PROPORTION-AIR

RM Series Volume Boosters

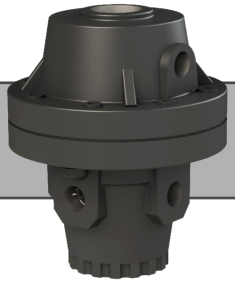
RM series volume boosters feature a dome-loaded design for systems that require high flow, high relief and pressure regulation. These units can be installed in an inaccessible location with a control regulator in an accessible location.

Quick exhaust • Rugged • Dirt tolerant

Features

- Inline mounting
- Diaphragm design for excellent pressure regulation and stability
- High-relief characteristics up to 200 SCFM
- Balanced valve minimizes effect of pressure changes of inlet pressure
- Self-relieving (non-relieving optional)
- Integral pilot regulator porting

Sizes



RM002
1/4" Port

RM008
1" Port

RM003
3/8" Port

RM00A
1-1/4" Port

RM004
1/2" Port

RM00B
1-1/2" Port

RM006
3/4" Port

RM00C
2" Port

Technical Information

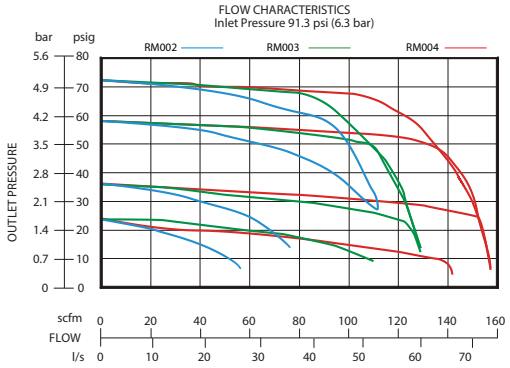
RM002, -003, -004

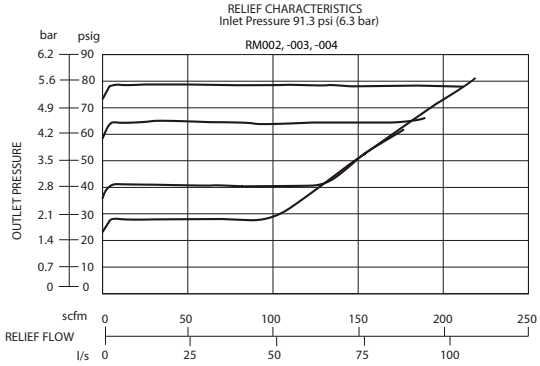
Specifications

Max Inlet Pressure ..... 400 PSIG (27.6 bar)
Outlet PSI Range ..... 0-300 PSI (17.2 bar)
Operating Temp ..... 32°F -158°F (0°C - 70°C)
Relief Flow ..... 150 SCFM
Body ..... Zinc
Dome ..... Zinc
Bottom plug ..... Acetal
Valve ..... Brass
Elastomers ..... Nitrile

Ports*:
002: 1/4" NPTF inlet/outlet, 1/4" NPTF gauge ports
003: 3/8" NPTF inlet/outlet, 3/8" NPTF gauge ports
004: 1/2" NPTF inlet/outlet, 1/2" NPTF gauge ports
Exhaust Port*: 3/4" NPTF

*BSPP option





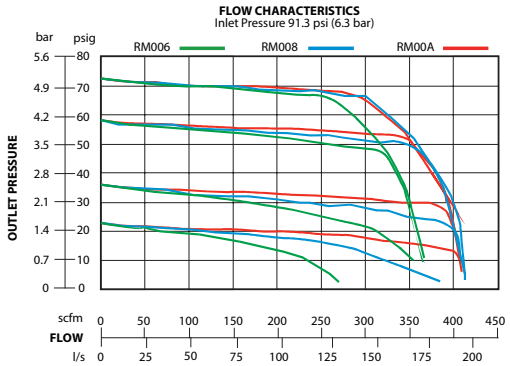
RM006, -008, -00A

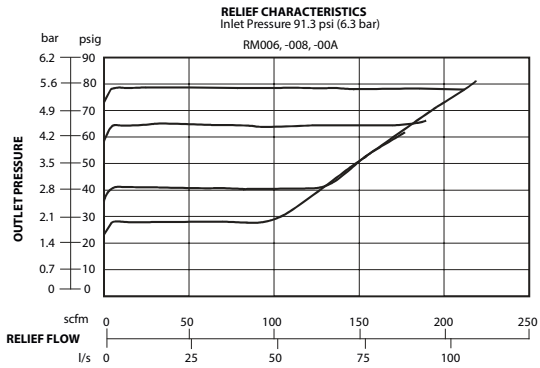
Specifications

Max Inlet Pressure ..... 400 PSIG (27.6 bar)
Outlet PSI Range ..... 0-250 PSI (17.2 bar)
Operating Temp ..... 0°F to 158°F (-18°C to 70°C)
Forward Flow ..... 400 SCFM
Relief Flow ..... 200 SCFM
Body ..... Zinc
Dome ..... Zinc
Bottom plug ..... Acetal
Valve ..... Brass
Elastomers ..... Nitrile

Ports*:
006: 3/4" NPTF inlet/outlet, 1/2" NPTF gauge ports
008: 1" NPTF inlet/outlet, 1/2" NPTF gauge ports
00A: 1-1/4" NPTF inlet/outlet, 1/2" NPTF gauge ports
Exhaust Port*: 3/4" NPTF

*BSPP option



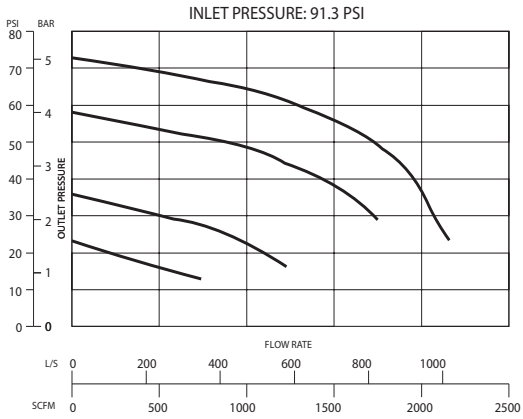


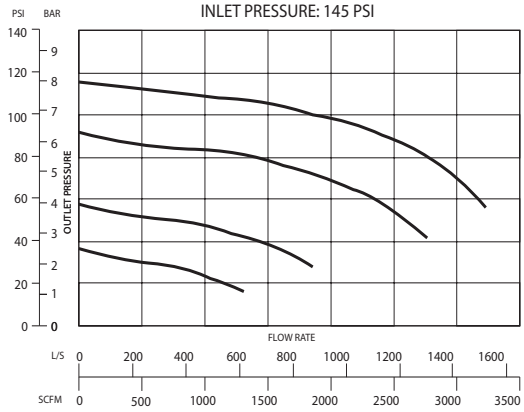
Technical Information

RM00B

Specifications

Inlet Pressure Range:
10 PSIG (min) to 450 PSIG (max) (0.7 TO 31 bar)
Outlet PSI Range: 0-250 PSI (17.2 bar)
Operating Temp: 0°F TO 175°F (-18°C to 79°C)
(Air moisture content must be dry)
Flow Rating: Flow rates exceed 2,000 SCFM
Body: Cast aluminum
Dome: Cast aluminum
Cap: Teflon coated aluminum
Valve: Nitrile bonded aluminum
Elastomers: Nitrile standard (viton optional)
Ports: 1-1/2" NPTF (BSPP optional)
Gauge Ports: 1/4" NPTF (BSPP optional)
Exhaust Port: 3/4" NPTF (BSPP optional)

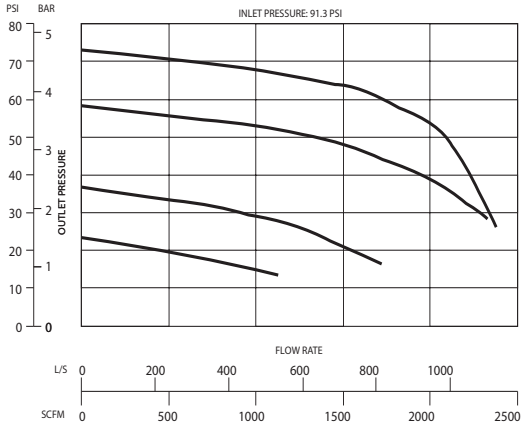


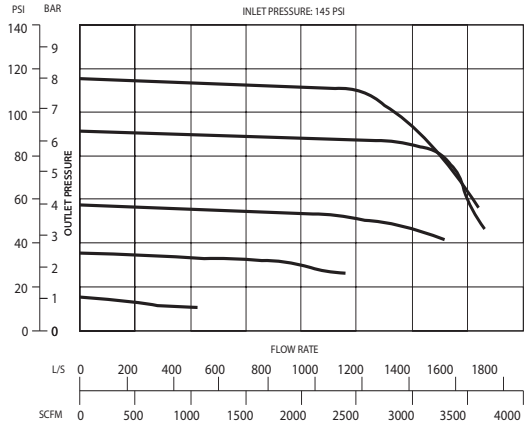


RM00C

Specifications

Inlet Pressure Range:
10 PSIG (min) to 450 PSIG (max) (0.7 TO 31 bar)
Outlet PSI Range: 0-250 PSI (17.2 bar)
Operating Temp: 0°F TO 175°F (-18°C to 79°C)
(Air moisture content must be dry)
Flow Rating: Flow rates exceed 2,000 SCFM
Body: Cast aluminum
Dome: Cast aluminum
Cap: Teflon coated aluminum
Valve: Nitrile bonded aluminum
Elastomers: Nitrile standard (viton optional)
Ports: 2" NPTF (BSPP optional)
Gauge Ports: 1/4" NPTF (BSPP optional)
Exhaust Port: 3/4" NPTF (BSPP optional)





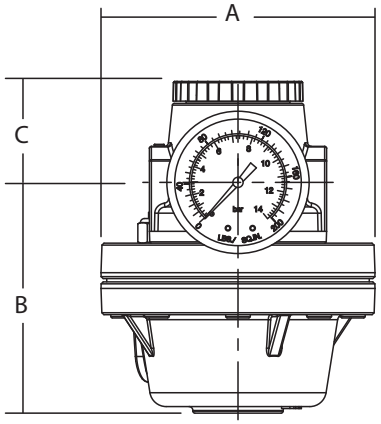
Dimensions

Not shown to scale

RM002, -003, -004

A	B	C	Depth †	Weight † lb (kg)
4.18 (106.0)	3.52 (89.3)	1.54 (39.1)	4.18 (106)	4.84 (2.2)

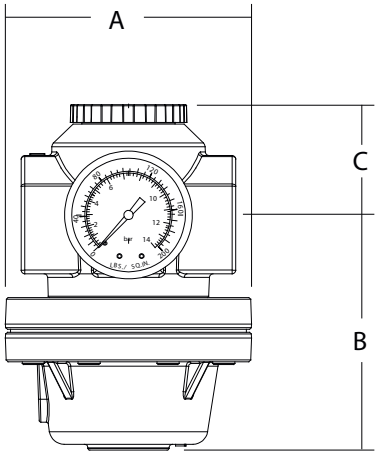
† Without gauge



RM006, -008, -00A

A	B	C	Depth †	Weight † lb (kg)
4.18 (106.0)	3.99 (101.3)	1.87 (47.5)	4.18 (106)	6.44 (3.0)

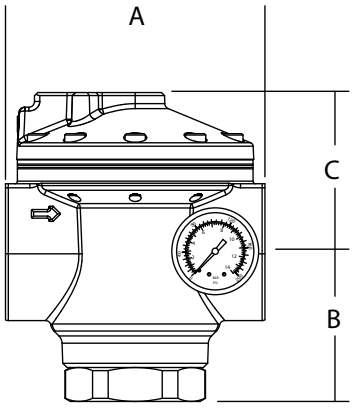
†Without gauge



RM00B, -00C

PORTS	A	B	C	DEPTH †	WEIGHT lb (kg) †
1-1/2	6 (152.4)	3.5 (88.9)	3.7 (94)	5.5 (139.7)	7.15 (3.25)
2	6 (152.4)	3.5 (88.9)	3.7 (94)	5.5 (139.7)	6.87 (3.12)

† Without gauge.



RM002, -003 and -004 Volume Boosters

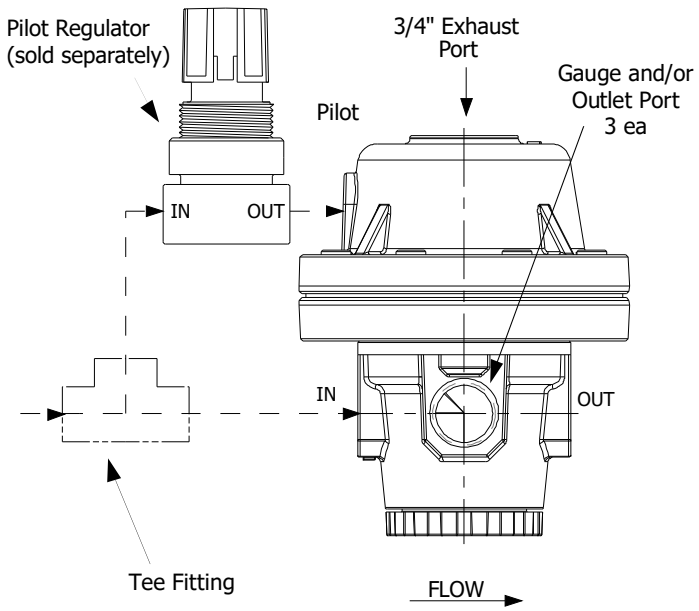


Figure 1

INSTALLATION

1. Depressurize and lock out the supply pressure.
2. Ensure the supply pressure has proper filtration and is free of contamination.
3. Install a tee fitting on the IN port of the RM regulator.
4. Connect the supply pressure to a port on the tee fitting. The RM may be installed in any orientation.
5. Plumb the remaining tee port to the inlet port of a pilot regulator (sold separately).
6. Plumb the output port of the pilot regulator to the PILOT port of the RM.
7. Plumb one of the OUT ports of the RM to the pressure control point. For best control, the RM should be installed as close as possible to the pressure control point.
8. Install a gauge or a pipe plug into the two remaining OUT ports. Do not leave any of these ports open.

OPERATION

The outlet pressure of the RM is controlled by the pilot regulator. To increase the RM output pressure, increase the pilot regulator pressure. To decrease the RM output pressure, decrease the pilot regulator pressure. The pilot regulator pressure must be a minimum of 10 psi higher than the RM output pressure.

CLEANING OR REPAIR

1. Depressurize and lock out the supply pressure.
2. If the RM regulator has a bracket installed, mark the dome where the longer bolts are that hold the bracket.
3. Remove the socket head cap bolts from the dome.
4. Free the dome from the diaphragm and remove it. You may need to pry slightly with a non-marking tool to get it free.
5. Remove the diaphragm.
6. Carefully unscrew the cap, being careful not to lose the spring that is underneath.
7. Remove the cap and extract the valve with a pair of needle nose pliers.
8. Inspect all elastomeric parts (o-rings, diaphragm, valve seal) for wear or damage. Replace any parts that are damaged or worn with new parts.
9. Inspect the diaphragm stem and valve for wear marks and scratches. Replace any parts that are scratched or worn with new parts.
10. Clean the body and all the internal parts with soap and water.
11. Install the non-damaged and new internal parts, making sure to apply grease to the inner o-ring, both sides of the diaphragm stem, and also to the top and bottom portions of the valve.
12. Install the dome and the body bolts, making sure to place any longer bracket bolts back in the proper location.

WARNING

These products are intended for use in industrial compressed gas systems only. Do not use these products where pressures and temperatures exceed the specifications listed on the product datasheet.

RM002, -003 and -004 Parts Listing

KEY	DESCRIPTION
1	Cap
2	Valve Spring
3	O-Ring
4	O-Ring
5	Valve Assembly
6	Screen
7	Head
8	O-Ring
9	O-Ring
10	O-Ring
11	Intermediate Plate
12	Diaphragm Assy
13	1/4-20 SHCS 7/8" (Qty. 7)
14	1/4-20 SHCS 1 3/8" (Qty. 1)
15	Dome Assembly
16	O-Ring

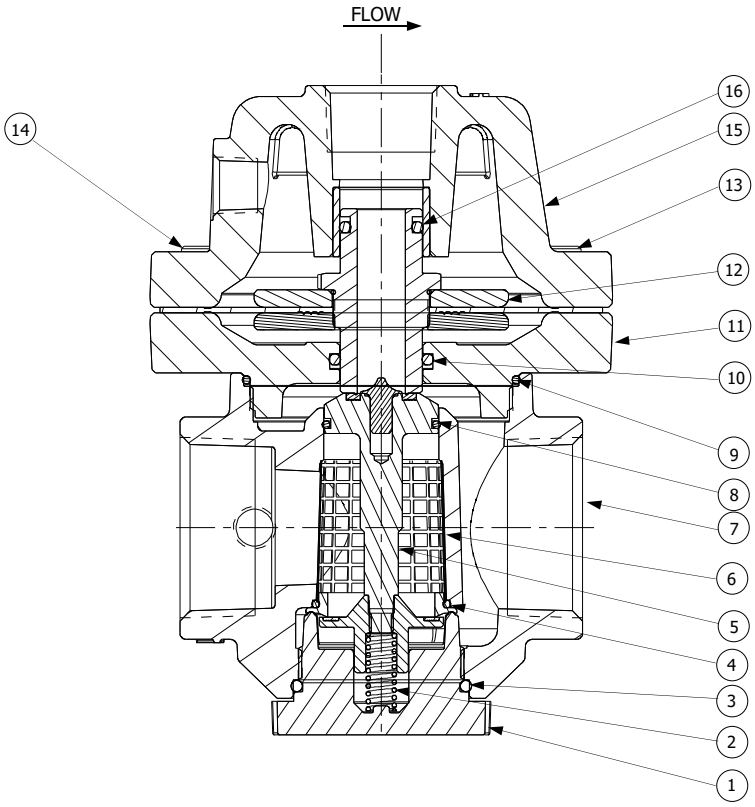


Figure 2

RM Part Configuration

Example part number: RM002NBRQR - 1/4" regulator with NPTF ends, bracket and quick response

Prefix	Size		End Connection		Options - Listed Alphabetically	
RM00	2	1/4"	N	NPTF		None - *Leave Blank*
	3	3/8"	P	BSPP	BR	Bracket Installed
	4	1/2"			LS	Light-Spring Installed
					NR	Non-Relieving
					O2	Oxygen Cleaned
					O3	Oxygen Cleaned for Non-Oxygen Use

Adder fee

Mounting Brackets	
Sizes 2, 3, 4	BKT-05

Gauges	
0-60 psig	BVSEP102D204D
0-100 psig	BVSEP102D204E
0-160 psig	BVSEP102D204F
0-200 psig	BVSEP102D204G

Repair Kits	
Sizes 2, 3, 4	
Complete Kit	H4158-01
Main Valve	H2250-50
Diaphragm	RMH387453
Elastomer Kit	H4158-03

RM006, -008 and -00A Pilot Operated Regulators

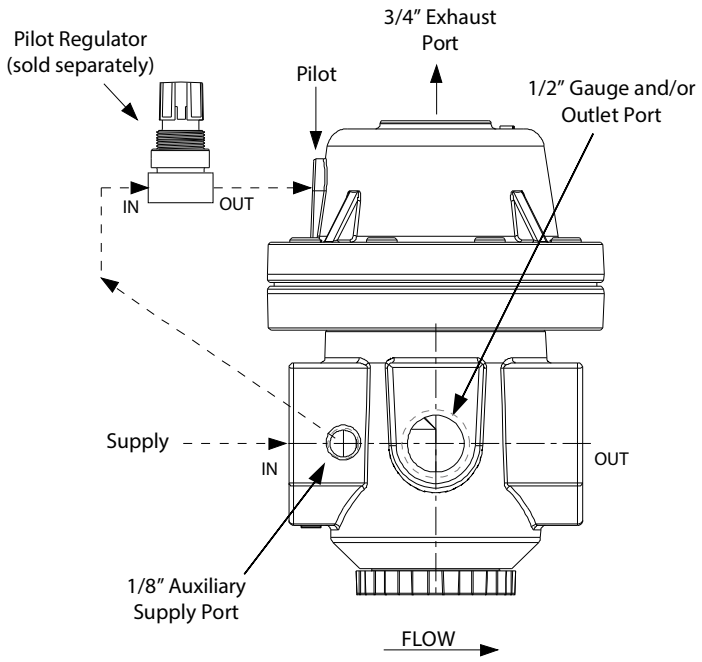


Figure 1

INSTALLATION

1. Depressurize and lock out the supply pressure.
2. Ensure the supply pressure has proper filtration and is free of contamination.
3. Connect the supply pressure to the IN port of the RM regulator. The RM may be installed in any orientation.
4. Plumb the auxiliary supply port to the inlet port of a pilot regulator (sold separately).
5. Plumb the output port of the pilot regulator to the PILOT port of the RM.
6. Plumb one of the OUT ports of the RM to the pressure control point. For best control, the RM should be installed as close as possible to the pressure control point.
7. Install a gauge or a pipe plug into the two remaining OUT ports. Do not leave any of these ports open.

OPERATION

The outlet pressure of the RM is controlled by the pilot regulator. To increase the RM output pressure, increase the pilot regulator pressure. To decrease the RM output pressure, decrease the pilot regulator pressure. The pilot regulator pressure must be a minimum of 10 psi higher than the RM output pressure.

CLEANING OR REPAIR

1. Depressurize and lock out the supply pressure.
2. If the RM regulator has a bracket installed, mark the dome where the longer bolts are that hold the bracket.
3. Remove the socket head cap bolts from the dome.
4. Free the dome from the diaphragm and remove it. You may need to pry slightly with a non-marking tool to get it free.
5. Remove the diaphragm.
6. Carefully unscrew the cap, being careful not to lose the spring that is underneath.
7. Remove the cap and extract the valve with a pair of needle nose pliers.
8. Inspect all elastomeric parts (o-rings, diaphragm, valve seal) for wear or damage. Replace any parts that are damaged or worn with new parts.
9. Inspect the diaphragm stem and valve for wear marks and scratches. Replace any parts that are scratched or worn with new parts.
10. Clean the body and all the internal parts with soap and water.
11. Install the non-damaged and new internal parts, making sure to apply grease (supplied with kit) to the inner o-ring, both sides of the diaphragm stem, and also to the top and bottom portions of the valve.
12. Install the dome and the body bolts, making sure to place any longer bracket bolts back in the proper location.

WARNING

These products are intended for use in industrial compressed gas systems only. Do not use these products where pressures and temperatures exceed the specifications listed on the product datasheet.

RM006, -008 and -00A Parts Listing

KEY	DESCRIPTION
1	Cap
2	Valve Spring
3	O-Ring
4	O-Ring
5	Valve Assembly
6	Screen
7	Head
8	O-Ring
9	O-Ring
10	O-Ring
11	Intermediate Plate
12	Diaphragm Assy
13	1/4-20 SHCS 7/8" (Qty. 7)
14	1/4-20 SHCS 1 3/8" (Qty. 1)
15	Dome Assembly
16	O-Ring

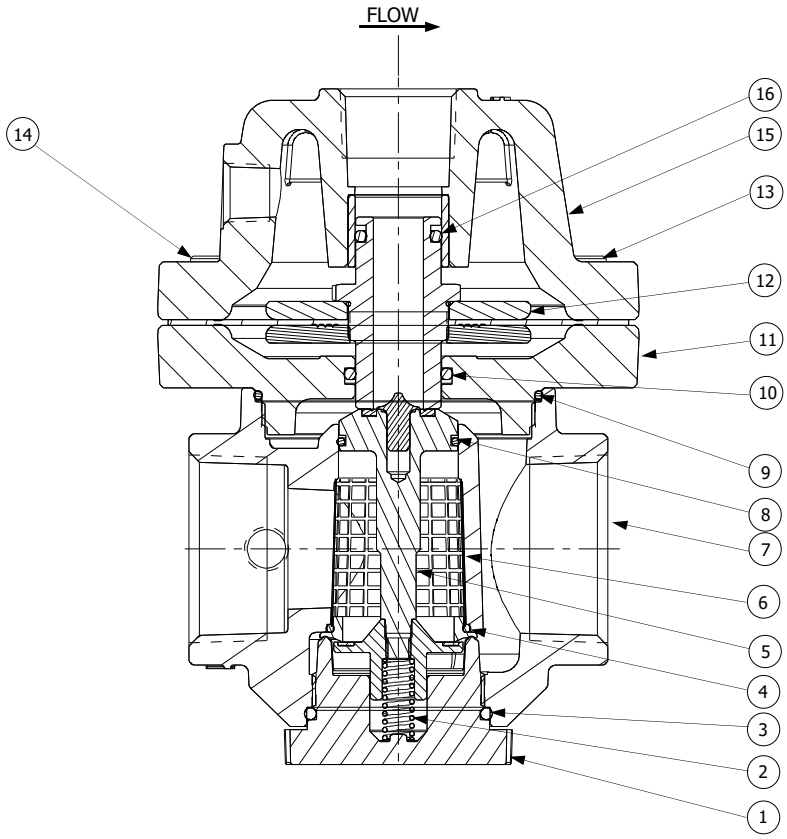


Figure 2

RM Part Configuration

Example part number: RM006NBRQR - 3/4" regulator with NPTF ends, bracket and quick response

Prefix	Size		End Connection		Options - List Alphabetically	
RM00	6	3/4"	N	NPTF		None - *Leave Blank*
	8	1"	P	BSPP	BR	Bracket Installed
	A	1-1/4"			LS	Light-Spring Installed
					NR	Non-Relieving
					O2	Oxygen Cleaned
					O3	Oxygen Cleaned for Non-Oxygen Use

Adder fee

Mounting Brackets	
Sizes 6, 8, A	BKT-06

Gauges	
0-60 psig	BVSEP102D204D
0-100 psig	BVSEP102D204E
0-160 psig	BVSEP102D204F
0-200 psig	BVSEP102D204G

Repair Kits	
Sizes 6, 8, A	
Complete Kit	H4158-02
Main Valve	H2264-50
Diaphragm	RMH387453
Elastomer Kit	H4158-04

RM00B (1-1/2”) and RM00C (2”) Volume Boosters

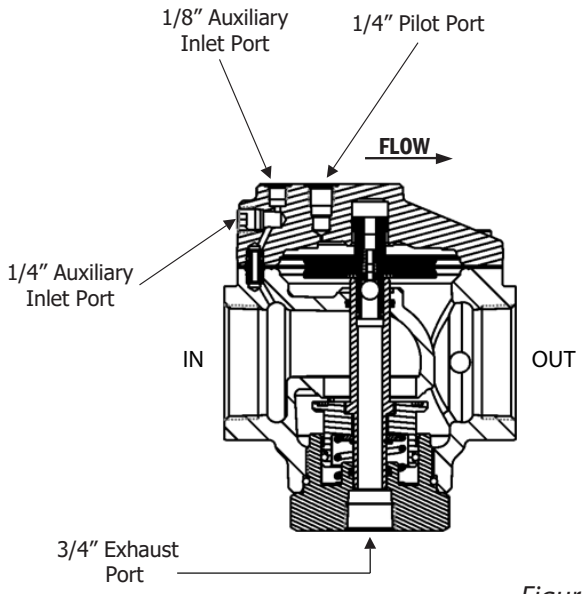


Figure 1

INSTALLATION

1. Depressurize and lock out the supply pressure.
2. Ensure the supply pressure has proper filtration and is free of contamination.
3. Connect the supply pressure to IN port on the RM regulator. The RM may be installed in any orientation.
4. Plumb one of the auxiliary supply ports to the inlet port of a pilot regulator (sold separetly). The remaining auxiliary supply port must be plugged.
5. Plumb the output port of the pilot regulator to the PILOT port of the RM.
6. Plumb one of the OUT ports of the RM to the pressure control point. For best control, the RM should be installed as close as possible to the pressure control point.
7. Install a gauge or a pipe plug into the two gauge ports (Fig. 2). Do not leave any of these ports open.

Figure 2

OPERATION

The outlet pressure of the RM is controlled by the pilot regulator. To increase the RM output pressure, increase the pilot regulator pressure. To decrease the RM output pressure, decrease the pilot regulator pressure. The pilot regulator pressure must be a minimum of 10 psi higher than the RM output pressure.

CLEANING OR REPAIR

1. Depressurize and lock out the supply pressure.
2. If the RM regulator has a bracket installed, mark the dome where the longer bolts are that hold the bracket.
3. Remove the socket head cap bolts from the dome.
4. Free the dome from the diaphragm and remove it. You may need to pry slightly with a non-marking tool to get it free.
5. Remove the diaphragm.
6. Carefully unscrew the cap, being careful not to lose the spring that is underneath.
7. Remove the cap and extract the valve with a pair of needle nose pliers.
8. Inspect all elastomeric parts (o-rings, diaphragm, valve seal) for wear or damage. Replace any parts that are damaged or worn with new parts.
9. Inspect the diaphragm stem and valve for wear marks and scratches. Replace any parts that are scratched or worn with new parts.
10. Clean the body and all the internal parts with soap and water.
11. Install the non-damaged and new internal parts, making sure to apply grease (supplied with kit) to the inner o-ring, both sides of the diaphragm stem, and also to the top and bottom portions of the valve.
12. Install the dome and the body bolts, making sure to place any longer bracket bolts back in the proper location.

WARNING

These products are intended for use in industrial compressed gas systems only. Do not use these products where pressures and temperatures exceed the specifications listed on the product datasheet.

RM00B and RM00C Parts Listing

KEY	DESCRIPTION
1	Screen
2	Plug
3	Coupler
4	O-Rings (2)
5	Head
6	Retaining Ring
7	Valve Spring
8	O-Ring
9	Dome
10	O-Ring
11	Screws (10)
12	Diaphragm Assy
13	O-Ring
14	O-Ring
15	Relief Stem
16	Valve
17	Washer
18	O-Ring
19	O-Ring
20	Cap

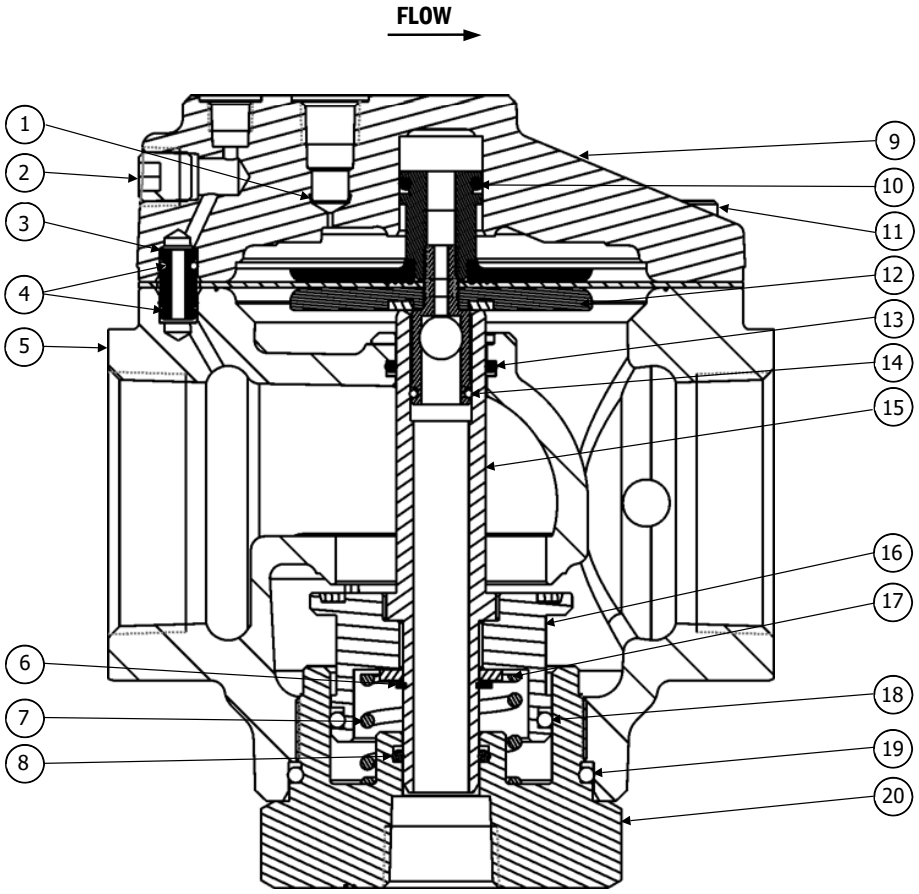


Figure 3

RM Part Configuration

Example part number: RM00BNBR -1-1/2" regulator with NPTF ports and bracket.

Prefix	Size		End Connection		Options - List Alphabetically	
RM00	B	1-1/2"	N	NPTF		None - *Leave Blank*
	C	2"	P	BSPP	BR	Bracket Installed
					LS	Light-Spring Installed
					NR	Non-Relieving
					QR	Quick Response**

Adder fee

**Standard on sizes B, C; please include in part number

Mounting Brackets	
Sizes B, C	BKTRM-07

Gauges	
0-60 psig	BVSEP102D204D
0-100 psig	BVSEP102D204E
0-160 psig	BVSEP102D204F
0-200 psig	BVSEP102D204G

Repair Kits	
Sizes B, C	
Complete Kit	RMH5890-01
Main Valve (valve, valve stem, valve spring, 2 o-rings)	HA251-81
Diaphragm (diaphragm assembly, 2 o-rings)	HA251-71
Elastomer Kit (all o-rings and screen)	HA251-91

SAFETY PRECAUTIONS

Please read the following safety information before installing or operating any Proportion-Air, Inc. equipment or accessories. To confirm safety, observe 'ISO 4414: Pneumatic Fluid Power - General rules relating to systems' and other safety practices.

WARNING

Improper operation could result in serious injury or loss of life!

1. **PRODUCT COMPATIBILITY**
Proportion-Air, Inc. products and accessories are for use in industrial pneumatic applications with compressed air media. The compatibility of the equipment is the responsibility of the end user. Product performance and safety are the responsibility of the person who determined the compatibility of the system. Also, this person is responsible for continuously reviewing the suitability of the products specified for the system, referencing the latest catalog, installation manual, Safety Precautions and all materials related to the product.

2. EMERGENCY SHUTOFF
Proportion, Inc. products cannot be used as an emergency shutoff. A redundant safety system should be installed in the system to prevent serious injury or loss of life.

3. EXPLOSIVE ATMOSPHERES
Products and equipment should not be used where harmful, corrosive or explosive materials or gases are present. Unless certified, Proportion-Air, Inc. products cannot be used with flammable gases or in hazardous environments.

4. AIR QUALITY
Clean, dry air is not required for Proportion-Air, Inc. products. However, a 40 micron particulate filter is recommended to prevent solid contamination from entering the product.

5. TEMPERATURE
Products should be used with a media and ambient environment inside of the specified temperature range of 32°F to 158°F. Consult factory for expanded temperature ranges.

6. OPERATION
Only trained and certified personnel should operate electronic and pneumatic machinery and equipment. Electronics and pneumatics are very dangerous when handled incorrectly. All industry standard safety guidelines should be observed.

7. SERVICE AND MAINTENANCE
Service and maintenance of machinery and equipment should only be handled by trained and experienced operators. Inspection should only be performed after safety has been confirmed. Ensure all supply pressure has been exhausted and residual energy (compressed gas, springs, gravity, etc.) has been released in the entire system prior to removing equipment for service or maintenance.

CAUTION

Improper operation could result in serious injury to people or damage to equipment!

1. PNEUMATIC CONNECTION
All pipes, pneumatic hose and tubing should be free of all contamination, debris and chips prior to installation. Flush pipes with compressed air to remove any loose particles.

2. THREAD SEALANT
To prevent product contamination, thread tape is not recommended. Instead, a non-migrating thread sealant is recommended for installation. Apply sealant a couple threads from the end of the pipe thread to prevent contamination.

3. ELECTRICAL CONNECTION
To prevent electronic damage, all electrical specifications should be reviewed and all electrical connections should be verified prior to operation.

EXEMPTION FROM LIABILITY

1. Proportion-Air, Inc. is exempted from any damages resulting from any operations not contained within the catalogs and/or instruction manuals and operations outside the range of its product specifications.

2. Proportion-Air, Inc. is exempted from any damage or loss whatsoever caused by malfunctions of its products when combined with other devices or software.

3. Proportion-Air, Inc. and its employees shall be exempted from any damage or loss resulting from earthquakes, fire, third person actions, accidents, intentional or unintentional operator error, product misapplication or irregular operating conditions.

4. Proportion-Air, Inc. and its employees shall be exempted from any damage or loss, either direct or indirect, including consequential damage or loss, claims, proceedings, demands, costs, expenses, judgments, awards, loss of profits or loss of chance and any other liability whatsoever including legal expenses and costs, which may be suffered or incurred, whether in tort (including negligence), contract, breach of statutory duty, equity or otherwise.

WARRANTY

Proportion-Air, Inc. products are warranted to the original purchaser only against defects in material or workmanship for eighteen (18) months from the date of manufacture. The extent of Proportion-Air's liability under this warranty is limited to repair or replacement of the defective unit at Proportion-Air's option. Proportion-Air shall have no liability under this warranty where improper installation or filtration occurred.

PROPORTION-AIR

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Handcrafted in the USA
ISO 9001-2015 Certified