to 8.6 bar)
Manual Drain	1/4	C18-02-FKG0B	C18-02-FLG0B	C18-02-FKBGB
	3/8	C18-03-FKG0B	C18-03-FLG0B	C18-03-FKBGB
	1/2	C18-04-FKG0B	C18-04-FLG0B	C18-04-FKBGB
Automatic Drain	1/4	C18-02-FGG0B	C18-02-FHG0B	C18-02-FGBGB
	3/8	C18-03-FGG0B	C18-03-FHG0B	C18-03-FGBGB
	1/2	C18-04-FGG0B	C18-04-FHG0B	C18-04-FGBGB

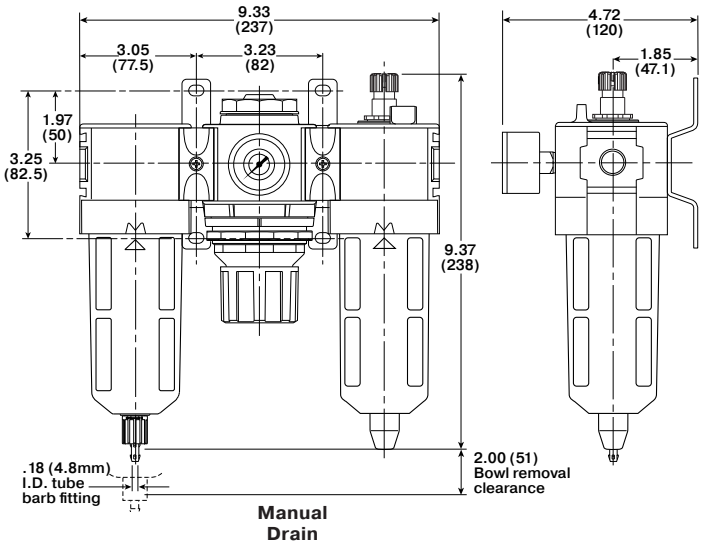
Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Combination C28



Features

- Components Integrated into Single Unit
- Modern Design and Appearance
- Light Weight, Ready-to-Mount Assembly Comes Standard with Pressure Gauge and Modular T-Bracket / Joiner Assembly
- High Flow Capacity
- Quick-Disconnect Bowl / Bowl Guard



Inches (mm)

Specifications

Flow Capacity*	3/8	90 SCFM (43 dm^3/s, ANR)
	1/2	90 SCFM (43 dm^3/s, ANR)
	3/4	110 SCFM (52 dm^3/s, ANR)
Gauge Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure	Plastic Bowl	150 PSIG (10.3 bar)
	Metal Bowl	250 PSIG (17.2 bar)
Operating Temperature	Plastic Bowl	-13˚ to 125˚F (-25˚ to 52˚C)
	Metal Bowl	-13˚ to 150˚F (-25˚ to 65.5˚C)
Port Size	NPT / BSPP-G	3/8, 1/2, 3/4
Standard Filtration		5 micron
Weight		5.90 lb. (2.6 kg)

* Inlet pressure 145 PSIG (10 bar), Secondary pressure 91.3 PSIG (6.3 bar), 14.5 PSIG (1 bar) pressure drop.

"F" Series Filters, Type "A" 5 micron elements: All Wilkerson Type "A" 5 micron elements **meet or exceed ISO** Class 3 for maximum particle size and concentration of solid contaminants.

Materials of Construction

Body		Aluminum
Bonnet / Knob		Nylon / Acetal
Bowls	Plastic Bowl	Polycarbonate
	Metal Bowl	Aluminum
Diaphragm Assembly		Nitrile / Zinc
Filter Element		Polyethylene
Seals	Plastic Bowl	Nitrile
	Metal Bowl	Nitrile
Sight Dome		Polycarbonate
Sight Gauge	Metal Bowl	Polyamide (Nylon)
Springs	Main Regulating	Steel
	Valve	Stainless Steel
Valve		Brass / Nitrile / Acetal

Suggested Lubricant
Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

= **"Most Popular"**

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.

⚠ WARNING

Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

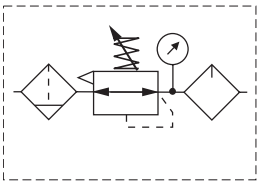
Ordering Information

Model Type	Port Size	Plastic Bowl / Bowl Guard / With Gauge 0 to 125 PSI (0 to 8.6 bar)	Metal Bowl / Sight Gauge / With Gauge 0 to 125 PSI (0 to 8.6 bar)	Plastic Bowl / Bowl Guard / With Gauge & End Blocks 0 to 125 PSI (0 to 8.6 bar)
Manual Drain	3/8	C28-03-FKG0B	C28-03-FLG0B	C28-03-FKBGB
	1/2	C28-04-FKG0B	C28-04-FLG0B	C28-04-FKBGB
	3/4	C28-06-FKG0B	C28-06-FLG0B	C28-06-FKBGB
Automatic Drain	3/8	C28-03-FGG0B	C28-03-FHG0B	C28-03-FGBGB
	1/2	C28-04-FGG0B	C28-04-FHG0B	C28-04-FGBGB
	3/4	C28-06-FGG0B	C28-06-FHG0B	C28-06-FGBGB

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Combination C90

= **"Most Popular"**



Options

C90	-	0	6	-	A	H	G	M

Unit function		Thread type*		Port size		Regulator function / pressure		Bowl / drain type		Option		Option	
Filter + Regulator + Lubricator	C90	NPT	0	3/4	6	A	Relieving / 0-174 PSI	H	Metal bowl with sight gauge / auto drain	G	Gauge	M	Mounting bracket
		BSPP	C	1	8			L	Metal bowl with sight gauge / manual drain				

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

Filter + Regulator + Lubricator Combinations
5 micron element, 12 bar (174 psig) regulator + gauge and wall mounting bracket

Ordering information

Port size	Flow‡ scfm	Weight kg (lb)	Combined manual / semi-auto drain part number†	Auto drain part number†
3/4"	170	3.3 (7.3)	**C90-06-ALGM**	**C90-06-AHGM**
1"	170	3.3 (7.3)	**C90-08-ALGM**	**C90-08-AHGM**

† **Standard part numbers shown in bold. For other models refer to Options chart below.**
‡ Flow with 10 bar (145 psig) inlet pressure, 6.3 bar (91.4 psig) set pressure and 1 bar (14.5 psig) pressure drop.

Suggested Lubricant

Airline Oil F442001
Petroleum based oil of 100 to 200 SUS viscosity at 100°F and an aniline point greater than 200°F
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Note: For Kits and Repair Parts, see individual pages for Filters, Regulators, and Lubricators.

⚠WARNING

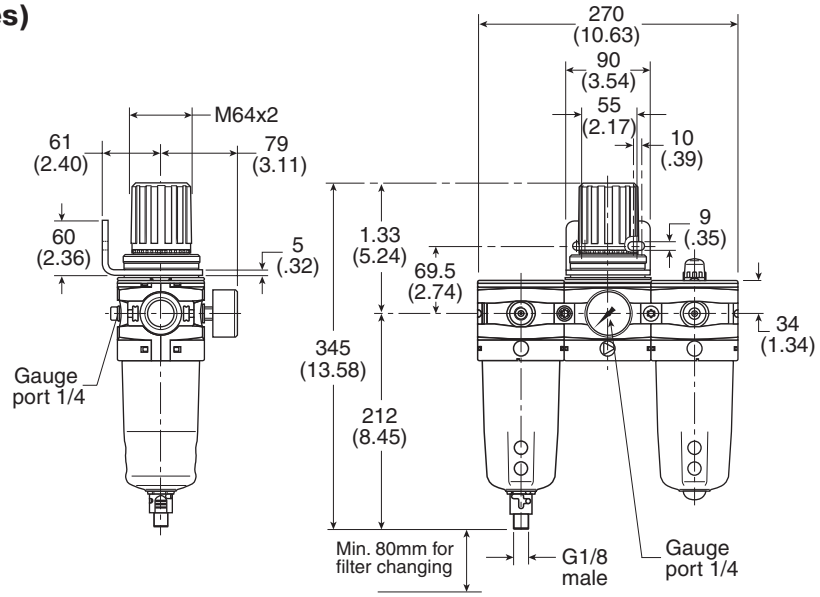
Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

CAUTION:

REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting devices may be obtained only by special design.

For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Dimensions mm (inches)



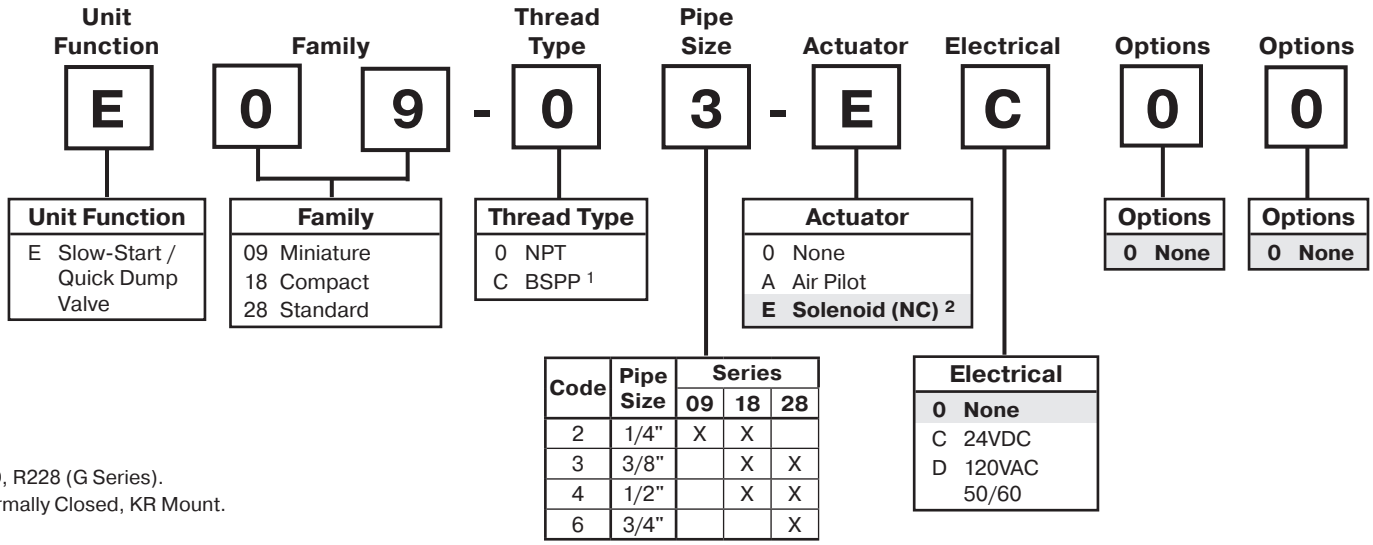
Notes

Slow-Start / Quick Dump Valve Numbering System

= "Most Popular"

Slow-Start / Quick Dump Valve

The Slow-Start / Quick Dump Valve is designed as a three-way Quick Dump Valve with a built-in Slow-Start capability. This Slow-Start capability allows control of downstream pressure buildup at start-up of a compressed air system. The combination of Slow-Start and Quick Dump reduces the number of pneumatic components and the unique volume-independent design allows any number of additions to the pneumatic circuit without readjusting the Slow-Start function.



[1] ISO, R228 (G Series).
[2] Normally Closed, KR Mount.

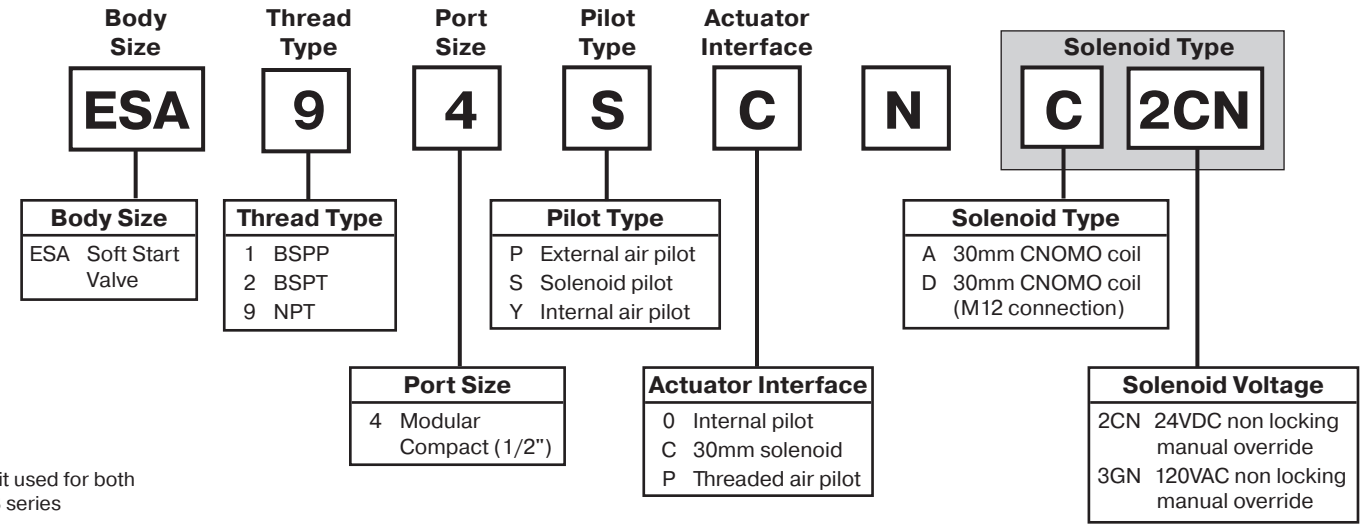
Soft Start Valve Numbering System

Soft Start Valve

The Soft Start Valves, provide for the safe introduction of pressure to machines or systems. Soft Start Valves, allow the pressure to gradually build to the set point before fully opening to deliver full flow at line pressure.

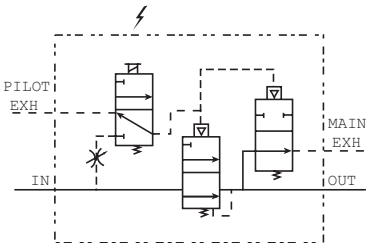
The controlled introduction of pressure can be an important safety factor and prevent damage to tooling when air pressure is introduced at machine or system start up.

Note: Soft Start Valves must be installed downstream of a 3/2 valve with exhaust capability



Note:
ESA unit used for both 18 & 28 series

Slow-Start / Quick Dump Valve E18 / E28



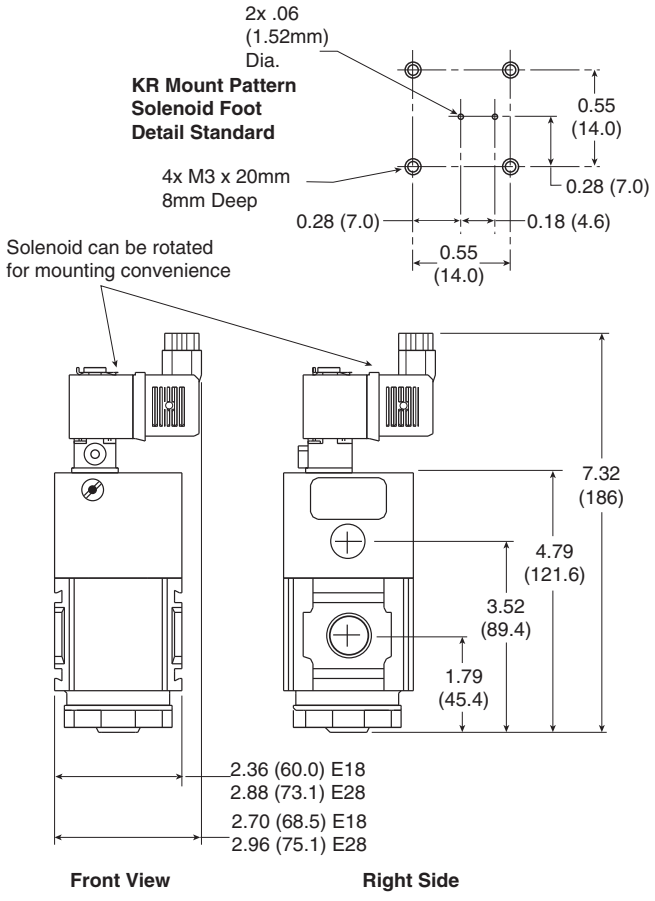
Specifications

Flow Capacity*	E18	1/4	95 SCFM (44.8 dm^3/s)
		3/8	101 SCFM (47.7 dm^3/s)
		1/2	113 SCFM (53.3 dm^3/s)
	E28	3/8	196 SCFM (92.5 dm^3/s)
		1/2	210 SCFM (99.1 dm^3/s)
		3/4	230 SCFM (108.5 dm^3/s)
Exhaust Ports Right Side and Rear	NPT / BSPP-G	E18	3/8
		E28	3/8
Maximum Supply Pressure			150 PSIG (10.3 bar)
Minimum Pressure			30 PSIG (2.1 bar)
Operating Temperature			32° to 150°F (0° to 65.5°C)
Port Size	NPT / BSPP-G	E18	1/4, 3/8, 1/2
		E28	3/8, 1/2, 3/4
Weight		E18	2.23 lb. (1.01 kg)
		E28	2.50 lb. (1.14 kg)

* Inlet pressure 150 PSIG (10.3 bar). Pressure drop 5 PSID (0.3 bar).

Features

- Modular Design
- True Volume Independence
- High Flow Capacity
- Choice of Two Exhaust Port Locations



Inches (mm)

Materials of Construction

Body	Aluminum
Bottom Plug	33% Glass-Filled Nylon
Seals	Nitrile
Springs	Music Wire / Stainless Steel
Valve Assembly	Brass / Nitrile

Replacement Kits

Actuating Valve
- KR Mount, 24VDC VRP-95-776
- KR Mount, 120VAC VRP-95-777
- CNOMO, 24VDC VRP-95-778
- CNOMO, 120VAC VRP-95-779

Muffler VRP-95-780

Valve / Spring Kit VRP-95-781

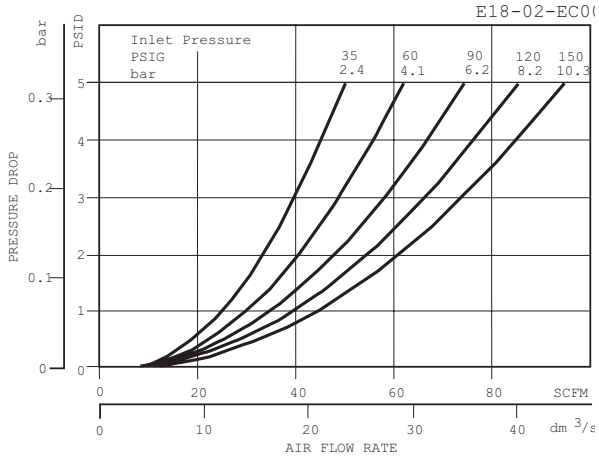
Repair Kit (Includes Valve / Spring) VRP-95-782

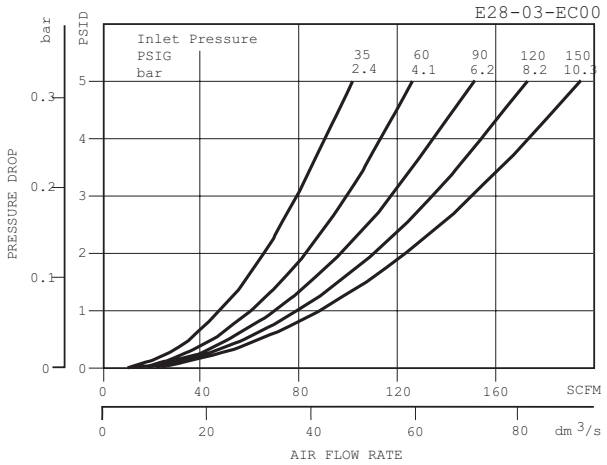
Body Cap Kit
- E18 ..... VRP-95-784
- E28 ..... VRP-95-785

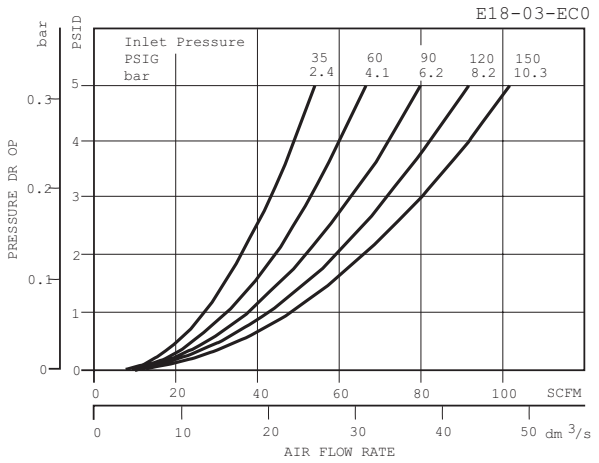
KR to CNOMO Adapter Block VRP-95-712

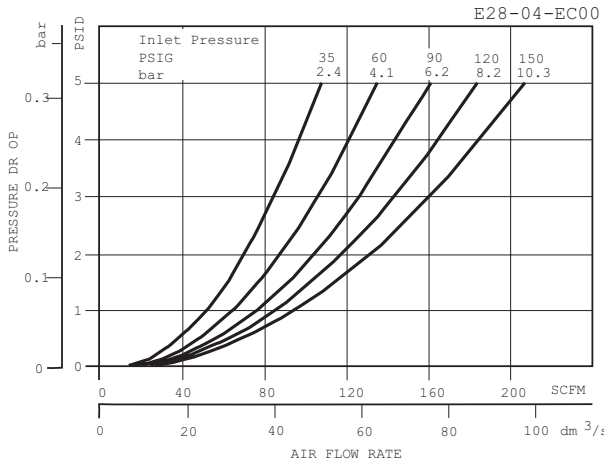
C-Bracket –
- E18 ..... GPA-97-086
- E28 ..... GPA-97-087

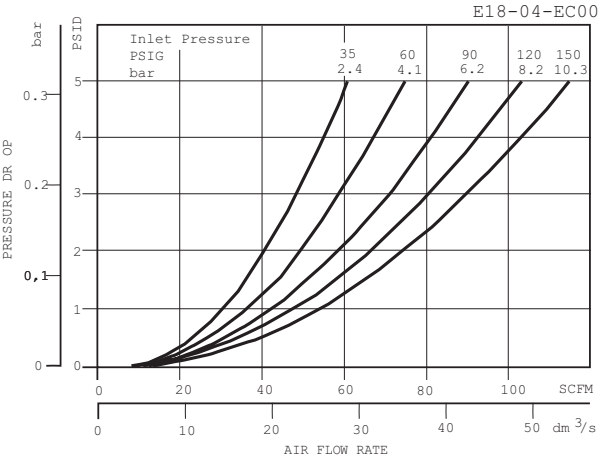
= **"Most Popular"**

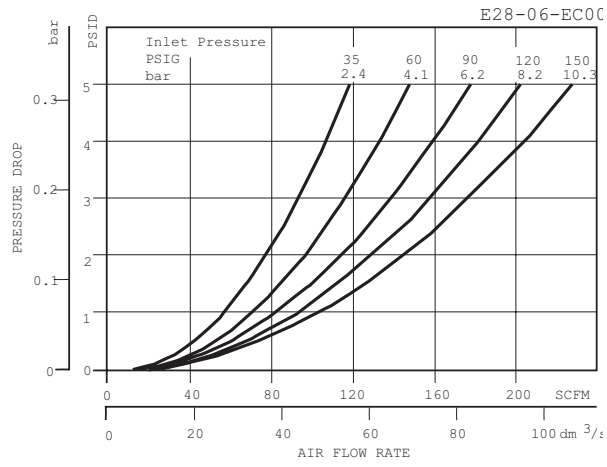










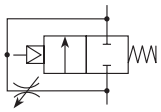


Ordering Information

Model Type	Port Size	24V / DC N.C.	120V / 60 Hz N.C.
E18	1/4	E18-02-EC00	E18-02-ED00
	3/8	E18-03-EC00	E18-03-ED00
	1/2	E18-04-EC00	E18-04-ED00
E28	3/8	E28-03-EC00	E28-03-ED00
	1/2	E28-04-EC00	E28-04-ED00
	3/4	E28-06-EC00	E28-06-ED00

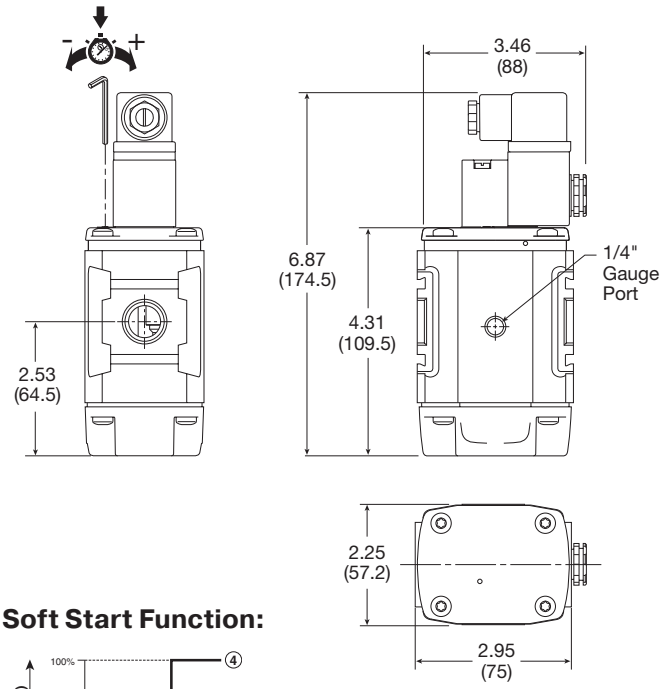
Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Soft Start Valves ESA

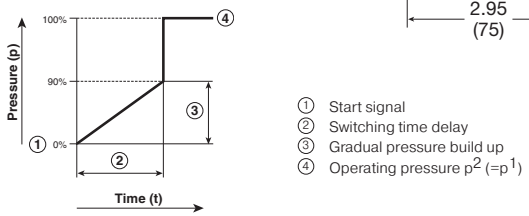


Features

- Modular design with 1/2" integral ports (NPT & BSPP)
- The 2-way, 2-position function provides for the safe introduction of pressure
- Adjustable slow start
- Solenoid or air pilot options
- High flow



Soft Start Function:



① Start signal
② Switching time delay
③ Gradual pressure build up
④ Operating pressure p^2 (=p^1)

Specifications

Flow Capacity*	1/2	101 SCFM (47.7 dm^3/s)
Maximum Supply Pressure		
Solenoid operated		150 PSIG (10.3 bar)
Air pilot operated		250 PSIG (7 bar)
Minimum Pressure		44 PSIG (3 bar)
Temperature Range (max)†		
Solenoid operated		14° to 122°F (-10° to 50°C)
Air pilot operated		-4° to 176°F (-20° to 80°C)
Fluid		Compressed air
Ports		
Air pilot		1/8
Gauge		1/4

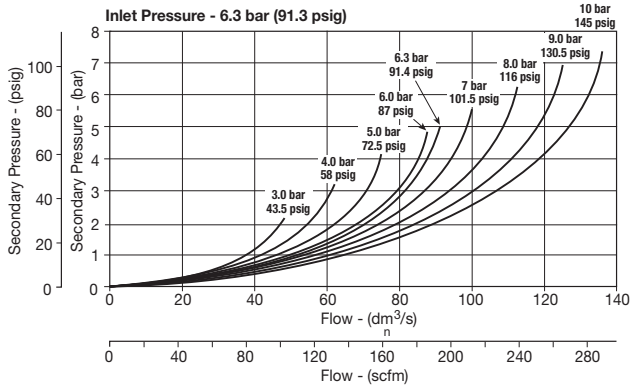
* Inlet pressure 91.3 PSIG (6.3 bar), inlet pressure and 14.5 (1 bar) pressure drop.

† Air supply must be dry enough to avoid ice formation at temperatures below 35.6°F (2°C). Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure.

Materials of Construction

Body	Aluminum
Body cover	Polyester
Seals	Nitrile NBR

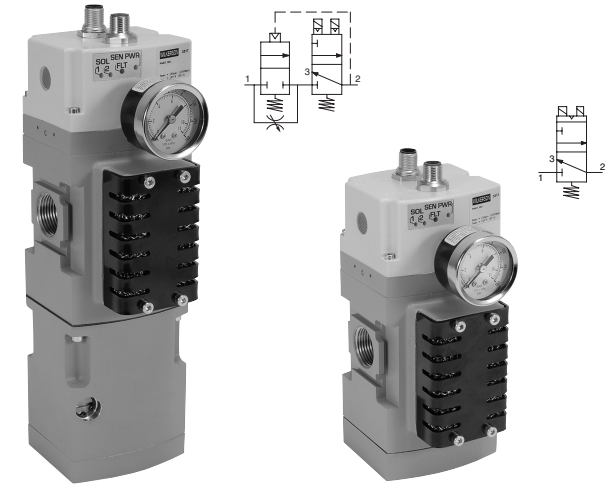
ESA 1/2" Soft Start Valve



Ordering Information

Port size	Description	Weight lbs (kg)	Part number
1/2"	120VAC 30mm coil & cable plug incl.	1.5 (0.87)	ESA94SCNA3GN
1/2"	24VDC 30mm coil & cable plug	2.0 (0.90)	ESA94SCNA2CN
1/2"	Internal air pilot operated	2.0 (0.90)	ESA94Y0N
1/2"	External air pilot (1/8 threaded)	1.5 (0.87)	ESA94PPN

Safety Exhaust Valves E28 / Q28



(optional soft start)

Specifications

Operating pressure: 30 to 150 PSIG (2 to 10 bar)	
Minimum operating pressure:	30 PSIG (2 bar)
Ambient temperature:	40˚ to 120˚F (4˚ to 50˚C)
Recommended filtration:	40µ
Operating medium:	Compressed air
Ingress protection class:	IP65
B10 (mio):	10 million switching cycles
B10 d (mio):	20 million switching cycles
Allowable discordance:	150ms
Flow media:	Compresses air to ISO 8573-1 Class 7:4:4
Weight lbs (kg):	6.5 (2.9) with soft start 4.2 (1.9) without soft start

The soft start opens to full flow at approximately 60% of input pressure.

Features

- Easy electrical interface with M12 connectors to safety circuit
- External monitoring provides a cost and space saving advantage
- Solid state pressure sensors provide accurate, fast fault detection
- Quick visual LED indicators on the front of the valve
- Superior seated seal design for longer life
- Safety exhaust outlet is no-maintenance and non-clog by design
- Suitable for stand alone use or modular mounting to P32 or P33 FRL assembly
- High B10 life value
- Fast exhaust times allow for smaller machine footprint

E28 - 0 6 - A A N

Series	
Safety redundant with soft start	E28
Safety redundant no soft start	Q28

Thread type	
NPT	0
BSPP	C

Port size	
3/4"	6

Output for Solenoid, M12 Connector Pin	
A	2 & 4, common 3
C	3 & 4
D	2 & 4

Output for Sensors, M12 Connector Pin	
A	1 & 2, 1 & 4, common 3
B	1 & 2, 5 & 4, common 3
C	5 & 2, 1 & 4, common 3

Gauge *	
N	No gauge
G	Dial gauge ** (standard)
D	Digital gauge **
M	MPS -P34 Gauge

Notes:
* Safety valve supplied with 1/8" gauge port in either BSPP or NPT threads as specified for ports. Gauges shipped loose.
** Dial or digital gauge not available on BSPP version.
Note: Mounting hardware sold separately.

General Technical Data

Valve type	Externally monitored, redundant, dual poppet
Soft start	Optional
Valve function	3/2 way, normally closed
Housing material	Cast aluminum
Seals	NBR
Fasteners	Stainless steel / brass
Silencer	Steel, non clog safety design

Electrical Specifications

Operating voltage	24V DC
Electrical connection	Two M12 connectors
Switching time 1-2 (ms)	23.3
Switching time 2-3 (ms)	42.7
Duty cycle (%)	100%
Operating voltage (DC)	21.6 to 26.4
Nominal power	
per solenoid coil at 24V DC (W) +/- 10%	1.2 W
per pressure sensor at 24V DC	1.2 W

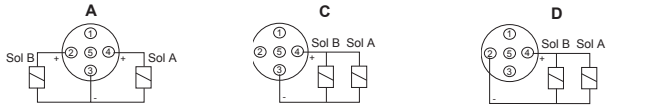
In accordance with EN ISO 13849-1 this safety valve is suitable for use up to Category 4, Ple, sil 3. Certified to $_{c}CSA_{us}$ and bears the CE mark.

A product Integration Guide is available to help connect your logic controller to the Parker Safety Exhaust Valve under the Product Support tab at www.parker.com/pdn/safetyvalve

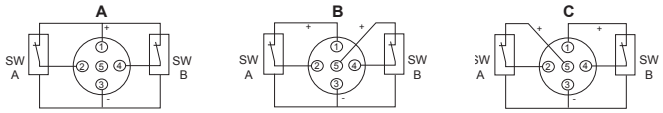
Mounting Hardware

Joiner Set		**GPA-96-601**
T-Bracket w / Body Connector		
T-Bracket (fits to body connector or port block)		**GPA-96-602**
Port Block Kits (includes one in kit)	1/2" NPT	**GPA-96-612**
	1/2" G	**GPA-96-622**
	3/4" NPT	**GPA-96-613**
	3/4" G	**GPA-96-623**

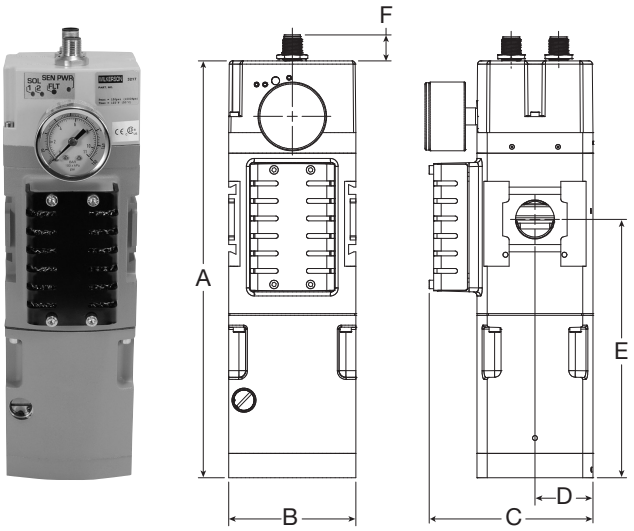
Solenoid M12 Pinouts



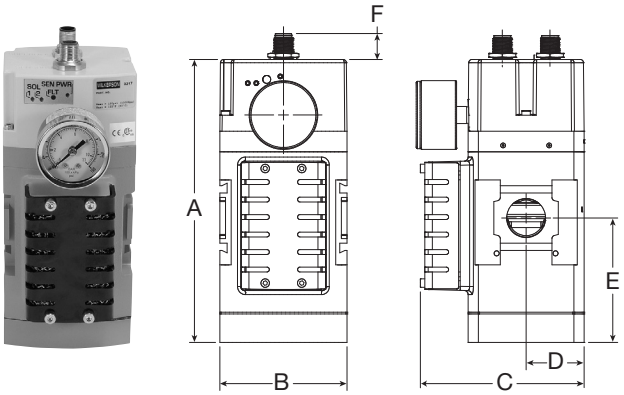
Pressure Sensor M12 Pinouts



Externally Monitored (with Soft Start)



Externally Monitored (No Soft Start)



Dimensions inches (mm)

	Ports	Standard nominal flow rate 1 → 2 L/min (SCFM)*	Standard nominal flow rate 2 → 3 L/min (SCFM)*	A	B	C	D	E	F
Externally Monitored with soft start	3/4"	4,100 (145)	7,500 (265)	10.31 (261.9)	3.15 (80)	4.30 (109.3)	1.44 (36.5)	6.39 (162.3)	0.64 (16.3)
Externally Monitored no soft start	3/4"	4,300 (152)	7,500 (265)	7.03 (178.7)	3.15 (80)	4.30 (109.3)	1.44 (36.5)	3.11 (79.0)	0.64 (16.3)

* Standard nominal flow rate is based on 6 bar input pressure with ΔP = 1 bar

Safety Exhaust Valve Function

When applications demand a safe environment you can count on safety valves from Wilkerson. The E28/Q28 family of safety exhaust valves are 3/2 normally closed valves designed to rapidly exhaust compressed air in the event of a fault condition and to provided monitored coverage ensuring safe function. The E28/Q28 is available in two distinct styles, internally* or externally monitored. The valve is suitable for use up to Category 4, performance level e. Monitoring is achieved externally via a two channel system connected to a safety interface device. Both valves are available with an adjustable soft start and high flow exhaust to shut your equipment down faster when needed. LED's provide clear status of main solenoid operation, sensor power and fault condition for quick visual reference.

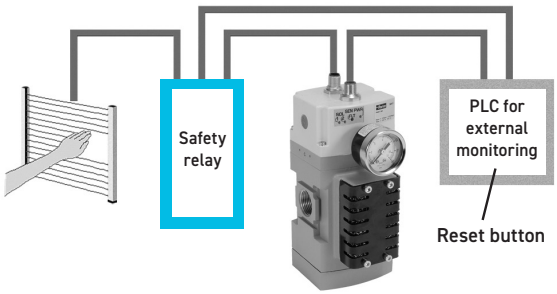
Externally Monitored Valve, Faults and Resets

The externally monitored valve has the monitoring done via a PLC or relay which offers a size and cost advantage over internally monitored valves. The integration of a safety interface into the PLC or relay will help determined the achievable category and performance level of the control system. Customers are required to provide the logic function via the safety device. The valve will lock-out to the "safe state" if asynchronous movement of the valve elements occur which will be detected by solid state pressure sensors. To achieve the proper safety rating, the safety PLC or relay must monitor the solid state pressure sensors to ensure they are not in different states for more than 150ms. If the sensors are in different states for longer than 150ms then the programming logic must shut off power to the solenoids and consider it a fault condition. If during operation the externally monitored E28/Q28 enters a fault condition the valve will shut off. A separate reset signal must be incorporated into the logic sequence to avoid automatic restart of the valve. The safety exhaust valves are not for use with clutch or brake applications and are designed for use in conjunction with a safety relay or safety PLC for safe monitoring and fault detection.

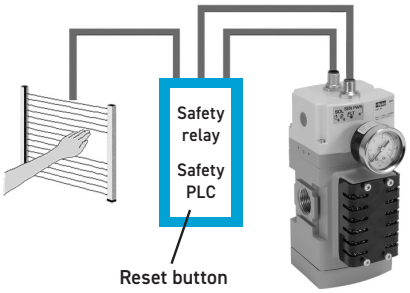
Achieving Desired Performance Level **

The category and performance level (PLr) needed for your machine is determined by a risk assessment of the machinery design and application based on EN ISO 13849-1. The Wilkerson E28/Q28 safety valve is designed for those applications requiring a PL of d or e. Please note these levels require other aspects of the system to meet these requirements. As a guide: you can achieve a Cat 4 PL e system by integrating monitoring via a programmable safety rated device. Because the E28/Q28 is a mechanical fail-safe device, the monitoring could also be done via a standard PLC and still attain as high as a PL d rating.

Cat 3, PL d

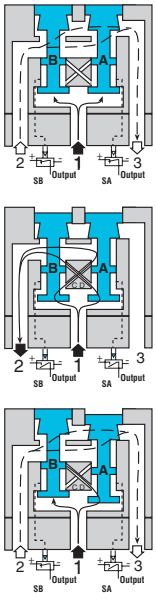


Cat 4, PL e



* For information on internally monitored safety valves reference Bulletin 9EM-B4.

** An integration guide is available to provide further information on connecting the safety valve product to achieve the desired performance level. Please consult Wilkerson and the standard EN ISO 13849-1 for more information.



Conditions at Start

The Safety exhaust valve starts with inlet 1 closed to outlet 2 by both valve elements A and B. Outlet 2 is open to exhaust 3. Pressure signals at both sensors SA and SB are exhausted and contacts 1 and 2 of sensors SA and SB are connected. The normally closed sensors both provide voltage feedback signals to the external monitoring system.

Normal Operation

During normal operation the two solenoids are simultaneously energized which actuates both pilots and causes valve elements A and B to shift. Inlet 1 is then connected to outlet 2 via crossflow passages C and D. Exhaust 3 is closed. Sensing pressure signals go to each pressure sensor and become equal to inlet pressure. Both sensors contacts open and no voltage signals are provided to the external monitoring system. This indicates that both sides of the valve actuated as expected.

Detecting a Malfunction

A malfunction in the system or the valve itself could cause one valve element to be open and the other closed. Air then flows past the inlet poppet on valve element A, into crossflow passage D, but is substantially blocked by the spool portion of element B. The large size of the open exhaust passage past element B keeps the pressure at the outlet port below 2% of inlet pressure. Full sensing air pressure from side A goes to sensor SA, and a reduced pressure goes to sensor SB. This full pressure signal causes SA to open. Sensor SB, with a reduced pressure signal, does not open. An external monitoring system can detect the malfunction by monitoring the outputs of the SA and SB sensors. The external monitor system must then react accordingly by shutting down the power to the valve solenoids and any other components deemed necessary to stop the machine.

Machinery Directive - Overview

The Machinery Directives' goal is to protect people and the environment from accidents caused from all types of machinery. Based on the standard EN 13849 [safety of machines; safety-related parts of control systems] these standards build the procedure to assess safety-related control systems.

Required Performance Level (PLr) based on a risk assessment are now commonly used to determine the safety level required for the controls system, for the application of machinery.

Performance Level (PL) based on the original B, 1,2,3,4 safety categories, diagnostic capabilities, Mean time to dangerous failure (MTTFd), and common cause failure (CCF), define safety levels of a given safety function. This ensures that safety is not just focused on component reliability, but instead introduces common sense safety principles such as redundancy, diversity, and fail-safe behavior of safety related control parts.

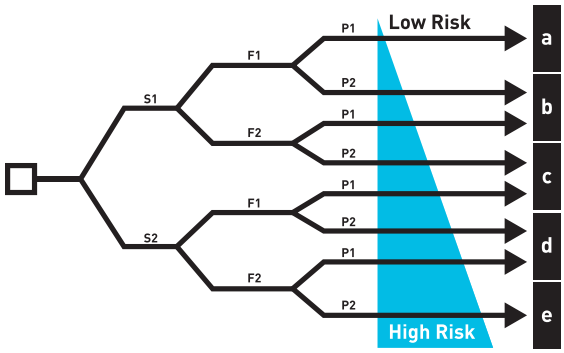
The new EN 13849 standards of the Machinery Directive dictates the machine is safe when the Performance Level of the safety control circuit is equal to or greater than the Required Performance Level of the application. When determining the required performance level, the greater the risk, the higher the requirements of the control system.

$$PLr < PL$$

$$=$$

Determining PLr According to EN 13849-1

The level of each hazardous situation is classified in five Performance levels from a to e. With PL a the control functions contribution to risk reduction is low, while at PL e it is high. The risk graph above can be used as a guideline to determine the required performance level PLr for safety function.



Risk Parameters

(S) Severity of injury

- **S1 Slight (normally reversible injury)**
- **S2 Serious (normally irreversible injury, or death)**

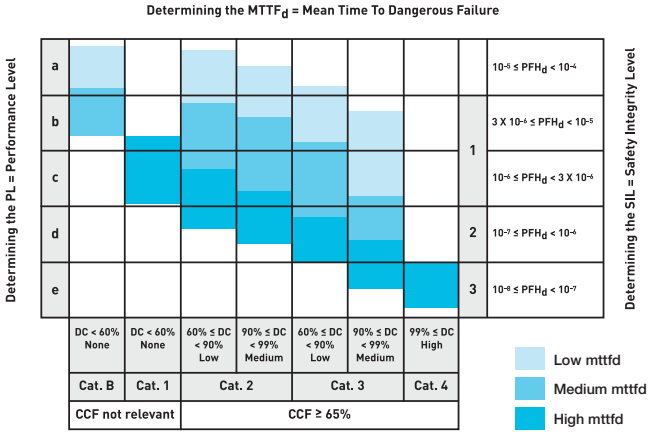
(F) Frequency and / or duration of exposure to hazard

- **F1 Seldom to less often and / or brief**
- **F2 Frequent to continuous and / or long**

(P) Possibility of avoiding the hazard

- **P1 Possibility of avoiding the hazard**
- **P2 Scarcely ever possible**

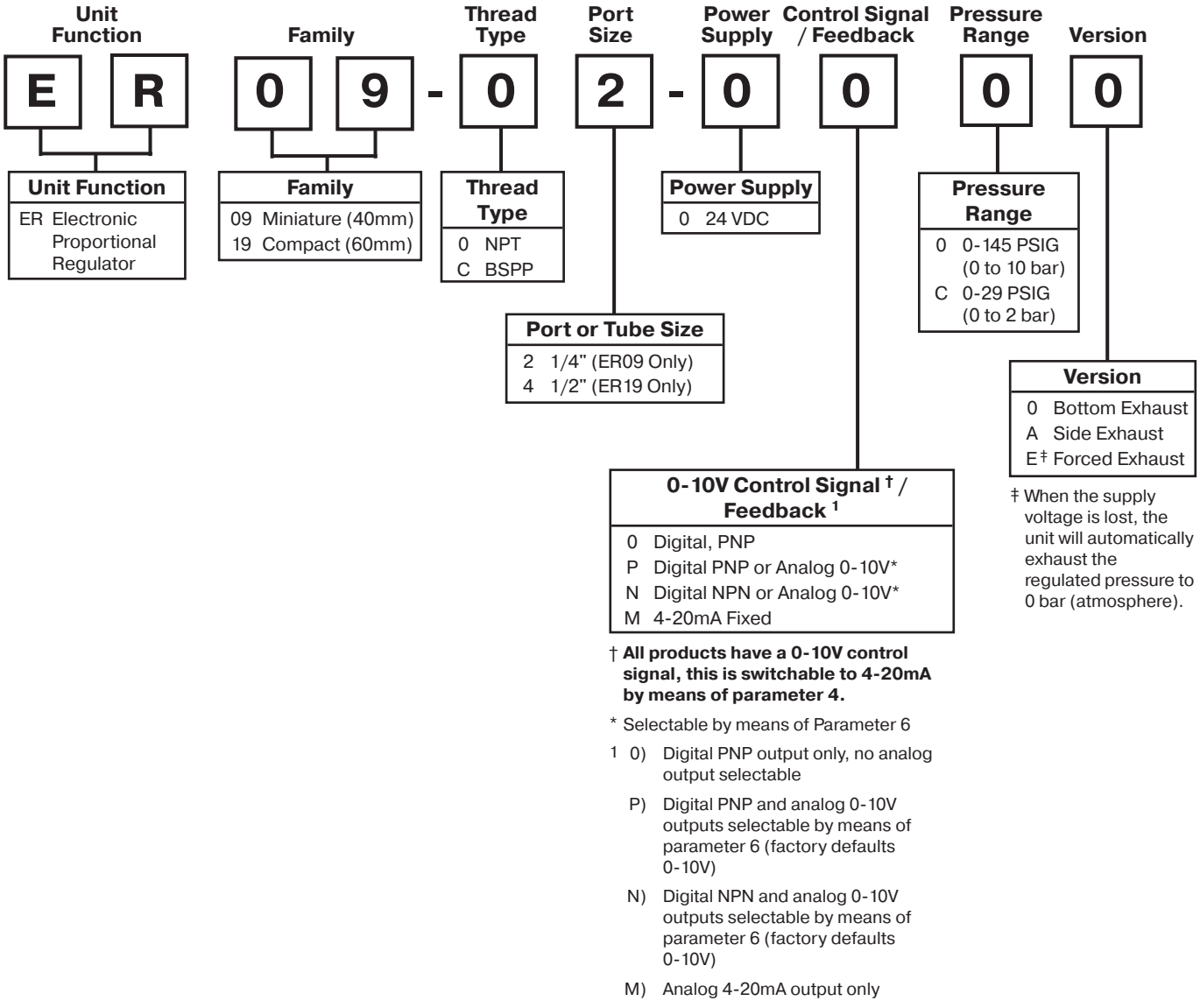
Determining PL According to EN 13849-1



Categories Defined by EN 13849-1

Category	Summary
Category B	When a fault occurs it can lead to the loss of the safety function.
Category 1	Same that Category B, but loss of the safety function is less likely thanks to a good MTTFd of each channel.
Category 2	System behavior allow that the occurrence of a fault can lead to the loss of the safety function between the checks; the loss of the safety function is detected by the check.
Category 3	A single fault in any of safety related parts does not lead to the loss of the safety function. Whenever reasonably possible the single fault shall be detected at or before the next demand upon the safety function. (Means redundancy)
Category 4	Same as Category 3, but if detection of single fault is not possible on or before the next demand upon the safety, an accumulation of these undetected faults shall not lead to the loss of the safety function. (Means redundancy & check)

Electronic Proportional Regulator Numbering System



‡ When the supply voltage is lost, the unit will automatically exhaust the regulated pressure to 0 bar (atmosphere).

† **All products have a 0-10V control signal, this is switchable to 4-20mA by means of parameter 4.**

* Selectable by means of Parameter 6

1 0) Digital PNP output only, no analog output selectable

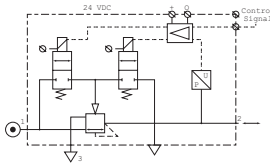
P) Digital PNP and analog 0-10V outputs selectable by means of parameter 6 (factory defaults 0-10V)

N) Digital NPN and analog 0-10V outputs selectable by means of parameter 6 (factory defaults 0-10V)

M) Analog 4-20mA output only

Electronic Proportional Regulator ER09, ER19

= "Most Popular"



ER09 ER19

Materials

Magnet Core	Steel
Solenoid Valve Poppet	FPM
Solenoid Valve Housing	Techno Polymer
Regulator Body (ER09 / ER19)	Aluminum
Regulator Top Housing	Nylon
Valve Head	Brass & NBR
Remaining Seals	NBR

Features

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

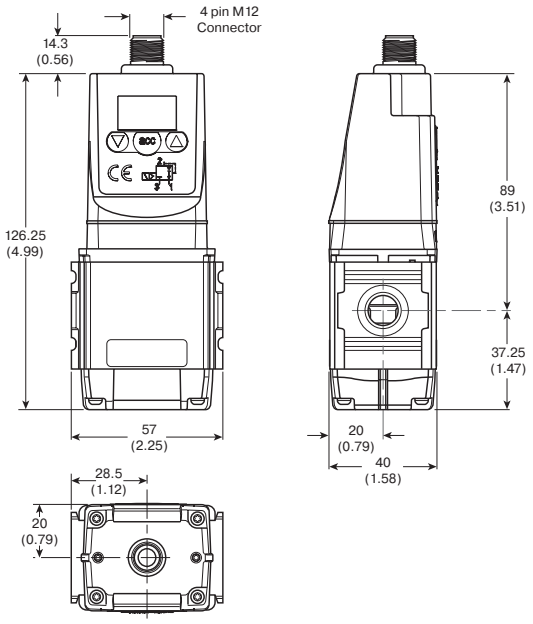
Accessories

Cable (M12, 4-Pin connection w/2m cable) ... CB-M12-4P-2M
DIN Rail Mounting Kit – ER09 ..... P3HKA00ML
Foot Bracket Mounting Kit – ER09.....P3HKA00MC
L-Bracket Mounting Kit – ER19 ..... P3KKA00ML
Foot Bracket Mounting Kit – ER19 .....P3KKA00MC
Seal Kit (valve seat, cover seal) 3538200
Valve Kit (2 valves, screws, cover seal) 3538100

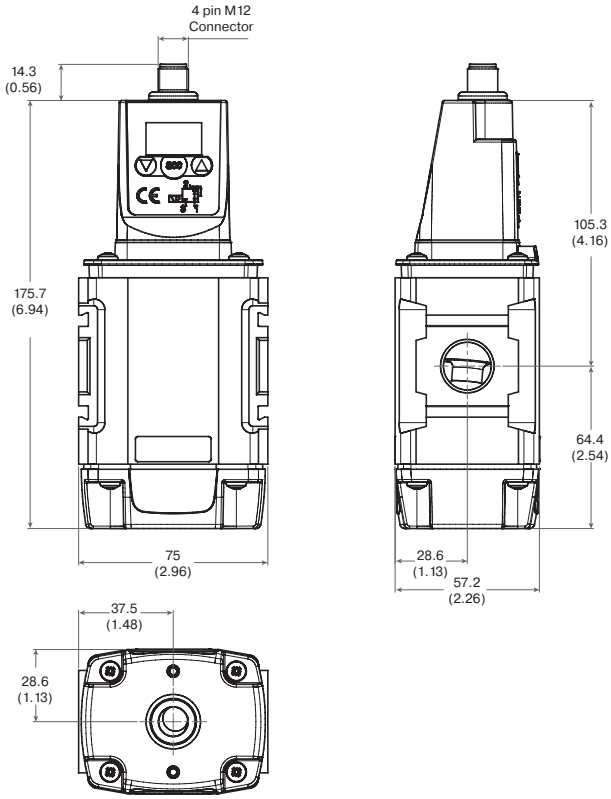
Ordering Information

Port Size	Order Code	Control Signal	Output Signal	Output Pressure
1/4	**ER09-02-00C0**	0 - 10 V	Digital PNP Only	0-29 PSIG (0 -2 bar)
1/4	**ER09-02-0000**	0 - 10 V	Digital PNP Only	0-145 PSIG (0 -10 bar)
1/4	**ER09-02-0PC0**	0 - 10 V	Digital PNP or 0-10V	0-29 PSIG (0 -2 bar)
1/4	**ER09-02-0P00**	0 - 10 V	Digital PNP or 0-10V	0-145 PSIG (0 -10 bar)
1/4	**ER09-02-0NC0**	0 - 10 V	Digital NPN or 0-10V	0-29 PSIG (0 -2 bar)
1/4	**ER09-02-0N00**	0 - 10 V	Digital NPN or 0-10V	0-145 PSIG (0 -10 bar)
1/4	**ER09-02-0MC0**	0 - 10 V	4-20mA Analog Only	0-29 PSIG (0 -2 bar)
1/4	**ER09-02-0M00**	0 - 10 V	4-20mA Analog Only	0-145 PSIG (0 -10 bar)
1/2	**ER19-04-00C0**	0 - 10 V	Digital PNP Only	0-29 PSIG (0 -2 bar)
1/2	**ER19-04-0000**	0 - 10 V	Digital PNP Only	0-145 PSIG (0 -10 bar)
1/2	**ER19-04-0PC0**	0 - 10 V	Digital PNP or 0-10V	0-29 PSIG (0 -2 bar)
1/2	**ER19-04-0P00**	0 - 10 V	Digital PNP or 0-10V	0-145 PSIG (0 -10 bar)
1/2	**ER19-04-0NC0**	0 - 10 V	Digital NPN or 0-10V	0-29 PSIG (0 -2 bar)
1/2	**ER19-04-0N00**	0 - 10 V	Digital NPN or 0-10V	0-145 PSIG (0 -10 bar)
1/2	**ER19-04-0MC0**	0 - 10 V	4-20mA Analog Only	0-29 PSIG (0 -2 bar)
1/2	**ER19-04-0M00**	0 - 10 V	4-20mA Analog Only	0-145 PSIG (0 -10 bar)

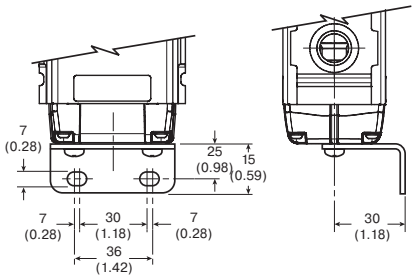
ER09 Bottom Exhaust Version



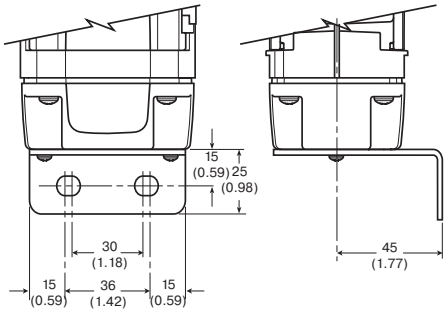
ER19 Bottom Exhaust Version



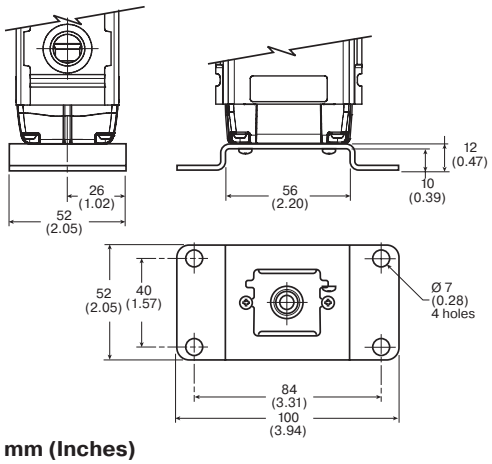
L-Bracket



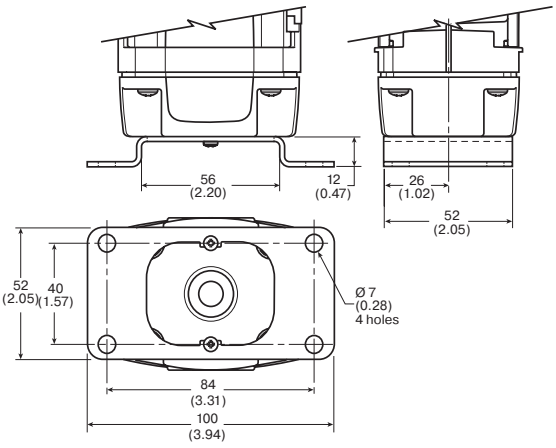
L-Bracket



Foot Bracket



Foot Bracket



Dimensions are in mm (Inches)

Energy Saving

Low Watt Power Consumption

No Unnecessary Loss of Air in Steady State

Man-Machine Interface

High Visibility LED Display

Easy to Read Characters

All Controls on the Same Face

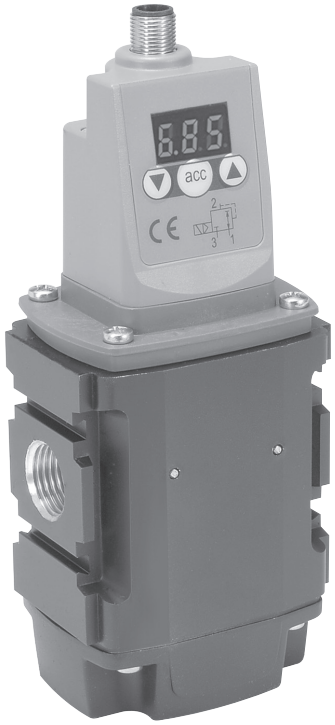
Total Flexibility

User Friendly and Easily Accessible Software Controls

One Basic Unit Suits All Customer Requirements -
0-10V Control Signal Standard
4-20mA Control Signal Software Selectable

Modular Mounting

10 bar & 2 bar Version



Special Applications

Clean Line Design

Suitable for Washdown: IP65

Forced Exhaust Option Available

4 Output Signal Versions Available

Compact and Light Weight

40 & 60 mm Body Sizes

Light Weight Aluminum Bodies

Flexible Mounting Options

Stand-alone or Modular Mounting

Foot Bracket Mounting

DIN-Rail Mounting

Outstanding Performance

Very Fast Response Times

Full Flow Exhaust

Excellent Linearity

High Flow

Generic Industries

The new Proportional Regulator is designed to quickly and accurately adjust and maintain a set output pressure.

The unit will operate regardless of flow, in response to an electronic control signal. The media can be compressed air or an inert gas.

Applications for this technology are virtually unlimited; from paint spray control, paper manufacturing and printing to weaving and laser cutting control; in fact anywhere that requires accurate remote pressure control.

Automation

In the field of general automation, the need to control processes or movement via electronic signals is of paramount importance. The Proportional Regulator unit provides the facility to incorporate pressure control into a fully integrated control system.

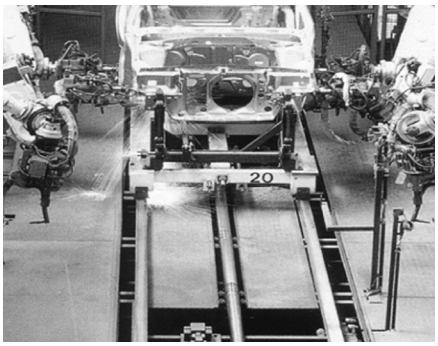
Packaging and Food

The Packaging and Food industry provides another ideal area for application of the Electronic Proportional Regulator, where fine control of tension on wrapping foils and paper is required. The degree of control and the ability to manually change parameters makes this unit ideally suited to the varying requirements of this industry.

Automotive

Applications for this innovative product in the Automotive industry can be seen in major manufacturers' "body-in-white" lines.

The control of clamping and welding forces during panel assembly is an ideal application, also accurate control in paint dipping and spraying can be achieved.



Why Proportional Technology ?

The Difference Between Open or Closed Circuit Control

Standard pressure regulators go a long way towards meeting customers needs. In most cases these regulators work well in general pneumatic and automation applications. However, sometimes the application calls for more precise pressure control. The effects of time, cycling, input, back pressure or pressure and flow variation can all cause inconsistencies in pneumatic systems. Proportional Regulators are designed to eliminate those inconsistencies.

Open Control Circuit

In a normal pressure regulated control system, the inlet pressure (p1) is converted into the output pressure (p2) by the regulator. The set pressure (set value) is usually manually set by adjusting the control knob and in normal circumstances the regulator maintains the output pressure (actual value).

No facility for monitoring the output pressure is provided and there is consequently no way of checking that the set value and the actual value are the same. Also, no account is taken of external influences such as air consumption by the system, which can drastically alter the actual value.

Closed Loop Control Circuit

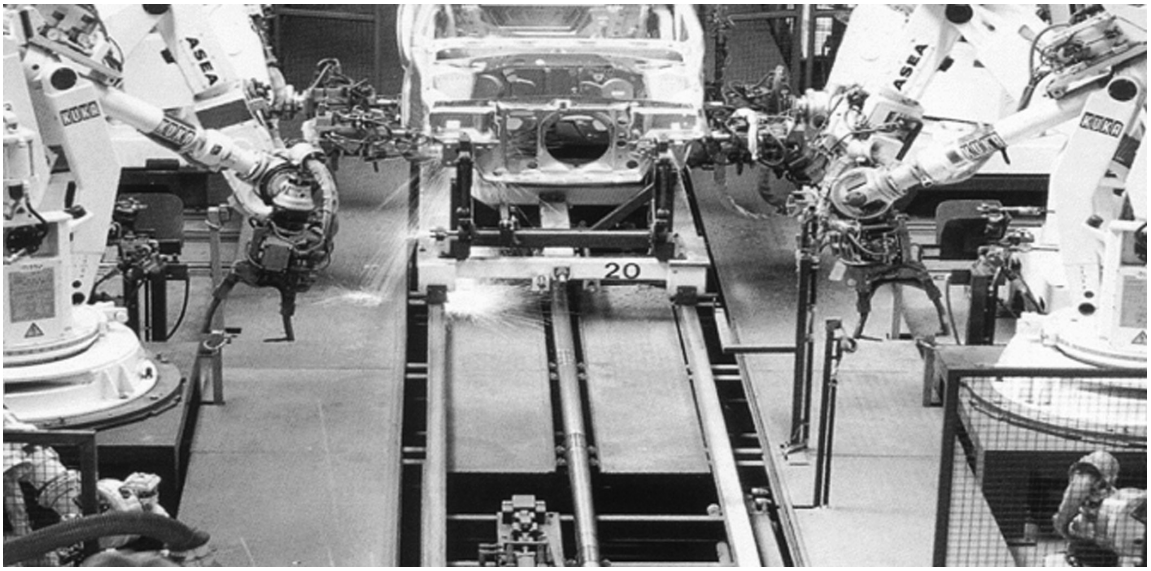
The input signal (Electronic Control Signal) is converted into the output value (P2 Output Pressure). This output value is continuously measured and compared with the input signal. If they are different, the unit adjusts the output value to correspond to the set value, to close the loop.

Proportional Pressure Regulators

The Proportional Regulators provide all the advantages of a closed circuit regulated system. When a set value is defined via the input signal (e.g. 0-10 V), the pressure regulator sets the corresponding output pressure (e.g. 0-150 PSI/0-10 bar). At the same time the integrated pressure sensor measures the actual pressure at the unit's outlet (actual value).

If the electronic regulation system finds that the actual value has deviated from the set value, it immediately corrects the actual value. This is a continuous process ensuring fast, accurate pressure regulation.

Typical Application in Automotive Body in White Welding Pressure Control



Pneumatics

Working Media

Compressed air or inert gasses, filtered to 40µ.

Operating Pressure

	Max. Operating Pressure
2 bar unit	3 bar (43.5 PSI)
10 bar unit	10.5 bar (152 PSI)
Min. Operating Pressure	P2 Pressure + 0.5 bar (7.3 PSI)

Pressure Control Range

Available in two pressure ranges, 0-2 bar (0-29 PSI) or 0-10 bar (0-145 PSI). Pressure range can be changed through the software at all times. (parameter 19)

Temperature Range

32°F to 122°F (0°C to 50°C)

Weight

ER09 0.64 lbs (.291 kg)
ER19 1.42 lbs (.645 kg)

Air Consumption

No consumption in stable regulated situation.

Display

The regulator is provided with a digital display, indicating the output pressure, either in PSI or bar.

The factory setting is as indicated on the label, can be changed through the software at all times (parameter 14).

Electronics

Supply Voltage

24 VDC +/- 10%

Power Consumption

1.1 W with unloaded signal outputs

Current Consumption

Max. 200 mA with no load

Control Signals

The electronic pressure regulator can be externally controlled through an analog control signal of 0-10 V, adjustable to 4-20 mA via parameter 4.

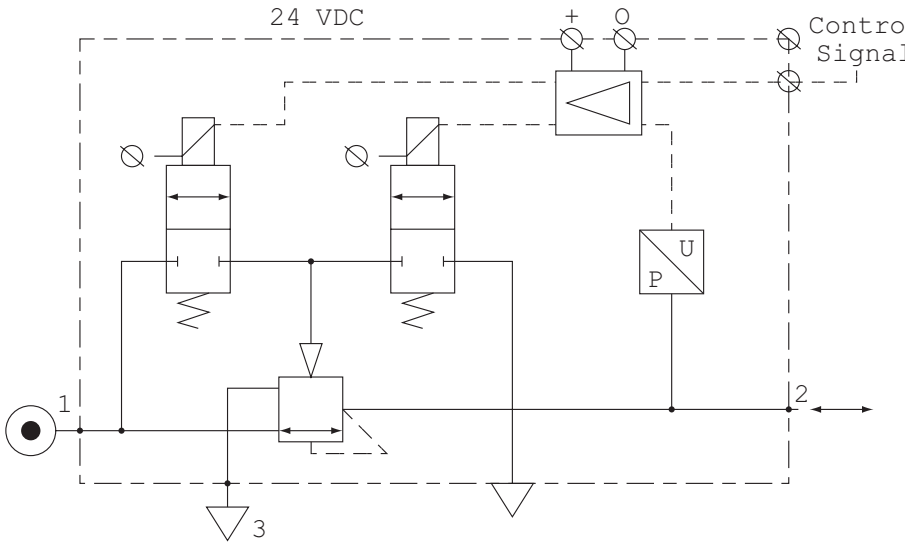
Connections

Central M12 male connector 4-pole.

The electrical connections are as follows:

Pin No.		Function	Color
1	24 V	Supply	Brown
2	0 to 10 V	Control Signal Ri = 100k Ω	White
	4 to 20mA	Control Signal Ri = 500 Ω	
3	0 V (GND)	Supply	Blue
4	24 V	Alarm Output Signal	Black

Schematic



Technical Information

Dead Band
The dead band is preset at 1.3% of Full Scale*, adjustable via parameter 13.

Accuracy
Linearity = < 0.3% of Full Scale.*

Proportional Band
The proportional band is preset at 10% of Full Scale.*

Fail Safe Operation
- If the ER09 / ER19 unit has an “0” or “A” in the 12th digit of the model number
  - – When the supply voltage drops, the electronic control reverts to the fail safe mode. The last known output pressure is maintained at approximately the same level depending upon air consumption. The digital display indicates the last known pressure setting.
  - – When the supply voltage is reinstated to the correct level, the valve moves from the fail safe mode and the output pressure immediately follows the control signal requirement. The display indicates the actual output pressure.
  - – Note: In the event of loss of both power and inlet pressure the unit will exhaust downstream pressure.
- If the ER09 / ER19 unit has an “E” in the 12th digit of the model number
  - – When the supply voltage drops, the electronic control reverts to “Forced Exhaust Mode” and will automatically exhaust the downstream (regulated) pressure.
  - – When the supply voltage is reinstated to the correct level the unit will return to normal operation and follows the control signal requirement. The display indicates the actual pressure.
- If the unit has been programmed in manual mode (not with a control signal) the unit will EXHAUST and the regulator will need to be reset when power is applied.

Full Exhaust
Complete exhaust of the regulator is defined as
P2 ≤ 1% Full Scale

* Full Scale (F.S.)
For 2 bar versions this will be 2 bar, for the 10 bar version full scale will be 10 bar.

Degree of Protection
IP65

EU Conformity
CE: standard
EMC: according to directive 89/336/EEC
The new pressure regulator is in accordance with:

EN 61000-6-1:2001
EN 61000-6-2:2001
EN 61000-6-3:2001
EN 61000-6-4:2001

These standards ensure that this unit meets the highest level of EMC protection.

Mounting Position
Preferably vertical, with the cable gland on top.

Advanced Functionality

Pilot Valve Protection

When the required output pressure can not be achieved due to lack of input pressure, the unit will open fully and will display “NoP”. Approximately every 10 seconds the unit will retry. The output pressure will then be approximately equal to the inlet pressure. As soon as the input pressure is back on the required level, the normal control function follows.

Safety Exhaust

Should the control signal fall below 0.1 volts, the valve will automatically dump downstream system pressure.

Input Protection

The unit has built-in protection against failure and burnout resulting from incorrect input value, typically:

The 24v DC supply is directly connected to the setpoint input, the display will show ‘OL’, as an overload indication. The unit will need to be rewired and when correctly connected will operate normally.

The overload indicator ‘OL’ will also appear should the wrong input value be applied or the wrong input value be programmed: 4 - 20m instead of 0 - 10V. To correct this a different set point value should be input or the unit reprogrammed to correct the set point value acceptance. (via parameter 4).

Response Times

Response time	ER09	ER19
2 to 4 bar	25 msecs	35 msecs
1 to 6 bar	55 msecs	135 msecs
4 to 2 bar	70 msecs	85 msecs
6 to 1 bar	80 msecs	225 msecs

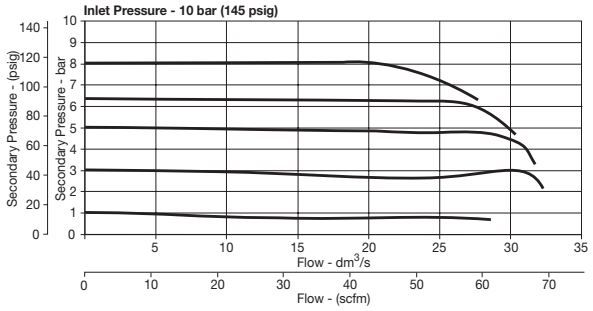
To fill volume of:
100cm^3 - ER09
330cm^3 - ER19
connected to the outlet of the regulator.

Settings

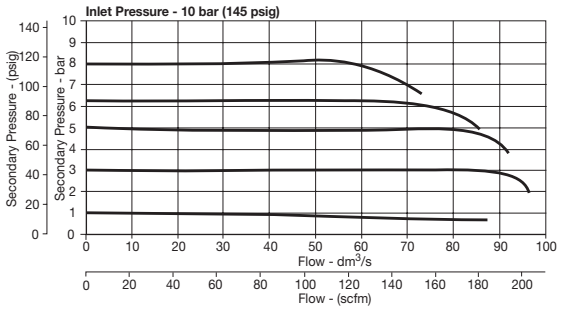
The regulator is pre-set at the factory. If required, adjustments can be made.

Flow Charts

ER09 Regulator 1/4” Ports



ER19 Regulator 1/2” Ports



How to Change Parameters

Pressing the Accept key “acc” for more than 3 seconds, will activate parameter change mode. The user can then select the parameters by pressing up or down key. (display will show Pxx). When parameter number is correct, pressing accept again will enter parameter number.(display will show parameter value).

Pressing the up or down key will change the parameter itself. (display will flash indicating parameter editing mode). Pressing the accept key will accept the new parameter value. (all digits will flash whilst being accepted).

After releasing all keys , the next parameter number will be presented on the display. (you may step to the next parameter). When no key is pressed, after 3 seconds the display will show the actual output pressure.

When the unit is initially powered up allow approximately 10 seconds for the unit to “boot-up” before changing parameter settings.

Only parameter numbers 0, 4, 6, 8, 9, 14, 18, 19, 20, 12, 13 and 21 are accessible to edit. All other parameters are fixed.

Manual mode:

When keys DOWN and UP are pressed during startup, (connecting to the 24V power supply) manual mode is activated. This means that the user is able to in/decrease the output pressure of the regulator, by pressing the UP or DOWN key. During this action the display will blink, indicating that the manual mode is activated. After powering up again, the unit will revert back to normal mode.

Back to Factory Setting

After start up. (Power is on)
Entering this value in parameter 0 will store the calibrated factory data into the working parameters.
(Default calibration data is used)

Parameter Number 0 – Reset Back to Factory Settings

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P00	000. Flashing Decimal	003. Flashing Decimal	003 Flashing	P01
Description	Accesses changeable parameters.	Accesses parameter no. 0.	Displays current parameter value.	Edits parameter. 3 = standard factory settings. If other than 3, use Up or Down Arrow and accept 3	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Control Signal

The unit is factory set for 0-10 V control signal. If 4-20 mA control signal is required, change parameter 4.

Parameter Number 4 – Set Control Signal in Volts or Milliamps

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P04	001. Flashing Decimal	000. Flashing Decimal	000 Flashing	P05
Description	Accesses changeable parameters.	Accesses parameter no. 4.	Displays current parameter value. 1 = V 0 = mA	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Output Signal

Parameter 6 is used to set the type of output signal to your PLC.
This parameter is used as follows:

Output Signal option “0” = Digital Output – PNP
- Factory set at “0” Non Adjustable

Output Signal option “P” = Digital PNP or Analog 1-10V
- Factory set at “1” for Analog Signal
- Convert to Digital PNP by changing parameter to “0” setting

Output Signal option “N” = Digital NPN or Analog 1-10V
- Factory set at “1” Analog Signal
- Convert to Digital NPN by changing parameter to “0”

Output Signal option “M” = Analog 4-20 mA
- Factory set at “2” Non Adjustable

Parameter Number 6 – Set Output Signal

Step	1	2	3	4	5	
Press	acc 3-6 seconds	or	acc	or	acc	
Until Display Reads	Pxx	P06	001. Flashing Decimal	###. Flashing Decimal (Value 0, 1 or 2)	###. Flashing	P07
Description	Accesses changeable parameters.	Accesses parameter no. 6.	Displays current parameter value. 1 = m factory default for ER with analog options	Edits parameter. 0 = digital (NPN or PNP) 1 = analog 0..10V 2 = analog 4..20 mA	Accepts and saves new parameter setting.	Sequences to next parameter.

Adjust Span Analog Output Signal

Set value is a % of Full Analog range. As an example for a 0-10V output signal, the original factory setting of 100% will give you an adjustment of 0-10V. If you reset Parameter 8 to 50%, the new output range would be 0-5V or 50% of the full range.

In the event that the output signal is to low, in a certain application, you can adjust it by increasing Parameter 8 to a maximum value of 130% of scale.

Note that all values are nominal and that an actual measurement may be required to ensure signal strength.

Parameter Number 8 – Adjust Span Analog Output Signal

Step	1	2	3	4	5	
Press	acc 3-6 seconds	or	acc	or	acc	
Until Display Reads	Pxx	P08	100. Flashing Decimal (For 2 bar versions value = 92)	###. Flashing Decimal (Value between 0 and 130)	###. Flashing	P09
Description	Accesses changeable parameters.	Accesses parameter no. 8.	Displays current parameter value.	Edits parameter.	Accepts and saves new parameter setting and implements the new analog signal span.	Sequences to next parameter.

Adjust Digital Display

If necessary, adjustments can be made to the digital display when using an external pressure sensor.

Parameter Number 9 – Adjust Digital Display Value (Pressure Calibration)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P09	###. Flashing Decimal	###. Flashing Decimal	### Flashing	P 10
Description	Accesses changeable parameters.	Accesses parameter no. 9.	Displays current digital display	Use up or down arrows and accept to adjust the display value if using an external pressure sensor.	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Pressure Scale

Units with NPT port threads are supplied with a factory set psig pressure scale. Use parameter 14 to change scale to bar.

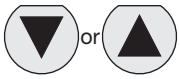
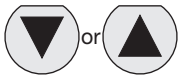
Parameter Number 14 – Set Pressure Scale in psig or bar

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 14	001. Flashing Decimal	000. Flashing Decimal	000 Flashing	P 15
Description	Accesses changeable parameters.	Accesses parameter no. 14.	Displays current parameter value. 1 = psig 0 = bar 2 = MPA	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Preset Minimum Pressure

If there is a need for a pre-set Minimum pressure, use parameter 18. (Note: preset pressure is affected by % P19.)

Parameter Number 18 – Set Minimum Preset Pressure

Step	1	2	3	4	5	
Press 	 3-6 seconds					
Until Display Reads			 Flashing Decimal	 Flashing Decimal (value between 0 and 200)	 Flashing	
Description	Accesses changeable parameters.	Accesses parameter no. 18.	Displays current parameter value. Incremental value is: <u>2 bar unit:</u> x 2 mbar x % P19 <u>10 bar unit:</u> x 10 mbar x % P19	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Pressure Correction

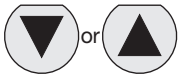
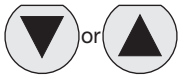
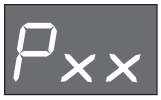
Pressure correction allows the user to set a Maximum pressure as a percentage of secondary pressure F.S.

Example: If F.S. is 10 bar, set parameter 19 to 50 for Maximum preset pressure of 5 bar.

Pressure correction also affects the Minimum preset pressure in parameter 18.

Example: If F.S. is 10 bar and parameter 18 is set to a value of 100 (1 bar), and parameter 19 is set to 50%, then the actual Minimum preset pressure seen is 0.5 bar.

Parameter Number 19 – Set Maximum Preset Pressure

Step	1	2	3	4	5	
Press 	 3-6 seconds					
Until Display Reads			 Flashing Decimal	 Flashing Decimal (value between 0 and 100)	 Flashing	
Description	Accesses changeable parameters.	Accesses parameter no. 19.	Displays current parameter value. Incremental value is: % of F.S.	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Behavior Control

The regulation speed of the pressure regulator can be modified by means of one parameter. (P 20)

The value in this parameter has a range from 0-5. A higher value indicates slower regulation speed, but will be more stable.

Parameter Number 20 – Set Behavior Control

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P20	003. Flashing Decimal	###. Flashing Decimal (value between 0 and 5)	### Flashing	P21
Description	Accesses changeable parameters.	Accesses parameter no. 20.	Displays current parameter value.	Edits parameter 0 = custom set* 1 = fastest (narrow proportional band) 2 = fast 3 = normal 4 = slow 5 = slowest (proportional band is broad)	Accepts and saves new parameter setting.	Sequences to next parameter.

* When the value 0 is entered, you are able to create your own custom settings true parameters 12, 13 and 21.

Fine Settings
Set Proportional Band

Proportional band is used for setting the reaction sensitivity of the regulator. The displayed value is X 10 mbar and has a range between 50 (0.5 bar) and 250 (2.5 bar).

Parameter Number 12 – Set Proportional Band (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 12	100. Flashing Decimal	###. Flashing Decimal (value between 50 and 250)	### Flashing	P 13
Description	Accesses changeable parameters.	Accesses parameter no. 12.	Displays current parameter value. Incremental value is: x 10 mbar	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Set Deadband

Deadband is the Minimum limit of accuracy at which the regulator is set for normal operation. The displayed value is X 10 mbar and has a range between 4 (40 mbar) and 40 (400 mbar).

Parameter Number 13 – Set Deadband (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P 13	0 15. Flashing Decimal	# # #. Flashing Decimal (value between 4 and 40)	# # # Flashing	P 14
Description	Accesses changeable parameters.	Accesses parameter no. 13.	Displays current parameter value. Incremental value is x 10 mbar	Edits parameter.	Accepts and saves new parameter setting.	Sequences to next parameter.

Proportional Effect

Parameter Number 21 – Set Proportional Effect (P20 Must be Set to 0)

Step	1	2	3	4	5	
Press	acc 3-6 seconds	▼ or ▲	acc	▼ or ▲	acc	
Until Display Reads	Pxx	P21	0 10. Flashing Decimal	# # #. Flashing Decimal (value between 5 and 100)	# # # Flashing	P22
Description	Accesses changeable parameters.	Accesses parameter no. 21.	Displays current parameter value.	Edits parameter. 5 = fastest regulation 100 = slowest regulation.	Accepts and saves new parameter setting.	Sequences to next parameter.

Parameter Number 39 – Displays Current Software Version

Step	1	2	3	
Press	acc 3-6 seconds	▼ or ▲	acc	
Until Display Reads	Pxx	P39	# # # Flashing Decimal	
Description	Accesses changeable parameters.	Accesses parameter no. 39.	Displays current parameter value. XXX = current software version	

Problem	Possible Reason	Solution
Display will not light up	No 24 volts power supply	Check if the wiring is connected according to the schematic wiring diagram
Unit will not, or not correctly respond to given setpoint	Wrong current applied (I.e. Volt instead of mA or mA instead of Volt	Change setpoint current or re configure the setpoint current through the software by changing parameter 4
		Check wiring if the setpoint signal lead is connected to the right pin within the male M12 connector (should be pin 2)
	Setpoint signal is not stable enough	Stabilize setpoint signal input
Display shows NoP.	Unit detects that required output pressure is higher than the supplied pressure	Adjust the inlet pressure to a higher value, preferably 0,5 bar higher than requested output pressure
		Give lower setpoint value which corresponds to a output pressure lower than the inlet pressure
	No inlet pressure at all	Connect port 1 to the supply pressure
Unit behavior is not considered normal	Faulty settings made in the parameters	Reset the unit to factory settings by using the green key function under parameter 0
Desired pressure can not be reached	Setpoint value to low	Increase setpoint value
	Pre-set pressure limit has been changed to a lower max. outlet pressure	Change max. outlet pressure back to required pressure by changing parameter 19
	Supply pressure is to low	Increase supply pressure
Secondary side stays pressurized	Setpoint value is higher than 0,1 Volt	Lower your setpoint value, preferably to 0 Volts
		Reset parameter 18 to 0
	Pre-set pressure has been enabled to a certain pressure	
Display shows unrealistic value	Display maybe configured in the wrong value (bar instead of psi)	Check through parameter 14, if the display value is set on either psi or bar, if necessary change it to the required setting
Unit response time too slow or too quick	Volume behind the unit is either too big or too small	Adjust the regulating speed of the unit through parameter 20
Unit gives too much overshoot	Relation between volume and response me is out of balance	Adjust response time to a higher value through parameter 20, to achieve more accurate behavior
Unit is adjusting / regulating constantly	Air leakage in the system behind the unit	Resolve leakage
	Constant changing volume behind the unit	Unit needs to regulate to keep required pressure at the same level
		Try to minimize the volume changes
	“Deadband “area is set too small	Enlarge deadband setting through parameter 13 in the software (parameter 20 has to be set to 0 before changing parameter 13)
Can not enter software through touchpad	Unit is currently working/processing	Make sure that the unit is in steady state while activating the software
	Activating time is too short	Hold the accept button for at least 3 seconds
Display indicates ‘OL’	Wiring not according to diagram (24 volt connected on the setpoint connection pin)	Rewire so that on the setpoint connection pin will be either 0-10v or 4-20mA
	Wrong setpoint value given in relation to programmed setpoint value acceptance	Change over setpoint value to either V or mA or Reprogram the unit to the correct setpoint value via parameter 4
Any other problem	Please consult factory	

Glossary

Hysteresis – The mechanical limits of accuracy of the unit. The regulator cannot be adjusted within the inherent mechanical limits of the design.

Dead Band – The minimum limit of accuracy at which the regulator is set for normal operation. This band must be equal to, or exceed, the inherent design limits of the regulator or the hysteresis band.

Proportional Band – The band used for setting reaction sensitivity of the regulator. The regulator senses the excursion from the set pressure and adjusts response in relation to the degree of excursion beyond the dead band. This band must exceed the dead band of the unit.

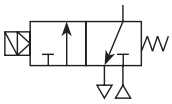
Proportional Effect – The speed at which the unit approaches P2 (secondary pressure).

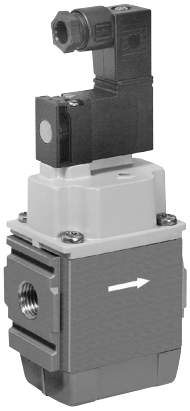
Sensitivity – The smallest change in the control signal, or feedback signal, to cause a change in regulated output pressure.

Repeatability – a measurement of how consistently the unit can reproduce an output pressure in relation to a specific set pressure.

Linearity – A measure of how closely the relationship of output pressure vs. the control signal deviates from a straight line function.

Dump Valves Q09 / Q19





Q09

Q19

= **"Most Popular"**

Specifications

Flow Capacity*	Q09 1/4	36 SCFM (17 dm^3/s)
	Q19 1/2	108 SCFM (51 dm^3/s)
Max. Pressure Solenoid operated		150 PSIG (10 bar)
Max. Pressure Air Pilot operated		250 PSIG (17 bar)
Min. Operating Pressure		44 PSIG (3 bar)
Temperature Max.† Solenoid Operated		14°F to 122°F (-10°C to 50°C)
Temperature Max.† Air Pilot Operated		-4°F to 176°F (-20°C to 80°C)
Air Pilot Port	1/8"	
Exhaust Port		Q09 - 1/4" / Q19 - 1/2"
Weight	1/4" 120VAC	0.8 lbs (0.37 kg)
	1/4" 24VDC	0.9 lbs (0.41 kg)
	1/4" Air Pilot	0.8 lbs (0.37 kg)
	1/2" 120VAC	1.5 lbs (0.69 kg)
	1/2" 24VDC	2.0 lbs (0.91 kg)
	1/2" Air Pilot	1.9 lbs (0.87 kg)

* Inlet pressure 91 PSIG (6.3 bar). Pressure drop 15 PSID (1 bar).

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

Snap pressure: Full flow when downstream pressure reaches 50% of the inlet pressure

Features

- Modular Design with 1/4" or 1/2" Integral Ports (NPT, BSPP & BSPT)
- Provides for the Safe Introduction of Pressure
- The 3-way, 2-position Function Automatically Dumps Downstream Pressure on the Loss of Pilot Signal
- Solenoid or Air Pilot Options
- High Flow & Exhaust Capability
- Silencer Included

Materials of Construction

Body	Aluminum
Body Cover	Polyester
Seals	Nitrile NBR

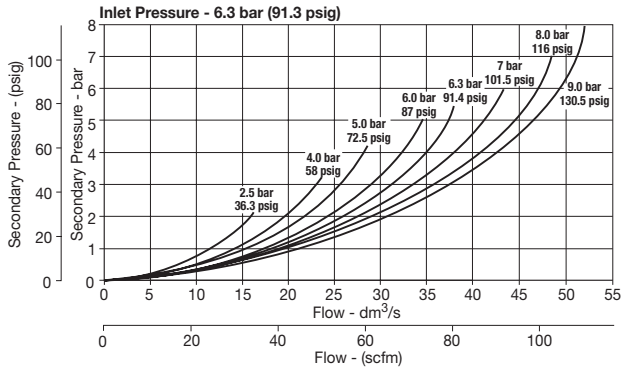
Mounting Brackets

Description	Order code **Q09**	Order code **Q19**
L-Bracket mounting kit	**P3HKA00ML**	**P3KKA00ML**
Foot bracket mounting kit	**P3HKA00MC**	**P3KKA00MC**

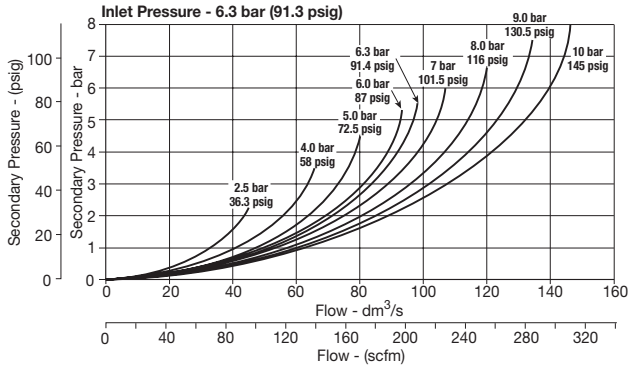
Ordering Information

Model Type	Port Size	Description	Order Code
Q09	**1/4"**	120VAC Solenoid & cable plug	**Q09-02-ED00**
	1/4"	24VDC Solenoid & cable plug	**Q09-02-EC00**
	1/4"	External air pilot operated	**Q09-02-A000**
Q19	**1/2"**	120VAC 30mm coil & cable plug incl.	**Q19-04-ED00**
	1/2"	24VDC 30mm coil & cable plug incl.	**Q19-04-EC00**
	1/2"	External air pilot operated	**Q19-04-A000**

1/4 Remote Dump Valve



1/2 Remote Dump Valve

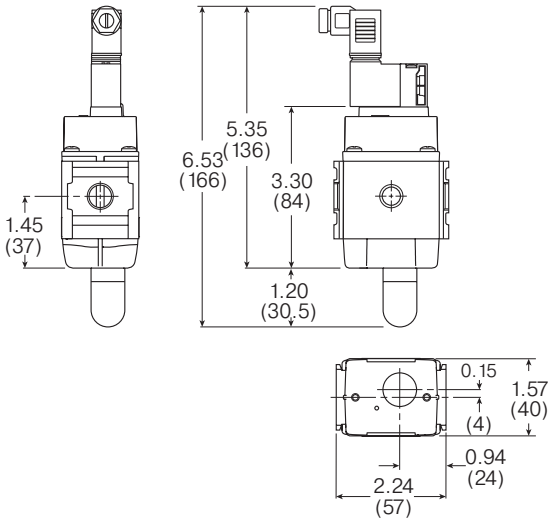


Remotely operated dump valves automatically shut off upstream pressure and exhaust the downstream pressure when the pilot pressure is released.
To maintain these units in the open position a pilot supply to the air pilot operated version or an electrical signal to the solenoid operated version must be maintained.
The valve will automatically dump when the holding signal is removed.

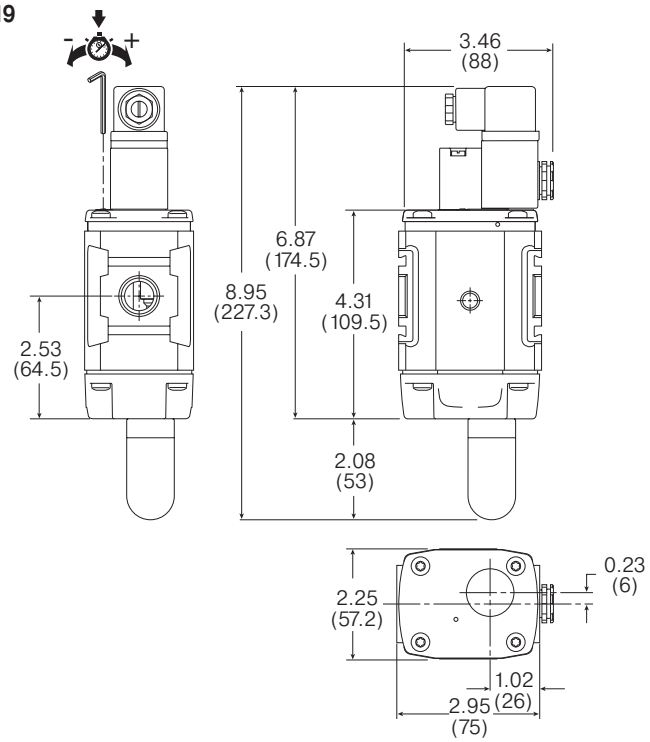
Dimensions

inches (mm)

Q09

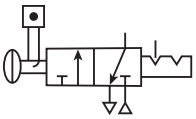


Q19



Modular Ball Valve V40, V60, V73

= **"Most Popular"**



Specifications

Operating Temperature		-40°C to 80°C (40°F to 176°F)
Max. Supply Pressure		17 bar (246 psi)
Port Size	NPT / BSPP / BSPT	1/4, 3/8, 1/2, 3/4
Weight	V40:	0.15 kg (0.33 lbs)
	V60:	0.36 kg (0.79 lbs)
	V73:	0.55 kg (1.21 lbs)

Materials of Construction

Body		Aluminum
Seals		PTFE
Ball	V40	Brass
	V60 / V73	Chrome plated brass

Features

The Modular Ball Valves provide shut off line pressure with a non-sticking 90˚ turn handle to prevent unauthorized adjustment. When the inlet pressure is turned off the downstream air pressure vents through the exhaust port. The padlock slide may be assembled on either side. It is recommended that this is assembled after mounting.

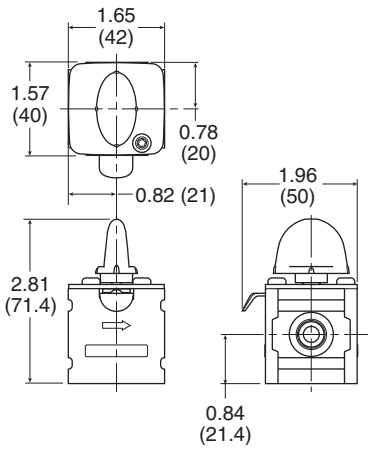
The Safety Lockout valves conform to OSHA #29 CFR part 1910 — control of hazardous energy source (lockout / tagout).

Note: This padlock slide is a permanent assembly and may not be removed later

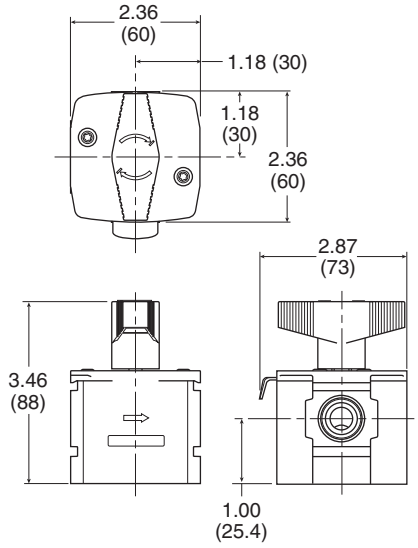
Ordering Information

Model Type	Port Size	Thread Type	Flow SCFM
V40-02-B000B	1/4	NPT	42
V60-03-B000B	3/8	NPT	190
V60-04-B000B	1/2	NPT	258
V73-04-B000B	1/2	NPT	561
V73-06-B000B	3/4	NPT	678

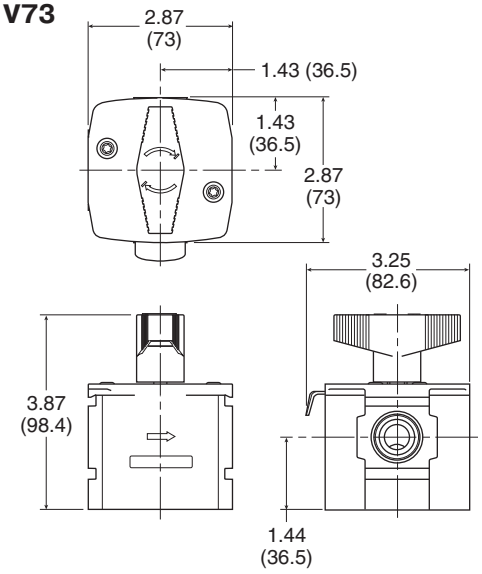
V40



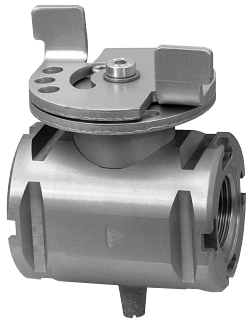
V60



V73



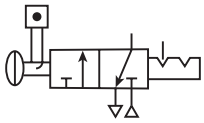
Modular Ball Valve V90



Ball / Lockout Valve shuts off downstream line pressure in the closed position with a 90˚ turn of the handle. In the closed position, inlet air pressure is blocked and downstream / system air is exhausted through a threaded port. To prevent unauthorized adjustment, the padlock slide may be assembled on either side. It is recommended that this slide is installed after final system assembly.

The Safety Lockout valves conform to OSHA #29 CFR part 1910 – control of hazardous energy source (lockout / tagout).

Symbol



- Positive bubble tight shut-off
- 90˚ turn handle to prevent unauthorized adjustment
- Padlockable (up to 6 times)
- When the inlet pressure is turned off the downstream vents through the exhaust port

V90 - 0 6 - B 0 0 0

Series	
Ball Valve	V90

Thread type*	
NPT	**0**
BSPP	C

Port size	
3/4	**6**
1	**8**

Option	
Ball	B

***Note:** For 1-1/2" ported unit, please order P3YKA*BCP port block kit separately.
Bold items are most common.

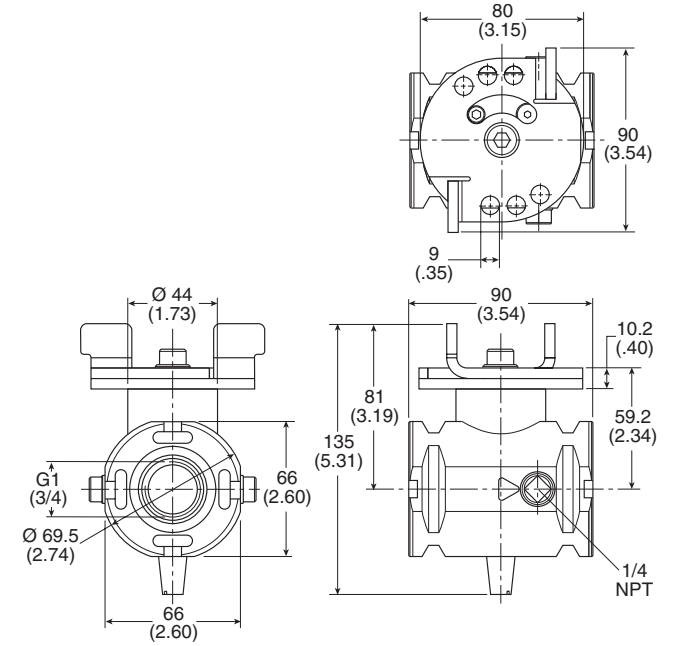
Specifications

Flow capacity	3/4"	333 dm³/s (705.6 scfm)
	1"	333 dm³/s (705.6 scfm)
Max. pressure air pilot operated		17.5 bar (254 psig)
Operating temperature		-10˚C to 60˚C (14˚F to 140˚F)
Weight	3/4"	1.1 kg (2.4 lb)
	1"	1.1 kg (2.4 lb)

Material Specifications

Body	Aluminum
Valve ball	Brass / Nickle plated
Handle	Aluminum
Seals	Nitrile NBR
Exhaust silencer	Sintered bronze

Dimensions mm (inches)



Numbering System

= "Most Popular"

08 Series Diverter Block

Unit Function	Family			Thread Type	Auxiliary Ports		Options	Options	Options	Options
N	0	8	-	0	2	-	0	0	0	0

Unit Function
N Diverter Block

Family
08 Miniature

Thread Type
0 NPT
C BSPP [1]

Auxiliary Ports
2 1/4"

Options (all)
0 None

[1] ISO, R228 (G Series)

18 / 28 Series Diverter Block

Unit Function	Family		Thread Type		Pipe Size	Options	Auxiliary Ports	Options	Options
N	1	8	-	0	4	- 0	0	0	0

Unit Function
N Diverter Block

Family
18 Miniature
28 Standard

Thread Type
0 NPT
C BSPP [1]

Pipe Size
4 1/2" In / Out
6 3/4" In / Out

Options (all)
0 None

Auxiliary Ports

	18	28
1/4"	A	N/A
3/8"	**0**	C
1/2"	D	**0**
3/4"	N/A	E
1"	N/A	N/A

[1] ISO, R228 (G Series)

NJ8 Diverter Block

Unit Function			Thread Type		Through Port	Auxiliary Ports		Options	Options	Options
N	J	8	-	0	6	-	D	0	0	0

Unit Function
NJ8 Diverter Block

Thread Type
0 NPT
C BSPP

Through Port
6 3/4"

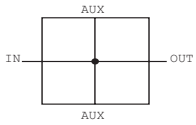
Auxiliary Ports
A 1/4"
C 3/8"
D 1/2"

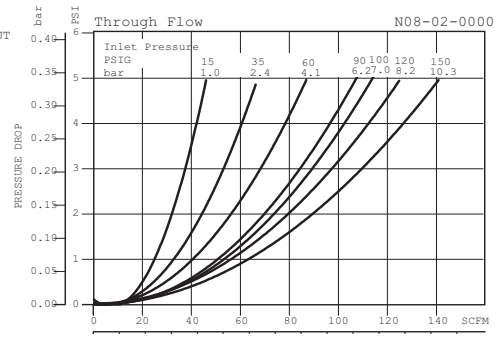
Auxiliary Ports
2 Each (one top, one bottom)

Options (all)
0 None

Diverter Block N08

= **"Most Popular"**





Specifications

Flow Capacity*	1/4	140 SCFM (66.1 dm^3/s)
Auxiliary Port (2)	NPT / BSPP-G	1/4
Maximum Supply Pressure		300 PSIG (20.7 bar)
Operating Temperature		32° to 150°F (0° to 65.5°C)
Port Size (In / Out)	NPT / BSPP-G	1/4
Weight		0.42 lb. (0.19 kg)

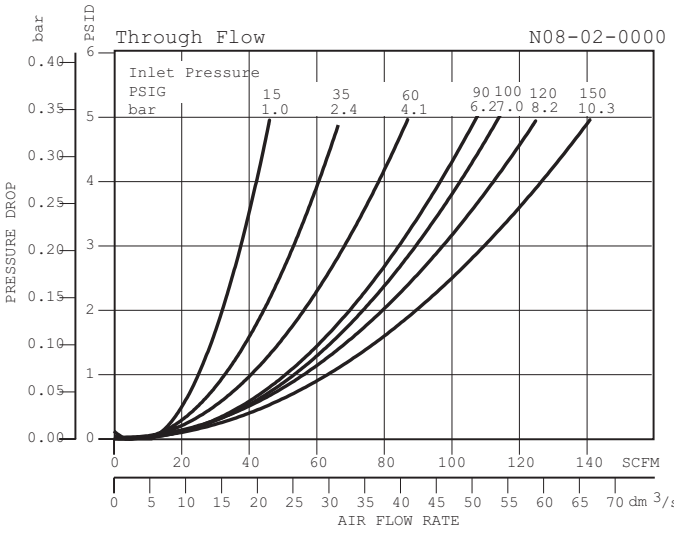
* Inlet pressure 150 PSIG (10.3 bar). Pressure drop 5 PSID (0.3 bar).

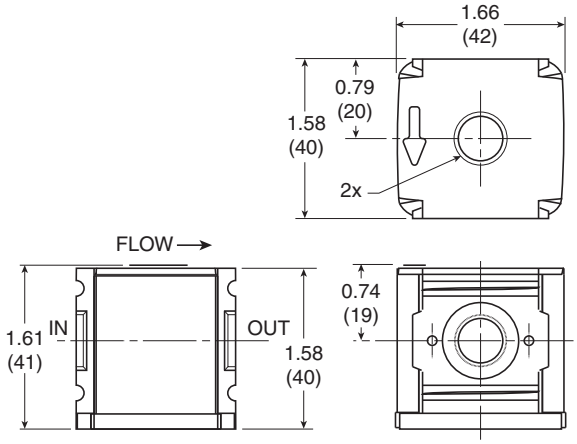
Materials of Construction

Body	Zinc

Features

- Available in 1/4 Threaded Ports
- Modern Design and Appearance
- Light Weight
- Two 1/4 Threaded Auxiliary Ports Standard
- Two Additional Auxiliary Ports Optional
- Can be Mounted Anywhere in the FRL System
- Includes One Pipe Plug



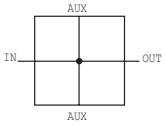


Ordering Information

Model Type	In / Out Port Size	Auxiliary Port Size	Model
N08	1/4	1/4	N08-02-0000

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

Diverter Block N18 / N28



Features

- Available in 1/2 (N18) or 3/4 (N28) Threaded Ports
- Two Auxiliary Ports Standard
- Can be Mounted Anywhere in the FRL System

Ordering Information

Model Type	In / Out Port Size	Auxiliary Port Size	Model
N18	1/2	1/4	N18-04-0A00
		3/8	N18-04-0000
		1/2	N18-04-0D00
N28	3/4	3/8	N28-06-0C00
		1/2	N28-06-0000
		3/4	N28-06-0E00

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number.

= **"Most Popular"**

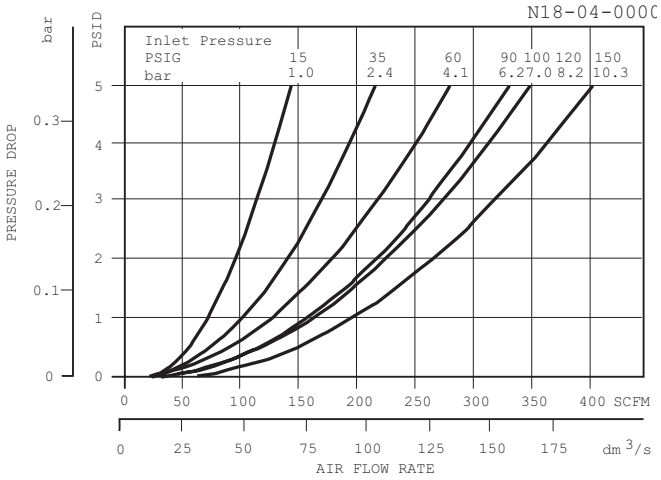
Specifications

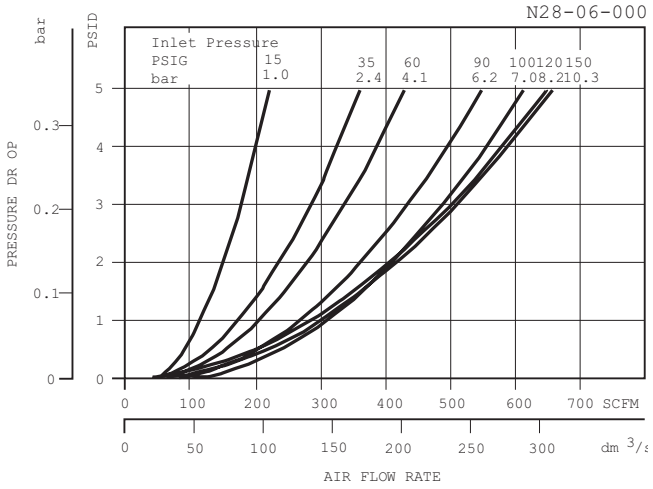
Flow Capacity*	N18	1/2	400 SCFM (189 dm3/s)
	N28	3/4	647 SCFM (305 dm3/s)
Auxiliary Port (2)	NPT / BSPP-G	N18	3/8
		N28	1/2
Maximum Supply Pressure			300 PSIG (20.7 bar)
Operating Temperature			32° to 150°F (0° to 65.5°C)
Port Size (In / Out)	NPT / BSPP-G	N18	1/2
		N28	3/4
Weight		N18	0.261 lb. (0.346 kg)
		N28	0.94 lb. (1.08 kg)

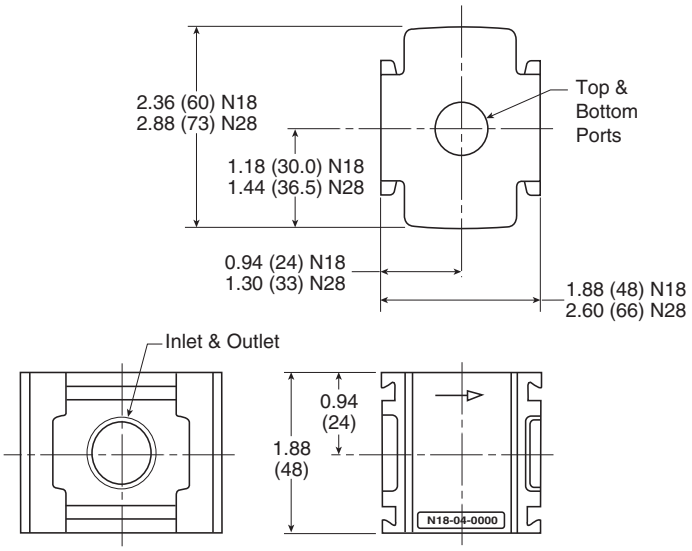
* Inlet pressure 150 PSIG (10.3 bar). Pressure drop 5 PSID (0.3 bar).

Materials of Construction

Body	Aluminum







Filter Replacement Element Kits




Model	Type A 5 Micron	Type B 0.5 Micron	Type C 0.01 Micron	Type D Oil Vapor Removing
Particulate Filters				
F08	FRP-96-729	—	—	—
F18	FRP-96-639	—	—	—
F28	FRP-96-653	—	—	—
Coalescing Filters				
M08	—	MSP-96-732	MTP-96-649	MXP-96-222
M18	—	MSP-96-647	MTP-96-646	MXP-96-650
M28	—	MSP-96-649	MTP-96-648	MXP-96-651

Filter Replacement Bowl Kits






Model	Plastic Bowl / Bowl Guard / No Drain	Plastic Bowl / Bowl Guard / Manual Drain	Metal Bowl / Manual Drain	Metal Bowl / Sight Gauge / Manual Drain	Plastic Bowl / Bowl Guard / Automatic Drain	Metal Bowl / Sight Gauge / Automatic Drain
Particulate Filter / Coalescing Filter						
F08 / M08	—	GRP-96-712	GRP-96-714*	—	—	—
F18 / M18	GRP-96-638	GRP-96-634	—	GRP-96-636	GRP-96-635	GRP-96-637
F28 / M28	GRP-96-652	GRP-96-642	—	GRP-96-644	GRP-96-643	GRP-96-645

* Metal bowl does not have sight gauge.

Model	Bowl O-ring (Nitrile)	Bowl O-ring (Fluorocarbon)	Filter Retainer Element Baffle	Manual Drain
Particulate Filter				
F08	GRP-96-710	GRP-96-711	—	—
F18	GRP-96-640	GRP-96-754	FRP-96-641	GRP-96-685
F28	GRP-96-654	GRP-96-755	FRP-96-283	GRP-96-685
Coalescing Filter				
M08	GRP-96-710	GRP-96-711	—	—
M18	GRP-96-640	GRP-96-754	—	GRP-96-685
M28	GRP-96-654	GRP-96-755	—	GRP-96-685

Modular Manifold P3YMA

90 Series Manifolds provide up to 4 extra outlet ports. They may be assembled at any position in a combination e.g. before the lubricator to provide oil free take off or at the end of a combination to provide extra outlet ports.

Thread type	Part number
NPT	P3YMA9V0N
BSPP	P3YMA1V0N

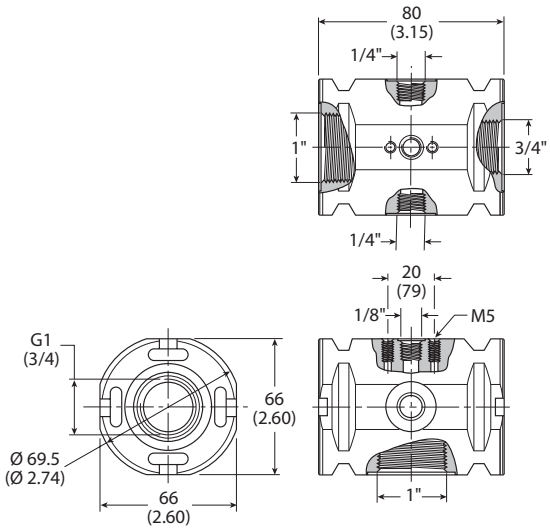
Port sizes

Inlet port	Top	Bottom	Front and Back
3/4"	1/8”	1”	1/4”
1"	1/8”	1”	1/4”

Material specifications

Body	Aluminum
Weight	0.7 kg (1.5 lb)

Dimensions mm (inches)

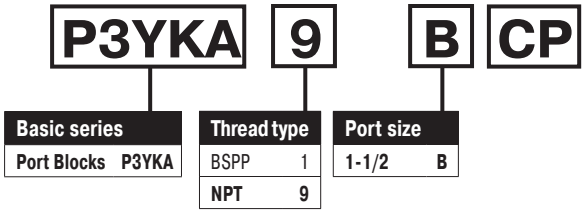


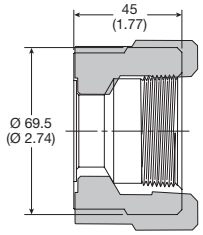
Optional Port Block Kits P3YKA

- To change port sizes Port Block Kits are available, they are attached to any unit utilizing the connecting kit.
- Allows assemblies to be removed from a hard piped system.

Material specifications

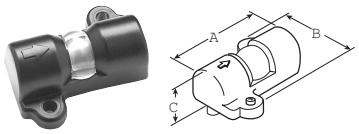
Body	Aluminum
Weight	0.65 kg (1.43 lb)



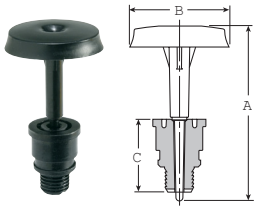


Inches (mm)

Accessories – Filters



Differential Pressure Indicator
DP8-01-000



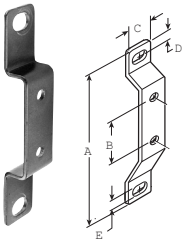
Piston Drain
GRP-96-716

(Use with GRP-95-981 shown above. Order separately)

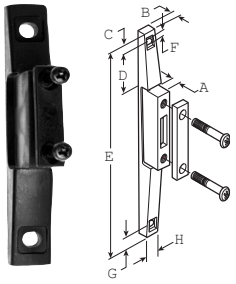
Manual Override for Auto Float Drains
GRP-96-001

Dimensions Inches (mm)

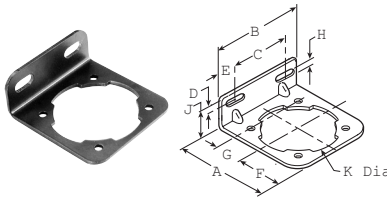
Accessories	Part Number	Used On	A	B	C
Differential Pressure Indicator	**DP8-01-000**	F18, F28, M18, M28	2.12 (54)	1.85 (47)	.84 (21)
Automatic Drains, Nitrile	**GRP-95-973**	F18, M18, B18, F28, M28, B28	2.93 (74.4)	1.47 (37.3)	1.17 (29.7)
Automatic Drains, Fluorocarbon	**GRP-95-981**				
Manual Override for Auto Float Drains	**GRP-96-001**	GRP-95-981	—	—	—
Piston Drain	**GRP-96-716**	F08, M08, B08	1.70 (43)	.94 (24)	.68 (17)



T-Bracket
GPA-96-602



T-Bracket
GPA-96-737
w/ Joiner



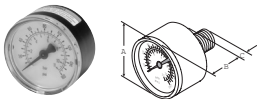
L-Bracket
GPA-96-604, GPA-96-605

Dimensions Inches (mm)

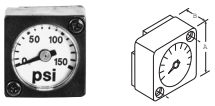
Accessories	Part Number	Used On	A	B	C	D	E	F	G	H	J	K
L-Bracket	**GPA-96-604**	F18, M18, B18	2.84 (72)	2.74 (69.5)	1.66 (42)	.38 (9.6)	.54 (14)	1.26 (32)	.88 (22)	.28 (7.1)	1.10 (28)	2.25 (57)
	GPA-96-605	F28, M28, B28	3.44 (87)	3.00 (76)	1.88 (48)	.38 (9.6)	.56 (14)	1.49 (38)	1.10 (28)	.28 (7.1)	1.10 (28)	2.66 (67.5)
T-Bracket	**GPA-96-602**	F18, F28, M18, M28	3.75 (95)	1.25 (32)	.76 (19.3)	.25 (6.3)	.28 (7.1)	—	—	—	—	—
T-Bracket w/ Joiner	**GPA-96-737**	F08, M08	.45 (11)	.28 (7.1)	.40 (10)	.67 (17)	3.97 (100.8)	.22 (5.6)	.40 (10)	.64 (16)	—	—

Accessories – Regulators

Flush Mount Gauge*



Gauges

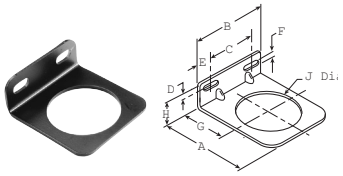


Flush Mount Gauge

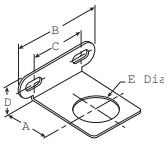
Digital Gauge

Dimensions Inches (mm)

Accessories		Used On	A	B	C
Flush Mount Series Gauge *For R08/R09 Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.	**GRP-96-791-04B** (0 to 4 bar)	R08, R09	1.06 (26.9)	.63 (16)	-
	GRP-96-791-11B (0 to 11 bar)				
	GRP-96-791-20B (0 to 20 bar)				
	GRP-96-791-060 (0 to 60 psig)				
	GRP-96-791-160 (0 to 160 psig)				
	GRP-96-791-290 (0 to 290 psig)				
Gauges, 5mm 2" Round 1/4" Center Back Mount	**K4520N14030** (0 to 30 PSIG)	R18, R28	1.97 (50)	0.94 +(24)	0.71 (18)
	K4520N14060 (0 to 60 PSIG)				
	K4520N14160 (0 to 160 PSIG)				
	K4520N14300 (0 to 300 PSIG)				
Gauges, 1/8 Port, CBM	**K4515N18060** (0 to 60 PSIG)	R08	1.64 (41.6)	1.09 (27.6)	.80 (20)
	K4515N18160 (0 to 160 PSIG)				
Flush Mount Series Gauges	**K4511SCR060** (0 to 60 PSIG)	R08	1.06 (26.9)	.63 (16)	—
	K4511SCR160 (0 to 160 PSIG)	R08			
	K4511SCR11B (0 to 11 bar)	R08			
Round Digital Gauge, 1/4 Port	**K4517N14160D** (0 to 160 PSIG)	R18, R28	1-3/4" Diameter		



L-Bracket
GPA-96-606, GPA-96-607



L-Bracket
GRP-96-739

Dimensions Inches (mm)

Accessories		Used On	A	B	C	D	E	F	G	H	J
L-Bracket	**GRP-96-739**	R08, R09	1.57 (40)	2.68 (68)	1.74 (44)	.97 (25)	1.19 (30)	—	—	—	—
	GPA-96-606	R18, R19	2.74 (69.5)	2.74 (69.5)	1.66 (42)	.43 (11)	.54 (14)	.28 (7.1)	1.57 (40)	1.00 (25)	2.0 (51)
	GPA-96-607	R28	3.33 (84.5)	3.00 (76)	1.88 (48)	.43 (11)	.56 (14)	2.40 (61)	1.94 (49)	1.00 (25)	2.40 (61)

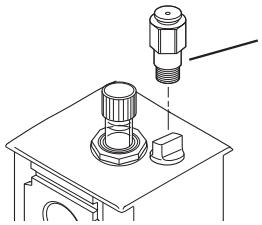
Regulator Replacement Kits

Model	Self-relieving Diaphragm (Nitrile)	Non-relieving Diaphragm (Nitrile)	Plastic Panel Nut	Aluminum Panel Nut
R08, R09	—	—	RPA-96-734	RPA-96-733
R18, R19	—	—	RRP-96-675B	RRP-96-673
R28	RRP-96-986	RRP-96-987	RRP-96-676	RRP-96-674
Model	**Main Regulating Spring 0-30 PSIG**	**Main Regulating Spring 0-60 PSIG**	**Main Regulating Spring 0-125 PSIG**	**Main Regulating Spring 0-250 PSIG**
R08, R09	GRP-95-111	GRP-96-718	GRP-96-717	—
R18, R19	RRP-96-659	RRP-96-660	RRP-96-661	RRP-96-662
R28	RRP-96-163	RRP-96-164	RRP-96-165	RRP-96-166

Lubricator Replacement Bowl Kits

Model	Manual Drain Kit	Plastic Bowl / Bowl Guard Manual Drain	Metal Bowl / Sight Gauge Manual Drain
L08	—	LRP-96-736	GRP-96-714*
L18	GRP-96-685	LRP-96-701	GRP-96-636
L28	GRP-96-685	LRP-96-702	GRP-96-644

*Metal bowl does not have sight gauge. ** No Drain.

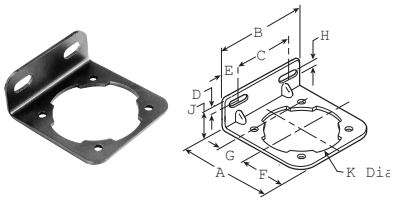


Force Fill Adapter
(Optional – Replaces Fill Plug)

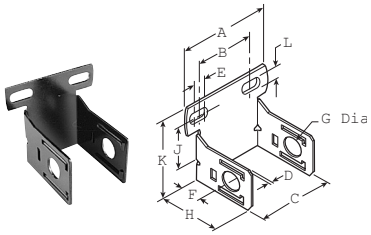
Lubricator Replacement Kits

Model	Siphon Tube Assembly	Bowl O-ring (Nitrile)	Bowl O-ring (Fluorocarbon)	Force Fill Adapter	Fill Plug Kit (Fill Plug & O-ring)	Sight Dome Assembly
L08	LRP-96-731	GRP-96-710	GRP-96-711	N/A	LRP-96-730	LRP-96-301
L18	LRP-96-677	GRP-96-640	GRP-96-754	LRP-96-704	LRP-96-679	LRP-96-720
L28	LRP-96-781	GRP-96-654	GRP-96-755	LRP-96-704	LRP-96-679	LRP-96-720

Accessories – Lubricators



L-Bracket
GPA-96-604, GPA-96-605



C-Bracket
GPA-97-010

Dimensions Inches (mm)

Accessories	Part Number	Used On	A	B	C	D	E	F	G	H	J	K	L
C-Bracket	**GPA-97-010**	L08	2.67 (68)	1.73 (44)	1.57 (40)	.07 (1.8)	.39 (9.9)	1.57 (40)	.78 (20)	2.32 (59)	1.37 (35)	2.41 (61)	.26 (6.6)
L-Bracket	**GPA-96-604**	L18	2.84 (72)	2.74 (69.5)	1.66 (42)	.38 (9.6)	.54 (14)	1.26 (32)	.88 (22)	.28 (7.1)	1.10 (28)	2.25 (57)	—
	GPA-96-605	L28	3.44 (87)	3.00 (76)	1.88 (48)	.38 (9.6)	.56 (14)	1.49 (38)	1.10 (28)	.28 (7.1)	1.10 (28)	2.66 (67.5)	—

F442 Oil
F442001 - 1 Quart Bottle
F442002 - 1 Gallon
F442005 - 4 Gallon Case

Filter / Regulators Replacement Repair Kits





Model	Plastic Bowl / Bowl Guard Manual Drain	Metal Bowl / Sight Gauge Manual Drain	Plastic Bowl / Bowl Guard Automatic Drain	Metal Bowl / Sight Gauge Automatic Drain	Plastic Bowl / Bowl Guard Closed Bottom
B08	GRP-96-712	GRP-96-714*	—	—	—
B18	GRP-96-634	GRP-96-636	GRP-96-635	GRP-96-637	GRP-96-638
B28	GRP-96-642	GRP-96-644	GRP-96-643	GRP-96-645	GRP-96-652

* Metal bowl does not have sight gauge.

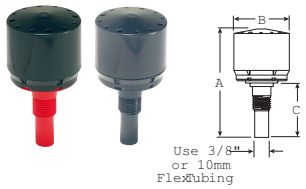
Model	Filter Element 5 Micron	Bowl O-ring (Nitrile)	Bowl O-ring (Fluorocarbon)	Filter Retainer Element Baffle	Manual Drain
B08	FRP-96-729	GRP-96-710	GRP-96-711	—	—
B18	FRP-96-639	GRP-96-640	—	FRP-96-641	GRP-96-685
B28	FRP-96-653	GRP-96-654	GRP-96-755	FRP-96-283	GRP-96-685

Model	Self-relieving Diaphragm (Nitrile)	Non-relieving Diaphragm (Nitrile)
B08	GRP-96-725B	GRP-96-726B
B18	RRP-96-656B	RRP-96-657B
B28	RRP-96-986	RRP-96-987

Model	Main Regulating Spring 0-30 PSIG	Main Regulating Spring 0-60 PSIG	Main Regulating Spring 0-125 PSIG	Main Regulating Spring 0-250 PSIG
B08	GRP-95-111B	GRP-96-718B	GRP-96-717B	—
B18	RRP-96-659B	RRP-96-660B	RRP-96-661B	RRP-96-662B
B28	RRP-96-163	RRP-96-164	RRP-96-165	RRP-96-166

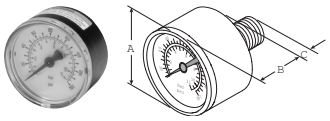
Tamper Resistant Model	Aluminum Resistant Ring	Plastic Panel Nut	Metal Panel Nut
B08	—	RPA-96-733	RPA-96-734
B18	—	RRP-96-673B	RRP-96-675
B28	RRP-96-672	RRP-96-674	RRP-96-676

Accessories Filter / Regulators

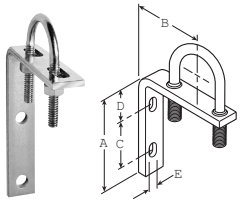


Automatic Drain

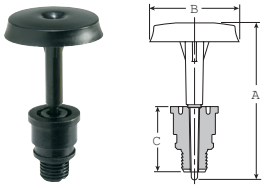
Flush Mount Gauge*



Gauges

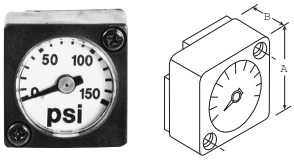


Wall Mounting Bracket U-Bolt Pipe Clamp



Piston Drain

Digital Gauge



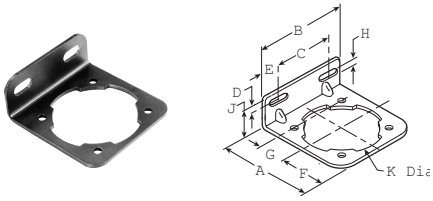
Flush Mount Gauge

Tamperproof Lock and Cover Kit

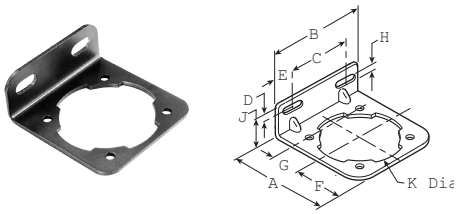
Dimensions Inches (mm)

Accessories	Part Number	Used On	A	B	C	D	E
Automatic Drains, Nitrile	**GRP-95-973**	B18, B28	2.93 (74.4)	1.47 (37.3)	1.17 (29.7)	—	—
Automatic Drains, Fluorocarbon	**GRP-95-981**	B18, B28					
Piston Drain	**GRP-96-716**	B08	1.70 (43)	.94 (24)	.68 (17)	—	—
Flush Mount Series Gauge *For R08/R09 Regulators with date code after November 2023 (4423 Date Code), please use these part numbers when ordering a replacement gauge.	**GRP-96-791-04B** (0 to 4 bar)	B08	1.06 (26.9)	.63 (16)	—	—	—
	GRP-96-791-11B (0 to 11 bar)						
	GRP-96-791-20B (0 to 20 bar)						
	GRP-96-791-060 (0 to 60 psig)						
	GRP-96-791-160 (0 to 160 psig)						
	GRP-96-791-290 (0 to 290 psig)						
Gauges, 5mm 2" Round 1/4" Center Back Mount	**K4520N14030** (0 to 30 PSIG)	B18, B28	1.97 (50)	0.94 (24)	0.71 (18)	—	—
	K4520N14060 (0 to 60 PSIG)						
	K4520N14160 (0 to 160 PSIG)						
	K4520N14300 (0 to 300 PSIG)						
Flush Mount Series Gauges	**K4511SCR150** (0 to 150 PSIG)	B08	1.06 (26.9)	.63 (16)	—	—	—
	K4511SCR060 (0 to 60 PSIG)						
	K4511SCR11B (0 to 11 bar)						
Round Digital Gauge, 1/4 Port	**K4517N14160D** (0 to 160 PSIG)	B18, B28	1-3/4" Diameter				
Wall Mtg. Bracket U-Bolt Pipe Clamp	**GRP-95-734**	For All Non-Modular Units Up to 1" NPT	3.34 (85)	2.76 (70)	1.62 (41)	1.10 (28)	0.30 (7.6)
Tamperproof Lock and Cover Kit	**RPA-96-736B**	R08, R09, B08	—	—	—	—	—
	RPA-96-737B	R18, B18	—	—	—	—	—

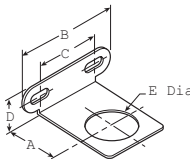
Accessories – Filter / Regulators



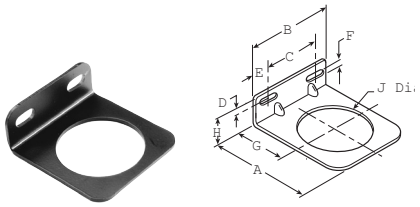
Body L-Bracket
GPA-96-604



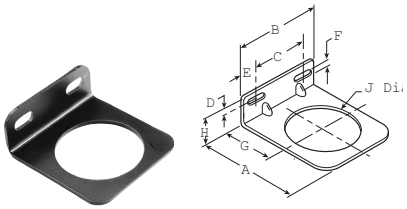
Body L-Bracket
GPA-96-605



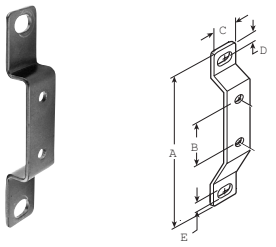
L-Bracket
GRP-96-739



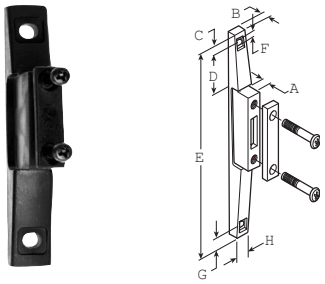
Bonnet L-Bracket
GPA-96-606



Bonnet L-Bracket
GPA-96-607



T-Bracket
GPA-96-602

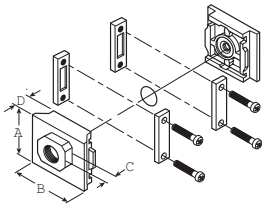


T-Bracket
GPA-96-737
w/ Joiner

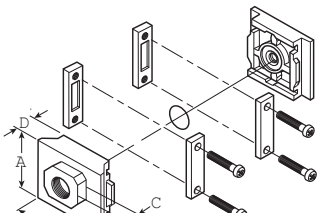
Dimensions Inches (mm)

Accessories	Part Number	Used On	A	B	C	D	E	F	G	H	J	K	L
L-Bracket (Bonnet)	GPA-96-606	B18	2.74 (69.5)	2.74 (69.5)	1.66 (42)	.43 (11)	.54 (14)	.28 (7.1)	1.57 (40)	1.00 (25)	2.0 (51)	—	—
	GPA-96-607	B28	3.33 (84.5)	3.00 (76)	1.88 (48)	.43 (11)	.56 (14)	2.40 (61)	1.94 (49)	1.00 (25)	2.40 (61)	—	—
	GRP-96-739	B08	1.57 (40)	2.68 (68)	1.74 (44)	.97 (25)	1.19 (30)	—	—	—	—	—	—
L-Bracket (Body)	GPA-96-604	B18	2.84 (72)	2.74 (69.5)	1.66 (42)	.38 (9.6)	.54 (14)	1.26 (32)	.88 (22)	.28 (7.1)	1.10 (28)	2.25 (57)	—
	GPA-96-605	B28	3.44 (87)	3.00 (76)	1.88 (48)	.38 (9.6)	.56 (14)	1.49 (38)	1.10 (28)	.28 (7.1)	1.10 (28)	2.66 (67.5)	—
	GPA-97-010	B08	2.67 (68)	1.73 (44)	1.57 (40)	.07 (1.8)	.39 (9.9)	1.57 (40)	.78 (20)	2.32 (59)	1.37 (35)	2.41 (61)	.26 (6.6)
T-Bracket	GPA-96-602	B18, B28	3.75 (95)	1.00 (25.4)	.76 (19.3)	.25 (6.3)	.28 (7.1)	—	—	—	—	—	—
T-Bracket w/ Joiner	GPA-96-737	B08	.45 (11)	.28 (7.1)	.40 (10)	.67 (17)	3.97 (100.8)	.22 (5.6)	.40 (10)	.64 (16)	—	—	—

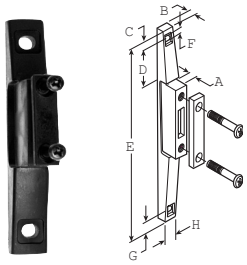
Modular Accessories – 08 Series



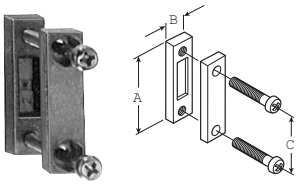
End Block Set



End Block Set
w/ T-Bracket



T-Bracket
GPA-96-737
w/ Joiner

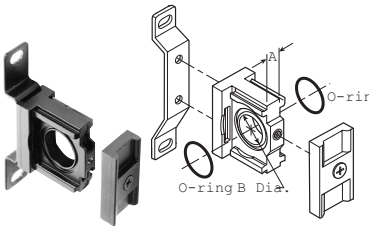


Joiner Set
GPA-96-738
(O-ring not shown)

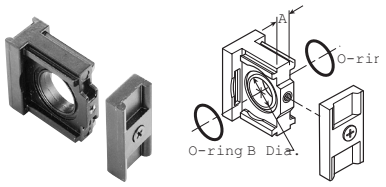
Dimensions Inches (mm)

Accessories	Part Number	Pipe Size	A	B	C	D	E	F	G	H
T-Bracket Joiner Set	GPA-96-737	—	.45 (11)	.28 (7.1)	.40 (10)	.67 (17)	3.97 (100.8)	.22 (5.6)	.40 (10)	.64 (16)
Joiner Set	GPA-96-738	—	1.42 (36)	.39 (9.9)	.98 (26)	—	—	—	—	—
End Block Set	GPA-97-018	1/8 NPT	1.42 (36)	1.57 (40)	.53 (13.5)	.31 (8)	—	—	—	—
	GPA-97-019	1/4 NPT								
	GPA-97-020	3/8 NPT								
	GPA-97-066	G 1/8								
	GPA-97-067	G 1/4								
	GPA-97-065	G 3/8								
End Block Set With T-Brackets	GPA-97-025	1/8 NPT	1.42 (36)	1.57 (40)	.53 (13.5)	.31 (8)	—	—	—	—
	GPA-97-026	1/4 NPT								
	GPA-97-027	3/8 NPT								
	GPA-97-068	G 1/8								
	GPA-97-069	G 1/4								
	GPA-97-070	G 3/8								

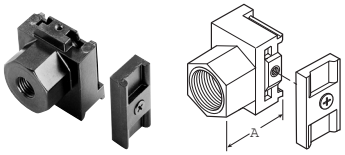
Modular Accessories – 18 / 28 Series



T-Bracket w/ Joiner Set GPA-96-603



Joiner Set GPA-96-601



End Block

Dimensions Inches (mm)

Accessories	Part Number	Pipe Size	A	B
T-Bracket w/ Joiner Set	GPA-96-603	—	.35 (8.9)	.87 (22.1)
Joiner Set	GPA-96-601	—	.35 (8.9)	.87 (22.1)
End Block	GPA-96-610	1/4 NPT	1.59 (40)	—
	GPA-96-611	3/8 NPT		
	GPA-96-612	1/2 NPT		
	GPA-96-613	3/4 NPT		
	GPA-96-620	G 1/4		
	GPA-96-621	G 3/8		
	GPA-96-622	G 1/2		
	GPA-96-623	G 3/4		

Safety Guide For Selecting And Using Pneumatic Division Products And Related Accessories

⚠WARNING:

FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF PNEUMATIC DIVISION PRODUCTS, ASSEMBLIES OR RELATED ITEMS ("PRODUCTS") CAN CAUSE DEATH, PERSONAL INJURY, AND PROPERTY DAMAGE. POSSIBLE CONSEQUENCES OF FAILURE OR IMPROPER SELECTION OR IMPROPER USE OF THESE PRODUCTS INCLUDE BUT ARE NOT LIMITED TO:

- Unintended or mistimed cycling or motion of machine members or failure to cycle
- Work pieces or component parts being thrown off at high speeds.
- Failure of a device to function properly for example, failure to clamp or unclamp an associated item or device.
- Explosion
- Suddenly moving or falling objects.
- Release of toxic or otherwise injurious liquids or gasses.

Before selecting or using any of these Products, it is important that you read and follow the instructions below.

1. GENERAL INSTRUCTIONS

1.1. **Scope:** This safety guide is designed to cover general guidelines on the installation, use, and maintenance of Pneumatic Division Valves, FRLs (Filters pressure Regulators and Lubricators), Vacuum products and related accessory components.

1.2. **Fail-Safe:** Valves, FRLs, Vacuum products and their related components can and do fail without warning for many reasons. Design all systems and equipment in a fail-safe mode, so that failure of associated valves, FRLs or Vacuum products will not endanger persons or property.

1.3 **Relevant International Standards:** For a good guide to the application of a broad spectrum of pneumatic fluid power devices see: ISO 4414:1998, Pneumatic Fluid Power – General Rules Relating to Systems. See www.iso.org for ordering information.

1.4. **Distribution:** Provide a copy of this safety guide to each person that is responsible for selection, installation, or use of Valves, FRLs or Vacuum products. Do not select, or use Wilkerson valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Wilkerson publications for the products considered or selected.

1.5. **User Responsibility:** Due to the wide variety of operating conditions and applications for valves, FRLs, and vacuum products Wilkerson and its distributors do not represent or warrant that any particular valve, FRL or vacuum product is suitable for any specific end use system. This safety guide does not analyze all technical parameters that must be considered in selecting a product. The user, through its own analysis and testing, is solely responsible for:

- Making the final selection of the appropriate valve, FRL, Vacuum component, or accessory.
- Assuring that all user's performance, endurance, maintenance, safety, and warning requirements are met and that the application presents no health or safety hazards.
- Complying with all existing warning labels and / or providing all appropriate health and safety warnings on the equipment on which the valves, FRLs or Vacuum products are used; and,
- Assuring compliance with all applicable government and industry standards.

1.6. **Safety Devices:** Safety devices should not be removed, or defeated.

1.7. **Warning Labels:** Warning labels should not be removed, painted over or otherwise obscured.

1.8. **Additional Questions:** Call the appropriate Wilkerson technical service department if you have any questions or require any additional information. See the Wilkerson publication for the product being considered or used, or call 269-629-2550, or go to www.wilkersoncorp.com, for telephone numbers of the appropriate technical service department.

2. PRODUCT SELECTION INSTRUCTIONS

2.1. **Flow Rate:** The flow rate requirements of a system are frequently the primary consideration when designing any pneumatic system. System components need to be able to provide adequate flow and pressure for the desired application.

2.2. **Pressure Rating:** Never exceed the rated pressure of a product. Consult product labeling, Pneumatic Division catalogs or the instruction sheets supplied for maximum pressure ratings.

2.3. **Temperature Rating:** Never exceed the temperature rating of a product. Excessive heat can shorten the life expectancy of a product and result in complete product failure.

2.4. **Environment:** Many environmental conditions can affect the integrity and suitability of a product for a given application. Pneumatic Division products are designed for use in general purpose industrial applications. If these products are to be used in unusual circumstances such as direct sunlight and/or corrosive or caustic environments, such use can shorten the useful life and lead to premature failure of a product.

2.5. **Lubrication and Compressor Carryover:** Some modern synthetic oils can and will attack nitrile seals. If there is any possibility of synthetic oils or greases migrating into the pneumatic components check for compatibility with the seal materials used. Consult the factory or product literature for materials of construction.

2.6. **Polycarbonate Bowls and Sight Glasses:** To avoid potential polycarbonate bowl failures:

- Do not locate polycarbonate bowls or sight glasses in areas where they could be subject to direct sunlight, impact blow, or temperatures outside of the rated range.
- Do not expose or clean polycarbonate bowls with detergents, chlorinated hydro-carbons, keytones, esters or certain alcohols.
- Do not use polycarbonate bowls or sight glasses in air systems where compressors are lubricated with fire resistant fluids such as phosphate ester and di-ester lubricants.

2.7. **Chemical Compatibility:** For more information on plastic component chemical compatibility see Pneumatic Division technical bulletins Tec-3, Tec-4, and Tec-5

2.8. **Product Rupture:** Product rupture can cause death, serious personal injury, and property damage.
- Do not connect pressure regulators or other Pneumatic Division products to bottled gas cylinders.
- Do not exceed the maximum primary pressure rating of any pressure regulator or any system component.
- Consult product labeling or product literature for pressure rating limitations.

3. PRODUCT ASSEMBLY AND INSTALLATION INSTRUCTIONS

3.1. **Component Inspection:** Prior to assembly or installation a careful examination of the valves, FRLs or vacuum products must be performed. All components must be checked for correct style, size, and catalog number. DO NOT use any component that displays any signs of nonconformance.

3.2. **Installation Instructions:** Wilkerson published Installation Instructions must be followed for installation of Wilkerson valves, FRLs and vacuum components. These instructions are provided with every Wilkerson valve or FRL sold, or by calling 269-629-2550, or at www.wilkersoncorp.com.

3.3. **Air Supply:** The air supply or control medium supplied to Valves, FRLs and Vacuum components must be moisture-free if ambient temperature can drop below freezing

4. VALVE AND FRL MAINTENANCE AND REPLACEMENT INSTRUCTIONS

4.1. **Maintenance:** Even with proper selection and installation, valve, FRL and vacuum products service life may be significantly reduced without a continuing maintenance program. The severity of the application, risk potential from a component failure, and experience with any known failures in the application or in similar applications should determine the frequency of inspections and the servicing or replacement of Pneumatic Division products so that products are replaced before any failure occurs. A maintenance program must be established and followed by the user and, at minimum, must include instructions 4.2 through 4.9.

4.2. **Installation and Service Instructions:** Before attempting to service or replace any worn or damaged parts consult the appropriate Service Bulletin for the valve or FRL in question for the appropriate practices to service the unit in question. These Service and Installation Instructions are provided with every Wilkerson valve and FRL sold, or are available by calling 269-629-2550, or by accessing the Wilkerson web site at www.wilkersoncorp.com.

4.3. **Lockout / Tagout Procedures:** Be sure to follow all required lockout and tagout procedures when servicing equipment. For more information see: OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – (Lockout / Tagout)

4.4. **Visual Inspection:** Any of the following conditions requires immediate system shut down and replacement of worn or damaged components:
- Air leakage: Look and listen to see if there are any signs of visual damage to any of the components in the system. Leakage is an indication of worn or damaged components.
- Damaged or degraded components: Look to see if there are any visible signs of wear or component degradation.
- Kinked, crushed, or damaged hoses. Kinked hoses can result in restricted air flow and lead to unpredictable system behavior.
- Any observed improper system or component function: Immediately shut down the system and correct malfunction.
- Excessive dirt build-up: Dirt and clutter can mask potentially hazardous situations.

Caution: Leak detection solutions should be rinsed off after use.

4.5. **Routine Maintenance Issues:**
- Remove excessive dirt, grime and clutter from work areas.
- Make sure all required guards and shields are in place.

4.6. **Functional Test:** Before initiating automatic operation, operate the system manually to make sure all required functions operate properly and safely.

4.7. **Service or Replacement Intervals:** It is the user's responsibility to establish appropriate service intervals. Valves, FRLs and vacuum products contain components that age, harden, wear, and otherwise deteriorate over time. Environmental conditions can significantly accelerate this process. Valves, FRLs and vacuum components need to be serviced or replaced on routine intervals. Service intervals need to be established based on:
- Previous performance experiences.
- Government and / or industrial standards.
- When failures could result in unacceptable down time, equipment damage or personal injury risk.

4.8. **Servicing or Replacing of any Worn or Damaged Parts:** To avoid unpredictable system behavior that can cause death, personal injury and property damage:
- Follow all government, state and local safety and servicing practices prior to service including but not limited to all OSHA Lockout Tagout procedures (OSHA Standard – 29 CFR, Part 1910.147, Appendix A, The Control of Hazardous Energy – Lockout / Tagout).
- Disconnect electrical supply (when necessary) before installation, servicing, or conversion.
- Disconnect air supply and depressurize all air lines connected to system and Pneumatic Division products before installation, service, or conversion.
- Installation, servicing, and / or conversion of these products must be performed by knowledgeable personnel who understand how pneumatic products are to be applied.
- After installation, servicing, or conversions air and electrical supplies (when necessary) should be connected and the product tested for proper function and leakage. If audible leakage is present, or if the product does not operate properly, do not put product or system into use.
- Warnings and specifications on the product should not be covered or painted over. If masking is not possible, contact your local representative for replacement labels.

4.9. **Putting Serviced System Back into Operation:** Follow the guidelines above and all relevant Installation and Maintenance Instructions supplied with the valve FRL or vacuum component to insure proper function of the system.

Warning: Use Limitations

Wilkerson's warranties are void, and Wilkerson assumes no responsibility for any resulting cost, loss, injury or any other damages whatsoever, with respect to any plastic bowl unit for which a bowl guard is standard equipment if the unit is placed in service without the bowl guard and, except as otherwise specified in writing by Wilkerson, with respect to any Wilkerson products which are used in other than compressed air service. Specific warnings with respect to these and other use limitations appear elsewhere in this catalog.

Wilkerson maintains a policy of ongoing product development and improvement. We therefore reserve the right to change dimensions specification and design without notice.

Do not place plastic bowl unit in service without bowl guard installed.

Plastic bowl units are sold only with bowl guards with the exception to miniature units (C04). To minimize the danger of flying fragments in the event of plastic bowl failure, the bowl guards should not be removed. If the unit is in service without the bowl guard installed, manufacturer's warranties are void, and the manufacturer assumes no responsibility for any resulting loss.

If the unit has been in service and does not have a bowl guard, order one and install before placing back in service.

Caution

Certain compressor oils, chemicals, household cleaners, solvents, paints and fumes will attack plastic bowls and can cause bowl failure. Do not use near these materials. When bowl becomes dirty replace bowl or wipe only with a clean, dry cloth. Reinstall bowl guard or buy and install a bowl guard. Immediately replace any crazed, cracked, damaged or deteriorated plastic bowl with a bowl or a new plastic bowl and bowl guard.

Caution

Except as otherwise specified by the manufacturer, this product is specifically designed for compressed air service, and use with any other fluid (liquid or gas) is a misapplication. For example, use with or injection of certain hazardous liquids or gases in the system (such as alcohol or liquid petroleum gas) could be harmful to the unit or result in a combustible condition or hazardous external leakage. Before using with fluids other than air, or for non-industrial applications, or for life support systems, consult Wilkerson Operations for written approval.

Caution

Suggested Lubricant

Petroleum based oil of 100 to 200 SUS viscosity at 100˚F and an aniline point greater than 200˚F (DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)

Some of the Materials that will Attack Polycarbonate Plastic Bowls

Acetaldehyde
Acetic acid (conc.)
Acetone
Acrylonitrile
Ammonia
Ammonium Fluoride
Ammonium Hydroxide
Ammonium Sulfide
Anaerobic adhesives
Trichloride and Sealants
Antifreeze
Benzene
Benzoic Acid
Benzyl Alcohol
Brake Fluids
Bromobenzene
Butyric Acid
Carbolic Acid
Carbon Disulfide
Carbon Tetrachloride
Caustic Potash Solution
Caustic Soda Solution
Chlorobenzene
Chloroform
Cresol
Cyclohexanol
Cyclohexanone
Cyclohexene
Dimethyl Formamide
Diozane
Ethgane tetrachloride
Ethyl Acetate
Ethyl Ether
Ethylamine
Ethylene Chlorohydrin
Ethylene Dichloride
Ethylene Glycol
Formic Acid (conc.)
Freon (Refrig. & Propell.)
Gasoline (High Aromatic)
Hydrazine
Hydrochloric Acid (conc.)
Lacquer Thinner
Methyl Alcohol
Methylene Chloride
Methylene Salicylate
Milk of Lime (CaOH)
Nitric Acid (conc.)
Nitrobenzene
Nitrocellulose Lacquer
Phenol
Phosphorous Hydroxy Chloride
Perchlorethylene
Phosphorous
Propionic Acid
Pyridine
Sodium Hydroxide
Sodium Sulfide
Styrene
Sufuric Acid (conc.)
Sulphural Chloride
Tetrahydronaphthalene
Tiophene
Toluene
Turpentine
Xylene & Others

Trade Names of some Compressor Oils, Rubber Compounds and other Materials that will Attack Polycarbonate Plastic Bowls.

Atlas "Perma-Guard"
Buna N
Cellulube #150 and #220
Crylex #5 cement
*Eastman 910
Garlock #98403 (polyurethane)
Haskel #568-023
Hilgard Co.'s hil phene
Houghton & Co. oil #1120, #1130 & #1055
Houtosafe 1000
Kano Kroil
Keystone penetrating oil #2
*Loctite 271
*Locite 290
*Loctite 601
*Loctite Teflon-Sealant
Marvel Mystery Oil
Minn. Rubber 366Y
National Compound #N11
"Nylock" VC-3
Parco #1306 Neoprene
*Permabond 910
Petron PD287
Prestone
Pydraul AC
Sears Regular Motor Oil
Sinclair oil "Lily White"
Stauffer Chemical FYRQUEL #150
Stillman #SR 269-75 (polyurethane)
Stillman #SR 513-70 (neoprene)
Tannergas
Telar
Tenneco anderol #495 & #500 oils
Titon
*Vibra-tite
Zerex

*When in raw liquid form.

We cannot possibly list all harmful substances, so check with Mobay or the General Electric office for further information on polycarbonate plastic.

The trade names "EconOmist" and "Flow-Guide" are registered at the United States Patent Office.

"Auto-Fill", "Dial-Air", "Flex-Drain", "Mainliner" and "Whirl-Flo" are tradenames of Wilkerson.

Claims and Shortages: ..... Risk of loss passes to buyer when goods are delivered to the carrier. Inspect all shipments for damage at time of receipt. Claims should be filed by the consignee against the carrier.

Changes: Wilkerson maintains a policy of ongoing product development and improvement. We therefore reserve the right to change dimensions, specifications and design without notice.

PARKER-HANNIFIN CORPORATION
OFFER OF SALE

1. **Definitions**. As used herein, the following terms have the meanings indicated.
"Buyer" means any customer receiving a Quote for Products.
"Buyer's Property" means any tools, patterns, plans, drawings, designs, specifications materials, equipment, or information furnished by Buyer, or which are or become Buyer's property.
"Confidential Information" means any technical, commercial, or other proprietary information of Seller, including, without limitation, pricing, technical drawings or prints and/or part lists, which has been or will be disclosed, delivered, or made available, whether directly or indirectly, to Buyer.
"Goods" means any tangible part, system or component to be supplied by Seller.
"Intellectual Property Rights" means any patents, trademarks, copyrights, trade dress, trade secrets or similar rights.
"Products" means the Goods, Services and/or Software as described in a Quote.
"Quote" means the offer or proposal made by Seller to Buyer for the supply of Products.
"Seller" means Parker-Hannifin Corporation, including all divisions, subsidiaries and businesses selling Products under these Terms.
"Seller's IP" means patents, trademarks, copyrights, or other intellectual property rights relating to the Products, including without limitation, names, designs, images, drawings, models, software, templates, information, any improvements or creations or other intellectual property developed prior to or during the relationship contemplated herein.
"Services" means any services to be provided by Seller.
"Software" means any software related to the Goods, whether embedded or separately downloaded.
"Special Tooling" means equipment acquired by Seller or otherwise owned by Seller necessary to manufacture Goods, including but not limited to tools, jigs, and fixtures.
"Terms" means the terms and conditions of this Offer of Sale.

2. Terms. All sales of Products by Seller will be governed by, and are expressly conditioned upon Buyer's assent to, these Terms. These Terms are incorporated into any Quote provided by Seller to Buyer. Buyer's order for any Products whether communicated to Seller verbally, in writing, by electronic data interface or other electronic commerce, shall constitute acceptance of these Terms. Seller objects to any contrary or additional terms or conditions of Buyer. Reference in Seller's order acknowledgement to Buyer's purchase order or purchase order number shall in no way constitute an acceptance of any of Buyer's terms or conditions of purchase. Any Quote made by Seller to Buyer shall be considered a firm and definite offer and shall not be deemed to be otherwise despite any language on the face of the Quote. Seller reserves all rights to accept or reject any purported acceptance by Buyer to Seller's Quote if such purported acceptance attempts to vary the terms of the Quote. If Seller ships Products after Buyer issues an acceptance to the Quote, any additional or different terms proposed by Buyer will not become part of the parties' business relationship unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence. If the transaction proceeds without such agreement on the part of Seller, the business relationship will be governed solely by these Terms and the specific terms in Seller's Quote.

3. Price; Payment. The Products set forth in the Quote are offered for sale at the prices indicated in the Quote. Unless otherwise specifically stated in the Quote, prices are valid for thirty (30) days and do not include any sales, use, or other taxes or duties. Seller reserves the right to modify prices for any reason and at any time by giving ten (10) days prior written notice. Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2020). All sales are contingent upon credit approval and full payment for all purchases is due thirty (30) days from the date of invoice (or such date as may be specified in the Quote). Under any circumstances, Buyer may not withhold or suspend payment of any amounts due and payable as a deduction, set-off or recoupment of any amount, claim or dispute with Seller. Unpaid invoices beyond the specified payment date incur interest at the rate of 1.5% per month or the maximum allowable rate under applicable law. Seller reserves the right to require advance payment or provision of securities for first and subsequent deliveries if there is any doubt, in Seller's sole determination, regarding the Buyer's creditworthiness or for other business reasons. If the requested advance payment or securities are not provided to Seller's satisfaction, Seller reserves the right to suspend performance or reject the purchase order, in whole or in part, without prejudice to Seller's other rights or remedies, including the right to full compensation. Seller may revoke or shorten any payment periods previously granted in Seller's sole determination. The rights and remedies herein reserved to Seller are cumulative and in addition to any other or further rights and remedies available at law or in equity. No waiver by Seller of any breach by Buyer of any provision of these terms will constitute a waiver by Seller of any other breach of such provision.

4. Shipment; Delivery; Title and Risk of Loss. All delivery dates are approximate, and Seller is not responsible for damages or additional costs resulting from any delay. All deliveries are subject to our ability to procure materials from our suppliers. Regardless of the manner of shipment, delivery occurs and title and risk of loss or damage pass to Buyer, upon placement of the Products with the carrier at Seller's facility. Unless otherwise agreed prior to shipment and for domestic delivery locations only, Seller will select and arrange, at Buyer's sole expense, the carrier and means of delivery. When Seller selects and arranges the carrier and means of delivery, freight and insurance costs for shipment to the designated delivery location will be prepaid by Seller and added as a separate line item to the invoice. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions. Buyer shall not return or repackage any Products without the prior written authorization from Seller, and any return shall be at the sole cost and expense of Buyer.

5. Warranty. The warranty for the Products is as follows:
(i) Goods are warranted against defects in material or workmanship for a period of twelve (12) months from the date of delivery or 2,000 hours of use, whichever occurs first; (ii) Services shall be performed in accordance with generally accepted practices and using the degree of care and skill that is ordinarily exercised and customary in the field to which the Services pertain and are warranted for a period of six (6) months from the date of completion of the Services; and (iii) Software is only warranted to perform in accordance with applicable specifications provided by Seller to Buyer for ninety (90) days from the date of delivery or, when downloaded by a Buyer or end-user, from the date of the initial download. All prices are based upon the exclusive limited warranty stated above, and upon the following disclaimer: **EXEMPTION CLAUSE; DISCLAIMER OF WARRANTY, CONDITIONS, REPRESENTATIONS: THIS WARRANTY IS THE SOLE AND ENTIRE WARRANTY, CONDITION, AND REPRESENTATION, PERTAINING TO PRODUCTS. SELLER DISCLAIMS ALL OTHER WARRANTIES, CONDITIONS, AND REPRESENTATIONS, WHETHER STATUTORY, EXPRESS OR IMPLIED, INCLUDING BUT NOT LIMITED TO THOSE RELATING TO DESIGN, NONINFRINGEMENT, MERCHANTABILITY, AND FITNESS FOR A PARTICULAR PURPOSE. SELLER DOES NOT WARRANT THAT THE SOFTWARE IS ERROR-FREE OR FAULT-TOLERANT, OR THAT BUYER'S USE THEREOF WILL BE SECURE OR UNINTERRUPTED, UNLESS OTHERWISE AUTHORIZED IN WRITING BY SELLER, THE SOFTWARE SHALL NOT BE USED IN CONNECTION WITH HAZARDOUS OR HIGH-RISK ACTIVITIES OR ENVIRONMENTS. EXCEPT AS EXPRESSLY STATED HEREIN, ALL PRODUCTS ARE PROVIDED "AS IS".**

6. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon receipt. No claims for shortages will be allowed unless reported to Seller within ten (10) days of delivery. Buyer shall notify Seller of any alleged breach of warranty within thirty (30) days after the date the non-conformance is or should have been discovered by Buyer. Any claim or action against Seller based upon breach of contract or any other theory, including tort, negligence, or otherwise must be commenced within twelve (12) months from the date of the alleged breach or other alleged event, without regard to the date of discovery.

7. LIMITATION OF LIABILITY. IN THE EVENT OF A BREACH OF WARRANTY, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE THE NON-CONFORMING PRODUCTS, RE-PERFORM THE SERVICES, OR REFUND THE PURCHASE PRICE PAID WITHIN A REASONABLE PERIOD OF TIME. IN NO EVENT IS SELLER LIABLE FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES INCLUDING ANY LOSS OF REVENUE OR PROFITS, WHETHER BASED IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE PAID FOR THE PRODUCTS.

8. Confidential Information. Buyer acknowledges and agrees that Confidential Information has been and will be received in confidence and will remain the property of Seller. Buyer further agrees that it will not use Seller's Confidential Information for any purpose other than for the benefit of Seller and shall return all such Confidential Information to Seller within thirty (30) days upon request.

9. Loss to Buyer's Property. Buyer's Property will be considered obsolete and may be destroyed by Seller after two (2) consecutive years have elapsed without Buyer ordering the Products manufactured using Buyer's Property.

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Also, Seller shall not be responsible for any loss or damage to Buyer's Property while it is in Seller's possession or control.

10. Special Tooling. Seller may impose a tooling charge for any Special Tooling. Special Tooling shall be and remain Seller's property. In no event will Buyer acquire any interest in the Special Tooling, even if such Special Tooling has been specially converted or adapted for manufacture of Goods for Buyer and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller has the right to alter, discard or otherwise dispose of any Special Tooling or other property owned by Seller in its sole determination at any time.

11. Security Interest. To secure payment of all sums due from Buyer, Seller retains a security interest in all Products delivered to Buyer and, Buyer's acceptance of these Terms is deemed to be a Security Agreement under the Uniform Commercial Code. Buyer authorizes Seller as its attorney to execute and file on Buyer's behalf all documents Seller deems necessary to perfect Seller's security interest.

12. User Responsibility. Buyer, through its own analysis and testing, is solely responsible for making the final selection of the Products and assuring that all performance, endurance, maintenance, safety and warning requirements of the application of the Products are met. Buyer must analyze all aspects of the application and follow applicable industry standards, specifications, and any technical information provided with the Quote or the Products, such as Seller's instructions, guides and specifications. If Seller provides options of or for Products based upon data or specifications provided by Buyer, Buyer is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products. In the event Buyer is not the end-user of the Products, Buyer will ensure such end-user complies with this paragraph.

13. Use of Products, Indemnity by Buyer. Buyer shall comply with all instructions, guides and specifications provided by Seller with the Quote or the Products. If Buyer uses or resells the Products in any way prohibited by Seller's instructions, guides or specifications, or Buyer otherwise fails to comply with Seller's instructions, guides and specifications, Buyer acknowledges that any such use, resale, or non-compliance is at Buyer's sole risk. Further, Buyer shall indemnify, defend, and hold Seller harmless from any losses, claims, liabilities, damages, lawsuits, judgments and costs (including attorney fees and defense costs), whether for personal injury, property damage, intellectual property infringement or any other claim, arising out of or in connection with: (a) improper selection, design, specification, application, or any misuse of Products; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of Buyer's Property; (d) damage to the Products from an external cause, repair or attempted repair by anyone other than Seller, failure to follow instructions, guides and specifications provided by Seller, use with goods not provided by Seller, or opening, modifying, deconstructing, tampering with or repackaging the Products; or (e) Buyer's failure to comply with these Terms, including any legal or administrative proceedings, collection efforts, or other actions arising from or relating to such failure to comply. Seller shall not indemnify Buyer under any circumstance except as otherwise provided in these Terms.

14. Cancellations and Changes. Buyer may not cancel or modify, including but not limited to movement of delivery dates for the Products, any order for any reason except with Seller's written consent and upon terms that will indemnify, defend and hold Seller harmless against all direct, incidental and consequential loss or damage and any additional expense. Seller, at any time, may change features, specifications, designs and availability of Products.

15. Assignment. Buyer may not assign its rights or obligations without the prior written consent of Seller.

16. Force Majeure. Seller is not liable for delay or failure to perform any of its obligations by reason of any events or circumstances beyond its reasonable control. Such circumstances include without limitation: accidents, labor disputes or stoppages, government acts or orders, acts of nature, pandemics, epidemics, other widespread illness, or public health emergency, cyber related disruptions, cyber-attacks, ransomware sabotage, delays or failures in delivery from carriers or suppliers, shortages of materials, sudden increases in the price of raw material or components, shutdowns or slowdowns affecting the supply of raw materials or components, or the transportation thereof, oil shortages or oil price increases, energy crisis, energy or fuel interruption, war (whether declared or not) or the serious threat of same, riots, rebellions, acts of terrorism, embargoes, fire or any reason whether similar to the foregoing or otherwise. Seller will resume performance as soon as practicable after the event of force majeure has been removed. All delivery dates affected by an event of force majeure shall be tolled for the duration of such event of force majeure and rescheduled for mutually agreed dates as soon as practicable after the event of force majeure ceases to exist. The right to allocate capacity is in the Seller's sole discretion. An event of force majeure shall not include financial distress, insolvency, bankruptcy, or other similar conditions affecting one of the parties, affiliates and/or subcontractors. An event of force majeure in the meaning of these Terms means any circumstances beyond Seller's control that permanently or temporarily hinders performance, even where that circumstance was already foreseen. Buyer shall not be entitled to cancel any orders following its claim of an event of force majeure.

17. Waiver and Severability. Failure to enforce any provision of these Terms will not invalidate that provision; nor will any such failure prejudice either party's right to enforce that provision in the future. Invalidation of any provision of these Terms shall not invalidate any other provision herein and, the remaining provisions will remain in full force and effect.

18. Duration. Unless otherwise stated in the Quote, any agreement governed by or arising from these Terms shall: (a) be for an initial duration of one (1) year; and (b) shall automatically renew for successive one-year terms unless terminated by Buyer with at least 180-days written notice to Seller or if Seller terminates the agreement pursuant to Section 19 of these Terms.

19. Termination. Seller may, without liability to Buyer, terminate any agreement governed by or arising from these Terms for any reason and at any time by giving Buyer thirty (30) days prior written notice. Seller may immediately terminate, in writing, if Buyer: (a) breaches any provision of these Terms, (b) becomes or is deemed insolvent, (c) appoints or has appointed a trustee, receiver or custodian for all or any part of Buyer's property,(d) files a petition for relief in bankruptcy on its own behalf, or one is filed against Buyer by a third party, (e) makes an assignment for the benefit of creditors; or (f) dissolves its business or liquidates all or a majority of its assets.

20. Ownership of Rights. Buyer agrees that (a) Seller (and/or its affiliates) owns or is the valid licensee of Seller's IP and (b) the furnishing of information, related documents or other materials by Seller to Buyer does not grant or transfer any ownership interest or license in or to Seller's IP to Buyer, unless expressly agreed in writing. Without limiting the foregoing, Seller retains ownership of all Software supplied to Buyer. In no event shall Buyer obtain any greater right in and to the Software than a right in a license limited to the use thereof and subject to compliance with any other terms provided with the Software. Buyer further agrees that it will not, directly or through intermediaries, reverse engineer, decompile, or disassemble any Software (including firmware) comprising or contained within a Product, except and only to the extent that such activity may be expressly permitted, either by applicable law or, in the case of open source software, the applicable open source license.

21. Indemnity for Infringement of Intellectual Property Rights. Seller is not liable for infringement of any Intellectual Property Rights except as provided in this Section. Seller will defend at its expense and will pay the cost of any settlement or damages awarded in an action brought against Buyer based on a third-party claim that one or more of the Products infringes the Intellectual Property Rights of a third party in the country of delivery of the Products by Seller to Buyer. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of any such claim, and Seller having sole control over the defense of the claim including all negotiations for settlement or compromise. If one or more Products is subject to such a claim, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Products, replace or modify the Products to render them non-infringing, or offer to accept return of the Products and refund the purchase price less a reasonable allowance for depreciation. Seller has no obligation or liability for any claim of infringement: (i) arising from information provided by Buyer (including Seller's use of Buyer's Property); or (ii) directed to any Products for which the designs are specified in whole or part by Buyer; or (iii) resulting from the modification, combination or use in a system of any Products. The foregoing provisions of this Section constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for claims of infringement of Intellectual Property Rights.

22. Governing Law. These Terms, the terms of any Quote, and the sale and delivery of all Products are deemed to have taken place in, and shall be governed and construed in accordance with, the laws of the State of Ohio, as applicable to contracts executed and wholly performed therein and without regard to conflicts of laws principles. Buyer irrevocably agrees and consents to the exclusive jurisdiction and venue of the courts of Cuyahoga County, Ohio with respect to any dispute, controversy or claim arising out of or relating to the sale and delivery of the Products.

23. Entire Agreement. These Terms, along with the terms set forth in the Quote, forms the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale and purchase. In the event of a conflict between any term set forth in the Quote and these Terms, the terms set forth in the Quote shall prevail. All prior or contemporaneous written or oral agreements or negotiations with

respect to the subject matter shall have no effect. No modification to these Terms will be binding on Seller unless agreed to in a writing that is signed by an authorized representative of Seller, excluding email correspondence, 'clickwrap' or other purported electronic assent to different or additional terms. Sections 2-25 of these Terms shall survive termination or cancellation of any agreement governed by or arising from these Terms.

24. No 'Wrap' Agreements/No Authority to Bind. Seller's clicking any buttons or any similar action, such as clicking "I Agree" or "Confirm," to utilize Buyer's software or webpage for the placement of orders, is NOT an agreement to Buyer's Terms and Conditions. **NO EMPLOYEE, AGENT OR REPRESENTATIVE OF SELLER HAS THE AUTHORITY TO BIND SELLER BY THE ACT OF CLICKING ANY BUTTON OR SIMILAR ACTION ON BUYER'S WEBSITE OR PORTAL.**

25. Compliance with Laws. Buyer agrees to comply with all applicable laws, regulations, and industry and professional standards, including those of the United States of America, and the country or countries in which Buyer may operate, including without limitation the U.S. Foreign Corrupt Practices Act ("FCPA"), the U.S. Anti-Kickback Act ("Anti-Kickback Act"), U.S. and E.U. export control and sanctions laws ("Export Laws"), the U.S. Food Drug and Cosmetic Act ("FDCA"), and the rules and regulations promulgated by the U.S. Food and Drug Administration ("FDA"), each as currently amended. Buyer agrees to indemnify, defend, and hold harmless Seller from the consequences of any violation of such laws, regulations and standards by Buyer, its employees or agents. Buyer represents that it is familiar with all applicable provisions of the FCPA, the Anti-Kickback Act, Export Laws, the FDCA and the FDA and certifies that Buyer will adhere to the requirements thereof and not take any action that would make Seller violate such requirements. Buyer represents and agrees that Buyer will not make any payment or give anything of value, directly or indirectly, to any governmental official, foreign political party or official thereof, candidate for foreign political office, or commercial entity or person, for any improper purpose, including the purpose of influencing such person to purchase Products or otherwise benefit the business of Seller. Buyer further represents and agrees that it will not receive, use, service, transfer or ship any Products from Seller in a manner or for a purpose that violates Export Laws or would cause Seller to be in violation of Export Laws. Buyer agrees to promptly and reliably provide Seller all requested information or documents, including end-user statements and other written assurances, concerning Buyer's ongoing compliance with Export Law.

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