



## **RG2112** **High Forward Flow Volume Booster**

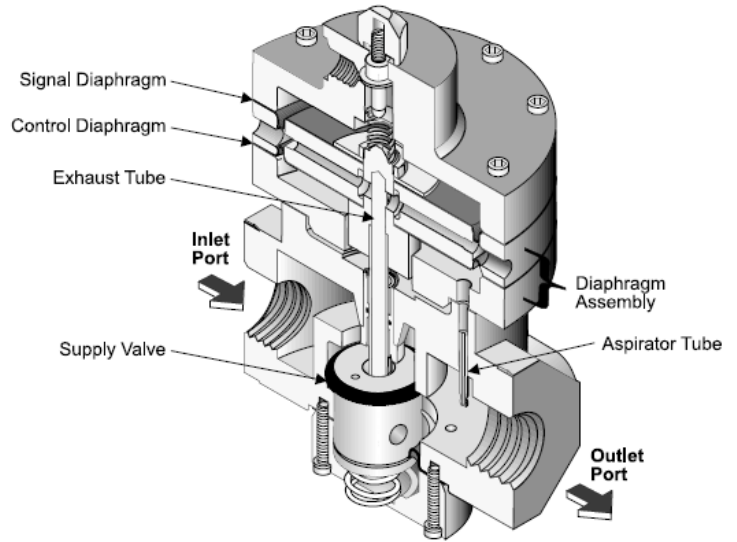
- Ultra fast responsive operation
- Eliminate hunting and buzzing
- Precision control at low setpoints
- Easy installation in the field
- In-line maintenance

# DESCRIPTION

The RG2112 reproduces a pneumatic signal in a 1:1 ratio. It is ideally suited for systems that require input isolation or increased forward flow capacity.

This regulator uses a force balance system to control the movement of the supply and exhaust valves.

At set point, the force due to signal pressure acting on the top of the upper diaphragm is balanced by the force due to output pressure acting on the underside of the lower diaphragm.



# SPECIFICATIONS

## Mechanical

Maximum inlet pressure.....	250 psig/17 bar
Max outlet pressure .....	150 psig/10 bar
Forward flow.....	1800 SCFM
Exhaust flow.....	65 SCFM
Accuracy.....	±5% FS
Sensitivity.....	1" water column
Supply pressure effect.....	<0.5 psi (0.35 bar)
Temperature range.....	-40-200°F/-40-93.3°C

## Materials

Body and housing.....	Aluminum
Trim .....	Aluminum, stainless steel, zinc plated steel, brass
Diaphragms.....	Nitrile on Dacron

## Port Sizes

Inlets .....	1/4" MNPT
Outlets.....	1/4" FNPT
Control .....	1/4" FNPT
Vent.....	1/8" FNPT

**Weight**.....2.15 lbs/0.98 kg

# CONFIGURATION

## RG2112

<b>PRESSURE RANGE</b>	0 to 150 PSIG (10 bar)	<b>MAX RELIEF FLOW</b>	65 SCFM (31 lit/sec)
<b>MAX FLOW</b>	830 SCFM (392 Lit/sec)	<b>PORT SIZE</b>	1" & 1-1/4"

Example Part Number	RG2112	8	N
Section Reference ->		1	2

<b>1</b>	<b>Port Size</b>
<b>8</b>	1"
<b>B</b>	1-1/2"

<b>2</b>	<b>Thread Type</b>
<b>N</b>	NPT

# DIMENSIONS

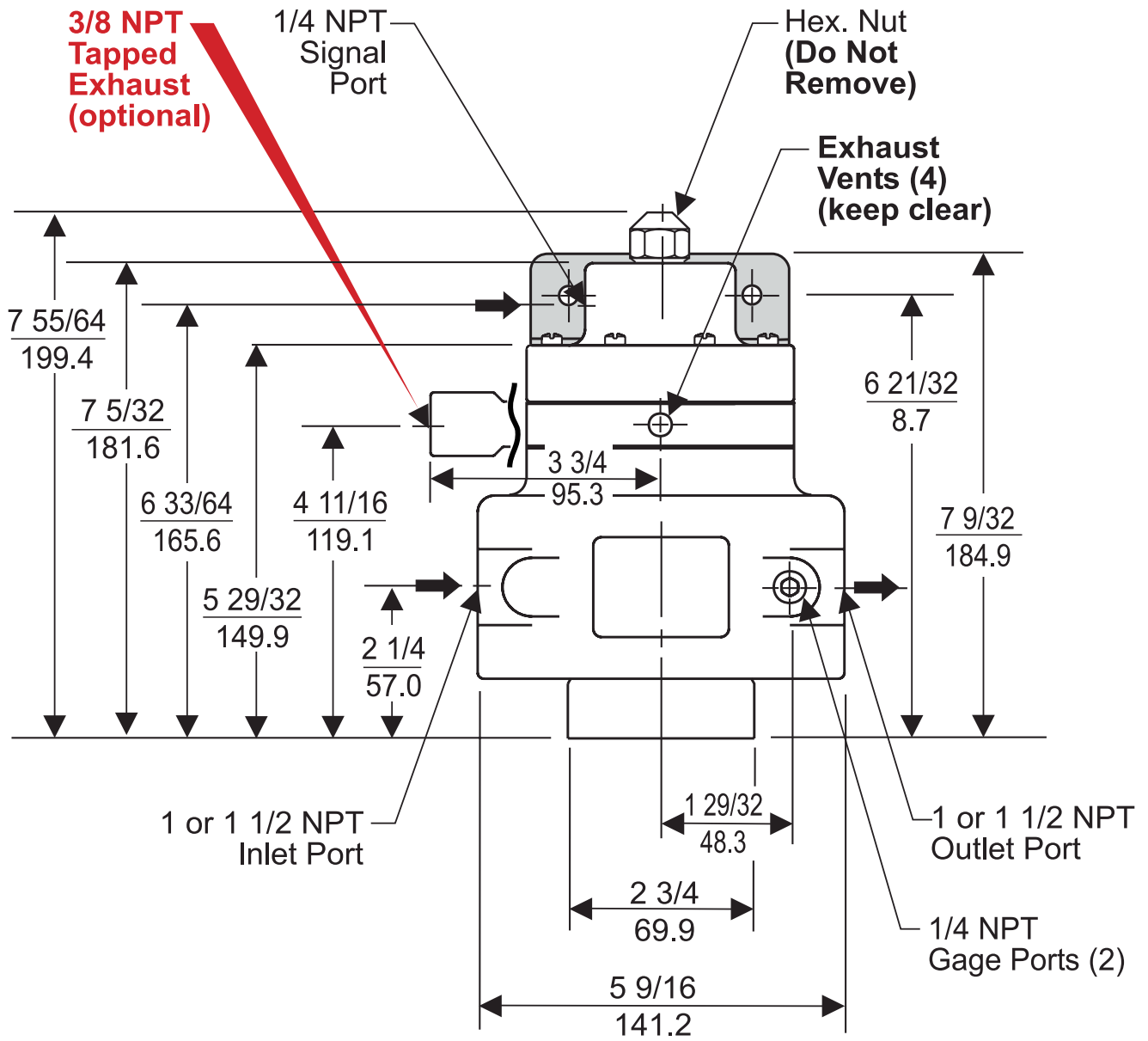


Figure 1

# INSTALLATION, OPERATION AND MAINTENANCE

## INSTALLATION

Arrows indicate the inlet and outlet ports on the booster. Tighten all connections securely. Avoid undersized fittings that will limit the flow through the booster. For more information, see Figure 1. Clean all pipelines to remove dirt and scale before installation.

Apply a minimum amount of pipe compound to the male threads of the fitting only. Do not use Teflon tape as a sealant. Start with the third thread back and work away from the end of the fitting to avoid contaminating the booster. Install the booster in the air line. Oil-free air must be applied to the booster. Use a filter to remove dirt and entrained liquid in the air line ahead of the booster. If an air line lubricator is used, it **MUST** be located downstream of the booster to avoid interference with performance.

## OPERATION

When signal pressure on the top of the signal diaphragm creates a downward force on the diaphragm assembly, the supply valve opens. Output pressure flows through the outlet port and the aspirator tube to the control chamber to create an upward force on the bottom of the control diaphragm.

When the setpoint is reached, the downward force of the signal pressure that acts on the top of the signal diaphragm balances with the upward force of the output pressure that acts on the bottom of the control diaphragm.

When the output pressure increases above the signal pressure, the diaphragm assembly moves upward to close the supply valve and open the exhaust valve. Excess output pressure exhausts through the vents in the side of the unit until it reaches the setpoint.

## MAINTENANCE

To clean the RG2112, use the following steps:

1. Shut off system pressure to the booster to prevent air from escaping. It is not necessary to remove the booster from the air line.
2. Remove the six screws from the bottom of unit. For more information, see Figure 2.
3. Remove the Valve Assembly. For more information, see Figure 2.

4. Wash the valve assembly with a solvent. Exercise care to prevent damage to diaphragms and valve facings. **Avoid solvents such as acetone, carbon tetrachloride and trichlorethylene.**
5. Replace the assembly carefully. Ensure that the exhaust vents in the spacer ring are clear. For more information, see Figure 2.

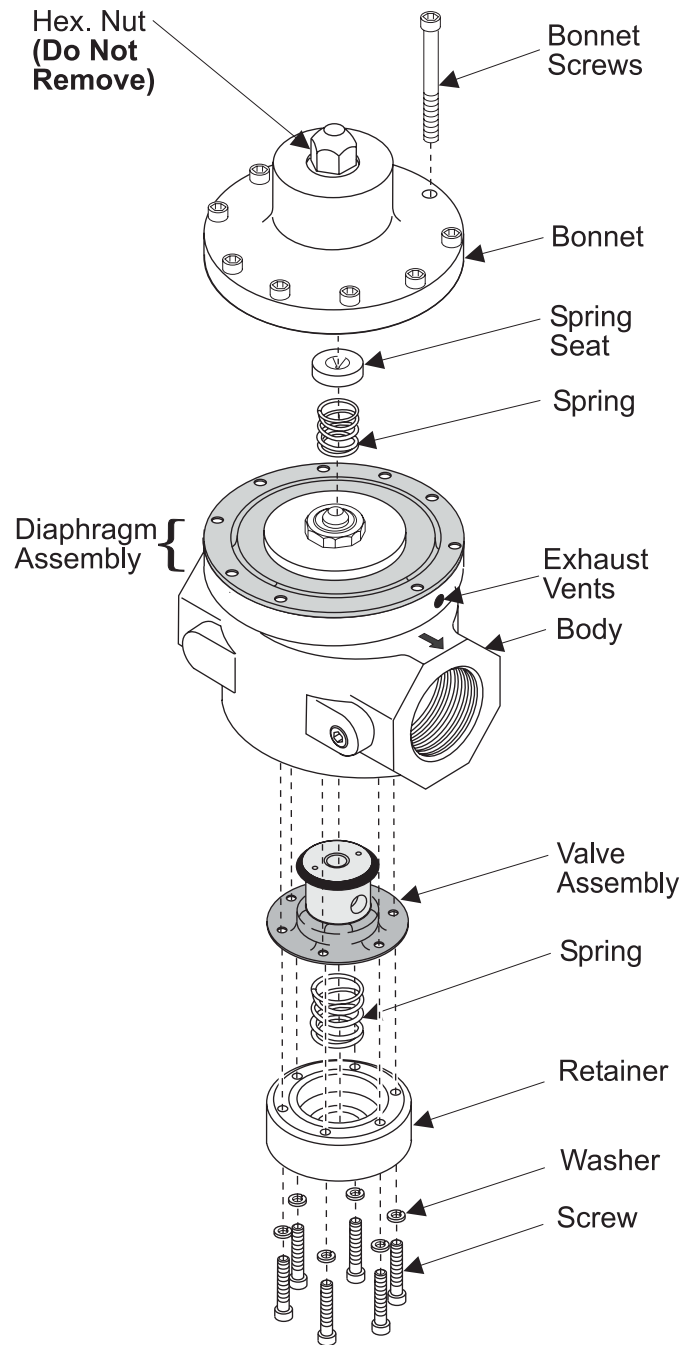


Figure 2

## **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**

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