03 Miniature FRL Series

Catalog 601



WILKERSON®

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

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

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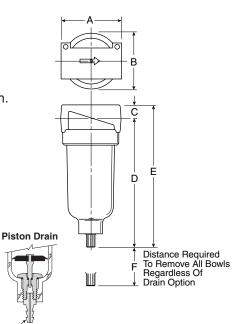
F03 Filters - Miniature



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 rated element.
- High Flow: 1/8" 22 SCFM §

1/4" - 24 SCFM§



Accepts 1/8" Tubing

Model Type	Port Size	Polycarbonate Bowl	Metal Bowl
Manual Drain	1/8	F03-01-000	F03-01-M00
	1/4	F03-02-000	F03-02-M00
Piston Drain	1/8	F03-01-D00	F03-01-DM0
	1/4	F03-02-D00	F03-02-DM0

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

For additional information on accessories and repair kits refer to the Table of Contents.

Standard part numbers shown, for other models refer to ordering information below.

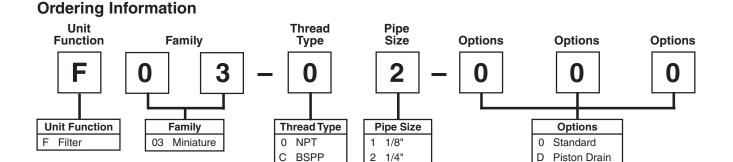
- [‡] For polycarbonate bowl see Caution on Inside Front Cover.
- § SCFM = Standard cubic feet per minute at 90 PSIG inlet and 5 PSIG pressure drop.

F03 Filter Dimensions					
Α	В	С			
1.69	1.53	.39			
(43)	(39)	(10)			
D	D†	E			
3.82	3.87	4.21			
(97)	(99)	(107)			
Ε [†]	F				
4.26	1.60				
(108)	(41)				

Inches (mm)

M Metal Bowl

† With Piston Drain

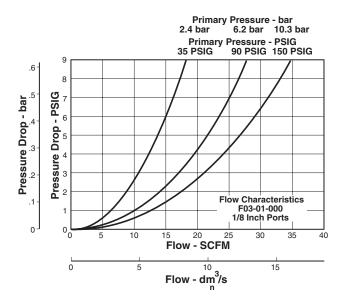


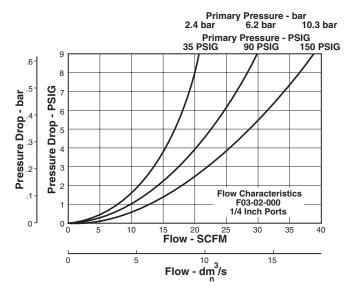
Note: When selecting from the options columns, please enter letters

in alphabetical order for positions 6, 7, and 8.

For example: F 0 3 - 0 1 - D M 0

NOTE: 000 in position 6, 7, and 8 signifies standard product. (Poly Bowl, Manual Drain, 5 Micron Element)





F03 Filter Kits & Accessories

Bowl Kits -

Manual Drain	PS404
	PS451B PS447B
Filter Element Kit – 5 Micron Mounting Bracket Kit	
Specifications	
Bowl Capacity	1 Ounce
Port Threads	1/8, 1/4 Inch

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

Piston Drain - 10 to 250 PSIG (0.7 to 17.2 bar) at 125°F (52°C) or less

32°F to 175°F (0°C to 80°C)

Poly Bowl - Piston Drain PS408B

Materials of Construction

Body	Zinc
Bowls - Transparent	
Deflector, Element Holder & Baffle	Plastic
Drains Manual Drain –	
Body & Stem	Plastic
Seals	Nitrile
Piston Drain –	
Piston & Seals	Nitrile
Stem, Seat, Adaptor & Washers	Aluminum
Filter Elements – 5 Micron	Plastic
Seals	Nitrile

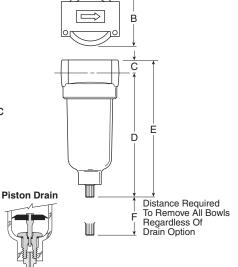
Accepts 1/8" Tubing

M03 Coalescing Filters - Miniature



Features

- Removes liquid aerosols and submicron 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.
- High Flow: .01 Type "C" Element 1/8" - 17 SCFM § 1/4" - 20 SCFM §



		Polycarbonate		Polycarbonate	Polycarbonate
	Bowl /		Metal Bowl /	Bowl /	Bowl /
Model Type	Port Size	"C" Element	"C" Element	1.0 Micron Elemen	t "D" Element
Manual Drain	1/8	M03-01-000	M03-01-M00	M03-01-S00	M03-01-X00
	1/4	M03-02-000	M03-02-M00	M03-02-S00	M03-02-X00

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in position 6, 7, 8 of the model number. For additional information on accessories and repair kits refer to the Table of Contents.

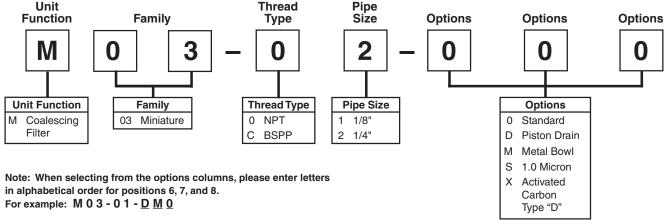
Standard part numbers shown, for other models refer to ordering information below.

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

M03 Coalescing Filter Dimensions				
Α	В	С		
1.69	1.53	.39		
(43)	(39)	(10)		
D	D†	E		
3.82	3.87	4.21		
(97)	(99)	(107)		
E†	F			
4.26	1.60			
(108)	(41)			

Inches (mm)

Ordering Information Unit

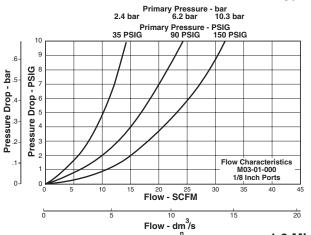


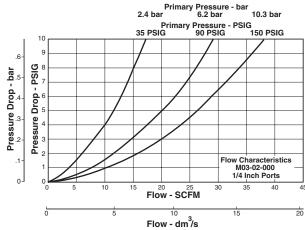
NOTE: 000 in position 6, 7, and 8 signifies standard product. (Poly Bowl, Manual Drain, .01 Micron "C" Element)



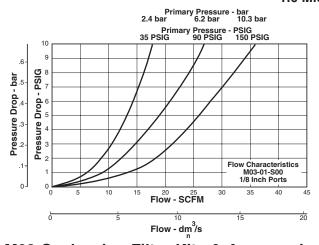
[†] With Piston Drain

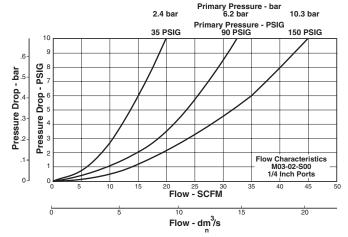
Type"C" Element





1.0 Micron Element





M03 Coalescing Filter Kits & Accessories

Poly Bowl - Piston Drain	PS408B
Manual Drain	PS404
Metal Bowl - Piston Drain	PS451B
Manual Drain	PS447B
Filter Element Kits - Type "C" (Standard)	PS446
1.0 Micron (Optional)	PS456
Type "D" (Optional)	PS452
Mounting Bracket Kit	PS417B

Materials of Construction

BodyZinc
Bowls - Transparent
Drains - Manual Drain - Body & Stem
Piston Drain – Piston & SealsNitrile Stem, Seat, Adaptor & Washers Aluminum
Element Holder Plastic
Filter Elements Borosilicate & Felt Glass Fibers
Seals Nitrile

Specifications

Bowl Kits -

Bowl Capacity	1 Ounce
Operation –	
Normal Operating Pressure Drop	2 PSIG
Maximum Recommended Pressure Drop	10 PSIG
(Element should be replaced)	
Port Threads	1/8, 1/4 Inch

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 250 PSIG (0 to 17.2 bar)

32°F to 175°F (0°C to 80°C)

Piston Drain – 10 to 250 PSIG (0.7 to 17.2 bar) at 125°F (52°C) or less

Weight .41 lb. (.18 kg)

R03 Regulators – Miniature

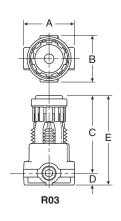


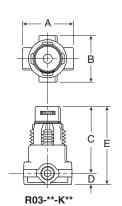
Features

- Unbalanced poppet standard.
- Solid control piston with lip seal for extended life.
- Non-rising adjusting knob.
- Compact, 3.08 inch (78mm) high by 1.65 inch (42mm) wide.
- · Easily serviced.

• High Flow: 1/8" - 13 SCFM §

1/4" - 15 SCFM§





Preset /

Pressure Limited

Options

Limiter Option

065 = 65 PSIG)

XXX PSIG (Example:

Blank No Preset or

Note: Pressure Range

Increments

10 to 90 PSIG in 5 PSIG

Model Type	Port Size	Without Gauge 2 to 125 PSIG (0,2 to 8,6 bar)	Without Gauge 1 to 60 PSIG (0,2 to 4,1 bar)	Without Gauge 1 to 30 PSIG (0,2 to 2,1 bar)	Without Gauge 1 to 15 PSIG (0,2 to 1,0 bar)
Relieving	1/8	R03-01-000	R03-01-L00	R03-01-P00	R03-01-Q00
	1/4	R03-02-000	R03-02-L00	R03-02-P00	R03-02-Q00
Outland To a	and a second constitution	and the state of t	and all the state of the state of the state of	and and an efficiency at a mile of a control of	2

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in position 6, 7, 8 of the model number. For additional information on accessories and repair kits refer to the Table of Contents.

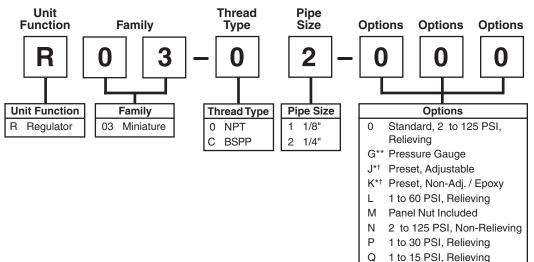
Standard part numbers shown, for other models refer to ordering information below.

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.

R03 Regulator Dimensions						
A B C D E						
R03	1.65	1.56	2.50	.38	2.88	
	(42)	(40)	(63,5)	(9,6)	(73)	
	Α	В	С	D	E	
R03-**-K**	1.65	1.56	2.28	.38	2.66	
	(42)	(40)	(57,9)	(9,6)	(67,6)	

Ordering Information



Note: When selecting from the options columns, please enter letters in alphabetical order for positions 6, 7, and 8.

For example: R 0 3 - 0 1 - G L 0

Spring Type by Preset / Limited Pressure:

For Preset / Limited Pressure 10 to 25 use 30 PSI Spring For Preset / Limited Pressure 26 to 50 use 60 PSI Spring For Preset / Limited Pressure 51 to 90 use 125 PSI Spring Inlet pressure is 100 PSIG.

R*† Pressure Limiter

For other pressures, consult factory.

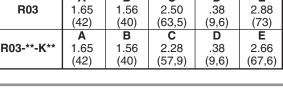
1 to 60 PSI, Non-Relieving

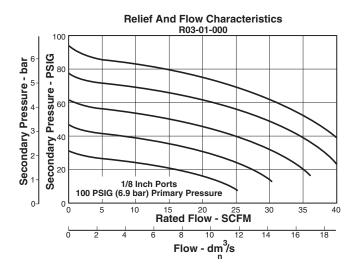
1 to 30 PSI, Non-Relieving

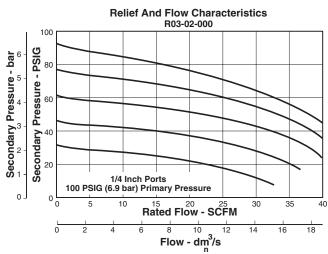
1 to 15 PSI, Non-Relieving

** Not available with BSPP thread type.

[†] Must specify preset or limited pressure.







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.

R03 Regulator Kits & Accessories

Poppet Valve Kit	PS424B
Gauges - 30 PSIG, 1/8" NPT (0 to 2,1 bar)	
60 PSIG, 1/8" NPT (0 to 4,1 bar)	P530154
160 PSIG, 1/8" NPT (0 to 11,0 bar)	
Mounting Bracket Kit (Includes Panel Mount Nut)	PS417B
Panel Mount Nuts - Plastic	
Metal	P01531
Service Kits – Non-Relieving	PS422
Relieving	PS423
Springs – 1-30 PSIG Range	P01175
1-60 PSIG Range	P01174
2-125 PSIG Range	P01173
1-15 PSIG Range	

Specifications

Port Threads
Pressure & Temperature Ratings – 0 to 300 PSIG (0 to 20,7 bar)
32°F to 125°F (0°C to 52°C)
Secondary Pressure Ranges –
Standard Pressure 2 to 125 PSIG (0 to 8,6 bar)
Medium Pressure
Medium Pressure
Low Pressure
Weight 2 lb / 14 kg

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

B03 Filter / Regulator – Miniature

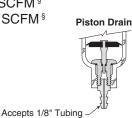


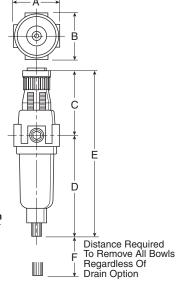




Features

- · Excellent water removal efficiency.
- Unbalanced poppet standard.
- · Solid control piston for extended
- 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§





Model Type	Port Size	Polycarbonate Bowl	Metal Bowl
Manual Drain	1/8	B03-01-0000	B03-01-M000
	1/4	B03-02-0000	B03-02-M000

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in the designated position of the model number. For additional information on accessories and repair kits refer to the Table of Contents.

B03 Regulator Dimensions			
Α	В	С	D
1.62	1.58	2.42	3.79
(41)	(40)	(61)	(96)
D†	Е	E†	F
3.64	6.21	6.06	1.60
(92)	(158)	(154)	(41)

Inches (mm)

1 to 60 PSI, Non-Relieving

1 to 30 PSI, Non-Relieving

1 to 15 PSI, Non-Relieving

Standard part numbers shown, for other models refer to ordering information below.

- [‡] For polycarbonate bowl see Caution on Inside Front Cover.
- § SCFM = Standard cubic feet per minute at 100 PSIG inlet,
- 90 PSIG no flow secondary setting and 10 PSIG pressure drop.

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

Ordering Information Unit **Thread Pipe** Preset / **Function Options Options Options Pressure Limited Family** Type Size **Unit Function** Options Options Family Pipe Size Thread Type NPT 03 Miniature 1/8 B Filter / Standard Blank No Preset or Regulator BSPP 1/4" Limiter Option Piston Drain Pressure Gauge XXX PSIG Preset, Adjustable (Example: K*† Preset, Non-Adj. / Epoxy 065 = 65 PSIGNote: Pressure Range 1 to 60 PSI, Relieving Note: When selecting from the options columns, please enter letters L 10 to 90 PSIG in 5 PSIG M* in alphabetical order for positions 6, 7, 8 and 9. Metal Bowl 2 to 125 PSI, Non-Relieving Increments For example: B 0 3 - 0 1 - D M 0 0 1 to 30 PSI, Relieving 'Inlet pressure is 100 PSIG. NOTE: 0000 in position 6, 7, 8 and 9 signifies standard product. Q 1 to 15 PSI, Relieving For other pressures, R*† Pressure Limiter (Poly Bowl, Manual Drain, 2 to 125 PSIG, Relieving)

Spring Type by Preset / Limited Pressure:

For Preset / Limited Pressure 10 to 25 use 30 PSI Spring

For Preset / Limited Pressure 26 to 50 use 60 PSI Spring

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

consult factory

thread type.

limited pressure.

* Not available with BSPP

Must specify preset or

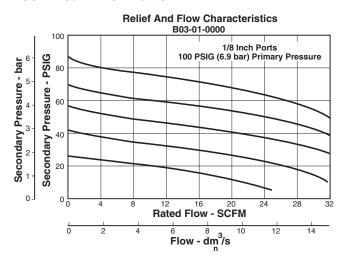
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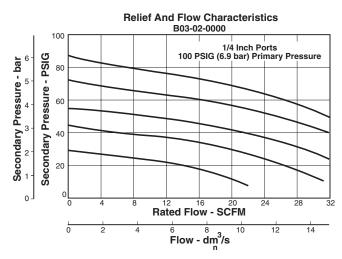
Т

[†] With Piston Drain

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.

⚠ WARNING

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

B03 Filter / Regulator Kits & Accessories

Bowl Kits –
Poly Bowl - Piston Drain PS408B
Manual DrainPS404
Metal Bowl – Piston Drain PS451B
Manual Drain PS447B
Filter Element Kit – 5 Micron
Gauges – 30 PSIG (0 to 2,1 bar) P530156
60 PSIG (0 to 4,1 bar) P530154
160 PSIG (0 to 11,0 bar) P77413
Mounting Bracket Kit (Includes Panel Mount Nut) PS417B
Panel Mount Nut – Plastic
Metal P01531
Poppet Valve Kit PS424B
Service Kits – Non-Relieving
RelievingPS423
Springs –1- 15 PSIG Range
1- 30 PSIG Range P01175
1- 60 PSIG Range P01174
2- 125 PSIG Range P01173

Specifications

Bowl Capacity	1 Ounce
Gauge Ports (2)	1/8 Inch
Port Threads1/8	3, 1/4 Inch

Pressure & Temperature Ratings -

Polycarbonate Bowl

0 to 150 PSIG (0 to 10,4 bar), 32°F to 125°F (0°C to 52°C)

0 to 250 PSIG (0 to 17,3 bar), 32°F to 175°F (0°C to 80°C)

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 1,0	bar)
W	eight		4	lb. (.18	kg)

Materials of Construction

A allocation or Block

Adjusting Nut	Brass
Adjusting Stem & Spring	Steel
Body	Zinc
Bonnet, Knob, Seat, Piston, Holder & Deflector	Plastic
Bowls - Transparent	Polycarbonate
Metal (Without Sight Gauge)	Zinc
Drains - Manual Drain -	
Body & Stem	Plastic
Seals	Nitrile
Piston Drain –	
Piston & Seals	Nitrile
Stem, Seat, Adaptor & Washers	Aluminum
Filter Elements – 5 Micron (Standard)	Plastic
Seals	Nitrile

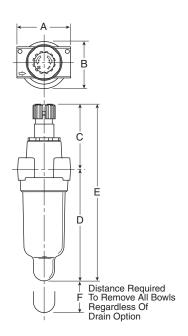
L03 EconOmist Lubricators - Miniature





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[§]



Model Type	Port Size	Polycarbonate Bowl	Metal Bowl
L03	1/8	L03-01-000	L03-01-M00
	1/4	L03-02-000	L03-02-M00

Options - To order an option supplied with the unit model, add the appropriate coded suffix letter in position 6, 7, 8 of the model number.

For additional information on accessories and repair kits, refer to the Table of Contents.

Standard part numbers shown, for other models refer to ordering information below.

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

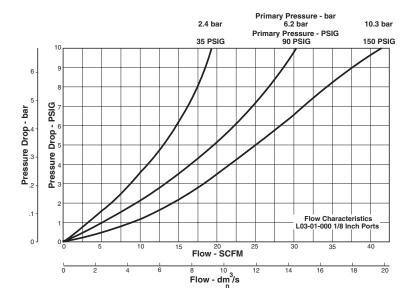
L03 Lubricator Dimensions			
Α	В	С	
1.73	1.56	2.16	
(44)	(40)	(55)	
D	D†	E	
3.64	3.78	5.80	
(92)	(96)	(147)	
E†	F		
5.94 (151)	1.60 (41)		

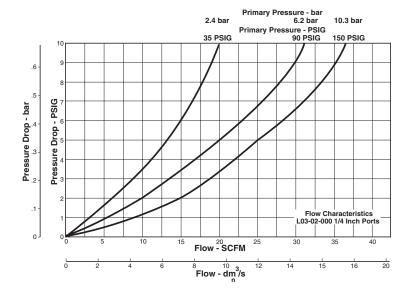
Inches (mm)

Ordering Information Unit **Thread Pipe Function Family** Size **Options Options Options** Type 0 **Unit Function Family** Thread Type Pipe Size **Options** L Lubricator 03 Miniature 0 NPT 1/8" Standard С BSPP 1/4" Poly Bowl w/ Manual Drain Metal Bowl w/ Note: When selecting from the options columns, please enter letters Manual Drain in alphabetical order for positions 6, 7, and 8. N* Nylon Drip Control For example: L 0 3 - 0 1 - M 0 0 (Metal Bowl Only) Available only with Metal NOTE: 000 in position 6, 7, and 8 signifies standard product. Bowl "M".

(Poly Bowl, No Drain)

[†] With Twist Drain





L03 EconOmist Lubricator Kits & Accessories

Bowl Kits	-
-----------	---

Poly Bowl – No DrainF	² S421
Manual DrainF	PS420
Metal Bowl – Manual Drain (No Sight Gauge) PS	S447B
Mounting Bracket Kit F	PS419

Specifications

Bowl Capacity	1 Ounce
Minimum Flow for Lubrication	0.7 SCFM at 100 PSIG
Port Threads	1/8, 1/4 Inch

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

Suggested Lubricant

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

Materials of Construction

Body	Zinc
Bowls - Transparent	Polycarbonate
Metal (Without Sight Gauge) .	Zinc
Drains - Manual - Body & Nut	Plastic
Seals	Nitrile
Sight Dome	Polycarbonate

Close Nippled Combinations – Miniature

· See individual component pages for details.

D03 Two-Unit Combo





A A A A A A A A A A A A A A A A A A A	D F F
	\bigcup

Series	Port	Model Numbers				
D03	1/8"	D03-01-0000				
D03	1/4"	D03-02-0000				

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

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.

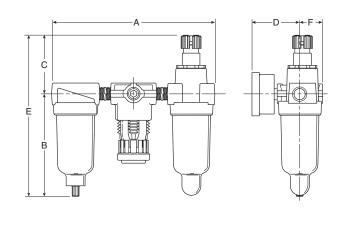
• Regulator can be mounted with knob in up or down position. (Factory supplied in down position)

C03 Three-Unit Combo



Series	Port	Model Numbers
C03	1/8"	C03-01-0000
C03	1/4"	C03-02-0000

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

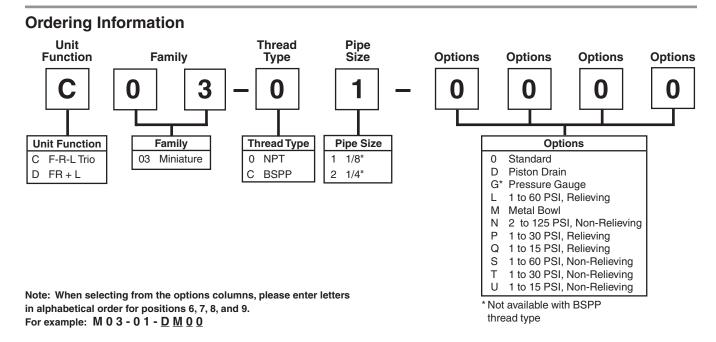


Α	В	С	D	Е	F
5.77	3.82	2.16	2.04	5.98	.79
(147)	(97)	(55)	(52)	(152)	(20)

Inches (mm)

Note: All dimensions nominal.

Close Nippled Combinations – Miniature



NOTE: 0000 in position 6, 7, 8 and 9 signifies standard product. (Poly Bowl, Manual Drain on Filter, no Drain on Lubricator, 2 to 125 PSIG, Relieving)

⚠ WARNING

Product rupture can cause serious injury.

Do not connect regulator to bottled gas.

Do not exceed maximum primary pressure rating.

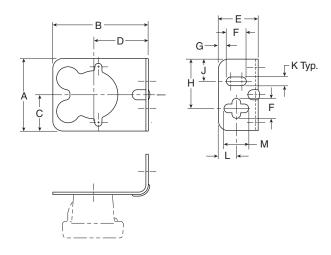
CAUTION:

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.

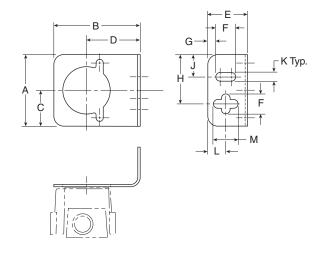
For best performance, regulated pressure should always be set by increasing the pressure up to the desired setting.

Kits & Accessories (See individual component pages for other kits and accessories.)





PS417B (Includes Panel Mount Nut)



PS419

Dimensions

	Α	В	С	D	E	F	G	Н	J	K	L	М	Kit
inches	1.80	2.37	.90	1.35	1.00	.50	.20	1.24	.56	.22	.45	.62	PS417B
mm	46	60	23	34	25	13	5	31	14	6	11	16	(F03, M03, R03, B03)
inches	1.80	2.17	.90	1.35	1.00	.50	.20	1.24	.56	.22	.45	.62	PS419
mm	46	55	23	34	25	13	5	31	14	6	11	16	(L03)





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- 7. Special Tooling: A tooling charge may be imposed for any special tooling, including without limitations, dies, fixtures, molds and patterns, acquired to manufacture items sold pursuant to this contract. 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 items sold hereunder, even if such apparatus has been specially converted or adapted for such manufacture and notwithstanding any charges paid by Buyer. Unless otherwise agreed,

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- 9. Taxes: Unless otherwise indicated on the face hereof, all prices and charges are exclusive of excise, sales, use, property, occupational or like taxes which may be imposed by any taxing authority upon the manufacture, sale or delivery of the items sold hereunder. If any such taxes must be paid by Seller or if Seller is liable for the collection of such tax, the amount thereof shall be in addition to the amounts for the items sold. Buyer agrees to pay all such taxes or to reimburse Seller therefore upon receipt of its invoice. If Buyer claims exemption from any sales, use or other tax imposed by any taxing authority, Buyer shall save Seller harmless from and against any such tax, together with any interest or penalties thereon which may be assessed if the items are held to be taxable.
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- 11. Force Majeure: Seller does not assume the risk of 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, acts of God, strikes or labor disputes, acts, laws, rules or regulations of any government or government agency, fires, floods, delays or failures in delivery of carriers or suppliers, shortages of materials and any other cause beyond Seller's control.
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