

### Specifications

Size: 1" & 2" NPT

Orifice Sizes: .125" (1/8"), .188" (3/16"), .25",  
.375" (3/8"), .50"

Body Pressure Rating: 2000 psi

Housing Pressure Rating:

To prevent housing failure: 375 psi

To prevent leakage to atmosphere: 250 psi

To prevent damage to internal parts: 60 psi above  
set point

Temperature Range: -20° F to 180° F (-29° C to 82° C)

### Application

The RG20 is a direct spring operated, pressure regulator that can be used anywhere pressure regulation of natural gas, air or other gas is required. It's housing can be moved to one of four positions to save space during installation.

The RG20 was designed for easy maintenance by allowing access to the body without removing it from the line. A NACE option is available for sour service.



## Model RG20 Installation

### Installation

Before installing the RG20, check the condition of the threads to make sure they're clean and clear of debris. Use pipe thread compound to ensure no pressure leaks from the connection and thread it onto the pipe. The RG20 has the capability to change the position of the housing four different ways to save space during installation.

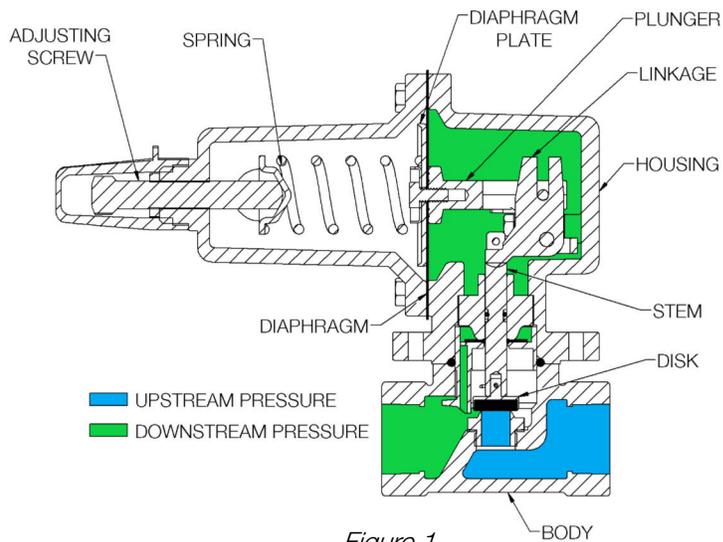
**WARNING:** The RG20 is not a self-relieving regulator. If there is a chance that the outlet pressure could rise above the set point the excess pressure will cause damage to the regulator. It is recommended to use some type of pressure relief device on the downstream side of the RG20 to prevent this.

## Model RG20 Operation

### Principles of Operation

The RG20 is a direct spring operated pressure regulator. The spring acts through the plunger and linkage to lift the disk off of the seat allowing the upstream pressure to pass through the regulator to the down stream side. As the down stream pressure increases, it acts on the diaphragm which counteracts the spring force and moves the disk closer to the seat.

Once the downstream pressure exceeds the setpoint of the regulator the regulator will be closed and not allow any more pressure to pass through. Turning the adjusting screw will change the setpoint pressure.



## Model RG20 Maintenance

### Setting the RG20

To set the RG20 simply remove the cap and turn the adjusting screw to reach the desired set pressure. Turning the screw down will increase the setpoint; turning it up will lower the setpoint. The RG20 has a number of different springs that cover a range from 5 to 150 psi. See Table 1.

### Spring Change

To change the spring, first remove the cap and back off the adjusting screw. Remove the spring cover by loosening the bolts holding it to the housing with a 7/16" wrench or socket. Replace the spring with the desired spring and put the spring cover back on and screw in the bolts. Do not exceed 8.5 ft-lb of torque on the bolts to prevent cracking the aluminum spring cover or housing.

Table 1

SPRING	COLOR CODE
5-20	YELLOW
15-40	GREEN
35-80	BLUE
70-150	RED
10-95	BLACK

**Model RG20 Maintenance Cont.**

**Replacing Soft Goods**

A repair kit is available for the RG20 that includes all soft goods and a disk holder assembly. To replace the soft goods start by removing the cap. Unthread the adjusting screw to remove all tension from the spring. Remove the housing from the body by unscrewing the two socket head screws using an 1/4" allen wrench. Remove the stem, stem guide, disk holder assembly and boost tube. Replace the stem o-ring and the boost tube o-ring and gasket. Take out the cotter pin and remove the disk holder assembly from the stem. Reinsert the stem making sure to hook it onto the linkage. Insert the stem guide and boost tube. Insert the new disk holder assembly into the stem and secure it with the cotter pin. Reattach the housing to the body.

**Diaphragm Replacement:**

Remove the spring cover by loosening the bolts holding it to the housing with a 7/16" wrench or socket. Remove the spring and then unscrew the screw holding the spring retainer and diaphragm plate to the diaphragm plunger using a 3/16" allen wrench. Remove the old diaphragm and replace it with the new one then reinstall it by threading the screw back into the diaphragm plunger. Put the spring back in place over the spring retainer and put the spring cover back on and tighten the bolts.

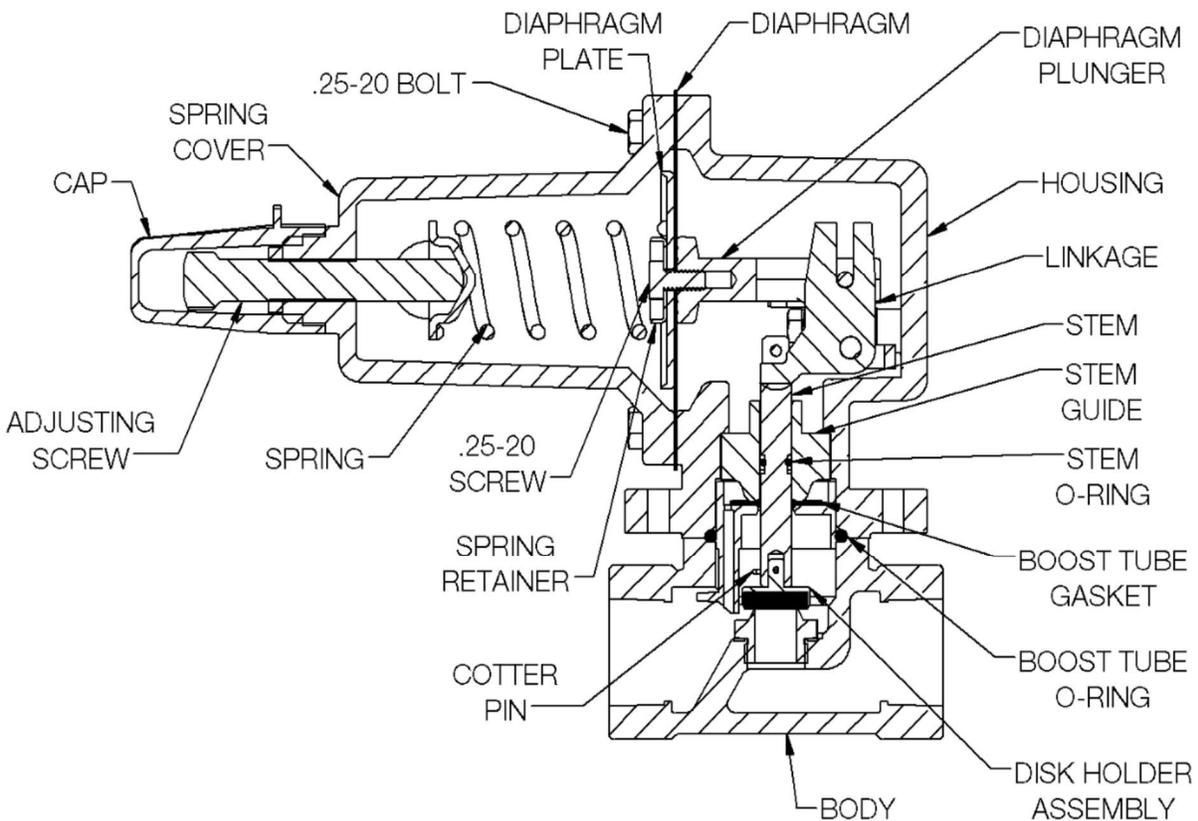


Figure 2

**Model RG20 Maintenance Cont.**

*Table 2. Trouble Diagnosis*

Symptom	Probable Cause(s)	Corrective Action(s)
Leaking from port in housing	Bad diaphragm	Replace the diaphragm found in the repair kit. See <b>Diaphragm Replacement</b> on page 3
Downstream pressure continuously increases beyond the set point	The seat is failing to seal	Replace the disk holder assembly found in the repair kit. See <b>Replacing Soft Goods</b> on page 3