

# **PROPORTION** *AR*



## **RG271 Series Volume Boosters**

RG271 series air-piloted regulators offer high flow and exhaust capacity. A force balance system controls the movement of the supply and exhaust valves.

**Minimize effects of supply pressure variation • Eliminate hunting and buzzing • Minimize downstream pressure droop under flow**

# Features

- Balanced supply valve minimize the effects of supply pressure variation.
- Aspirator tube minimizes downstream pressure droop under flowing conditions.
- Separate control chamber isolates the diaphragm from the main flow, eliminating hunting and buzzing.

# Sizes



**RG2712**  
1/4" Port



**RG2713**  
3/8" Port

# Technical Information

## Specifications

Type ..... Air piloted, relieving, low hysteresis regulator

Maximum inlet ..... 250 psi (17 Bar)

Outlet pressure ..... 0 to 150 psi (10 Bar)

### Flow capacity

100 psig supply, 20 psig output..... 45 SCFM (76.5 m3/hr)

### Exhaust capacity

5 psig > 20 psig output pressure .... 11 SCFM (18.7 m3/hr)

### Ambient operating and

fluid media temperature..... -40° to +200°F  
(-40° to +93.3°C)

### Materials in contact with media

Body & Housing..... Aluminum

Trim ..... Zinc plated steel, Brass

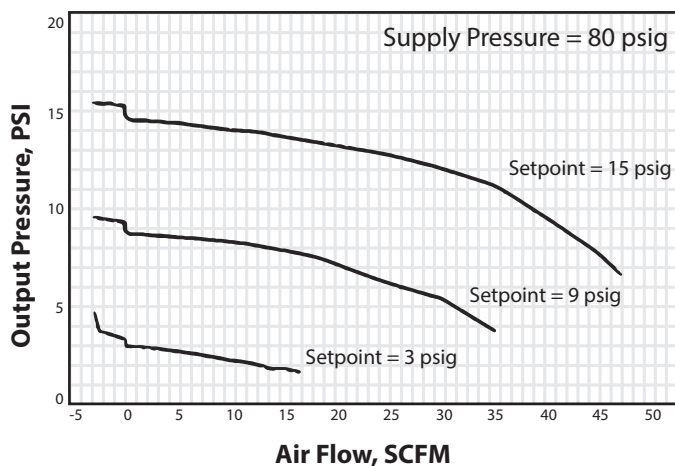
Diaphragm ..... Nitrile on Dacron Fabric

### Ports

RG2712 ..... 1/4" NPT

RG2713 ..... 3/8" NPT

## Flow Characteristics



# Installation and Operation

## INSTALLATION

*Pilot signal: Proportion-Air control valve\**

A. Proportion Air control valve & RG2712/13 volume booster ordered as an assembly:

1. Plug unused gage ports.
2. Connect primary air to the IN port of the RG2712/13 regulator.
3. Connect OUT port of RG2712/13 to process being controlled.
4. **Note: Tapped exhaust only.** Install a muffler in the EXHAUST port to protect internal parts from contamination and to reduce noise.
5. Before turning on system pressure, make sure dome pressure is 0 psig. Turn on system pressure and then increase the analog signal to Proportion-Air control valve until the desired downstream pressure of the RG2712/13 regulator is reached.

B. Proportion Air control valve & RG2712/13 regulator NOT ordered as an assembly:

1. Plug unused gage ports.
2. Plumb the output of the control valve to the pilot port of the RG2712/13 using 1/4" OD tubing.
3. Connect primary air to the IN port of both the RG2712/13 and the control valve.
4. RG2712/13 and the control valve.
5. Follow step 3, 4 & 5 in section A.

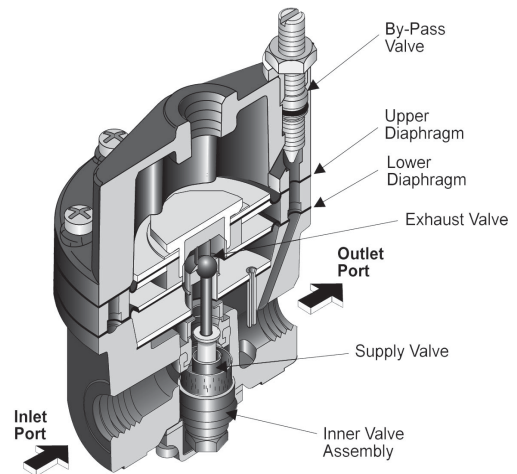
\*An adjustable manual regulator can also be used as the pilot signal.

## OPERATION

The RG271 is a pneumatic device capable of high flow and exhaust capacity. This device uses a force balance system to control the movement of the supply and exhaust valves.

At set point, the force due to signal pressure that acts on the top of the Upper Diaphragm balances with the force due to output pressure acting on the bottom of the Lower Diaphragm.

RG271 series reproduces a pneumatic signal in a 1:1 ratio. The outlet pressure of the RG is controlled by the pilot regulator. To increase the RG output pressure, increase the pilot regulator pressure. To decrease the RG output pressure, decrease the pilot regulator pressure.



## MAINTENANCE/CLEANING

1. Before disassembly, shut off the valve supplying air to the booster. This is to prevent air from escaping. It is not necessary to remove the booster from the air line.
2. Remove the two screws (18) from Figure 1.
3. Pull out the inner valve assembly (15) from Figure 1. Wash the seat on the inner valve assembly carefully.
4. Wipe off any particles that may be attached to rubber seat assembly (13) from Figure 1.
5. Replace the assembly carefully. For more information, see Figure 1.

NOTES: Avoid solvents such as acetone, carbon tetrachloride and trichlorethylene.

If the standard maintenance procedure does not correct the trouble, install service kit (RG2712KIT).

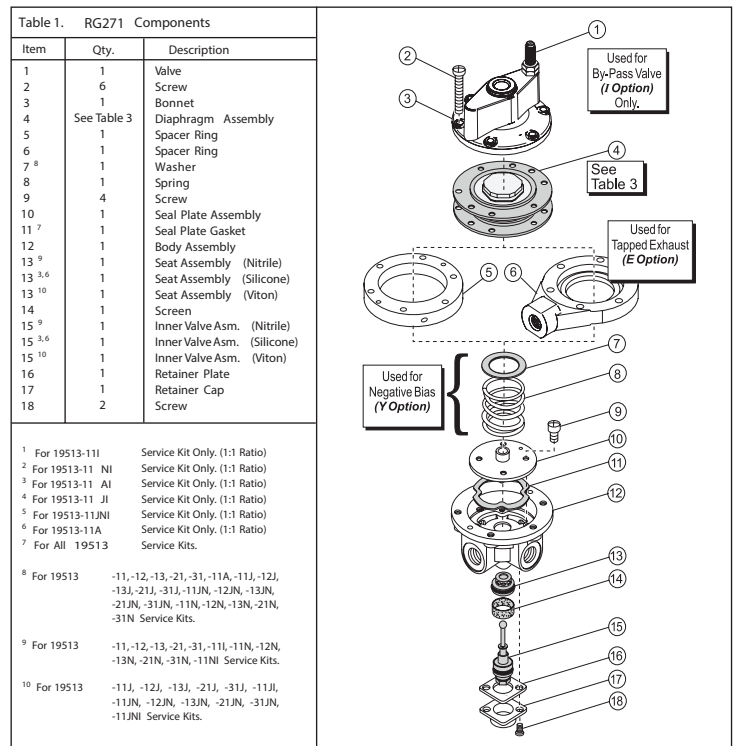
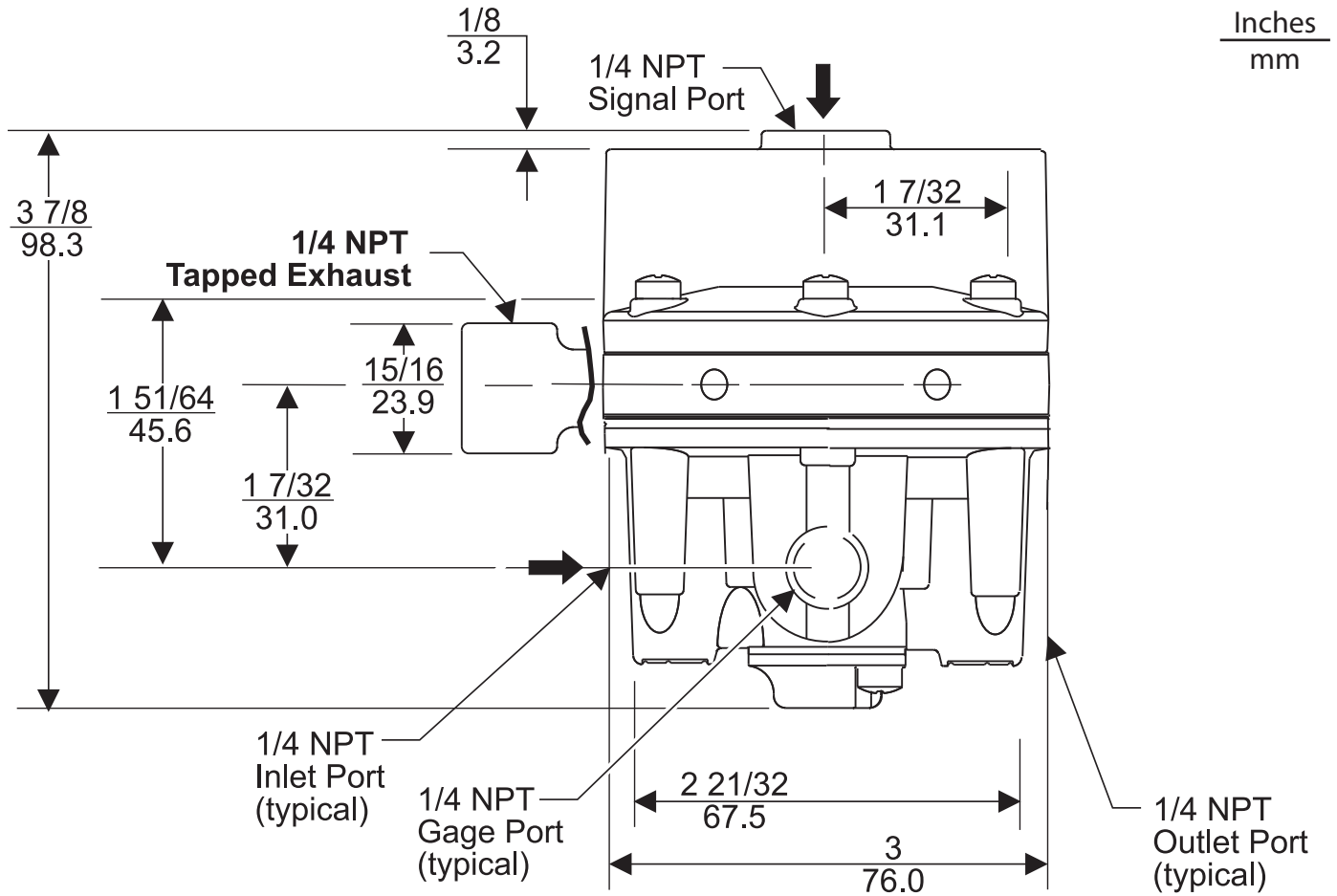


Figure 1. Exploded Drawing for 1:1, 1:2, 1:3, 2:1, & 3:1 Ratios.

# Dimensions



NOTES:  
1. ALL DIMENSIONS ARE FOR REFERENCE ONLY

# Configuration

RG271	PRESSURE RANGE		0 to 150 PSIG (10 bar)		MAX RELIEF FLOW		11 SCFM (5 lit/sec)	
	MAX FLOW		45 SCFM (21 Lit/sec)		PORT SIZE		1/4" to 3/8"	
Example Part Number	RG271	3	N	NR	O2			
Section Reference ->	1	2	OPTIONS					
<b>1</b>	<b>Port Size</b>		<b>2</b>	<b>Thread Type</b>				
<b>2</b>	1/4"		<b>N</b>	NPT				
<b>3</b>	3/8"		<b>P</b>	BSPP				

Options	
<b>NR</b>	Non-Relieving (Port size 2 only)
<b>O2</b>	O2 Cleaned
<b>O3</b>	O2 Cleaned for Non-Oxygen use
<b>TE</b>	Threaded Exhaust (Port size 2 only)

## **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**

ProportionAir.com

8250 N 600 W

P.O. Box 218

McCordsville, IN 46055

*info@proportionair.com*

Handcrafted in the USA

ISO 9001-2015 Certified