Beaumont Manufacturing
and Distribution Company
www.beaumontmanufacturing.com

Installation, Operation, and Maintenance Instructions

Model RG10

Specifications

Size: 1” & 2” NPT

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

Body Pressure Rating: 1500 psi

Housing Pressure Rating:

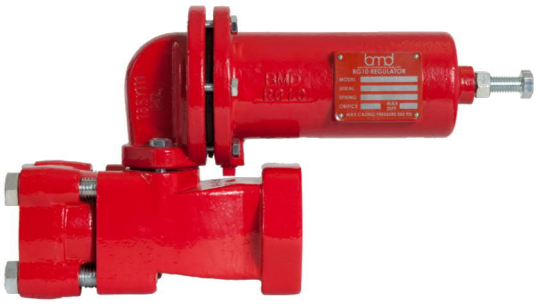
To prevent housing failure: 550 psi

To prevent damage to internal parts: 200 psi above set point up to 550 psi max

Temperature Range:

-20° F to 180° F (-29° C to 82° C) Buna, Nylon, Neoprene

0° F to 300° F (-18° C to 149° C) Viton



Application

The RG10 is a high pressure, direct spring operated, pressure regulator. Its high pressure, heavy duty design makes it ideal for pressure regulation in the oil and natural gas industry. Typical applications include farm taps, first or second cut regulation, transmission to distribution and many other high pressure processes. It has a maximum inlet pressure of 1500 psi and an outlet range of 27-500 psi.

The RG10 also has the ability to be converted into a relief valve. A NACE option is available for sour service.

Model RG10 Installation

Installation

Before installing the RG10, 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.

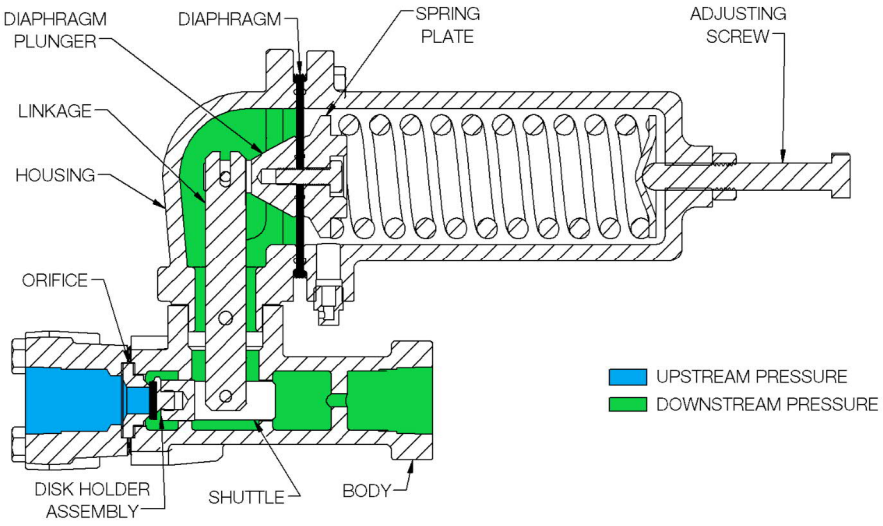
WARNING: The RG10 is not a self-relieving regulator. If there is a chance that the outlet pressure could rise above the set point the excess pressure will cause damage to the regulator. It is recommended to use some type of pressure relief device on the downstream side of the RG10 to prevent this.

Model RG10 Operation

Principles of Operation

The RG10 is a direct spring operated pressure regulator. The spring acts through the diaphragm 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 RG10 Maintenance

Setting the RG20

To set the RG10 loosen the adjusting screw lock nut and turn the adjusting screw up or down to reach the desired set pressure. Turning the screw down will increase the setpoint; turning it up will lower the setpoint. The RG10 has a number of different springs that cover a range from 27 to 500 psi. See Table 1.

Spring Change

To change the spring, first back off the adjusting screw. Remove the spring cover by loosening the bolts holding it to the housing with a 1/2" wrench or socket. Replace the spring with the desired spring and put the spring cover back on and screw in the bolts. If the blue or yellow spring is being added and the diaphragm is viton, it must be preloaded before the spring cover is torqued down. To preload the diaphragm put the spring cover in place and install the bolt finger tight only. Then, turn the adjusting screw until it makes contact with the spring retainer. After it makes contact, turn it two more revolutions, then tighten the housing bolts.

Table 1

SPRING	COLOR CODE
27-50	RED STRIPE
46-95	OLIVE
90-150	NONE
150-200	GREEN STRIPE
200-275	BLUE STRIPE
275-500	YELLOW STRIPE

Model RG10 Maintenance Cont.

Orifice and Disk Holder Replacement

To replace the orifice and disk holder first unthread the adjusting screw to remove all tension from the spring. Loosen and remove the two screws that hold the housing onto the body using an 1/2" wrench or socket. Remove the housing/spring cover assembly and set it aside. Take care that the pivot pin that holds the linkage in does not fall out. Remove the body/housing gasket. Next, remove the inlet adaptor from the body by unscrewing the bolts with a 9/16" wrench (3/4" for 2" body). Take out the orifice and remove the two orifice gaskets. Now that the inlet adapter has been removed, shuttle containing the disk holder assembly can be removed from the body. Remove it and use a 3/4" wrench to take off the disk holder assembly. Replace the disk holder assembly and reinsert the shuttle assembly into the body. Replace the orifice gaskets and reinstall the orifice and inlet adaptor. Place a the new gasket onto the housing and attach it back to the body ensuring the linkage is positioned correctly with the shuttle.

Diaphragm Replacement:

Remove the spring cover by loosening the bolts holding it to the housing with a 1/2" wrench or socket. Remove the spring, and then, unscrew the screw holding the spring plate and diaphragm plunger together using a 1/2" wrench or socket. Remove the old diaphragm and replace it with the new one then, reinstall it by threading the screw back into the spring plate. CAUTION: If the spring that's being used is a blue or yellow spring and the diaphragm is viton, it must be preloaded before tightening down the spring cover to the housing. To preload the diaphragm put the spring cover in place and install the bolt finger tight only. Then, turn the adjusting screw until it makes contact with the spring retainer. After it makes contact, turn it two more revolutions, then tighten the housing bolts.

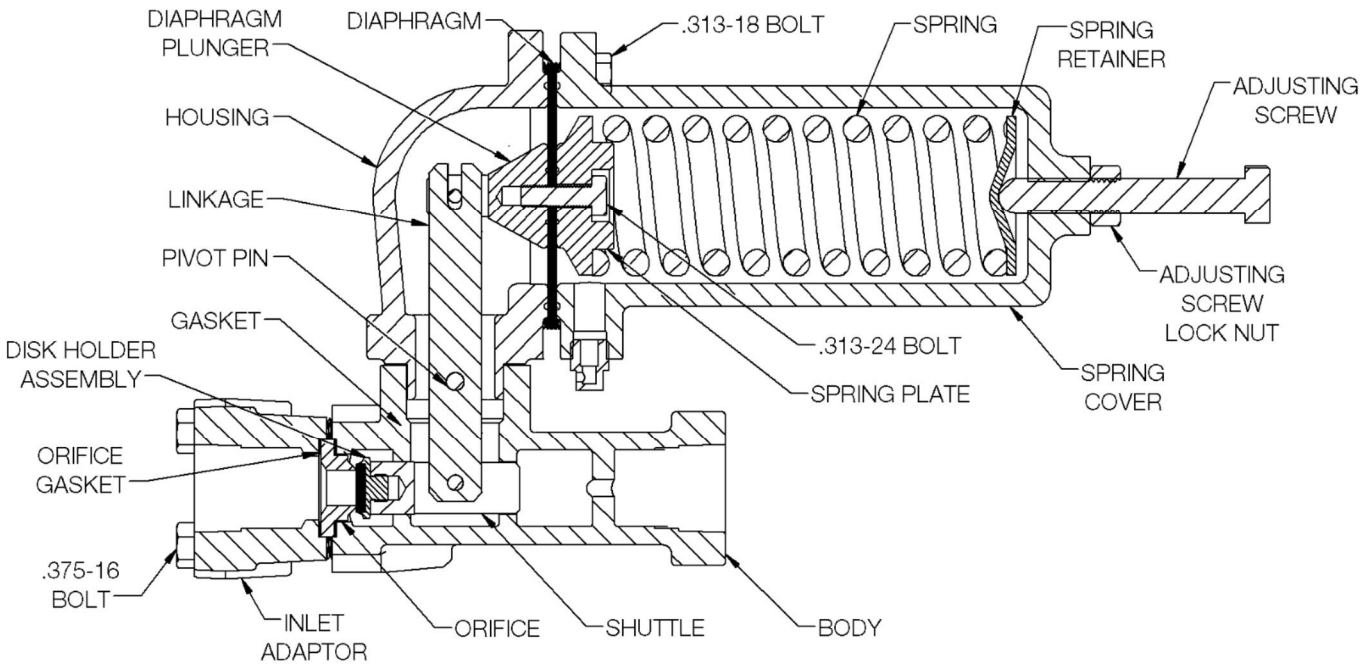


Table 2. Trouble Diagnosis

Symptom	Probable Cause(s)	Corrective Action(s)
Leaking at the diaphragm	Bad diaphragm	Replace the diaphragm. See **Diaphragm Replacement** on page 3
Diaphragm fails prematurely	Failure to preload diaphragm at higher spring range	Replace the diaphragm making sure to preload it. See **Diaphragm Replacement**
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 **Replacing Soft Goods** on page 3