



# PRODUCT INFORMATION

## INTEGRATED FILTER/REGULATOR AND LUBRICATOR

### COMBINATION UNITS



**ROSS CONTROLS**

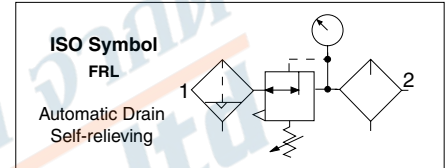
# In-line Integrated Filter/Regulator plus Lubricator Combinations

MINIATURE Series

Port Sizes: 1/8 & 1/4 – Flow to 24 scfm

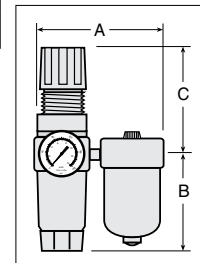


Combination with PISTON Type REGULATOR					
Port Size	Port Threads	Automatic Drain		Manual Drain	
		Polycarbonate Bowl	Metal Bowl	Polycarbonate Bowl	Metal Bowl
		Model Number	Model Number	Model Number	Model Number
<b>With FILL Port Lubricator</b>					
1/8	NPTF	5351C1006	5352C1006	5351C1005	5352C1005
	G	C5351C1006	C5352C1006	C5351C1005	C5352C1005
1/4	NPTF	5351C2006	5352C2006	5351C2005	5352C2005
	G	C5351C2006	C5352C2006	C5351C2005	C5352C2005
<b>With QUICK-FILL Cap Lubricator</b>					
1/8	NPTF	5351C1106	5352C1106	5351C1105	5352C1105
	G	C5351C1106	C5352C1106	C5351C1105	C5352C1105
1/4	NPTF	5351C2106	5352C2106	5351C2105	5352C2105
	G	C5351C2106	C5352C2106	C5351C2105	C5352C2105

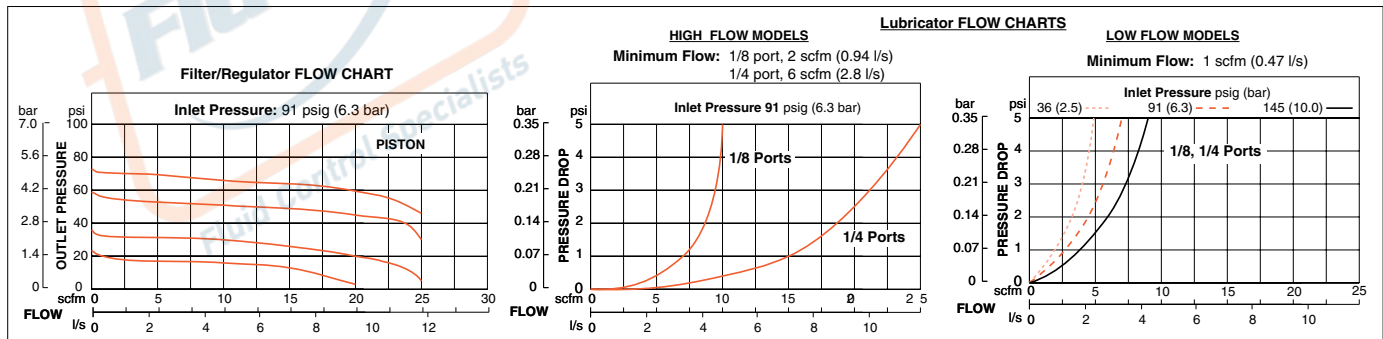


Port Size	Bowl Type	Bowl Capacity	Dimensions inches (mm)				Weight † lb (kg)
			A	B	C	Depth †	
1/8, 1/4	Polycarbonate	2-oz (59.1-ml)	3.7 (94)	3.9 (99)	2.6 (67)	1.6 (41)	0.66 (0.30)
	Aluminum	2-oz (59.1-ml)	4.0 (101)	4.3 (109)	2.6 (67)	1.6 (41)	0.66 (0.30)

† Less gauge.



REPLACEMENT FILTER ELEMENTS		
Element Rating	Element Material	Model Number
5-µm - Standard	Polyethylene	933K77
5-µm - Optional	Sintered Bronze	R-KA130-27E5
20-µm - Optional	Sintered Bronze	R-KA130-27E4
40-µm - Optional	Sintered Bronze	R-KA130-27E3



Pressure Gauge included.  
Accessories ordered separately, refer to page G6.3-4.

## STANDARD SPECIFICATIONS (for units on this page):

Construction Design	Filter – Fiber Regulator - Piston Lubricator - Wick-Feed	Outlet Pressure	Adjustable up to 100 psig (7 bar).
Temperature	Ambient/Media: Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	Filter Drain	Internal automatic drain; optional manual drain
Fluid Media	Compressed air	Pressure Gauge	0 to 160 psig (11 bar); 1/8 NPT gauge ports front and rear
Operating Pressure	Automatic Drain Models Polycarbonate Bowl: 15 to 150 psig (1 to 10 bar) Metal Bowl: 15 to 200 psig (1 to 14 bar)	Oil Adjustment	External, no shutoff.
	Manual Drain Models Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0 to 200 psig (0 to 14 bar)	Panel Mounting	1-3/16 inch (30 mm) hole required
		Construction Material	Filter Element: 5-micron rated polyethylene Filter/Regulator & Lubricator Bodies: Aluminum Bowl: Polycarbonate bowls or aluminum bowls Regulator Dome and Knob: Acetal Seals: Nitrile



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# In-line Integrated Filter/Regulator plus Lubricator Combinations

## MINIATURE Series

Port Sizes: 1/8 & 1/4 – Flow to 24 scfm

### Combination with DIAPHRAGM Type REGULATOR

Port Size	Port Threads	Automatic Drain		Manual Drain	
		Polycarbonate Bowl	Metal Bowl	Polycarbonate Bowl	Metal Bowl
		Model Number	Model Number	Model Number	Model Number

### Fill Port Lubricator

1/8	NPTF	5341C1006	5342C1006	5341C1005	5342C1005
	G	C5341C1006	C5342C1006	C5341C1005	C5342C1005
1/4	NPTF	5341C2006	5342C2006	5341C2005	5342C2005
	G	C5341C2006	C5342C2006	C5341C2005	C5342C2005

### With QUICK-FILL Cap Lubricator

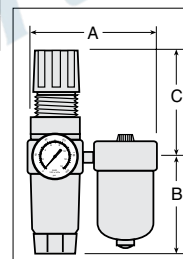
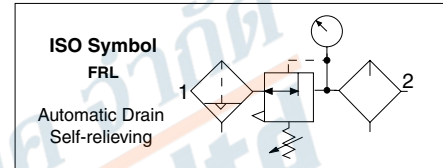
1/8	NPTF	5341C1106	5342C1106	5341C1105	5342C1105
	G	C5341C1106	C5342C1106	C5341C1105	C5342C1105
1/4	NPTF	5341C2106	5342C2106	5341C2105	5342C2105
	G	C5341C2106	C5342C2106	C5341C2105	C5342C2105

Port Size	Bowl Type	Bowl Capacity	Dimensions inches (mm)				Weight † lb (kg)
			A	B	C	Depth †	
1/8, 1/4	Polycarbonate	2-oz (59.1-ml)	3.7 (94)	3.6 (92)	2.6 (67)	1.6 (41)	0.66 (0.30)
1/8, 1/4	Aluminum	2-oz (59.1-ml)	4.0 (101)	4.3 (109)	2.6 (67)	1.6 (41)	0.66 (0.30)

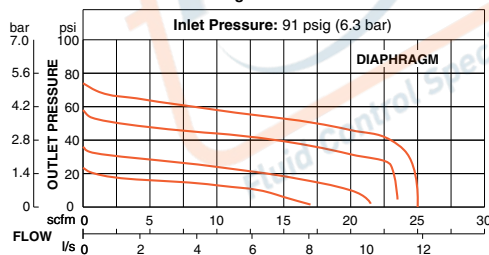
† Less gauge.

### REPLACEMENT FILTER ELEMENTS

Element Rating	Element Material	Model Number
5-µm - Standard	Polyethylene	933K77
5-µm - Optional	Sintered Bronze	R-KA130-27E5
20-µm - Optional	Sintered Bronze	R-KA130-27E4
40-µm - Optional	Sintered Bronze	R-KA130-27E3



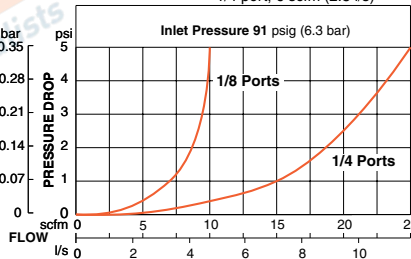
### Filter/Regulator FLOW CHART



### Lubricator FLOW CHARTS

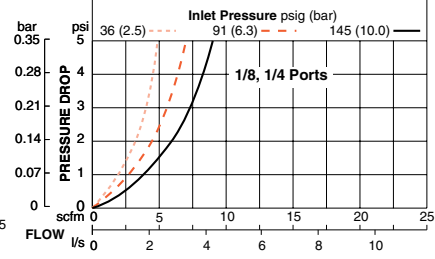
#### HIGH FLOW MODELS

Minimum Flow: 1/8 port, 2 scfm (0.94 l/s)  
1/4 port, 6 scfm (2.8 l/s)



#### LOW FLOW MODELS

Minimum Flow: 1 scfm (0.47 l/s)



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Pressure Gauge included.  
Accessories ordered separately, refer to page G6.3-4.

### STANDARD SPECIFICATIONS (for units on this page):

Construction Design	Filter – Fiber Regulator – Diaphragm Lubricator – Week-Feed	Outlet Pressure	Adjustable up to 100 psig (7 bar).
Temperature	Ambient/Media: Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	Filter Drain	Internal Automatic or Manual
Fluid Media	Compressed air	Pressure Gauge	0 to 160 psig (11 bar); 1/8 NPT gauge ports front and rear
Operating Pressure	Automatic Drain Models Polycarbonate Bowl: 15 to 150 psig (1 to 10 bar) Metal Bowl: 15 to 200 psig (1 to 14 bar)	Oil Adjustment	Internal; tamper-resistant
	Manual Drain Models Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0 to 200 psig (0 to 14 bar)	Panel Mounting	1-3/16 inch (30 mm) hole required
		Construction Material	Filter Element: 5-micron rated polyethylene Filter/Regulator & Lubricator Bodies: Aluminum Bowls: Polycarbonate or Aluminum Regulator Dome and Knob: Acetal Seals: Nitrile



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# Modular Integrated Filter/Regulator plus Lubricator Combinations

MID-SIZE Series

Port Sizes: 1/4, 3/8 & 1/2 – Flow to 100 scfm

Choose your options (in red) to configure your model number.

5N 00 B 2 1 0 1

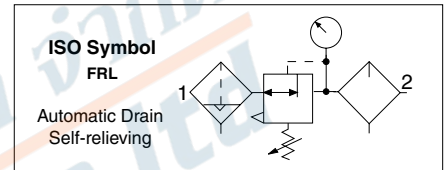
CONNECTIONS	
NPTF Pipe In, Out, Between	00
NPTF Pipe In & Out, Modular Between	09
Modular, Male Ports In & Out	10
Modular, Female Ports In & Out	11

PIPE SIZE	
1/4	2
3/8	3
1/2	4

FILTER DRAIN TYPE	
None	0
Automatic Drain, Plastic Bowl	1
Automatic Drain, Metal Bowl	2
Manual Drain, Plastic Bowl	3
Manual Drain, Metal Bowl	4

Regulator TYPE ADJUSTMENT RANGE	
None	0
0-100 psig (0-6.9 bar)	1
0-50 psig (0-3.4 bar)	3
0-150 psig (0-10 bar)	5

LUBRICATOR FILL TYPE	
None	0
Plastic Bowl	1
Metal Bowl	2
Plastic Bowl, Quick-Fill Cap	3
Metal Bowl, Quick-Fill Cap	4



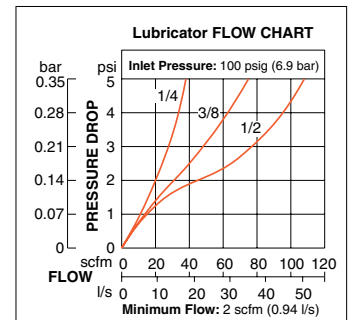
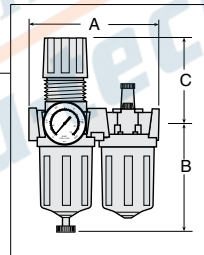
Port Size	Bowl Type	Bowl Capacity	Dimensions* inches (mm)				Weight † lb (kg)
			A	B**	C***	Depth †	
1/4, 3/8, 1/2	Polycarbonate	4-oz (120-ml)	4.9 (124)	4.6 (116)	3.3 (83)	2.4 (60)	2.94 (1.34)
	Zinc	4-oz (120-ml)	4.9 (124)	4.9 (123)	3.3 (83)	2.4 (60)	2.94 (1.34)

\* Dimensions for NPTF Pipe In & Out, Modular Between option; dimensions for other combinations consult ROSS.

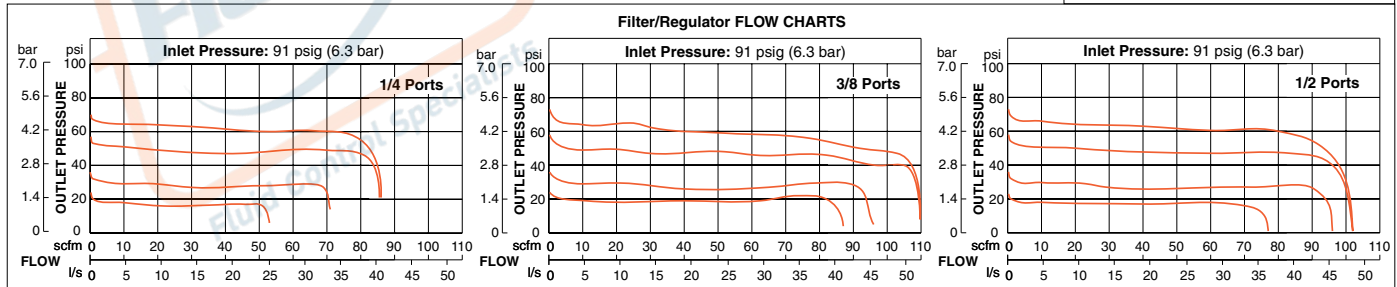
\*\* Bowl removal clearance: add 3.1 (79).

\*\*\* Dome removal clearance: add 0.63 (16).

† Less gauge.



REPLACEMENT FILTER ELEMENTS		
Element Rating	Element Material	Model Number
5-µm - Standard	Polyethylene	936K77
5-µm - Optional	Sintered Bronze	R-KA60F-03E5
20-µm - Optional	Sintered Bronze	R-KA60F-03E4
40-µm - Optional	Sintered Bronze	R-KA60F-03E3



Pressure Gauge included. Includes 2 Female Port Blocks.  
Accessories ordered separately, refer to page G6.3-4.

## STANDARD SPECIFICATIONS (for units on this page):

Construction Design	Filter – Fiber Regulator – Diaphragm Lubricator - Week-Feed	Filter Drain	Internal Automatic or Manual
Temperature	Ambient/Media: Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	Pressure Gauge	0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear
Fluid Media	Compressed air	Oil Adjustment	External; tamper-resistant
Operating Pressure	Automatic Drain Models Polycarbonate Bowl: 15 to 150 psig (1 to 10 bar) Metal Bowl: 15 to 200 psig (1 to 14 bar)	Panel Mounting	1-9/16 inch (40 mm) hole required
	Manual Drain Models Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0 to 200 psig (0 to 14 bar)	Construction Material	Filter Element: 5-micron rated polyethylene
Outlet Pressure	Adjustable up to 100 psig (7 bar).		Filter/Regulator & Lubricator Bodies: Zinc
			Bowls: Polycarbonate bowls with zinc shatterguard, or zinc bowls
			Regulator Dome and Knob: Acetal
		Sight Dome: Nylon	
		Seals: Nitrile	



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# Modular Integrated Filter/Regulator plus Lubricator Combinations

MD3™ Series

Port Sizes: 1/4, 3/8 & 1/2 – Flow to 110 scfm

Choose your options (in red) to configure your model number.

MD3 **53P** **B** **B** **2** **C** **2** **2** **Q** **1**

BOWLS MATERIAL/SIZE	
Polycarbonate Bowls 5.1-oz (151-ml) - on Filter/Regulator and Lubricator	<b>53P</b>
Metal Bowls 6-oz (177-ml) - on Filter/Regulator and Lubricator	<b>53M</b>
Metal Bowl 6-oz (177-ml) - on Filter/Regulator	<b>53E</b>
Metal Bowl 10-oz (295-ml) - on Lubricator	<b>53E</b>
Plastic Bowl 6-oz (177-ml) - on Filter/Regulator	<b>53F</b>
Metal Bowl 10-oz (295-ml) - on Lubricator	<b>53F</b>

ADJUSTMENT RANGE	
0-200 psig (0-14 bar)	<b>A*</b>
<b>0-150 psig (0-10.3 bar)</b>	<b>B</b>
0-100 psig (0-6.9 bar)	<b>C</b>
0-50 psig (0-3.4 bar)	<b>D</b>
Reverse Flow 0-200 psig (0-13.8 bar)	<b>F*</b>
Reverse Flow 0-150 psig (0-10.3 bar)	<b>G</b>
Reverse Flow 0-100 psig (0-6.9 bar)	<b>H</b>
Reverse Flow 0-50 psig (0-3.4 bar)	<b>J</b>

\*Must be ordered with metal bowl.

BOWL DRAIN	
Manual Drain	<b>2</b>
Float Drain	<b>0</b>

FILTER ELEMENT TYPE	
40-µm Sintered Bronze	<b>A</b>
<b>5-µm Polyethylene</b>	<b>B</b>
5-µm Sintered Bronze	<b>E</b>
20-µm Sintered Bronze	<b>F</b>

CAP COLOR	
Black	<b>2</b>
Yellow	<b>Y</b>

LUBRICATOR FILL TYPE	
None	<b>N</b>
<b>Quick Fill Cap</b>	<b>Q</b>
Fill Port	<b>S</b>

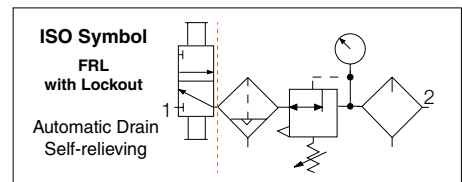
PIPE SIZE	
1/4 NPTF	<b>2</b>
3/8 NPTF	<b>3</b>
1/2 NPTF	<b>4</b>
1/4 G	<b>B</b>
3/8 G	<b>C</b>
1/2 G	<b>D</b>

LOCKOUT VALVE	
<b>L-O-X® on outlet side</b>	<b>1</b>
L-O-X® on the inlet side (must also choose Reverse Flow)	<b>2</b>
L-O-X® with EEZ-ON® on outlet side	<b>3</b>
L-O-X® with EEZ-ON® on inlet side (must also choose Reverse Flow)	<b>4</b>
Without Valve - Leave Blank	



REPLACEMENT FILTER ELEMENTS*		
Element Rating	Element Material	Model Number
5-µm	Polyethylene	R-A60F-03PE5
5-µm	Sintered Bronze	R-A60F-03E5
20-µm	Sintered Bronze	R-A60F-03E4
40-µm	Sintered Bronze	R-A60F-03E3

\* For polycarbonate and metal bowl types.



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Accessories ordered separately, refer to page G6.3-5.

## STANDARD SPECIFICATIONS (for units on this page):

Construction Design	Filter – Fiber or Sintered Bronze Regulator – Diaphragm Lubricator - Sight-Feed	Filter Drain	Internal Automatic or Manual
Temperature	Ambient/Media: Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	Pressure Gauge	0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear
Fluid Media	Compressed air	Oil Adjustment	External; tamper-resistant
Operating Pressure Filter	Float Drain Models Polycarbonate Bowl: 30 to 150 psig (2 to 10 bar) Metal Bowl: 30-200 psig (2 to 14 bar) Manual Drain Models Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0-250 psig (0 to 17 bar)	Panel Mounting	2-1/16 inch (52 mm) hole required
Operating Pressure Lubricator	Polycarbonate Bowl: Maximum 150 psig (10 bar) Metal Bowl: Maximum 200 psig (17 bar)	Construction Material	Filter Element: 5-micron rated polyethylene; 5-, 20- or 40-micron rated sintered bronze Filter/Regulator & Lubricator Bodies: Zinc Bowls: Polycarbonate bowl with nylon shatterguard, or aluminum bowl with clear nylon sight glass. Lubricator bowl only: Extended aluminum bowl with clear nylon sight glass
Outlet Pressure	Adjustable up to 200 psig (14 bar); optional adjusting springs	Dome: Nylon	
Optional Pressure Adjustment	Locking Key: Removable	Sight-Feed Dome: Nylon	
		Seals: Nitrile	
		Valve: Brass	



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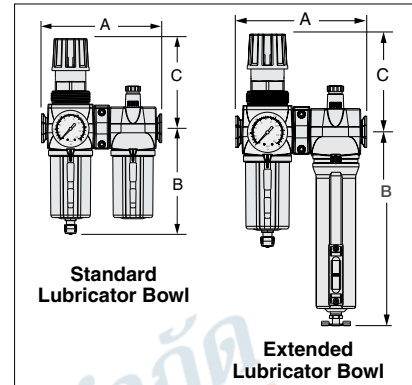
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# Modular Integrated Filter/Regulator plus Lubricator Combinations

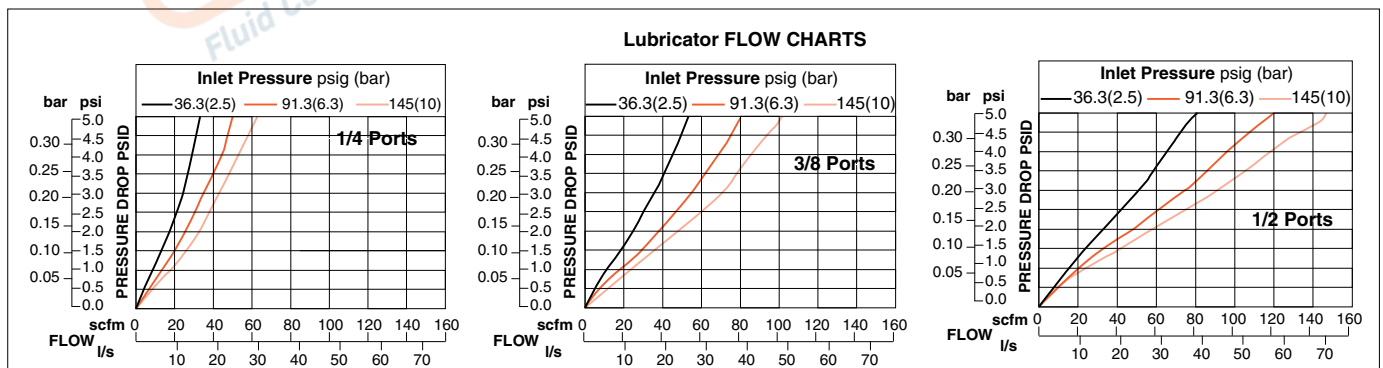
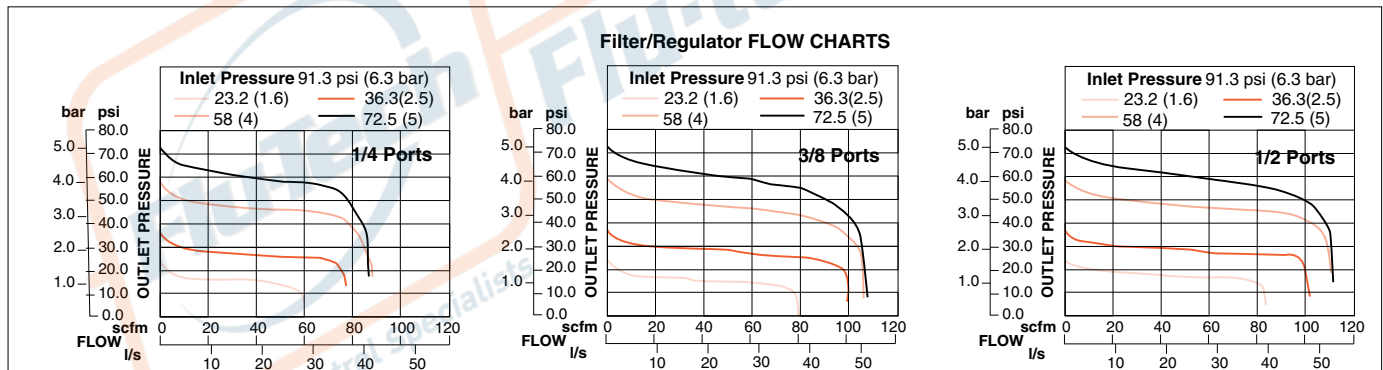
MD3™ Series

Bowl Type	Dimensions inches (mm)				Weight † lb (kg)
	A	B*	C	Depth †	
Polycarbonate	6.46 (164.1)	5.54 (140.6)	4.68 (119)	2.90 (73.7)	4.7 (2.1)
Metal	6.46 (164.1)	6.42 (163.1)	4.68 (119)	2.90 (73.7)	5.1 (2.3)
Extended Metal	6.46 (164.1)	9.37 (238)	4.68 (119)	2.90 (73.7)	5.3 (2.4)

**Lockout:** With the lockout valve, add 2.3 (58) to dimension A.  
 \* Bowl (standard) removal clearance: add 3.1 (79)  
 \* Bowl (extended) removal clearance: add 6.1 (155)  
 † Less gauge.



## AIR FLOW and CONSTRUCTION DATA



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# Modular Integrated Filter/Regulator plus Lubricator Combinations

FULL-SIZE Series

Port Sizes: 1/4, 3/8, 1/2 & 3/4 – Flow to 140 scfm

Choose your options (in red) to configure your model number.

5E 00 B 2 1 0 5

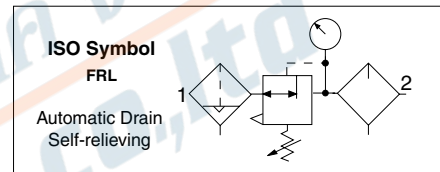
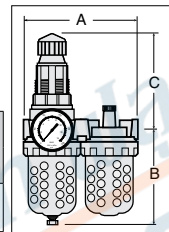
CONNECTIONS	
NPTF Pipe In, Out, Between	00
NPTF Pipe In & Out, Modular Between	09
Modular, Male Ports In & Out	10
Modular, Female Ports In & Out	11

PIPE SIZE	
1/4	2
3/8	3
1/2	4
3/4	5

Regulator TYPE ADJUSTMENT RANGE	
None	0
0-125 psig (0-8.6 bar)	2
0-50 psig (0-3.4 bar)	4
0-175 psig (0-12 bar)	6

FILTER DRAIN TYPE	
None	0
Automatic Drain, Plastic Bowl	1
Automatic Drain, Metal Bowl	2
Manual Drain, Plastic Bowl	3
Manual Drain, Metal Bowl	4

LUBRICATOR FILL TYPE	
None	0
Sight-Feed, Plastic Bowl	1
Sight-Feed, Metal Bowl	2
Sight-Feed, Plastic Bowl, Quick-Fill Cap	3
Sight-Feed, Metal Bowl, Quick-Fill Cap	4
Wick-Feed, Plastic Bowl	5
Wick-Feed, Metal Bowl	6
Wick-Feed, Plastic Bowl, Quick-Fill Cap	7
Wick-Feed, Metal Bowl, Quick-Fill Cap	8



Port Size	Bowl Type	Dimensions* inches (mm)				Weight † lb (kg)
		A	B**	C***	Depth †	
1/4, 3/8, 1/2, 3/4	Polycarbonate 8-oz (240-ml)	6.7 (170)	5.8 (146)	5.8 (146)	3.5 (89)	5.94 (2.69)
	Metal 8-oz (240-ml)	6.7 (170)	6.4 (163)	5.8 (146)	3.5 (89)	5.94 (2.69)

\* Dimensions for NPTF Pipe In & Out, Modular Between option; dimensions for other combinations consult ROSS.

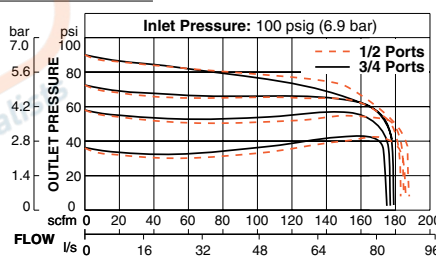
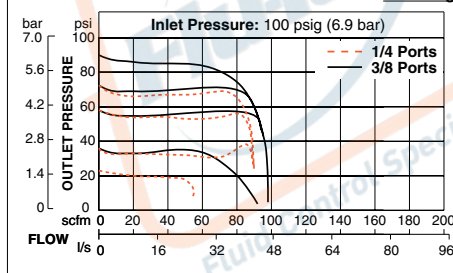
\*\* Bowl removal clearance: add 3.1 (79).

\*\*\* Dome removal clearance: add 0.63 (16).

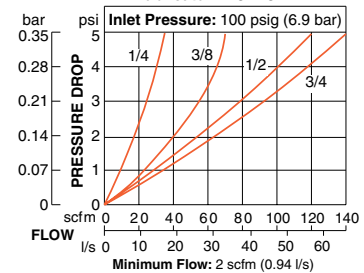
† Less gauge.

REPLACEMENT FILTER ELEMENTS		
Element Rating	Element Material	Model Number
5-µm - Standard	Polyethylene	939K77
5-µm - Optional	Sintered Bronze	R-KA103-03E5
20-µm - Optional	Sintered Bronze	R-KA103-03E4
40-µm - Optional	Sintered Bronze	R-KA103-03E3

Filter/Regulator FLOW CHARTS



Lubricator FLOW CHART



Pressure Gauge included. Units with Threaded Ports Include 2 female port blocks.

Options: External Automatic Drain, refer to page G6.7.

Accessories ordered separately, refer to page G6.3-4.

## STANDARD SPECIFICATIONS (for units on this page):

Construction Design	Filter – Fiber Regulator – Diaphragm Lubricator - Sight-Feed, or Week-Feed	Pressure Adjustment	Locking Key: Removable
Temperature	Ambient/Media: Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	Filter Drain	Internal Automatic or Manual
Fluid Media	Compressed air	Pressure Gauge	0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear
Operating Pressure	Automatic Drain Models Polycarbonate Bowl: Up to 150 psig (up to 10 bar) Metal Bowl: Up to 200 psig (up to 14 bar) Manual Drain Models Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0 to 200 psig (0 to 14 bar)	Oil Adjustment	External; tamper-resistant
Outlet Pressure	Adjustable up to 125 psig (9 bar).	Construction Material	Filter Element: 5-micron rated polyethylene Filter/Regulator & Lubricator Bodies: Zinc Bowls: Polycarbonate bowls with steel shatterguard, or zinc bowls with clear nylon sight glasses Regulator Dome: Nylon Regulator Knob: Acetal Sight Dome: Clear Nylon Seals: Nitrile



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# Modular Integrated Filter/Regulator plus Lubricator Combinations

MD4™ Series

Port Sizes: 3/8, 1/2 & 3/4 – Flow to 205 scfm

Choose your options (in red) to configure your model number.

**MD4** **53P** **B** **B** **1** **B** **5** **2** **S** **1**

BOWLS MATERIAL/SIZE	
Polycarbonate Bowls 9-oz (270-ml) - on Filter/Regulator and Lubricator	53P
Metal Bowls 9-oz (270-ml) - on Filter/Regulator and Lubricator	53M
Metal Bowl 9-oz (270-ml) - on Filter/Regulator	
Extended Metal Bowl 15-oz (450-ml) - on Lubricator	53E
Plastic Bowl 9-oz (270-ml) - on Filter/Regulator	
Extended Metal Bowl 15-oz (450-ml) - on Lubricator	53F

ADJUSTMENT RANGE	
0-175 psig (0-12 bar) with 0-200 psig (0-14 bar) gauge	A*
0-125 psig (0-8.6 bar) standard with 0-200 psig (0-14 bar) gauge	B
0-50 psig (0-3.4 bar) with 0-60 psig (0-4 bar) gauge	C
0-20 psig (0-1.4 bar) with 0-60 psig (0-4 bar) gauge	D
Reverse Flow 0-175 psig (0-12 bar) with 0-200 psig (0-14 bar) gauge	F*
Reverse Flow 0-125 psig (0-8.6 bar) standard with 0-200 psig (0-14 bar) gauge	G
Reverse Flow 0-50 psig (0-3.4 bar) with 0-60 psig (0-4 bar) gauge	H
Reverse Flow 0-20 psig (0-1.4 bar) with 0-60 psig (0-4 bar) gauge	J

\*Must be ordered with metal bowl.

PIPE SIZE	
3/8 NPTF	3
1/2 NPTF	4
3/4 NPTF	5
3/8 G	C
1/2 G	D
3/4 G	E

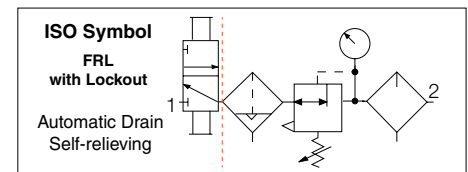
CAP COLOR	
Black	2
Yellow	Y

Lockout Valve	
L-O-X® on outlet side	1
L-O-X® on the inlet side (must also choose Reverse Flow)	2
L-O-X® with EEZ-ON® on outlet side	3
L-O-X® with EEZ-ON® on inlet side (must also choose Reverse Flow)	4
Without Valve - Leave Blank	

FILTER REGULATOR DRAIN TYPE	
Automatic Drain	1
Manual Drain	2

FILTER ELEMENT TYPE	
40-µm Sintered Bronze	A
5-µm Polyethylene	B

LUBRICATOR FILL TYPE	
Quick Fill Cap	Q
Fill Port	S



REPLACEMENT FILTER ELEMENTS		
Element Rating	Element Material	Element Number
5-µm - Standard	Polyethylene	R-A115-106PE5
40-µm - Standard	Sintered Bronze	R-A115-106E3
5-µm - Optional	Sintered Bronze	R-A115-106E5
20-µm - Optional	Sintered Bronze	R-A115-106E4

Options: External Bowl Drains, refer to page G6.7.  
Accessories ordered separately, refer to page G6.3-5.

## STANDARD SPECIFICATIONS (for units on this page):

<b>Construction Design</b>	Filter – Fiber, or Sintered Bronze Regulator – Diaphragm Lubricator - Sight-Feed	<b>Pressure Adjustment</b>	Locking Key: Removable
<b>Temperature</b>	<b>Ambient/Media:</b> Polycarbonate Bowl: 40° to 125°F (4° to 52°C) Metal Bowl: 40° to 175°F (4° to 80°C)	<b>Filter Drain</b>	Internal Automatic or Manual
<b>Fluid Media</b>	Compressed air	<b>Pressure Gauge</b>	0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear
<b>Operating Pressure</b>	<b>Automatic Drain Models</b> Polycarbonate Bowl: Up to 150 psig (up to 10 bar) Metal Bowl: Up to 200 psig (up to 14 bar) <b>Manual Drain Models</b> Polycarbonate Bowl: 0 to 150 psig (0 to 10 bar) Metal Bowl: 0 to 200 psig (0 to 14 bar)	<b>Oil Adjustment</b>	External; tamper-resistant
<b>Outlet Pressure</b>	Adjustable up to 125 psig (9 bar).	<b>Construction Material</b>	<b>Filter Element:</b> 5-micron rated polyethylene; optional 40-micron element <b>Filter/Regulator &amp; Lubricator Bodies:</b> Zinc <b>Bowls:</b> Aluminum bowl with clear nylon sight glass, polycarbonate bowl with steel shatterguard, or extended aluminum lubricator bowl with clear nylon sight glass <b>Regulator Valve:</b> Brass <b>Sight Dome:</b> Clear Nylon <b>Seals:</b> Nitrile



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G5

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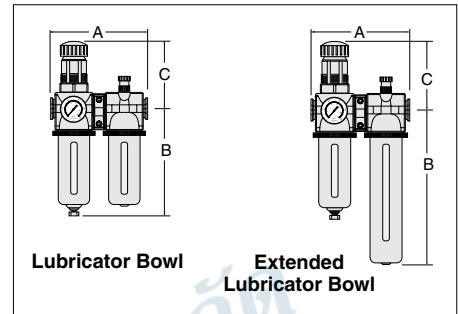


# Modular Integrated Filter/Regulator plus Lubricator Combinations

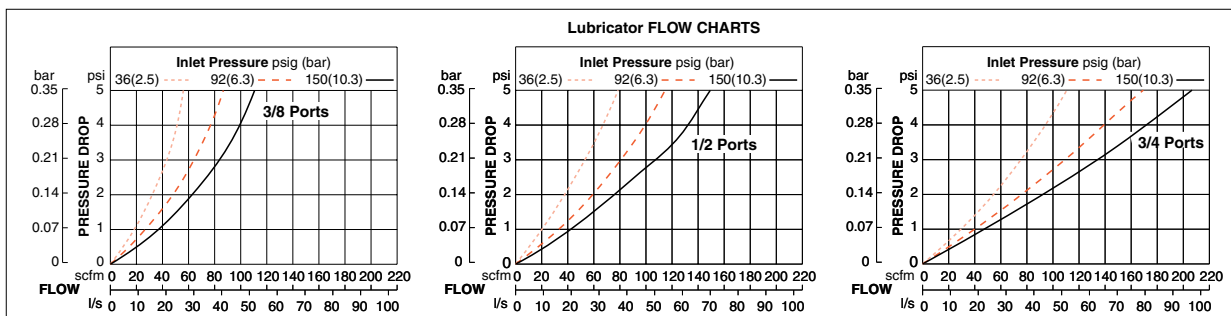
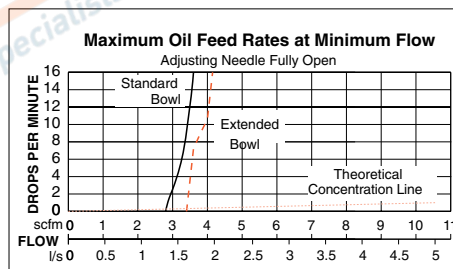
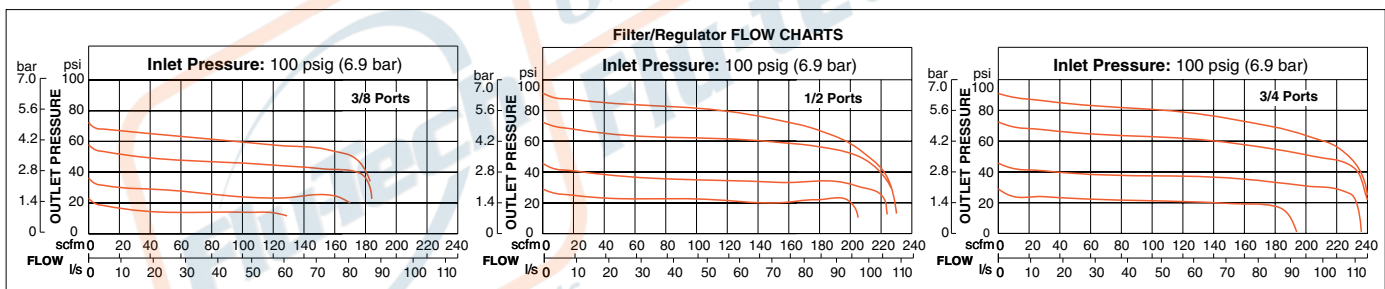
MD4™ Series

Port Size	Bowl Type	Dimensions inches (mm)				Weight † lb (kg)
		A	B*	C	Depth †	
3/8, 1/2, 3/4	Polycarbonate	7.3 (186)	7.7 (195)	5.4 (137)	2.9 (73)	5.81 (2.64)
	Metal	7.3 (186)	7.6 (193)	5.4 (137)	2.9 (73)	5.81 (2.64)
	Extended Metal	7.2 (183)	10.6 (269)	4.68 (119)	5.4 (137)	6.00 (2.73)

**Lockout:** With the lockout valve, add 2.3 (58) to dimension A.  
 \* Bowl (standard) removal clearance: add 4.2 (107).  
 \* Bowl (extended) removal clearance: add 6.1 (155)  
 † Less gauge.



## AIR FLOW and CONSTRUCTION DATA



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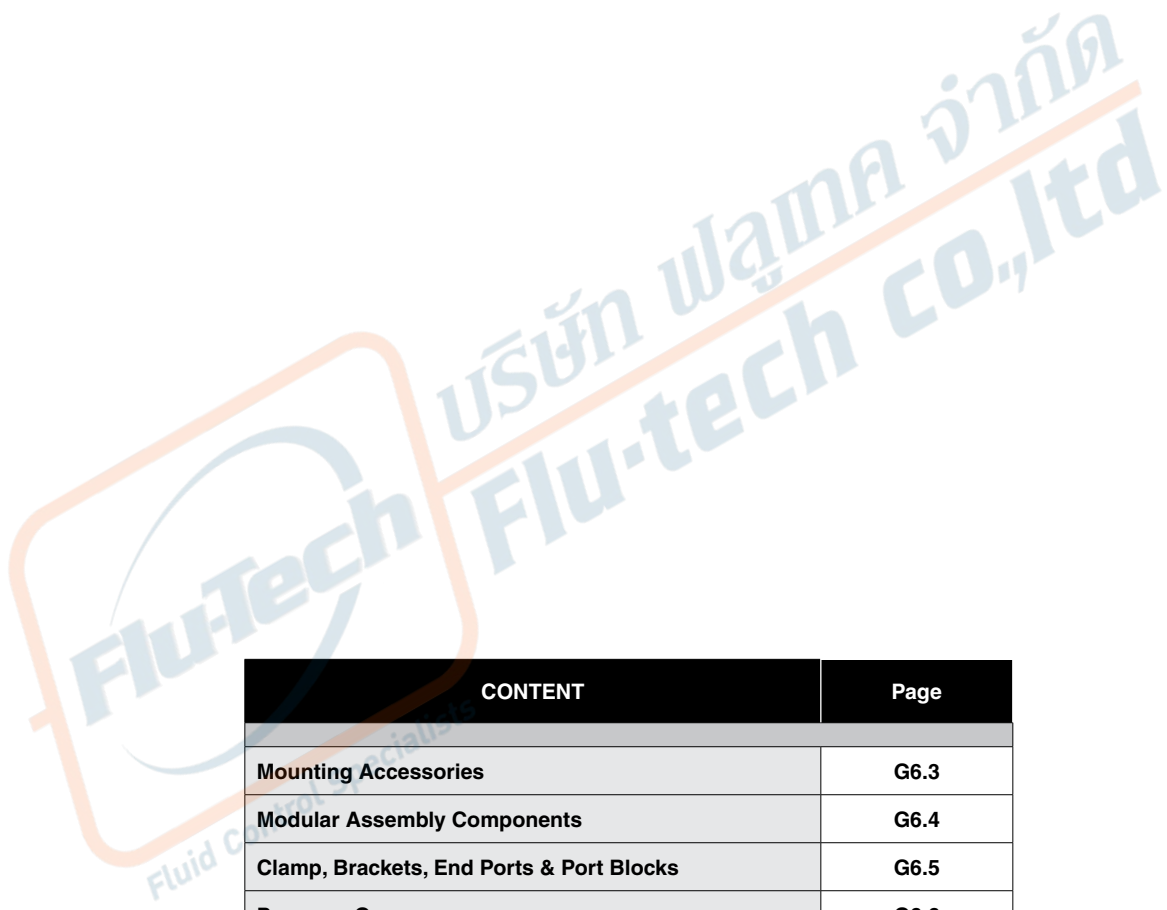
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# AIR PREPARATION FRL's ACCESSORIES



**ROSS CONTROLS**



CONTENT	Page
Mounting Accessories	G6.3
Modular Assembly Components	G6.4
Clamp, Brackets, End Ports & Port Blocks	G6.5
Pressure Gauges	G6.6
External Drains, Silencers	G6.7
Replacements Filter Elements	G6.8

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### Mounting Screws for BANTAM Models

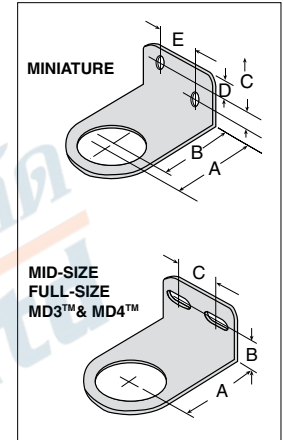
Usage Models	Kit Number
BANTAM	859K77

BANTAM models mounts with long screws that extend through end plates.

### Mounting Brackets for Regulators and Integrated Filter/Regulators

Regulators and integrated filter/regulators can be mounted to a surface with a bracket that attaches to the regulator. Brackets and mounting panel nuts can be ordered separately or in a kit which includes both bracket and mounting panel nut.

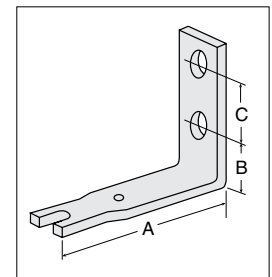
Usage Models	Model Number			Dimensions inches (mm)					Panel Mounting Hole Diameter
	Kit	Bracket	Panel Nut	A	B	C	D	E	
MINIATURE	873K77	872K77	874K77	1.375 (35)	1.125 (29)	0.31 (8)	0.31 (8)	0.69 (17)	1.19 (30)
MID-SIZE	876K77	875K77	877K77	2.38 (60)	1.00 (25)	1.50 (38)	—	—	1.56 (40)
MD3™	R-A127-11	—	R-127-11	2.38 (60)	1.00 (25)	1.50 (38)	—	—	2.06 (52)
FULL-SIZE, MD4™	879K77	878K77	880K77						



### Modular Mounting Brackets for Filters, Regulators, Lubricators, FRL's, or Clean Air Packages

Two L-shaped metal brackets as shown at the right can be used for wall mounting of modular FRLs or Clean Air Packages. A single bracket can be used to mount individual filters or lubricators. Kits include two brackets and four screws for attaching the brackets to the modules.

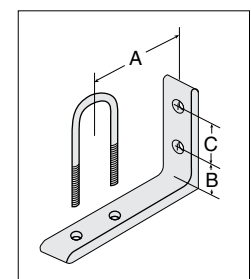
Usage Models	Kit Number	Dimensions inches (mm)			
		A	B	C	D
MID-SIZE & FULL-SIZE	915K77	3.0 (76)	0.88 (22)	1.00 (25)	1.20 (31)



### FRLs In-line Mounting Pipe Brackets

Two pipe brackets can be used for wall mounting of FRLs assemblies that use pipe nipples to join the components. The bracket kits listed below include two sets of brackets.

Nipple Size	Kit Number	Dimensions inches (mm)		
		A	B	C
1/4	887K77	2.72 (28)	0.50 (13)	1.00 (25)
3/8	888K77			
1/2	889K77			
3/4	890K77	3.69 (94)	1.13 (29)	1.25 (32)
1	891K77			



### Bracket Assembly Kit for HIGH-RELIEF Pilot Operated Regulator

High-Relief Pilot Operated Regulator with 1/4- thru 1 1/4 inch ports can be mounted to a vertical surface using a bracket assembly kit.

Kit Number	R-A37-381
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### MID-SIZE and FULL-SIZE Units

The modular designs of the MID-SIZE and FULL-SIZE series offer maximum flexibility in customizing FRLs assemblies. As shown at the right, connector kits are required to interconnect units. Various port kits (shown below) can be used to connect the assemblies to the inlet and outlet piping. Note that all FRLs components have threaded ports so that conventional pipe fittings may be used where desired.

#### Female Port Block

Used to connect to piping at inlet or outlet.

Port Size	Model Number	
	NPTF Threads	G Threads
1/4	897K77	D897K77
3/8	898K77	D898K77
1/2	899K77	D899K77
3/4	900K77	D900K77



#### Male Port Block

Used to connect modular to non-modular units.

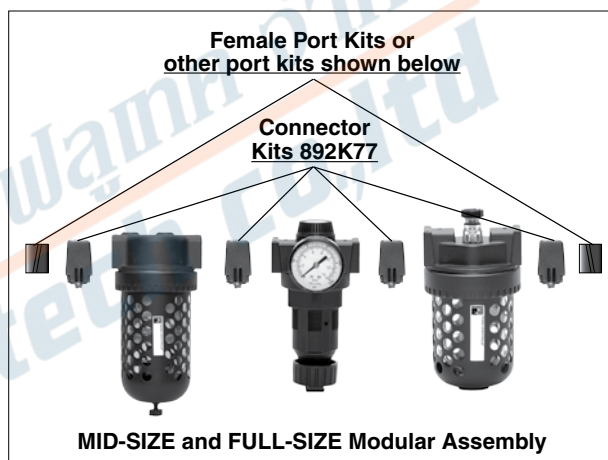
Port Size	Model Number	
	NPTF Threads	G Threads
1/4	893K77	D893K77
3/8	894K77	D894K77
1/2	895K77	D895K77
3/4	896K77	D896K77



#### Connector Kit

Used to connect units to one another as well as to any of the ports shown on this page.

Kit Number 892K77



### BANTAM Units

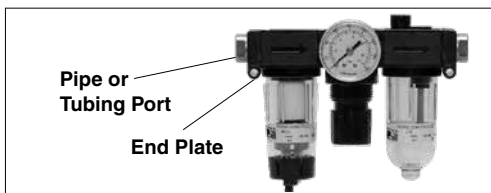
BANTAM modular units use end plates secured with screws to hold the pipe or tubing ports (see below), and also to serve as mounting brackets. Short screws are used to secure the end plates when a single BANTAM unit is used. If two or more units are combined, long screws extend through an end plate and thread into the next unit.

Screw kits required are as follows:

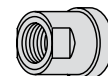
Single Unit: Two short screw kits.

Two-Unit Combination: One each short screw kit and long screw kit.

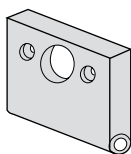
Three-Unit Combination: Two long screw kits.



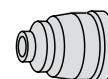
Pipe Ports	
Port Size	Model Number
1/8 NPTF	862K77
1/4 NPTF	863K77
1/8 BSPP	D864K77
1/4 BSPP	D865K77



Pipe Ports	
Kit Description	Model Number
END PLATE (1)	857K77
Short Screw (2)	858K77
Long Screw (2)	859K77
Small O-Ring (for inlet or mating ports)	860K77
Large O-Ring (for outlet or mating ports)	861K77



Tube Ports	
Port Size	Model Number
1/4	866K77
3/8	867K77
4 mm	868K77
6 mm	869K77
8 mm	870K77
10 mm	871K77



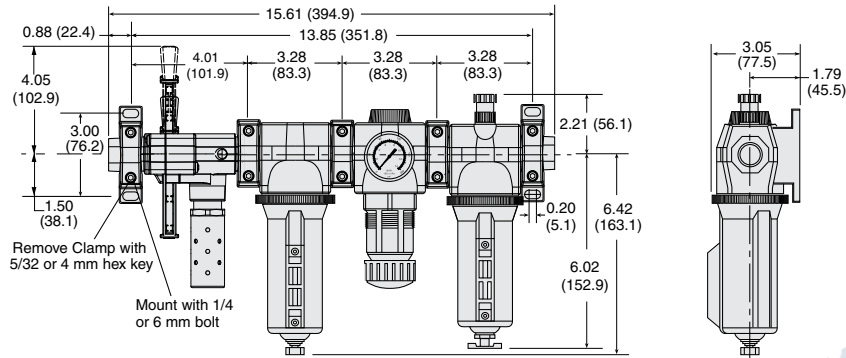
# Modular Assemblies

## Accessories: Clamp, Brackets, End Ports & Port Blocks

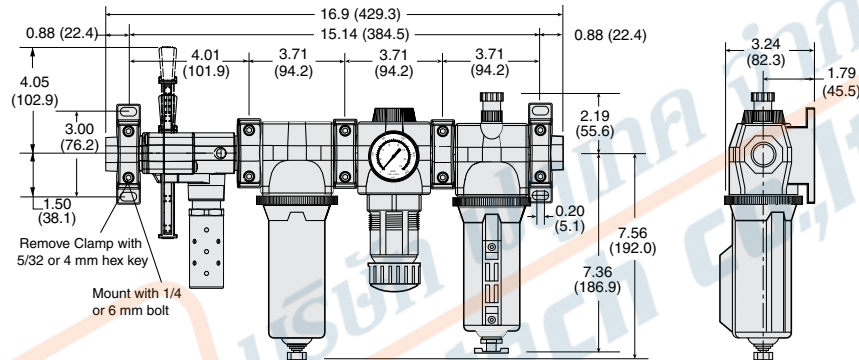
## MD Series

Dimensions: inches (mm)

### MD3™ Series



### MD4™ Series



### Mounting Brackets & Clamp for Module Connections

Two brackets are normally used to mount an FRL to a vertical surface. The mounting bracket attaches to the module connecting clamp (see above) with a single screw. Each bracket then employs two bolts (1/4" or 6mm) to connect the assembly to the mounting surface. Specially designed clamps provide a quick and easy assembly or disassembly of MD3™ modules. Two Allen-Head bolts quickly tighten or loosen the clamp using a 5/32 or 4mm hex key. The clamp contains a plate carrying two O-rings to provide positive sealing between modules.



Bracket, Screw, and Clamp



Module Connecting Clamp



Mounting Bracket

#### Mounting Brackets & Clamp for Module Connections

Description	Model Number
Bracket and Screw	R-A118-103
Module Connecting Clamp	R-A118-105
Bracket, Screw, and Clamp	R-A118-105M

### Male and Female End Ports

Either male or female end ports can be attached to threaded inlet and outlet lines. This allows all modules of an FRL assembly to be removed easily and quickly without having to unthread the end modules. The end ports are attached to the modules with clamps (see at left). End ports can be included in an assembled FRL or ordered separately by the following model numbers:

Type	Port Size	Model Number		
		NPTF Threads	G Threads	
Female	1/4	R-118-100-2	R-118-100-2W	
	3/8	R-118-100-3	R-118-100-3W	
	1/2	R-118-100-4	R-118-100-4W	
	3/4	R-118-100-6	R-118-100-6W	
Male	1/4	R-118-109-2F	R-118-109-2FW	
	3/8	R-118-109-3F	R-118-109-3FW	
	1/2	R-118-109-4F	R-118-109-4FW	
	3/4	R-118-109-6F	R-118-109-6FW	

### Extra Port Blocks

An extra port block can be placed between modules to provide two auxiliary 1/4 NPTF ports. Its mounting position can be rotated to obtain the most convenient operating orientation. If only one auxiliary port is to be used, the unused port must be closed with a pipe plug. (The inlet and outlet are not threaded.)

Port Size	Model Number	
	NPTF Threads	G Threads
1/4	R-118-106-2	R-118-106-2W
3/8	R-118-106-3	R-118-106-3W
1/2	R-118-106-4	R-118-106-4W



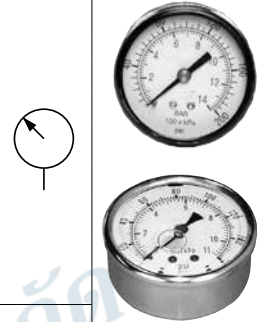
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Analog Pressure Gauges

Pressure Gauges (Center Back Mounting)	Type/Material	Port Size	Model Number		Pressure Range psig (bar)	Case Diameter inches (mm)
			Thread			
			NPT	G		
Standard Aluminum		1/8	5400A1002	D5400A1002	0-160 (0-11)	1.7 (43)
		1/4	5400A2010	D5400A2010	0-60 (0-4)	2.0 (51)
		1/4	5400A2011	D5400A2011	0-200 (0-14)	2.0 (51)
		1/4	5400A2012	D5400A2012	0-300 (0-20)	2.0 (51)
Liquid Filled Stainless Steel		1/4	5400A2014	D5400A2014	0-160 (0-11)	2.5 (64)
		1/4	5400A2015*	D5400A2015*	0-160 (0-11)	2.0 (51)

\*Green shade between 40-70 psi (2.7-4.8 bar).



Differential Pressure Gauges

DIFFERENTIAL PRESSURE GAUGE TYPE/SERIES	Small Slide Gauge	Small Slide Gauge	Large Dual Face Gauge	Large Dual Face Gauge with Reed Switch (Normally Open)	Large Dual Face Gauge with Reed Switch (Normally Closed)
	R-A60F-28	R-K103-151	R-106-35	R-106-35E	R-106-35EC
<b>FILTERS</b>					
BANTAM	-	-	-	-	-
MINIATURE	-	-	-	-	-
MID-SIZE	-	-	-	-	-
MD3™	-	-	-	-	-
FULL-SIZE	-	-	-	-	-
MD4™	-	-	-	-	-
HIGH-CAPACITY	-	-	-	-	-
<b>COALESCING FILTERS</b>					
BANTAM	-	-	-	-	-
MINIATURE	-	-	-	-	-
MID-SIZE	-	-	-	-	-
FULL-SIZE	-	-	-	-	-
MD3™	-	-	-	-	-
MD4™	-	-	-	-	-
HIGH-CAPACITY	-	-	-	-	-
<b>OIL VAPOR REMOVAL (ADSORBING) FILTERS</b>					
MD3™	-	-	-	-	-
MD4™	-	-	-	-	-
<b>CLEAN AIR PACKAGES</b>					
MD3™	-	-	-	-	-
MD4™	-	-	-	-	-

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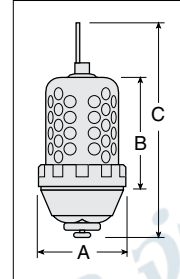
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### External Automatic Drains

Pipe Size	Model Number*	
	Polycarbonate Bowl**	Metal Bowl
1/8	5057B1001	5058B1001
1/4*	5057B2001	5058B2001

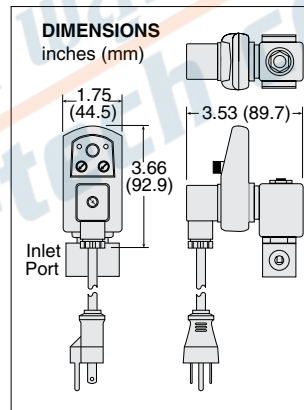
\*Use 1/4 size with FULL-SIZE, HIGH-CAPACITY, MD3™ & MD4™ filters.  
Use kit 1076K77 to convert standard bowl to accept auto drain unit.  
\*\*Available for FULL-SIZE filters only. Polycarbonate bowl includes metal bowl guard.

Port Size	Dimensions inches (mm)			Weight lb (kg)
	A	B	C	
1/8, 1/4	3.5 (89)	4.2 (107)	8.3 (211)	2.6 (1.2)



### Electronically Controlled Drain

Pipe Size	Voltage	Model Number	
		NPTF Threads	G Threads
1/4	24 volts DC	R-DED-24V-2	R-DED-24V-2W
3/8	24 volts DC	R-DED-24V-3	R-DED-24V-3W
1/2	24 volts DC	R-DED-24V-4	R-DED-24V-4W
1/4	110-120 volts AC, 50/60 Hz	R-DED-115V-2	R-DED-115V-2W
3/8	110-120 volts AC, 50/60 Hz	R-DED-115V-3	R-DED-115V-3W
1/2	110-120 volts AC, 50/60 Hz	R-DED-115V-4	R-DED-115V-4W



### STANDARD SPECIFICATIONS (for electronically controlled drain):

Drain Time	Adjustable 0.5 to 10 seconds	Electrical Connection	DIN 43650A, ISO 440/6952
Drain Interval	0.5 to 45 minutes	Valve Type	2/2 direct acting, normally closed
Current Consumption	Maximum 4 ma	Valve Body	Forged brass; 3/16-inch (4.8 mm) orifice
Temperature	Ambient: 35° to 130°F (2° to 54°C)	Maximum Pressure	230 psig (15.8 bar)
	Media: 35° to 190°F (2° to 88°C)		

### Silencers

Port Size	Thread Type	Model Number*		Avg. Cv	Dimensions inches (mm)		Weight lb (kg)
		NPT Threads	R/Rp Threads		Width	Length	
3/8	Male	5500A3003	D5500A3003	4.3	1.3 (32)	3.5 (88)	0.2 (0.1)
3/4	Male	5500A5013	D5500A5013	5.1	1.3 (32)	3.6 (92)	0.2 (0.1)
3/4	Male	5500A5003	D5500A5003	11.5	2.0 (51)	5.3 (135)	0.6 (0.3)

**Flow Media:** Filtered air.  
**Pressure Range:** 0 to 290 psig (0 to 20 bar) maximum.



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บริษัท ฟลูเทค จำกัด  
FLU-TECH CO.,LTD

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# Replacements Filter Elements

## FRL's Series

Category	Series	Bowl Type	Element Rating	Element Material	Model Number
Filters	Bantam & Miniature	Standard	5-µm	Polyethylene	933K77
			5-µm	Sintered Bronze	R-KA130-27E5
			20-µm	Sintered Bronze	R-KA130-27E4
			40-µm	Sintered Bronze	R-KA130-27E3
	MID-SIZE	Standard	5-µm	Polyethylene	936K77
	MD3™	Standard	5-µm	Polyethylene	R-A60F-03PE5
			5-µm	Sintered Bronze	R-A60F-03E5
			20-µm	Sintered Bronze	R-A60F-03E4
			40-µm	Sintered Bronze	R-A60F-03E3
	FULL-SIZE	Standard	5-µm	Polyethylene	939K77
			5-µm	Sintered Bronze	R-KA103-03E5
			20-µm	Sintered Bronze	R-KA103-03E4
			40-µm	Sintered Bronze	R-KA103-03E3
	MD4™	Standard	5-µm	Polyethylene	R-A115-106PE5
			5-µm	Sintered Bronze	R-A115-106E5
			20-µm	Sintered Bronze	R-A115-106E4
			40-µm	Polyethylene	R-A115-106PE3
	HIGH-CAPACITY Flow to 275 scfm	Standard	5-µm	Polyethylene	1010K77
			5-µm	Sintered Bronze	R-KA109-03E5
			20-µm	Sintered Bronze	R-KA109-03E4
40-µm			Sintered Bronze	R-KA109-03E3	
HIGH-CAPACITY Flow to 660 scfm	Standard	5-µm	Sintered Bronze	1656K77	
		40-µm	Sintered Bronze	R-A114-106E3	
HIGH-CAPACITY Flow to 1000 scfm	Standard	5-µm	Sintered Bronze	942K77	
		40-µm	Sintered Bronze	944K77	
Coalescing Filters	Bantam & Miniature	Standard	0.3-µm	Borosilicate-glass-fiber	945K77
			0.01-µm	Borosilicate-glass-fiber	R-A-10F-16E8
	MID-SIZE	Standard	0.3-µm	Borosilicate-glass-fiber	R-A60F-29
			Extended	0.3-µm	Borosilicate-glass-fiber
		Standard	0.01-µm	Borosilicate-glass-fiber	R-A60F-29E8
			Extended	0.01-µm	Borosilicate-glass-fiber
	MD3™	Polycarbonate	0.3-µm	Borosilicate-glass-fiber	R-A60F-23
		Metal	0.3-µm	Borosilicate-glass-fiber	R-A60F-29
		Extended Metal	0.3-µm	Borosilicate-glass-fiber	R-A60F-32
		Polycarbonate	0.01-µm	Borosilicate-glass-fiber	R-A60F-23E8
		Metal	0.01-µm	Borosilicate-glass-fiber	R-A60F-29E8
		Extended Metal	0.01-µm	Borosilicate-glass-fiber	R-A60F-32E8
	FULL-SIZE	Standard	0.3-µm	Borosilicate-glass-fiber	947K77
			Extended	0.3-µm	Borosilicate-glass-fiber
		Standard	0.01-µm	Borosilicate-glass-fiber	948K77
			Extended	0.01-µm	Borosilicate-glass-fiber
	MD4™	Standard	0.3-µm	Borosilicate-glass-fiber	R-A115-117
			Extended	0.3-µm	Borosilicate-glass-fiber
		Standard	0.01-µm	Borosilicate-glass-fiber	R-A115-117E8
			Extended	0.01-µm	Borosilicate-glass-fiber
	HIGH-CAPACITY Flow to 220 scfm	Standard	0.3-µm	Borosilicate-glass-fiber	949K77
			0.01-µm	Borosilicate-glass-fiber	R-A109-106E8
	HIGH-CAPACITY Flow to 295 & 450 scfm	Standard	0.3-µm	Borosilicate-glass-fiber	R-A114-112
			Extended	0.3-µm	Borosilicate-glass-fiber
		Standard	0.01-µm	Borosilicate-glass-fiber	R-A114-112E8
			Extended	0.01-µm	Borosilicate-glass-fiber
	HIGH-CAPACITY Flow to 465 scfm	Standard	0.3-µm	Borosilicate-glass-fiber	952K77
			Extended	0.3-µm	Borosilicate-glass-fiber
Standard			0.01-µm	Borosilicate-glass-fiber	R-A106-24E8
HIGH-CAPACITY Flow to 840 scfm	Extended	0.01-µm	Borosilicate-glass-fiber	R-A106-24LE8	
		0.3-µm	Borosilicate-glass-fiber	953K77	
Oil Vapor Removal Filters	MD3™	Standard	-	Borosilicate-glass-fiber	R-A60F-29E9
			-	Borosilicate-glass-fiber	R-A60F-32E9
	MD4™	Standard	-	Borosilicate-glass-fiber	R-A115-117E9
			-	Borosilicate-glass-fiber	R-A115-118E9
Silencers Reclassifiers	Port Size 1/2	Standard	20-µm	Sintered Bronze	940K77
	Port Size 3/4, 1		100-µm	Sintered Bronze	981K77