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# Air Preparation Units

Parker-Watts General Line FRL, Hi-Flow FRL & Desiccant Dryers

Catalog 0730-2





### Warnings, Offer of Sale

### **!** CAUTION:

Polycarbonate bowls, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls should not be exposed to chlorinated hydro-carbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and di-ester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Metal bowl guards are recommended for all applications.

### **!** 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.

### **∴** 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 Parker Hannifin Corporation, 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 Parker Hannifin Corporation and its subsidiaries at any time without notice.

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### **Particulate and Coalescing Filters**

### **Filtration**

The average 10-hp compressor handles four million cubic inches of air per hour. This air can contain billions of contaminating particles.

At high concentration and high speed, these particles can be extremely harmful. They block orifices, erode components, and clog clearances between moving parts.

In addition, when ambient air is drawn into a compressor, it can, depending on weather conditions, have relative humidity up to 100 percent. As air is compressed and cooled, some water vapor1 condenses out as free water, and even with a compressor aftercooler, some moisture is swept downstream into the air system. This may result in rusted pneumatic tools and components, contaminated lubricants, and frozen air lines during low temperature periods.

Other types of foreign matter in air lines include: impurities generated within the air line, such as wear particles, pipe scale and rust; construction and assembly debris; and contaminants introduced into the air system during maintenance or through leakage passages.

All these contaminants, which are of a size to cause air stream problems, should be removed by the filter.

<sup>1</sup> Water vapor, which is a gas, is not a contaminant in pneumatic systems until it condenses.

### **How to Select the Proper Filter**

Filter element rating is the prime selection criterion. This rating must match the requirements of all downstream components. Next, the flow capacity and pressure rating of the filter should be considered. Finally, port size should match system piping to avoid unnecessary pressure drops through restricting adapters.

Bowl material and the type of drain for the application are other choices to be made.

The first step in choosing a filter is to determine the filtration requirements of the most critical components used in that system.

Contamination particle size is measured in micrometers. A micrometer is one millionth of a meter or 0.000039 inches. Frequently, micrometer is abbreviated as micron or symbolized by the Greek letter  $\mu.$  Particle-removing filter elements are rated2 according to the particle size they will trap. For most industrial applications, filter elements rated at 40 microns are adequate. When necessary, filtration as low as 5 microns or finer can be provided. Remember, however, that finer filtration increases the pressure drop through the element. As micron size rating varies, so does the size and type of filter.

Most oils entrained in a compressed air stream are in the form of tiny mist or aerosol droplets which can pass through a standard industrial filter element. If it is necessary to remove these aerosols, an oil-removal type coalescing filter can be used. The sub-micron oil particles which

escape an oil-removal filter should have no detrimental effect on industrial pneumatic components. But if these particles must be removed for applications such as spray painting, a coalescing type element should be used.

<sup>2</sup> The inexact nominal filter element rating indicates that most particles that size or larger will be trapped. The absolute rating indicates that all particles that size or larger will be trapped.

#### Filter Construction

Most pneumatic filters consist of two basic elements: a die-cast body, into which the inlet and outlet piping is connected, and a sealed removable bowl which contains collected contaminants.

The bowl is fitted with a drain mechanism to remove liquids before they rise to the baffle level. The drain system usually operates while the filter is under pressure, but the unit must be exhausted to remove the bowl for cleaning and element service. The piping need not be disturbed

Generally a transparent bowl is the most convenient because it provides easy visual inspection of the sump level. However, hostile environment, higher pressure, or higher temperature may require a metal bowl for safety.

The most common plastic used for bowls is polycarbonate. This material performs satisfactorily for air pressures below 150 PSIG and temperatures between 40° and 120° F. Parker offers polyethylene bowl guards for added safety.

As the pressure or temperature requirement increases, you may have to specify a metal bowl with sight gauge. For extreme conditions, it is recommended that the sight gauge be eliminated. (Please refer to the individual model descriptions for specifications on bowls.)

Thus, the environment determines the choice of bowl. Polycarbonates offer great strength and visibility, but can be attacked by certain chemicals. Metal bowls offer the highest pressure and temperature rating, and provide superior protection when installed in an environment containing chemicals that are incompatible with polycarbonate.

#### **Filter Operation**

When pressurized air enters a typical filter body. The curved inlet and deflector direct the incoming air in a downward whirling pattern. Centrifugal force hurls the larger solid and liquid water particles outward where they collect on the inner surface of the filter bowl. The particles spiral down past a baffle into a quiet chamber. The baffle prevents turbulent air in the upper bowl from re-entraining liquid contaminants and carrying them downstream.

Then the dry, cleaner air follows a convoluted path through the filter element, where finer solid particles are filtered out. Finally, filtered air passes up the center of the element and out the discharge port.



### **Particulate and Coalescing Filters**

### **⚠ Warning**

The plastic material used to manufacture the plastic bowls, and the sight gauge on metal bowls, may be attacked by certain chemicals. Do not use this filter on systems with air supplied by a compressor lubricated with synthetic oils or oils containing phosphate esters or chlorinated hydrocarbons. These oils can carry over into the air lines and chemically attack and possibly rupture the bowl or sight gauge. Also, do not expose the bowl or sight gauge to materials such as carbon tetrachloride, trichlorethylene, acetone, paint thinner, cleaning fluids, or other harmful materials, for they too will cause the plastic to craze and/or rupture. For use in environments where these, or any, chemicals may be present, consult the factory for approval.

### **Coalescing Filters**

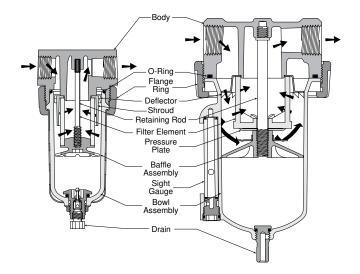
These high-efficiency filters operate on a somewhat different principle than particulate air filters. The key difference is in the element, where a fiber network is narrowly spaced to trap smaller contaminants. The special fibers hold any liquid particle which contacts them.

Pre-filtered (A particulate filter must be used prior to a coalescing filter) air enters the cylindrical element at the center. As it flows through the element, particles are captured by three different mechanisms: direct interception as particles impinge on the fibers; inertial impaction as particles are thrown against fibers by the turbulent air stream; and diffusion as smaller particles vibrate with Brownian movement to collide with fibers and other particles. As a result, coalescing elements can capture particles smaller than the nominal size of the flow passages through the element.

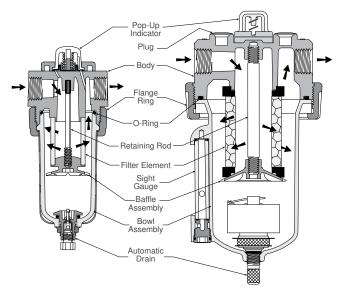
Collected liquid migrates to the crossing points of the fibers where larger drops form or coalesce. Pressure differential through the element then forces these drops to the downstream surface of the element where they gravitate downward to the sump.

The filtered air then exits through the outlet port.

It is very important that the air be pre-filtered, as larger contaminants tend to block the passages between fibers, reducing the efficiency of the coalescing element.



**Particulate Filters** 

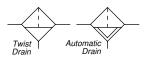


**Coalescing Filters** 



### **Miniature 14F Series**

### 14F Filters - Miniature

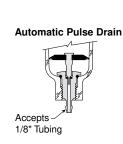


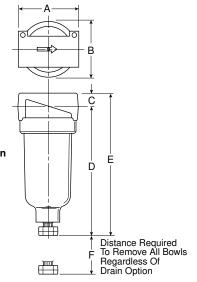


#### **Features**

- · Excellent water removal efficiency
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation
- Easily disassembled for servicing without the use of tools
- · 5 Micron element standard
- Interchangable twist and automatic pulse drains
- High flow: 1/8" 22 SCFM§

1/4" - 24 SCFM§





Port	NPT		
Size	Twist Drain	Automatic Pulse Drain	
Poly Bowl	‡		
1/8"	14F01B*	14F05B*	
1/4"	14F11B*	14F15B*	
Metal Bow	Metal Bowl without Sight Gauge		
1/8"	14F03B*	14F07B*	
1/4"	14F13B*	14F17B*	

Standard	part	num	bers s	hown	bold	J.
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For other models refer to ordering information below.

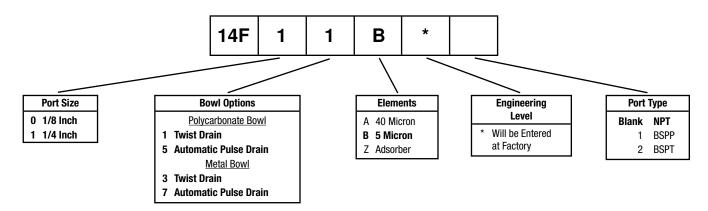
- <sup>‡</sup> For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

14F Filter Dimensions		
<b>A</b> 1.69 (43)	<b>B</b> 1.53 (39)	<b>C</b> .39 (10)
<b>D</b> 3.82 (97)	<b>D</b> † 3.87 (99)	<b>E</b> 4.21 (107)
<b>E</b> † 4.26 (108)	<b>F</b> 1.60 (41)	

Inches (mm)

† With Automatic Pulse Drain.

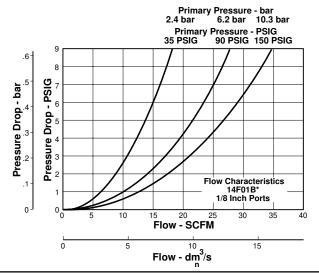
### **Ordering Information**

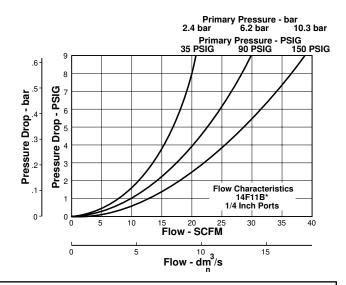




### **Air Line Filters**

#### **Technical Information**





### $\Lambda$

### **CAUTION:**

Polycarbonate bowls and sight dome, being transparent and tough, are ideal for use with Filters and Lubricators. They are suitable for use in normal industrial environments, but should not be located in areas where they could be subjected to direct sunlight, an impact blow, nor temperatures outside of the rated range. As with most plastics, some chemicals can cause damage. Polycarbonate bowls and sight dome should not be exposed to chlorinated hydro-carbons, ketones, esters and certain alcohols. They should not be used in air systems where compressors are lubricated with fire-resistant fluids such as phosphate ester and di-ester types.

Metal bowls are recommended where ambient and/or media conditions are not compatible with polycarbonate bowls. Metal bowls resist the action of most such solvents, but should not be used where strong acids or bases are present or in salt laden atmospheres. Consult the factory for specific recommendations where these conditions exist.

TO CLEAN POLYCARBONATE BOWLS USE MILD SOAP AND WATER ONLY! DO NOT use cleansing agents such as acetone, benzene, carbon tetrachloride, gasoline, toluene, etc., which are damaging to this plastic.

Metal bowl guards are recommended for all applications.

### 14F Filter Kits & Accessories

Bowl Kits – Poly Bowl –	
•	PS408B
	PS404
Metal Bowl –	
Automatic Pulse Drain	PS451B
Twist Drain	PS447B
Filter Element Kits –	
40 Micron	PS401
5 Micron	
5 Micron Cartridge Kit	
Adsorber	PS452
Mounting Bracket Kit	PS417B
•	
Specifications	
Specifications Automatic Pulse Drain Tube Barb	1/8 Inch
•	
Automatic Pulse Drain Tube Barb	1 Ounce
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads	1 Ounce
Automatic Pulse Drain Tube Barb Bowl Capacity	1 Ounce 1/8, 1/4 Inch –
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings	1 Ounce 1/8, 1/4 Inch –
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings	
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings Polycarbonate Bowl	
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings Polycarbonate Bowl Metal Bowl	
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings Polycarbonate Bowl	
Automatic Pulse Drain Tube Barb Bowl Capacity Port Threads Pressure & Temperature Ratings Polycarbonate Bowl Metal Bowl	

#### **Materials of Construction**

Body	∠inc
Bowls	Transparent Polycarbonate
	Metal (Zinc) Bowl w/o Sight Gauge
Deflector, Element Holder & Bat	flePlastic
Drains –	
Twist Drain –	
Body & Stem	Plastic
Seals	Nitrile
Automatic Pulse Drain -	
Piston & Seals	Nitrile
	nersAluminum
Filter Elements –	
5 Micron (Standard)	Plastic
	Plastic
	Activated Charcoal
Seals	Nitrile



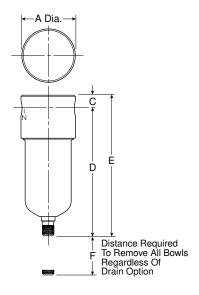
### F504 Filters - Miniature





### **Features**

- · Excellent water removal efficiency
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation
- Easily disassembled for servicing without the use of tools
- · Interchangeable twist and automatic pulse drains
- High flow: 22 SCFM §



Port	NPT		
Size	Twist Drain	Automatic Pulse Drain	
Polycarbo	arbonate Bowl ‡		
1/8"	F504-01AH	F504-01AHS	
1/4"	F504-02AH	F504-02AHS	
Metal Bow	Metal Bowl without Sight Gauge		
1/8"	F504-01DH	F504-01DHS	
1/4"	F504-02DH	F504-02DHS	

#### Standard part numbers shown bold.

For other models refer to ordering information below.

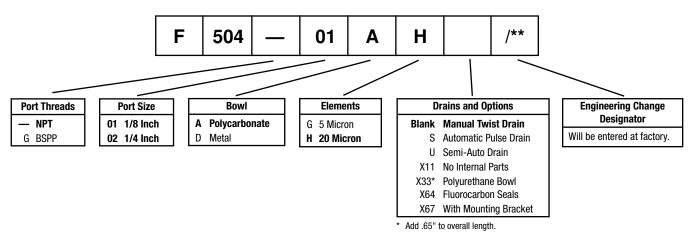
- <sup>‡</sup> For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

	F504 Filter Dimensions		
<b>A</b> 1.56 (39.7)	<b>C</b> 0.38 (9.5)	<b>D</b> 3.78 (96)	
<b>D</b> <sup>†</sup> 3.62 (92)	3.62 4.16		
<b>F</b> .75 (77)	<b>F</b> † .75 (77)		

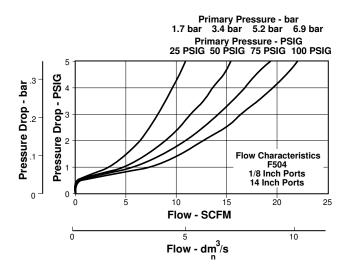
Inches (mm)

† With Metal Bowl

### **Ordering Information**







### F504 Filter Kits & Accessories

Bowl Kits –	
Metal (D)	BK505Y
Metal (D) with Automatic Pulse Drain	BK505SY
Polycarbonate (A)	BK504Y
Polycarbonate (A) with Automatic Pulse	
Drain Kits –	
Automatic Pulse Drain	RK504SY
Manual Twist Drain	SA600Y7-1
Semi-Automatic "Overnight" Drain	SA602A7
(Drains automatically under zero pres	sure)
Filter Element Kits –	
5 Micron (All)	EK504VY
20 Micron (All)	
Mounting Bracket Kit M	
mounting bracket Kit	dat be chacted with hiter

### **Specifications**

### **Materials of Construction**

Body	Aluminum
Bowls	Polycarbonate Metal (Zinc)
Drains	Brass
Filter Elements	Polypropylene
Seals	Nitrile

( ) = BOWL TYPE



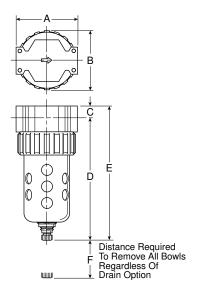
### F602 Filters - Compact



#### **Features**

- Excellent water removal efficiency
- Unique deflector plate and shroud creates a swirling of the air stream ensuring maximum water and dirt separation
- Large filter element surface guarantees low pressure drop and increased element life
- · Optional automatic float drain available
- · Shown with recommended metal bowl guard

 High flow: 1/4" – 53 SCFM§ 3/8" – 80 SCFM§ 1/2" – 85 SCFM§



F60	F602 Filter Dimensions			
Α	В	С	D	
2.81	2.74	.53	5.69	
(71)	(70)	(13)	(145)	
<b>D</b> †	Е	E†	F	
5.74	6.22	6.27	2.25	
(146)	(158)	(159)	(57)	

Inches (mm)

† With Automatic Float Drain

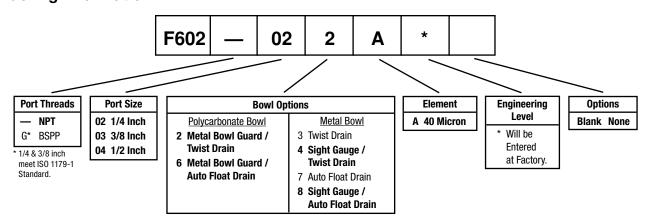
Port	NPT		
Size	Twist Drain	Automatic Float Drain	
Poly Bowl‡	Poly Bowl‡ / Metal Guard		
1/4"	F602-022A*	F602-026A*	
3/8"	F602-032A*	F602-036A*	
1/2"	F602-042A*	F602-046A*	
Metal Bowl / Sight Gauge			
1/4"	F602-024A*	F602-028A*	
3/8"	F602-034A*	F602-038A*	
1/2"	F602-044A*	F602-048A*	

Standard part numbers shown bold.

For other models refer to ordering information below.

- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

### **Ordering Information**

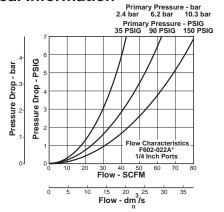


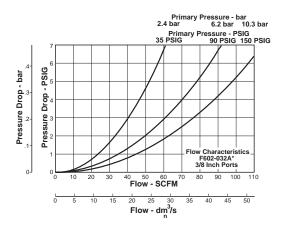


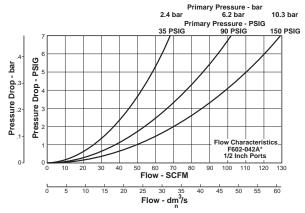
**Compact Filters** 

### **Technical Specifications - F602**

### **Technical Information**







### F602 Filter Kits & Accessories

Bowl Guard KitPS705
Bowl Kits -
Poly Bowl –
Automatic Float DrainPS722
Twist DrainPS732
Polycarbonate (B) (Old F602)BK602Y
Metal Bowl –
Automatic Float DrainPS726
Twist DrainPS734
Sight Gauge / Automatic Float DrainPS723
Sight Gauge / Twist DrainPS735
Metal with Sight Gauge (W) (Old F602)BK605WY
DPI Replacement KitPS781
Drain Kits -
Automatic Float DrainPS506
Twist DrainPS512
Internal Auto (All) (Old F602)SA602MD
Manual Twist (All) (Old F602)SA600Y7-1
Filter Element Kits -
40 Micron (New style units)PS701
Mounting Bracket KitPS743
Mounting Bracket Kit (Old F602)(All) SAF602-0571
Sight Gauge KitPS914
Specifications

Bowl Capacity ......4.4 Ounces Sump Capacity ......1.75 Ounces 

#### Pressure & Temperature Ratings -

Without Differential Pressure Indicator:

Polycarbonate Bowl - 0 to 150 PSIG (0 to 10.3 bar)

32°F to 125°F (0°C to 52°C)

Metal Bowl - 0 to 250 PSIG (0 to 17.2 bar)

32°F to 175°F (0°C to 80°C)

With Differential Pressure Indicator: 0 to 150 PSIG (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)

Automatic Float Drain - 15 to 250 PSIG (1.0 to 17.2 bar)

### **Materials of Construction**

Body	Zinc
BowlsTransp	arent Polycarbonate or
Metal (Zinc) With o	or Without Sight Gauge
Bowl Guards	Steel
Collar	Plastic
Deflector, Shroud & Baffle	Plastic
Drains -	
Twist Drain - Body & Nut	Plastic
Automatic Float Drain - Housing, Float	Plastic
Seals	
Springs, Push Rod	Stainless Steel
Filter Elements -	
40 Micron (Standard)	Plastic
Adsorber (Optional)	Activated Charcoal
Seals	Nitrile
Sight Gauge	Nvlon

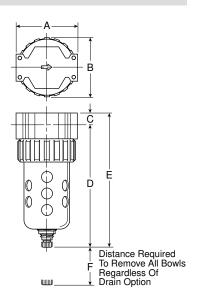


### F602 Filters - Standard



### **Features**

- Excellent water removal efficiency
- Unique deflector plate and shroud creates a swirling of the air stream ensuring maximum water and dirt separation
- Large filter element surface guarantees low pressure drop and increased element life
- Optional automatic float drain available
- · Shown with recommended metal bowl guard
- High flow: 3/4" 145 SCFM§



Dowt	NPT				
Port Size	Twist Drain	Twist Drain Automatic Float Drain			
Poly Bowl‡ / Metal Guard					
3/4"	F602-062A*	F602-066A*			
Metal Bowl / Sight Gauge					
3/4"	F602-064A*	F602-068A*			

Standard part numbers shown bold.

For other models refer to ordering information below.

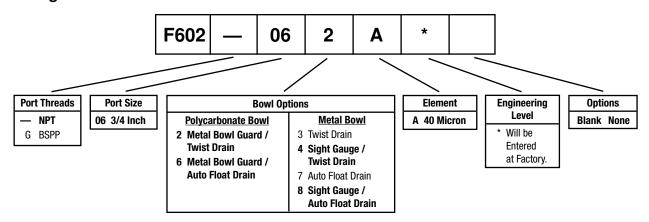
- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F602 Filter Dimensions				
Α	В	С	D	
3.24	3.25	.70	6.97	
(82)	(83)	(18)	(177)	
D <sup>†</sup>	E	E†	F	
7.00	7.67	7.70	2.75	
(178)	(195)	(196)	(70)	

Inches (mm)

† With Automatic Float Drain

### **Ordering Information**

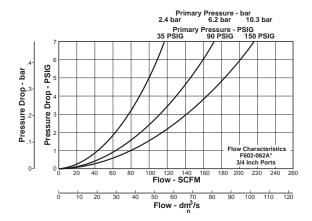




F602 Series, 3/4 Inch Ports

### **Technical Specifications - F602**

### **Technical Information**



### F602 Filter Kits & Accessories

Bowl Guard KitPS805
Bowl Kits -
Poly Bowl -
Automatic Float DrainPS822
Twist DrainPS832
Polycarbonate with Plastic Bowl Guard (B) (Old F602)BK602A
Metal Bowl –
Automatic Float DrainPS826
Twist DrainPS834
Sight Gauge / Automatic DrainPS823
Sight Gauge / Twist DrainPS835
Aluminum (E) (Old F602)BK603A
Metal with Sight Gauge (W) (Old F602)BK605WA
DPI Replacement KitPS781
Drain Kits -
Automatic Float DrainPS506
Twist DrainPS512
External Auto (B,W) (Old F602)SA602D
External Auto (E) (Old F602)SA603D
Internal Auto (All) (Old F602)SA602MD
Manual Twist (All) (Old F602)SA600Y7-1
Filter Element Kits -
40 Micron (New style units)PS801
Mounting Bracket KitPS843
<b>Mounting Bracket Kit</b> (Old F602)(All) SAF602-0572
Sight Gauge KitPS914
Specifications

Bowl Capacity .......7.2 Ounces 

#### Pressure & Temperature Ratings -

Without Differential Pressure Indicator:

Polycarbonate Bowl - 0 to 150 PSIG (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)

Metal Bowl - 0 to 250 PSIG (0 to 17.2 bar) 32°F to 175°F (0°C to 80°C)

0 to 150 PSIG (0 to 10.3 bar)

32°F to 125°F (0°C to 52°C)

Automatic Float Drain - 15 to 250 PSIG (1.0 to 17.2 bar)

Weight ......2.2 lb. (1.0 kg)

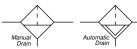
With Differential Pressure Indicator:

Materials of Con	struction
Body	Zinc
Bowls	Transparent Polycarbonate
	Metal (Zinc) With or Without Sight Gauge
Bowl Guards	Steel
Collar	Plastic or Metal
Deflector, Shroud & Baffl	lePlastic
Drains -	
Twist Drain - Body & N	utPlastic
Automatic Float Drain -	
	Plastic
	Nitrile
	Stainless Steel
Filter Elements –	Plastic
	Activated Charcoal
	Nitrile
Signit Gauge	INVIOLI



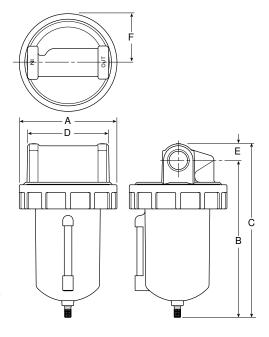
#### Hi-Flow F602 Series

### F602 Filters - Hi-Flow



#### **Features**

- · Excellent water removal efficiency
- · For heavy duty applications with minimum pressure drop requirement
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation
- · Large filter element surface guarantees low pressure drop and increased element life
- 40 micron filter element standard, 5 micron available
- · Metal bowl with sight gauge standard
- Twist drain as standard, optional auto drain
- Large bowl capacity
- Optional high capacity bowl(s) available
- High flow: 3/4" 270 SCFM<sup>§</sup> 1" - 300 SCFM<sup>§</sup>



Port	NPT			
Size	Twist Drain	Automatic Pulse Drain		
Metal Bowl / Sight Gauge - 16 oz.				
3/4"	F602-06WJ	F602-06WJR		
1"	F602-08WJ	F602-08WJR		
Metal Bowl without Sight Gauge - 32 oz.				
3/4"	F602-06EJ	F602-06EJR		
1"	F602-08EJ F602-08EJR			

1 COL 1 III.CI DIIII.CIIOIOIIO					
Α	В	С	D	E	F
F602-06W, F602-08W					
4.90 (124)	7.88 (200)	8.72 (221)	4.06 (103)	.84 (21)	2.45 (62)
F602-06E, F602-08E					
4.90 (124)	11.10 (282)	11.94 (303)	4.06 (103)	.84 (21)	2.45 (62)
inches (	mm)				

**F602 Filter Dimensions** 

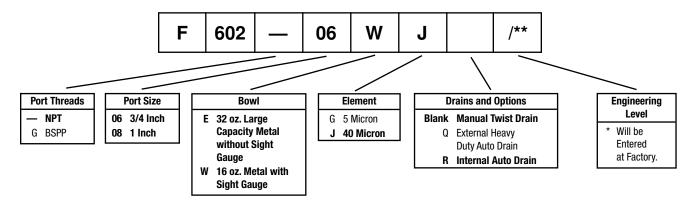
inches (mm)

#### Standard part numbers shown bold.

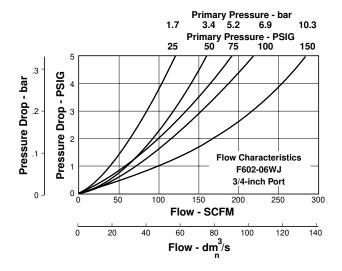
For other models refer to ordering information below.

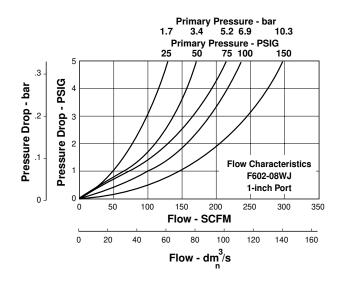
§ SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

### **Ordering Information**



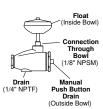






### "Q" Option External Heavy Duty Auto Drain SA602D / SA603D

For heavy duty applications where the filter is being used to remove large volumes of liquid and/or particulate matter from the airstream, the external automatic drain ("Q" option) should be used.



### F602 Filter Kits & Accessories

Bowl Kits –  Aluminum (E)
Drain Kits –         SA603D           External Auto (E)         SA602D           External Auto (W)         SA602D           Internal Auto (All)         SA602MD           Manual (All)         SA600Y7-1           Semi-Automatic "Overnight" Drain         SA602A7           (Drains automatically under zero pressure)
Filter Element Kits –         40 Micron (All)         EK602B           5 Micron (All)         EK602VB
Mounting Bracket Kit (Pair or 2 Kits Pipe Mounted Brackets needed) – (3/4" Unit)
Repair Kits – Deflector, Baffle Assembly, and Retaining Rod (E,W)RK602B External Auto Drain (All)RK602D Internal Auto Drain (All)RK602MD Metal Bowl Sight Gauge (W)RKB605WB
Specifications
Bowl Capacity –  Aluminum Bowl (E)

Pressure & Temperature Ratings –
Aluminum Bowl (E)
Zinc (W)
With Internal Auto Drain (R)20 to 175 PSIG (1.4 to 11.9 bar) 40°F to 125°F (4.4°C to 52°C)
With External Auto Drain (Q)30 to 250 PSIG (0 to 17.2 bar) 40°F to 150°F (4.4°C to 65.6°C)
Weight -
Aluminum Bowl (E)
Zinc Bowl (W)
Materials of Construction
BodyZinc
Bowls -
(E)
Drain –
Manual Twist & Overnight Brass Housing "R" Acetal Housing "Q" Bronze
Filter Elements –

40 Micron (Standard) Polypropylene 5 Micron (Optional) Polypropylene Seals Nitrile

Sight Gauge ......Nylon



) = Bowl Type

#### Hi-Flow F602 Series

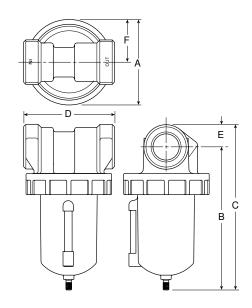
### F602 Filters - Hi-Flow





#### **Features**

- Excellent water removal efficiency
- For heavy duty applications with minimum pressure drop requirement
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation
- Large filter element surface guarantees low pressure drop and increased element life
- 40 micron filter element standard,
   5 micron available
- Metal bowl with sight gauge standard
- Twist drain as standard, optional auto drain
- · Large bowl capacity
- · Optional high capacity bowl(s) available
- High flow: 1-1/4" 390 SCFM§ 1-1/2" 450 SCFM§



Port	NPT			
Size	Twist Drain	<b>Automatic Pulse Drain</b>		
Metal Bowl / Sight Gauge - 16 oz.				
1-1/4"	F602-10WJ	F602-10WJR		
1-1/2"	F602-12WJ	F602-12WJR		
Metal Bowl without Sight Gauge - 32 oz.				
1-1/4"	F602-10EJ	F602-10EJR		
1-1/2"	F602-12EJ	F602-12EJR		

F602 Filter Dimensions					
Α	В	C	D	E	F
F602-1	F602-10W, F602-12W				
4.90 (124)	8.18 (208)	9.46 (240)	5.19 (132)	1.28 (32.4)	2.45 (62.2)
F602-10E, F602-12E					
4.90 (124)	11.41 (290)	12.69 (322)	5.19 (132)	1.28 (32.4)	2.45 (62.2)
inches (	\				

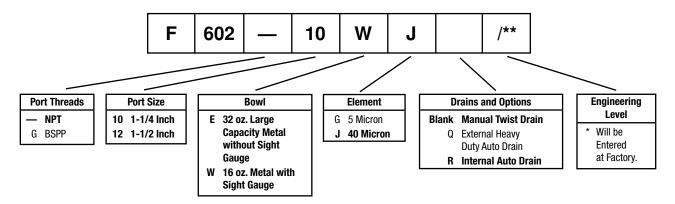
inches (mm)

### Standard part numbers shown bold.

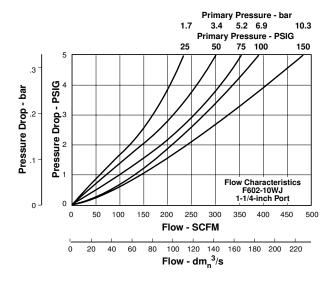
For other models refer to ordering information below.

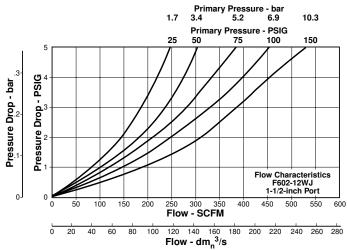
§ SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

### **Ordering Information**



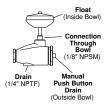






#### "Q" Option External Heavy Duty Auto Drain SA602D / SA603D

For heavy duty applications where the filter is being used to remove large volumes of liquid and/or particulate matter from the airstream, the external automatic drain ("Q" option) should be used.



### F602 Filter Kits & Accessories

Bowl Kits –           Aluminum (E)         BK603B           Zinc with Sight Gauge (W)         BK605WB
Drain Kits –           External Auto (E)         SA603D           External Auto (W)         SA602D           Internal Auto (All)         SA602MD           Manual (All)         SA600Y7-1           Semi-Automatic "Overnight" Drain         SA602A7           (Drains automatically under zero pressure)
Filter Element Kits –         40 Micron (All)         EK602B           5 Micron (All)         EK602VB
Repair Kits –         Deflector, Baffle Assembly, and Retaining Rod (All)       RK602C         External Auto Drain (All)       RK602D         Internal Auto Drain (All)       RK602MD         Metal Bowl Sight Gauge (W)       RKB605WB
Specifications
Bowl Capacity –         Aluminum (E)         32 Ounces           Zinc (W)         16 Ounces           Port Threads         1-1/4, 1-1/2 Inch

Pressure & Temperature Ratings –
Aluminum Bowl (E)
Zinc (W) 0 to 250 PSIG (0 to 17.2 bar) 40°F to 150°F (4.4°C to 65.6°C)
With Internal Auto Drain (R)20 to 175 PSIG (1.4 to 11.9 bar) 40°F to 125°F (4.4°C to 52°C)
With External Auto Drain (Q)30 to 250 PSIG (0 to 17.2 bar) 40°F to 150°F (4.4°C to 65.6°C)
Weight -
Aluminum Bowl (E)
Zinc Bowl (W)
Materials of Construction

Materials of Construc	tion
Body	Zinc
Bowls -	
(E)	Aluminum without Sight Gauge
(W)	Zinc with Sight Gauge
Drain -	
Manual Twist & Overnight	Brass
Housing "R"	Acetal
Housing "Q"	Bronze
Filter Elements –	
40 Micron (Standard)	Polypropylene
5 Micron (Optional)	Polypropylene
Seals	Nitrile
Sight Gauge	Nylon



( ) = Bowl Type

#### Hi-Flow F602 Series

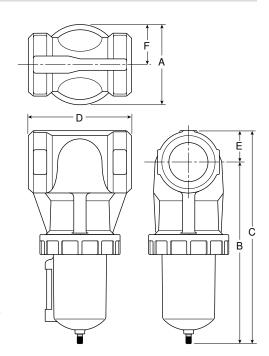
### F602 Filters - Hi-Flow





#### **Features**

- Excellent water removal efficiency
- For heavy duty applications with minimum pressure drop requirement
- Unique deflector plate that creates swirling of the air stream ensuring maximum water and dirt separation
- Large filter element surface guarantees low pressure drop and increased element life
- 40 micron filter element standard
- · Metal bowl with sight gauge standard
- Twist drain as standard, optional auto drain
- Large bowl capacity
- Optional high capacity bowl(s) available
- High flow: 2 & 2-1/2" 1200 SCFM§



Port	NI	PT
Size	Twist Drain	Automatic Pulse Drain
Metal Bowl	/ Sight Gauge - 16 oz.	
2"	F602-16WJ	F602-16WJR
2-1/2"	F602-20WJ	F602-20WJR
Metal Bowl	without Sight Gauge - 32 o	Z.
2"	F602-16EJ	F602-16EJR
2-1/2"	F602-20EJ	F602-20EJR

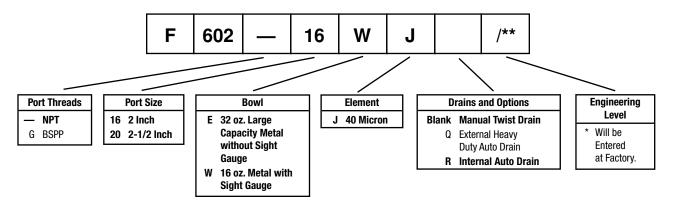
Standa	rd par	t	num	bers s	hov	vn	bol	d.

For other models refer to ordering information below.

	F602 Filter Dimensions							
Α	В	С	D	E	F			
F602-1	F602-16W, F602-20W							
4.90 (124)	11.08 (281)	13.00 (330)	6.30 (160)	1.92 (48.7)	2.45 (62.2)			
F602-1	F602-16E, F602-20E							
4.90 (124)	14.31 (364)	16.23 (412)	6.30 (160)	1.92 (48.7)	2.45 (62.2)			

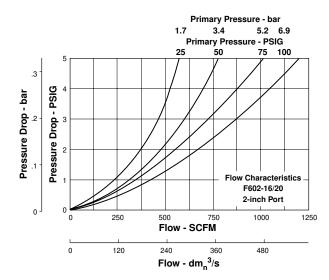
inches (mm)

### **Ordering Information**



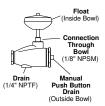


<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.



## "Q" Option External Heavy Duty Auto Drain SA602D / SA603D

For heavy duty applications where the filter is being used to remove large volumes of liquid and/or particulate matter from the airstream, the external automatic drain ("Q" option) should be used.



### **F602 Filter Kits & Accessories**

Bowl Kits –  Aluminum (E)
Drain Kits -
External Auto (E)       SA603D         External Auto (W)       SA602D         Internal Auto (All)       SA602MD         Manual (All)       SA600Y7-1         Semi-Automatic "Overnight" Drain       SA602A7         (Drains automatically under zero pressure)
Filter Element Kits -
40 Micron (All)EK602B
Repair Kits – Deflector, Baffle Assembly, and Retaining Rod (All)
Specifications
Bowl Capacity -
Aluminum (E)       32 Ounces         Zinc (W)       16 Ounces
<b>Port Threads</b>

Pressure & 16	emperature Ratings –		
Aluminum E	Bowl (E)	0 to 300 PSIG (0 40°F to 150°F (4.4°C	,
Zinc (W)		0 to 250 PSIG (0 40°F to 150°F (4.4°C	,
With Interna	al Auto Drain (R)	.20 to 175 PSIG (1.4 40°F to 125°F (4.4	
With Extern	nal Auto Drain (Q)	30 to 250 PSIG (0 40°F to 150°F (4.4°C	,
Weight -			
Aluminum E	30wl (E)11 lk	10.3 lb. (4.6 b. (4.99 kg) / 1-Unit N	Ο,
Zinc Bowl (	W)39 lb.	9.8 lb. (4.4 . (17.69 kg) / 4-Unit N	٠,

### **Materials of Construction**

Body	Aluminum
Bowls – (E)(W)	
Drain -	
Manual Twist & Overnight Housing "R" Housing "Q"	Acetal
Filter Elements -	
40 Micron (Standard)	Polypropylene
Seals	Buna N
Sight Gauge	Nylon



( ) = Bowl Type

### 35F, 43F Filters - Hi-Flow

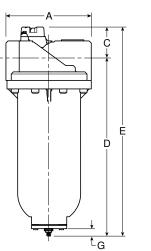


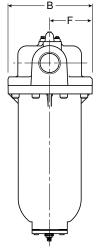
Auto Drain



#### **Features**

- Heavy-duty cast aluminum housings to withstand operating pressures up to 250 PSIG\*
- Differential pressure indicator to eliminate the guesswork of element replacement
- Differential pressure gauge available, order separately, Kit DP3-01-000
- Unique drain mounting plate design offers a trouble-free method for interchanging and installing external drains
- High flow: 1-1/2" 1280 SCFM§
  - 2" 1400 SCFM§
  - 3" 2900 SCFM§
- Without Differential Pressure Indicator –
   Max. supply pressure is 250 PSIG (20.7 bar).





	Port	Element	Part Number (NPT)
Series	Size	Туре	Automatic Drain
35F	1-1/2	5 micron	35F77BAP
331	2	5 micron	35F87BAP
43F	3	5 micron	43FN7BAP

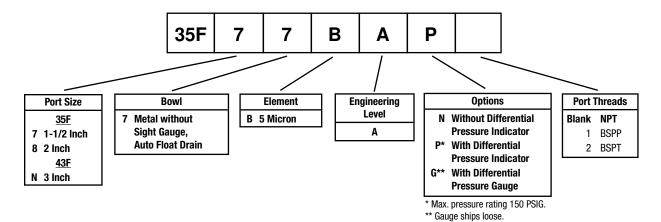
#### Standard part numbers shown bold.

For other models refer to ordering information below.

	35F Filter Dimensions							
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b>	<b>E</b>	<b>F</b>	<b>G</b>		
7.80	7.75	2.81	16.24	19.07	3.88	.55		
(198)	(197)	(71)	(412.5)	(484)	(98.6)	(14)		
	43F Filter Dimensions							
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b> 25.96 (659.4)	<b>E</b>	<b>F</b>	<b>G</b>		
8.94	8.88	3.48		29.44	4.44	.55		
(227)	(225.5)	(88)		(748)	(112.8)	(14)		

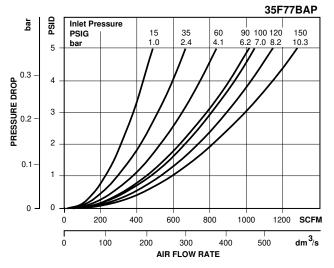
inches (mm)

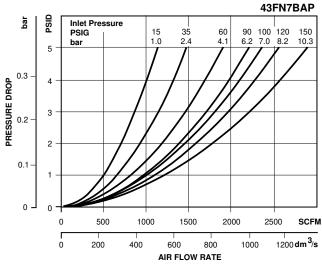
### **Ordering Information**

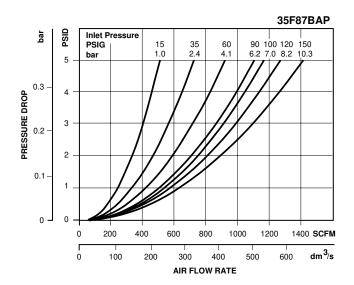




<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.







### 35F & 43F Filter Kits & Accessories

Differential Pressure Indicator Cap – For pressures over 150 PSIG	GRP-95-022
Differential Pressure Gauge	DP3-01-000
Differential Pressure Indicator	DP2-02-001
Drain, Automatic, Internal, Fluorocarbon – 1/8 NPT	GRP-95-981
Drain Plate Kit –  1/2 NPT Tapped Drain Port	GRP-95-393
<b>Element –</b> 35F, 5 Micron	
Manual Drain Kit with 1/2" Drain Plate	GRP-95-392
Specifications	

35F	
Standard Filtration	5 Micron
<b>Weight –</b> 35F43F	( 0)
* Without pressure indicator	
Materials of Construction	
Baffle	Plated Steel
Body	Aluminum
Bowls	Aluminum
Deflector	Plated Steel
Element Retainer	Plated Steel
Filter Element	Polyethylene
Seals	Fluorocarbon
Stud	Plated Steel



Maximum Supply Pressure -

Port Size -

### 10F Coalescing Filters - Miniature



### **Features**

- · Removes liquid aerosols and sub-micron particles
- Liquids gravitate to the bottom of the element and will not re-enter the airstream
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls
- · Interchangeable twist and automatic pulse drains
- Grade 6 element, 99.97% DOP efficiency
- · High flow:

grade 6 element

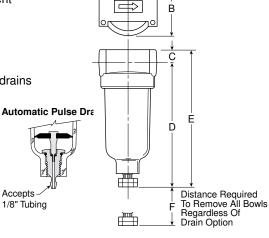
1/8" - 17 SCFM<sup>§</sup>

1/4" - 20 SCFM §

Grade 10 element

1/8" – 19 SCFM §

1/4" - 24 SCFM §



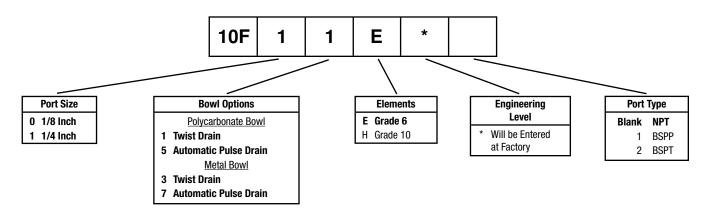
Port	NPT			
Size	Twist Drain	Twist Drain Automatic Pulse Drain		
Poly Bowl	pwl ‡			
1/8"	10F01E*	10F05E*		
1/4"	10F11E* 10F15E*			
Metal Bowl without Sight Gauge				
1/8"	10F03E*	10F07E*		
1/4"	10F13E*	10F17E*		

Standard part numbers shown bold, with Grade 6 Elements (for Grade 10 Elements, replace "E" with "H" in the 6th position). For other models refer to ordering information below.

10F Coalescing Filter Dimensions			
<b>A</b> 1.69 (43)	<b>C</b> .39 (10)		
<b>D</b> 3.82 (97)	<b>D</b> † 3.67 (93)	<b>E</b> 4.21 (107)	
<b>E</b> † 4.06 (103)	<b>F</b> 1.60 (41)		

Inches (mm)

### **Ordering Information**



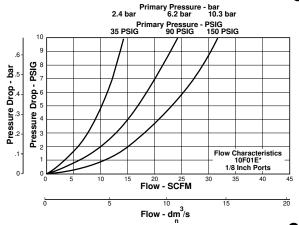


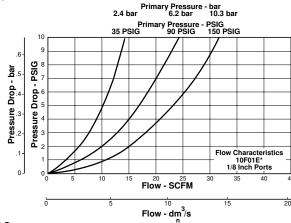
<sup>&</sup>lt;sup>‡</sup> For polycarbonate bowl see Caution on page inside cover.

<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

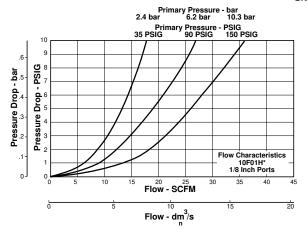
<sup>†</sup> With Automatic Pulse Drain.

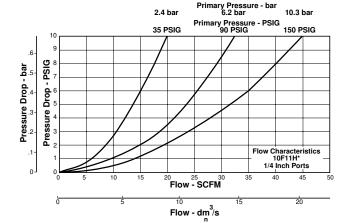
### Grade 6





### Grade 10





### 10F Coalescing Filter Kits & Accessories

Bowl Kits –
Poly Bowl –
Automatic Pulse DrainPS408B
Twist DrainPS404
Metal Bowl –
Automatic Pulse DrainPS451B
Twist DrainPS447B
Filter Element Kits –
Grade 6 (Standard)PS446
Grade 10 (Optional)PS456
Mounting Bracket KitPS417B
Specifications
Automatic Pulse Drain Tube Barb1/8 Inch
Automatic Pulse Drain Tube Barb
Bowl Capacity

### **Materials of Construction**

BodyZinc
Bowls -
TransparentPolycarbonate
MetalZinc Without Sight Gauge
Drains –
Twist Drain –
Body & StemPlastic
SealsNitrile
Automatic Pulse Drain -
Piston & SealsNitrile
Stem, Seat, Adaptor & WashersAluminum
Element HolderPlastic
Filter ElementBorosilicate & felt glass fibers 99.97% DOP efficiency
Largest Aerosol Particle Passed (Grade 6)0.75 Micron
Largest Solid Particle Passed (Grade 6)
SealsNitrile

### **Media Specifications**

G	D.O.P. Coalescing	Maximum Oil	Pressure Drop (PSID) <sup>2</sup> @ Rated Flow		Particulate Particulate
a d e	Efficiency 0.3 to 0.6 Micron Particles	Carryover <sup>1</sup> PPM w/w	Media Dry	Media Wet With 10-20 wt. oil	Micron Rating
6	99.97%	0.008	1.0	2-3	0.01
10	95%	0.85	0.5	0.5	0.7

<sup>&</sup>lt;sup>1</sup>Tested per BCAS 860900 at 40 ppm inlet.



32°F to 175°F (0°C to 80°C)

...... 0.41 lb. (0.18 kg)

<sup>&</sup>lt;sup>2</sup> Add dry + wet for total pressure drop.

D.O.P. = Dioctylphthalate

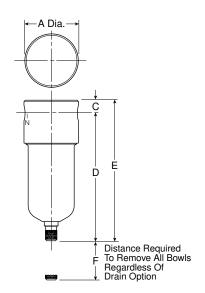
### F501, F507 Coalescing Filters – Miniature





### **Features**

- Removes liquid aerosols and sub-micron particles
- Liquids gravitate to the bottom of the element and will not re-enter the airstream
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls
- Interchangeable twist and automatic pulse drains
- · Grade 6 element, 99.97% DOP efficiency
- High flow: Grade 6 element 8 SCFM<sup>§</sup>
   Grade 10 element 10 SCFM<sup>§</sup>



Port	NI	PT			
Size	Grade 6	Grade 10			
Polycarbo	ycarbonate Bowl, Manual Twist Drain ‡				
1/8"	F501-01AH F507-01AO				
1/4"	F501-02AH	F507-02AO			
Metal Bow	Metal Bowl without Sight Gauge, Manual Twist Drain				
1/8"	F501-01DH	F507-01DO			
1/4"	F501-02DH	F507-02DO			

#### **Bold Items are Most Popular.**

For other models refer to ordering information below.

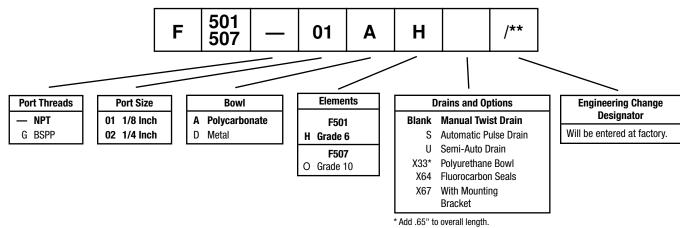
- <sup>‡</sup> For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet and 1.0 PSIG Grade 6, .5 PSIG Grade 10 pressure drop.

F501 / F507 Coalescing Filter Dimensions					
A B D 1.56 .038 3.78 (39.7) (9.5) (96)					
<b>D</b> <sup>†</sup> 3.62 (92)	<b>E</b> 4.16 (105.6)	<b>E</b> † 4.00 (101.6)			
<b>F</b> .75 (77)					

Inches (mm)

† With Metal Bowl

### **Ordering Information**





### **Coalescing Filter Flow Ratings in SCFM**

F501 Flow measured at 100 PSIG inlet pressure and 1.0 PSIG pressure drop. F507 Flow measured at 100 PSIG inlet pressure and 0.5 PSIG pressure drop.

For Inlet Pressures other than 100 PSIG

Inlet Pressure	F501-H	F507-O	Inlet Pressure	F501H	F507-O
10	1.7	2.2	160	12.2	15.2
20	2.4	3.0	170	12.9	16.1
30	3.1	3.9	180	13.6	17.0
40	3.8	4.8	190	14.3	178
50	4.5	5.6	200	15.0	18.7
60	5.2	6.5	210	15.7	19.6
70	5.9	7.4	220	16.4	20.5
80	6.6	8.3	230	17.1	21.3
90	7.3	9.1	240	17.8	22.2
100	8.0	10.0	250	18.5	23.1
110	8.7	10.9	260	19.2	23.9
120	9.4	11.7	270	19.9	24.8
130	10.1	12.6	280	20.6	25.7
140	10.8	13.5	290	21.3	26.6
150	11.5	14.4	300	21.9	27.4
Polycarbonate Bowl Limit 150 PSIG				Zinc Bowl nit 300 PS	•

### F501, F507 Filter Kits & Accessories

Bowl Kits –           Polycarbonate (A)         BK504Y           Metal (D)         BK505Y           Polycarbonate (A) with Automatic Pulse Drain         BK504SY           Metal (D) with Automatic Pulse Drain         BK505SY
Drain Kits –         Manual Twist Drain       SA600Y7-1         Automatic Pulse Drain       RK504SY         Semi-Automatic "Overnight" Drain       SA602A7         (Drains automatically under zero pressure)
Filter Element Kits – Grade 6EKF501H
Grade 10EKF507
Mounting Bracket KitMust be Ordered with Filter
Specifications
Openications
Bowl Capacity1 Ounce
•
Bowl Capacity
Bowl Capacity
Port Threads

Polycarbonate Bowl	0.3 lb. (0.14 kg) / Unit 7 lb. (3.18 kg) / 24-Unit Master Pack
Metal Bowl	
Materials of Cons	truction
Body	Aluminum
Bowls	Polycarbonate Metal (Zinc)
Drains	Brass
Filter Elements	Borosilicate Fibers & Felt
End Caps	Urethane
Seals	Nitrile

### **Media Specifications**

G r	D.O.P. Coalescing	Maximum Oil	Pressure Drop (PSID) <sup>2</sup> @ Rated Flow		Particulate
a d e	to old which off		Media Dry	Media Wet With 10-20 wt. oil	Micron Rating
6	99.97%	0.008	1.0	2-3	0.01
10	95%	0.85	0.5	0.5	0.7

<sup>&</sup>lt;sup>1</sup> Tested per BCAS 860900 at 40 ppm inlet. <sup>2</sup> Add dry + wet for total pressure drop.

D.O.P. = Dioctylphthalate

Weight



( ) = BOWL TYPE

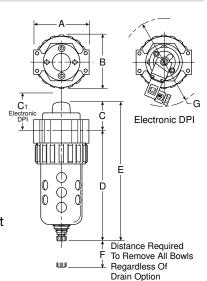
## F701 Coalescing Filters - Compact



#### **Features**

- Removes liquid aerosols and sub-micron particles
- Liquids gravitate to the bottom of the element and will not re-enter the airstream
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls
- Interchangeable twist and automatic float drains
- Differential pressure indicator standard
- Shown with recommended metal bowl guard

High flow: Grade 6 element 1/4" - 45 SCFM\$ Grade 10 element 1/4" - 60 SCFM\$ 3/8" - 72 SCFM\$ 1/2" - 65 SCFM\$ 1/2" - 95 SCFM\$



Port	NPT			
Size	Twist Drain	Automatic Float Drain		
Poly Bowl:	‡ / Metal Guard			
1/4"	F701-022E*	F701-026E*		
3/8"	F701-032E*	F701-036E*		
1/2"	F701-042E*	F701-046E*		
Metal Bow	Metal Bowl / Sight Gauge			
1/4"	F701-024E*	F701-028E*		
3/8"	F701-034E*	F701-038E*		
1/2"	F701-044E*	F701-048E*		

Standard part numbers shown bold, with Grade 6 Elements (for Grade 10 Elements, replace "E" with "H" in the 6th position). For other models refer to ordering information below.

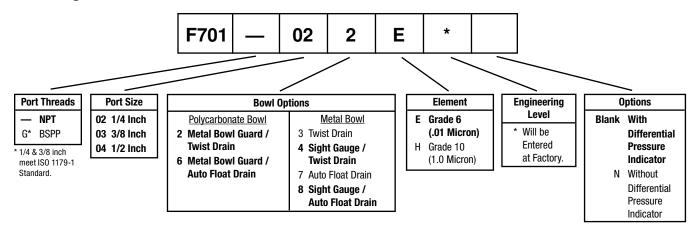
- <sup>‡</sup> For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F701 Coalescing Filter Dimensions					
A         B         C         C1           2.81         2.74         1.46         1.81           (71)         (70)         (37)         (46)					
<b>D</b> 5.69 (145)	<b>D</b> <sup>†</sup> 5.74 (146)	<b>E</b> 7.15 (182)	<b>E</b> <sup>†</sup> 7.20 (183)		
F G Dia. 2.25 4.50 (57) (114)					

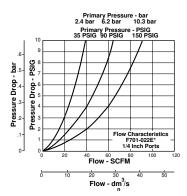
Inches (mm)

† With Automatic Float Drain

### **Ordering Information**

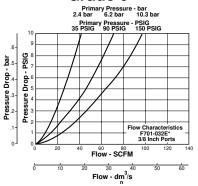


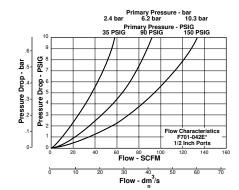




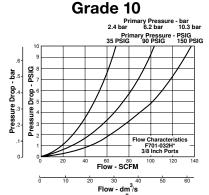
**Technical Specifications - F701** 

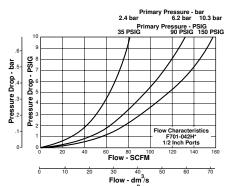
### Grade 6





# Primary Pressure - bar 2.4 bar 6.2 bar 10.3 bar Primary Pressure - PSIG 35 PSIG 90 PSIG 150 PSIG Pressure Drop - PSIG Pressure Drop - bar Flow - SCFM





### F701 Coalescing Filter Kits & Accessories

Bowl Guard KitPS705
Bowl Kits –
Poly Bowl – Automatic Float Drain PS722
Twist DrainPS732
Metal Bowl – Automatic Float DrainPS726
Twist DrainPS734
Sight Gauge / Automatic Float Drain PS723
Sight Gauge / Twist DrainPS735
1/4, 3/8, 1/2 Inch (W) (Old F701)BK605WA
1/4, 3/8, 1/2 Inch (E) (Old F701)BK603A
DPI Replacement KitPS781
Differential Pressure Pop Up Indicator Repair KitRK701P
(only works with originally equipped 701 units)
Differential Pressure GaugeDP276-P
(only works on units without pop-up indicator)
Drain Kits –
Automatic Float DrainPS506
Automatic Float DrainPS506 Twist DrainPS512
Twist DrainPS512
Twist DrainPS512 Internal Automatic Drain - High Pressure (T) (Old F701)SA702MD
Twist Drain

Bowl Capacity ......4.4 Ounces

n		n
Sump Capac	city	1.75 Ounces
Operation –		e Drop
	Minimum Recommended I	Flow –
	20% Nominal Rating of Ele	ement
Port Threads	<b>3</b>	1/4, 3/8, 1/2 Inch
Pressure & 1	Temperature Ratings –	
Without Di	fferential Pressure Indicator	:
	Polycarbonate Bow	1 - 0 to 150 PSIG (0 to 10.3 bar)
		32°F to 125°F (0°C to 52°C)
	Metal Bow	I - 0 to 250 PSIG (0 to 17.2 bar)
		32°F to 175°F (0°C to 80°C)
With Differ	ential Pressure Indicator:	0 to 150 PSIG (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)
		02 1 10 120 1 (0 0 10 02 0)

## **Materials of Construction**

Body	Zinc
Bowls	Transparent Polycarbonate
	Metal (Zinc) With or Without Sight Gauge
<b>Bowl Gua</b>	ardSteel
Collar	Plastic
Drains –	Twist Drain - Body & Nut
	Springs, Push RodStainless Steel
Filter Ele	ment –
	osilicate & Felt Glass Fibers 99.97% DOP Efficiency

Weight......1.5 lb (0.7 kg)

Automatic Float Drain - 15 to 250 PSIG (1.0 to 17.2 bar)

	Springs, Push Rod	Stainless Steel
Filter Element –		
Borosilicate & Felt Gla	ass Fibers 99.97% DOP	Efficiency
Largest Aerosol Partic	cle Passed (Grade 6)	0.01 Micron
Largest Solid Particle	Passed (Grade 6)	0.30 Micron
Seals		Nitrile
Sight Gauge		Nylon

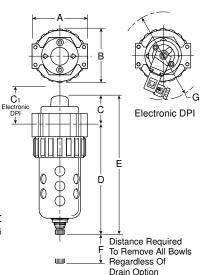


## F701 Coalescing Filters - Standard



#### **Features**

- Removes liquid aerosols and sub-micron particles
- Liquids gravitate to the bottom of the element and will not re-enter the airstream
- Oil free air for critical applications, such as air gauging and pneumatic instrumentation and controls
- Interchangeable twist and automatic float drains
- Differential pressure indicator standard
- · Shown with recommended metal bowl guard
- High flow: Grade 6 element Grade 10 element 3/4" - 80 SCFM<sup>§</sup> 3/4" - 160 SCFM<sup>§</sup>



Port	NPT		
Size	Twist Drain	Automatic Float Drain	
Poly Bowl :	Poly Bowl ‡ / Metal Guard		
3/4"	F701-062E* F701-066E*		
Metal Bowl / Sight Gauge			
3/4"	F701-064E*	F701-068E*	

Standard part numbers shown bold, with Grade 6 Elements (for Grade 10 Elements, replace "E" with "H" in the 6th position). For other models refer to ordering information below.

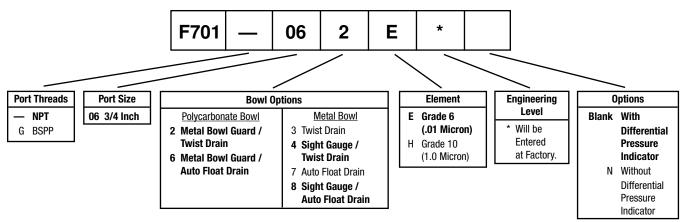
- <sup>‡</sup> For polycarbonate bowl see Caution on inside cover.
- SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F701 Coalescing Filter Dimensions					
A         B         C         C1           3.24         3.25         1.63         2.00           (82)         (83)         (41)         (51)					
<b>D</b> 6.97 (177)	<b>D</b> <sup>†</sup> 7.00 (178)	<b>E</b> 8.60 (218)	<b>E</b> <sup>†</sup> 8.63 (219)		
<b>F</b> 2.75 (70)	<b>G Dia.</b> 4.50 (114)				

Inches (mm)

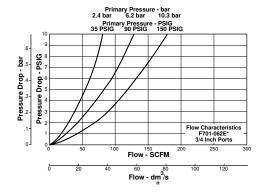
† With Automatic Float Drain

### Ordering Information

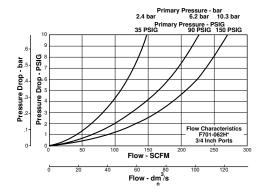




### Grade 6



### Grade 10



### F701 Coalescing Filter Kits & Accessories

1 701 Oddieschig Filter IV	its & Accessories
Bowl Guard Kit	PS805
Bowl Kits –	
Poly Bowl - Automatic Float Drain.	PS822
Twist Drain	PS832
Metal Bowl – Automatic Float Drain.	
	PS834
	tic Float DrainPS823
	ainPS835
DPI Replacement Kit	PS781
Drain Kits -	
Automatic Float Drain	PS506
Twist Drain	PS512
Manual Twist Drain	SA600Y7-1
Filter Element Kits –	
Grade 6 (Standard)	PS824
Grade 10 (Optional)	PS830
Mounting Bracket Kit	PS843
Sight Gauge Kit	PS914
Specifications	
Bowl Capacity	7.2 Ounces
Sump Capacity	2.8 Ounces
Operation - Normal Operating Pressu	ire Drop2 PSIG
	Pressure Drop10 PSIG
Minimum Recommended	-
20% Nominal Rating of E	lement
Port Threads	1/2 & 3/4 Inch

### Pressure & Temperature Ratings -

Without Differential Pressure Indicator:

Polycarbonate Bowl – 0 to 150 PSIG (0 to 10.3 bar)

32°F to 125°F (0°C to 52°C)

Metal Bowl - 0 to 250 PSIG (0 to 17.2 bar)

32°F to 175°F (0°C to 80°C)

With Differential Pressure Indicator: 0 to 150 PSIG (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)

Automatic Float Drain - 15 to 250 PSIG (1.0 to 17.2 bar) Weight ......2.4 lb. (1.1 kg)

### **Materials of Construction**

Body	Zinc
Bowls	Transparent Polycarbonate
	Metal (Zinc) With or Without Sight Gauge
Bowl Guard	Steel
Collar	Plastic or Metal
Drains - Twist Drain - Bo	ody & NutPlastic
Automatic Float	Drain – Housing, Float Plastic SealsNitrile
	Springs, Push Rod Stainless Steel

#### Filter Element -

ealsNitrile
Largest Aerosol Particle Passed (Grade 6)
Borosilicate & Felt Glass Fibers 99.97% DOP Efficiency

Sight Gauge ......Nylon



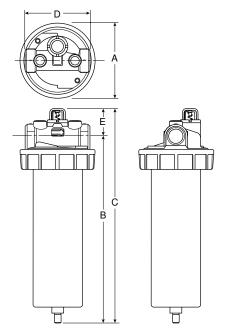
### F701 Coalescing Filters - Hi-Flow



#### **Features**

- Removes liquid aerosols and sub-micron particles
- Protects pneumatic systems from contamination that standard particulate filters will not catch
- Two different grade elements available
- Differential pressure pop-up indicator standard
- Differential pressure gauge optional
- · High flow design

Note: All coalescing filters should be protected by a particulate filter (i.e., F602, or other) installed upstream.



	Grade 6		Grade 10	
Port Size	Flow (SCFM)*	Part Number	Flow (SCFM)*	Part Number
3/4"	95	F701-06E3P	158	F701-06E7P
3/4"	170	F701-06L3P	285	F701-06L7P
1"	95	F701-08E3P	158	F701-08E7P
1"	170	F701-08L3P	285	F701-08L7P

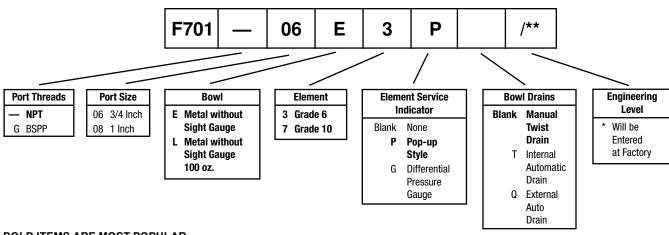
<sup>\*</sup> Dry media flow. For wet media info see table to right

F701 Coalescing Filter Dimensions						
Port Size	Bowl Capacity	Α	В	O	D	E
3/4 & 1 Inch (E)	32 oz.	4.95 (126)	11.77 (299)	13 (330)	4.00 (101)	1.23 (31)
3/4 &1 Inch (L)	100 oz.	4.95 (126)	21.39 (543)	22.63 (575)	4.00 (101)	1.23 (31)

<sup>&</sup>quot;G" Differential Pressure Gauge add 2.00(50.8) to C & E.

inches (mm)

### **Ordering Information**





<sup>&</sup>quot;Q" External Auto Drain add 1.70 (43.1) to B & C.

### **Technical Specifications - F701**

#### **Element Selection**

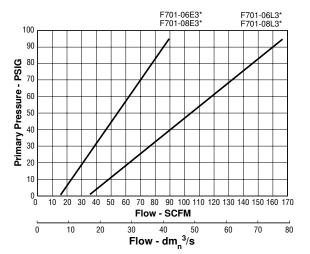
Element Grade		Applications	
6	General air coalescing applications when total removal of liquid aerosols and suspended fines is required in all pressure ranges. Protection of air dryers, air gauging, air logic, modulating systems, critical air conveying, most breathing air systems, etc.		
10	Precoalescer or prefilter for Grade 6 to remove gross amounts of water and oil, or tenacious aerosols which are difficult to remove. Upgrading existing particulate equipment to coalescing without increase in pressure drop.		

**Media Specifications** 

		Maximum Oil		Drop (PSID) <sup>2</sup> @ ted Flow	1 PSID
a d e	Efficiency 0.3 to 0.6 Micron Particles	Carryover <sup>1</sup> PPM w/w	Media Dry	Media Wet With 10-20 wt. oil	Operating Pressure 100 PSIG
6	99.97%	0.008	1.0	2-3	3.5 SCFM
10	95%	0.85	0.5	0.5	5.3 SCFM

<sup>&</sup>lt;sup>1</sup> Tested per BCAS 860900 at 40 ppm inlet.

D.O.P. = Dioctylphthalate



### F701 Filter Kits & Accessories

Mounting	Brackets	-
----------	----------	---

Port Size

Bowl Kits -

Port Size

**Differential Pressure Pop Up Indicator Repair Kit** ......RK701P (only works with originally equipped units)

Drain Kits -

Filter Element Kits -

Port Size - Grade 6

Port Size - Grade 10

**Specifications** 

Operation -

) = Bowl Type

ı	Minimum Recommended Flow 20% of Rated Flow
ı	Maximum Pressure (Manual Drains) 0 to 300 PSIG (0-20 bar)
	Maximum Pressure Automatic Drains) –         "R" Drain
ı	<b>Maximum Temperature</b>
	Weight –  3/4 & 1 Inch (E) 32 oz
ı	Body & Flange RingZinc
ı	Bowl – Metal Bowl (E) (L)Aluminum
	Drains –  Automatic Float Drain –  Housing "R", "T"
ı	Seals & Float Buna N
l	SpringsStainless Steel
l	Elements (Media) Borosilicate Fibers & Felt
I	Element End CapsUrethane
1	

Seals ...... Buna N



<sup>&</sup>lt;sup>2</sup> Add dry + wet for total pressure drop.

### 35F, 43F Coalescing Filters - Hi-Flow



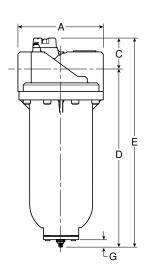
Auto Drain

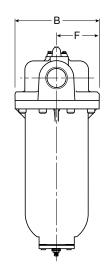


#### **Features**

- Heavy-duty cast aluminum housings to withstand operating pressures up to 250 PSIG\*
- Differential pressure indicator to eliminate the guesswork of element replacement
- Differential pressure gauge available, order separately, Kit DP3-01-000
- Unique drain mounting plate design offers a trouble-free method for interchanging and installing external drains
- High-flow filter elements: coalescing, 1 micron and 0.01 Micron
- High flow: 1-1/2" 710 SCFM§
  - 2" 710 SCFM§
  - 3" 1770 SCFM§

Without Differential Pressure Indicator -Max. supply pressure is 250 PSIG (20.7 bar).





G

.55

(14)

G

.55

(14)

	Port	Element	Part number (NPT)
Series	size	type	Automatic drain
	1-1/2	0.01 micron	35F77EAP
	1-1/2 1.0 micron		35F77HAP
35F	1-1/2	Adsorber	35F77ZAP
551	2	0.01 micron	35F87EAP
	2	1.0 micron	35F87HAP
	2	Adsorber	35F87ZAP
	3	0.01 micron	43FN7EAP
43F	3	1.0 micron	43FN7HAP
	3	Adsorber	43FN7ZAP

					-
	43F C	oalesci	ng Filte	r Dimen	sions
Α	В	С	D	E	F
8.94	8.88	3.48	25.96	29.44	4.44
(227)	(225.5)	(88)	(659.4)	(748)	(112.8
nchae (m	m)				

2.83

(72)

35F Coalescing Filter Dimensions

16.24

(412.5)

19.07

(484)

3.88

(98.6)

4.44

(112.8)

inches (mm)

7.80

(198)

В

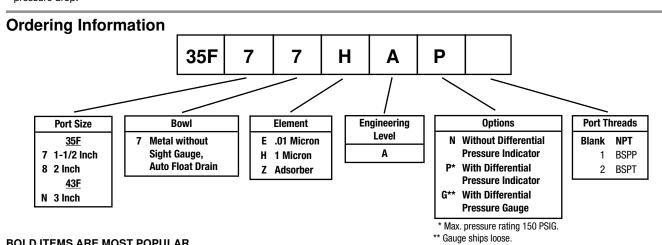
7.76

(197)

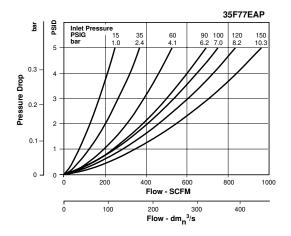
#### Standard part numbers shown bold.

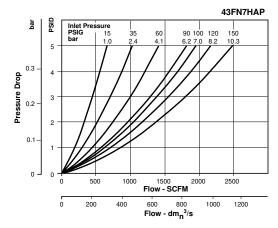
For other models refer to ordering information below.

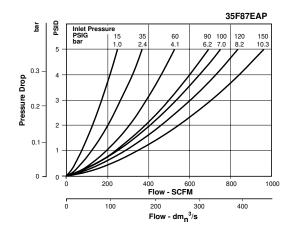
<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.











# 35F & 43F Coalescing Filter Kits & Accessories

Differential Pressure Indicator Cap –	
For pressures over 150 PSIG	GRP-95-022
Differential Pressure Gauge	DP3-01-000
Differential Pressure Indicator	DP2-02-001
Drain, Automatic, Internal, Fluorocarbon -	
1/8 NPT	GRP-95-981
Drain Plate Kit –	
1/2 NPT Tapped Drain Port	GRP-95-393
Element -	
Element –	
35F: 0.01 Micron	MTP-95-502
35F: 0.01 Micron	MSP-95-502
35F: 0.01 Micron	MSP-95-502 MXP-95-502
35F: 0.01 Micron	MSP-95-502 MXP-95-502 MTP-95-562
35F: 0.01 Micron	MSP-95-502 MXP-95-502 MTP-95-562 MSP-95-876
35F: 0.01 Micron 35F: 1.0 Micron 35F: Adsorber 43F: 0.01 Micron 43F: 1.0 Micron	MSP-95-502 MXP-95-502 MTP-95-562 MSP-95-876

### **Specifications**

Maximum Supply Pressure -

	n Pressure Gauge250 PSIG (17.2 bar)* 150 PSIG (10.3 bar)
Operating Temperatu	re32° to 150°F (0° to 65.5°C)
Port Size -	
	1-1/2, 2 Inch 3 Inch
Standard Filtration* –	Micron
Weight -	
	of 70°F (21°C) @100 PSIG (6.9 bar) with typical oil and protected by 0.01 micron filter.
Materials of C	onstruction
Body	Aluminum
Bowls	Aluminum
	0.01 & 1.0 MicronBorosilicate Cloth AdsorberActivated Carbon
Seals	Fluorocarbon
Stud	Plated Steel
Seals	Fluorocarbon

Stud......Plated Steel



### **Bulk Liquid Separators – P3TF**



P3TFA98WEAN

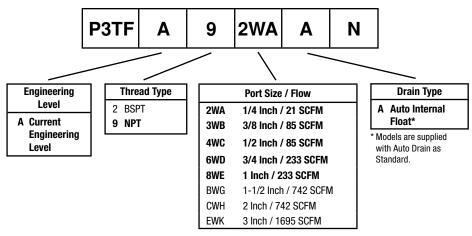
### **Features**

- Tested in Accordance with ISO 8573.9.
- High Liquid Removal Efficiencies at All Flow Conditions.
- Low Pressure Losses for Low Operational Costs.
- Multiple Port Sizes for a Given Flow Rate Provides Increased Flexibility During Installation.
- Suitable for Variable Flow Compressors.
- Works with All Types of Compressor and Compressor Condensate.
- Low Maintenance.
- Lightweight Cast Aluminum Housing with 1/4" to 3" Ports.
- External Surface Epoxy Painted for Maximum Corrosion Resistance.

### **Applications**

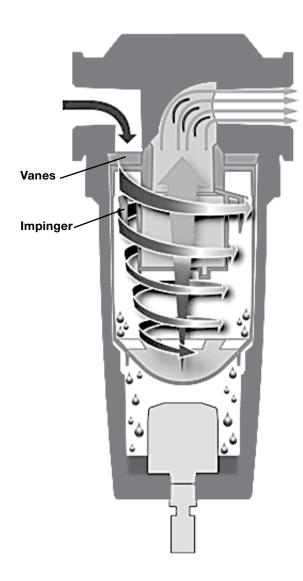
- Bulk Liquid Removal at Any Point in a Compressed Air System
- Protection of Refrigeration and Heatless Regenerative Desiccant Dryers
- Liquid Removal from Compressor Inter-coolers / After-coolers
- Liquid Separation Within Refrigeration Dryers
- Pre-Filtration

### **Ordering Information**





### Bulk Liquid Separators P3TF Series



### **Operation**

- Air Enters the Bulk Liquid Separator Inlet and Turns Into the Separator Module.
- The Inlet of the Separator Module Contains a Set of Fixed Vanes Which the Air Must Pass Through.
- The Vanes Force the Air to Spin Inside the Vessel.
- The Spinning Air is Then Forced to Change Direction as it Passes the Impinger.
- A Vortex is Created Which, Due to the Design of the Separator Module, Narrows and Intensifies as it Reaches the Lower Part of the Separator Module.
- Bulk Liquid is Removed From the Airstream Due to:
  - Directional Changes of the Airstream
  - Velocity Changes
  - Centrifugal Action of the Vortex
- As the Vortex Reaches the Bottom of the Module, Air is Forced Through The Center of the Vortex.
- Aerospace Turning Vanes, Located in the Outlet of the Separator Module, Turn an Inefficient Corner Into a Number of More Efficient Corners.
- Turning Vanes Reduce Turbulence, Minimizing Pressure Loss and Cost of Ownership.
- The Number of Vanes Required is Dependent Upon the Conduit Diameter.



### **Bulk Liquid Separators – P3TF**

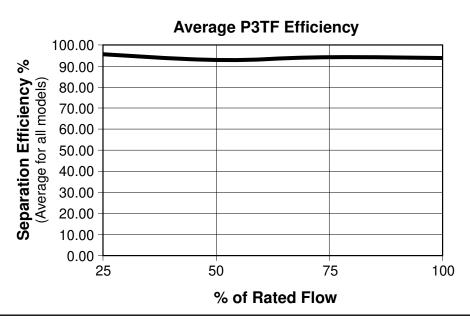
### **Specifications**

Pressure Differential at Rated Flow..... 1.0 PSID (0.07 bar)

Model Number	Pipe Size	SCFM (L/s)	Maximum Operating Pressure psig (bar)	Operating Temperature	Weight Lb. (kg)
P3TFA92WAAN	1/4"	21 (10)			0.9 (0.4)
P3TFA93WBAN	3/8"	85 (40)			2.2 (1.0)
P3TFA94WCAN	1/2"	85 (40)		-	2.2 (1.0)
P3TFA96WDAN	3/4"	233 (110)	232 (16)	Maximum 176°F (80°C)	4.8 (2.2)
P3TFA98WEAN	1	233 (110)	232 (10)	Minimum 35°F (1.5°C)	2.6 (5.7)
P3TFA9BWGAN	1-1/2"	742 (350)		5.3 (11.6)	
P3TFA9CWHAN	2"	742 (350)			5.3 (11.6)
P3TFA9EWKAN	3"	1695 (800)			12.0 (26.4)

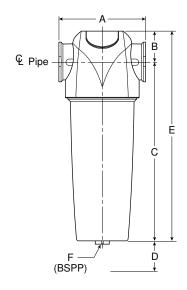
Stated flows are for operation at 102 psig (7 bar) with reference to  $20^{\circ}$ C, 1 bar (a),  $0^{\circ}$  relative water vapor pressure.

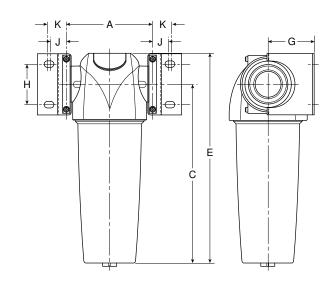
### **Flow**





### **Technical Specifications – P3TF Series**





### **Dimensions**

Model Number	Wall Mounting Bracket Kit	Pipe Size	Α	В	С	D	E	BSPP F	G	Н	J	К
P3TFA92WAAN	P3TKA00MWA	1/4"	3.00 (76)	1.12 (28.5)	6.02 (153)	1.58 (40)	7.15 (181.5)	1/2	2.05 (50)	1.18 (30)	0.71 (18)	0.96 (24.5)
P3TFA93WBAN	P3TKA00MWB	3/8"	3.83 (97.5)	1.34 (34)	7.91 (201)	1.97 (50)	9.25 (235)	1/2	2.36 (60)	1.57 (40)	0.81 (20.5)	1.00 (25.5)
P3TFA94WCAN	P3TKA00MWB	1/2"	3.83 (97.5)	1.34 (34)	7.91 (201)	1.97 (50)	9.25 (235)	1/2	2.36 (60)	1.57 (40)	0.81 (20.5)	1.00 (25.5)
P3TFA96WDAN	P3TKA00MWD	3/4"	5.07 (129)	1.67 (42.5)	13.09 (232.5)	2.76 (70)	10.80 (275)	1/2	2.68 (68)	2.36 (60)	0.91 (23)	1.10 (28)
P3TFA98WEAN	P3TKA00MWD	1	5.07 (129)	1.67 (42.5)	12.68 (322)	2.76 (70)	14.35 (364.5)	1/2	2.68 (68)	2.36 (60)	0.91 (23)	1.10 (28)
P3TFA9BWGAN	P3TKA00MWF	1-1/2"	6.70 (170)	1.97 (50)	18.68 (474.5)	3.94 (100)	20.64 (524.5)	1/2	3.62 (92)	3.31 (84)	1.26 (32)	1.54 (39)
P3TFA9CWHAN	P3TKA00MWF	2"	6.70 (170)	1.97 (50)	18.68 (474.5)	3.94 (100)	20.64 (524.5)	1/2	3.62 (92)	3.31 (84)	1.26 (32)	1.54 (39)
P3TFA9EWKAN	P3TKA00MWJ	3"	8.07 (205)	2.36 (60)	30.39 (772)	4.72 (120)	32.76 (832)	1/2	5.31 (135)	3.94 (100)	1.40 (35.5)	1.67 (42.5)

Inches (mm)

### **Bulk Liquid Separator Kits & Accessories**

### **Materials of Construction**

Automatic Float Drain	Plastic
Housing / Bowl	Aluminum
Seals	Fluorocarbon

For External Drains, please reference WDV3-G **Automatic Electrical Drain or ED Zero Loss Drain** 



Wall Mounting Bracket Kit
Mounting brackets provide additional support to filters installed in flexible piping systems or OEM equipment.



### **DD Desiccant Dryers**



### **Features**

- These desiccant dryers are a convenient and cost effective means of ensuring your sensitive pneumatic applications are never exposed to damaging moisture
- Compact size for point-of-use applications
- Drying efficiency down to -40°F pressure dew point
- Easily and quickly serviced
- · Sightglass in bowl to monitor desiccant
- Built-in particulate after filter prevents downstream dust
- No electricity needed
- Low pressure drop
- · No purge air lost as with other dryer types

### **Applications**

- Paint spraying
- Instrument air
- Laboratory instruments
- · Control air systems
- Air blanketing

Port Size	15 SCFM	30 SCFM	60 SCFM
Desiccant Capacity <sup>1</sup>	2.5 lb <sup>1</sup>	5 lb.¹	10 lb.1
1/4" 2	DD15-02	N/A	N/A
3/8" <sup>2</sup>	DD15-03	N/A	N/A
1/2" 2	DD15-04	DD30-04	DD60-04
3/4"	DD15-06	DD30-06	DD60-06
1"	N/A	DD30-08	DD60-08

### Notes:

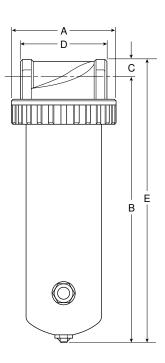
- 1. Desiccant must be ordered separately
- 2. These units supplied with reducer bushings

### **Performance**

The rated flow capacities are nominal ratings provided for reference. These capacities are recommended for minimal pressure drop and average desiccant life. A supply of low flow / low humidity air will provide longer desiccant life: whereas, high flow / high humidity air will require more frequent desiccant changes. Installed in an application with intermittent flow, these desiccant dryers will typically dry air for weeks before the silica gel desiccant requires replacement or regeneration.

### **BOLD ITEMS ARE MOST POPULAR.**





	DD Desiccant Dryer Dimensions						
DD15	<b>A</b> 4.94 (125)	<b>B</b> 12.69 (322)	<b>C</b> .84 (21)	<b>D</b> * 4.06 (103)	E 13.5 (343)		
DD30	<b>A</b> 4.94 (125)	<b>B</b> 22.44 (570)	<b>C</b> .84 (21)	<b>D</b> * 4.06 (103)	<b>E</b> 23.25 (591)		
DD60	<b>A</b> 4.94 (125)	<b>B</b> 29.44 (748)	<b>C</b> .84 (21)	<b>D</b> * 4.06 (103)	<b>E</b> 30.25 (768)		

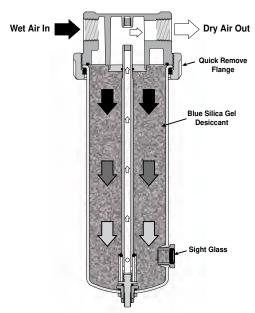
 $<sup>^{\</sup>star}$  Dimension does not include reducer bushings for 1/4", 3/8", 1/2" versions

inches (mm)

### **Technical Specifications - DD Series**

As the wet compressed air enters through the inlet, the air travels down through the bed of desiccant which adsorb the water vapor and aerosols. The silica gel desiccant beads will reduce the humidity down to a -40°F pressure dew point. After the moisture has been removed, the dry air passes through a sintered bronze filter element (eliminating dust downstream), up the tube and out the outlet port.

As the desiccant becomes saturated with moisture, the dew point will begin to rise. This is evident when the blue silica gel desiccant beads in the sight glass change to pink, indicating the need for desiccant replacement. Simply remove the flange and bowl and replace with new desiccant or regenerate saturated desiccant by heating to 275°F.



### **Desiccant Dryers Kits & Accessories**

Desiccan	t - Environmentally Friendly Silica Gel
100% Indi	icating –

DD30	
DD60	DRP-14-447/012
low Tube Repair Kit (Tube, Filter	Element(s), Adaptor)

### FI

DD15	RKDD15-02-06
DD30	RKDD30-03-08
DD60	RKDD60-03-08
DD00	

### Mounting Brackets (Recommended for DD15 & DD30 only) -

1/4 Inch Pipe Size (Pair of Pipe Mounted Brackets) ... SA200YW57 1 Inch Pipe Size (Pair of Pipe Mounted Brackets)...... SA200CW57

### Spring Check Valve for Inlet (250 PSIG max.) -

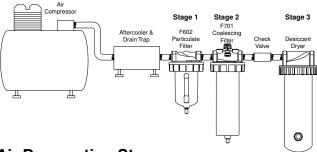
(Maximizes Life of Desiccant)	
1/4 Inch NPT	003393001
3/8 Inch NPT	003393002
1/2 Inch NPT	003393003
3/4 Inch NPT	003393004

### **Specifications**

Desiccant Capacity (Desiccant m	ust be ordered separately) –
DD15	2.5 lb.
DD30	5 lb.
DD60	10 lb.

### **Installation Tips**

- Always place a moisture separator/particulate filter (i.e., F602) to remove bulk moisture and a coalescing filter (i.e., F701) to remove oil upstream of desiccant dryer. Desiccant coated with oil will not adsorb oil.
- Automatic drains should be used in prefilters
- A spring ball check valve should be installed at the dryer inlet to maximize the life of the desiccant.



### Air Preparation Stages

Stage	Type of Filter	Example	Function Served in Compressed Air System
1	Particulate / Moisture Removal Filters	F602	Removes bulk moisture & particulate matter <sup>1</sup>
2	Coalescing Filters	F701	Removes fine particulate matter, moisture droplets and aerosols, but NOT vapor <sup>2</sup>
3	Desiccant Dryer	DD15, DD30, DD60	Removes moisture vapor <sup>3</sup>

- 1. Removes approx 75% of moisture
- 2. Removes approx 99.97% efficient in removing oil & water aerosols >.01 micron
- 3. Provides pressure dew point of -40° F with unsaturated desiccant

### Filter Element Rating -DD15, DD30 ......90 micron

Pressure & Temperature Ratings -	
Optimum working temperature	Below 100° F
Pressure Range	0 to 300 PSIG
Temperature Range	32°F to 180°F
Weight (Housing Only) -	
DD15 (add 2.5 lb for weight full)	8 lb.
DD30 (add 5 lb for weight full)	13 lb.
DD60 (add 10 lb for weight full)	20 lb

### Materials of Construction

### Bowl -

DOW	
DD15, DD30	Aluminum
DD60	Steel
Flow Tube	CPVC
Filter Elements	Sintered Bronze
Head & Flange Ring	Zinc
Other Hardware	Brass
Seals	Buna-N
Sight Glass	Glass & Steel



### Regulators

### Regulation

An air regulator is a specialized control valve. It reduces upstream supply pressure level to a specified constant downstream pressure.

Pneumatic equipment that is operated at higher-thanrecommended pressure wastes the energy to generate that pressure. It creates a potential safety hazard, and probably will wear out prematurely. Operating below specified pressure can cause the machine to fail to meet design performance specifications. Therefore, precise air pressure control is essential to efficient operation of air-powered equipment.

### **How to Select the Proper Regulator**

While regulator bodies are generally constructed of die-cast metal, other external parts may be either metal or plastic. Remember that all-metal construction is best for tough applications, where abuse is likely to occur, but plastic construction is generally lower in cost. For normal industrial applications, either construction is suitable.

Inlet pressure rating and downstream controlled range, as well as flow capacity, must be determined before selecting a regulator. Port size should match piping size.

Required response time, relieving capability, and type of adjustment are other considerations. Highly sensitive, lightweight diaphragm sensors vs. the slower, but often more durable, piston sensors. Self-relieving vs. non-relieving regulators. T-Handles or knobs as the adjustment mechanism, or air pilot operated regulator which offer remote adjustment. Other choices to be made include gauge, panel mount and other special options.

### **Regulator Construction**

Regulators are generally constructed using a die-cast metal body. Other external parts, such as the spring cage and bottom plug, may be either metal or plastic. All-metal construction offers more durability in tough applications where abuse is likely to occur, while the plastic construction offers lower cost. For normal industrial applications (temperature range of 40° to 120° F and supply pressure to 300 PSIG), either construction will serve well.

Lightweight diaphragm sensors offer quick response and high sensitivity to air pressure changes. Piston sensors are somewhat slower but may be more durable. Where downstream pressure requirements change rapidly enough to cause regular chatter, slower response may be an advantage.

If the self-relieving feature is not needed for an application, simpler non-relieving regulators are available.

For regulators with an adjustment spring, a -T-Handle or knob provides the external link to the spring on various models.

Pilot-operated regulators substitute air pressure in the chamber above the sensor to provide the reference force.

Remote adjustment through a separate pilot regulator thus becomes possible, or the pilot signal can be fed back from a downstream location for precise control.

The balanced inner valve design exposes both sides of the inner valve to essentially the same pressure. This eliminates much of the effect that changes in inlet pressure might have on inner valve position and orifice opening.

### **Regulator Operation**

In a typical regulator, an inner valve sets the size of an orifice which connects inlet port to outlet port. The sensing element, often a diaphragm or piston mechanically linked to the inner valve, reacts to downstream pressure and a reference force to position the inner valve. The reference force can be a spring, or an air pilot chamber.

The valve is normally open. High pressure air enters and flows through the orifice toward the outlet. Downstream pressure is connected through an aspirator tube to the bottom of the diaphragm. As downstream pressure increases, the diaphragm is forced upward, compressing the adjustment spring. When the diaphragm moves, the inner valve spring pushes the inner valve disc upward to throttle the orifice. If downstream pressure exhausts, the mechanical sequence reverses and the inner valve disc opens the orifice until the set pressure is reached again.

The arrangement of separate diaphragm chamber and aspirator tube accomplishes two purposes. First, the diaphragm is moved out of the potentially abrasive air stream. Second, and more important, if the downstream system calls for high flow, this flow generates a low pressure venturi effect at the end of the aspirator tube and into the diaphragm chamber. The diaphragm therefore reacts more quickly to open the orifice via the inner valve, thereby improving response time to high flow demands.

Some circuits may be subject to downstream-generated high pressure (from high temperatures or heavy vertical loads on cylinders, for example). This high pressure is reduced by a self-relieving feature built into the regulator. The inner valve stem normally blocks a relieving orifice in the center of the diaphragm. If excessive pressure lifts the diaphragm off the stem, air bleeds through the orifice and out the spring cage vent until the system returns to the set pressure.

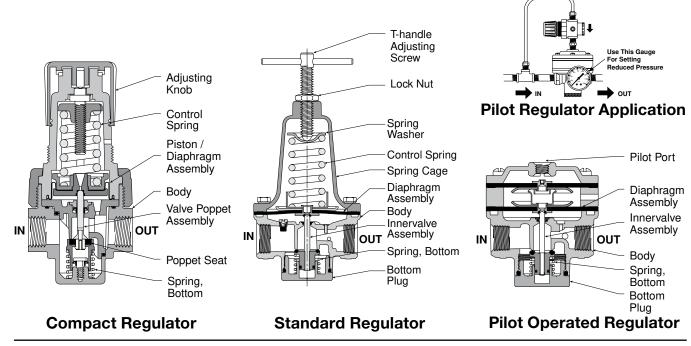


### **General Information**

### Regulators

### **Regulator Comparison Chart**

		Hiç	gh Precision Regulat	ors	Precision Regulator	Standard Regulator
	Examples $\rightarrow$	R210	R220	R230	R216	R10, R11, R119
Repeatability / Sensitivity	Regulator's ability to return to a set	0.005 PSIG	0.005 PSIG	0.010 PSIG	0.5 to	2 to
	pressure after inducing flow.	1/8" Water Column	1/8" Water Column	1/4" Water Column	1.0 PSIG	4 PSIG
Reduced	This refers to the regulator's ability	Best	Best	Better	Good	Average
Pressure	to maintain a consistent output					
Variation	pressure when faced with variables					
	such as time, cycling, temperature, supply pressure, flow, etc.					
Input Pressure	Unregulated air pressure going into the regulator	150 PSIG Max.	150 PSIG Max.	250 PSIG Max.	Varies	Varies
Effect of Supply	Reduced / set pressure variation	0.020 PSIG	0.020 PSIG	0.100 PSIG	4 PSIG	Approx.
Pressure Variation	when input pressure changes by					3 - 6 PSIG
on Regulated Pressure	100 PSIG					
Reduced Pressure	Reduced pressure ranges available	2-40 PSIG	2-120 PSIG	0-2 PSIG	Varies	Varies
Range		2-120 PSIG		0-30 PSIG		
				0-60 PSIG		
				0-150 PSIG		
Flow Capacity	Regulator's flow capacity	14 SCFM	14 SCFM	80 SCFM	Varies	Varies
Exhaust (Relief) Capacity	Regulator's exhaust/relief flow	3 SCFM	11 SCFM	4 SCFM	Low	Low
	rating when backpressure is					
	introduced from downstream	<b>.</b> .	<u> </u>	<b>5</b>	0 1	
Overpressure to Relieve	Regulator's sensitivity to relieve	Best	Best	Better	Good	Average
*Key in cylinder applications	excess downstream pressure over the set pressure.	(0.005 PSIG)	(0.005 PSIG)	(0.010 PSIG)	(1 PSIG)	(5-10 PSIG)
Constant Bleed	Does the regulator constantly bleed	Yes	Yes	Yes	Varies	No
	air to the atmosphere to maintain					
	accuracy?					
Size Constraints	Overall size of regulator	4.5" H x 2.06" W	4.5" H x 2.06" W	5.5" H x 3" W	Varies	Varies
Mounting Constraints	Mounting options	Panel, Pipe,	Panel, Pipe,	Panel, Pipe,	Panel, Pipe,	Varies
		or Bracket	or Bracket	or Bracket	Bracket, or	
					Modular	
Port Size	Inlet / Outlet port size	1/4"	1/4"	1/4" or 3/8"	Varies	Varies



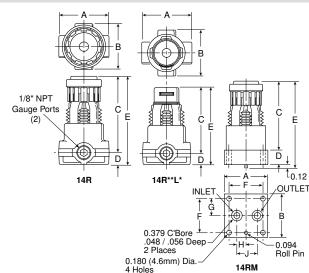


### 14R Regulators - Miniature



### **Features**

- · Unbalanced poppet standard
- Solid control piston with lip seal for extended life
- · Non-rising adjusting knob
- Compact, 2.88 Inch (73.2mm) high by 1.65 Inch (42mm) wide
- · Easily serviced
- High flow: 1/8" 13 SCFM§ 1/4" – 15 SCFM§



Port Size	NPT
Without Gaug	е
1/8"	14R013F*
1/4"	14R113F*
With Gauge	
1/8"	14R018F*
1/4"	14R118F*

### **Bold Items are Most Popular.**

For other models refer to ordering information below.

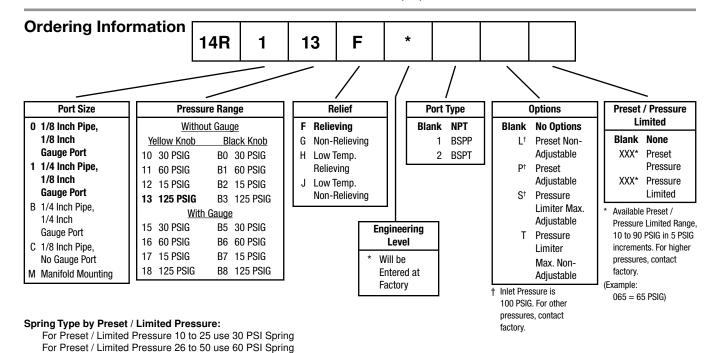
NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

For Preset / Limited Pressure 51 to 90 use 125 PSI Spring

14R Regulator Dimensions					
14R	<b>A</b> 1.65 (42)	<b>B</b> 1.56 (40)	<b>C</b> 2.50 (63,5)	<b>D</b> .38 (10)	<b>E</b> 2.88 (73)
14R**L*	<b>A</b> 1.65 (42)	<b>B</b> 1.56 (40)	<b>C</b> 2.28 (57,9)	<b>D</b> .38 (10)	<b>E</b> 2.68 (68)
14RM	<b>A</b> 1.50 (38)	<b>B</b> 1.50 (38)	<b>C</b> 2.36 (60)	<b>D</b> .50 (13)	<b>E</b> 2.98 (73)
14010	<b>F</b> 1.188 (30)	<b>G</b> .594 (15)	<b>H</b> .325 (8)	<b>J</b> .725 (18)	

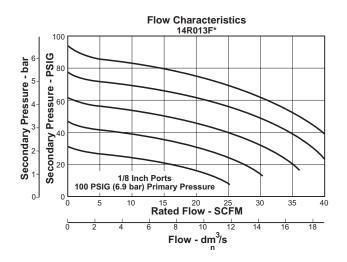
Inches (mm)

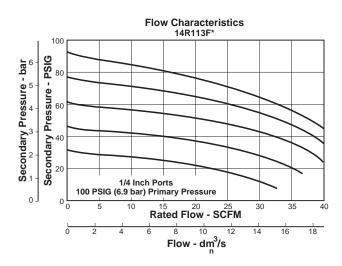




### Technical Specifications – 14R Air Line Regulators

### **Technical Information**





### **⚠ 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.

### 14R Regulator Kits & Accessories

Bonnet Assembly Kit	L01369
Gauges - 30 PSIG, 1/8" NPT (0 to 2.1 bar)	K4515N18030
60 PSIG, 1/8" NPT (0 to 4.1 bar)	
160 PSIG, 1/8" NPT (0 to 11.0 bar)	K4515N18160
60 PSIG, 1/4" NPT (0 to 4.1 bar)	K4520N14060
160 PSIG, 1/4" NPT (0 to 11.0 bar)	K4520N14160
Mounting Bracket Kit* (Includes Panel Mount Nut)	PS417B
Panel Mount Nuts* - Plastic	P78652
Metal	P01531
Poppet / Piston Kits - Unbalanced Non-Relieving.	PS428
Unbalanced Relieving	PS426
Springs - 1-15 PSIG Range (Yellow)	P01176
1-30 PSIG Range (Black)	P01175
1-60 PSIG Range (White)	P01174
2-125 PSIG Range (Gold)	

\*Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.

### **Specifications**

(Can be used for Full Flow)	
Port Threads	1/8, 1/4 Inch
Pressure & Temperature Ratings 32°F to 125°F (0°C to 52°C)	0 to 300 PSIG (0 to 20.7 bar)
Secondary Pressure Ranges –	
Standard Pressure	2 to 125 PSIG (0 to 8.6 bar)
Medium Pressure	1 to 60 PSIG (0 to 4.1 bar)
Medium Pressure	1 to 30 PSIG (0 to 2.1 bar)
Low Pressure	1 to 15 PSIG (0 to 1 bar)
Weight - 14R, 14RM, 14**L*	

### **Materials of Construction**

Adjusting Nut	Brass
Adjusting Stem & Spring	Steel
Body	Zinc
Bonnet, Seat, Piston & Valve Poppet	Plastic
Seals	Nitrile



### 1/8", 1/4" - Basic 1/8" Body

### R34 Regulators – Miniature



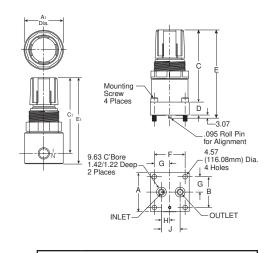


### **Features**

- · Diaphragm operated for fast operation
- · Large Diaphragm to valve area ratio for precise regulation and high flow capacity
- · Balanced valve design for precise regulation
- · Available in 2 or 4 port design
- · Available with a manifold mount to minimize plumbing
- Suitable for low temperature applications
- · Non-rising adjusting knob
- 1/8" 17 SCFM\*
- 1/4" 19 SCFM\*



R344-02C R342-0MC



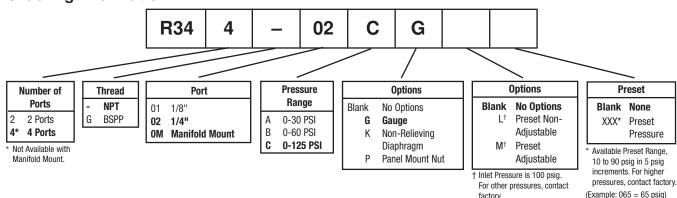
R	R34 Miniature Regulator			
	Di	mensio	ns	
Α	<b>A</b> 1	В	B1	С
1.50	1.54	1.188	1.56	2.75
(38.1)	(39.2)	(30.18)	(39.6)	(69.9)
C <sub>1</sub>	D	E	E <sub>1</sub>	F
2.70	.50	3.25	3.25	1.20
(68.6)	(12.7)	(82.6)	(82.6)	(30.5)
G	Н	J		
.60	.32	.73		
(15.2)	(8.1)	(18.5)		

Model	Port Size	Without Gauge	Without Gauge	Without Gauge	With Gauge	With Gauge	With Gauge
Туре	Port Size	0 to 30 psig (0.0 to 2.1 bar)	0 to 60 psig (0.0 to 4.1 bar)	0 to 125 psig (0.0 to 8.6 bar)	0 to 30 psig (0.0 to 2.1 bar)	0 to 60 psig (0.0 to 4.1 bar)	0 to 125 psig (0.0 to 8.6 bar)
	1/8"	R344-01A	R344-01B	R344-01C	R344-01AG	R344-01BG	R344-01CG
Relieving	1/4"	R344-02A	R344-02B	R344-02C	R344-02AG	R344-02BG	R344-02CG
	Manifold Mount	R342-0MA	R342-0MB	R342-0MC			

Standard part numbers shown bold.

For other models refer to ordering information below.

### **Ordering Information**

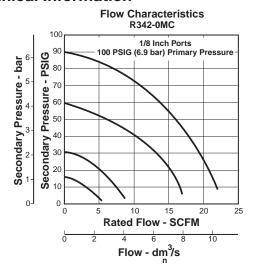


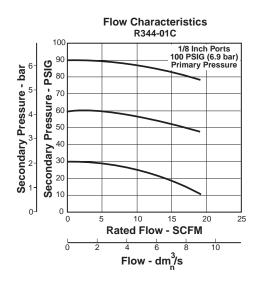


SCFM = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

### **Technical Specifications - R34**

### **Technical Information**





### **A** 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.

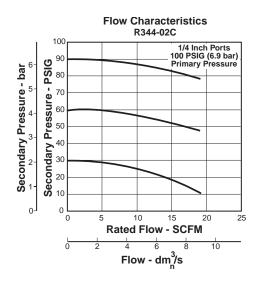
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

### **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.



### **R34 Regulator Kits and Accessories**

Diaphragm Assembly – Non-relieving				
<b>Spring, Regulating</b> – 0 to 30 psig (0 to 2.1 bar)				
Panel Mount Nut –         Aluminum         R05x51-A           Plastic         R05x51-P				
Mounting Bracket Kit - (Includes Panel Mount Nut)SA161x57				
Gauges - 0 to 60 psig (0 to 4.1 bar), 1-1/2" Dial Face, 1/8 NPT, CBM				
Tamperproof Knob KitP31KB00AT				

### **Materials of Construction**

Bonnet	Acetal
Diaphragm & Seals	Nitrile
Valve Assembly	Brass
Springs	Steel
Panel Nut	Acetal
Specifications	
Operating Temperature40° F to 150°F (-40° C to	65.5°C)
Supply Pressure	20.4 bar)
Port Threads1/8,	1/4 Inch
Gauge Ports (2) Std	1/8 Inch

Body......Aluminum



......25 lbs. (0.11 kg)

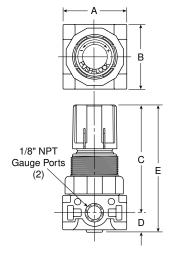
(No Gauge Port Version Available)

## R24, R25 Regulators - Miniature (Air / Water Service)



### **Features**

- · Lightweight plastic body
- Constructed with a combination of N.S.F. and F.D.A. approved materials
- Unbalanced poppet standard
- · Non-rising, push-to-lock adjusting knob
- Compact, 3.10 inch (79mm) high by 1.60 inch (41mm) wide
- · Lightweight
- · Diaphragm operated



	NPT		
Port Size	Air Service Relieving	Water Service Non-Relieving	
	Relieving, 0-125 Reduced Pressure, Without		
1/8"	R25-01C	R24-01CK	
1/4"	R25-02C	R24-02CK	

**Bold Items are Most Popular.** 

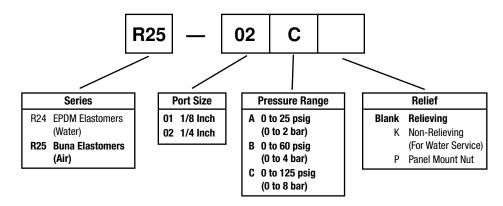
For other models refer to ordering information below.

NOTE: 1.250 Dia. (31.8mm) hole required for panel mounting.

R24, R25 Regulator Dimensions				
A B C 1.60 1.60 2.61 (41) (41) (66)				
<b>D</b> 0.49 (13)	<b>E</b> 3.10 (79)			

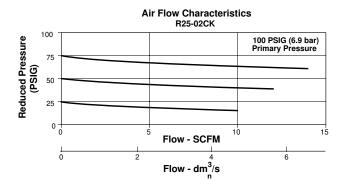
Inches (mm)

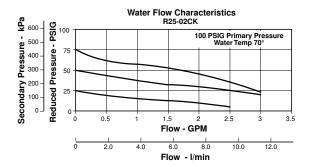
### **Ordering Information**





### **Technical Information**





### **⚠ 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.

### R24, R25 Regulator Kits and Accessories

Plastic ......R05X51-P

Aluminum	R05X51-A
Mounting Bracket and Nut	SA161X57
Service Kits – Relieving (Buna)	RKR25KY RKR24Y
Springs – 0-25 psig Spring 0-60 psig Spring 0-125 psig Spring	SPR-376
Specifications	
Gauge Ports (2)(Can be use	1/8 Inched for full flow)
Pressure Rating – Maximum Inlet Pressure 150 psig	(10.0 bar)
Port Threads	1/8, 1/4 Inch
Temperature Rating40°F to 125°F	(4°C to 52°C)
Weight0.2	25 lb. (0.11 kg)

### **Materials of Construction**

Adjusting Screw	Steel
Body	Acetal
Bonnet and Seat	Acetal
Diaphragm (R25)	Buna N
Diaphragm (R24)	EPDM
Seals (R25)	Buna N
Seals (R24)	EPDM
Springs	Stainless Steel
Valve Poppet (R25)	Buna N
Valve Poppet (R24)	EPDM



Panel Mount Nut -

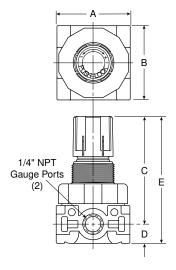
## R45, R46 Regulators - Miniature (Air / Water Service)





### **Features**

- · Lightweight plastic body
- · Constructed with a Combination of N.S.F. and F.D.A. approved materials
- · Unbalanced poppet standard
- · Non-rising, push-to-lock adjusting knob
- · Compact, 3.43 inch (87.1mm) high by 2.06 inch (52.3mm) wide
- · Lightweight
- · Diaphragm operated

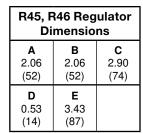


	NPT	
Port Size	Air Service Relieving	Water Service Non-Relieving
Relieving, 0-125 Reduced Pressure, Without Ga		Pressure, Without Gauge
1/4"	R45-02C R46-02CK	
3/8"	R45-03C	R46-03CK

**Bold Items are Most Popular.** 

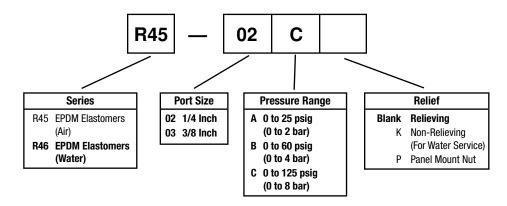
For other models refer to ordering information below.

NOTE: 1.250 Dia. (31.8mm) hole required for panel mounting.



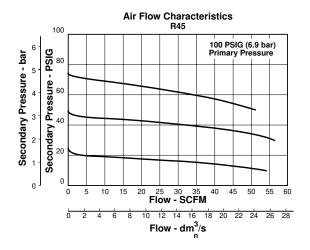
Inches (mm)

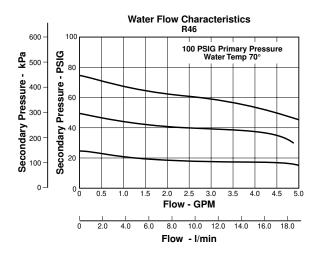
### **Ordering Information**





### **Technical Information**





### **⚠ 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.

### R45, R46 Regulator Kits and Accessories

R05X51
R05X51-A
SA161X57
RKR45Y
RKR45KY
SPR-346
SPR-47
SPR-48
1/4 Inch
Can be used for full flow)
ressure 150 psig(10.0 bar)
1/4, 3/8 Inch
40°F to 125°F (4°C to 52°C)
0.38 lb. (0.17 kg)

### **Materials of Construction**

Steel
Acetal
Acetal
Buna N
EPDM
Buna N
EPDM
Stainless Steel
Buna N
EPDM



### R364, R374 Regulators - Miniature



### **Features**

- · High flow and high sensitivity
- ap
- Ca (nc
- Un
- Dia
- No
- Sta (se
- High

onstant bleed option for semi-precision oplications	В
an be used for water service on-relieving)	
nbalanced poppet standard	
iaphragm operated for fast response	
on-rising adjusting knob	1/8" NPT C C C C C C C C C C C C C C C C C C C
tainless steel version available ee stainless steel section of catalog)	(2)
igh flow: 10 SCFM <sup>§</sup> (Air) 1.25 GPM (Water)	- D

Port Size	NPT
Brass	
1/8"	R364-01C
1/4"	R364-02C
Aluminum	
1/8"	R374-01C
1/4"	R374-02C

Standard part numbers shown bold.

For other models refer to ordering information below.

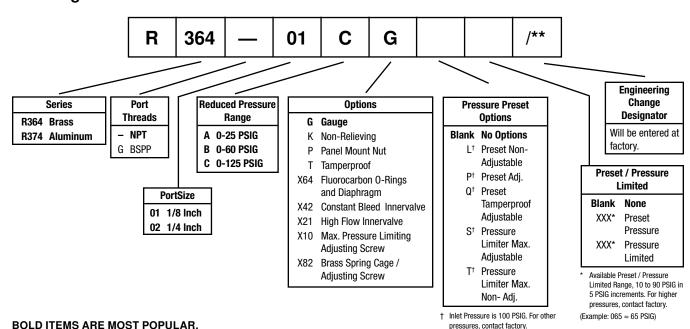
NOTE: 1.250 Dia. (31.8mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 25% pressure drop.

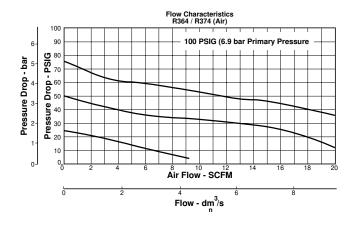
R	364, R3 legulato mensio	r
<b>A</b> 1.56 (39.7)	<b>B</b> 1.56 (39.7)	<b>C</b> 2.56 (65.1)
<b>D</b> 0.50 (12.7)	<b>E</b> 3.06 (77.8)	

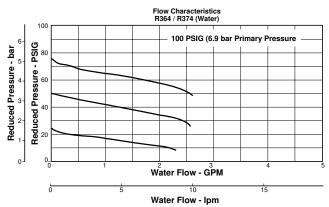
Inches (mm)

### **Ordering Information**



### **Technical Information**





### **⚠ 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.

### R364, R374 Regulator Kits & Accessories

-	•	
Gauges –	1-1/2" Dial Size, 1/8" Back Connection 0 to 60 PSIG (0 to 400 kPa)	K4515N18060
	1-1/2" Dial Size, 1/8" Back Connection 0 to 160 PSIG, (0 to 1100 kPa)	K4515N18160
•	Bracket Kit Panel Mount Nut)	SA161X57
Panel Mou	Int Nut - Plastic	
Spring Ca	ge & Knob	CKR364Y
Spring Ca	ge Kit (Tamperproof)	CKR364T
Non-Rel	d Nitrile – ieving Diaphragm, Valve Assembly	RKR163Y
Relieving	g Diaphragm, Valve Assembly	RKR164Y
	arbon – ieving Diaphragm, Valve Assembly g Diaphragm, Valve Assembly	

### **Specifications**

Gauge Ports (2)	
Port Threads	1/8, 1/4 Inch
Primary Pressure Rating	2 to 125 PSIG (-15 to 8.5 bar)
Supply Pressure	300 PSIG Maximum (20.4 bar)
Temperature Rating	40°F to 125°F (4.4°C to 52°C)
Weight - Brass Body	
Aluminum Body .	

### **Materials of Construction**

Adjusting Screw	Steel
<b>Body</b> – R364	
Springs – Adjusting	Stainless Steel
Spring Cage	Acetal
Bottom Plug, Innervalve, Diaphragm Buttom	Brass



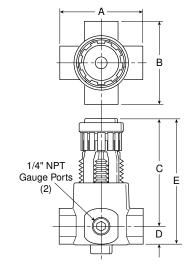
### 15R Regulators - Economy



### **Features**

- Solid control piston with resilient seat for service-free operation
- Non-rising "locking" adjusting knob
- Compact, 3.30 inch (84mm) high by 2.12 inch (54mm) wide
- · Easily serviced
- High flow: 1/4" 21 SCFM§

3/8" - 28 SCFM§



Port Size	NPT
Without Gaug	е
1/4"	15R113F*
3/8"	15R213F*
With Gauge	
1/4"	15R118F*
3/8"	15R218F*

Standard part numbers shown bold.

For other models refer to ordering information below.

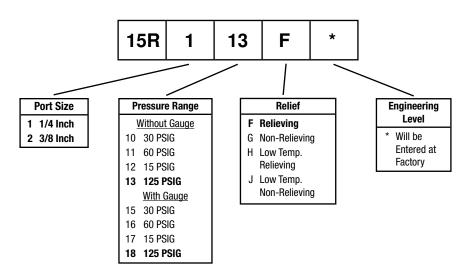
NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

15R Regulator Dimensions			
<b>A</b> 2.12 (54)	<b>B</b> 2.00 (51)	<b>C</b> 2.60 (66)	
<b>D</b> 0.70 (18)	<b>E</b> 3.30 (84)		

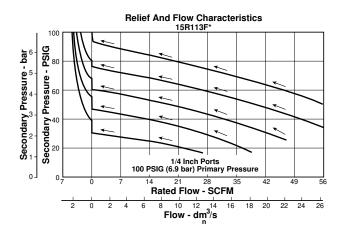
Inches (mm)

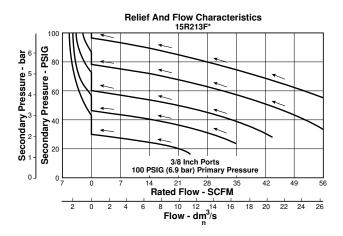
### **Ordering Information**





### **Technical Information**





### **⚠ 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.

### 15R Regulator Kits & Accessories

<b>Body Serv</b>	ice Kit – Unbalanced	PS424B
<b>Bonnet As</b>	sembly Kit	L01369
Gauges –	30 PSIG, 1/8" NPT (0 to 2.1 bar)	. K4515N18060 . K4515N18160
	160 PSIG, 1/4" NPT (0 to 11.0 bar)	
Mounting I	Bracket Kit* (Includes Panel Mount Nut)	PS417B
Panel Mou	nt Nuts* - Plastic	
Service Ki	ts – Non-Relieving	
	1-15 PSIG Range (Yellow)	P01175 P01174

AT				
* I lahten panel	mount nut 2.8 to	3.4 Nm (	25 to 30 in-l	bs) of torque.

### **Specifications**

Gauge Ports (2)(Can be used for Full Flow)	1/4 Inch
Port Threads	1/4, 3/8 Inch
Pressure Ratings	0 to 250 PSIG (0 to 17.2 bar)
Secondary Pressure Ranges –	
Standard Pressure	2 to 125 PSIG (0 to 8.6 bar)
Medium Pressure	1 to 60 PSIG (0 to 4.1 bar)
Medium Pressure	1 to 30 PSIG (0 to 2.1 bar)
Low Pressure	1 to 15 PSIG (0 to 1 bar)
Temperature Ratings	32°F to 125°F (0°C to 52°C)
Low Temperature	4°F to 125°F (-20°C to 52°C)
Weight	0.5 lb. (0.23 ka)

### **Materials of Construction**

Adjusting Nut	Brass
Adjusting Stem & Spring	Steel
Body	Zinc
Bonnet, Seat, Piston & Valve Poppet	Plastic
Seals	Nitrile



# **R10 Regulators – Compact**



### **Features**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Two high flow 1/4" gauge ports can be used as additional outlets
- · Easily serviced
- · Removable non-rising knob for panel mounting and tamper resistance
- High flow: 1/4" -

3/8" -1/2" -

– 53 SCFM§ – 60 SCFM§ – 75 SCFM§					D D
	R	10 Regu	lator Di	mensio	ns
	Α	В	С	D	

Port Size	NPT
Without Gaug	ge
1/4"	R10-0211A*
3/8"	R10-0311A*
1/2"	R10-0411A*
With 160 PSI	Gauge
1/4"	R10-0218A*
3/8"	R10-0318A*
1/2"	R10-0418A*

R10 Regulator Dimensions				
Α	В	С	D	Е
2.81	2.74	4.69	1.39	6.08
(71)	(70)	(119)	(35)	(154)

1/4" NPT Gauge Ports

(2)

inches (mm)

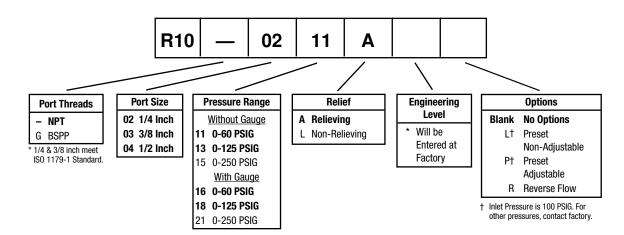
Standard part numbers shown bold.

For other models refer to ordering information below.

NOTE: 2.00 Dia. (51mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

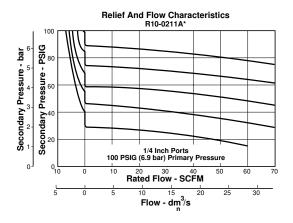
### **Ordering Information**



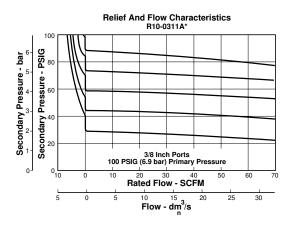


### **Compact Regulators**

### **Technical Information**



(Revised 05-13-14)



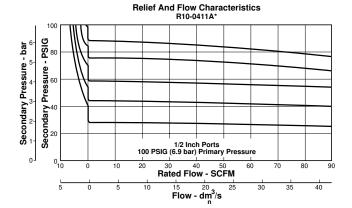
### **⚠ WARNING**

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.



### **R10 Regulator Kits & Accessories**

Bonnet Assembly Kit	PS715
Control Knob	P04069B
Gauges – 2" Dial Face	
60 psig (0 to 4.1 bar)	K4520N14160
1-3/4" Digital Round Face	
160 psig (0 to 11.0 bar)	. K4517N14160D
Mounting Bracket Kit (Includes Panel Mount Nut)	PS707
Panel Mount Nut - Plastic	P04082
Metal	P04079B
Reverse Flow Service Conversion Kit –	
Relieving	PS708R
Service Kit – Relieving (Includes Poppet) Non-Relieving (Includes Poppet)	
Springs – 1-30 psig Range	P04062 P04063
Tamperproof Kit	PS737

### **Specifications**

(Can be used as additional High Flow	1/4 Inch Outlet Ports)
Port Threads 1/4, 3/8, 1/2 Inch Maximum Primary Pressure	
Secondary Pressure Ranges – Standard Pressure Low Pressure High Pressure5	1 to 60 psig (0 to 4.1 bar)
Temperature Rating Low Temperature4	32°F to 175°F (0°C to 80°C) 1°F to 125°F (-20°C to 52°C)
Weight	1.6 lb. (0.7 kg)
Materials of Construction	
Adjusting Stem	Steel
Body	Zinc
Bonnet, Piston Stem, Valve Poppet & C	CapPlastic
Collar, Knob	Plastic
Diaphragm	Nitrile
Seals	Nitrile
Springs - Poppet	

**Gauge Ports (2)** ...... 1/4 Inch



Control......Steel

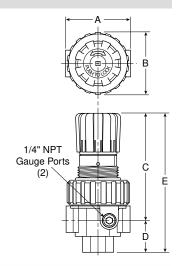
### **Standard R10 Series**

## R10 Regulators – Standard



### **Features**

- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- Rolling diaphragm for extended life
- Two high flow 1/4" gauge ports can be used as additional outlets
- · Easily serviced
- Removable non-rising knob for panel mounting and tamper resistance
- High flow: 3/4" 90 SCFM§



Port Size	NPT
Without Gaug	ge
3/4"	R10-0611A*
With 160 PS	SI Gauge
3/4"	R10-0618A*

 A
 B
 C
 D
 E

 3.24
 2.74
 4.79
 1.61
 6.40

 (82)
 (70)
 (122)
 (41)
 (163)

**R10 Regulator Dimensions** 

inches (mm)

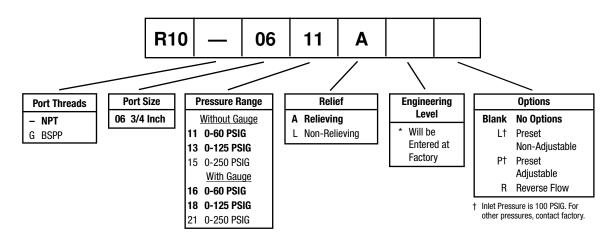
Standard part numbers shown bold.

For other models refer to ordering information below.

NOTE: 2.00 Dia. (51mm) hole required for panel mounting.

§ SCFM = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

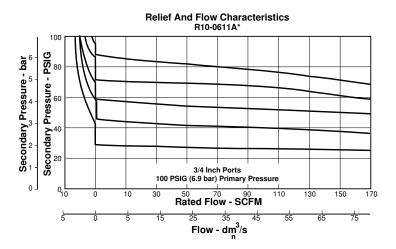
### **Ordering Information**





### **Standard Regulators**

### **Technical Information**



(Revised 05-13-14)

### **⚠ 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.

### **R10 Regulator Kits & Accessories**

D . A	D0745
Bonnet Assembly Kit	PS/15
Control Knob	P04069B
Gauges – 2" Dial Face	K4500NH 4000
60 psig (0 to 4.1 bar) 160 psig (0 to 11.0 bar)	
300 psig (0 to 20.0 bar)	
1-3/4" Digital Round Face	
160 psig (0 to 11.0 bar)	K4517N14160D
Mounting Bracket Kit (Includes Panel Mount N	lut) PS807
Panel Mount Nut - Plastic	P04082
Metal	P04079B
Reverse Flow Service Conversion Kit –	
Relieving	PS808R
Service Kit - Relieving (Includes Poppet)	PS808
Non-Relieving (Includes Poppet)	PS809
Springs - 1-30 psig Range	P01698
1-60 psig Range	P04062
2-125 psig Range	P04063
5-250 psig Range	P04064
Tamperproof Kit	PS737

### **Specifications**

-	
Gauge Ports (2)(Can be used as additional High F	
Port Threads	1/2, 3/4 Inch
Primary Pressure Rating –  Maximum Primary Pressure	250 psig (17.2 bar)
Secondary Pressure Ranges – Standard Pressure Low Pressure High Pressure	1 to 60 psig (0 to 4.1 bar)
Temperature Rating Low Temperature	
Weight	2.5 lb. (1.1 kg)
Materials of Construct	ion
Adjusting Stem	
Bonnet, Piston Stem, Valve Poppe	et & CapPlastic
Collar, Knob	Plastic
Diaphragm	Nitrile
Seals	Nitrile

Springs - Poppet......Stainless

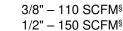


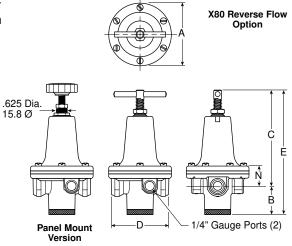
### R119 Regulators – Standard



### **Features**

- · High flow performance featuring rugged design for the most demanding applications
- · Ideal for those installations calling for constant pressure with wide variation
- Diaphragm operated design with balanced poppet design for quick and accurate regulation
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- · Heavy duty tee handle adjustment
- · Reverse flow version available
- · Panel mount version available
- High flow: 1/4" 100 SCFM§





R119 Regulator Dimensions					
Α	В	С	D	E	N
R119-0	2C, R11	9-03C			
3.00 (76)	1.38 (35)	5.29 (134)	2.74 (70.5)	6.67 (169)	.90 (24)
R119-04C					
3.56 (90)	1.56 (40)	5.34 (136)	3.25 (83)	6.90 (175)	1.45 (37)

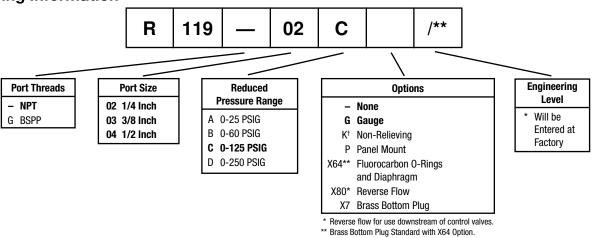
inches (mm)

Port Size	NPT Relieving	BSPP Relieving	
Without Ga	uge 0-125 PSIG Reduced F	Pressure	
1/4"	R119-02C	R119G02C	
3/8"	R119-03C	R119G03C	
1/2"	R119-04C	R119G04C	
With Gauge 0-125 PSIG Reduced Pressure			
1/4"	R119-02CG	_	
3/8"	R119-03CG	_	
1/2"	R119-04CG	_	

Standard part numbers shown bold. For other models refer to ordering information below.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting, and 20 PSIG pressure drop.

### **Ordering Information**



**BOLD ITEMS ARE MOST POPULAR.** 

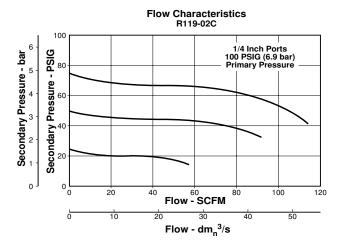


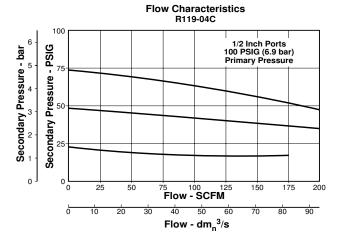
† Not available with 250 PSIG spring

**Standard Regulators** 

### **Technical Specifications - R119**

### **Technical Information**





### 

### $oldsymbol{\Lambda}$ 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.

### **R119 Regulator Kits & Accessories**

Gauges – 2" Dial Face
60 psig (0 to 4.1 bar)
<b>1-3/4" Digital Round Face</b> 160 psig (0 to 11.0 bar)K4517N14160D
Mounting Bracket Kit –
1/4", 3/8"
Panel Mount Conversion Kit –
1/4", 3/8"
Repair Kits – Non-Relieving Diaphragm, Valve Assembly (1/4", 3/8"; All PSIG)RK118Y
Relieving Diaphragm, Valve Assembly (1/4", 3/8"; All PSIG)RK119Y
Non-Relieving Diaphragm, Valve Assembly (1/2"; 25, 60, 125 PSIG)RK118A
Non-Relieving Diaphragm, Valve Assembly (1/2"; 250 PSIG)RK118A250
Relieving Diaphragm, Valve Assembly (1/2"; 25, 60, 125 PSIG)RK119A

Specifications			
For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.			
Spring Cage & Insert Only Kit (1/2)SAC18A3/BK			
Spring Cage & T-Handle Kit (1/4 & 3/8)RKC119Y			
Relieving Diaphragm, Valve Assembly (1/2"; 250 PSIG)RK119A250			

1/4 Inch
1/4, 3/8, 1/2 Inch
2 to 125 PSIG (0.15 to 8.5 bar)
300 PSIG Maximum (20.4 bar)
40°F to 125°F (4.4°C to 52°C)
1.8 lb. (0.82 kg) / Unit
26 lb. (11.79 kg) / 12-Unit Master Pack

Materials of Construction	
Adjusting Screw, Springs	Steel
Body, Spring Cage	Zinc
Bottom Plug	Nylon
Innervalve	Brass
Saala	Puna N



27 lb. (12.25 kg) / 8-Unit Master Pack

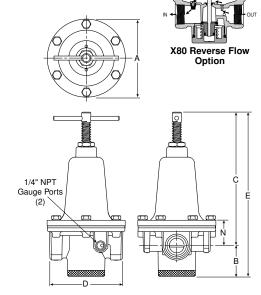
### R119 Regulators - Hi-Flow



### **Features**

- · High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet design for quick and accurate regulation
- · Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- · Heavy duty tee handle adjustment
- Reverse flow version available

• High flow: 3/4" **300 SCFM** 400 SCFM 1-1/4" & 1-1/2" **500 SCFM** 



R119 Regulator Dimensions					
Α	В	С	D	E	N
R119-0	6C, R11	9-08C			
4.69 (119)	1.87 (47)	8.15 (207)	4.38 (111)	10.02 (255)	1.61 (41)
R119-10C, R119-12C					
4.94 (125)	1.81 (46)	8.53 (217)	4.94 (125)	10.34 (263)	1.99 (50.6)

inches (mm)

Port Size	NPT Relieving	
Without Gauge 0-1	25 PSIG Reduced Pressure	
3/4"	R119-06C	
1"	R119-08C	
1-1/4"	R119-10C	
1-1/2"	R119-12C	
With Gauge 0-125 PSIG Reduced Pressure		
3/4"	R119-06CG	
1"	R119-08CG	
1-1/4"	R119-10CG	
1-1/2"	R119-12CG	

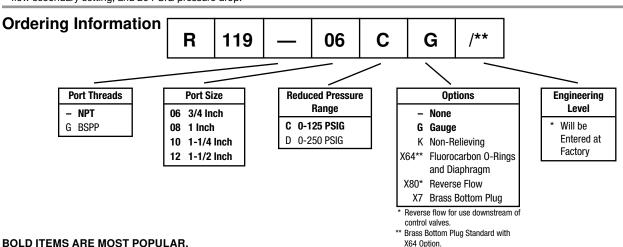
Standard part numbers shown bold.

For other models refer to ordering information below.

§ SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting, and 20 PSIG pressure drop.

### **⚠ WARNING**

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

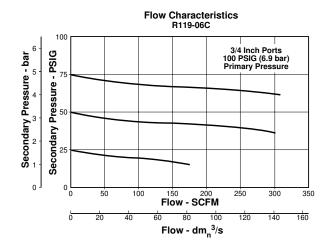


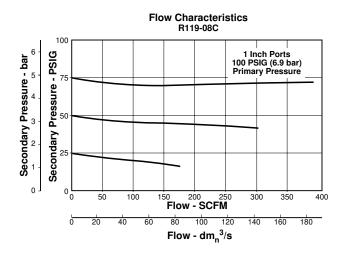


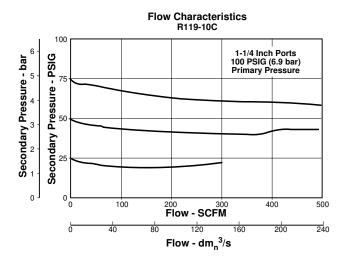
(Revised 05-13-14)

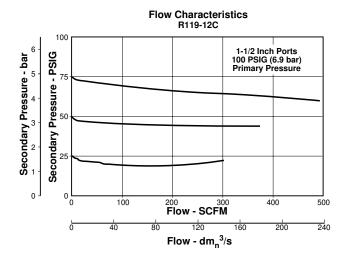
### **Technical Specifications - R119**

### **Technical Information**









### R119 Regulator Kits & Accessories

Gauges – 2" Dial Face
60 psig (0 to 4.1 bar)
160 psig (0 to 11.0 bar)K4520N14160 300 psig (0 to 20.0 bar)K4520N14300
1-3/4" Digital Round Face
160 psig (0 to 11.0 bar)K4517N14160D
Mounting Bracket Kit
Repair Kits –
Non-Relieving Diaphragm, Valve Assembly (3/4", 1")RK118B
Non-Relieving Diaphragm, Valve Assembly (1-1/4", 1-1/2")RK118D
Relieving Diaphragm, Valve Assembly (3/4", 1")RK119B
Relieving Diaphragm, Valve Assembly (1-1/4", 1-1/2")RK119D
For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.

### **Specifications**

Gauge Ports (2)	1/4 Inch
Port Threads	3/4, 1, 1-1/4, 1-1/2 Inch
Reduced Pressure Range	
Supply Pressure	
Temperature Rating	40°F to 125°F (4.4°C to 52°C)
Weight -	
R119-06, R119-08	6.2 lb. (2.81 kg) / Unit
	25 lb. (11.34 kg) / 4-Unit Master Pack
R119-10, R119-12	7.2 lb. (3.27 kg) / Unit
,	29 lb. (13.15 kg) / 4-Unit Master Pack

### **Materials of Construction**

Adjusting Screw, Springs	Steel
Body, Spring Cage	Zinc
Bottom Plug, Innervalve	Brass
Seals	Buna N

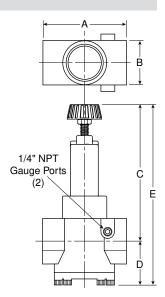


# 09R Regulators - Hi-Flow



### **Features**

- Piston design for reduced downtime
- High flow
- Balanced poppet for quick and accurate regulation
- Two full flow 1/4" gauge ports which can be used as additional outlets
- · Self relieving piston standard
- High flow: 2" 1000 SCFM§



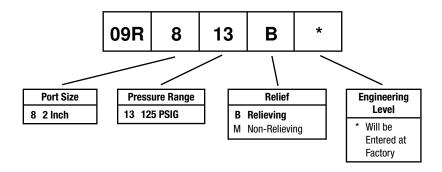
Port Size	NPT
Without Gaug	е
2"	09R813B*

Standard part numbers shown bold. For other models refer to ordering information below.

09R Regulator Dimensions					
Α	В	С	D	E	
5.30	3.60	9.10	2.80	11.90	
(135)	(91)	(231)	(71)	(302)	

Inches (mm)

### **Ordering Information**

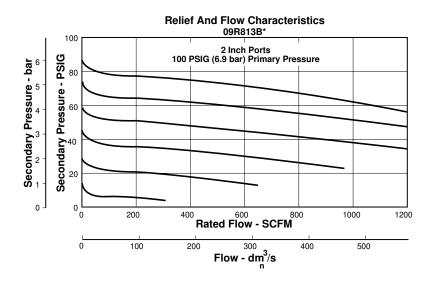




<sup>§</sup> SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

**Hi-Flow Regulators** 

### **Technical Information**



### **⚠ 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.

### 09R Regulator Kits & Accessories

Body Service KitPS603	
Gauges –         2" Dial Face       160 psig (0 to 11.0 bar)	
<b>1-3/4" Digital Round Face</b> 160 psig (0 to 11.0 bar)	
Mounting Bracket Kit PS605	
Service Kit –  Non-Relieving PS604  Relieving PS626	
<b>Springs –</b> 2-125 PSIG Range	

### **Specifications**

Gauge Ports (2)				
Port Threads	2 Inch			
Primary Pressure Rating – Maximum Primary Pressure	250 PSIG (17.2 bar)			
Secondary Pressure Range – 10	to 125 PSIG (0.7 to 8.6 bar)			
Temperature Rating	32°F to 150°F (0°C to 66°C)			
Weight	10.82 lb. (53 kg)			
Materials of Construction				
Adjusting Stem & Springs	Steel			
Body	Zinc Alloy, Die Cast			
Bonnet, Piston Stem, Valve Poppet & Cap Aluminum				

Piston, Cap ...... Plastic

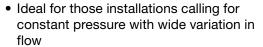


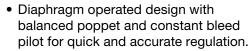
### **R119 – Pilot Operated Regulators**



### **Features**

- Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible
- High flow performance featuring rugged design for the most demanding applications



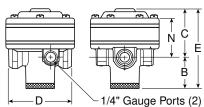


- Secondary aspiration plus balanced poppet provides quick response and accurate pressure regulation
- · Reverse flow available
- High flow: 1/4" 100 SCFM§

3/8" - 110 SCFM§

1/2" - 150 SCFM§





R119 Regulator Dimensions					
Α	В	С	D	E	N
R119-02J, R119-03J					
3.00 (76)	1.38 (35)	1.98 (50)	2.74 (70)	3.55 (90)	1.57 (40)
R119-04J					
3.56 (90)	1.56 (40)	2.33 (59)	3.25 (83)	3.90 (99)	1.91 (49)

inches (mm)

Port Size	NPT Relieving	BSPP Relieving	
Without Gauge 0-125 PSIG Reduced Pressure			
1/4"	R119-02J	R119G02J	
3/8"	R119-03J	R119G03J	
1/2"	R119-04J	R119G04J	

Standard part numbers shown bold.

For other models refer to ordering information below.

§ SCFM = Standard Cubic Feet Per Minute at 100 PSIG Inlet, 75 PSIG No Flow Secondary Setting, and 20 PSIG Pressure Drop.

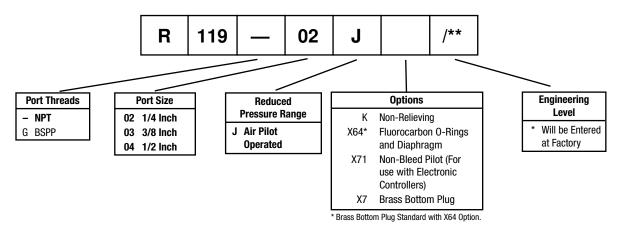
### **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

### **Ordering Information**



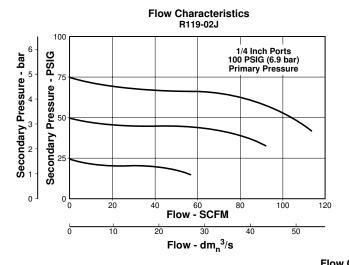


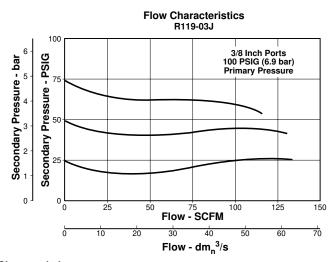
**Pilot Operated Regulators** 

### **Technical Specifications - R119**

### Technical Specifications - NTI

### **Technical Information**





# Flow Characteristics R119-04J 1/2 Inch Ports 1/0 Primary Pressure Primary Pressure 1/2 Inch Ports 1/2 Inch Po

### R119 Regulator Kits & Accessories

Gauges –
2" Dial Face
60 psig (0 to 4.1 bar)K4520N14060
160 psig (0 to 11.0 bar)K4520N14160
300 psig (0 to 20.0 bar)
1-3/4" Digital Round Face
160 psig (0 to 11.0 bar)K4517N14160D
Repair Kits -
Non-Relieving Diaphragm,
Valve Assembly (1/2")RK118X20A
Non-Relieving Diaphragm,
Valve Assembly (1/4", 3/8")RK118X20Y
Relieving Diaphragm,
Valve Assembly (1/2")RK119X20A
Relieving Diaphragm,
Valve Assembly (1/4", 3/8")RK119X20Y
For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.
For Non-Bleed Pilot Repair Kits, add X71 to Kit Number suffix.

### **Specifications**

<b>Gauge Ports (2)</b> 1/4 Inch
<b>Port Threads</b> 1/4, 3/8, 1/2 Inch
Pilot Port –       1/4 & 3/8" Threads       1/8"         1/2" Threads       1/4"
Reduced Pressure Range – Adjustable to within 5 to 7 PSIG of Supply Pressure
Supply Pressure300 PSIG Maximum (20.4 bar)
Air Consumption – Constant bleed from air pilot chamber: approx. 0.17 SCFM (10 SCFH)
Temperature Rating40°F to 125°F (4.4°C to 52°C)
Weight –         R119-02J, R119-03J       1.6 lb. (0.73 kg) / Unit         19 lb. (8.62 kg) / 12-Unit Master Pack         R119-04J       2.6 lb. (1.18 kg) / Unit         21 lb. (9.53 kg) / 8-Unit Master Pack



Body, Ring, Top Plate	Zinc
Bottom Plug	Nylon
Innervalve	Brass
Seals	Buna N



### R119 - Pilot Operated Regulators



### **Features**

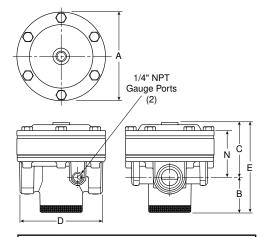
 Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible

(Revised 04-30-13)

- High flow performance featuring rugged design for the most demanding applications
- Ideal for those installations calling for constant pressure with wide variation in flow
- Diaphragm operated design with balanced poppet and constant bleed pilot for quick and accurate regulation
- Secondary aspiration plus balanced poppet provides quick response and accurate pressure rgulation
- Reverse flow version available
- High flow: 3/4" & 1" 300 SCFM§

1-1/4" & 1-1/2" - 500 SCFM§





	R119-06J, R119-08J Pilot Regulator Dimensions				
<b>A</b> 4.72 (120)	<b>B</b> 1.87 (47)	<b>C</b> 2.94 (75)	<b>D</b> 4.38 (111)	<b>E</b> 4.81 (122)	<b>N</b> 2.47 (63)
R119-10J, R119-12J Pilot Regulator Dimensions					
	Pilot	regulato	merוט	ISIONS	

inches (mm)

Port Size	NPT		
Port Size	Relieving		
Without Gauge 0-125 PSIG Reduced Pressure			
3/4"	R119-06J		
1"	R119-08J		
1-1/4"	R119-10J		
1-1/2"	R119-12J		

Standard part numbers shown bold. For other models refer to ordering information below.

§ SCFM = Standard Cubic Feet Per Minute at 100 PSIG Inlet, 75 PSIG No Flow Secondary Setting, and 20 PSIG Pressure Drop.

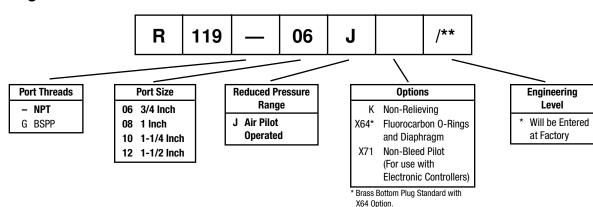
### **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

### **Ordering Information**

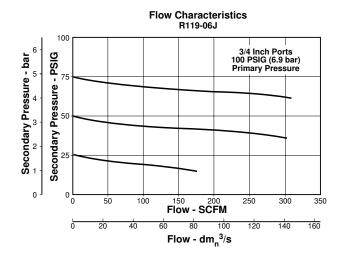


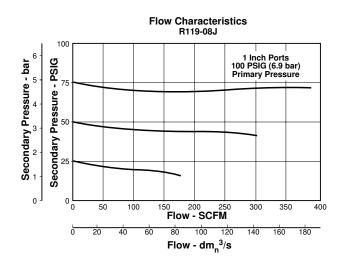


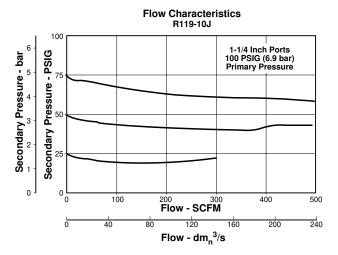
**Pilot Operated Regulators** 

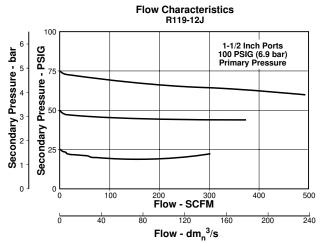
### **Technical Specifications - R119**

### **Technical Information**









### R119 Regulator Kits & Accessories

2" Dial Face		
60 psig (0 to 4.1 bar)	K4520N14160	
300 psig (0 to 20.0 bar)	K4520N14300	
1-3/4" Digital Round Face 160 psig (0 to 11.0 bar)	K4517N14160D	
Repair Kits – Non-Relieving Diaphragm, Valve Assembly (3/4", 1")	RK118X20B	
Non-Relieving Diaphragm, Valve Assembly (1-1/4", 1-1/2")	RK118X20D	
Relieving Diaphragm, Valve Assembly (3/4", 1")	RK119X20B	
Relieving Diaphragm, Valve Assembly (1-1/4", 1-1/2")	RK119X20D	
For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.		

For Non-Bleed Pilot Repair Kits, add X71 to Kit Number suffix.

Specification:	S
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<b>Port Threads</b>
Reduced Pressure Range – Adjustable to Within 5 to 7 PSIG of Supply Pressure
Supply Pressure300 PSIG Maximum (20.4 bar)
Air Consumption –  Constant Bleed from Air Pilot Chamber: Approximately 0.17 SCFM (10 SCFH)
Temperature Rating40°F to 125°F (4.4°C to 52°C)
<b>Weight –</b> R119-06J, R119-08J 5.2 lb. (2.36 kg) / Unit 42 lb. (19.05 kg) / 8-Unit Master Pack
R119-10J, R119-12J 5.6 lb. (2.54 kg) / Unit 46 lb. (20.87 kg) / 8-Unit Master Pack
Materials of Construction

Gauge Ports (2) ......1/4 Inch

### Materials of Construction

Body, Ring, Top Plate	Zinc
Bottom Plug, Innervalve	Brass
Seals	Buna N



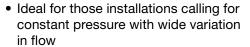
Gauges -

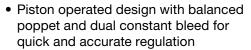
### R119 - Pilot Operated Regulators



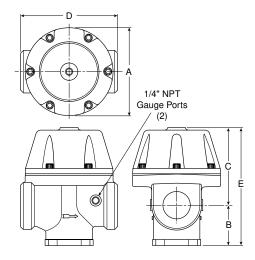
### **Features**

- Adapted for control by a remote or distant small pilot regulator. Ideal for maximum capacity requirements in applications where units are not readily accessible
- High flow performance featuring rugged design for the most demanding applications



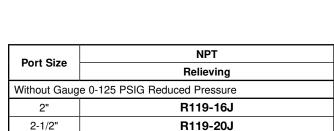


• High flow: 2" & 2-1/2" - 1800 SCFM§



R119-16J, R119-20J Pilot Regulator Dimensions				
Α	В	С	D	E
6.63	3.09	7.78	7.31	10.87
(168)	(79)	(147)	(185)	(276)

inches (mm)



Standard part numbers shown bold.

For other models refer to ordering information below.

§ SCFM = Standard Cubic Feet Per Minute at 100 PSIG Inlet, 75 PSIG No Flow Secondary Setting, and 20 PSIG Pressure Drop.

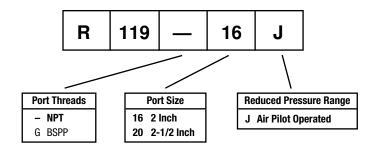
### **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

### **Ordering Information**

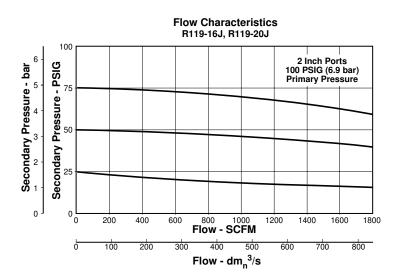


NOTE: Non-Relieving Not Available.



**Pilot Operated Regulators** 

### **Technical Information**



### R119 Regulator Kits & Accessories

Gauges –	
2" Dial Face	
60 psig (0 to 4.1 bar)	K4520N14060
160 psig (0 to 11.0 bar)	K4520N14160
300 psig (0 to 20.0 bar)	K4520N14300
1-3/4" Digital Round Face	
160 psig (0 to 11.0 bar)	K4517N14160D
Repair Kits –	
Piston Type Regulation (2", 2-1/2")	RK119G
Piston & Cylinder Kit	SA119-0291
Cylinder Only Kit	118F29

# **Specifications**

•
Gauge Ports (2)
Port Threads2, 2-1/2 Inch
Reduced Pressure Range – Adjustable to Within 5 to 7 PSIG of Supply Pressure
Supply Pressure300 PSIG Maximum (20.4 bar)
Air Consumption – Constant Bleed from Air Pilot Chamber: Approximately 0.17 SCFM (10 SCFH)
Constant Bleed from Reduced Pressure: Approximately 0.17 SCFM (10 SCFH)
<b>Temperature Rating</b>
Weight – R119-16J, R119-20J

### **Materials of Construction**

Body, Piston	Aluminum
Seals	Buna N
Innervalve	Brass & Stainless



### **General Information**

### Filter / Regulators

- Pipe Sizes 1/8 thru 1-1/2 Inch
- Flows to 200 SCFM
- Pressures to 250 psig

Integral Filter / Regulators are an excellent choice where accurate pressure regulation and high moisture removal efficiency are required in a space saving package.

### Filter / Regulator Selection

- 1. Determine maximum system flow requirements.
- 2. Determine maximum allowable pressure drop at rated flow in SCFM.
- Refer to flow chart and select filter/regulator by choosing the curve that offers minimum pressure drop at desired flow in SCFM.

# Reading Flow Charts to Size Filter / Regulators

Once the required flow is determined for a pneumatic application the regulator or filter/regulator can be selected by using the flow chart. The chart serves two different purposes. To read the flow, use the right side of the chart. To read the relief characteristics use the left side of the chart. When reading the flow chart, first determine the secondary pressure that will be used. Find the appropriate pressure curve on the graph. Given an acceptable pressure drop for an application, follow the flow curve until it intersects the pressure drop point. This will give the flow at that particular pressure drop.

### **⚠ 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.

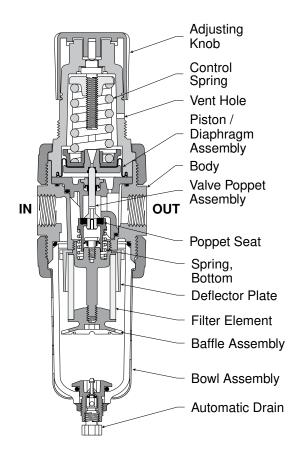
### **Marning**

The plastic material used to manufacture the plastic bowls, and the sight gauge on metal bowls, may be attacked by certain chemicals. Do not use this Ifilter regulator on systems with air supplied by a compressor lubricated with synthetic oils or oils containing phosphate esters or chlorinated hydrocarbons. These oils can carry over into the air lines and chemically attack and possibly rupture the bowl or sight gauge. Also, do not expose the bowl or sight gauge to materials such as carbon tetrachloride, trichlorethylene, acetone, paint thinner, cleaning fluids, or other harmful materials, for they too will cause the plastic to craze and/or rupture. For use in environments where these, or any, chemicals may be present, consult the factory for approval.

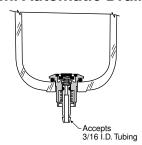


### Filter / Regulators

Turning the adjusting knob clockwise applies a load to control spring which forces the piston / diaphragm and valve poppet assembly to move downward allowing filtered air to flow through the seat area created between the poppet assembly and the seat. "First stage filtration" begins when air pressure supplied to the inlet port is directed through deflector plate causing a swirling centrifugal action forcing liquids and coarse particles to the inner bowl wall and down below the lower baffle to the quiet zone. After liquids and large particles are removed in the first stage of filtration "second stage filtration" occurs as air flows through element where smaller particles are filtered out and retained. The air flow now passes through seat area to the outlet port of the unit. Pressure in the downstream line is sensed below the piston / diaphragm and offsets the load of control spring. When downstream pressure reaches the set-point, poppet valve assembly and piston / diaphragm move upward closing seat area. Should downstream pressure exceed the desired regulated pressure, the excess pressure will cause the piston / diaphragm to move upward opening vent hole venting the excess pressure to atmosphere through the hole in the bonnet. (This occurs in the standard relieving type regulator only.)



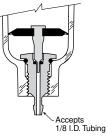
### **Semi Automatic Drain**



### (Overnight Drain)

This drain offers a semi-automatic function when there is a differential pressure in the filter which occurs when system pressure is shut off. The drain can also be used manually by gripping it with your fingertips and pushing upward.

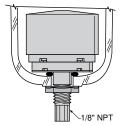
### **Automatic Pulse Drain**



### (Spitter Drain)

The diaphragm in this drain pulses when there is a pressure differential such as a valve cycling or cylinder stroking downstream. This action flexes the diaphragm and allows the filter to drain the entrapped water.

### Automatic Float Drain

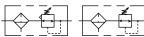


The float internal to this drain rises with increased liquid level. When the float rises, it opens a seat area allowing the trapped liquids to drain through the bottom.

A manual override can be pushed in the bottom of the drain to unseat the float if particulates create a block.

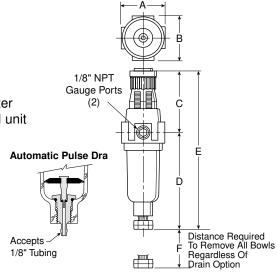


## 14E Filter / Regulator - Miniature



### Features

- Excellent water removal efficiency
- · Unbalanced poppet standard
- · Solid control piston for extended life
- Space saving package offers both filter and regulator features in one integral unit
- Non-rising adjustment knob
- Two full flow 1/8" gauge ports
- High flow: 1/8" 16 SCFM§ 1/4" – 18 SCFM§



Port	NPT	
Size	Twist Drain	Automatic Pulse Drain
Poly Bowl <sup>‡</sup>		
1/8"	14E01B13F*	14E05B13F*
1/4"	14E11B13F*	14E15B13F*
Metal Bowl		
1/8"	14E03B13F*	14E07B13F*
1/4"	14E13B13F*	14E17B13F*

Standard part numbers shown bold.

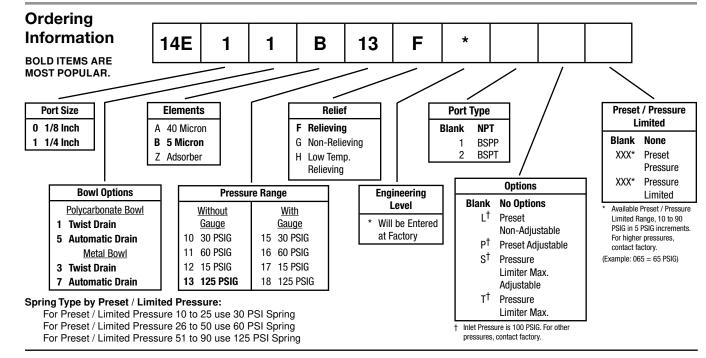
For other models refer to ordering information below.

NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

- ‡ For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet, 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

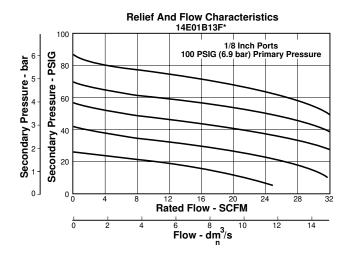
14E Filter / Regulator Dimensions		
<b>A</b> 1.62 (41)	<b>B</b> 1.58 (40)	<b>C</b> 2.42 (61)
<b>D</b> 3.79 (96)	<b>D</b> † 3.64 (92)	<b>E</b> 6.21 (158)
<b>E</b> † 6.06 (154)	<b>F</b> 1.60 (41)	

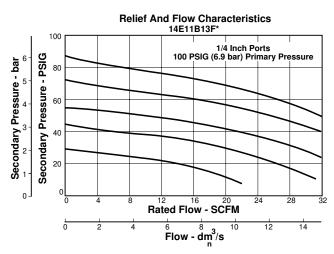
Inches (mm) † With Auto Drain





#### **Technical Information**





#### $oldsymbol{\Lambda}$ 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.

# 14E Filter / Regulator Kits & Accessories

Bowl Kits –	
Polycarbonate Bowl – Automatic Drain Twist Drain	
Metal Bowl – Automatic Drain Twist Drain	
Filter Element Kits – 40 Micron	PS403
Gauges – 30 PSIG (0 to 2.1 bar)	K4515N18060
Mounting Bracket Kit* (Includes Panel Mount Nut)	PS417B
Panel Mount Nut*	P78652
Poppet / Piston Kits – Unbalanced Non-Relieving Unbalanced Relieving	
Springs – 1- 15 PSIG Range (Yellow)	P01175 P01174
Specifications	
Automatic Pulse Drain Tube Barb	1/8 Inch
Bowl Capacity	1 Ounce
Gauge Ports (2) (Can be used for Full Flow)	1/8 Inch
Port Threads	

\*Tighten panel mount nut 2.8 to 3.4 Nm (25 to 30 in-lbs) of torque.

Duccerre	о т		Datings
Pressure	ŒΙ	emperature	Ratings –

Polycarbonate Bowl -

0 to 150 PSIG (0 to 10.3 bar), 32°F to 125°F (0°C to 52°C)

0 to 250 PSIG (0 to 17.2 bar), 32°F to 175°F (0°C to 80°C)

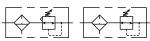
#### Secondary Pressure Ranges -

Standard Pressure	
Medium Pressure	1 to 30 PSIG (0 to 2.1 bar)
Medium Pressure	1 to 60 PSIG (0 to 4.1 bar)
Low Pressure	1 to 15 PSIG (0 to 1 bar)
Weight	0.4 lb. (0.18 kg)

Materials of Construction
Adjusting NutBrass
Adjusting Stem & Spring Steel
BodyZinc
Bonnet, Knob, Seat, Piston, Holder & DeflectorPlastic
Bowls Available –
TransparentPolycarbonate Metal (Without Sight Gauge)Zinc
<b>Drains –</b> Manual – Twist Type
Body & Stem
Automatic - Pulse Type
Piston & SealsNitrile
Stem, Seat, Adaptor & Washers Aluminum
Filter Elements –
40 Micron (Optional)Plastic
Adsorber (Optional) Activated Charcoal
Seals



# **B34 Filter / Regulator – Miniature**



#### **Features**

- Excellent water removal efficiency
- Diaphragm operated for fast operation

	Manual Twist Drain		Regardless Of Drain Option
	NPT	1	Distance Required To Remove All Bowls
	• High flow: 1/8" – 12 SCI 1/4" – 12 SCI		
-	Non-rising adjustment kn     Non-rising adjustment kn     Non-rising adjustment kn     Non-rising adjustment kn		
3	Space saving package of and regulator features in		N E
	Balanced valve design for	r precise regulation	(2)
	Large diaphragm to valve regulation and high flow on the second sec	•	1/8" NPT Gauge Ports
	Diaphragm operated for it		

Port	NPT	
Size	Manual Twist Drain	
Poly Bowl <sup>‡</sup>		
1/8"	B344-01AGC	
1/4"	B344-02AGC	
Metal Bowl wi	thout Sight Gauge	
1/8"	B344-01DGC	
1/4"	B344-02DGC	

#### Standard part numbers shown bold. For other models refer to ordering information below.

NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

- ‡ For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 25% pressure drop.

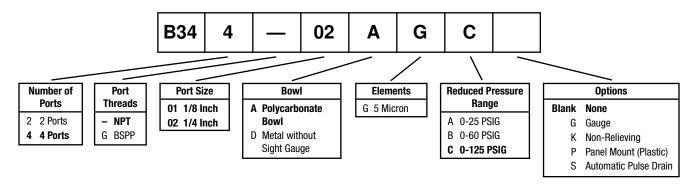
1911	ا 🌉 ا	To Remove Regardless Drain Optio	Of
		ter / Re mensio	-
	<b>A</b> 1.54 (39.2)	<b>C</b> 2.68 (68.1)	<b>D</b> 3.63 (92.1)
	<b>E</b> 6.31 (160.2)	<b>F</b> 1.65 (41.9)	

Inches (mm)

Standard part numbers shown bold. † With Auto Drain For other models refer to ordering information below. NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

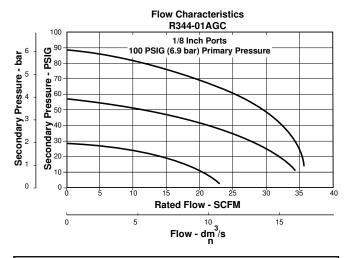
- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 25% pressure drop.

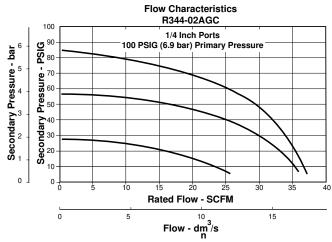
#### **Ordering Information**





#### **Technical Information**





# **⚠ 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.

# **B34 Filter / Regulator Kits & Accessories**

Adjusting KnobRRP-16-005-000
Bowl Kits –
Zinc (D) BK505Y
Zinc with Automatic Pulse Drain (D)BK505SY
Polycarbonate (A) BK504Y
Polycarbonate with Automatic Pulse Drain (A)BK504SY
Drain Kits –
Automatic Pulse Drain
(Maximum Pressure = 175 PSIG)RK504SY
Filter Element Kits –
5 Micron (All)FRP-96-729
Gauges –
1-1/2" Dial Size, 1/8" Back Connection
0 to 60 PSIG (0 to 400 kPa)K4515N18060
1-1/2" Dial Size, 1/8" Back Connection
0 to 160 PSIG (0 to 1100 kPa) K4515N18160
Mounting Bracket Kit (Includes Plastic Panel Nut)SA161X57
Panel Mount Nut –
PlasticR05X51-P
AluminumR05X51-A
Repair Kits –
Non-Relieving Diaphragm, Valve Assembly (All) GRP-96-726
Relieving Diaphragm, Valve Assembly (All) GRP-96-725
<b>Springs –</b> 0-25
0-60GRP-96-718
0-125 GRP-96-717

#### **Specifications**

Bowl Capacity	1 Ounce
Gauge Ports (2)	1/8 Inch
Maximum Pressure –	
	0 to 300 PSIG
Polycarbonate Bowl (A)	0 to 150 PSIG
Reduced Pressure Range -	
0 to 25 PSIG	(0 to 1.7 bar) (A)
	(0 to 4.1 bar) (B)
2 to 125 PSIG	(0.15 to 8.5 bar) (C)
Temperature Rating	40°F to 125°F (4.4°C to 52°C)
Port Threads	1/8 &1/4 Inch
Weight –	
Zinc Bowl (D)	
	12 lb. (5.44 kg) / 24-Unit Master Pack
Polycarbonate Bowl (A)	
	6 lb. (2.72 kg) / 24-Unit Master Pack

#### **Materials of Construction**

Adjusting Knob	Acetal
Body	Aluminum
Bowls -	
Polycarbonate (A)	Polycarbonate
Metal (D)	Zinc
	Zinc with Automatic Pulse Drain
Elastomers	Buna N
Filter Element	Sintered Polyethylene
Filter Retainer, Vane Plate	Acetal
Innervalve, Diaphragm, Button, D	rain Brass



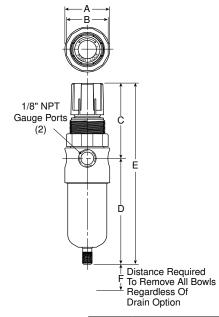
# **B548 Filter / Regulator - Miniature**





#### **Features**

- Excellent water removal efficiency
- · Unbalanced poppet standard
- · Solid control piston for extended life
- Space saving package offers both filter and regulator features in one integral unit
- Non-rising adjustment knob
- High flow: 12 SCFM §



R	648 Filte Regulato mensio	r
<b>A</b> 1.55 (39.2)	<b>B</b> 4.44 (36.5)	<b>C</b> 2.58 (65.6)
<b>D</b> 6.23 (158.2)	<b>E</b> 3.81 (96.7)	<b>F</b> .86 (21.9)

Inches (mm) † With Auto Drain

Port	NPT	
Size	Manual Twist Drain	
Poly Bowl <sup>‡</sup>		
1/8"	B548-01AHC	
1/4"	B548-02AHC	
Metal Bowl without Sight Gauge		
1/8"	B548-01DHC	
1/4"	B548-02DHC	

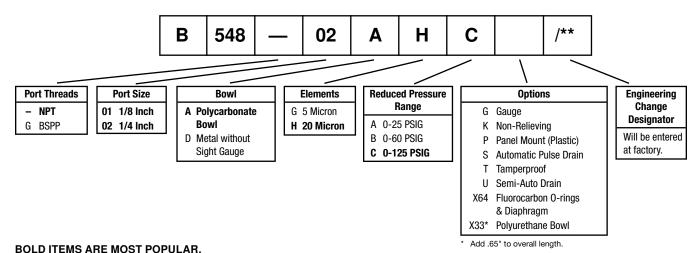
Standard part numbers shown bold.

For other models refer to ordering information below.

NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

- ‡ For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 25% pressure drop.

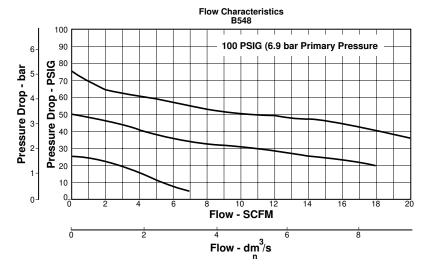
#### **Ordering Information**





### Air Line Filter / Regulators

#### **Technical Information**



#### **⚠ WARNING**

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

# **A** 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.

### **B548 Filter / Regulator Kits & Accessories**

DOTO I liter / Negulator Mila & Accessories
Bowl Kits –
Zinc (D) BK505Y
Zinc with Automatic Pulse Drain (D)BK505SY
Polycarbonate (A)
Cage Kits (All)CKR364Y
Drain Kits –
Automatic Pulse Drain
(Maximum Pressure = 175 PSIG)RK504SY
Semi-Automatic "Overnight" Drain
Filter Element Kits –
20 Micron (All)EK504Y 5 Micron (All)EK504VY
` '
Gauges –
1-1/2" Dial Size, 1/8" Back Connection 0 to 60 PSIG (0 to 400 kPa)K4515N18060
1-1/2" Dial Size, 1/8" Back Connection
0 to 160 PSIG (0 to 1100 kPa)K4515N18160
Mounting Bracket Kit (Includes Plastic Panel Nut)SA161X57
Panel Mount Nut –
PlasticR05X51-P
AluminumR05X51-A
Repair Kits –
Non-Relieving Diaphragm, Valve Assembly (All) RK548Y
Relieving Diaphragm, Valve Assembly (All) RK549Y
For Fluorocarbon Repair Kits, add X64 to Kit Number suffix.

#### **Specifications**

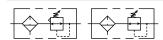
Bowl Capacity	1 Ounce
Gauge Ports (2)	1/8 Inch
	0 to 300 PSIG
0 to 60 PSIG	(0 to 1.7 bar) (A) (0 to 4.1 bar) (B) (0.15 to 8.5 bar) (C)
Temperature Rating	40°F to 125°F (4.4°C to 52°C)
Port Threads	1/4 Inch
Weight – Zinc Bowl (D)	0.6 lb. (0.27 kg) / Unit 12 lb. (5.44 kg) / 24-Unit Master Pack
Polycarbonate Bowl (A)	0.3 lb. (0.14 kg) / Unit
	6 lb. (2.72 kg) / 24-Unit Master Pack

#### **Materials of Construction**

Adjusting Knob	Acetal
Body	Aluminum
Bowls -	
• • • • • • • • • • • • • • • • • • • •	PolycarbonateZinc
	Zinc with Automatic Pulse Drain
Elastomers	Buna N
Filter Element	Sintered Polypropylene
Filter Retainer, Vane Plate	Acetal
Innervalve, Diaphragm, Button, D	rain Brass



# **B11 Filter / Regulators – Compact**





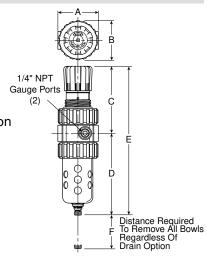
#### **Features**

- Space saving package offers both filter and regulator features for optimal performance
- Excellent water removal efficiency
- · Rolling diaphragm for extended life
- Quick response, and accurate pressure regulation regardless of changing flow or inlet pressure
- Two high flow 1/4" gauge ports can be used as additional outlets
- · Shown with recommended metal bowl guard

• High flow: 1/4" – 46 SCFM§

3/8" - 55 SCFM§

1/2" - 61 SCFM§



Port Size	NPT		
Port Size	Twist Drain	Auto Float Drain	
Poly Bowl‡ / Metal Guard			
1/4"	B11-022A11A*	B11-026A11A*	
3/8"	B11-032A11A*	B11-036A11A*	
1/2"	B11-042A11A*	B11-046A11A*	
Metal Bowl / Sight Gauge			
1/4"	B11-024A11A*	B11-028A11A*	
3/8"	B11-034A11A*	B11-038A11A*	
1/2"	B11-044A11A*	B11-048A11A*	

B11 Filter / Regulator Dimensions			
<b>A</b>	<b>B</b>	<b>C</b>	<b>D</b> 5.69 (145)
2.81	2.74	4.69	
(71)	(70)	(119)	
<b>D</b> † 5.74 (146)	<b>E</b>	<b>E</b> †	<b>F</b>
	10.38	10.43	2.25
	(264)	(265)	(57)

Inches (mm)

† With Twist Drain or Auto Pulse Drain

Standard part numbers shown bold. For other models refer to ordering information below.

NOTE: 1.218 Dia. (31mm) hole required for panel mounting.

- $\ensuremath{\ddagger}$  For polycarbonate bowl see Caution on page inside cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet, 75 PSIG no flow secondary setting and 25% pressure drop.

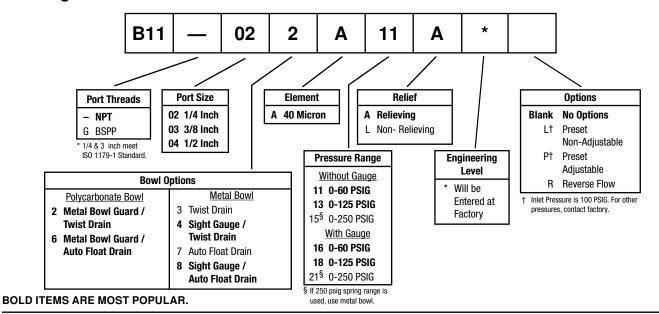
#### **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

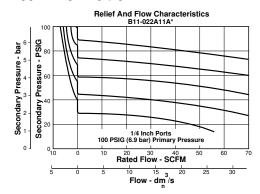
### **Ordering Information**





# Technical Specifications – B11 Compact Filter / Regulators

#### **Technical Information**



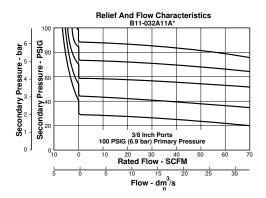
# **!** CAUTION:

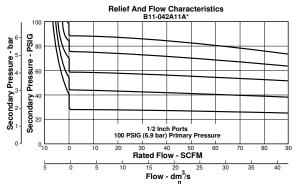
REGULATOR PRESSURE ADJUSTMENT – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and limiting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

# **B11 Filter / Regulator Kits & Accessories**

Dirintor / Hogalator Hito a /100	00001100
Bonnet Assembly Kit	PS715
Bowl Guard Kit	PS705
Bowl Kits –	
Poly Bowl - Automatic Float Drain	PS722
Twist Drain	PS732
Metal Bowl – Automatic Float Drain	
Twist Drain	
Sight Gauge / Automatic Drain	
Sight Gauge / Twist Drain	
Control Knob	P04069B
Drain Kits - Automatic Float Drain	PS506
Twist Drain	PS512
Filter Element Kits - 40 Micron	PS701
Gauges – 2" Dial Face	
60 psig (0 to 4.1 bar)	
160 psig (0 to 11.0 bar)	
300 psig (0 to 20.0 bar)	K4520N14300
1-3/4" Digital Round Face	
160 psig (0 to 11.0 bar)	K4517N14160D
Mounting Bracket Kit (Includes Panel Mount Nut)	PS707
Panel Mount Nut	P04082
Service Kits - Non-Relieving (Includes Poppet)	PS711
Relieving (Includes Poppet)	
Seat Insert Kit	D9713
Springs - 1- 30 psig Range	
Springs – 1- 30 psig Range	P01698
Springs – 1- 30 psig Range	P01698 P04062
1- 60 psig Range	P01698 P04062 P04063
1- 60 psig Range2- 125 psig Range	
1- 60 psig Range	
1- 60 psig Range	P01698 P04062 P04063 P04064 PS737
1- 60 psig Range	P01698 P04062 P04063 P04064 PS737
1- 60 psig Range	P01698 P04062 P04063 P04064 PS737  4.4 Ounces





#### Pressure & Temperature Ratings -

Polycarbonate Bowl – 0 to 150 psig (0 to 10.4 bar) 32°F to 125°F (0°C to 52°C)

Metal Bowl – 0 to 250 psig (0 to 17.2 bar) 32°F to 175°F (0°C to 80°C)

Automatic Float Drain - 15 to 250 psig (1.0 to 17.2 bar)

#### Secondary Pressure Ranges –

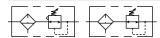
Standard Pressure	2 to 125 psig (0 to 8.6 bar)
	1 to 60 psig (0 to 4.1 bar)
High Pressure	5 to 250 psig (0.4 to 17.2 bar)
Sump Capacity	1.75 Ounces
Weight	1.6 lb (0.7 kg)

#### **Materials of Construction**

Adjusting Stem		Steel
Body		Zinc
Bonnet, Internal Pa	arts	Plastic
Bowls Available –	Transparent	
Bowl Guard		Steel
Collar		Plastic
Diaphragm		Nitrile
Drains - Manual Tv Body &	vist Drain Standard Nut	Plastic
(Interch Operat	Float Drain Optional nangeable for Field Conversions) ing Range10 to 250 g, Float	
Seals .	-	Nitrile
	s, Push Rod	
Knob		Plastic
Filter Elements –	40 Micron (Standard)	Plastic
Seals		Nitrile
Sight Gauge		. Polyamide (Nylon)
Springs - Poppet		



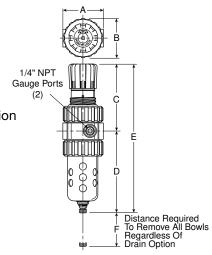
# **B11 Filter / Regulators – Standard**





#### **Features**

- Space saving package offers both filter and regulator features for optimal performance
- Excellent water removal efficiency
- · Rolling diaphragm for extended life
- Quick response, and accurate pressure regulation regardless of changing flow or inlet pressure
- Two high flow 1/4" gauge ports can be used as additional outlets
- · Shown with recommended metal bowl guard
- High flow: 3/4" 90 SCFM§



Port	NPT	
Size	Twist Drain	Auto Float Drain
Poly Bowl‡ / Metal Guard		
3/4"	B11-062A11A* B11-066A11A*	
Metal Bowl / Sight Gauge		
3/4"	B11-064A11A*	B11-068A11A*

Standard part numbers shown bold.

For other models refer to ordering information below.

- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 100 psig inlet, 90 psig no flow secondary setting and 10 psig pressure drop.

NOTE: 2.00 Dia. (50.8 mm) hole required for panel mounting. Max. panel thickness 1/4".

B11 Filter / Regulator Dimensions			
<b>A</b> 3.24 (82)	<b>B</b> 3.25 (83)	<b>C</b> 4.79 (122)	<b>D</b> 6.97 (177)
<b>D</b> <sup>†</sup> 7.00 (178)	<b>E</b> 11.76 (299)	<b>E</b> † 11.79 (299)	<b>F</b> 2.75 (70)

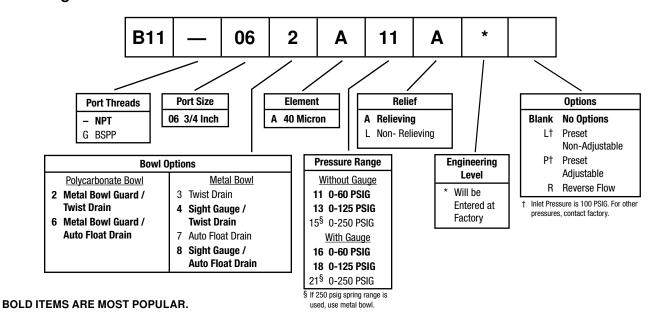
Inches (mm)

† With Twist Drain or Auto Pulse Drain

#### **⚠ WARNING**

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

#### **Ordering Information**

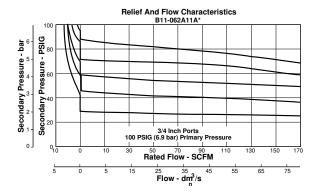




Standard Filter / Regulators

# **Technical Specifications - B11**

#### **Technical Information**



# **A** 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.

### **B11 Filter / Regulator Kits & Accessories**

Di i Fillei / Negulatoi Kits & Acce	
Bonnet Assembly Kit	PS715
Bowl Guard Kit	PS805
Bowl Kits –	
Poly Bowl - Automatic Float Drain	PS822
Twist Drain	
Metal Bowl – Automatic Float Drain	
Twist Drain	
Sight Gauge / Automatic DrainSight Gauge / Twist Drain	
5 5	
Control Knob	
Drain Kits - Automatic Float Drain	
Twist Drain	
Filter Element Kits – 40 Micron	PS801
Gauges – 2" Dial Face	1/4E00NH 4000
60 psig (0 to 4.1 bar)	
300 psig (0 to 20.0 bar)	
,	1140201114000
1-3/4" Digital Round Face 160 psig (0 to 11.0 bar)	K4517N14160D
Mounting Bracket Kit (Includes Panel Mount Nut)	
Panel Mount Nut	
Service Kits - Non-Relieving (Includes Poppet)	
Relieving (Includes Poppet)	PS810
Seat Insert Kit	PS813
Springs – 1-30 psig Range	P01698
1- 60 psig Range	
2- 125 psig Range	
5- 250 psig Range	
Tamperproof Kit (Key Lock)	PS737
Specifications	
Bowl Capacity	7.2 Ounces
Gauge Ports (2)	1/4 Inch
(Can be used as Additional Full Flow 1/4" Outlet Ports)	

#### Pressure & Temperature Ratings -

Polycarbonate Bowl – 0 to 150 psig (0 to 10.4 bar)  $32^{\circ}F$  to  $125^{\circ}F$  (0°C to  $52^{\circ}C$ )

Metal Bowl – 0 to 250 psig (0 to 17.2 bar) 32°F to 175°F (0°C to 80°C)

Automatic Float Drain – 15 to 250 psig (1.0 to 17.2 bar)

#### Secondary Pressure Ranges -

econdary Fressure nanges –	
Standard Pressure	2 to 125 psig (0 to 8.6 bar)
Low Pressure	1 to 60 psig (0 to 4.1 bar)
High Pressure	5 to 250 psig (0.4 to 17.2 bar)
Sump Capacity	2.8 Ounces
Valulat	0 E lb (1 1 kg)

#### **Materials of Construction**

Adjusting Stem Steel
BodyZinc
Bonnet, Internal PartsPlastic
Bowls Available - TransparentPolycarbonate Metal (With or Without Sight Gauge)Zinc
Bowl Guard Steel
CollarPlastic or Metal
DiaphragmNitrile
Drains - Manual Twist Drain Standard  Body & Nut
Automatic Float Drain Optional (Interchangeable for Field Conversions) Operating Range
KnobPlastic
Filter Elements – 40 Micron (Standard)Plastic
SealsNitrile
Sight Gauge Polyamide (Nylon)
Springs - PoppetStainless



#### **General Information**

### Lubricators

#### Lubrication

Many pneumatic system components and most pneumatic tools require oil lubrication for proper operation and long service life. This lubricant is typically carried by the air stream. Too little oil can cause excessive wear and premature failure. Too much oil is wasteful and can become a contaminant, particularly when carried over with the air exhaust. Intermittent lubrication may be the worst situation because the oil film can dry out to form sludges and varnishes on internal surfaces.

Air line lubricators meter oil from a reservoir into the moving air stream. In general terminology, the oil droplets are usually termed a fog. For best results, the lubricator should be located as close as possible to the point where lubrication is required.

#### **How to Select the Proper Lubricator**

Use of proper lubricator can greatly extend the life of expensive downstream pneumatic equipment. Lubricators often are selected according to pipe size. Other selection factors are type of bowl material, bowl size, and refilling system capability. Bowls are available in both polycarbonate and metal. Polycarbonate offers the advantage or transparency, for simplified inspection of oil level and condition. However, caution must be exercised when using polycarbonate bowls in any area where certain chemicals are used. (Please read the warning carefully.)

In addition to choice of bowls, minimum and maximum flow rates and pressure requirements should also be considered. Be sure to check the pressure drop curves, to make certain the selected model will not create a higher pressure drop than the system design can tolerate.

#### **Lubricator Construction**

Bowls are available in polycarbonate and metal, subject to the same constraints discussed in the Filter Section. Transparent polycarbonate simplifies inspection of the oil level and checking for dirt and liquid condensate in the oil. Note that the system must be exhausted before removing the bowl.

In some models, the system must also be exhausted before opening the fill plug to recharge the lubricator. Other designs automatically bypass the air during refilling.

#### 

The plastic material used to manufacture the plastic bowls, and the sight gauge on metal bowls, may be attacked by certain chemicals. Do not use this lubricator on systems with air supplied by a compressor lubricated with synthetic oils or oils containing phosphate esters or chlorinated hydrocarbons. These oils can carry over into the air lines and chemically attack and possibly rupture the bowl or sight gauge. Also, do not expose the bowl or sight gauge to materials such as carbon tetrachloride, trichlorethylene, acetone, paint thinner, cleaning fluids, or other harmful materials, for they too will cause the plastic to craze and/or rupture. For use in environments where these, or any, chemicals may be present, consult the factory for approval.

#### **Lubricator Installation**

The lubricators listed in this catalog should be placed before any valving and stay pressurized before, during, and after machine tool cycles. These lubricators should be placed no farther away than 15 feet from the desired point of lubrication.

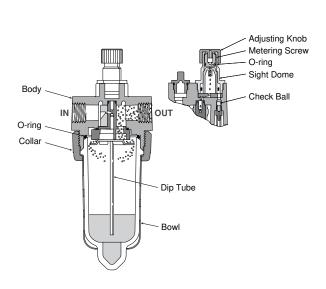


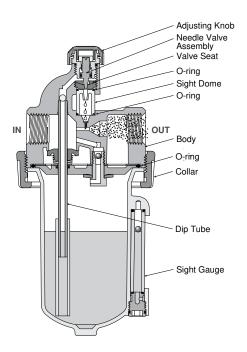
# Lubricators

#### **Lubrication Operation**

Most lubricator designs include a high-velocity venturi section in the air flow path which creates a low-pressure area to draw oil from the reservoir through a capillary tube to the point of injection. There, the air stream breaks up the oil into droplets.

In a typical lubricator, filtered and regulated air enters the lubricator housing and is channeled in either of two directions depending on flow rate. At low flow rates, all the air passes through the venturi where it mixes with metered oil droplets. Under higher flow conditions, the spring-loaded bypass valve opens and the excess flow bypasses the venturi, then blends with the lubricated air at a downstream point. A manual adjustment (needle valve) in the housing sets the oil drip-rate into the air stream; a sight gauge allows that rate to be monitored. Fill plugs at the lubricator top provide access to refill the reservoir with oil. The bowl is removable for cleaning.







# 04L Mist Lubricators - Miniature



#### **Features**

- · Proportional oil delivery over a wide range of air flows
- · Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- · Ideal for low and high flow applications with changing air flow
- Transparent sight dome for 360° visibility
- High flow: 1/8" 20 SCFM§ 1/4" - 20 SCFM§

A	<b>↑</b> B
	E D D Distance Required F To Remove All Bowls Regardless Of Drain Option

04L Lubricator Dimensions			
A B 1.73 1.56 (44) (40)		<b>C</b> 2.16 (55)	
<b>D</b> 3.64 (92)	<b>D</b> † 3.78 (96)	<b>E</b> 5.80 (147)	
<b>E</b> † 5.94 (151)	<b>F</b> 1.60 (41)		

Inches (mm) † With Twist Drain.

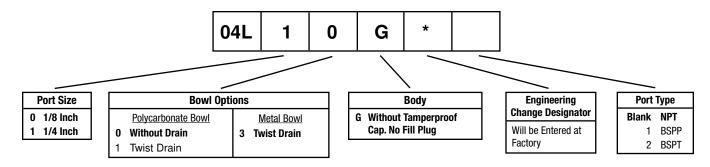
Port	NPT				
Size	Twist Drain	No Drain			
Poly Bowl <sup>‡</sup>					
1/8"	_	04L00G*			
1/4"	— 04L10G*				
Metal Bowl without Sight Gauge					
1/8"	04L03G*	_			
1/4"	04L13G*	_			

Standard part numbers shown bold.

For other models refer to ordering information below.

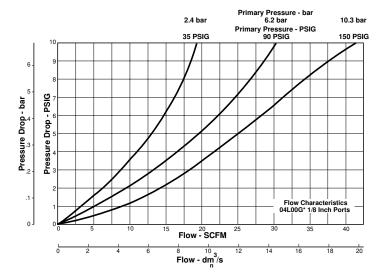
- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

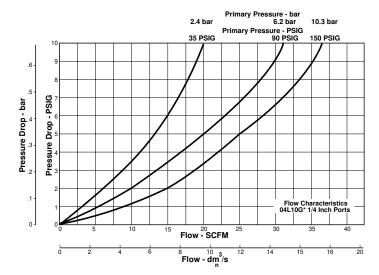
# **Ordering Information**





#### **Technical Information**





#### 04L Mist Lubricator Kits & Accessories

Poly Bowl – No Drain	PS421
Twist Drain	
Metal Bowl –	
Twist Drain (No Sight Gauge)	PS447B
Mounting Bracket Kit	PS419
Oil - 1 Gal	F442002
12 Quart Case	F442003
4 Gallon Case	F442005
Specifications	
Bowl Capacity	1 Ounce
Minimum Flow for Lubrication	0.5 SCFM at 100 PSIG
Port Threads	1/8 1/4 Inch

Polycarbonate Bowl ......0 to 150 PSIG (0 to 10.3 bar)

Metal Bowl	0 to 250 PSIG (0 to 17.2 bar)
	32°F to 175°F (0°C to 80°C)
Suggested Lubricant –	F442 Oil
Petroleum based oil of 100 to 200 SL 100°F and an aniline point greater tha	•
(DO NOT USE OILS WITH ADDITIVE COMPOUNDED OILS CONTAINING GRAPHITE, DETERGENTS, OR SYI	SOLVENTS,
Weight	0.4 lb. (0.18 kg)
Materials of Construction	n
Body	Zinc
Bowls - Transparent	
Drains - Twist - Body & Nut	Plastic
Seals	Nitrile
Sight Dome	Polycarbonate



Pressure & Temperature Ratings -

Bowl Kits -

32°F to 125°F (0°C to 52°C)

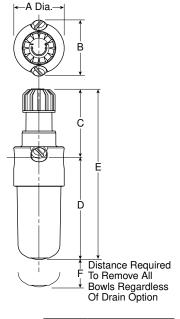
# L508 Mist Lubricators - Miniature



#### **Features**

- Proportional oil delivery over a wide range of air flows
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- Ideal for low and high flow applications with changing air flow
- · Polycarbonate sight dome for 360° visibility

 High flow: 1/8" – 20 SCFM\u00a8 1/4" – 20 SCFM\u00a8



Port	NPT			NPT	
Size	No Drain Twist Drain				
Poly Bowl <sup>‡</sup>					
1/8"	L508-01A	L508-01AX9			
1/4"	L508-02A L508-02AX9				
Metal Bowl without Sight Gauge					
1/8"	L508-01D	L508-01DX9			
1/4"	L508-02D L508-02DX9				

Standard part numbers shown bold.

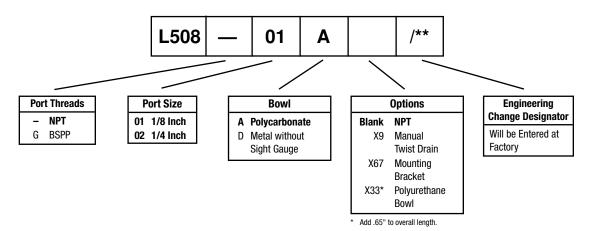
For other models refer to ordering information below.

- ‡ For polycarbonate bowl see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

L508 Lubricator Dimensions				
<b>A</b> 1.55 (39.2)	<b>C</b> 2.21 (56)			
<b>D</b> 3.10 (70.7)	<b>D</b> † 3.68 (93.5)	<b>E</b> 5.21 (132)		
<b>E</b> † 5.79 (147)	<b>F</b> 1.70 (43)			

Inches (mm)

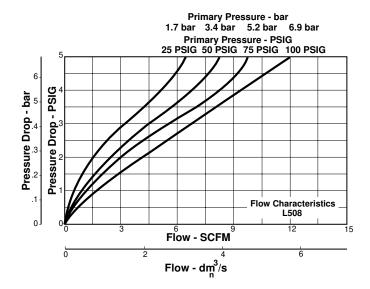
#### **Ordering Information**





<sup>†</sup> With Twist Drain.

#### **Technical Information**



#### L508 Mist Lubricator Kits & Accessories

Bowl Kits –
Polycarbonate Bowl –
No Drain
Manual Twist Drain BK504Y
Metal Bowl – No DrainBK509Y
Manual Twist Drain (No Sight Gauge)BK505Y
Mounting Bracket Kit Must Be Ordered with Lubricator
Oil –
1 GalF442002
12 Quart Case F442003
4 Gallon Case
Specifications
-
Bowl Capacity1 Ounce
Minimum Flow for Lubrication 0.5 SCFM at 100 PSIG
Port Threads
Pressure & Temperature Ratings –
Polycarbonate Bowl – 0 to 150 PSIG (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)
Metal Bowl –0 to 300 PSIG (0 to 20.4 bar) 40°F to 150°F (4°C to 65.6°C)

Suggested Lubricant –F442 Oil
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.)
<b>Weight</b>
Materials of Construction
Body Aluminum
Bowls – PolycarbonatePolycarbonate Metal (Without Sight Gauge)Zinc
Drains –  Manual TwistBrass
SealsNitrile
Sight Dome Polyurethane

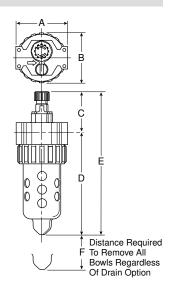


# **L606 Micro-Mist Lubricators – Compact**



#### **Features**

- Proportional oil delivery over a wide range of air flows
- Generates oil particles of 5 micron or smaller downstream to lubricate systems having complex piping arrangements
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- Ideal for low and high flow applications with changing air flow
- Transparent sight dome for 360° visibility.
- Yellow fill cap identifies Micro-Mist Lubricator
- High Flow: 1/4" 40 SCFM §
   3/8" 60 SCFM §
   1/2" 90 SCFM §



Port	NPT				
Size	Twist Drain	No Drain			
Poly Bowl <sup>‡</sup>	Poly Bowl <sup>‡</sup> / Metal Guard				
1/4"	_	L606-022B*			
3/8"	_	L606-032B*			
1/2"	_	L606-042B*			
Metal Bowl / Sight Gauge					
1/4"	L606-024B*	_			
3/8"	L606-034B*	_			
1/2"	L606-044B*	_			

L606 Lubricator Dimensions				
A B C D				
2.81	2.74	2.24	5.58	
(71)	(70)	(57)	(142)	
D†	E	E†	F	
5.69	7.82	7.93	2.25	
(145)	(199)	(201)	(57)	

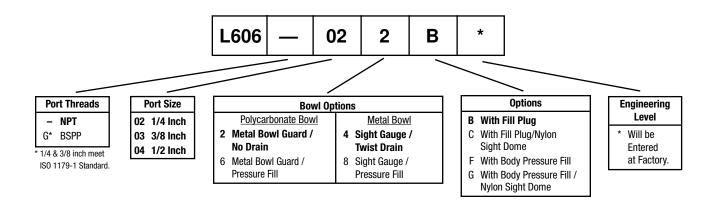
Inches (mm)

#### Standard part numbers shown bold.

For other models refer to ordering information below.

- ‡ For polycarbonate bowl and sight dome, see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

# **Ordering Information**

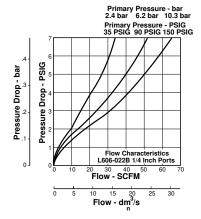


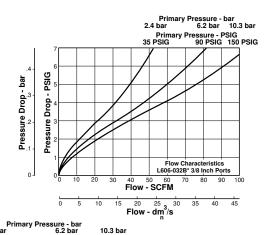


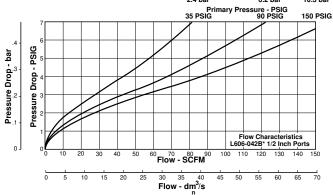
<sup>†</sup> With Twist Drain.

# Technical Specifications – L606 Compact Micro-Mist Lubricators

#### **Technical Information**







### L606 Micro-Mist Lubricator Kits & Accessories

•		
	<b>ob</b> (Old L606)	
Bowl Guard Kit		PS705
Bowl Kits –		
Poly Bowl - N	lo Drain	PS746
T	wist Drain	PS717
	Pressure Fill	
F	Plastic Bowl Guard (Old L606)	BK606Y
	Sight Gauge / Twist Drain	
	Sight Gauge / Pressure Fill	
Z	Zinc with Sight Gauge (Old L606)	BK605WY
Drain Kit - Twist	Drain	PS512
Fill Cap Kit		PS742
-	ce Kit	
Mounting Brack	et Kit	PS743
Mounting Brack	et Kit (Old L606)	SAF602-0571
12 Quart C	Case	F442003
4 Gallon C	ase	F442005
Pressure Fill Ad	apter Kit	PS716
	tton	
Button Head Fill	<b>Fitting (M14 Male Thread)</b> (Old Le	606)L606C14
Drip Tube Kit (O	ld L606)	DTK606
	Old L606)	
Sight Dome / Fill	I Cap Kit	PS739
Nylon Sight Don	ne Kit	PS740N
Repair Kits –		
Needle Valve A	Assembly (B, W) (Old L606)	RK606Y
	or "W" Bowl (Old L606)	

Adjustment Knob ......P04121

#### **Specifications**

<b>Port Threads</b>
Pressure & Temperature Rating –
Polycarbonate Bowl – 0 to 150 psig (0 to 10.3 bar)
32°F to 125°F (0°C to 52°C)
Metal Bowl – 0 to 250 psig (0 to 17.2 bar) 32°F to 175°F (0°C to 80°C)
Suggested LubricantF442 Oil
Petroleum based oil of 100 to 200 SSU viscosity at 100°F (38°C) and an aniline point greater than 200°F (93°C)
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR SYNTHETIC OILS.)
<b>Weight</b>
Weight 1.2 lb. (.5 kg)  Materials of Construction
Materials of Construction
Materials of Construction  Body Zinc
Materials of Construction  Body Zinc  Bowls – Transparent Polycarbonate
Materials of Construction  Body Zinc  Bowls – Transparent Polycarbonate  Metal (With Sight Gauge) Zinc
Materials of Construction  Body Zinc  Bowls – Transparent Polycarbonate  Metal (With Sight Gauge) Zinc  Bowl Guard Steel

 Sight Dome
 Polyamide (Nylon)

 Sight Gauge
 Polyamide (Nylon)

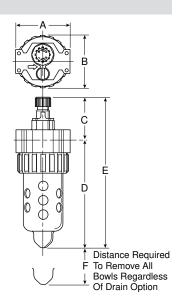


# L606 Micro-Mist Lubricators - Standard



#### **Features**

- Proportional oil delivery over a wide range of air flows
- Generates oil particles of 5 micron or smaller downstream to lubricate systems having complex piping arrangements
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- Ideal for low and high flow applications with changing air flow
- Transparent sight dome for 360° visibility
- Yellow fill cap identifies micro-mist lubricator
- High flow: 3/4" 90 SCFM§



Port Size	NPT	
Port Size	Twist Drain	No Drain
Poly Bowl <sup>‡</sup> / Metal Guard		
3/4"	— L606-062B*	
Metal Bowl / Sight Gauge		
3/4"	L606-064B*	_

#### Standard part numbers shown bold.

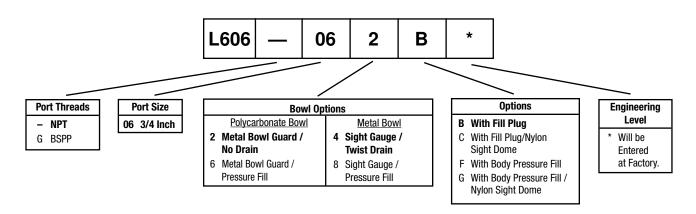
For other models refer to ordering information below.

- ‡ For polycarbonate bowl and sight dome, see Caution on inside cover.
- § SCFM = Standard cubic feet per minute at 90 psig inlet and 5 psig pressure drop.

L606 Lubricator Dimensions				
A         B         C         D           3.24         3.25         2.41         6.80           (82)         (83)         (61)         (174				
<b>D</b> † 6.95 (177)	<b>E</b> 9.09 (231)	<b>E</b> † 9.35 (237)	<b>F</b> 2.75 (70)	

Inches (mm)

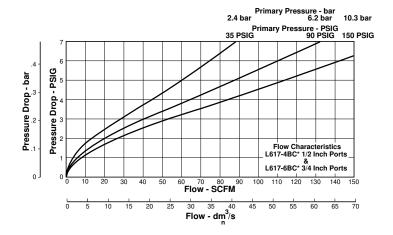
# **Ordering Information**





<sup>†</sup> With Twist Drain.

#### **Technical Information**



# L606 Micro-Mist Lubricator Kits & Accessories

Adjustment KnobP04121				
Adjustment Knob (Old L606)606Y72				
Bowl Guard KitPS805F				
Bowl Kits -				
Poly Bowl –	No Drain Twist Drain Pressure Fill Remote Fill Plastic Bowl Guard (Old L606)	PS817 PS819 PS828		
Metal Bowl -	- Sight Gauge / Twist Drain Sight Gauge / Pressure Fill	PS820 <i>BK605WA</i> <i>BK603A</i>		
Drain Kit – Tw	ist Drain	PS512		
Fill Cap Kit		PS742		
Lubricator Se	rvice Kit	PS748		
Mounting Bra	cket Kit	PS843		
Mounting Bra	<b>cket Kit</b> (Old L606)	SAF602-0572		
12 Quar	t Case	F442003		
Pressure Fill	Adapter Kit	PS716		
Pressure Fill I	Button	P11912		
Button Head I	Fill Fitting (M14 Male Thread) (Old L606	6)L606C14		
Drip Tube Kit	(Old L606)	DTK606		
Drip Spout Ki	t (Old L606)	RK606SY		
Remote Auto-	Fill Device	PS505C		
Sight Dome /	Fill Cap Kit	PS739		
Sight Dome K	it	PS740		
Nylon Sight D	ome Kit	PS740N		
Needle Valv Sight Gauge	nob (Old L606)e Assembly (B, W) (Old L606)e for "W" Bowl (Old L606)e for "G" Bowl (Old L606)	RK606Y RKB605WY		

#### **Specifications**

Bowl Capacity4.9 Ounces
Minimum Flow for Lubrication 1 SCFM at 100 PSIG
Port Threads
Pressure & Temperature Rating –
Polycarbonate Bowl – 0 to 150 psig (0 to 10.3 bar) 32°F to 125°F (0°C to 52°C)
Metal Bowl – 0 to 250 psig (0 to 17.2 bar) 32°F to 175°F (0°C to 80°C)
Suggested LubricantF442 Oil
Petroleum based oil of 100 to 200 SSU viscosity at 100°F (38°C) and an aniline point greater than 200°F (93°C)
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLVENTS, GRAPHITE, DETERGENTS, OR
SYNTHETIC OILS.)
SYNTHETIC OILS.)           Weight
,
Weight 1.9 lb. (.9 kg)
Weight 1.9 lb. (.9 kg)  Materials of Construction
Weight
Weight
Weight
Weight
Materials of Construction  Body Zinc  Bowls – Transparent Polycarbonate Metal (With Sight Gauge) Zinc  Bowl Guard Steel  Collar Plastic or Metal  Drain – Twist – Body & Nut Plastic  Injector Meter Block & Base Assembly Plastic
Materials of Construction  Body
Materials of Construction  Body Zinc  Bowls – Transparent Polycarbonate Metal (With Sight Gauge) Zinc  Bowl Guard Steel  Collar Plastic or Metal  Drain – Twist – Body & Nut Plastic  Injector Meter Block & Base Assembly Plastic



# L606 Mist Lubricators – Standard



Port Size

Metal Bowl / Sight

Metal Bowl 32 oz. w

Metal Bowl 64 oz. w
3/4"
1"

#### **Features**

- Metal bowl with sight gauge standard
- Polycarbonate sight dome
- Bowl can be filled while air line is under pressure
- Proportional oil delivery over a wide range of air flows
- Large capacity bowl
- Optional high capacity bowl(s) available
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- Automatic fill optional (requires external pressurized oil supply)
- High flow: 3/4" 325 SCFM§ 1" – 350 SCFM§

	   F   <u> </u>
A D D D D D D D D D D D D D D D D D D D	C
	B

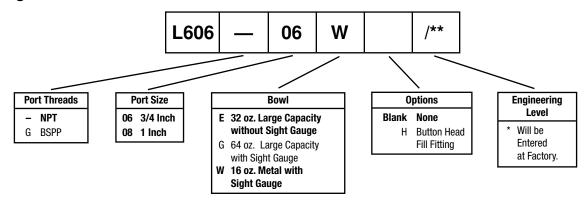
	NPT
	No Drain
Gauge	
	L606-06W
	L606-08W
rithout Sight Gau	ige
	L606-06E
	L606-08E
rith Sight Gauge	
	L606-06G
	L606-08G

Standard part numbers shown bold. For other models refer to ordering information below.

L606 Lubricator Dimensions						
A B C D E F						
L606-06W, L606-08W						
4.97 (126)	7.25 (184)	2.63 (67)	4.06 (103)	9.88 (251)	2.48 (63)	
L606-06E, L606-08E						
4.97         10.75         2.63         4.06         13.38         2.48           (126)         (273)         (67)         (103)         (340)         (63)						
L606-06G, L606-08G						
5.00 (127)	9.40 (239)	2.62 (66)	4.06 (103)	12.02 (305)	2.50 (64)	

inches (mm)

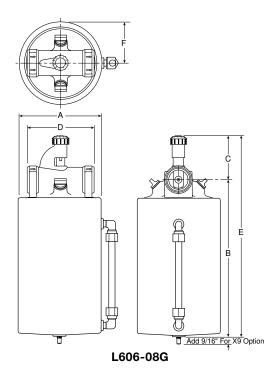
# **Ordering Information**

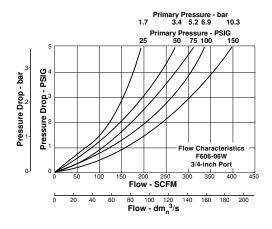


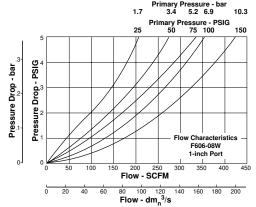


<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

#### **Technical Information**







#### L606 Lubricator Kits & Accessories

Adjusting Knob	606Y72
Bowl Kits –  Aluminum (E)	BK606X30B
Button Head Fill Fitting (M14 male thread)	L606C14
Dip Tube Kit	DTK606
Drip Spout Kit	RK606SY
Mounting Bracket –	
3/4 Inch units (2 required per unit)	SA200AW57 SA200CW57
Oil – 1 Gal	F442003
Repair Kits - Needle Valve Assembly (All) Sight Gauge Repair Kit (W) Sight Gauge Repair Kit (G) Fill Plug Replacement	RKB605WB . RKB606X30B

#### **Specifications**

Bowl Capacity –	
Aluminum (E)	32 Ounces
Aluminum with Polycarbonate Sight Gauge (G)	64 Ounces
Zinc with Nylon Sight Gauge (W)	16 Ounces
Port Threads	. 3/4, 1 Inch
Pressure & Temperature Ratings –	

Aluminum Bowl (E) ...... 0 to 300 PSIG (0 to 20.4 bar) 40°F to 150°F (4.4°C to 65.6°C)

Aluminum Bowl with	
Polycarbonate Sight Gauge (G)	0 to 150 PSIG (0 to 10.2 bar)
	40°F to 125°F (4.4°C to 52°C)
Zinc Bowl with	
Nylon Sight Gauge (W)	0 to 250 PSIG (0 to 17.2 bar) 40°F to 150°F (4.4°C to 65.6°C)

Suggested Lubricant .....F442 Oil Petroleum based oil of 100 to 200 SSU 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.)

#### Weight -Aluminum Bowl (F)

9	
Aluminum Bowl (E)	5.5 lb. (2.49 kg) / Unit
	22.3 lb. (10.12 kg) / 4-Unit Master Pack
Aluminum Bowl with	
Polycarbonate Sight Gauge	e (G)7.2 lb. (3.27 kg) / Unit
	28.8 lb. (13.06 kg) / 4-Unit Master Pack
Zinc Bowl with	
Nylon Sight Gauge (W)	4.2 lb. (1.91 kg) / Unit
	16.6 lb. (7.53 kg) / 4-Unit Master Pack

#### **Materials of Construction**

Body	Zinc
Bowls - (E)	Aluminum
(G)	Aluminum with Polycarbonate Sight Gauge
(W)	Zinc with Nylon Sight Gauge
Seals	Buna N



# L606 Mist Lubricators - Standard



Port

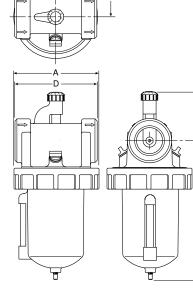
Size

1-1/2"

Metal Bowl / Sight Gauge

#### **Features**

- Metal bowl with sight gauge standard
- Polycarbonate sight dome
- Bowl can be filled while air line is under pressure
- Proportional oil delivery over a wide range of air flows
- Large capacity bowl
- Optional high capacity bowl(s) available
- Precision needle valve assures repeatable oil delivery and provides simple adjustment of delivery rate
- Automatic fill optional (requires external pressurized oil supply)
- High flow: 1-1/4" 325 SCFM§ 1-1/2" – 400 SCFM§



NPT	
No Drain	
L606-10W	

L606-12G

# 1-1/4" L606-10W 1-1/2" L606-12W Metal Bowl 32 oz. without Sight Gauge 1-1/4" L606-10E

1-1/2"	L606-12E		
Metal Bowl 64 oz.	with Sight Gauge		
1-1/4"	L606-10G		

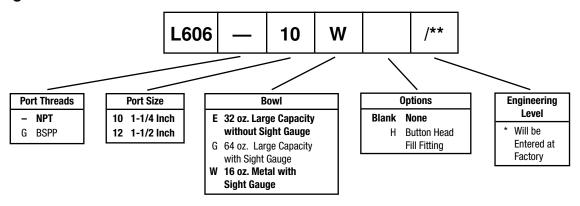
<sup>§</sup> SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

#### L606-10W12W & L606-10E12E

L606 Lubricator Dimensions					
Α	В	Е	F		
	L60	6-10W,	L606-1	2W	
4.97 (126)	7.63 (194)	2.84 (72)	4.81 (122)	10.47 (266)	2.48 (63)
L606-10E, L606-12E					
4.97 (126)	11.13 (283)	2.84 (72)	4.81 (122)	13.97 (355)	2.48 (63)
L606-10G, L606-12G					
5.00 (127)	7.99 (203)	2.84 (72)	4.81 (122)	12.80 (325)	2.50 (64)

inches (mm)

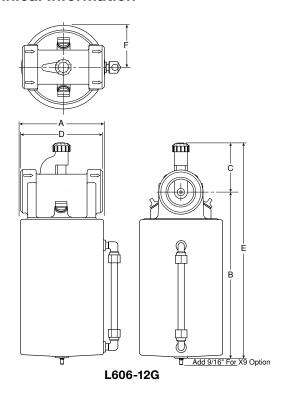
# **Ordering Information**

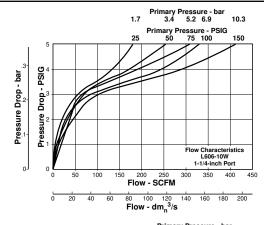


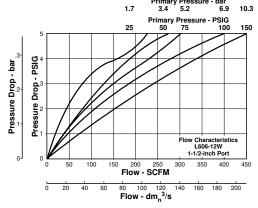


#### **Standard Mist Lubricators**

#### **Technical Information**







#### L606 Lubricator Kits & Accessories

Adjusting Knob606Y72	2
Bowl Kits –         Aluminum (E)         BK603E           Aluminum with Sight Gauge (G)         BK606X30E           Zinc with Sight Gauge (W)         BK609WE	3
Button Head Fill Fitting (M14 male thread)L606C14	1
Dip Tube KitDTK606	3
Drip Spout KitRK606S\	1
Oil – 1 Gal.       F442002         12 Quart Case       F442002         4 Gallon Case       F442002	3
Repair Kits – Needle Valve Assembly (All)RK606\ Sight Gauge Repair Kit (W)RKB605WE Sight Gauge Repair Kit (G)RKB606X30E FIII Plug ReplacementSAP04113	3

#### Suggested Lubricant .....F442 Oil

Petroleum based oil of 100 to 200 SSU 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.)

#### Weight -

	33.2 lb. (15.06 kg) / 4-Unit Master Pack
Aluminum Bowl with	
Polycarbonate Sight Gaug	e (G)
	40 lb. (18.14 kg) / 4-Unit Master Pack
Zinc Bowl with	
Nylon Sight Gauge (W)	
	28.2 lb. (12.79 kg) / 4-Unit Master Pack

### **Specifications**

Bowl Capacity –	
Aluminum (E)	32 Ounces
Aluminum with Polycarbonate Sight Gauge (G)	
Zinc with Nylon Sight Gauge (W)	16 Ounces
Port Threads 1-1/4	, 1-1/2 Inch

# **Materials of Construction**

Roay	ZINC
Bowls -	- (E) Aluminum
	(G) Aluminum with Polycarbonate Sight Gauge
	(W)Zinc with Nylon Sight Gauge
Seals	Runa N

#### Pressure & Temperature Ratings -

ressure & Temperature Hattings	5 –
Aluminum Bowl (E)	0 to 300 PSIG (0 to 20.4 bar)
	40°F to 150°F (4.4°C to 65.6°C)
Aluminum Bowl with	
Polycarbonate Sight Gauge (G)	0 to 150 PSIG (0 to 10.2 bar)
, , ,	40°F to 125°F (4.4°C to 52°C)
Zinc Bowl with	
Nylon Sight Gauge (W)	0 to 250 PSIG (0 to 17.2 bar)



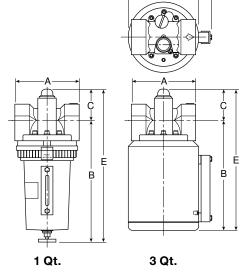
40°F to 150°F (4.4°C to 65.6°C)

# 09L Mist Lubricators - Hi-Flow



#### **Features**

- Metal bowl with sight gauge and manual drain standard
- Transparent sight dome for 360° visibility
- Bowl can be filled while air line is under pressure
- Proportional oil delivery over a wide range of air flows
- High flow: 1000 SCFM§



Port Size	NPT	
Metal Bowl / Sight Gauge – 1 Quart		
2"	09L84BA	
Metal Bowl / Sight Gauge – 3 Quart		
2"	09L8PBA	

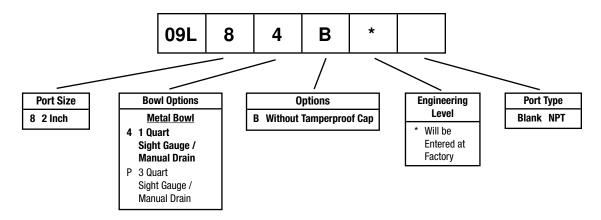
Standard part numbers shown bold. For other models refer to ordering information below.

<sup>§</sup> SCFM = Standard Cubic Feet Per Minute at 900 PSIG Inlet, and 5 PSIG Pressure Drop.

09L Lubricator Dimensions						
1 Qt.	<b>A</b> 5.50 (140)	<b>B</b> 10.40 (264)	<b>C</b> 2.64 (67)	D	E 13.04 (331)	F
3 Qt.	<b>A</b> 5.50 (140)	<b>B</b> 9.44 (240)	<b>C</b> 2.64 (67)	<b>D</b> 6.00 (152)	<b>E</b> 12.08 (307)	<b>E</b> 7.12 (181)

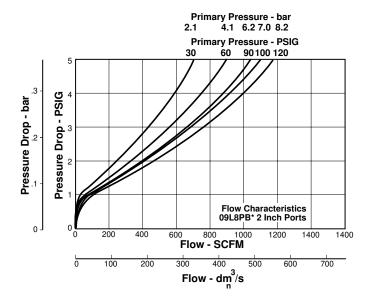
Inches (mm)

#### **Ordering Information**





#### **Technical Information**



#### 09L Lubricator Kits & Accessories

Fill Cap Kit	PS610
Lubricator Service Kit	PS607
Metal Bowl - Sight Gauge / Twist Drain	PS612*
<b>Oil</b> – 1 Gal	F442002
12 Quart Case	F442003
4 Gallon Case	F442005
Sight Dome Kit	PS613

<sup>\* 1</sup> Quart Bowl

# **Specifications**

Bowl Capacity	1 Qt. (Standard) 3 Qt. (Optional)
Bowl	Metal with Sight Gauge
Drain	Manual Twist Drain
Port Threads	2 Inch
Pressure & Temperature Rating 0 to 1 32°F	50 PSIG (0 to 10.3 bar) to 150°F (0°C to 66°C)
Suggested Lubricant	F442 Oil
Petroleum based oil of 100 to 200 SSU viso at 100°F and an aniline point greater than 2	•
(DO NOT USE OILS WITH ADDITIVES, COMPOUNDED OILS CONTAINING SOLV GRAPHITE, DETERGENTS, OR SYNTHE	-,
Weight -1 Qt	
Materials of Construction	



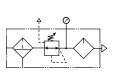
Body ......Zinc Alloy, Die Cast



# **Close Nippled Combinations – 14 Miniature Series**

· See individual component pages for details.

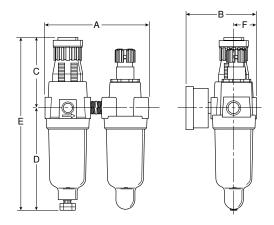
# Two-Unit Combo





Series	Port	Model Numbers
14G	1/8"	14G01B13F0G*
146	1/4"	14G11B13F0G*

For other models, refer to ordering information on next page. For polycarbonate bowl see Caution on inside cover.

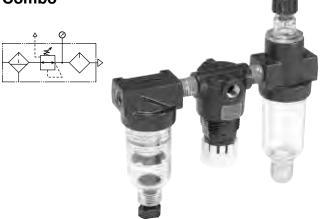


Α	В	С	D	E	F
3.75	3.79	2.42	2.04	6.21	.79
(95)	(96)	(61)	(52)	(158)	(20)

Inches (mm)

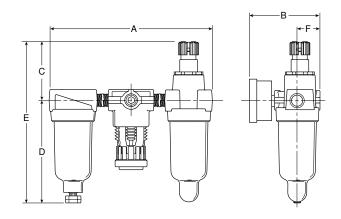
Note: All dimensions nominal.

# Three-Unit Combo



Series	Port	Model Numbers
14Δ	1/8"	14A01B13F0G*
144	1/4"	14A11B13F0G*

For other models, refer to ordering information on next page. For polycarbonate bowl see Caution on inside cover.



Α	В	С	D	E	F
5.77	3.82	2.16	2.04	5.98	.79
(147)	(97)	(55)	(52)	(152)	(20)

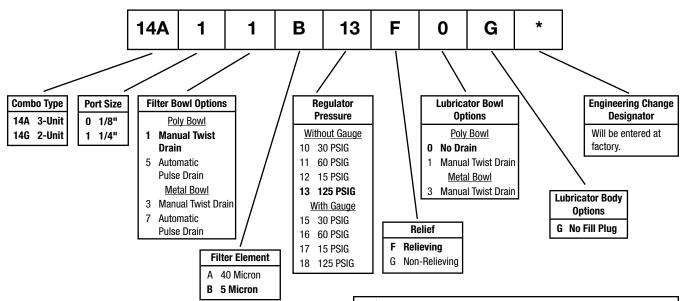
Inches (mm)





# **Close Nippled Combinations – 14 Miniature Series**

### **Ordering Information**



#### $oldsymbol{\Lambda}$ WARNING

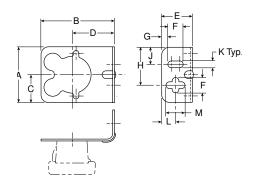
Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

# ⚠ CAUTION:

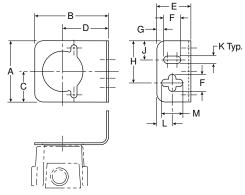
**REGULATOR PRESSURE ADJUSTMENT** – The working range of knob adjustment is designed to permit outlet pressures within their full range. Pressure adjustment beyond this range is also possible because the knob is not a limiting device. This is a common characteristic of most industrial regulators, and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

# **Mounting Bracket Kits**



**PS417B** (Includes Panel Mount Nut)



**PS419** 

#### **Dimensions**

Α	В	С	D	E	F	G	Н	J	K	L	М	Kit
1.80	2.37	.90	1.35	1.00	.50	.20	1.24	.56	.22	.45	.62	<b>PS417B</b> (14F, 10F, 14R, 14E)
(46)	(60)	(23)	(34)	(25)	(13)	(5)	(31)	(14)	(6)	(11)	(16)	
1.80	2.17	.90	1.35	1.00	.50	.20	1.24	.56	.22	.45	.62	<b>PS419</b>
(46)	(55)	(23)	(34)	(25)	(13)	(5)	(31)	(14)	(6)	(11)	(16)	(04L)

Inches (mm)

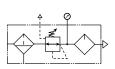


#### **Model Numbers & Dimensions**

# **Close Nippled Combinations – C528 Miniature Series**

· See individual component pages for details.

# Two-Unit Combo



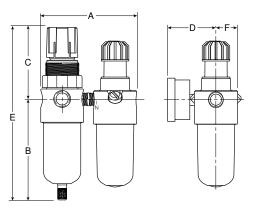


Series	Port Model Number		
CEOODI	1/8", 1/4"	C528**BLAHCA	
C528BL	1/8", 1/4"	C528**BLDHCD	

<sup>\*\*</sup> Port Size 01 = 1/8", 02 = 1/4".

For other models, refer to ordering information on next page.

For polycarbonate bowl see Caution on inside cover.

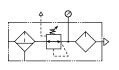


Α	В	С	D	E	F
3.50	3.50	2.38	1.98	5.88	.77
(89)	(89)	(60)	(50)	(149)	(20)

Inches (mm)

Note: All dimensions nominal.

# Three-Unit Combo



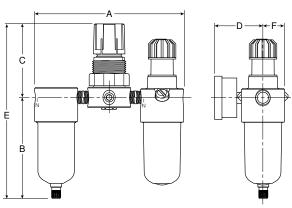


Series	Port Model Numbers		
C528FRL	1/8", 1/4"	C528**FRLAHCA	
C320FRL	1/8", 1/4"	C528**FRLDHCD	

<sup>\*\*</sup> Port Size 01 = 1/8", 02 = 1/4".

For other models, refer to ordering information on next page.

For polycarbonate bowl see Caution on inside cover.



Α	В	С	D	E	F
5.13	3.50	1.63	1.98	5.13	.77
(130)	(89)	(41)	(50)	(130)	(20)

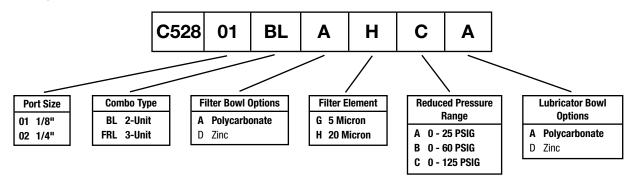
Inches (mm)





# **Close Nippled Combinations - C528 Miniature Series**

# **Ordering Information**



# **⚠ WARNING**

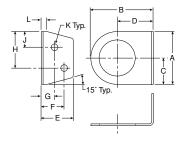
Product rupture can cause serious injury.
Do not connect regulator to bottled gas.
Do not exceed maximum primary pressure rating.

# **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.

### **Mounting Bracket Kit**



#### SA161X57

(Comes with R05X51-P Panel Nut)

#### **Dimensions**

Α	В	С	D	E	F	G	Н	J	K	L
1.75	2.06	.88	1.19	1.06	.75	.44	1.22	.53	.22	.19
(44)	(53)	(22)	(30)	(27)	(19)	(11)	(31)	(13)	(6)	(5)

Inches (mm)



# Close Nippled Combinations - C10 Compact & Standard Series

• See individual component pages for details.

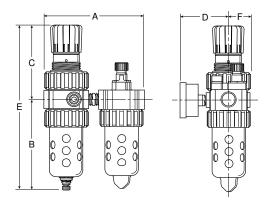
# Two-Unit Combo





Series	Port Size	Model Numbers
	1/4" (Compact)	C10-02BL2A11A2B*
C10	3/8" (Compact)	C10-03BL2A11A2B*
C10	1/2" (Compact)	C10-04BL2A11A2B*
	3/4" (Standard)	C10-06BL2A11A2B*

For other models, refer to ordering information on next page.



C10 2-Unit Combination Dimensions						
Α	В	С	D	E	F	
C10-02BL, C10-03BL, C10-04BL Compact						
6.13 (156)	5.69 (145)	4.69 (119)	3.18 (81)	10.38 (264)	1.37 (35)	
C10-06BL	C10-06BL Standard					
6.99     6.97     4.79     3.44     11.76     1.63       (178)     (177)     (122)     (87)     (299)     (41)						

Inches (mm)

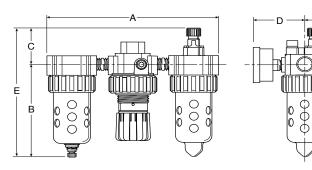
# Three-Unit Combo





Series	Port Size	Model Numbers
	1/4" (Compact)	C10-02FRL2A11A2B*
C10	3/8" (Compact)	C10-03FRL2A11A2B*
C10	1/2" (Compact)	C10-04FRL2A11A2B*
	3/4" (Standard)	C10-06FRL2A11A2B*

For other models, refer to ordering information on next page.



C10 3-Unit Combination Dimensions						
Α	В	С	D	E	F	
C10-02FR	C10-02FRL, C10-03FRL, C10-04FRL Compact					
9.45 (240)	5.69 (145)	2.24 (57)	3.18 (81)	7.93 (201)	1.37 (35)	
C10-06FRL Standard						
10.74     6.97     2.41     3.44     9.38     1.63       (2738)     (177)     (61)     (87)     (238)     (41)						

Inches (mm)

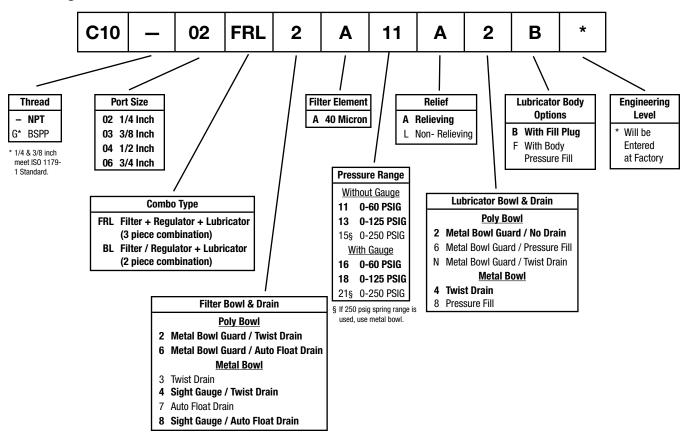


All dimensions nominal.

All dimensions nominal.

# Close Nippled Combinations - C10 Compact & Standard Series

#### **Ordering Information**



#### **BOLD ITEMS ARE MOST POPULAR.**

# **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.

For polycarbonate bowl and sight dome, see Caution on Inside Cover.

#### **↑** WARNING

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

#### Kits & Accessories

(See individual component sections for other kits and accessories.)

#### Mounting Bracket Kit (Includes Panel Mount Nut)

1/4", 3	/8" , 1/2"	PS707
3/4"		PS807



#### 3-Unit Close Nippled Combinations

# Standard Combinations – C628 Series

#### **Three-Unit Combo**

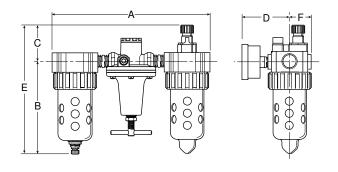
See individual component pages for details.





Series	Port Size	Model Numbers
	1/4"	C628-02FRL2ACA2B*
C628	3/8"	C628-03FRL2ACA2B*
	1/2"	C628-04FRI 2ACA2B*

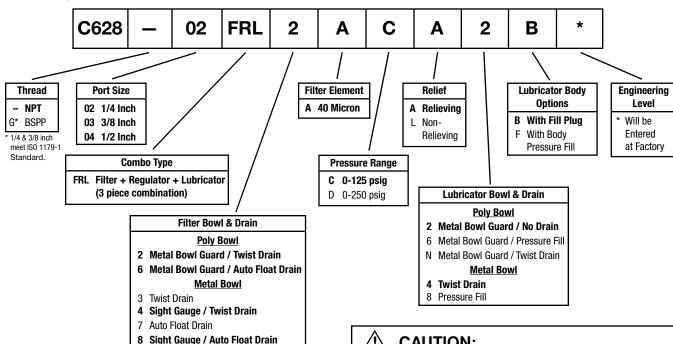
For other models, refer to ordering information.



Α	В	С	D	E	F	
C628-02F	C628-02FRL, C628-03FRL					
9.64 (245)	5.69 (145)	2.24 (57)	3.18 (81)	7.93 (201)	1.37 (35)	
C628-04FRL						
10.55 (268)	5.69 (145)	2.24 (57)	3.18 (81)	7.93 (201)	1.37 (35)	

· All dimensions nominal.

#### **Ordering Information**



#### **⚠ WARNING**

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

**BOLD ITEMS ARE MOST POPULAR.** 

# **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.

For polycarbonate bowl and sight dome, see Caution on Inside Cover.



#### **3-Unit Close Nippled Combinations**

### Standard Combinations - C628 Series

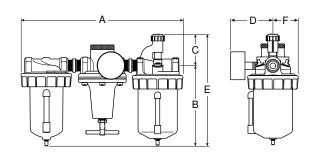
# **Three-Unit Combo**

- See individual component pages for details.
- Gauges included on combinations.



Series	Port Size	Model Numbers		
	3/4"	C628-06FRLWJCW		
0000	1"	C628-08FRLWJCW		
C628	1-1/4"	C628-10FRLWJCW		
	1-1/2"	C628-12FRLWJCW		

For other models, refer to ordering information below.

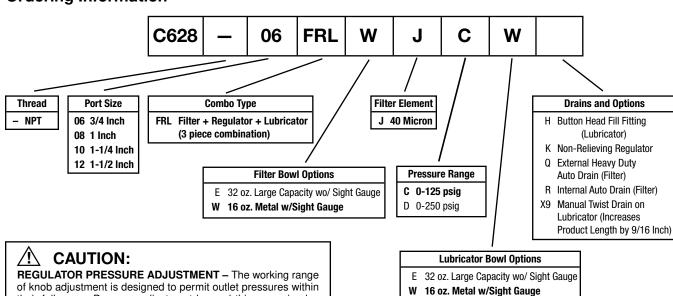


Α	В	С	D	E	F
C628-06FRL, C628-08FRL					
15.75 (400)	7.75 (197)	2.63 (67)	3.52 (89)	13.00 (330)	2.48 (63)
C628-10FRL, C628-12FRL					
16.50 (419)	8.13 (206)	2.84 (72)	3.86 (98)	14.13 (359)	2.64 (67)

Inches (mm)

• All dimensions nominal.

#### **Ordering Information**



**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.

#### **BOLD ITEMS ARE MOST POPULAR.**

# **-**Parker

# **⚠ WARNING**

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.





# 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 Parker valves, FRLs or vacuum products without thoroughly reading and understanding this safety guide as well as the specific Parker 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 Parker 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 Parker technical service department if you have any questions or require any additional information. See the Parker publication for the product being considered or used, or call 1-800-CPARKER, or go to www.parker.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.



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- 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: Parker published Installation Instructions must be followed for installation of Parker valves, FRLs and vacuum components. These instructions are provided with every Parker valve or FRL sold, or by calling 1-800-CPARKER, or at www.parker.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 4.10.
- **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 Parker valve and FRL sold, or are available by calling 1-800-CPARKER, or by accessing the Parker web site at www.parker.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.



#### Offer of Sale

The items described in this document and other documents and descriptions provided by Parker Hannifin Corporation, its subsidiaries and its authorized distributors ("Seller") are hereby offered for sale at prices to be established by Seller. This offer and its acceptance by any customer ("Buyer") shall be governed by all of the following Terms and Conditions. Buyer's order for any item described in its document, when communicated to Seller verbally, or in writing, shall constitute acceptance of this offer. All goods or work described will be referred to as "Products".

- 1. <u>Terms and Conditions.</u> Seller's willingness to offer Products, or accept an order for Products, to or from Buyer is subject to these Terms and Conditions or any newer version of the terms and conditions found on-line at www.parker.com/saleterms/. Seller objects to any contrary or additional terms or conditions of Buyer's order or any other document issued by Buyer.
- 2. <u>Price Adjustments</u>: <u>Payments</u>. Prices stated on Seller's quote or other documentation offered by Seller are valid for 30 days, and do not include any sales, use, or other taxes unless specifically stated, Unless otherwise specified by Seller, all prices are F.C.A. Seller's facility (INCOTERMS 2010). Payment is subject to credit approval and is due 30 days from the date of invoice or such other term as required by Seller's Credit Department, after which Buyer shall pay interest on any unpaid invoices at the rate of 1.5% per month or the maximum allowable rate under applicable law.
- 3. <u>Delivery Dates; Title and Risk; Shipment.</u> All delivery dates are approximate and Seller shall not be responsible for any damages resulting from any delay. Regardless of the manner of shipment, title to any products and risk of loss or damage shall pass to Buyer upon placement of the products with the shipment carrier at Seller's facility. Unless otherwise stated, Seller may exercise its judgment in choosing the carrier and means of delivery. No deferment of shipment at Buyers' request beyond the respective dates indicated will be made except on terms that will indemnify, defend and hold Seller harmless against all loss and additional expense. Buyer shall be responsible for any additional shipping charges incurred by Seller due to Buyer's acts or omissions.
- 4. Warranty. Seller warrants that the Products sold hereunder shall be free from defects in material or workmanship for a period of twelve months from the date of delivery to Buyer or 2,000 hours of normal use, whichever occurs first. The prices charged for Seller's products are based upon the exclusive limited warranty stated above, and upon the following disclaimer: DISCLAIMER OF WARRANTY: THIS WARRANTY COMPRISES THE SOLE AND ENTIRE WARRANTY PERTAINING TO PRODUCTS PROVIDED HEREUNDER. SELLER DISCLAIMS ALL OTHER WARRANTIES, EXPRESS AND IMPLIED, INCLUDING DESIGN, MERCHANTABILITY AND FITNESS FOR A PARTICULAR PURPOSE.
- 5. Claims; Commencement of Actions. Buyer shall promptly inspect all Products upon delivery. No claims for shortages will be allowed unless reported to the Seller within 10 days of delivery. No other claims against Seller will be allowed unless asserted in writing within 30 days after delivery. Buyer shall notify Seller of any alleged breach of warranty within 30 days after the date the defect is or should have been discovered by Buyer. Any action based upon breach of this agreement or upon any other claim arising out of this sale (other than an action by Seller for an amount due on any invoice) must be commenced within 12 months from the date of the breach without regard to the date breach is discovered.
- 6. LIMITATION OF LIABILITY. UPON NOTIFICATION, SELLER WILL, AT ITS OPTION, REPAIR OR REPLACE A DEFECTIVE PRODUCT, OR REFUND THE PURCHASE PRICE. IN NO EVENT SHALL SELLER BE LIABLE TO BUYER FOR ANY SPECIAL, INDIRECT, INCIDENTAL OR CONSEQUENTIAL DAMAGES ARISING OUT OF, OR AS THE RESULT OF, THE SALE, DELIVERY, NON-DELIVERY, SERVICING, USE OR LOSS OF USE OF THE PRODUCTS OR ANY PART THEREOF, OR FOR ANY CHARGES OR EXPENSES OF ANY NATURE INCURRED WITHOUT SELLER'S WRITTEN CONSENT, EVEN IF SELLER HAS BEEN NEGLIGENT, WHETHER IN CONTRACT, TORT OR OTHER LEGAL THEORY. IN NO EVENT SHALL SELLER'S LIABILITY UNDER ANY CLAIM MADE BY BUYER EXCEED THE PURCHASE PRICE OF THE PRODUCTS.
- 7. <u>User Responsibility.</u> The user, through its own analysis and testing, is solely responsible for making the final selection of the system and Product and assuring that all performance, endurance, maintenance, safety and warning requirements of the application are met. The user must analyze all aspects of the application and follow applicable industry standards and Product information. If Seller provides Product or system options, the user is responsible for determining that such data and specifications are suitable and sufficient for all applications and reasonably foreseeable uses of the Products or systems.
- 8. Loss to Buyer's Property. Any designs, tools, patterns, materials, drawings, confidential information or equipment furnished by Buyer or any other items which become Buyer's property, may be considered obsolete and may be destroyed by Seller after two consecutive years have elapsed without Buyer ordering the items manufactured using such property. Seller shall not be responsible for any loss or damage to such property while it is in Seller's possession or control.
- 9. Special Tooling. A tooling charge may be imposed for any special tooling, including without limitation, dies, fixtures, molds and patterns, acquired to manufacture Products. Such special tooling shall be and remain Seller's property notwithstanding payment of any charges by Buyer. In no event will Buyer acquire any interest in apparatus belonging to Seller which is utilized in the manufacture of the Products, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed, Seller shall have the right to alter, discard or otherwise dispose of any special tooling or other property in its sole discretion at any time.
- 10. <u>Buyer's Obligation</u>; <u>Rights of Seller</u>. To secure payment of all sums due or otherwise, Seller shall retain a security interest in the goods delivered and this agreement shall be deemed 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 its security interest.
- 11. Improper use and Indemnity. Buyer shall indemnify, defend, and hold Seller harmless from any claim, liability, damages, lawsuits, and costs (including attorney fees), whether for personal injury, property damage, patent, trademark or copyright

- infringement or any other claim, brought by or incurred by Buyer, Buyer's employees, or any other person, arising out of: (a) improper selection, improper application or other misuse of Products purchased by Buyer from Seller; (b) any act or omission, negligent or otherwise, of Buyer; (c) Seller's use of patterns, plans, drawings, or specifications furnished by Buyer to manufacture Product; or (d) Buyer's failure to comply with these terms and conditions. Seller shall not indemnify Buyer under any circumstance except as otherwise provided.
- 12. Cancellations and Changes. Orders shall not be subject to cancellation or change by Buyer 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. Seller may change product features, specifications, designs and availability with notice to Buyer.
- **13.** <u>Limitation on Assignment.</u> Buyer may not assign its rights or obligations under this agreement without the prior written consent of Seller.
- 14. Force Majeure. Seller does not assume the risk and shall not be liable for delay or failure to perform any of Seller's obligations by reason of circumstances beyond the reasonable control of Seller (hereinafter "Events of Force Majeure") Events of Force Majeure shall include without limitation: accidents, strikes or labor disputes, acts of any government or government agency, acts of nature, delays or failures in delivery from carriers or suppliers, shortages of materials, or any other cause beyond Seller's reasonable control.
- 15. Waiver and Severability. Failure to enforce any provision of this agreement will not waive that provision nor will any such failure prejudice Seller's right to enforce that provision in the future. Invalidation of any provision of this agreement by legislation or other rule of law shall not invalidate any other provision herein. The remaining provisions of this agreement will remain in full force and effect.
- 16. <u>Termination.</u> Seller may terminate this agreement for any reason and at any time by giving Buyer thirty (30) days written notice of termination. Seller may immediately terminate this agreement, in writing, if Buyer: (a) commits a breach of any provision of this agreement (b) appointments a trustee, receiver or custodian for all or any part of Buyer's property (c) files a petition for relief in bankruptcy on its own behalf, or by a third party (d) makes an assignment for the benefit of creditors, or (e) the dissolves or liquidates all or a majority of its assets.
- 17. Governing Law. This agreement and the sale and delivery of all Products hereunder shall be 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 this agreement.
- 18. Indemnity for Infringement of Intellectual Property Rights. Seller shall have no liability for infringement of any patents, trademarks, copyrights, trade dress, trade secrets or similar rights except as provided in this Section. Seller will defend and indemnify Buyer against allegations of infringement of U.S. patents, U.S. trademarks, copyrights, trade dress and trade secrets ("Intellectual Property Rights"). 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 an allegation that a Product sold pursuant to this Agreement infringes the Intellectual Property Rights of a third party. Seller's obligation to defend and indemnify Buyer is contingent on Buyer notifying Seller within ten (10) days after Buyer becomes aware of such allegations of infringement, and Seller having sole control over the defense of any allegations or actions including all negotiations for settlement or compromise. If a Product is subject to a claim that it infringes the Intellectual Property Rights of a third party, Seller may, at its sole expense and option, procure for Buyer the right to continue using the Product, replace or modify the Product so as to make it noninfringing, or offer to accept return of the Product and return the purchase price less a reasonable allowance for depreciation. Notwithstanding the foregoing, Seller shall have no liability for claims of infringement based on information provided by Buyer, or directed to Products delivered hereunder for which the designs are specified in whole or part by Buyer, or infringements resulting from the modification, combination or use in a system of any Product sold hereunder. The foregoing provisions of this Section shall constitute Seller's sole and exclusive liability and Buyer's sole and exclusive remedy for infringement of Intellectual Property Rights
- 19. <u>Entire Agreement.</u> This agreement contains the entire agreement between the Buyer and Seller and constitutes the final, complete and exclusive expression of the terms of sale. All prior or contemporaneous written or oral agreements or negotiations with respect to the subject matter are herein merged.
- 20. Compliance with Law, U. K. Bribery Act and U.S. Foreign Corrupt Practices Act. Buyer agrees to comply with all applicable laws and regulations, including both those of the United Kingdom and the United States of America, and of the country or countries of the Territory in which the Buyer may operate, including without limitation the U. K. Bribery Act, the U.S. Foreign Corrupt Practices Act ("FCPA") and the U.S. Anti-Kickback Act (the "Anti-Kickback Act"), and agrees to indemnify and hold harmless Seller from the consequences of any violation of such provisions by Buyer, its employees or agents. Buyer acknowledges that they are familiar with the provisions of the U. K. Bribery Act, the FCPA and the Anti-Kickback Act, and certifies that Buyer will adhere to the requirements thereof. In particular, Buyer represents and agrees that Buyer shall not make any payment or give anything of value, directly or indirectly to any governmental official, any foreign political party or official thereof, any candidate for foreign political office, or any commercial entity or person, for the purpose of influencing such person to purchase products or otherwise benefit the business of Seller.

02/12



Catalog 0303

03/2013



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