FILTERS
PRESSURE REGULATORS
LUBRICATORS
SILENCERS
RECLASSIFIERS

• Manufacturers of Premium Pneumatic Controls since 1921 •
Almost any pneumatic system will function better, and for a longer time, with properly “conditioned” air. In fact, many system components, such as air cylinders and motors, may be vulnerable to significant damage from dirty or unlubricated air. Other devices require a carefully maintained, consistent line pressure. Yet others will malfunction or fail due to excess water vapor in the line. These are but a few of the cases where filters, regulators, lubricators, and other devices are called upon to prepare, or “condition,” compressed air. All such devices are available in single-function units, but they are more often installed in combinations to perform several conditioning functions at once.

ROSS SERIES MD4™
Modern, modular design with ROSS’ traditional robust construction including a seven year warranty designed to meet or exceed ISO Standard.

Choose a combination of the standard filter, regulator, and lubricator, or mix and match specialized units to meet special requirements.

Rugged and reliable construction makes ROSS FRLs economical and trouble-free system components.

For reliable line conditioning, choose ROSS Filters, Regulators, and Lubricators

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INSTRUCTIONAL INFORMATION

For convenience in matching filters, regulators, and lubricators, ROSS units are grouped in five series of increasing flow capacity: Bantam, Miniature, Mid-Size, Full-Size, MD4™, and High-Capacity.

BANTAM Series. For flow to 30 scfm (14.1 l/s); port sizes 1/8 and 1/4; tube fittings 1/4 to 10 mm. Modular components are joined without pipe nipples; ports are O-ring sealed.

MINIATURE Series. For flow to 20 scfm (9.4 l/s); port sizes 1/8 and 1/4. Units joined by pipe nipples.

MID-SIZE Series. For flow to 75 scfm (35.4 l/s); port sizes 1/4, 3/8, 1/2. Connection of units by either special modular connectors or by pipe nipples.

FULL-SIZE Series. For flow to 155 scfm (73.1 l/s); port sizes 1/4 through 3/4. Connection of units by either special modular connectors or by pipe nipples.

MD4™ Series. For flows to 205 scfm (96.7 l/s), port sizes 3/8" to 3/4" units joined by positive-seal clamps.

HIGH-CAPACITY Series. For flow to 1000 scfm (471.9 l/s); pipe sizes 3/4 through 2. Connection of units only by pipe nipples.

FILTER RATINGS. ROSS conventional filters have 5-micron ratings compared to the usual industry standard 40-micron rating. 40-micron particles have 500 times the volume of 5-micron particles, so it’s easy to see why ROSS filters clean best.

ROSS coalescing filters remove 99.98% of oil from the air as well as solids as small as 0.3 micron. A filter as fine as this should be preceded by a conventional 5-micron filter to prolong its service life. Full-Size and High-Capacity units have built-in differential pressure gauges to show when the coalescing element must be changed.

ROSS OIL VAPOR REMOVAL. Adsorbing filters remove oil and hydrocarbon vapors that cannot be removed by a coalescing or a general purpose filter. It is used in industries such as food processing, electronics, and instrumentation.

FILTER DRAINS. Most ROSS filters are available with either manual or automatic drains. An automatic drain discharges liquids accumulated in the filter bowl whenever there is a pressure drop. This ensures better filter performance and simplifies maintenance, especially of filters in inaccessible locations. ROSS strongly recommends the use of automatic drains.

PRESSURE REGULATORS. Both piston and diaphragm styles are available. All are self-relieving and give accurate and consistent pressure regulation. In the Miniature, Full-Size, MD4™, and High-Capacity series precision regulators are offered. They provide the most precise regulation throughout their flow ranges. Mid-Size, Full-Size, and High-Capacity series also offer reverse-flow regulators for special applications.

LUBRICATORS. Two systems of introducing oil into the air stream are used in ROSS lubricators.

Wick-feed. A porous bronze rod carries oil from the lubricator bowl up to the air passage by capillary action, and the air stream picks up the oil. This is a self-adjusting system because the amount of oil added to the air is in proportion to the air flow.

Sight-feed. A riser tube brings the oil up to an adjustable metering valve within a transparent dome, where it then drips into the air stream. A vane in the path of incoming air creates the small pressure drop that draws oil up the riser tube. This occurs even at very low air flows so that no air passes without being lubricated.

CONSOLIDATED FILTER & REGULATOR. A filter and a regulator consolidated into a single space-saving assembly is available in all sizes except the High-Capacity series.

FILTER FUNCTION

General purpose compressed air filters remove water and particulate material from the air stream to protect downstream equipment from contamination. As air enters the filter, internal baffles create a swirling motion in the air so that entrained dirt and liquids are thrown against the sides of the filter bowl and then fall to the sump area at the bottom of the bowl.

Additional baffling keeps the air in the sump area relatively quiet; this ensures that the removed material is not returned to the air flow going to the filter element. The filter element will then collect smaller particles.

The most frequently used element in ROSS general purpose filters is rated at 5-micron, so that nearly all particles larger than 5 micron (half the diameter of a human hair) will be collected in the filter element.

FILTER SELECTION

General purpose filter elements are available with 5-micron ratings. The most efficient filter element is one selected by taking into consideration the dirtiness of the ambient air and the needed cleanliness of the air after filtration.

Some high-capacity filters have 40-micron elements which are satisfactory for general piping. At point of use, and with smaller filters, the standard 5-micron element is most commonly used and recommended. See coalescing and oil vapor removal (adsorbing) filters for finer filtration.

FILTER MAINTENANCE

Filters must be attended to on a regular basis in order to rid them of water and other contaminants. The use of an automatic drain is highly recommended because it greatly reduces the need for frequent individual attention. This is especially important if access to the filter is difficult, because difficult access makes it much more likely that regular maintenance will be overlooked.

If a filter is equipped with a manual drain, accumulated water must be removed regularly so that it does not clog the filter.

The pressure drop across filter elements increases as they accumulate dirt from the air. They should be inspected on a regular basis, and replaced to restore full efficiency. Under average conditions filter elements should be replaced annually.
INSTRUCTIONAL INFORMATION

CARE OF PLASTIC BOWLS

Plastic bowls are made of high-strength polycarbonate, a very tough transparent material. Bowls are intended for use with compressed air, but can be adversely affected if contaminants such as alcohol or liquefied petroleum gas are in the intake air. Some compressor oils, solvent fumes, and other substances can attack the bowl and lead to failure.

When a bowl is cleaned (by wiping inside and outside with a clean dry cloth) it should be inspected for cracks or scarring on the surface. If either condition occurs it is an indication that the ambient air contains harmful substances, and the bowl should be replaced, preferably with a metal bowl.

A few of the substances that can harm polycarbonate bowls are: acetone, ammonia, benzene, brake fluids, carbon disulfide, carbon tetrachloride, ethyl acetate, ethylene glycol, Freon, lacquer thinner, nitrocellulose lacquer, sodium hydroxide, toluene, turpentine, and many others. Please refer to page 80 for a more complete list.

Metal shatterguards are supplied with larger bowls and must always be used.

Never use polycarbonate bowls at temperatures above 125°F (52°C) or pressures above 150 psig (10.3 bar). For conditions exceeding these limits use metal bowls.

BOWL DRAINS

MANUAL DRAIN

Manual drains are the simplest bowl drains, but they require frequent attention to rid the bowl of accumulated water and dirt particles. If a filter is located where it is difficult to access, it might not be drained as often as it should be. For this reason, and to save a lot of maintenance manpower, automatic drains are standard equipment and provide a cost-effective way to maximize filter performance and reduce maintenance.

Tube-Away kits supply tubing for filters with automatic drains to carry water and dirt to a suitable drainage outlet. External drains for filters are for use wherever severe condensate problems exist. They operate automatically whenever liquid in the bowl raises the float activating the drain.

INTERNAL AUTOMATIC DRAIN

Manual draining is often inconvenient, and overlooked. Manual drains require frequent attention to rid the bowl of accumulated water and dirt particles. If a filter is located where it is difficult to access, it might not be drained as often as it should be.

Automatic drains are standard on ROSS filters and we strongly recommend their use to improve filter effectiveness, lengthen service life, and reduce maintenance needs.

The ROSS automatic drain operates when liquids have accumulated in the filter bowl and a pressure drop of 2 psi (0.14 bar) or more occurs (e.g., when a valve or other device is actuated). The pressure drop triggers the automatic drain to expel accumulated liquid. The drain activates whenever the air supply is shut down and exhausted. An adjusting knob at the bottom of the filter can be set for optimum performance throughout the air flow range.

INTERNAL FLOAT DRAIN

Float drains are used as an alternative for continuous flow applications where pressure drop might only occur at the start of the duty cycle. When liquid is present the float will rise and the bowl will empty.

Operating pressure: 200 psig (13.8 bar) maximum and 30 psig (2.1 bar) minimum.

Internal float drain are available with plastic or brass drain stem, plastic or metal bowl.

IMPORTANT NOTE: Before inspecting or servicing a filter (or any other pneumatic component) be sure that the pneumatic pressure to the component is shut off and exhausted, and cannot be inadvertently turned on.
BANTAM Filters

Ports: 1/8 to 1/4
Flow to 30 scfm

FEATURES:
- Modular assembly and mounting
- Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
- High-strength polycarbonate plastic filter bowl; optional metal bowl
- Internal automatic drain; optional manual drain

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowl: 40° to 150°F (4° to 66°C).

Body: Acetal.
Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.
Bowl Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.

Inlet Pressure:
For automatic drain model:
- With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
- With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
- With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
- With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5B01B0100.

ISO Symbols
Automatic Drain Manual Drain

FLOW CHART

STANDARD 5-µm ELEMENT
Inlet Pressure 100 psig (6.9 bar)

PRESSURE DROP
bar
0.35
0.28
0.21
0.14
0.07
0
psi
5
4
3
2
1
0
scfm
0
FLOW
0
2.5
5
10
15
20
25
30
35
40
l/s
0
2.5
5
7.5
10
12.5
15
17.5

REPLACEMENT FILTER ELEMENT KITS & BOWLS

Element Rating/Type Kit Number
5-µm polyethylene - Standard 933K77
Bowl Type Kit Number
Plastic - Automatic 920K77
Plastic - Manual 921K77
Metal - Automatic R-ABFD130-22
Metal - Manual R-ABF130-22

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MINIATURE Filters

Ports: 1/8 & 1/4
Flow to 23 scfm

FEATURES:
• Inline mounting
• High-strength polycarbonate plastic filter bowl; optional metal bowl
• Internal automatic drain; optional manual drain

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 150°F (4° to 66°C).
Body: Aluminum.
Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.
Bowl Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5021B1010.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
**MID-SIZE Filters**

**Ports: 1/4, 3/8, 1/2**

Flow to 75 scfm

**FEATURES:**
- Modular or inline mounting
- High-strength polycarbonate plastic filter bowl with zinc shatterguard; optional zinc bowl
- Internal automatic drain; optional manual drain

**STANDARD SPECIFICATIONS** (for products on this page):
- **Ambient/Media Temperature:**
  - **Polycarbonate plastic bowl:** 40° to 125°F (4° to 52°C).
  - **Metal Bowl:** 40° to 175°F (4° to 79°C).

- **Body:** Zinc.
- **Bowl:** 4-ounce (120-ml) capacity polycarbonate plastic with zinc shatterguard; optional zinc bowl.
- **Bowl Drain:** Internal automatic drain; optional manual drain. For optional internal float drain (on metal bowl only), consult ROSS.
- **Filter Element:** 5-micron rated polyethylene.

**Fluid Media:** Compressed air.

**Inlet Pressure:**
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
- For manual drain model:
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).

**Seals:** Nitrile.

**Threads:** NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5021B2007.

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
FULL-SIZE Filters

Ports: 1/4 to 3/4
Flow to 155 scfm

FEATURES:
• Modular or inline mounting
• High-strength polycarbonate plastic filter bowl with steel shatterguard; optional metal bowl with clear nylon sight glass
• Optional differential pressure gauge
• Internal automatic drain; optional manual drain or external automatic drain

ISO Symbols
Automatic Drain
Manual Drain

FLOW CHART

STANDARD 5-µm ELEMENT
Inlet Pressure 100 psig (6.9 bar)

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow (scfm/ l/s)</th>
<th>Automatic Drain Models</th>
<th>Manual Drain Models</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>45 (21.3)</td>
<td>5021B2008</td>
<td>5011B2008</td>
</tr>
<tr>
<td>3/8</td>
<td>85 (40.1)</td>
<td>5021B3008</td>
<td>5011B3008</td>
</tr>
<tr>
<td>1/2</td>
<td>120 (61.3)</td>
<td>5021B4008</td>
<td>5011B4008</td>
</tr>
<tr>
<td>3/4</td>
<td>155 (73.1)</td>
<td>5021B5018</td>
<td>5011B5018</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KITS & BOWLS

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm polyethylene - Standard</td>
<td>933K77</td>
</tr>
<tr>
<td>Bowl Type</td>
<td>Kit Number</td>
</tr>
<tr>
<td>Plastic - Automatic</td>
<td>926K77</td>
</tr>
<tr>
<td>Plastic - Manual</td>
<td>927K77</td>
</tr>
<tr>
<td>Metal - Automatic</td>
<td>R-ABFD130-117</td>
</tr>
<tr>
<td>Metal - Manual</td>
<td>R-ABF130-117</td>
</tr>
</tbody>
</table>

Differential Pressure Gauges

Small Slide Gauge R-K103-151
Large Dual Face Gauge R-106-35
Large Dual Face Gauge with Reed Switch R-106-35E (Normally Open) R-106-35EC (Normally Closed)

FILTER ELEMENT: 5-micron rated polyethylene.
FLUID MEDIA: Compressed air.
INLET PRESSURE:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
SEALS: Nitrile.
THREADS: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5021B2008.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 175°F (4° to 79°C).
Body: Zinc.
Bowl: 8-ounce (240-ml) capacity polycarbonate plastic with steel shatterguard; optional zinc bowl with clear nylon sight glass.
Bowl Drain: Internal automatic drain; optional manual drain or external automatic drain. For optional internal float drain (on polycarbonate plastic bowl only), consult ROSS.
Bowl Ring: Aluminum.
Differential Pressure Gauge: Optional, consult ROSS.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
FEATURES:
- Modular or inline mounting
- Polycarbonate plastic bowl with steel shatterguard; optional metal bowl with sight glass
- Optional differential pressure gauge
- Gold cap color; optional gray, yellow, red, or blue
- Internal automatic drain; optional manual drain, automatic external drain, or electronic drain

Bowl Type | Dimensions (inches (mm)) | Weight (lb (kg)) |
--- | --- | --- |
Plastic | 3.5 (88) | 7.7 (195) | 1.1 (28) | 2.9 (73) | 2.13 (0.97) |
Metal | 3.5 (88) | 7.6 (193) | 1.1 (28) | 3.1 (79) | 2.13 (0.97) |

† Bowl removal clearance: add 3.1 (79).

REPLACEMENT FILTER ELEMENT KITS

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm - Standard</td>
<td>R-A115-106PE5</td>
</tr>
<tr>
<td>40-µm - Optional</td>
<td>R-A115-106PE3</td>
</tr>
</tbody>
</table>

HOW TO ORDER

<table>
<thead>
<tr>
<th>MD4</th>
<th>BOWL SIZE</th>
<th>ELEMENT TYPE</th>
<th>PIPE SIZE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td>50P - 9 oz Polycarbonate Bowl</td>
<td>A - 40 µm - Optional</td>
<td>3 - 3/8 NPTF</td>
<td>G - Gray</td>
<td></td>
</tr>
<tr>
<td>50M - 9 oz Metal Bowl</td>
<td>B - 5 µm - Standard</td>
<td>4 - 1/2 NPTF</td>
<td>L - Large Gauge</td>
<td></td>
</tr>
<tr>
<td>50R - 3/8-16 SAE</td>
<td>C - 3/8 BSPP</td>
<td>5 - 3/4 NPTF</td>
<td>S - Small Gauge</td>
<td></td>
</tr>
<tr>
<td>50E - 7/8-14 SAE</td>
<td>D - 1/2 BSPP</td>
<td>6 - 3/4 BSPP</td>
<td>H - Automatic External Drain - available in metal bowl version only</td>
<td></td>
</tr>
<tr>
<td>50A - Internal Float Drain</td>
<td>E - 3/4-16 SAE</td>
<td>7 - 7/8-14 SAE</td>
<td>L - Less Drain Fitting - 1/4 NPT female instead</td>
<td></td>
</tr>
</tbody>
</table>

Differential Pressure Gauge: Optional.
Filter Element: 5-micron rated polyethylene; for optional 40-micron element, consult ROSS.
Fluid Media: Compressed air.
Inlet Pressure: For automatic drain model:
- With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
- With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
- With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
- With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile
Threads: NPT standard, BSPP, SAE.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
**STANDARD SPECIFICATIONS** (for products on this page):

**Ambient/Media Temperature:**
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal Bowl: 40° to 175°F (4° to 79°C).

**Body:** Aluminum.

**Bowl:**
- 16-ounce (480-ml) capacity polycarbonate plastic with steel shatterguard; optional aluminum bowl with clear nylon sight glass.
- Bowl Drain: Internal automatic drain; optional manual drain or external automatic drain. For optional internal float drain (on polycarbonate plastic bowl only), consult ROSS.

**Bowl Ring:** Aluminum.

**Differential Pressure Gauge:** Optional, consult ROSS.

**FEATURES:**
- Inline mounting
- High-strength polycarbonate plastic filter bowl with steel shatterguard; optional metal bowl with clear nylon sight glass
- Optional differential pressure gauge
- Internal automatic drain; optional manual drain or external automatic drain

**FLOW CHARTS**

**DIFFERENTIAL PRESSURE GAUGES**

<table>
<thead>
<tr>
<th>Small Slide Gauge</th>
<th>Large Dual Face Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-K103-151</td>
<td>R-106-35</td>
</tr>
</tbody>
</table>

**REPLACEMENT FILTER ELEMENT KITS & BOWLS**

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm polyethylene - Standard</td>
<td>1010K77</td>
</tr>
<tr>
<td>Bowl Type</td>
<td>Kit Number</td>
</tr>
<tr>
<td>Plastic - Automatic</td>
<td>928K77</td>
</tr>
<tr>
<td>Plastic - Manual</td>
<td>929K77</td>
</tr>
<tr>
<td>Metal - Automatic</td>
<td>R-ABFD109-6A</td>
</tr>
<tr>
<td>Metal - Manual</td>
<td>R-ABF109-6A</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
HIGH-CAPACITY Filters

Ports: 1¼ & 1½  
Flow to 660 scfm

FEATURES:
- Inline mounting
- Aluminum bowl with clear nylon sight glass
- Optional differential pressure gauge
- Internal automatic drain; optional manual drain or external drain

ISO Symbols

Automatic Drain  Manual Drain

FLOW CHARTS

STANDARD 40-µm ELEMENT

Inlet Pressure 100 psig (6.9 bar)

P1

Pressure Drop

0.35

0.30

0.25

0.20

0.15

0.10

0.05

0.00

bar

psi

Flow to 660 scfm

Inlet Pressure

100 psig (6.9 bar)

Port

1/4

1/2

1-1/4

1-1/2

1/4

1/2

1-1/4

1-1/2

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

800

800

0.07

0.14

0.21

0.28

0.35

Bar

psi

Flow

scfm

l/s

0

50

100

150

200

250

300

350

400

450

500

550

600

650

700

750

80 DIFFERENTIAL PRESSURE GAUGES

Small Slide Gauge  R-K103-151

Large Dual Face Gauge  R-106-35

Large Dual Face Gauge with Reed Switch  R-106-35E (Normally Open)  R-106-35EC (Normally Closed)

STANDARD SPECIFICATIONS (for products on this page):
- Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
- Body: Aluminum, polycarbonate plastic bowl with steel shatterguard.
- Bowl: 35-ounce (1 liter) aluminum bowl with clear nylon sight glass.
- Bowl Drain: Internal automatic drain; optional manual drain or external automatic drain. For optional internal float drain, consult ROSS.
- Bowl Ring: Aluminum.
- Differential Pressure Gauge: Optional, consult ROSS.

Filter Element: 40-micron rated; optional 5-micron rated element.
- Fluid Media: Compressed air.
- Inlet Pressure:
  - For automatic drain model: 15 to 200 psig (1.0 to 13.8 bar).
  - For manual drain model: 0 to 200 psig (0 to 13.8 bar).
- Seals: Nitrile.
- Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5022B7019.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Filters

Ports: 1¼, 1½, & 2
Flow to 1000 scfm

FEATURES:
- Inline mounting
- Aluminum bowl
- Optional differential pressure gauge
- Internal float drain; optional manual drain

DIMENSIONS

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Air Flow scfm (l/s)</th>
<th>Metal Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1¼</td>
<td>630 (297.3)</td>
<td>5022B7018</td>
<td>5012B7018</td>
</tr>
<tr>
<td>1¼</td>
<td>850 (401.1)</td>
<td>5X00B7025</td>
<td>5X00B7054</td>
</tr>
<tr>
<td>1½</td>
<td>690 (325.6)</td>
<td>5022B8018</td>
<td>5012B8018</td>
</tr>
<tr>
<td>1½</td>
<td>900 (424.7)</td>
<td>5X00B8018</td>
<td>5X00B8019</td>
</tr>
<tr>
<td>2</td>
<td>750 (354.0)</td>
<td>5022B9018</td>
<td>5012B9018</td>
</tr>
<tr>
<td>2</td>
<td>1000 (471.9)</td>
<td>5X00B9004</td>
<td>5X00B9003</td>
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REPLACEMENT FILTER ELEMENT KITS

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>40-µm bronze - Standard</td>
<td>944K77</td>
</tr>
<tr>
<td>5-µm bronze - Optional</td>
<td>942K77</td>
</tr>
</tbody>
</table>

DIFFERENTIAL PRESSURE GAUGES

Small Slide Gauge R-K103-151
Large Dual Face Gauge R-106-35
Large Dual Face Gauge with Reed Switch R-106-35E (Normally Open) R-106-35EC (Normally Closed)

STANDARD SPECIFICATIONS (for products on this page):
- Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
- Body: Aluminum.
- Bowl: 123-ounce (3700-ml) capacity aluminum bowl.
- Bowl Drain: Internal float drain; optional manual drain.
- Differential Pressure Gauge: Optional, consult ROSS.
- Filter Element: 40-micron rated; optional 5-micron rated element.

Fluid Media: Compressed air.
Inlet Pressure:
- For internal float drain model: 30 to 200 psig (2.1 to 13.8 bar).
- For manual drain model: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5022B7018.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
A 0.3-micron rated coalescing filter element is standard in all coalescing units. This filter removes 99.99% of oil and solid contaminants larger than 0.3 micron. An optional 0.01-micron rated element provides extremely fine filtration, but at some reduction in air flow. However, in ROSS’ MID-SIZE, FULL-SIZE, and MD4™ filters, there are extended bowls available with higher capacity coalescing elements for significantly increased air flows.

Coalescing filters have epoxy-resin coated, borosilicate, glass-fiber elements. Liquids and solids are removed from the air stream by several different actions, namely:

**IMPACTION:** Particles larger than 1 micron collide with and adhere to the fibers of the element.

**INTERCEPTION:** Particles 0.3 micron to 2 micron in size are molecularly attracted to the fibers of the element, and this causes them to adhere.

**DIFFUSION:** Particles 0.001 micron to 0.3 micron in size move by random Brownian motion, thereby contacting and adhering to the fibers of the element.

**DRAINING:** Tiny droplets of oil coalesce (merge) until they form drops large enough to fall off the filter element and into the bowl sump. The automatic drain then expels them.

The filter element will continue to coalesce liquids until solid contaminants accumulated in the filter element cause the pressure drop across the element to become excessive. At this point the filter element must be changed. A built-in differential pressure gauge (see below) will indicate when the elements must be changed.

**DIFFERENTIAL PRESSURE GAUGES**

MID-SIZE, MD4™, and FULL-SIZE coalescing filters include a differential pressure gauge which measures the pressure drop across the coalescing filter element. The gauge monitors the condition of the coalescing element and such a gauge should **always** be used with coalescing filters. When the pressure drop increases into the range of 7 to 10 psi (0.5 to 0.7 bar), the gauge indicates that the element must be changed. The types of gauges are shown below.

The FULL-SIZE MD4™ filters use the small R-K103-151 gauge. Mid-size units use the R-A60F-28 gauge. Both are slide-type gauges, and are color coded to show the condition of the coalescing element.

- **Green** — Clean  Up to 7 psi (0.5 bar)
- **Red** — Change 7 to 10 psi (0.7 bar)

**HIGH-CAPACITY** filters employ the large R-106-35 gauge as shown above. It is a dual face gauge color coded to show the condition of the coalescing element.

- **Green** — Clean  Up to 6 psi (0.4 bar)
- **Yellow** — Change 6 to 9 psi (0.4 to 0.6 bar)
- **Red** — Dirty Over 9 psi (0.6 bar)

The large gauge is also available with a reed switch: normally open (R-106-35E) or normally closed (R-106-35EC).

- **Green** — Clean  Up to 6 psi (0.4 bar)
- **Yellow** — Change 6 to 9 psi (0.4 to 0.6 bar)
- **Red** — Dirty Over 9 psi (0.6 bar)

**IMPORTANT NOTE:** A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element. A coalescing filter must be installed ahead of an oil vapor removal (adsorbing) filter to ensure good performance.

**INTERNAL AUTOMATIC BOWL DRAIN**

Automatic drains are standard on ROSS coalescing filters and we strongly recommend their use to improve filter effectiveness, lengthen service life, and reduce maintenance needs.

The ROSS automatic drain operates when liquids have accumulated in the filter bowl and a pressure drop of 2 psi (0.1 bar) or more occurs (e.g., when a valve or other device is actuated). The pressure drop triggers the automatic drain to expel accumulated liquid.

The drain is also activated whenever the air supply is shut down and exhausted. Although the unit is set at the factory, an adjusting knob at the bottom of the filter can be manually set for optimum performance throughout the air flow range.
BANTAM Modular Coalescing Filters

Ports: 1/8 & 1/4
Flow to 11 scfm

FEATURES:
- Modular assembly and mounting
- Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
- 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
- Automatic drain; optional manual drain
- High-strength polycarbonate plastic filter bowl; optional aluminum bowl

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

FLOW CHART

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 150°F (4° to 66°C).
Body: Acetal.
Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.
Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated element. For 0.01-micron rated filter element, consult ROSS.
Fluid Media: Compressed air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MINIATURE Coalescing Filters

Ports: 1/8 & 1/4
Flow to 10 scfm

FEATURES:
• Inline mounting
• 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
• High-strength polycarbonate plastic filter bowl; optional metal bowl
• Automatic drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 150°F (4° to 66°C).
Body: Aluminum.
Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.
Bowl Drain: Manual drain; optional automatic drain. For optional automatic drain, consult ROSS.
Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated element. For 0.01-micron rated filter element, consult ROSS.

Fluid Media: Compressed air.
Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5031B1128.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MID-SIZE Coalescing Filters

Ports: 1/4, 3/8, 1/2
Flow to 100 scfm

FEATURES:
- Modular or inline mounting
- 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
- Differential pressure gauge
- Aluminum bowl with clear nylon sight glass
- Optional extended bowl with higher flow filter element
- Internal automatic drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

FLOW CHARTS

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Zinc.
Bowl: 6-ounce (180-ml) capacity aluminum with clear nylon sight glass. Bowl can be rotated for easy readability. Optional 10-ounce (300-ml) extended aluminum bowl has higher flow filter element.
Bowl Drain: Internal automatic drain; optional manual drain.
Bowl Ring: Nylon.
Differential Pressure Gauge: R-A60F-28 standard.

Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated element. For 0.01-micron filter element replace the seventh digit from the model number with a “2”, e.g., 5032B2238.
Fluid Media: Compressed air.
Inlet Pressure:
For automatic drain model: 15 to 150 psig (1.0 to 10.3 bar).
For manual drain model: 0 to 150 psig (0 to 10.3 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5032B2138.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
FULL-SIZE Coalescing Filters

Ports: 1/4, 3/8, 1/2
Flow to 100 scfm

FEATURES:
- Modular or inline mounting
- 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
- Differential pressure gauge
- High-strength polycarbonate plastic filter bowl with steel shatterguard;
  optional metal bowl with clear nylon sight glass
- Optional extended bowl with higher flow filter element
- Manual drain; optional internal automatic drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

---

FLOW CHARTS

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STANDARD SPECIFICATIONS (for products on this page):

Ambient/Media Temperature:
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowl: 40° to 175°F (4° to 79°C).

Body:
- Zinc.

Bowl:
- 8-ounce (240-ml) capacity polycarbonate plastic with steel shatterguard; optional zinc bowl with clear nylon sight glass. Optional 20-ounce (600-ml) extended polycarbonate or zinc bowl has higher flow filter element.

Bowl Drain:
- Manual; optional internal automatic drain only on extended aluminum bowl. For optional internal flow drain (on polycarbonate plastic bowl only), consult ROSS.

Bowl Ring:
- Aluminum.

Differential Pressure Gauge:
- Small Slide Gauge R-K103-151 standard; optional Large Dual Face Gauges, consult ROSS.

Filter Element:
- 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated element. For 0.01-micron filter element replace the seventh digit from the model number with a “2”, e.g., 5031B2208.

Fluid Media:
- Compressed air.

Inlet Pressure:
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).

For manual drain model:
- With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
- With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Seals:
- Nitrile.

Threads:
- NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5031B2208.

---

IMPORTANT NOTE:
Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MD4™ Coalescing Filters

Ports: 3/8, 1/2, 3/4
Flow to 158 scfm

FEATURES:
• Modular or inline mounting
• 0.3-micron rated coalescing filter element; ; optional 0.01-micron rated element
• Polycarbonate plastic bowl with steel shatterguard; optional metal bowl with sight glass
• Gold cap color; optional gray, yellow, red, and blue
• Optional extended metal bowl with higher flow filter element
• Differential pressure gauge indicates when filter element needs changing
• Internal automatic bowl drain; optional manual drain or electronic drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 175°F (4° to 79°C).
Body: Die-cast zinc.
Bowl: 9-ounce (270-ml) capacity polycarbonate plastic with steel shatterguard; optional aluminum bowl with clear nylon sight glass. Optional 15-ounce (450-ml) extended aluminum bowl with a clear nylon sight glass and higher flow filter element.
Bowl Drain: Internal automatic drain; optional manual drain or electronic drain. For optional internal float drain (on polycarbonate plastic bowl only), consult ROSS.
Bowl Ring: Nylon.

Differential Pressure Gauge (options): Small Slide Gauge, Large Dual Face Gauge and Large Dual Face Gauges with Reed Switch.
Filter Element: 0.3-micron rated borosilicate-glass-fiber; optional 0.01-micron rated element (reduces flow by 20%).
Fluid Media: Compressed air.
Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP, SAE.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
**BOWL SIZE**
- 50P - 9 oz Polycarbonate Bowl
- 50E - 15 oz Metal Bowl
- 50M - 9 oz Metal Bowl

**ELEMENT TYPE**
- C - 0.3 µm - Standard
- D - 0.01 µm - Optional

**BOWL DRAIN**
- A - Auto Drain
- M - Manual Drain
- E - Electronic Drain - available in manual bowl version only
- H - Automatic External Drain - available in manual drain version only
- L - Less Drain Fitting - 1/4 NPT female instead
- F - Internal float drain

**DIFFERENTIAL PRESSURE GAUGE**
- A - No Gauge
- L - Large Gauge
- S - Small Gauge
- E - Large Gauge with Normally Open Reed Switch
- C - Large Gauge with Normally Closed Reed Switch

**COLOR**
- G - Gray
- Y - Yellow
- R - Red
- B - Blue
- 2 - Gold - Standard

**FLOW CHARTS**

### STANDARD 0.3-µm ELEMENT

#### Inlet Pressure psig (bar)

<table>
<thead>
<tr>
<th>Flow (l/s)</th>
<th>0</th>
<th>15</th>
<th>30</th>
<th>45</th>
<th>60</th>
<th>75</th>
<th>90</th>
<th>105</th>
<th>120</th>
<th>135</th>
<th>150</th>
</tr>
</thead>
<tbody>
<tr>
<td>Pressure Drop (bar)</td>
<td>0.35</td>
<td>0.3</td>
<td>0.28</td>
<td>0.25</td>
<td>0.22</td>
<td>0.19</td>
<td>0.16</td>
<td>0.13</td>
<td>0.1</td>
<td>0.07</td>
<td>0.04</td>
</tr>
</tbody>
</table>

**REPLACEMENT FILTER ELEMENT KITS**

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.3-µm - Standard</td>
<td>R-A115-117</td>
</tr>
<tr>
<td>Extended</td>
<td>0.3-µm - Standard</td>
<td>R-A115-118</td>
</tr>
<tr>
<td>Standard</td>
<td>0.01-µm - Optional</td>
<td>R-A115-117E8</td>
</tr>
<tr>
<td>Extended</td>
<td>0.01-µm - Optional</td>
<td>R-A115-118E8</td>
</tr>
</tbody>
</table>
HIGH-CAPACITY Coalescing Filters

Ports: 3/4 & 1
Flow to 220 scfm

FEATURES:
- Inline mounting
- 0.3 micron rated coalescing filter element; optional 0.01-micron rated element
- Differential pressure gauge
- High-strength polycarbonate plastic filter bowl with steel shatterguard; optional aluminum bowl with clear nylon sight glass
- Internal automatic drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

DIMENSIONS

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>A (in)</th>
<th>B (in)</th>
<th>C (in)</th>
<th>Depth (in)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycarbonate</td>
<td>4.5 (114)</td>
<td>8.0 (203)</td>
<td>3.1 (78)</td>
<td>4.5 (114)</td>
<td>2.38 (1.09)</td>
</tr>
<tr>
<td>Metal</td>
<td>4.5 (114)</td>
<td>8.3 (210)</td>
<td>3.1 (78)</td>
<td>4.5 (114)</td>
<td>3.20 (1.46)</td>
</tr>
</tbody>
</table>

Automatic Drain Models

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Air Flow scfm</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>140 (68)</td>
<td>5X00B5099</td>
<td>5X00B5076</td>
<td>5031B5008</td>
<td>5032B5018</td>
</tr>
<tr>
<td>1</td>
<td>160 (76)</td>
<td>5X00B6027</td>
<td>5X00B6054</td>
<td>5031C6008</td>
<td>5032B6117</td>
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</table>

Manual Drain Models

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Air Flow scfm</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>140 (68)</td>
<td>5X00B5099</td>
<td>5X00B5076</td>
<td>5031B5008</td>
<td>5032B5018</td>
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<tr>
<td>1</td>
<td>160 (76)</td>
<td>5X00B6027</td>
<td>5X00B6054</td>
<td>5031C6008</td>
<td>5032B6117</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KIT

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3-µm - Standard</td>
<td>949K77</td>
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<tr>
<td>0.01-µm - Optional</td>
<td>R-A109-106E8</td>
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</table>

Differential Pressure Gauges

<table>
<thead>
<tr>
<th>Small Slide Gauge</th>
<th>Large Dual Face Gauge</th>
</tr>
</thead>
<tbody>
<tr>
<td>R-K103-151</td>
<td>R-106-35</td>
</tr>
</tbody>
</table>

Large Dual Face Gauge with Reed Switch

R-106-35E (Normally Open)
R-106-35EC (Normally Closed)

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal Bowl: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Bowl: 16-ounce (480-ml) capacity polycarbonate plastic with steel shatterguard; optional aluminum bowl with clear nylon sight glass.
Bowl Drain: Bowl Drain: Internal automatic drain; optional manual drain. For optional internal flow drain (on polycarbonate plastic bowl only), consult ROSS.
Bowl Ring: Aluminum.
Differential Pressure Gauge: Large Dual Face Gauge R-106-35 standard; optional Small Slide Gauge and Large Dual Face Gauges with Reed Switch, consult ROSS.

Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated filter element. For 0.01-micron rated filter element, consult ROSS.
Fluid Media: Compressed air.
Inlet Pressure:
For automatic drain model:
- With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
- With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
- With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
- With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5X00B5099.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Coalescing Filters

Ports: 3/4, 1
Flow to 295 scfm

FEATURES:
• Inline mounting
• 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
• Differential pressure gauge
• Aluminum bowl; optional extended aluminum bowl with higher flow filter element
• Internal automatic drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Dimensions</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>4.5 (114)</td>
<td>3.50 (1.59)</td>
</tr>
<tr>
<td>Extended</td>
<td>4.5 (114)</td>
<td>4.25 (1.91)</td>
</tr>
</tbody>
</table>

FLOW CHART

REPLACEMENT FILTER ELEMENT KITS

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.3-µm - Standard</td>
<td>R-A114-112</td>
</tr>
<tr>
<td>Extended</td>
<td>0.3-µm - Standard</td>
<td>R-A114-113</td>
</tr>
<tr>
<td>Standard</td>
<td>0.01-µm - Optional</td>
<td>R-A114-112E8</td>
</tr>
<tr>
<td>Extended</td>
<td>0.01-µm - Optional</td>
<td>R-A114-113E8</td>
</tr>
</tbody>
</table>

Differential Pressure Gauges

Standard Specifications (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Bowl: 35-ounce (1050-ml) capacity aluminum bowl. Optional 62-ounce (1860-ml) extended aluminum bowl has higher capacity filter element for increased air flow.
Bowl Drain: Internal automatic drain or manual drain available. For optional internal float drain, consult ROSS.
Bowl Ring: Aluminum.
Differential Pressure Gauge: Large Dual Face Gauge R-106-35 standard; optional Small Slide Gauge and Large Dual Face Gauges with Reed Switch, consult ROSS.

Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated filter element. For 0.01-micron rated filter element, consult ROSS.
Fluid Media: Compressed air.
Inlet Pressure:
For automatic drain model: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., CSX00B5086.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Coalescing Filters

Ports: 1¼ & 1½
Flow to 450 scfm

FEATURES:
• Inline mounting
• 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
• Differential pressure gauge
• Aluminum bowl; optional extended bowl with higher flow filter element
• Internal automatic drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

Standard Bowl

Extended Bowl

FLOW CHART

STANDARD 0.3-µm ELEMENT

Inlet Pressure 100 psig (7 bar)

Bowl Type | Dimensions (inches (mm)) | Weight (lb (kg))
--- | --- | ---
Standard | A: 5.5 (140) | 4.31 (1.94)
 | B: 10.6 (270) | 4.2 (106)
 | C: 3.7 (94) | 4.2 (106)
 | Depth: 4.2 (106) | 4.3 (1.94)
Extended | A: 5.5 (140) | 5.00 (2.27)
 | B: 16.2 (412) | 4.2 (106)
 | C: 3.7 (94) | 4.2 (106)
 | Depth: 4.2 (106) | 5.00 (2.27)

Automatic Drain Models
Manual Drain Models

Port Size | Air Flow scfm (l/s) | Standard Bowl | Extended Bowl | Standard Bowl | Extended Bowl
--- | --- | --- | --- | --- | ---
1¼ | 230 (108.5) | 5X00B7034 | 5X00B7036 | 5032B7019 | 5032B7029
1½ | 270 (127.4) | 5X00B8035 | 5X00B8036 | 5032B8019 | 5032B8029

REPLACEMENT FILTER ELEMENT KITS

Bowl Type | Element Rating/Type | Kit Number
--- | --- | ---
Standard | 0.3-µm - Standard | R-A114-112
Extended | 0.3-µm - Standard | R-A114-113
Standard | 0.01-µm - Optional | R-A114-112E8
Extended | 0.01-µm - Optional | R-A114-113E8

DIFFERENTIAL PRESSURE GAUGES

Small Slide Gauge
R-K103-151

Large Dual Face Gauge
R-106-35

Large Dual Face Gauge with Reed Switch
R-106-35EC ( Normally Open)

Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated filter element. For 0.01-micron rated filter element, consult ROSS.

Fluid Media: Compressed air.

Inlet Pressure:
For automatic drain model: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model: 0 to 200 psig (0 to 13.8 bar).

Seals: Nitrile.

Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5X00B7034.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Coalescing Filters

Ports: 1¼ & 1½
Flow to 465 scfm

FEATURES:
- Inline mounting
- 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
- Differential pressure gauge
- Metal bowl; optional extended bowl with higher flow filter element
- Internal float drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

FLOW CHARTS

STANDARD 0.3-µm ELEMENT
Inlet Pressure psig (bar)

<table>
<thead>
<tr>
<th>Depth</th>
<th>7.8 (179)</th>
<th>15 (381)</th>
<th>3.9 (99)</th>
<th>7.8 (179)</th>
<th>14.6 (6.6)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Type</td>
<td>Standard</td>
<td>Extended</td>
<td>Bowl</td>
<td>Standard</td>
<td>Extended</td>
</tr>
<tr>
<td>A</td>
<td>7.8 (197)</td>
<td>7.8 (197)</td>
<td>15 (381)</td>
<td>22 (559)</td>
<td>15 (381)</td>
</tr>
<tr>
<td>B</td>
<td>3.9 (99)</td>
<td>3.9 (99)</td>
<td>3.9 (99)</td>
<td>3.9 (99)</td>
<td>3.9 (99)</td>
</tr>
<tr>
<td>C</td>
<td>7.8 (197)</td>
<td>7.8 (197)</td>
<td>14.6 (6.6)</td>
<td>19.7 (8.9)</td>
<td>19.7 (8.9)</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KITS

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>0.3-µm - Standard</td>
<td>952K77</td>
</tr>
<tr>
<td>Extended</td>
<td>0.3-µm - Extended</td>
<td>953K77</td>
</tr>
<tr>
<td>Standard</td>
<td>0.01-µm - Optional</td>
<td>R-A106-24E8</td>
</tr>
<tr>
<td>Extended</td>
<td>0.01-µm - Optional</td>
<td>R-A106-24E8</td>
</tr>
</tbody>
</table>

DIFFERENTIAL PRESSURE GAUGES

STANDARD SPECIFICATIONS (for products on this page):

| Ambient/Media Temperature: 40° to 175°F (4° to 79°C). |
| Body: Aluminum. |
| Bowl: 123-ounce (3.7-liter) capacity aluminum bowl. Optional 233-ounce (7-liter) extended aluminum bowl has higher flow filter element. |
| Bowl Drain: Internal float drain; optional manual drain. |
| Differential Pressure Gauge: Large Dual Face Gauge R-106-35 standard; optional Small Slide Gauge and Large Dual Face Gauges with Reed Switch, consult ROSS. |

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Coalescing Filters

Port: 2
Flow to 840 scfm

FEATURES:
- Inline mounting
- 0.3-micron rated coalescing filter element; optional 0.01-micron rated filter element
- Differential pressure gauge
- Metal bowl
- Internal float drain; optional manual drain

APPLICATION NOTE:
A general purpose filter must be installed ahead of a coalescing filter to ensure good performance and to extend the life of the coalescing element.

FLOW CHART

DIMENSIONS

<table>
<thead>
<tr>
<th>Port</th>
<th>Air Flow</th>
<th>Internal Float Drain</th>
<th>Manual Drain</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>600 (283.2)</td>
<td>5X00B9009</td>
<td>5032B9018</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KIT

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.3 µm - Standard</td>
<td>953K77</td>
</tr>
<tr>
<td>0.01-µm - Optional</td>
<td>R-A-106-24LE8</td>
</tr>
</tbody>
</table>

DIFFERENTIAL PRESSURE GAUGES

| Small Slide Gauge R-K103-151 | Large Dual Face Gauge R-106-35 | Large Dual Face Gauge with Reed Switch R-106-35E (Normally Open) R-106-35EC (Normally Closed) |

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Bowl: 233-ounce (7-liter) capacity aluminum bowl.
Bowl Drain: Internal float drain or manual drain available.
Differential Pressure Gauge: Large Dual Face Gauge R-106-35 standard; optional Small Slide Gauge and Large Dual Face Gauges with Reed Switch, consult ROSS.
Filter Element: 0.3-micron rated borosilicate-glass-fiber coalescing element; optional 0.01-micron rated element. For 0.01-micron rated filter element, consult ROSS.

Fluid Media: Compressed air.
Inlet Pressure:
For internal float drain model: 30 to 200 psig (2.1 to 13.8 bar).
For manual drain model: 0 to 200 psig (0 to 13.8 bar).
Seals: Nitrile.
V-Band: Stainless steel.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5X00B9009.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
The adsorbing filter is designed to remove vapors from the air line that cannot be removed by a coalescing filter. It produces air free of oil and hydrocarbons as required by industries such as food processing, electronics, and instrumentation. An adsorbing filter preceded by a coalescing filter and a general purpose filter is recognized as a Clean Air Package as shown on page 27-28.

**FEATURES:**
- Modular or inline mounting
- Filter cartridge contains activated carbon
- Polycarbonate plastic bowl with steel shatterguard; optional aluminum bowl, optional extended aluminum bowl with higher flow filter element
- Manual drain

**STANDARD SPECIFICATIONS** (for products on this page):
- Ambient/Media Temperature:
  - Polycarbonate plastic bowl: 40°F to 125°F (4°C to 52°C).
  - Metal bowl: 40°F to 175°F (4°C to 79°C).
- Body: Zinc.
- Bowl: 9-ounce (270-ml) capacity polycarbonate plastic with steel shatterguard; optional aluminum bowl.
  - Optional 15-ounce (450-ml) extended aluminum bowl includes a higher capacity adsorbing cartridge.

**REPLACEMENT FILTER ELEMENT KITS**

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>Element Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>Standard</td>
<td>R-A115-117E9</td>
</tr>
<tr>
<td>Extended</td>
<td>Extended</td>
<td>R-A115-118E9</td>
</tr>
</tbody>
</table>

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
The general purpose filter in this assembly removes gross contaminants, while the coalescing filter removes oil mists, aerosols, and minute particles. Finally, the adsorbing filter effectively eliminates odors from Freons, alcohols, esters, ketones, and up to 99% of most hydrocarbons.

**FEATURES:**
- General purpose filter with 5-micron rated polyethylene filter element
- Coalescing filter with 0.3-micron rated coalescing element; optional 0.01-micron element
- Adsorbing filter with activated carbon element
- Modular or inline mounting
- Polycarbonate plastic bowls with steel shatterguards; optional metal bowls
- Gold cap color; optional gray, yellow, red or blue
- Optional extended metal bowls for coalescing and adsorbing filters with higher flow filter element
- Internal automatic drains for general purpose and coalescing filters; internal float drain; manual drain for adsorbing filter
- Differential pressure gauge on coalescing filter indicates when element needs changing

**ISO Symbol**

<table>
<thead>
<tr>
<th>Bowl</th>
<th>DIMENSIONS inches (mm)</th>
<th>Weight lb (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard</td>
<td>10.9 (276) 7.7 (195) 2.2 (55) 2.9 (73)</td>
<td>6.63 (3.01)</td>
</tr>
<tr>
<td>Extended</td>
<td>10.9 (276) 11.2 (284) 2.2 (55) 2.9 (73)</td>
<td>7.00 (3.18)</td>
</tr>
</tbody>
</table>

† Bowl removal clearance: add 3.4 (86) for 9-ounce bowl; 6.1 (155) for extended bowl.

**STANDARD SPECIFICATIONS** (for products on this page):
- Ambient/Media Temperature:
  - Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
  - Metal bowls: 40° to 175°F (4° to 79°C).
- Bowls: 9-ounce (270-ml) capacity polycarbonate plastic bowls with steel shatterguards. Optional aluminum bowls; clear nylon sight glasses on general purpose and coalescing units. Optional 15-ounce (450-ml) extended aluminum bowls with higher flow elements for coalescing and adsorbing filters.
- Cap Color: Gold; optional gray, yellow, red, blue.
- Filter Drains: Internal automatic drains for general purpose and coalescing filters; manual drain for adsorbing filter. For optional internal float drain on polycarbonate plastic bowl only, consult ROSS.
- Differential Pressure Gauge: Small Slide Gauge, Large Dual Face Gauges and Large Dual Face Gauges with Reed Switch.
- Filter Elements: General Purpose: 5-micron rated polyethylene. Coalescing: 0.3-micron rated borosilicate glass-fiber; optional 0.01-micron rated element. Adsorbing: Activated carbon with urethane seals.
- Fluid Media: Compressed air.
- Inlet Pressure:
  - For automatic drain model:
    - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
    - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
  - For internal float drain model:
    - With polycarbonate plastic bowl: 30 to 150 psig (2.1 to 10.3 bar).
    - With metal bowl: 30 to 200 psig (2.1 to 13.8 bar).
  - For manual drain model:
    - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
    - With metal bowl: 0 to 200 psig (0 to 13.8 bar).
- Threads: NPT standard, BSPP, SAE.

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.

www.rosscontrols.com
MD4™ Modular Clean Air Package

Ports: 3/8, 1/2, 3/4

**BOWL SIZE**
- 1 - Three 9 oz Polycarbonate Bowls
- 2 - Three 9 oz Metal Bowls
- 3 - One 9 oz and Two 15 oz Metal Bowls

**COALESCING FILTER ELEMENT TYPE**
- A - 0.3-µm - Standard
- B - 0.01-µm - Optional

**DRAIN TYPES**
- 1 - Manual
- 2 - Internal Automatic (not available on adsorber)
- F - Internal Float drain

**MD4 CAP**

**HOW TO ORDER**

- A
- B 1 5 2

**GAUGE**
- A - No Gauge
- L - Large Gauge
- S - Small Gauge
- E - Large Gauge with Normally Open Reed Switch
- C - Large Gauge with Normally Closed Reed Switch

**PIECE SIZE**
- 3 - 3/8 NPTF
- 4 - 1/2 NPTF
- 5 - 3/4 NPTF
- C - 3/8 BSPP

**COLOR**
- G - Gray
- Y - Yellow
- R - Red
- B - Blue
- 2 - Gold (standard)

**Differential Pressure Gauges**

<table>
<thead>
<tr>
<th>Small</th>
<th>Large Dual Face Gauge with Reed Switch</th>
</tr>
</thead>
<tbody>
<tr>
<td>Slide Gauge</td>
<td>R-106-35E (Normally Open)</td>
</tr>
<tr>
<td>R-K103-151</td>
<td>R-106-35EC (Normally Closed)</td>
</tr>
</tbody>
</table>

**REPLACEMENT FILTER ELEMENT KITS**

<table>
<thead>
<tr>
<th>Filter Type</th>
<th>Bowl Type</th>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>General Purpose</td>
<td>Standard</td>
<td>5-µm - Standard</td>
<td>R-A115-106PE5</td>
</tr>
<tr>
<td>Coalescing</td>
<td>Standard</td>
<td>0.3-µm - Standard</td>
<td>R-A115-117</td>
</tr>
<tr>
<td>Coalescing</td>
<td>Extended</td>
<td>0.3-µm - Standard</td>
<td>R-A115-118</td>
</tr>
<tr>
<td>Coalescing</td>
<td>Standard</td>
<td>0.01-µm - Optional</td>
<td>R-A115-117E8</td>
</tr>
<tr>
<td>Coalescing</td>
<td>Extended</td>
<td>0.01-µm - Optional</td>
<td>R-A115-118E8</td>
</tr>
<tr>
<td>Absorbing</td>
<td>Standard</td>
<td>Standard cartridge</td>
<td>R-A115-117E9</td>
</tr>
<tr>
<td>Coalescing</td>
<td>Extended</td>
<td>Extended standard cartridge</td>
<td>R-A115-118E9</td>
</tr>
</tbody>
</table>

**FLOW CHARTS for INDIVIDUAL ASSEMBLY COMPONENTS**

- MD4™ General Purpose Filter
- MD4™ Coalescing Filter
- MD4™ Adsorbing Filter

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Silencer/reclassifiers are integral silencer and oil separation devices. When installed at the exhaust ports of pneumatic valves they reduce exhaust noise and capture lubricants contained in the exhausting air. They are used on valve-cylinder applications and on air tools with piped exhausts.

**FEATURES:**
- Exhaust noise is reduced to 80 to 85 dBA under standard steady-state test conditions
- Peak impact noise is reduced to 106 to 108 dBA
- Both a drain cock and a 1/8 tube fitting are supplied for the manual or automatic draining of accumulated liquids

### Ports: 1/2 to 1

**Port Size** | **Model Numbers**
--- | ---
1/2 | 5055B4009
3/4 | 5055B5009
1 | 5055B6009

**DIMENSIONS**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Model Number</th>
<th>A (in)</th>
<th>B (in)</th>
<th>C (in)</th>
<th>Depth (in)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>5055B4009</td>
<td>3.5 (89)</td>
<td>5.5 (140)</td>
<td>0.7 (18)</td>
<td>3.5 (89)</td>
<td>1.3 (0.59)</td>
</tr>
<tr>
<td>3/4</td>
<td>5055B5009</td>
<td>4.2 (107)</td>
<td>8.4 (213)</td>
<td>2.7 (69)</td>
<td>4.2 (107)</td>
<td>2.8 (1.27)</td>
</tr>
<tr>
<td>1</td>
<td>5055B6009</td>
<td>4.2 (107)</td>
<td>8.4 (213)</td>
<td>2.7 (69)</td>
<td>4.2 (107)</td>
<td>2.8 (1.27)</td>
</tr>
</tbody>
</table>

**REPLACEMENT FILTER ELEMENT KITS & BOWLS**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Model Number</th>
<th>Bowl Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/2</td>
<td>20-µm - Standard</td>
<td>Polycarbonate</td>
<td>940K77</td>
</tr>
<tr>
<td>3/4 - 1</td>
<td>100-µm - Standard</td>
<td>Polycarbonate</td>
<td>981K77</td>
</tr>
</tbody>
</table>

**STANDARD SPECIFICATIONS** (for products on this page):

- **Ambient/Media Temperature**: 40°F to 125°F (4°C to 51°C).
- **Bowl**: Polycarbonate plastic.
- **Element**: Sintered bronze.
- **Fluid Media**: Compressed air.

**Inlet Pressure**:

- For automatic drain model: 5 to 150 psig (0.3 to 10.3 bar).
- For manual drain model: 0 to 150 psig (0 to 10.3 bar).
- **Threads**: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5055B4009.

**IMPORTANT NOTE**: Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
SILENCERS/RECLASSIFIERS

Ports: 1/2 to 1

Typical Installation In A Valve-Cylinder Circuit

FLOW CHART

SOUND ATTENUATION DATA

Constant-flow tests were conducted in a 14' x 22' room with a 14' ceiling. Sound pressure levels were recorded using a B & K precision impulse sound meter (model 22045), a 1-inch microphone (DB0375), a flexible extension rod (UA0196), and a random incidence corrector (UA0055).

Test system as mounted on the 14-foot wall with exhaust port 4 feet from the 14-foot wall.
ROSS regulators are made in a wide range of sizes to suit nearly all industrial requirements for pneumatic pressure regulation. Good pressure regulation is essential to the efficient use of pneumatic equipment. A compressor may supply air at 150 psig (10.3 bar), but most of the equipment will operate best at lower pressures. A cylinder, for example, may develop sufficient force for its purpose with 50 psig (3.4 bar) air. Remember that compressed air is costly, so using higher air pressure than necessary is wasteful, and may also shorten the life of the cylinder.

A general purpose pressure regulator is the answer for greater economy and efficiency. Regulators are of two basic designs. Piston design provides highest air flow; diaphragm design provides high sensitivity and quick response. All regulators are self-relieving, but a non-relieving option is available. A pressure gauge is standard, and gauge ports are at the front and the rear of each unit. In addition there are precision regulators in all port sizes for applications demanding extra precision in the regulation of air pressure, plus regulators for remote piloting.

MODULAR or INLINE MOUNTING
Regulators are connected to filters or lubricators by special modular connectors which seal the faces between units. They may also be inline mounted with pipe nipples. MINIATURE and HIGH-CAPACITY regulators are inline mounted only.

BANTAM REGULATORS
Port sizes 1/8 and 1/4 or fittings for tubing up to 10 mm. Modular units have durable plastic, corrosion-resistant bodies. A non-relieving version can be used with water, oil, and many other liquids.

MINIATURE REGULATORS
Port sizes 1/8, 1/4. Aluminum-bodied units for inline mounting. Same performance characteristics as the BANTAM models. Brass or stainless steel bodies, and water pressure models are also available. MINIATURE regulators are available to provide outstanding pressure control at relatively low cost. A large diaphragm area gives high sensitivity, and a small valve seat gives greater precision and little variation in outlet pressure from fluctuations in supply pressure. With an inlet pressure of 100 psig (6.9 bar), repeatability is within 1/4 psig. Regulated pressure range is 0 to 60 psig (0 to 4.1 bar). Optional springs allow other pressure ranges.

MID-SIZE REGULATORS
Port sizes 1/4, 3/8, 1/2. Modular units in a balanced-valve, piston design with very quick response for fast-cycling valves and cylinders. Two sub-series: models with durable plastic dome, and models with high-strength metal dome for more severe environments. Regulation performance is essentially the same.

FULL-SIZE REGULATORS
Port sizes 1/4 to 3/4. Modular units with diaphragm design for sensitivity and accurate pressure regulation. An adjustment-locking key to impede tampering is standard.

FULL-SIZE Diaphragm Regulators are also available. They were developed to give superior torque control with pneumatic tools. However, they are well suited to many other applications because of their ability to regulate very high air flows with great precision. They will hold regulated pressure within 3 psig (0.2 bar) and repeatability is within 0.5 psig (0.034 bar). For torque control and applications that cannot tolerate over-pressurization, regulated pressure can be limited to 85 psig (5.9 bar). Air from a constant bleed, which is important to the precision of these units, is normally inaudible.

HIGH-CAPACITY REGULATORS
Port sizes 3/4 to 1½. Inline mounting and piston design are featured in these high air-flow models. An adjustment-locking key to impede tampering is standard.

HIGH-CAPACITY Regulators are also of diaphragm design and have essentially the same precise operating characteristics as the FULL-SIZE precision regulators described above. Their larger port sizes, however, make them the choice for very high air-flow applications.

REMOTE PILOT REGULATORS
Regulators with remote pilots operate as precisely as the remote pilot regulators used. A 1/4 inch pilot regulator (or precision model) provides an accurately controlled air spring for excellent regulation. The pilot control regulator can be installed at a distance from the main regulator for convenience in making adjustments.

FULL-SIZE Regulators are of diaphragm design for high sensitivity. They provide air flow up to 160 scfm (75.5 l/s) in applications where low pressure drop and/or remote adjusting are desired.

HIGH-CAPACITY Regulators are of diaphragm design, and provide air flow up to 600 scfm (283.2 l/s).

HIGH-CAPACITY Regulators provide air flow up to 1000 scfm (471.9 l/s). For fast response, good sensitivity, and long service life they employ a piston traveling in a hard-anodized, Teflon-impregnated, metal cylinder. A high-flow, self-relieving valve is built into the main regulator.

RELIEF VALVES
Relief valves are set for a desired maximum system pressure and inserted in a tee downstream of regulated pressure to prevent over-pressurization of the system beyond the relief valve setting. Relief valves are adjustable from 1 to 125 psig (0.07 to 8.6 bar). Optional springs are available for other pressure ranges. If pressure exceeds the relief valve setting it will dump system air to atmosphere or to a valve to provide a warning signal.

Port sizes 1/8 and 1/4. A pressure gauge is standard equipment.

REVERSE FLOW REGULATOR
ROSS reverse-flow regulators provide regulated pressure control from in-to-out, and quick exhausting from out-to-in. When the inlet side of the regulator is exhausted, the regulator piston or diaphragm snaps open to allow the immediate exhaust of secondary pressure.

PRECISION REGULATORS
Provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).

When the inlet side of the regulator is exhausted, the regulator piston or diaphragm snaps open to allow the immediate exhaust of secondary pressure.
RIGHT-ANGLE Pressure Regulators

Ports: 1/8 to 1/2

FEATURES:
- Right-angle regulators used to control outlet pressure to work devices
- Right angle design with threaded Banjo for easy positioning of pipe or tubing
- Quick and easy installation
- Galvanized zinc plated brass body construction
- Lube or non-lube operation

ISO Symbol
Regulator
Self-Relieving

FLOW CHARTS
G1/8 - 1/8 NPT

FLOW CHARTS
G1/4 - 1/4 NPT

FLOW CHARTS
G3/8 - 3/8 NPT & G1/2 - 1/2 NPT

FEATURES:
• Right-angle regulators used to control outlet pressure to work devices
• Right angle design with threaded Banjo for easy positioning of pipe or tubing
• Quick and easy installation
• Galvanized zinc plated brass body construction
• Lube or non-lube operation

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 15° to 160°F (-10° to 70°C).
Flow Media: Filtered air, 5 micron recommended.
Inlet Pressure: 15 to 240 psig (1.0 to 16.5 bar).
Regulated Pressure Range: 15 to 120 psig (1.0 to 8.3 bar).

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

Threads: NPT standard; BSPP, mm, inches.
Inlet Ports: Available with NPTF threaded or push-to-connect fittings.
Outlet Ports: Available with NPT or G threads.

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BANTAM Modular General Purpose Regulators

Ports: 1/8, 1/4, 3/8
Flow to 23 scfm

FEATURES:
- Modular assembly and mounting
- Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
- Piston-type or diaphragm-type
- Self-relieving; optional non-relieving
- Pressure gauge
- NPTF port threads; optional BSPP threads or fittings for tubing up to 10 mm
- Adjusting knob is removable for tamper resistance

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).
Body: Acetal.
Dome and Knob: Acetal
Fluid Media: Compressed air.
Inlet Pressure: 150 psig (10.3 bar) maximum.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).

Pressure Gauge: 0 to 160 psig (0 to 11 bar); 1/8 gauge ports front and rear.
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a "C" prefix to the model number, e.g., C5B01C0010.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

ISO Symbol
Regulator
Self-Relieving
Non-Relieving

FLOW CHARTS

Port Size | Regulated Pressure* \(100 \text{ psig (6.9 bar)}\) | Piston Type Models | Diaphragm Type Models
<table>
<thead>
<tr>
<th>Size</th>
<th></th>
<th>Pipe Ports</th>
<th>Tube Fittings</th>
<th>Pipe Ports</th>
<th>Tube Fittings</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>0-100 (0-6.9)</td>
<td>5B01C0010</td>
<td>—</td>
<td>5B01C0020</td>
<td>—</td>
</tr>
<tr>
<td>1/4</td>
<td>0-100 (0-6.9)</td>
<td>5B02C0010</td>
<td>5B03C0010</td>
<td>5B02C0020</td>
<td>5B03C0020</td>
</tr>
<tr>
<td>3/8</td>
<td>0-100 (0-6.9)</td>
<td>—</td>
<td>5B04C0010</td>
<td>—</td>
<td>5B04C0020</td>
</tr>
<tr>
<td>4 mm</td>
<td>0-100 (0-6.9)</td>
<td>—</td>
<td>5B05C0010</td>
<td>—</td>
<td>5B05C0020</td>
</tr>
<tr>
<td>6 mm</td>
<td>0-100 (0-6.9)</td>
<td>—</td>
<td>5B06C0010</td>
<td>—</td>
<td>5B06C0020</td>
</tr>
<tr>
<td>8 mm</td>
<td>0-100 (0-6.9)</td>
<td>—</td>
<td>5B07C0010</td>
<td>—</td>
<td>5B07C0020</td>
</tr>
<tr>
<td>10 mm</td>
<td>0-100 (0-6.9)</td>
<td>—</td>
<td>5B08C0010</td>
<td>—</td>
<td>5B08C0020</td>
</tr>
</tbody>
</table>

*For other regulated pressure ranges, change the next to last digit in the model number as indicated below:
0-50 psig (0-3.4 bar): Piston type: Change 1 to 3 Diaphragm type: Change 2 to 4
0-125 psig (0-8.6 bar): Piston type: Change 1 to 5 Diaphragm type: Change 2 to 6

† Less gauge.
MINIATURE Regulators & Relief Valves

Ports: 1/8 & 1/4
Flow to 40 scfm

FEATURES:
- Inline mounting
- Piston-type or diaphragm-type
- Self-relieving; optional non-relieving
- Pressure gauge
- Adjusting knobs are removable making the regulators tamper-resistant

FLOW CHARTS

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40°F to 125°F (4°C to 52°C).
Body: Aluminum.
Dome and Knob: Acetal.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).

Pressure Gauge: 0 to 160 psig (0 to 11 bar): 1/8 NPT gauge ports front and rear.
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5212C1004.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

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MID-SIZE Regulators

Ports: 1/4, 3/8, 1/2
Flow to 100 scfm

FEATURES:
• Modular or inline mounting
• Piston-type design
• Self-relieving; optional non-relieving
• Pressure gauge
• Adjustment knob is removable for tamper-resistance

Reverse-Flow Regulators are also available. They provide regulated in-to-out pressure control, plus quick exhausting from out-to-in. Used for downstream pressure regulation of weld guns and other applications requiring quick exhausting through the regulator. Available with adjustment knob or T-handle.

<table>
<thead>
<tr>
<th>DIMENSIONS</th>
<th>inches (mm)</th>
<th>Weight †</th>
<th>lb (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A</td>
<td>2.7 (68)</td>
<td>B</td>
<td>3.3 (83)</td>
</tr>
<tr>
<td>C</td>
<td>1.3 (33)</td>
<td>Depth †</td>
<td>2.1 (52)</td>
</tr>
<tr>
<td></td>
<td>1.0 (0.46)</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

† Less gauge.

REGULATORS — General Purpose

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow Rating*</th>
<th>0-50 psig</th>
<th>0-100 psig</th>
<th>0-150 psig</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>45 (21.2)</td>
<td>5212B2015</td>
<td>5211B2015</td>
<td>5213B2015</td>
</tr>
<tr>
<td>3/8</td>
<td>65 (30.7)</td>
<td>5212B3015</td>
<td>5211B3015</td>
<td>5213B3015</td>
</tr>
<tr>
<td>1/2</td>
<td>75 (35.4)</td>
<td>5212B4015</td>
<td>5211B4015</td>
<td>5213B4015</td>
</tr>
</tbody>
</table>

* For comparison with filters and lubricators.

REGULATORS — Reverse Flow

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow Rating*</th>
<th>Knob Adjustment</th>
<th>T-Handle Adjustment</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>65 (30.7)</td>
<td>5X00B2035</td>
<td>5X00B2039</td>
</tr>
<tr>
<td>3/8</td>
<td>65 (30.7)</td>
<td>5X00B3024</td>
<td>5X00B3021</td>
</tr>
<tr>
<td>1/2</td>
<td>75 (35.4)</td>
<td>5X00B4023</td>
<td>5X00B4041</td>
</tr>
</tbody>
</table>

* For comparison with filters and lubricators.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).
Body: Zinc.
Cap: Nylon.
Dome and Knob: Acetal.
Fluid Media: Compressed air.
Inlet Pressure: 250 psig (17.2 bar) maximum.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Panel Mounting: 1-9/16 inch (40 mm) hole required.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a "C" prefix to the model number, e.g., C5212B2015.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
**FULL-SIZE Regulators**

**Ports:** 1/4, 3/8, 1/2, 3/4  
Flow to 155 scfm

**FEATURES:**  
- Modular or inline mounting  
- Diaphragm-type design  
- Self-relieving; optional non-relieving  
- Pressure gauge  
- Pressure adjustment locking key  
- Reverse flow optional

**Precision internal Pilot Regulators** provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).  
**Remote Pilot Regulators** use any small regulator to provide remote adjustment and to ensure accurate pressure control. Diaphragm type.

**Reverse-Flow Regulators** provide regulated in-to-out pressure control, plus quick exhausting from out-to-in. Used for applications, such as weld guns, requiring quick exhausting through the regulator.

---

**Flow Rating**

*For comparison with filters and lubricators.

---

**STANDARD SPECIFICATIONS** (for products on this page):  
Ambient/Media Temperature:  
General Purpose and Remote Pilot: 40°F to 175°F (4°C to 79°C).  
Precision Internal Pilot: 40°F to 125°F (4°C to 52°C).  
Body: Zinc.  
Dome: Nylon; aluminum with optional 0 to 175 psig (0 to 12.1 bar) spring.  
Fluid Media: Compressed air.  
Inlet Pressure: 300 psig (20.7 bar) maximum.

---

**CAUTIONS**  
* Dome removal clearance: add 0.63 (16).  
** Cap removal clearance: add 0.5 (13).  
† Less gauge.

---

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.

---

**DIMENSIONS**  
(inches (mm))  
**Weight †**  

<table>
<thead>
<tr>
<th>Type</th>
<th>A</th>
<th>B*</th>
<th>C**</th>
<th>Depth †</th>
<th>Weight †</th>
</tr>
</thead>
<tbody>
<tr>
<td>Gen. Purp. Reg.</td>
<td>3.5</td>
<td>5.8</td>
<td>1.3</td>
<td>2.8</td>
<td>2.06</td>
</tr>
<tr>
<td>Precision Reg.</td>
<td>3.5</td>
<td>4.2</td>
<td>1.3</td>
<td>2.8</td>
<td>2.06</td>
</tr>
<tr>
<td>Rem. Pilot Reg.</td>
<td>3.5</td>
<td>2.4</td>
<td>1.3</td>
<td>2.8</td>
<td>2.06</td>
</tr>
</tbody>
</table>

---

**REGULATORS — General Purpose**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow Rating* scfm (l/s)</th>
<th>0-50 psig (0-3.4 bar)</th>
<th>0-125 psig (0-8.6 bar)</th>
<th>0-175 psig (0-12.1 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>70 (33.0)</td>
<td>5212B2017</td>
<td>5211B2017</td>
<td>5213B2017</td>
</tr>
<tr>
<td>3/8</td>
<td>80 (37.7)</td>
<td>5212B3017</td>
<td>5211B3017</td>
<td>5213B3017</td>
</tr>
<tr>
<td>1/2</td>
<td>145 (68.4)</td>
<td>5212B4017</td>
<td>5211B4017</td>
<td>5213B4017</td>
</tr>
<tr>
<td>3/4</td>
<td>155 (73.1)</td>
<td>5212B5027</td>
<td>5211B5027</td>
<td>5213B5027</td>
</tr>
</tbody>
</table>

---

**REGULATORS — Precision Internal Pilot**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow Rating* scfm (l/s)</th>
<th>15-200 psig (1.0-13.8 bar)</th>
<th>15-250 psig (1.0-17.2 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>75 (35.4)</td>
<td>5213C2018</td>
<td>5214C2018</td>
</tr>
<tr>
<td>3/8</td>
<td>75 (35.4)</td>
<td>5213C3018</td>
<td>5214C3018</td>
</tr>
<tr>
<td>1/2</td>
<td>130 (61.3)</td>
<td>5213C4018</td>
<td>5214C4018</td>
</tr>
<tr>
<td>3/4</td>
<td>155 (73.1)</td>
<td>5213C5018</td>
<td>5214C5018</td>
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</tbody>
</table>

---

**REGULATORS — Remote Pilot and Reverse-Flow**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Flow Rating* scfm (l/s)</th>
<th>Remote Pilot 0-200 psig (0-13.8 bar)</th>
<th>Reverse Flow 0-125 psig (0-8.6 bar)</th>
<th>Knob</th>
<th>T-Handle</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>50 (23.6)</td>
<td>5211C2007</td>
<td></td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3/8</td>
<td>105 (49.6)</td>
<td>5211C3007</td>
<td></td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1/2</td>
<td>130 (61.3)</td>
<td>5211C4007</td>
<td></td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>3/4</td>
<td>155 (73.1)</td>
<td>5211C5007</td>
<td></td>
<td>–</td>
<td>–</td>
</tr>
<tr>
<td>1/2</td>
<td>130 (61.3)</td>
<td>5211C4004</td>
<td></td>
<td>5X00B4047</td>
<td></td>
</tr>
<tr>
<td>3/4</td>
<td>155 (73.1)</td>
<td>5211C5007</td>
<td></td>
<td>5X00B5034</td>
<td></td>
</tr>
</tbody>
</table>

---

**FLOW CHARTS**

---

**ISO Symbol**  
Self-Relieving Regulator  
Non-Relieving Regulator

---

**REGULATORS — Full-Size**

---

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MD4™ Modular General Purpose Regulators

Ports: 3/8, 1/2, 3/4
Flow to 220 scfm

FEATURES:
- Modular or inline mounting; modular mounting allows regulators to be positioned at increments of 45° for ease in adjustment
- Self-relieving diaphragm design, with large diaphragm sensing ratio
- Non-relieving - optional
- Pressure adjustment locking key; tamper-resistant pressure setting
- Reverse flow - optional

FLOW CHARTS

<table>
<thead>
<tr>
<th>PRESSURE</th>
<th>0</th>
<th>20</th>
<th>40</th>
<th>60</th>
<th>80</th>
<th>100</th>
<th>120</th>
<th>140</th>
<th>160</th>
<th>180</th>
<th>200</th>
<th>220</th>
<th>240</th>
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<tr>
<td>bar</td>
<td>0</td>
<td>2</td>
<td>4</td>
<td>6</td>
<td>8</td>
<td>10</td>
<td>12</td>
<td>14</td>
<td>16</td>
<td>18</td>
<td>20</td>
<td>22</td>
<td>24</td>
</tr>
<tr>
<td>psi</td>
<td>70</td>
<td>56</td>
<td>40</td>
<td>28</td>
<td>20</td>
<td>14</td>
<td>10</td>
<td>7</td>
<td>5</td>
<td>4</td>
<td>3</td>
<td>2</td>
<td>1</td>
</tr>
</tbody>
</table>

ISO Symbol
- Self-Relieving
- Non-Relieving

DIMENSIONS inches (mm)

<table>
<thead>
<tr>
<th></th>
<th>A</th>
<th>B*</th>
<th>C**</th>
<th>Depth †</th>
<th>Weight †</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>3.5 (87)</td>
<td>5.6 (142)</td>
<td>1.6 (40)</td>
<td>2.9 (73)</td>
<td>2.56 (1.16)</td>
</tr>
</tbody>
</table>

* Dome removal clearance: add 0.625 (16).
** Cap removal clearance: add 0.50 (13).
† Less gauge.

HOW TO ORDER

<table>
<thead>
<tr>
<th>ADJUSTMENT TYPE</th>
<th>ADJUSTMENT RANGE</th>
<th>PIPE SIZE</th>
<th>GAUGE</th>
<th>COLOR</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>3 - 3/8 NPTF</td>
<td>A - No Gauge</td>
<td>G - Gray</td>
</tr>
<tr>
<td>52K - Knob (standard)</td>
<td>A - 0-175 psig (0-12.1 bar)</td>
<td>4 - 1/2 NPTF</td>
<td>B - 0-200 psig (0-14 bar)</td>
<td>Y - Yellow</td>
</tr>
<tr>
<td>52T - Tee Handle</td>
<td>5 - 3/4 NPTF</td>
<td>C - 3/8 BSPP</td>
<td>C - 0-60 psig (0-4 bar)</td>
<td>R - Red</td>
</tr>
<tr>
<td></td>
<td>B - 0-125 psig (0-8.6 bar)</td>
<td>D - 1/2 BSPP</td>
<td>D - 0-60 psig (0-4 bar)</td>
<td>B - Blue</td>
</tr>
<tr>
<td></td>
<td>standard</td>
<td>E - 3/4 BSPP</td>
<td>E - No Gauge with Panel Mount Nut</td>
<td>2 - Gold (standard)</td>
</tr>
<tr>
<td></td>
<td>C - 0-50 psig (0-3.4 bar)</td>
<td>F - 3/4-16 SAE</td>
<td></td>
<td></td>
</tr>
<tr>
<td></td>
<td>D - 0-20 psig (0-1.4 bar)</td>
<td>G - 7/8-14 SAE</td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

FLOW OPTIONS
- R - Reverse Flow
- S - Standard (standard)

Pressure Adjustment Locking Key: Removable.
Pressure Gauge: 0 to 200 psig (0 to 14 bar);
1/4 NPT gauge ports front and rear.
Panel Mounting: 2-1/16 inch (52 mm) hole required.
Seals: Nitrile.
Self-relieving: Non-relieving optional, consult ROSS.
Valve: Brass.
Valve Cap: Nylon.
Threads: NPT standard, BSPP, SAE.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Zinc.
Dome: Nylon; aluminum with optional 0 to 175 psig (0 to 12.1 bar) spring.
Cap Color: Gold standard; optional gray, yellow, red, blue.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Knob: Acetal.
Outlet Pressure: Adjustable up to 125 psig (8.6 bar); optional adjusting springs.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

www.rosscontrols.com
HIGH-CAPACITY Regulators

**Ports: 3/4, 1, 1¼, 1½**
Flow to 800 scfm

**FEATURES:**
- Inline mounting
- Piston-type design
- Self-relieving; optional non-relieving
- Pressure gauge
- Pressure adjustment locking key

**Reverse-flow regulators** provide regulated in-to-out pressure control, plus quick exhausting from out-to-in. Used for applications, such as weld guns, requiring quick exhausting through the regulator. Piston type design.

---

**PORT DIMENSIONS**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>A (inches)</th>
<th>B (inches)</th>
<th>C (inches)</th>
<th>Depth (inches)</th>
<th>Weight (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4, 1</td>
<td>4.4 (111)</td>
<td>6.1 (154)</td>
<td>2.4 (62)</td>
<td>2.8 (71)</td>
<td>2.19 (0.99)</td>
</tr>
<tr>
<td>1¼, 1½</td>
<td>4.9 (124)</td>
<td>6.4 (162)</td>
<td>2.1 (54)</td>
<td>2.8 (71)</td>
<td>2.50 (1.14)</td>
</tr>
</tbody>
</table>

* Dome removal clearance: add 0.63 (16).
** Cap removal clearance: add 0.65 (16.5).
† Less gauge.

**REGULATORS – General Purpose; Piston Type**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Regulated Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>0–100 psig (0–6.9 bar)</td>
</tr>
<tr>
<td>3/4</td>
<td>5211D5017</td>
</tr>
<tr>
<td>1</td>
<td>5211D6017</td>
</tr>
<tr>
<td>1¼</td>
<td>5211C7017</td>
</tr>
<tr>
<td>1½</td>
<td>5211C8017</td>
</tr>
<tr>
<td>1¼</td>
<td>5212D5017</td>
</tr>
<tr>
<td>1½</td>
<td>5212D6017</td>
</tr>
<tr>
<td>1¼</td>
<td>5212C7017</td>
</tr>
<tr>
<td>1½</td>
<td>5212C8017</td>
</tr>
</tbody>
</table>

**REGULATORS – Reverse Flow; Piston Type; 0–100 psig (0-6.9 bar)**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Regulated Pressure Range</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>0–100 psig (0–6.9 bar)</td>
</tr>
<tr>
<td>1</td>
<td>0–50 psig (0–3.4 bar)</td>
</tr>
<tr>
<td>1¼</td>
<td>5211D5017</td>
</tr>
<tr>
<td>1½</td>
<td>5211D6017</td>
</tr>
<tr>
<td>1¼</td>
<td>5211C7017</td>
</tr>
<tr>
<td>1½</td>
<td>5211C8017</td>
</tr>
<tr>
<td>1¼</td>
<td>5212D5017</td>
</tr>
<tr>
<td>1½</td>
<td>5212D6017</td>
</tr>
<tr>
<td>1¼</td>
<td>5212C7017</td>
</tr>
<tr>
<td>1½</td>
<td>5212C8017</td>
</tr>
</tbody>
</table>

**FLOW CHARTS**

---

**STANDARD SPECIFICATIONS** (for products on this page):

- **Ambient/Media Temperature:** 40° to 175°F (4° to 79°C).
- **Body:** Aluminum.
- **Dome:** Nylon; aluminum with optional 0 to 150 psig (0 to 10.3 bar) spring.
- **Fluid Media:** Compressed air.
- **Inlet Pressure:** 300 psig (20.7 bar) maximum.
- **Knob:** Acetal.
- **Outlet Pressure:** Adjustable up to 100 psig (6.9 bar).

**Pressure Adjustment Locking Key:** Removable.

**Pressure Gauge:** 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

**Panel Mounting:** 2-1/16 inch (52 mm) hole required.

**Seals:** Nitrile.

**Valve:** Brass.

**Valve Cap:** Nylon.

**Threads:** NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5211D5017.

---

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
MD4™ Modular Precision Regulators

Ports: 3/8, 1/2, 3/4
Flow to 170 scfm

FEATURES:
- Modular or inline mounting
- Self-relieving diaphragm design
- Repeatability ± 0.5 psi (0.034 bar)
- Easy finger adjustment, no overshoot or undershoot when adjusting
- Minimal air bleed for high accuracy
- Pressure gauge

FLOW CHARTS

HOW TO ORDER
MD4 52K
E - 15-200 psig (1.0-13.8 bar)
F - 15-250 psig (1.0-17.2 bar)
G - 15-100 psig (1.0-6.9 bar)

GAUGE
A - No Gauge
B - 0-200 psig (0-13.8 bar)
D - No Gauge with Panel Mount Nut
E - 0-200 psig (0-13.8 bar) Gauge with Panel Mount Nut

COLOR
G - Gray
Y - Yellow
R - Red
B - Blue
2 - Gold (standard)

PIPE SIZE
3 - 3/8 NPTF
4 - 1/2 NPTF
5 - 3/4 NPTF
C - 3/8 BSPP
D - 1/2 BSPP
E - 3/4 BSPP
F - 3/4-16 SAE
G - 7/8-14 SAE

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 125°F (4° to 52°C).
Body and Dome: Zinc.
Bonnet and Knob: Acetal.
Fluid Media: Compressed air.
Inlet Pressure: 250 psig (17 bar) maximum.
Outlet Pressure: Adjustable 15 to 125 psig (1.0 to 8.6 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Panel Mounting: 2-1/16 (52 mm) hole required.
Seals: Nitrile.
Valve: Brass.
Cap Color: Gold standard; gray, yellow, red, and blue optional.
Precision Regulators: Provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).
Threads: NPT standard, BSPP, SAE.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Regulators

Ports: 3/4, 1, 1¼, 1½
Flow to 800 scfm

FEATURES:
- Inline mounting
- Diaphragm-type design
- Self-relieving
- Manual air bleed for accuracy
- Repeatability ± 0.5 psi (± 0.034 bar)
- Pressure gauge

FLOW CHARTS

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Bonnet and Knob: Acetal.
Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Outlet Pressure: Adjustable 15 to 200 psig (1.0 to 13.8 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

ISO Symbol
Regulator
Self-Relieving

Port Dimensions (inches (mm))

<table>
<thead>
<tr>
<th>Port Size</th>
<th>A</th>
<th>B†</th>
<th>C</th>
<th>Depth†</th>
<th>Weight† (lb (kg))</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4, 1</td>
<td>4.4 (111)</td>
<td>4.6 (112)</td>
<td>2.4 (62)</td>
<td>2.8 (71)</td>
<td>2.0 (0.91)</td>
</tr>
<tr>
<td>1¼, 1½</td>
<td>4.9 (124)</td>
<td>4.9 (125)</td>
<td>2.1 (54)</td>
<td>2.8 (71)</td>
<td>2.38 (1.08)</td>
</tr>
</tbody>
</table>

† Less gauge.

REGULATORS – Precision Diaphragm Type

<table>
<thead>
<tr>
<th>Port Size</th>
<th>0–100 psig (0–6.9 bar)</th>
<th>0–50 psig (0–3.4 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>5213D5017</td>
<td>5214D5017</td>
</tr>
<tr>
<td>1</td>
<td>5213D6017</td>
<td>5214D6017</td>
</tr>
<tr>
<td>1¼</td>
<td>5213D7017</td>
<td>5214D7017</td>
</tr>
<tr>
<td>1½</td>
<td>5213D8017</td>
<td>5214D8017</td>
</tr>
</tbody>
</table>

Panel Mounting: 1-3/16 (30 mm) hole required.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.
Precision Regulators: Provide improved torque control for pneumatic tools; diaphragm type. Pressure settings held within 3 psig (0.2 bar).
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5213D5017.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MD4™ Modular Remote Pilot Regulators

Ports: 3/8, 1/2, 3/4
Flow to 190 scfm

FEATURES:
• Modular or inline mounting
• Diaphragm-type design
• Self-relieving
• Pressure gauge

FLOW CHARTS

INLET PRESSURE: 91 psig (6.3 bar)

DIMENSIONS inches (mm)  Weight †
A  B  C  Depth †   lb (kg)
3.5 (87)  2.4 (62)  1.6 (41)  2.9 (73)  2.20 (1.0)
† Less gauge.

HOW TO ORDER

PRESSURE GAUGE: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge
ports front and rear.

SEALS: Nitrile.

VALVE: Brass.

VALVE CAP: Nylon.

CAP COLOR: Gold standard; optional gray, yellow, red, blue.

THREADS: NPT standard, BSPP, SAE.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body and Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Outlet Pressure: Adjustable 0 to 250 psig (0 to 17.2 bar).
Pilot Ports: 1/4 NPTF.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
FULL-SIZE High-Relief Remote Pilot Regulators

Ports: 1/4, 3/8, 1/2, 3/4
Flow to 150 scfm

High-Relief regulators separate control air from exhaust air.

FEATURES:
- Modular or inline mounting
- Diaphragm-type design
- Self-relieving
- Pressure gauge

FLOW CHARTS

<table>
<thead>
<tr>
<th>Inlet Pressure: 91 psig (6.3 bar)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 Ports</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1/2 Ports</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>3/4 Ports</td>
</tr>
</tbody>
</table>

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body and Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (21 bar) maximum.
Outlet Pressure: Adjustable 0 to 200 psig (0 to 13.8 bar).
Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Seals: Nitrile; optional Viton seals.
Valve: Brass.
Valve Cap: Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., CSX00B2037.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
High-Relief Remote Pilot Regulators

Ports: 1/4, 3/8, 1/2, 3/4, 1, 1 1/4
Flow to 400 scfm

FEATURES:
- Inline mounting
- Diaphragm design
- High relief characteristics up to 200 scfm (94.4 l/s)
- Self-relieving
- Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):

Ambient/Media Temperature: 0° to 158°F (-18° to 70°C).
Body and Dome: Zinc.
Fluid Media: Compressed Air.
Inlet Pressure: 400 psig (27.6 bar) Maximum.
Outlet Pressure: Adjustable up to 250 psig (17.2 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar) standard, 1/4-NPTF (1/4 BSPP) gauge ports front and rear; 0 to 600 psig (0 to 40 bar) optional.

ISO Symbol
With conventional pilot regulator
Self-Relieving

Pilot/Gauge Ports:
1/4-NPT Inlet/Outlet Ports, 1/4-NPT gauge Ports
3/8-NPT Inlet/Outlet Ports, 3/8-NPT gauge Ports
1/2-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
3/4-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
1-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
1 1/4-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports

Seals: Nitrile.
Valve: Brass. Valve Cap: Glass filled Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5216A2007.

FLOW CHARTS

Inlet Pressure: 91.3 psi (6.3 bar)
1/4 Ports 3/8 Ports 1/2 Ports
Inlet Pressure: 91.3 psi (6.3 bar)
3/4 Ports 1 Ports 1 1/4 Ports

RELIEF CHARTS

Inlet Pressure: 91.3 psi (6.3 bar)
1/4, 3/8 and 1/2 Ports
Inlet Pressure: 91.3 psi (6.3 bar)
3/4, 1, 1-1/4 Ports

Pilot/Gauge Ports:
1/4-NPT Inlet/Outlet Ports, 1/4-NPT gauge Ports
3/8-NPT Inlet/Outlet Ports, 3/8-NPT gauge Ports
1/2-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
3/4-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
1-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports
1 1/4-NPT Inlet/Outlet Ports, 1/2-NPT gauge Ports

Seals: Nitrile.
Valve: Brass. Valve Cap: Glass filled Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5216A2007.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY High-Relief Remote Pilot Regulators

Ports: 3/4, 1, 1¼, 1½
Flow to 700 scfm

High-Relief regulators separate control air from exhaust air.

FEATURES:
- Inline mounting
- Diaphragm-type design
- Self-relieving
- Pressure gauge

FLOW CHARTS

Port Dimensions: inches (mm)

<table>
<thead>
<tr>
<th>Port Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Depth</th>
<th>Weight †</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4, 1</td>
<td>4.4 (111)</td>
<td>4.6 (112)</td>
<td>2.4 (62)</td>
<td>2.8 (71)</td>
<td>1.88 (0.85)</td>
<td>5X00B5046</td>
</tr>
<tr>
<td>1¼, 1½</td>
<td>4.9 (124)</td>
<td>5.1 (129)</td>
<td>2.1 (54)</td>
<td>2.8 (71)</td>
<td>2.25 (1.02)</td>
<td>5X00B6039</td>
</tr>
</tbody>
</table>

† Less gauge.

Port Size Air Flow scfm (l/s) Part Number

<table>
<thead>
<tr>
<th>Size</th>
<th>3/4</th>
<th>400 (188.8)</th>
<th>5X00B5046</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>550 (259.6)</td>
<td>5X00B6039</td>
<td></td>
</tr>
<tr>
<td>1¼</td>
<td>600 (283.2)</td>
<td>5X00B7021</td>
<td></td>
</tr>
<tr>
<td>1½</td>
<td>650 (306.8)</td>
<td>5X00B8049</td>
<td></td>
</tr>
</tbody>
</table>

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Outlet Pressure: 0 to 200 psig (0 to 13.8 bar).
Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., CSX00B5046.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Remote Pilot Regulators

Ports: 3/4, 1, 1¼, 1½
Flow to 740 scfm

FEATURES:
- Inline mounting
- Diaphragm-type design
- Self-relieving
- Pressure gauge

FLOW CHART

<table>
<thead>
<tr>
<th>Port Size</th>
<th>DIMENSIONS inches (mm)</th>
<th>Weight lb (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4, 1</td>
<td>4.4 (111) 4.6 (112) 2.4 (62) 2.8 (71)</td>
<td>1.88 (0.85)</td>
</tr>
<tr>
<td>1¼, 1½</td>
<td>4.9 (124) 5.1 (129) 2.1 (54) 2.8 (71)</td>
<td>2.25 (1.02)</td>
</tr>
</tbody>
</table>

† Less gauge.

ISO Symbol
Regulator

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 300 psig (20.7 bar) maximum.
Outlet Pressure: 0 to 200 psig (0 to 13.8 bar).
NOTE: Outlet pressure depends on the adjustment of the pilot regulator.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

Pilot Ports: 1/4 NPTF.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5211D5006.
HIGH-CAPACITY Remote Pilot Regulators

Ports: 1½, 2 & 3
Flow to 4000 scfm

**FEATURES:**
- Inline mounting
- Piston-type design
- Self-relieving
- Pressure gauge

---

**STANDARD SPECIFICATIONS** (for products on this page):
- **Ambient/Media Temperature:** 40° to 175°F (4° to 79°C).
- **Body and Dome:** Aluminum.
- **Fluid Media:** Compressed air.
- **Inlet Pressure:** 300 psig (20.7 bar) maximum.
- **Outlet Pressure:** 0 to 200 psig (0 to 13.8 bar).

**NOTE:** Outlet pressure depends on the selection of the pilot regulator.

---

**Pilot Ports:** 1/4 NPTF.
- **Pressure Gauge:** 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
- **Seals:** Nitrile; optional Viton.
- **Valve:** 1¼” to 2” Ports - Brass; 3” Port - Aluminum.
- **Valve Cap:** Aluminum.
- **Threads:** NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5211B8027.

---

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
HIGH-PRESSURE Regulators

Ports: 1/8, 1/4 & 3/8
Flow to 70 scfm

FEATURES:
- Inline mounting
- Piston-type design
- Self-relieving, optional non-relieving
- Pressure adjustment locking feature
- Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body and Dome: Aluminum.
Knob: Nylon.
Fluid Media: Compressed air.
Inlet Pressure: 400 psig (27.6 bar) maximum.

Outlet Pressure: Adjustable up to 390 psig (26.9 bar).
Pressure Gauge: 0 to 600 psig (0 to 40 bar).
Seals: Viton.
Max Flow Rate: 70 scfm (33.0 l/s) @400 psi (27.6 bar).
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5215B1004.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-FLOW Relief Valve

Port: 1
Flow to 450 scfm

The High Flow Relief valve is designed to prevent the over-pressurization of pneumatic components and systems.

FEATURES:
- Inline mounting
- Diaphragm-type design
- Self-relieving
- Pressure gauge

On the right is a typical circuit using the High Flow Relief Valve. The circuit utilizes a remotely piloted “fill” regulator (port size 1 NPT) and a small, remotely mounted, pilot regulator with 1/4 NPT ports.

The required system pressure is set by adjusting the knob on the pilot regulator until the desired system pressure is shown on the pilot regulator’s gauge. An example system pressure of 50 PSIG was selected in the circuit on the right.

Outlet pressure from the pilot regulator is sent to the fill regulator’s signal port and the Port 2 of the High Flow Relief Valve. The Port 1 of the High Flow Relief Valve is connected to the system, as shown, to monitor system pressure.

If the system pressure exceeds the pilot regulator setting (set-point), the High Flow Relief Valve will begin to exhaust air after an approximate 2 psig (0.1 bar) rise above the set-point.

Should the system pressure drop below the set-point, the fill valve will open to supply air downstream and maintain the system at the set-point.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature: 40° to 175°F (4° to 79°C).
Body: Aluminum.
Dome: Zinc.
Fluid Media: Compressed air.
Inlet Pressure: 200 psig (13.8 bar) maximum.
Outlet Pressure: 0 to 200 psig (0 to 13.8 bar).
Pilot Ports: 1/4 NPTF.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Seals: Nitrile.
Valve: Brass.
Valve Cap: Nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5X00D6012.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
INTEGRATED FILTER/REGULATOR

Instructional Information

The integration of a general purpose filter and a pressure regulator into a single module provides the compactness needed where space is limited.

These integrated filter/regulators are offered by ROSS in port sizes from 1/8 up to 3/4 along with models equipped with quick-connect fittings for tubing from 1/4 up to 10 mm.

The regulator is the top portion of the assembly and the filter is the bottom portion. All sizes have essentially the same operating characteristics as their corresponding individual filters and regulators.

All filter/regulators include an internal automatic filter drain and a pressure gauge as standard equipment. Regulators are self-relieving and have gauge ports front and rear. Non-relieving models are also available. Available options are the same as those for the corresponding individual filters and regulators. They include regulating springs for various pressure ranges, metal filter bowls, and sintered bronze filter elements in several micron ratings.

MODULAR or INLINE MOUNTING

Integrated filter/regulators are of modular design. Units can be connected to lubricators by special modular connectors which seal the faces between units. They may also be inline mounted with pipe nipples. MINIATURE filter/regulators are designed for inline mounting only.

All units are available with either NPTF or BSPP port threads.

MINIATURE FILTER/REGULATORS

Port sizes 1/8 and 1/4.
Built to the same performance standards as the BANTAM units, but are non-modular and at lower cost.

BANTAM FILTER/REGULATORS

Port sizes 1/8 and 1/4 or fittings for tubing up to 10 mm.
Modular units have durable plastic, corrosion-resistant bodies. Units are available with either piston or diaphragm type regulators. A non-relieving version can be used with water, oil, and many other liquids.

MID-SIZE FILTER/REGULATORS

Port sizes 1/4, 3/8, and 1/2.
Standard polycarbonate plastic filter bowl has a zinc die-cast shatterguard. A zinc bowl is optionally available. Regulator is a self-relieving piston type; non-relieving also available.

MD4™ FILTER/REGULATORS

Port sizes 3/8, 1/2, 3/4.
Polycarbonate plastic filter bowl with steel shatterguard standard. Optional aluminum bowl with clear nylon sight glass. Regulator is a self-relieving diaphragm type; non-relieving also available. Includes pressure adjustment locking key to impede tampering.
**BANTAM Modular Integrated Filter/Regulator**

**Ports: 1/8 & 1/4**

**Flow to 24 scfm**

**Tube Fittings**

---

**Features:**
- Filter and regulator consolidated in a single assembly
- Modular assembly and mounting
- Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
- 5-micron rated polyethylene filter element
- High-strength polycarbonate plastic filter bowl; optional metal bowl
- Internal automatic drain; optional manual drain
- Piston-type regulator diaphragm-type
- Self-relieving regulator; optional non-relieving
- Pressure gauge

---

**STANDARD SPECIFICATIONS** (for products on this page):

- **Ambient/Media Temperature:**
  - Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
  - Metal bowl: 40° to 150°F (4° to 66°C).
- **Body, Dome and Knob:** Acetal.
- **Filter Drain:** Internal automatic drain; optional manual drain.
- **Filter Element:** 5-micron rated polyethylene.
- **Fluid Media:** Compressed air.
- **Inlet Pressure:**
  - For automatic drain model:
    - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
    - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
  - For manual drain model:
    - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
    - With metal bowl: 0 to 200 psig (0 to 13.8 bar).
- **Outlet Pressure:** Adjustable up to 100 psig (6.9 bar).
- **Pressure Gauge:** 0 to 160 psig (0 to 11.0 bar); 1/8 NPT gauge ports front and rear.
- **Panel Mounting:** 1-3/16 inch (30 mm) hole required.
- **Seals:** Nitrile.
- **Threads:** NPT standard, BSPP. For BSPP threads, add a "C" prefix to the model number, e.g., C5D01C0110.

---

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
MINIATURE Integrated Filter/Regulator

Ports: 1/8 & 1/4
Flow to 24 scfm

FEATURES:
• Filter and regulator consolidated in a single assembly
• Inline mounting
• 5-micron rated polyethylene filter element; optional sintered bronze elements
• High-strength polycarbonate plastic filter bowl; optional aluminum bowl
• Internal automatic drain; optional manual drain
• Piston-type regulator or diaphragm-type
• Self-relieving regulator; non-relieving optional
• Pressure gauge
• Regulator adjusting knob removable for tamper-resistance

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Outlet Pressure: Adjustable up to 100 psig (6.9 bar).

Pressure Gauge: 0 to 160 psig (0 to 11.0 bar); 1/8 NPT gauge ports front and rear.

Panel Mounting: 1-3/16 inch (30 mm) hole required.

Seals: Nitrile.

Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5321C1032.

REPLACEMENT FILTER ELEMENT KIT

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm polyethylene - Standard</td>
<td>933K77</td>
</tr>
</tbody>
</table>

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 150°F (4° to 66°C).

Body: Aluminum.

Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.

Dome and Knob: Acetal.

Filter Drain: Internal automatic drain; optional manual drain.

Filter Element: 5-micron rated polyethylene.

Fluid Media: Compressed air.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MID-SIZE Modular Integrated Filter/Regulator

Ports: 1/4, 3/8, 1/2
Flow to 105 scfm

FEATURES:
- Filter and regulator consolidated in a single assembly
- Modular or inline mounting
- 5-micron rated polyethylene filter element
- High-strength polycarbonate plastic filter bowl with zinc shatterguard; optional zinc bowl
- Internal automatic drain; optional manual drain
- Self-relieving piston-type regulator; non-relieving optional
- Pressure gauge
- Adjusting knob removable for tamper resistance

FLOW CHARTS

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>5321B2052</td>
<td>5322B2051</td>
</tr>
<tr>
<td>3/8</td>
<td>5321B3052</td>
<td>5322B3051</td>
</tr>
<tr>
<td>1/2</td>
<td>5321B4052</td>
<td>5322B4051</td>
</tr>
</tbody>
</table>

ISO Symbol
Filter/Regulator
Automatic Drain
Self-relieving

DIMENSIONS

<table>
<thead>
<tr>
<th>Bowl Type</th>
<th>A (in)</th>
<th>B* (in)</th>
<th>C** (in)</th>
<th>Depth † (in)</th>
<th>Weight ‡ (lb)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycarbonate</td>
<td>2.7 (68)</td>
<td>4.6 (116)</td>
<td>3.3 (83)</td>
<td>2.4 (60)</td>
<td>1.44 (0.65)</td>
</tr>
<tr>
<td>Metal</td>
<td>2.7 (68)</td>
<td>4.9 (123)</td>
<td>3.3 (83)</td>
<td>2.4 (60)</td>
<td>1.50 (0.68)</td>
</tr>
</tbody>
</table>

** Dome removal clearance: add 0.63 (16).
† Less gauge.
‡ Less gauge.

CONSOLED FILTER & REGULATOR

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>Automatic Drain Models</td>
<td>5321B2062</td>
<td>5322B2061</td>
</tr>
<tr>
<td>Manual Drain Models</td>
<td>5321B3062</td>
<td>5322B3061</td>
</tr>
<tr>
<td>1/2</td>
<td>5321B4062</td>
<td>5322B4061</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KIT

Element Rating/Type | Kit Number
5-µm polyethylene - Standard | 936K77

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal Bowl: 40° to 175°F (4° to 79°C).
Body: Zinc.
Bowl: 4-ounce (120-ml) capacity polycarbonate plastic with zinc shatterguard; optional zinc bowl.
Dome and Knob: Acetal.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.

Inlet Pressure:
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
- For manual drain model:
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Panel Mounting: 1-9/16 inch (40 mm) hole required.
Seals: Nitrile.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a “C” prefix to the model number, e.g., C5321B2052.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
## FULL-SIZE Integrated Filter/Regulator

### FEATURES:
- Filter and regulator consolidated in a single assembly
- Modular assembly and mounting
- 5-micron rated polyethylene filter element
- High-strength polycarbonate plastic filter bowl with steel shatterguard; optional metal bowl with clear nylon sight glass
- Internal automatic drain; optional manual drain or external automatic drain
- Self-relieving diaphragm-type regulator; optional non-relieving
- Pressure adjustment locking key
- Pressure gauge

### SPECIFICATIONS:
- Ambient/Media Temperature:
  - Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
  - Metal Bowl: 40° to 175°F (4° to 79°C).
- Body: Zinc.
- Bowl: 8-ounce (240-ml) capacity polycarbonate plastic with steel shatterguard; optional zinc bowl with clear nylon sight glass.
- Dome: Nylon.
- Filter Drain: Internal automatic drain; optional manual drain or external automatic drain.
- Filter Element: 5-micron rated polyethylene.
- Fluid Media: Compressed air.

### FLOW CHARTS

#### INLET PRESSURE: 100 psig (6.9 bar)

- **1/4 Ports**
- **3/8 Ports**

### CONSOLED FILTER & REGULATOR

#### Automatic Drain Models
- **1/4**
  - 80 (38) scfm
  - 5321B2072
  - 5322B2071
  - 5321B2012
  - 5322B2011
- **3/8**
  - 90 (42) scfm
  - 5321B3072
  - 5322B3071
  - 5321B3012
  - 5322B3011
- **1/2**
  - 170 (80) scfm
  - 5321B4072
  - 5322B4071
  - 5321B4012
  - 5322B4011
- **3/4**
  - 180 (85) scfm
  - 5321B5072
  - 5322B5071
  - 5321B5012
  - 5322B5011

#### Manual Drain Models
- **1/4**
  - 80 (38) scfm
  - 5321B2072
  - 5321B2012
  - 5322B2011
- **3/8**
  - 90 (42) scfm
  - 5321B3072
  - 5321B3012
  - 5322B3011
- **1/2**
  - 170 (80) scfm
  - 5321B4072
  - 5321B4012
  - 5322B4011
- **3/4**
  - 180 (85) scfm
  - 5321B5072
  - 5321B5012
  - 5322B5011

### REPLACEMENT FILTER ELEMENT KIT

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm polyethylene - Standard</td>
<td>939K77</td>
</tr>
</tbody>
</table>

### IMPORTANT NOTE:
Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MD4™ Modular Integrated Filter/Regulator

Ports: 3/8, 1/2, 3/4
Flow to 230 scfm

ISO Symbol
Filter/Regulator
Automatic Drain
Self-relieving

FEATURES:
- Filter and regulator consolidated into a single space-saving assembly
- Modular or inline mounting
- Pressure gauge included; two gauge ports
- Add on L-O-X® valve – optional
- 5-micron rated polyethylene filter element; optional 40-micron element
- Polycarbonate plastic bowl with steel shatterguard; optional metal bowl with sight glass
- Internal automatic drain; optional manual drain and other drain types
- Self-relieving diaphragm-type regulator; optional non-relieving
- Pressure adjustment locking key; tamper-resistant pressure setting

DIMENSIONS inches (mm)  Weight † lb (kg)

<table>
<thead>
<tr>
<th>Bowl</th>
<th>A</th>
<th>B *</th>
<th>C **</th>
<th>Depth †</th>
</tr>
</thead>
<tbody>
<tr>
<td>Polycarbonate</td>
<td>3.5 (88)</td>
<td>7.7 (195)</td>
<td>5.4 (137)</td>
<td>2.9 (73)</td>
</tr>
<tr>
<td>Metal</td>
<td>3.5 (88)</td>
<td>7.6 (193)</td>
<td>5.4 (137)</td>
<td>2.9 (73)</td>
</tr>
</tbody>
</table>

** Dome removal clearance: add 0.63 (16).
† Less gauge.

HOW TO ORDER

BOWL DRAIN
A - Auto Drain
M - Manual Drain
E - Electronic Drain – available in metal bowl
H - Automatic External Drain – available in metal bowl version only

ADJUSTMENT RANGE
A - 0-175 psig (0-12.1 bar)
B - 0-125 psig (0-8.6 bar), standard
C - 0-50 psig (0-3.4 bar)
D - 0-20 psig (0-1.4 bar)
GAGE
A - No Gauge
B - 0-200 psig (0-14 bar)
C - 0-60 psig (0-4 bar)
D - No Gauge with Panel Mount Nut
E - 0-200 psig (0-14 bar) Gauge with Panel Mount Nut
F - 0-60 psig (0-4 bar) Gauge with Panel Mount Nut

REPLACEMENT FILTER ELEMENT KITS

Element Rating/Type  Kit Number
5-µm polyethylene - Standard  R-A115-106PE5
40-µm  R-A115-106PE3

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 175°F (4° to 79°C).
Body: Zinc.
Bonnet: Nylon; aluminum with optional 0 to 175 psig (0 to 12.1 bar) spring.
Bowl: 9-ounce (270-ml) polycarbonate plastic with steel shatterguard; optional aluminum bowl with clear nylon sight glass.
Bowl Drain: Internal automatic drain; optional manual drain and other drain types.
Fluid Media: Compressed air.
Filter Element: 5-micron rated polyethylene; optional 40-micron.

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Outlet Pressure: Adjustable up to 125 psig (8.6 bar); optional adjusting springs.
Pressure Adjustment Locking Key: Removable.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Panel Mounting: 2.05-inch (52.1-mm) hole required.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
LUBRICATOR FUNCTION

Air line lubricators are designed to introduce atomized oil into the air line so that downstream mechanisms can be adequately lubricated. Lubricators should be adjusted so that the minimum amount of oil to lubricate the equipment is used.

There are two basic designs used in ROSS lubricators: sight-feed design and wick-feed design. Illustrations of these two types of assembly are shown on the right.

SIGHT-FEED LUBRICATORS

Air flows through a flexible-vane automatic flow sensor that creates a small pressure differential between the air passage and the oil reservoir. This differential causes oil to move up a riser tube, through an adjustable metering valve, and then to drip into a transparent dome and the air stream. This oil is “atomized” by the air stream, and carried down the air line to the points of lubrication.

Sight-feed lubricators are easy to adjust and an indicator on the sight dome measures the amount of oil dispensed. The adjusting knob can be removed to make the lubricator “tamper-resistant.” All working parts are in an easily replaceable cartridge.

WICK-FEED LUBRICATORS

In a wick-feed lubricator, one end of a porous bronze wick is saturated with oil in the reservoir. Capillary action causes the oil to travel up the wick. Oil is stripped off the upper portion of the wick by the air flow, and maintains a constant oil-to-air ratio. This ratio can be varied by manual adjustment. Units will not shut off, even with dirt and moisture in the reservoir. However, air must be shut off when filling the reservoirs of these models.

MODULAR or INLINE MOUNTING

ROSS lubricators are of modular design. They are connected to other units by special modular connectors which seal the faces between units. They may also be inline mounted with pipe nipples. MINIATURE and HIGH-CAPACITY lubricators are inline mounted only.

BANTAM LUBRICATORS

Port sizes 1/8 and 1/4 or fittings for tubing up to 10 mm. Wick-feed design and modular assembly. Made of durable, corrosion-resistant acetal. Polycarbonate or aluminum bowl. Air flow to 25 scfm (11.8 l/s). 2-ounce (60-ml) bowl capacity.

MINIATURE LUBRICATORS

Port sizes 1/8 and 1/4. Wick-feed design and inline mounting only. Aluminum head with polycarbonate or aluminum bowl. Air flow to 25 scfm (11.8 l/s). 2-ounce (60-ml) bowl capacity. Special low-flow models are designed to deliver oil in situations where air flow is less than 1 scfm (0.5 l/s).

MID-SIZE LUBRICATORS

Port sizes 1/4, 3/8, 1/2. Sight-feed design and modular or inline mounting. Polycarbonate bowl with zinc die-cast shatterguard or zinc bowl. Air flow to 110 scfm (52.0 l/s). 4-ounce (120-ml) bowl capacity.

MD4™ LUBRICATORS


FULL-SIZE LUBRICATORS

Port sizes 1/4, 3/8, 1/2. Either wick-feed or sight-feed design; modular or inline mounting. Air flows up to 140 scfm (66.1 l/s). Zinc head. Polycarbonate bowl with steel shatterguard or zinc bowl. 8-ounce (240-ml) zinc bowls.

HIGH-CAPACITY LUBRICATORS

Port sizes 3/4 to 1½. Either wick-feed or sight-feed design; inline mounting only. Air flows up to 500 scfm (236.0 l/s). Aluminum head. Polycarbonate bowl with steel shatterguard or aluminum bowl. 16-ounce (480-ml), 35-ounce (1030-ml), or 62-ounce (1830-ml) bowls.

MD4™

Port sizes 3/8, 1/2, 3/4. Sight-feed design and modular or inline mounting. 9-ounce or 15-ounce capacity polycarbonate bowl with steel shatterguard; optional aluminum bowl with clear nylon sight glass. Air flow to 205 cfm (96.7 l/s).
BANTAM Modular Lubricators

Ports: 1/8 & 1/4 and Tube Fittings
Flow to 27 scfm

FEATURES:
• Modular assembly and mounting
• Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
• Wick-feed design

ISO Symbol
Lubricator

FLOW CHART

Inlet Pressure: 100 psig (6.9 bar)
Minimum Flow: 1 scfm (0.47 l/s)

ISO Symbol
Lubricator

FLOW CHART

H: High Oil Delivery
L: Low Oil Delivery
A: Wick Up
B: Wick Down 1 Groove
C: Wick Down 2 Grooves

Port Size:
3/8
4 mm
6 mm
8 mm
10 mm

INLET PRESSURE DROP

<table>
<thead>
<tr>
<th>Flow (l/s)</th>
<th>0.07</th>
<th>0.14</th>
<th>0.21</th>
<th>0.28</th>
<th>0.35</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5 to 1.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>1.0 to 2.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>2.0 to 3.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3.0 to 4.0</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

Port Dimensions (inches (mm))

<table>
<thead>
<tr>
<th>Port Size</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Depth</th>
</tr>
</thead>
<tbody>
<tr>
<td>No Port</td>
<td>1.7 (43)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>1/8, 1/4</td>
<td>3.0 (76)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>3/8</td>
<td>3.9 (99)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>4 mm</td>
<td>3.4 (86)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>6 mm</td>
<td>3.4 (86)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>8 mm</td>
<td>3.1 (79)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
<tr>
<td>10 mm</td>
<td>3.9 (99)</td>
<td>3.6 (91)</td>
<td>0.9 (22)</td>
<td>1.8 (45)</td>
</tr>
</tbody>
</table>

† Dimension with plastic filter bowl; with metal bowl is 3.8 (97).

Models below have quick-connect fittings for tubing:

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Air Flow</th>
<th>Models with Pipe Ports*</th>
<th>Models with Tube Fittings*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>1-27 (0.5-12.7)</td>
<td>5B01B0005</td>
<td>5B01B0006</td>
</tr>
<tr>
<td>1/4</td>
<td>1-27 (0.5-12.7)</td>
<td>5B02B0005</td>
<td>5B02B0006</td>
</tr>
<tr>
<td>3/8</td>
<td>1-27 (0.5-12.7)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>4 mm</td>
<td>1-27 (0.5-12.7)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>6 mm</td>
<td>1-27 (0.5-12.7)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>8 mm</td>
<td>1-27 (0.5-12.7)</td>
<td>—</td>
<td>—</td>
</tr>
<tr>
<td>10 mm</td>
<td>1-27 (0.5-12.7)</td>
<td>—</td>
<td>—</td>
</tr>
</tbody>
</table>

* To order a lubricator with quick-fill cap, add 2 to the last digit in the model number, e.g., model 5B01B0005 with quick-fill cap becomes model number 5B01B0007.

STANDARD SPECIFICATIONS (for products on this page):

Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 150°F (4° to 66°C).

Body: Acetal.

Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.
Fluid Media: Compressed air.

Inlet Pressure:
Polycarbonate plastic bowl: 150 psig (10.3 bar) maximum.
Metal bowl: 200 psig (13.8 bar) maximum.

Oil Adjustment: External, no shutoff.

Seals: Nitrile.

Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., CSB01B0005.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MINIATURE Lubricators

Ports: 1/8 & 1/4
Flow to 25 scfm

FEATURES:
- Inline mounting
- High-strength polycarbonate plastic bowl; optional aluminum bowl
- Low-flow models are designed to deliver oil in extremely low-flow less than 1 scfm (0.5 l/s) situations
- Wick-feed design in both high-flow and low-flow lubricators
- Internal tamper-resistant adjustment

ISO Symbol
Lubricator

DIMENSIONS inches (mm)

<table>
<thead>
<tr>
<th>Bowl</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Depth</th>
<th>Weight lb (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>1.6 (41)</td>
<td>3.6 (91)</td>
<td>0.7 (17)</td>
<td>1.6 (41)</td>
<td>0.21 (0.10)</td>
</tr>
<tr>
<td>Metal</td>
<td>1.6 (41)</td>
<td>3.8 (97)</td>
<td>0.7 (17)</td>
<td>1.6 (41)</td>
<td>0.21 (0.10)</td>
</tr>
</tbody>
</table>

Model Numbers*

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Type</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
<th>Reservoir oz (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 High Flow</td>
<td>5111B1010</td>
<td>5112B1010</td>
<td>2.0 (59)</td>
<td></td>
</tr>
<tr>
<td>1/8 Low Flow</td>
<td>5111B1012</td>
<td>5112B1012</td>
<td>2.0 (59)</td>
<td></td>
</tr>
<tr>
<td>1/4 High Flow</td>
<td>5111B2010</td>
<td>5112B2010</td>
<td>2.0 (5.9)</td>
<td></td>
</tr>
<tr>
<td>1/4 Low Flow</td>
<td>5111B2012</td>
<td>5112B2012</td>
<td>2.0 (5.9)</td>
<td></td>
</tr>
</tbody>
</table>

*To order a lubricator with quick-fill cap, change the third digit from the end of the model number from “0” to “1,” e.g., model 5111B1010 with quick-fill cap becomes model 5111B1110.

NOTE: See Compatible Lubricants and CAUTIONS about polycarbonate plastic bowls on page 80.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

STANDARD SPECIFICATIONS (for products on this page):

 Ambient/Media Temperature:
Polycarbonate plastic bowl: 40°F to 125°F (4°C to 52°C).
Metal bowl: 40°F to 150°F (4°C to 66°C).

Body: Aluminum.

Bowl: 2-ounce (60-ml) capacity polycarbonate plastic; optional aluminum bowl.

Fluid Media: Compressed air.

Inlet Pressure:
Polycarbonate plastic bowl: 150 psig (10.3 bar) maximum.
Metal bowl: 200 psig (13.8 bar) maximum.

Oil Adjustment: Internal, tamper-proof.

Seals: Nitrile.

Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5111B1010.
MID-SIZE Modular Lubricators

Ports: 1/4, 3/8, 1/2
Flow to 110 scfm

**FEATURES:**
- Modular or inline mounting
- High-strength polycarbonate plastic bowl with zinc shatterguard; optional zinc bowl
- Sight-feed design
- External tamper-resistant adjustment

**PORTS:** 1/4, 3/8, 1/2
**Flow to:** 110 scfm

**DIMENSIONS** inches (mm)

<table>
<thead>
<tr>
<th>Bowl</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Depth</th>
<th>Weight</th>
<th>Reservoir</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>2.7 (68)</td>
<td>4.1 (103)</td>
<td>1.8 (46)</td>
<td>2.4 (60)</td>
<td>1.06 (0.48)</td>
<td>oz (ml)</td>
</tr>
<tr>
<td>Metal</td>
<td>2.7 (68)</td>
<td>4.1 (103)</td>
<td>1.8 (46)</td>
<td>2.4 (60)</td>
<td>1.50 (0.68)</td>
<td></td>
</tr>
</tbody>
</table>

**FLOW CHART**

**STANDARD SPECIFICATIONS** (for products on this page):

**Ambient/Media Temperature:**
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowl: 40° to 175°F (4° to 79°C).

**Body:** Zinc.

**Bowl:** 4-ounce (120-ml) polycarbonate plastic with zinc shatterguard; optional zinc bowl.

**Fluid Media:** Compressed air.

**Inlet Pressure:**
- Polycarbonate plastic bowl: 150 psig (10.3 bar) maximum.
- Metal bowl: 200 psig (13.8 bar) maximum.

**Oil Adjustment:** External, tamper-resistant.

**Sight Dome:** Nylon.

**Seals:** Nitrile.

**Threads:** NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5111B2007.

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
FULL-SIZE Lubricators

Ports: 1/4, 3/8, 1/2, 3/4
Flow to 140 scfm

FEATURES:
- Modular or inline mounting
- High-strength polycarbonate plastic bowl with steel shatterguard; optional zinc bowl with sight glass
- Sight-feed or wick-feed design
- External adjusting knob; removable for tamper resistance

ISO Symbol

Lubricator

DIMENSIONS

<table>
<thead>
<tr>
<th>Bowl Size</th>
<th>Dimensions (inches (mm))</th>
<th>Weight (lb (kg))</th>
</tr>
</thead>
<tbody>
<tr>
<td>Standard Plastic</td>
<td>A 3.5 (89) B 5.2 (132) C 1.3 (32) Depth 3.5 (89)</td>
<td>2.06 (0.94)</td>
</tr>
<tr>
<td>Standard Metal</td>
<td>A 3.5 (89) B 5.3 (135) C 1.3 (32) Depth 3.5 (89)</td>
<td>2.90 (1.32)</td>
</tr>
<tr>
<td>Wick-Feed Design</td>
<td>A 3.5 (89) B 5.2 (132) C 0.7 (17) Depth 3.5 (89)</td>
<td>2.25 (1.02)</td>
</tr>
<tr>
<td>Standard Metal</td>
<td>A 3.5 (89) B 5.3 (135) C 0.7 (17) Depth 3.5 (89)</td>
<td>2.85 (1.30)</td>
</tr>
</tbody>
</table>

Flow Chart

Minimum Flow: 2 scfm (0.94 l/s)

<table>
<thead>
<tr>
<th>Port</th>
<th>Air Flow scfm (l/s)</th>
<th>Sight-feed Models*</th>
<th>Wick-feed Models*</th>
<th>Reservoir oz (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Size</td>
<td>Plastic Bowl**</td>
<td>Metal Bowl</td>
<td>Plastic Bowl**</td>
<td>Metal Bowl</td>
</tr>
<tr>
<td>1/4</td>
<td>35 (16.5)</td>
<td>5111B2008</td>
<td>5112B2008</td>
<td>8.0 (236.6)</td>
</tr>
<tr>
<td>3/8</td>
<td>68 (32.1)</td>
<td>5111B3008</td>
<td>5112B3008</td>
<td>8.0 (236.6)</td>
</tr>
<tr>
<td>3/4</td>
<td>140 (66.1)</td>
<td>5111B5008</td>
<td>5112B5008</td>
<td>8.0 (236.6)</td>
</tr>
</tbody>
</table>

*To order a lubricator with quick-fill cap, change the third digit from the end of the model number from “0” to “1,” e.g., model 5111B2008 with quick-fill cap becomes model 5111B2108.

Fluid Media: Compressed air.
Inlet Pressure:
- Polycarbonate plastic bowl: 150 psig (10.3 bar) maximum.
- Metal bowl: 200 psig (13.8 bar) maximum.
Oil Adjustment: External, tamper-resistant.
Seals: Nitrile.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a “C” prefix to the model number, e.g., C5111B2008.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowl: 40° to 175°F (4° to 79°C).
Adjusting Knob: Acetal.
Body: Zinc.
Bowl: 8-ounce (236.6-ml) capacity polycarbonate plastic with steel shatterguard; optional zinc bowl with sight glass.
Bowl Ring: Aluminum.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MD4™ Modular Lubricators

Ports: 3/8, 1/2, 3/4
Flow to 205 scfm

FEATURES:
- Modular or inline mounting
- Sight-feed design; transparent dome shows how much oil is being dispensed
- External adjusting knob, removable for tamper resistance
- Polycarbonate plastic bowl with steel shatterguard; optional aluminum bowl with sight glass
- Extended metal bowl – optional
- All working parts can be replaced with a single service cartridge

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowl: 40° to 175°F (4° to 79°C).
Body: Zinc.
Bowl: 9-ounce (266.2-ml) capacity polycarbonate plastic with steel shatterguard; optional aluminum bowl with clear nylon sight glass. Optional 15-ounce (443.6-ml) extended aluminum bowl with two clear nylon sight glasses.
Bowl Ring: Nylon.

Cap Color: Gold standard; optional gray, yellow, red, blue.
Fluid Media: Compressed air.
Inlet Pressure:
Polycarbonate plastic bowl: 150 psig (10.3 bar).
Metal bowl: 200 psig (13.8 bar).
Oil Adjustment: External; tamper resistant.
Seals: Nitrile.
Sight-Feed Dome: Nylon.
Threads: NPT standard, BSPP, SAE.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
HIGH-CAPACITY Lubricators

Ports: 3/4, 1, 1½
Flow to 500 scfm

FEATURES:
- Inline mounting
- High-strength polycarbonate plastic bowl with steel shatterguard; optional aluminum bowl with sight glass
- Sight-feed or wick-feed design
- External adjusting knob; removable for tamper resistance (sight-feed)
- Internal adjustment (wick-feed)

STANDARD SPECIFICATIONS (for products on this page):
- Ambient/Media Temperature:
  - Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
  - Metal bowl: 40° to 175°F (4° to 79°C).
- Body: Aluminum.
- Bowl (MODEL A): 16-ounce (473.2-ml) capacity polycarbonate plastic with steel shatterguard. Optional aluminum bowl with sight glass.
- Bowl (MODEL B): 35-ounce (1035.1-ml) aluminum bowl with sight glass or optional extended metal bowl 62-ounce (1833.6-ml) with two sight glasses.

FLOW CHARTS
Inlet Pressure: 100 psig (6.9 bar)

Minimum Flow:
- 35-ounce bowl, 10 scfm (4.7 l/s)
- 62-ounce bowl, 14 scfm (6.6 l/s)

Minimum Flow: 3/4 port, 25 scfm (11.8 l/s)

DIMENSIONS inches (mm)  Weight lb (kg)

<table>
<thead>
<tr>
<th>Bowl</th>
<th>Plastic Bowl**</th>
<th>Metal Bowl</th>
<th>Plastic Bowl**</th>
<th>Metal Bowl</th>
<th>Reservoir oz (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Sight-feed, 16 oz (473.2 ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>4.3 (108)</td>
<td>8.2 (208)</td>
<td>1.4 (37)</td>
<td>4.2 (106)</td>
<td>2.63 (1.21)</td>
</tr>
<tr>
<td>Metal</td>
<td>4.3 (108)</td>
<td>7.3 (185)</td>
<td>1.4 (37)</td>
<td>4.2 (106)</td>
<td>2.85 (1.30)</td>
</tr>
<tr>
<td>Wick-feed, 16 oz (473.2 ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Plastic</td>
<td>4.5 (114)</td>
<td>7.7 (195)</td>
<td>0.8 (21)</td>
<td>4.3 (108)</td>
<td>2.88 (1.31)</td>
</tr>
<tr>
<td>Metal</td>
<td>4.5 (114)</td>
<td>8.2 (208)</td>
<td>0.8 (21)</td>
<td>4.3 (108)</td>
<td>3.00 (1.36)</td>
</tr>
<tr>
<td>Sight-feed, 35 oz (1035.1 ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4, 1</td>
<td>4.3 (108)</td>
<td>10.2 (259)</td>
<td>2.0 (51)</td>
<td>4.2 (106)</td>
<td>2.56 (1.16)</td>
</tr>
<tr>
<td>1 1/4, 1 1/2</td>
<td>4.3 (108)</td>
<td>10.6 (268)</td>
<td>1.6 (41)</td>
<td>4.2 (106)</td>
<td>2.56 (1.16)</td>
</tr>
<tr>
<td>The following have extended bowls 62 oz (1833.6-ml)</td>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>3/4, 1</td>
<td>4.3 (108)</td>
<td>15.8 (400)</td>
<td>2.0 (51)</td>
<td>4.2 (106)</td>
<td>3.38 (1.54)</td>
</tr>
<tr>
<td>1 1/4, 1 1/2</td>
<td>4.3 (108)</td>
<td>16.1 (410)</td>
<td>1.6 (41)</td>
<td>4.2 (106)</td>
<td>3.38 (1.54)</td>
</tr>
</tbody>
</table>

*To order a lubricator with quick-fill cap, change the third digit from the end of the model number from “0” to “1,” e.g., model 5111B5009 with quick-fill cap becomes model 5111B5109. **Polycarbonate plastic bowl includes metal bowl guard.

ISO Symbol Lubricator

Sight-feed Models*
Wick-feed Models*

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Plastic Bowl**</th>
<th>Metal Bowl</th>
<th>Plastic Bowl**</th>
<th>Metal Bowl</th>
<th>Reservoir oz (ml)</th>
</tr>
</thead>
<tbody>
<tr>
<td>3/4</td>
<td>5111B5009</td>
<td>5112B5009</td>
<td>5111B5011</td>
<td>5112B5011</td>
<td>16 (473.2)</td>
</tr>
<tr>
<td>3/4</td>
<td>—</td>
<td>5112B5019</td>
<td>—</td>
<td>—</td>
<td>35 (1035.1)</td>
</tr>
<tr>
<td>3/4</td>
<td>—</td>
<td>5112B5029</td>
<td>—</td>
<td>—</td>
<td>62 (1833.6)</td>
</tr>
<tr>
<td>1</td>
<td>5111B6009</td>
<td>5112B6009</td>
<td>5111B6011</td>
<td>5112B6011</td>
<td>16 (473.2)</td>
</tr>
<tr>
<td>1</td>
<td>—</td>
<td>5112B6019</td>
<td>—</td>
<td>—</td>
<td>35 (1035.1)</td>
</tr>
<tr>
<td>1</td>
<td>—</td>
<td>5112B6029</td>
<td>—</td>
<td>—</td>
<td>62 (1833.6)</td>
</tr>
<tr>
<td>1 1/4</td>
<td>5111B7009</td>
<td>5112B7009</td>
<td>—</td>
<td>—</td>
<td>16 (473.2)</td>
</tr>
<tr>
<td>1 1/4</td>
<td>—</td>
<td>5112B7019</td>
<td>—</td>
<td>—</td>
<td>35 (1035.1)</td>
</tr>
<tr>
<td>1 1/4</td>
<td>—</td>
<td>5112B7029</td>
<td>—</td>
<td>—</td>
<td>62 (1833.6)</td>
</tr>
<tr>
<td>1 1/2</td>
<td>5111B8009</td>
<td>5112B8009</td>
<td>—</td>
<td>—</td>
<td>16 (473.2)</td>
</tr>
<tr>
<td>1 1/2</td>
<td>—</td>
<td>5112B8019</td>
<td>—</td>
<td>—</td>
<td>35 (1035.1)</td>
</tr>
<tr>
<td>1 1/2</td>
<td>—</td>
<td>5112B8029</td>
<td>—</td>
<td>—</td>
<td>62 (1833.6)</td>
</tr>
</tbody>
</table>

Bowl Ring: Aluminum.
Fluid Media: Compressed air.
Inlet Pressure:
- Polycarbonate plastic bowl: 150 psig (10.3 bar) maximum.
- Metal bowl: 200 psig (13.8 bar) maximum.
Oil Adjustment: External, tamper-resistant or internal.
Seals: Nitrile.
Sight Dome: Nylon.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a “C” prefix to the model number, e.g., C5111B5009.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
BANTAM Modular FRLs
Integrated Filter/Regulator plus Lubricator

Ports: 1/8 & 1/4 and Tube Fittings
Flow to 23 scfm

FEATURES:
• Filter and regulator consolidated in a single assembly; wick-feed lubricator
• Modular assembly and mounting
• Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
• 5-micron rated polyethylene filter element
• High-strength polycarbonate plastic bowls or aluminum bowls
• Internal automatic filter drain; optional manual drain
• Piston-type regulator or diaphragm-type
• Self-relieving regulator; optional non-relieving
• Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
With polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).
Bowls: 2-ounce (60-ml) capacity polycarbonate plastic bowls or aluminum bowls.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Filter/Regulator & Lubricator Bodies: Acetal.
Fluid Media: Compressed air.
Pressure Gauge: 0 to 160 psig (11 bar);
1/8 NPT gauge ports front and rear.

ISO Symbol
FRL
Automatic Drain
Self-relieving

Port Size DIMENSIONS inches (mm)
1/8, 1/4 4.6 (117) 3.6 (92) 2.6 (67) 1.8 (45) 0.57 (0.32)

Models below have quick-connect fittings for tubing.

Port Size Automatic Drain Models Plastic Bowl Metal Bowl Manual Drain Models Plastic Bowl Metal Bowl

THREADED
1/8 5D01C0115 5D01C0216 5D01C0315 5D01C0416
1/4 5D02C0115 5D02C0216 5D02C0315 5D02C0416

TUBE FITTINGS
1/4 5D03C0115 5D03C0216 5D03C0315 5D03C0416
3/8 5D04C0115 5D04C0216 5D04C0315 5D04C0416
4mm 5D05C0115 5D05C0216 5D05C0315 5D05C0416
6mm 5D06C0115 5D06C0216 5D06C0315 5D06C0416
8mm 5D07C0115 5D07C0216 5D07C0315 5D07C0416
10mm 5D08C0115 5D08C0216 5D08C0315 5D08C0416

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Oil Adjustment: External, no shutoff.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Regulator Dome and Knob: Acetal.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5D01C0115.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MINIATURE FRLs
Integrated Filter/Regulator plus Lubricator

Ports: 1/8 & 1/4
Flow to 24 scfm

FEATURES:
• Filter and regulator consolidated in a single assembly; wick-feed lubricator
• Inline mounting
• 5-micron rated polyethylene filter element
• High-strength polycarbonate plastic bowls or aluminum bowls
• Internal automatic filter drain; optional manual drain
• Piston-type regulator or diaphragm-type
• Self-relieving regulator; optional non-relieving
• Pressure gauge
• NPTF port threads; optional BSPP threads or fittings for tubing up to 10 mm

Air Flow Data
See Flow Charts for individual assembly components on preceding pages.

StANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
With polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).

Bodies: Aluminum for filter/regulator and lubricator.
Bowls: 2-ounce (59.1-ml) capacity polycarbonate plastic bowls or aluminum bowls.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Pressure Gauge: 0 to 160 psig (11.0 bar);
1/8 NPT gauge ports front and rear.

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Oil Adjustment: Internal; tamper-resistant.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Regulator Dome and Knob: Acetal.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5351C1006.

ISO Symbol
FRL
Automatic Drain
Self-relieving

REPLACEMENT FILTER ELEMENT KIT
Element Rating/Type                    Kit Number
0.5 µm polyethylene - Standard    933K77

DIMENSIONS inches (mm)        Weight
Bowl   A    B    C   Depth †   lb (kg)
Plastic 3.7 (94) 3.6 (92) 2.6 (67) 1.6 (41) 0.66 (0.30)
Metal   4.0 (101) 4.3 (109) 2.6 (67) 1.6 (41) 0.66 (0.30)
† Less gauge.

PISTON TYPE

Port Size   Automatic Drain Models   Manual Drain Models
           Plastic Bowl   Metal Bowl   Plastic Bowl   Metal Bowl
COMBINATION FILTER & REGULATOR* (piston type) & Lubricator** (High Flow)
1/8        5351C1006       5352C1006       5351C1005       5352C1005
1/4        5351C2006       5352C2006       5351C2005       5352C2005
COMBINATION FILTER & REGULATOR* (diaphragm type) & Lubricator** (High Flow)
1/8        5341C1006       5342C1006       5341C1005       5342C1005
1/4        5341C2006       5342C2006       5341C2005       5342C2005
* Regulated pressure 0 - 100 psig (0 - 6.9 bar); gauge included.
** To order the lubricator with a quick-fill cap, change the third digit from the end of the model number from “0” to “1,” e.g., model 5351C1006 with quick-fill cap becomes model 5351C1106.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MID-SIZE Modular FRLs
Integrated Filter/Regulator plus Lubricator

Ports: 1/4, 3/8, 1/2
Flow to 100 scfm

FEATURES:
• Filter and regulator consolidated in a single assembly; sight-feed lubricator
• Modular or inline mounting
• 5-micron rated polyethylene filter element
• High-strength zinc bowls or polycarbonate plastic bowls with shatterguard
• Internal automatic filter drain; optional manual drain
• Self-relieving piston-type regulator; optional non-relieving
• Pressure gauge

DIMENSIONS inches (mm) Weight
<table>
<thead>
<tr>
<th>Bowl</th>
<th>A</th>
<th>B</th>
<th>C</th>
<th>Depth †</th>
<th>Weight lb (kg)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>4.9</td>
<td>4.6</td>
<td>3.3</td>
<td>2.4</td>
<td>2.94 (1.34)</td>
</tr>
<tr>
<td>Metal</td>
<td>4.9</td>
<td>4.9</td>
<td>3.3</td>
<td>2.4</td>
<td>2.94 (1.34)</td>
</tr>
</tbody>
</table>

† Less gauge.

COMBINATION FILTER, REGULATOR* & LUBRICATOR
(Includes 2 female port kits)

PISTON TYPE

PORT SIZE   Automatic Drain Models Manual Drain Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>5N11B2111</td>
<td>5N11B2212</td>
<td>5N11B2311</td>
<td>5N11B2412</td>
</tr>
<tr>
<td>3/8</td>
<td>5N11B3111</td>
<td>5N11B3212</td>
<td>5N11B3311</td>
<td>5N11B3412</td>
</tr>
<tr>
<td>1/2</td>
<td>5N11B4111</td>
<td>5N11B4212</td>
<td>5N11B4311</td>
<td>5N11B4412</td>
</tr>
</tbody>
</table>

* Piston type; regulated pressure 0 - 100 psig (6.9 bar); gauge included.

STANDARD SPECIFICATIONS (for products on this page):

Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).

Bodies: Zinc for filter/regulator and lubricator.
Bowls: 4-ounce (120-ml) capacity zinc bowls or polycarbonate plastic bowls with zinc shatterguard.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Inlet Pressure:
For automatic drain model:
  With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
  With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Oil Adjustment: External; tamper-resistant.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Panel Mounting: 1-9/16 inch (40 mm) hole required.
Regulator Dome and Knob: Acetal.
Seals: Nitrile.
Sight Dome: Clear nylon.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5N11B2111.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
LOCKOUT Valve with Integrated Filter/Regulator

Ports: 1/4, 3/8, 1/2
Flow to 105 scfm

**FEATURES:**
- Internal automatic drain; optional manual drain or float drain (metal bowl only)
- Reversal flow, self-relieving piston-type regulator; non-relieving optional
- Modular mounting
- Tamper-resistant pressure setting
- Only lockable in the off position
- Full-size exhaust port (equal to or larger than supply)
- Easy to operate (positive push/pull operation-detented)
- Has a visible indicator of pressure release (verification port)
- Optional EEZ-ON® operation available

**REPLACEMENT FILTER ELEMENT KITS**

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>5-µm bronze - Standard</td>
<td>936K77</td>
</tr>
<tr>
<td>40-µm bronze - Optional</td>
<td>938K77</td>
</tr>
</tbody>
</table>

**ISO Symbol**

**BOWL DRAIN**
- Auto Drain/Differential Pressure
- Manual Drain
- Float Drain (metal bowl only)

**ADJUSTMENT RANGE**
- A - 0-150 psig (0-10.3 bar); reverse flow
- B - 0-100 psig (0-6.9 bar); standard, reverse flow
- C - 0-50 psig (0-3.4 bar); reverse flow

**HOW TO ORDER**

**ADD ON L-O-X®**
- 1 - Outlet Side
- 2 - Inlet Side
- 3 - L-O-X® with EEZ-ON® on Inlet Side
- 4 - L-O-X® with EEZ-ON® on Outlet Side
- X - no L-O-X®

**GAUGE**
- A - No Gauge
- B - 0-200 psig (0-14 bar)
- C - 0-60 psig (0-4 bar)
- D - No Gauge with Panel Mount Nut
- E - 0-200 psig (0-14 bar) Gauge with Panel Mount Nut
- F - 0-60 psig (0-4 bar) Gauge with Panel Mount Nut

**STANDARD SPECIFICATIONS**

**Ambient/Media Temperature:**
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowls: 40° to 175°F (4° to 79°C).

**Body:** Zinc. **Bonnet:** Acetal. **Cap Color:** Black.

**Bowl Drain:** Internal automatic drain; optional manual drain or float drain (metal bowl only).

**Filter Element:** 5-micron rated polyethylene filter element; optional 40-micron element.

**Fluid Media:** Compressed air.

**Pressure Adjustment:** Removable, knob.

**Pressure Gauge:** 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear; 0 to 60 psig (0 to 4 bar) optional.

**Ports:** Tapped inlet, outlet and exhaust ports.

**Inlet Pressure:**
- For automatic drain model: With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10 bar).
- With metal bowl: 15 to 200 psig (1.0 to 14 bar).
- For internal float drain model: With metal bowl: 30 to 200 psig (2.1 to 13.8 bar).
- For manual drain model: With metal bowl: 0 to 200 psig (0 to 13.8 bar).

**Outlet Pressure:** Adjustable up to 150 psig (10.3 bar); optional adjusting springs.

**Panel Mounting:** 1.56 inch (37.1 mm) hole required.

**Seals/Elastomers:** Nitrile. **Slide:** Acetal.

**Valve:** Brass. **Valve Color:** Yellow body, red lockout slide.

**Threads:** NPT standard, BSPP.

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
FULL-SIZE Sight-Feed Modular FRLs
Integrated Filter/Regulator plus Lubricator

Ports: 1/4, 3/8, 1/2, 3/4
Flow to 140 scfm

FEATURES:
• Filter and regulator consolidated in a single assembly, sight-feed lubricator
• Modular or inline mounting
• 5-micron rated polyethylene filter element
• Zinc bowls with clear nylon sight glasses or polycarbonate plastic bowls with steel shatterguard
• Internal automatic filter drain; optional manual drain or external automatic drain
• Self-releasing diaphragm-type regulator; optional non-releasing
• Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).
Bodies: Zinc for filter/regulator and lubricator.
Bowls: 8-ounce (240-ml) capacity zinc bowls with clear nylon sight glasses or polycarbonate plastic bowls with steel shatterguards.
Bowl Rings: Nylon.
Filter Drain: Internal automatic drain; optional manual drain or external automatic drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Pressure Adjustment Locking Key: Removable.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Oil Adjustment: External; tamper-resistant.
Outlet Pressure: Adjustable up to 125 psig (8.6 bar).
Regulator: Nylon dome; acetal knob.
Seals: Nitrile.
Sight Dome: Clear nylon.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a “C” prefix to the model number, e.g., C5E11B2121.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MD4™ FRLs
Integrated Filter/Regulator plus Lubricator

**Ports:** 3/8, 1/2, 3/4
Flow to 205 scfm

**Features:**
- Filter and regulator consolidated in a single assembly, sight-feed lubricator
- Modular or inline mounting
- 5-micron rated polyethylene filter element; optional 40-micron element
- Aluminum bowl with clear nylon sight glass or polycarbonate plastic bowl with steel shatterguard
- Internal automatic filter drain; optional manual drain, or electronic drain
- Optional extended aluminum lubricator bowl with sight glass
- Self-relieving diaphragm-type regulator; optional non-relieving
- Pressure gauge; two gauge ports

**Standard Specifications** (for products on this page):

- **Filter Element:**
  - Standard
  - Extended

- **Regulator Adjustment Range**
  - A - 0-175 psig (0-12.1 bar)
  - B - 0-125 psig (0-8.6 bar)
  - C - 0-50 psig (0-3.4 bar)
  - D - 0-20 psig (0-1.4 bar)

- **Inlet Pressure:**
  - A - 0 to 200 psig (0 to 14 bar)
  - B - 15 to 200 psig (1.0 to 13.8 bar)
  - C - 15 to 150 psig (1.0 to 10.3 bar)

- **Outlet Pressure:**
  - Adjustable up to 125 psig (8.6 bar)

- **Threads:**
  - NPT standard, BSPP, SAE

- **Cap Colors:** Filter/regulator, black only. Lubricator: gold; gray, yellow, red, and blue optional.

- **Filter Drain:**
  - Internal automatic drain; optional manual drain, or electronic drain.

- **Filter Element:**
  - 5-micron rated polyethylene; optional 40-micron element.

- **Fluid Media:** Compressed air.

- **Heads:** Zinc.

**Important Note:** Please read carefully and thoroughly all of the **Cautions** on the inside back cover.

**Air Flow Data:**
See Flow Charts for individual assembly components on preceding pages.

**Pressure Adjustment Locking Key:** Removable.
**Pressure Gauge:**
- 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

**Inlet Pressure:**
- **For automatic drain model:**
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).

- **For manual drain model:**
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).

**Oil Adjustment:** External; tamper-resistant.
**Outlet Pressure:**
- Adjustable up to 125 psig (8.6 bar).

**Regulator Valve:** Brass.
**Seals:** Nitrile.
**Sight Dome:** Clear nylon.
**Threads:** NPT standard, BSPP, SAE.
FEATURES:
- Individual filter, piston-type regulator or diaphragm-type, wick-feed lubricator
- Modular assembly and mounting
- Threaded ports or quick-connect fittings for tubing up to 10 mm in diameter
- 5-micron rated polyethylene filter element
- High-strength polycarbonate plastic bowls or aluminum bowls
- Internal automatic filter drain; optional manual drain
- Self-relieving regulator; optional non-relieving
- Pressure gauge

BANTAM Modular FRLs

Ports: 1/8 & 1/4
Flow to 22 scfm

ISO Symbol
FRL
Automatic Drain
Self-relieving

REPLACEMENT FILTER ELEMENT KIT
Element Rating/Type
Kit Number
0.5 µm polyethylene - Standard 933K77

AIR FLOW DATA
See Flow Charts for individual assembly components on preceding pages.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
- Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
- Metal bowls: 40° to 175°F (4° to 79°C).

Bodies: Acetal.
Bowls: 2-ounce (60-ml) capacity polycarbonate plastic bowls or aluminum bowls.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.

Inlet Pressure:
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
- For manual drain model:
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Oil Adjustment: External, no shutoff.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Panel Mounting: 1-3/16 inch (30 mm) hole required.
Regulator Dome and Knob: Acetal.
Seals: Nitrile.
Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5B01C0115.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MINIATURE FRLs

Ports: 1/8 & 1/4
Flow to 19 scfm

FEATURES:
- Individual filter, piston-type or diaphragm-type regulator, wick-feed lubricator
- Inline mounting
- 5-micron rated polyethylene filter element
- High-strength polycarbonate plastic bowls or aluminum bowls
- Internal automatic filter drain; optional manual drain
- Self-relieving regulator; optional non-relieving
- Pressure gauge

REPLACEMENT FILTER ELEMENT KIT

Element Rating/Type Kit Number
0.5 µm polyethylene (Std. element) 933K77

ISO Symbol FRL
Automatic Drain Self-relieving

AIR FLOW DATA
See Flow Charts for individual assembly components on preceding pages.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperatures:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).
Bowls: 2-ounce (60-ml) capacity polycarbonate plastic bowls or aluminum bowls.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Heads: Aluminum.
Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).

Port Size Automatic Drain Models Manual Drain Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
<th>Plastic Bowl</th>
<th>Metal Bowl</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>5321C1027</td>
<td>5322C1024</td>
<td>5321C1026</td>
<td>5322C1025</td>
</tr>
<tr>
<td>1/4</td>
<td>5321C2027</td>
<td>5322C2024</td>
<td>5321C2026</td>
<td>5322C2025</td>
</tr>
</tbody>
</table>

*Regulated pressure 0 – 100 psig (0 - 6.9 bar); gauge included.
**To order the lubricator with a quick-fill cap, change the third digit from the end of the model number from “0” to “1,” e.g., model 5311C1012 with quick-fill cap becomes model 5311C1112.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
MID-SIZE Modular FRLs

Ports: 1/4, 3/8, 1/2

FEATURES:
• Individual filter, piston-type regulator, sight-feed lubricator
• Modular or inline mounting
• 5-micron rated polyethylene filter element
• High-strength zinc bowl or polycarbonate plastic bowl with shatterguard
• Internal automatic filter drain; optional manual drain
• Self-relieving regulator; optional non-relieving
• Pressure gauge

ISO Symbol
FRL
Automatic Drain
Self-relieving

REPLACEMENT FILTER ELEMENT KIT
Element Rating/Type Kit Number
0.5 µm polyethylene (Std. element) 936K77

AIR FLOW DATA
See Flow Charts for individual assembly components on preceding pages.

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).
Bowls: 4-ounce (120-ml) capacity zinc bowls or polycarbonate plastic bowls with zinc shatterguards.
Filter Drain: Internal automatic drain; optional manual drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Heads: Zinc.
Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
Inlet Pressure:
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Oil Adjustment: External; tamper-resistant.
Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Panel Mounting: 1-9/16 inch (40 mm) hole required.
Seals: Nitrile.
Sight Dome: Clear nylon.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a “C” prefix to the model number, e.g., C5M11B2110.

DIMENSIONS inches (mm) Weight lb (kg)

<table>
<thead>
<tr>
<th>Bowl</th>
<th>A (215)</th>
<th>B (117)</th>
<th>C (46)</th>
<th>Depth † (71)</th>
<th>3.75 (1.70)</th>
</tr>
</thead>
<tbody>
<tr>
<td>Plastic</td>
<td>8.5</td>
<td>4.6</td>
<td>1.8</td>
<td>2.8</td>
<td>3.75</td>
</tr>
<tr>
<td>Metal</td>
<td>8.5</td>
<td>4.7</td>
<td>1.8</td>
<td>2.8</td>
<td>3.75</td>
</tr>
</tbody>
</table>
|† Less gauge.

Port Size Automatic Drain Models Manual Drain Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Automatic Drain Models</th>
<th>Manual Drain Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plastic Bowl** Metal Bowl</td>
<td>Plastic Bowl** Metal Bowl</td>
</tr>
<tr>
<td>1/4</td>
<td>5M11B2110 5M11B2210</td>
<td>5M11B2310 5M11B2410</td>
</tr>
<tr>
<td>3/8</td>
<td>5M11B3110 5M11B3210</td>
<td>5M11B3310 5M11B3410</td>
</tr>
<tr>
<td>1/2</td>
<td>5M11B4110 5M11B4210</td>
<td>5M11B4310 5M11B4410</td>
</tr>
</tbody>
</table>

*Cabinet type; regulated pressure 0-100 psig (0-6.9 bar); gauge included.
**Plastic bowl includes metal bowl guard.
Note: Each regulator comes complete with a gauge.

PORT

Automatic Drain Models Manual Drain Models

<table>
<thead>
<tr>
<th>Size</th>
<th>Port</th>
<th>Automatic Drain Models</th>
<th>Manual Drain Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td></td>
<td>Plastic Bowl** Metal Bowl</td>
<td>Plastic Bowl** Metal Bowl</td>
</tr>
<tr>
<td>1/4</td>
<td>5M11B2101 5M11B2202</td>
<td>5M11B2301 5M11B2402</td>
<td></td>
</tr>
<tr>
<td>3/8</td>
<td>5M11B3101 5M11B3202</td>
<td>5M11B3301 5M11B3402</td>
<td></td>
</tr>
<tr>
<td>1/2</td>
<td>5M11B4101 5M11B4202</td>
<td>5M11B4301 5M11B4402</td>
<td></td>
</tr>
</tbody>
</table>

*Piston type, regulated pressure 0-100 psig (0-6.9 bar); gauge included.
**Plastic bowl includes metal bowl guard.
Note: Each regulator comes complete with a gauge.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
FULL-SIZE FRLs

Ports: 1/4, 3/8, 1/2, 3/4
Flow to 138 scfm

FEATURES:
• Individual filter, diaphragm-type regulator, sight-feed lubricator
• Modular or inline mounting
• 5-micron rated polyethylene filter element
• Zinc bowl with clear nylon sight glass or polycarbonate plastic bowl with steel shatterguard
• Internal automatic filter drain; optional manual drain or electronic drain
• Self-relieving regulator; optional non-relieving
• Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):
Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).
Bowls: 8-ounce (240-ml) capacity zinc bowl with clear nylon sight glass or polycarbonate plastic bowl with steel shatterguard.
Bowl Rings: Aluminum.
Filter Drain: Internal automatic drain; optional manual drain or electronic drain.
Filter Element: 5-micron rated polyethylene.
Fluid Media: Compressed air.
Heads: Zinc.
Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
Inlet Pressure:
For manual drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).
Oil Adjustment: External; tamper-resistant.
Outlet Pressure: Adjustable up to 125 psig (8.6 bar).
Pressure Adjustment Locking Key: Removable.
Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
Regulator: Nylon dome; acetal knob.
Seals: Nitrile.
Sight Dome: Clear nylon.
Threads: NPT standard, BSPP, SAE. For BSPP threads, add a "C" prefix to the model number, e.g., C5F11B2120.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
Flow to 205 scfm

Ports: 3/8, 1/2, 3/4

**ISO Symbol - FRL**
Automatic Drain - Self-relieving

**AIR FLOW DATA**
See Flow Charts for individual assembly components on preceding pages.

**HOW TO ORDER**

**STANDARD SPECIFICATIONS** (for products on this page):

**Ambient/Media Temperature:**
- *Polycarbonate plastic bowl*: 40° to 125°F (4° to 52°C).
- *Metal bowls*: 40° to 175°F (4° to 79°C).

**Bowl Rings:** Nylon.

**Cap Color:** Gold standard; optional gray, yellow, red, blue.

**Filter Drain:** Internal automatic drain; optional manual drain or electronic drain.

**Filter Element:** 5-micron rated polyethylene; optional 40-micron element.

**Fluid Media:** Compressed air.

**Heads:** Zinc.

**Inlet Pressure:**
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
- For manual drain model:
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).

**Oil Adjustment:** External; tamper-resistant.

**Outlet Pressure:** Adjustable up to 125 psig (8.6 bar).

**Pressure Adjustment Locking Key:** Removable.

**Pressure Gauge:**
- 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.
- 0 to 150 psig (0 to 10.3 bar).

**Seals:** Nitrile.

**Sight Dome:** Clear nylon.

**Threads:** NPT standard, BSPP, SAE.

**IMPORTANT NOTE:** Please read carefully and thoroughly all of the **CAUTIONS** on the inside back cover.
HIGH-CAPACITY FRLs

Ports: 3/4 & 1
Flow to 270 scfm

FEATURES:
- Individual filter, piston-type regulator, wick-feed lubricator
- Inline mounting
- 5-micron rated polyethylene filter element
- Metal bowls with clear nylon sight glass or polycarbonate plastic bowls with steel shatterguard
- Internal automatic filter drain, optional manual drain, external automatic drain, or electronic drain
- Self-relieving regulator; optional non-relieving
- Pressure gauge

STANDARD SPECIFICATIONS (for products on this page):
- Ambient/Media Temperature:
  - Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
  - Metal bowls: 40° to 175°F (4° to 79°C).
- Bowls: 16-ounce (480-ml) capacity aluminum bowls with sight glass or polycarbonate plastic bowls with steel shatterguard.
- Bowl Rings: Aluminum.
- Filter Drain: Internal automatic drain; optional manual drain, external automatic, or electronic drain.
- Filter Element: 5-micron rated polyethylene.
- Fluid Media: Compressed air.
- Heads: Aluminum.

Inlet Pressure:
- For automatic drain model:
  - With polycarbonate plastic bowl: 15 to 150 psig (1.0 to 10.3 bar).
  - With metal bowl: 15 to 200 psig (1.0 to 13.8 bar).
- For manual drain model:
  - With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
  - With metal bowl: 0 to 200 psig (0 to 13.8 bar).
- Oil Adjustment: External; tamper-resistant.
- Outlet Pressure: Adjustable up to 100 psig (6.9 bar).
- Pressure Adjustment Locking Key: Removable.
- Pressure Gauge: 0 to 200 psig (0 to 14 bar);
  1/4 NPT gauge ports front and rear.
- Seals: Nitrile.
- Threads: NPT standard, BSPP. For BSPP threads, add a "C" prefix to the model number, e.g., C5H00C5110.

ISO Symbol
FRL
Automatic Drain
Self-relieving

AIR FLOW DATA
See Flow Charts for individual assembly components on preceding pages.

REPLACEMENT FILTER ELEMENT KIT
Element Rating/Type
0.5-µm polyethylene (Std. element)
Kit Number
1010K77

DIMENSIONS inches (mm)*

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Automatic Drain Models</th>
<th>Manual Drain Models</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plastic Bowl**</td>
<td>Metal Bowl</td>
</tr>
<tr>
<td></td>
<td>Plastic Bowl**</td>
<td>Metal Bowl</td>
</tr>
<tr>
<td></td>
<td>**Plastic bowl includes metal bowl guard.</td>
<td></td>
</tr>
</tbody>
</table>

Note: Each regulator comes complete with a gauge.

Note: For BSPP threads, add the letter "C" in front of the part number.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

ISO Symbol
FRL
Automatic Drain
Self-relieving

www.rosscontrols.com
HIGH-CAPACITY FRLs

Ports: 1¼ & 1½
Flow to 495 scfm

FEATURES:
- Individual filter, piston-type regulator, sight-feed
- Inline mounting
- 5-micron rated filter element; optional 40-micron filter element
- Aluminum bowls with clear nylon sight glass
- Internal automatic filter drain; optional manual drain
- Self-relieving regulator
- Pressure gauge

ISO Symbol
FRL
Automatic Drain
Self-relieving

DIMENSIONS inches (mm)

<table>
<thead>
<tr>
<th>A</th>
<th>B*</th>
<th>C</th>
<th>Depth</th>
<th>Weight</th>
</tr>
</thead>
<tbody>
<tr>
<td>15.8 (401)</td>
<td>10.6 (268)</td>
<td>2.1 (54)</td>
<td>4.3 (108)</td>
<td>8.00 (3.64)</td>
</tr>
</tbody>
</table>

REPLACEMENT FILTER ELEMENT KIT

<table>
<thead>
<tr>
<th>Element Rating/Type</th>
<th>Kit Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>0.5-µm polyethylene - Standard</td>
<td>1656K77</td>
</tr>
<tr>
<td>40-µm bronze - Optional</td>
<td>R-A114-106E3</td>
</tr>
</tbody>
</table>

AIR FLOW DATA
See Flow Charts for individual assembly components on preceding pages.

HOW TO ORDER

HIGH-CAPACITY Model No. 5H 00C

PIPE SIZE
7 = 1¼
8 = 1½

FILTER
0 = None
1 = Automatic drain, metal bowl, 40 micron
2 = Automatic drain, metal bowl, 5 micron
3 = Manual drain, metal bowl, 40 micron
4 = Manual drain, metal bowl, 5 micron

NOTE: Polycarbonate plastic bowls for 1¼ and 1½ units not available.

STANDARD SPECIFICATIONS (for products on this page):

Ambient/Media Temperature:
Polycarbonate plastic bowl: 40° to 125°F (4° to 52°C).
Metal bowls: 40° to 175°F (4° to 79°C).

Bowls: 35-ounce (1 liter) capacity aluminum bowls with clear nylon sight glasses.

Bowl Rings: Aluminum.


Filter Element: 5-micron or 40-micron rated filter element available.

Fluid Media: Compressed air.

Heads: Aluminum.

Inlet Pressure:
For automatic drain model:
With polycarbonate plastic bowl: 0 to 150 psig (0 to 10.3 bar).
With metal bowl: 0 to 200 psig (0 to 13.8 bar).

Oil Adjustment: External; tamper-resistant.

Outlet Pressure: Adjustable up to 100 psig (6.9 bar).

Pressure Adjustment Locking Key: Removable.

Pressure Gauge: 0 to 200 psig (0 to 14 bar); 1/4 NPT gauge ports front and rear.

Regulator: Nylon dome; acetal knob.

Seals: Nitrile.

Sight Dome: Clear nylon.

Threads: NPT standard, BSPP. For BSPP threads, add a “C” prefix to the model number, e.g., C5H00C7112.

IMPORTANT NOTE: Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.
Components for Modular Assembly

MID-SIZE and FULL-SIZE Units

The modular designs of the MID-SIZE and FULL-SIZE series offer maximum flexibility in customizing FRL 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 FRL components have threaded ports so that conventional pipe fittings may be used where desired.

Female Port Kits
Used to connect to piping at inlet or outlet.

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>897K77</td>
</tr>
<tr>
<td>3/8</td>
<td>898K77</td>
</tr>
<tr>
<td>1/2</td>
<td>899K77</td>
</tr>
<tr>
<td>3/4</td>
<td>900K77</td>
</tr>
</tbody>
</table>

Male Port Kits
Used to connect modular to non-modular units. Also allows 90-degree connections using side, bracket, or extra port kits.

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>893K77</td>
</tr>
<tr>
<td>3/8</td>
<td>894K77</td>
</tr>
<tr>
<td>1/2</td>
<td>895K77</td>
</tr>
<tr>
<td>3/4</td>
<td>896K77</td>
</tr>
</tbody>
</table>

Side Port Kits
Functions as a 90-degree female port.

Three types:
(1) port at front or back; (2) port at top; (3) port at bottom.

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Front/Back</th>
<th>Top</th>
<th>Bottom</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>902K77</td>
<td>906K77</td>
<td>1000K77</td>
</tr>
<tr>
<td>3/8</td>
<td>903K77</td>
<td>907K77</td>
<td>1001K77</td>
</tr>
<tr>
<td>1/2</td>
<td>904K77</td>
<td>908K77</td>
<td>1002K77</td>
</tr>
<tr>
<td>3/4</td>
<td>905K77</td>
<td>909K77</td>
<td>1003K77</td>
</tr>
</tbody>
</table>

Connect Kit 892K77
Used to connect units to one another as well as to any of the ports shown on this page.

Mounting Bracket Kit 915K77
L-shaped metal brackets (not illustrated) are used for wall mounting modular assemblies. Kit contains two brackets and four screws for attaching brackets to tops of modular units.

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.

<table>
<thead>
<tr>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>END PLATE (1): 857K77</td>
</tr>
<tr>
<td>Short Screw (2): 858K77</td>
</tr>
<tr>
<td>Long Screw (2): 859K77</td>
</tr>
<tr>
<td>Small O-Rings: 860K77</td>
</tr>
<tr>
<td>(for inlet or mating ports)</td>
</tr>
<tr>
<td>Large O-Rings: 861K77</td>
</tr>
<tr>
<td>(for outlet or mating ports)</td>
</tr>
</tbody>
</table>

Pipe Ports

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8 NPT</td>
<td>862K77</td>
</tr>
<tr>
<td>1/4 NPT</td>
<td>863K77</td>
</tr>
<tr>
<td>1/8 BSP</td>
<td>D864K77</td>
</tr>
<tr>
<td>1/4 BSP</td>
<td>D865K77</td>
</tr>
</tbody>
</table>

Tube Ports

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4</td>
<td>866K77</td>
</tr>
<tr>
<td>3/8</td>
<td>867K77</td>
</tr>
<tr>
<td>4 mm</td>
<td>868K77</td>
</tr>
<tr>
<td>6 mm</td>
<td>869K77</td>
</tr>
<tr>
<td>8 mm</td>
<td>870K77</td>
</tr>
<tr>
<td>10 mm</td>
<td>871K77</td>
</tr>
</tbody>
</table>

www.rosscontrols.com
**Series MD4™ Modular Assemblies**

**Dimensions:** inches (mm)

![Module Connecting Clamp
Part No. R-A118-105](image)

![Combined Clamp & Bracket
Part No. R-A118-105M](image)

![Mounting Bracket
Part No. R-A118-103](image)

**Clamp for Module Connections**

Specially designed clamps provide a quick and easy assembly or disassembly of MD4™ 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.

Order clamp by part number R-A118-105.

Combined clamp and bracket (below) can be ordered by part number R-A118-105M.

**Mounting Brackets**

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.

Order bracket and screw by part number R-A118-103.

Combined bracket and clamp (above) can be ordered by part number 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 part numbers:

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Male Part Number*</th>
<th>Female Part Number*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPTF</td>
<td>R-118-109-2F</td>
<td>R-118-100-2</td>
</tr>
<tr>
<td>3/8 NPTF</td>
<td>R-118-109-3F</td>
<td>R-118-100-3</td>
</tr>
<tr>
<td>1/2 NPTF</td>
<td>R-118-109-4F</td>
<td>R-118-100-4</td>
</tr>
<tr>
<td>3/4 NPTF</td>
<td>R-118-109-6F</td>
<td>R-118-100-6</td>
</tr>
</tbody>
</table>

For BSPP threads, add a “W” suffix to the model number, e.g., R-118-109-2FW.

---

**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.)

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Part Number*</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/4 NPTF</td>
<td>R-118-106-2</td>
</tr>
<tr>
<td>3/8 NPTF</td>
<td>R-118-106-3</td>
</tr>
<tr>
<td>1/2 NPTF</td>
<td>R-118-106-4</td>
</tr>
</tbody>
</table>

For BSPP threads, add a “W” suffix to the model number, e.g., R-118-109-2FW.
# Mounting Accessories

## Regulator Mounting Brackets

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

<table>
<thead>
<tr>
<th>Usage</th>
<th>Part Numbers</th>
<th>Dimensions inches (mm)</th>
<th>Panel Mounting Hole Diameter inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Kit</td>
<td>Bracket Nut A B C D E</td>
<td></td>
</tr>
<tr>
<td>MINIATURE</td>
<td>873K77</td>
<td>872K77 874K77 1.375 (35) 1.125 (29) 0.31 (8) 0.31 (8) 0.69 (17) 1.19 (30)</td>
<td></td>
</tr>
<tr>
<td>MID-SIZE</td>
<td>876K77</td>
<td>875K77 877K77 2.38 (60) 1.00 (25) 1.50 (38) – – 1.56 (40)</td>
<td></td>
</tr>
<tr>
<td>MD4™ &amp; FULL-SIZE</td>
<td>879K77</td>
<td>878K77 880K77 2.38 (60) 1.00 (25) 1.50 (38) – – 2.06 (52)</td>
<td></td>
</tr>
</tbody>
</table>

## Modular Mounting Brackets

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.

<table>
<thead>
<tr>
<th>Usage</th>
<th>Kit</th>
<th>Dimensions inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Number</td>
<td>A B C D E</td>
</tr>
<tr>
<td>BANTAM - Mounts with long screws that extend through end plates, number 859K77 (two required).</td>
<td></td>
<td></td>
</tr>
<tr>
<td>MID-SIZE &amp; FULL-SIZE</td>
<td>915K77</td>
<td>3.0 (76) 0.88 (22) 1.00 (25) 1.20 (31)</td>
</tr>
</tbody>
</table>

## FRL Inline Mounting Pipe Brackets

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

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

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

High-Relief Pilot Operated Regulator with 1/4- thru 1¼ inch ports can be mounted to a vertical surface using the bracket assembly kit listed below.

**Bracket Assembly Kit**

**Model Number** R-A37-381
## MUFFL-AIR® Silencers

**Ports: 1/8 to 2 1/2**

*C*: 2.0 to 65

ROSS MUFFL-AIR® silencers substantially reduce exhaust noise levels in the workplace, yet produce little back pressure. Typical impact noise reduction is in the 20–25 decibel range.

### Construction

- Aluminum shell up to 1/2 size; steel and zinc shell for 3/4 and 1 sizes; steel shell for 1 1/4 to 2 1/2 sizes. Diffuser is brass cloth.
- **Pressure Range:** Up to 150 psig (10.3 bar).
- **Temperature:** Up to 160°F (71°C).
- **Port Threads:** NPT standard, BSPP.

### Pressure Gauges

**Center back mounting; male pipe threads.**

<table>
<thead>
<tr>
<th>Port Size</th>
<th>Model Numbers</th>
<th>Pressure Range psig (bar)</th>
<th>Case Diameter inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1/8</td>
<td>5400A1002</td>
<td>0-160 (0-11)</td>
<td>1.5 (38)</td>
</tr>
<tr>
<td>1/4</td>
<td>5400A2010</td>
<td>0-60 (0-11)</td>
<td>2.0 (51)</td>
</tr>
<tr>
<td>1/4</td>
<td>5400A2011</td>
<td>0-200 (0-14)</td>
<td>2.0 (51)</td>
</tr>
<tr>
<td>1/4</td>
<td>5400A2012</td>
<td>0-300 (0-20)</td>
<td>2.0 (51)</td>
</tr>
<tr>
<td>1/4</td>
<td>5400A2014*</td>
<td>0-160 (0-11)</td>
<td>2.5 (64)</td>
</tr>
<tr>
<td>1/4</td>
<td>5400A2015**</td>
<td>0-160 (0-11)</td>
<td>2.0 (51)</td>
</tr>
</tbody>
</table>

* 5400A2014 - Stainless steel case liquid filled.
** 5400A2015 - Green shade between 40-70 psi (2.7-4.8 bar).
External Drains

Automatic External Drains

For use where severe condensate problems exist. These drains are used with FULL-SIZE or HIGH-CAPACITY filters, but can also be used to drain water separators, drain legs, or compressor receiver tanks.

When liquid is present, it is drained regardless of air flow, and there is no loss of air. Discharge rate is approximately 5 gallons per minute at 100 psig (6.9 bar). Drain can also be operated manually.

<table>
<thead>
<tr>
<th>Pipe Size</th>
<th>Model Numbers</th>
<th>Dimensions inches (mm)</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Plastic Bowl**</td>
<td>Metal Bowl</td>
</tr>
<tr>
<td></td>
<td></td>
<td>A</td>
</tr>
<tr>
<td>1/8 NPTF</td>
<td>5057B1001</td>
<td>5058B1001</td>
</tr>
<tr>
<td>1/4 NPTF</td>
<td>5057B2001</td>
<td>5058B2001</td>
</tr>
</tbody>
</table>

*Use 1/4 size with FULL-SIZE or HIGH-CAPACITY filters. Use kit 1076K77 to convert standard bowl to accept auto drain unit.

**Plastic bowl includes metal bowl guard.

Electronically Controlled Drain

The electronic drain is designed to remove condensate from components in compressed air systems. Typical installations include compressors, dryers, receivers, driplegs, and filters.

The drain consists of a timer and a valve. Electronic controls allow the draining interval to be set from 0.5 to 45 minutes, and the drain time from 0.5 to 10 seconds. Once set, draining action is automatic and requires no maintenance. This is important in constant-flow applications where there is no on-off action to trigger a standard automatic drain.

**CAUTIONS**

- Please read carefully and thoroughly all of the CAUTIONS on the inside back cover.

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

- Drain Time: Adjustable 0.5 to 10 seconds.
- Drain Interval: Adjustable 0.5 to 45 minutes.
- Current Consumption: 4 ma maximum.
- Ambient Temperature: 35° to 130°F (2° to 54°C).
- Media Temperature: 35° to 190°F (2° to 88°C).

**Electrical Connection:** DIN 43650A, ISO 440/6952.

**Valve Type:** 2/2 direct acting, normally closed.

**Valve Body:** Forged brass; 3/16-inch (4.8 mm) orifice.

**Maximum Pressure:** 230 psig (15.8 bar).

**Port Threads:** NPT standard, BSPP.
Lubricants, Polycarbonate Bowl Cautions

Compatible Lubricants

Although air line lubrication is not required for most ROSS valves, other mechanisms in the system may need such lubrication. When a lubricator is used, it should be supplied only with oils which are compatible with the materials used in the valves for seals and poppets. Generally speaking, these are petroleum base oils with oxidation inhibitors, and aniline point between 180°F (82°C) and 220°F (104°C) and an ISO 32, or lighter, viscosity. Oils with phosphate type additives, such as zinc dithiophosphate, must be avoided because they can harm polyurethane valve components.

The best oils to use in pneumatic systems are those specifically compounded for air line lubricator service.

Cautions on the Use of Polycarbonate Plastic Bowls

Use Only with Compressed Air. Filters and lubricators with polycarbonate plastic bowls are specifically designed for compressed air service, and their use with any other fluid (liquid or gas) is a misapplication. The use with or injection of certain hazardous fluids in the system (e.g., alcohol or liquefied petroleum gas) could be harmful to the plastic bowl or result in a combustible condition or hazardous leakage. Before using with a fluid other than air, or for nonindustrial applications, or for life support systems, consult ROSS.

Use Metal Bowl Guard When Supplied. A metal bowl guard is supplied with all but the smallest bowls, and must always be used to minimize danger from fragmentation in the event of failure of a plastic bowl.

Avoid Harmful Substances. Some compressor oils, chemical cleaners, solvents, paints, and fumes will attack plastic bowls and can cause bowl failure. Do not use with or near these materials. When a bowl becomes dirty, replace the bowl or wipe it with a clean dry cloth. Immediately replace any plastic bowl which is crazed, cracked, or deteriorated.

Substances HARMFUL to Polycarbonate Plastic Bowls

| Acetaldehyde | Carbon disulfide | Ethylene dichloride | Phosphorous trichloride |
| Acetic acid  | Carbon tetrachloride | Ethylene glycol | Propionic acid |
| Acetone      | Caustic potash solution | Formic acid | Pyridine |
| Acrylonitrile| Caustic soda solution | Freon (refrigerant & propellant) | Sodium hydroxide |
| Ammonia      | Chlorobenzene | Gasoline (high aromatic) | Sodium sulfide |
| Ammonium fluoride | Chloroform | Hydrazine | Styrene |
| Ammonium hydroxide | Cresol | Hydrochloric acid | Sulfuric acid |
| Ammonium sulfide | Cyclohexanol | Lacquer thinner | Sulfural chloride |
| Anaerobic adhesives & sealants | Cyclohexanone | Methyl alcohol | Tetrahynadrophthalene |
| Antifreeze   | Cyclohexene | Methylene chloride | Thiophene |
| Benzene      | Dimethyl formamide | Methylene salicylate | Toluen |
| Benzoic acid | Dioxane | Milk of lime (CaOH) | Turpentine |
| Benzyl alcohol | Ethane tetrachloride | Nitric acid | Xylene |
| Brake fluids | Ethyl acetate | Nitrobenzene | Perchloroethylene |
| Bromobenzene | Ethyl ether | Nitrocellulose lacquer | |
| Butyric acid | Ethylamine | Phenol | |
| Carboxylic acid | Ethylene chlorohydrid | | |

Trade Names of Substances HARMFUL to Polycarbonate Plastic Bowls

- Atlas Perma-Guard
- Buna N
- Cellulube #150 & #220
- Crylex #5 cement
- Eastman 910
- Garlock 98403 (polyurethane)
- Haskel 568-023
- Hilgard Company's hil phene
- Houghton & Co. oil 1120, 1130, 1055
- Houtsafe 1000
- Kano Kroil
- Keystone penetrating oil #2
- Loctite 271, 290, 601
- Loctite Teflon sealant
- Marvel Mystery Oil
- Minn. Rubber 366Y
- National Compound N11
- Nylock VC-3
- Parco 1306 Neoprene
- Permabond 910
- Petron PD287
- Prestone
- Pydraul AC
- Sears Regular Motor Oil
- Sinclair oil “Lily White”
- Stauffer Chemical FYRQUEL 150
- Stillman SR 269-75 (polyurethane)
- Stillman SR 513-70 (neoprene)
- Tannergas
- Telar
- Tenneco anderol 495 & 500 oils
- Titon
- Vibra-tite
- Zerex
STANDARD CAUTIONS

PRE-INSTALLATION or SERVICE
1. Before servicing a valve or other pneumatic component, be sure that all sources of energy are turned off, the entire pneumatic system is shut off and exhausted, and all power sources are locked out (ref: OSHA 1910.147, EN 1037).
2. All ROSS products, including service kits and parts, should be installed and/or serviced only by persons having training and experience with pneumatic equipment. Because any installation can be tampered with or need servicing after installation, persons responsible for the safety of others or the care of equipment must check every installation on a regular basis and perform all necessary maintenance.
3. All applicable instructions should be read and complied with before using any fluid power system in order to prevent harm to persons or equipment. In addition, overhauled or serviced valves must be functionally tested prior to installation and use.
4. Each ROSS product should be used within its specification limits. In addition, use only ROSS parts to repair ROSS products. Failure to follow these directions can adversely affect the performance of the product or result in the potential for human injury or damage to property.

FILTRATION and LUBRICATION
5. Dirt, scale, moisture, etc. are present in virtually every air system. Although some valves are more tolerant of these contaminants than others, best performance will be realized if a filter is installed to clean the air supply, thus preventing contaminants from interfering with the proper performance of the equipment. ROSS recommends a filter with a 5-micron rating for normal applications.
6. All standard ROSS filters and lubricators with polycarbonate plastic bowls are designed for compressed air applications only. Do not fail to use the metal bowl guard, where provided, to minimize danger from high pressure fragmentation in the event of bowl failure. Do not expose these products to certain fluids, such as alcohol or liquefied petroleum gas, as they can cause bowls to rupture, creating a combustible condition, hazardous leakage, and the potential for human injury or damage to property. Immediately replace a crazed, cracked, or deteriorated bowl. When bowl gets dirty, replace it or wipe it with a clean dry cloth.
7. Only use lubricants which are compatible with materials used in the valves and other components in the system. Normally, compatible lubricants are petroleum based oils with oxidation inhibitors, an aniline point between 180°F (82°C) and 220°F (104°C), and an ISO 32, or lighter, viscosity. Avoid oils with phosphate type additives which can harm polyurethane components, potentially leading to valve failure which risks human injury, and/or damage to property.

AVOID INTAKE/EXHAUST RESTRICTION
8. Do not restrict the air flow in the supply line. To do so could reduce the pressure of the supply air below the minimum requirements for the valve and thereby cause erratic action.
9. Do not restrict a valve’s exhaust port as this can adversely affect its operation. Exhaust silencers must be resistant to clogging and must have flow capacities at least as great as the exhaust capacities of the valves. Contamination of the silencer can result in reduced flow and increased back pressure.

ENERGY ISOLATION/EMERGENCY STOP
11. Per specifications and regulations, ROSS L-O-X® valves and L-O-X® valves with EEZ-ON® operation are defined as energy isolation devices, NOT AS EMERGENCY STOP DEVICES.

STANDARD WARRANTY
All products sold by ROSS CONTROLS are warranted for a one-year period [with the exception of all Filters, Regulators and Lubricators (“FRLs”) which are warranted for a period of seven years] from the date of purchase to be free of defects in material and workmanship. ROSS’ obligation under this warranty is limited to repair or replacement of the product or refund of the purchase price paid solely at the discretion of ROSS and provided such product is returned to ROSS freight prepaid and upon examination by ROSS is found to be defective. This warranty becomes void in the event that product has been subject to misuse, misapplication, improper maintenance, modification or tampering.

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