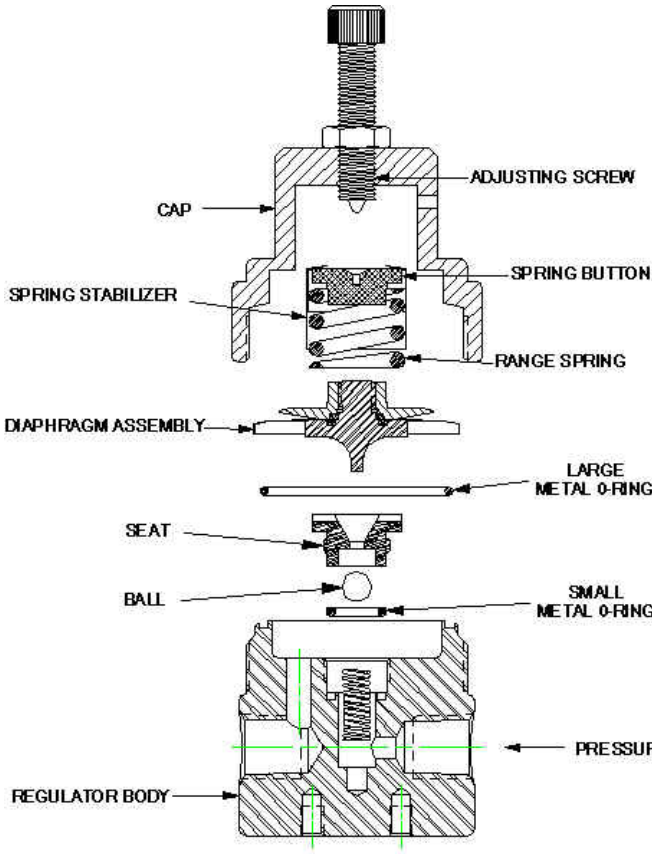
GO REGULATOR

Fluid Control Solutions

PR-9 Series Pressure Regulator
Ball, Seat & Spring Replacement Instructions

Make sure you thoroughly understand these directions before proceeding
MAKE SURE THE REGULATOR IS DISCONNECTED FROM AIR SOURCE
MAKE SURE ANY RESIDUAL PRESSURE IS BLED OFF FROM REGULATOR.

Instructions



1. Completely read these instructions before performing any of the operations.
2. Make sure the regulator is disconnected from pressure source; make sure any residual pressure is bled off from the regulator. **FAILURE TO DO THIS WILL RESULT IN SERIOUS PERSONAL INJURY. DO NOT PROCEED UNTIL PRESSURE HAS BEEN REMOVED AND/OR TERMINATED**
3. Securely clamp the regulator over the flats in a vise.
4. Loosen lock nut on adjusting screw.
5. Use a ¼" Allen wrench and turn the adjustment screw counterclockwise, as looking from the top of the regulator, until it will turn no further.
6. Remove the cap and adjusting screw as a unit. The range spring will be securely held inside the cap if this unit is equipped with a spring stabilizer. Earlier models do not have a stabilizer, in which case the range spring will be sitting on top of the diaphragm.
7. Remove the diaphragm assembly.
8. Carefully remove the large metal o-ring from the groove on the nose of the regulator
9. Remove the seat, ball, and spring.
10. Carefully remove the small metal o-ring from the body. It might be necessary to drill a small hole in this o-ring to facilitate its removal. DO NOT damage the groove in the body.
11. Thoroughly blow out the inside of regulator body using clean, dry compressed air.
12. Clean seat surface with a cotton swab moistened with isopropyl alcohol.
13. Place new small metal o-ring in the groove in the body.
14. Place new spring into .312 (7.9mm) hole in the body.
15. Place new ball onto spring.
16. Place the seat over the ball and start the threads by hand. Tighten the seat hand tight.
17. Finish tightening seat to 25 lbf•ft (34 N•m).
18. Attach primary pressure supply to inlet with suitable fittings.
19. Apply a small amount of leak detecting fluid, such as "Leak Detective" or soapy water, around the exposed area of the ball.
20. The PR-9 utilizes a metal to metal seat and therefore does not afford a bubble tight shut-off. Slowly apply pressure to unit, increasing the inlet pressure up to one-half the maximum rated pressure for this unit. Let stand for 30 seconds. There will be evidence of leaking such as bubbles or frothing. However, the leak rate should not be audible and should not be high enough to blow away the leak detecting fluid.

21. Place new metal o-ring in the groove on the nose of the body.
22. Place new diaphragm assembly onto regulator cavity.
23. Place range spring and spring button onto diaphragm assembly unless it was equipped with a stabilizer and is inside the cap.
24. Place a small amount of Krytox or other lubricant on the outer threads of the body if the regulator body is steel.
25. Put the cap over the regulator and engage threads by hand. Tighten hand tight.
26. Finish tightening cap to 80 lbf•ft (81 N•m).
27. Attach a pressure gauge and quarter-turn valve to the outlet port. Leave the valve in the open position.
28. Use a 1/4" Allen wrench and slowly turn adjusting screw clockwise. When there is evidence of flow at the quarter-turn valve close it.
29. Squirt a leak detecting fluid around the base of the cap where it meets the body. Agitate the fluid to form foam and apply around the 0.125 (3.1mm) leak detection port in the bonnet of the cap.
30. Slowly continue turning the adjusting screw while watching and listening for any leaks. It may be necessary to re-apply the liquid. If leaks are noticed, immediately back off adjusting screw and repair unit as needed.
31. If no leaks are noticed, adjust control pressure to a value that is 110% of the maximum rating for this regulator. Reapply the leak detecting fluid as needed.
32. Note the pressure reading on the gauge. The PR-9 utilizes a metal to metal seat and therefore does not afford a bubble tight shut-off. However, the leak rate across the seat should not exceed 300 SCCM. Determine this by measuring the flow from the outlet that is required to stabilize the outlet pressure. Leak rates in excess of 300 SCCM indicate that the ball and seat should be removed and cleaned or replaced.
33. Relieve the outlet pressure while backing off on the adjusting screw. Continue backing off on adjustment screw until it is all the way out and will turn no further.
34. The regulator is now ready for service.

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