

Installation Operation and Maintenance Manual

SPRUNG LOADED PRESSURE REDUCING VALVE A11 & A12



THIS DOCUMENT is only applicable to the service of A11 and A12 valves only. General instructions regarding installation, operation and maintenance for all types of dome loaded pressure reducing valves must be read prior.

PRESSURE REDUCING VALVES INSTRUCTIONS.

These instructions are confined to the replacement of the Valve Seat and O-Ring seal only. Any damage caused to other components would require the units return to the manufacturer.

Before undertaking any servicing of the regulator, ensure the valve is completely isolated from the supply and outlet pressures, and any pressure in the valve has been removed.

Before commencing the valve refurbishment, it is recommended that the valve be removed from the line and worked on in a clean environment.

Cleanliness during assembly is most important, particularly on all sealing surfaces.

BEFORE SERVICE, REFER TO THE SPRUNG LOADED PRESSURE REDUCING VALVES GENERAL INSTRUCTIONS

A11 & A12 SERVICING

DISMANTLING

1. Ensure the loading spring (13) is not being compressed. Do this by unscrewing the Handwheel (3) counter clockwise until a positive stop is met.
2. Unscrew the Handwheel Retaining Screw (1) and remove the Handwheel (3) and Washer (2).
3. Loosen the Spring Housing Retaining Screw (27) by 2 to 3 turns.
4. Unscrew the Spring Housing (4) and remove the Spring (13), the Spring carrier (14). and O-Ring (26) if applicable.
5. Remove the spindle assembly (5,7,8,9,10,11,12) from the spring housing (4) and remove the bearing (6) from the spindle (7).
6. Remove O-Ring (5) if applicable.
7. If the spindle assembly is to be dismantled further, the position of the two Lock Nuts (12) along the threaded shaft of the Spindle (7) must be recorded. Unscrew the lock nuts and Spring Locator (10) in a clockwise direction as these components have left hand threads.
8. To dismantle the Relieving Adjuster Stem (9) if fitted, use a flat head screw driver with a maximum blade width of 4.75 mm and screw the adjuster out through the bottom of the Spindle (7).
9. Remove O-Ring (8).
10. Lift out the piston assembly (15-25).
11. Remove the O-Ring (25).
12. Push the Piston (21) unit out of the Piston Plate (24) and using a suitable extraction tool remove the O-Ring (23) and Anti-Extrusion Ring (22).
13. If a relieving valve is fitted unscrew the upper Seat Retainer (16) and remove with the Seat and Seat Support (17A, 17B) and pin (15) also remove the ball, washer and spring (18,19,20)
14. Unscrew the Lower Seat Retainer (16) from the Body (28) and remove the Seat and Seat Support (17A, 17B), and pin (15) also remove the ball washer and spring (18,19,20)
15. Check all parts for wear or damage.

REASSEMBLY

- 1) Assemble the Spring, Washer and Ball (18,19,20) into the Body (28).
- 2) Fit the new lower Valve Seat Support (17A) and Valve Seat (17B) into the lower Seat Retainer (16) ensuring the recess of the Seat Support (17A) is fitted to the inside of the Retainer (16). Screw the Seat Retainer (16) into the Body (28) and torque – See below for torque values. Insert a new Pin (15) and check for smooth pin action.
 - a) Polymer seats and Aluminium or Brass components: 12 - 15 Nm.
 - b) Metallic seats and Stainless Steel components: 40 - 45 Nm.
- 3) If a Relieving Valve is fitted, follow steps 1 and 2 above to assemble the Relieving Valve assembly into the piston (21).
- 4) Fit the new O-Ring (23) and Anti-Extrusion Ring (22) into the Piston Plate (24), ensure the Anti-Extrusion Ring (22) is fitted above the O-Ring (23).
- 5) Fit the new O-Ring (25) to the Piston Plate (24)
- 6) Lightly lubricate the Piston shaft (21) with suitable lubricant and fit the Piston (21) into the Piston Plate (24) ensuring it slides freely.
- 7) Assemble the piston assembly (15-25) into the Body (28).
- 8) Lubricate the thread of the Loading Stem (7) with an anti-seize compound and assemble the Loading Nut (10) and lock nuts (12), position the lock nuts and lock in the recorded position.
- 9) Replace the O-Ring (8) on the Relieving Valve Adjuster (9) and push the Adjuster (9) into the Loading Stem (7). Screw Adjuster (9) into the Loading Stem (7) until it is level with the bottom of the Stem. This must be carried out immediately prior to finishing the assembly, setting and testing the valve.
- 10) Replace O-Ring (5) if applicable.
- 11) Lubricate the Bearing (6) with suitable lubricant and fit to the Loading Stem (7), re-assemble the Stem (7) into the Spring Housing (4) ensuring the Guide Pin (11) is located in the spring housing guide slot.
- 12) Fit the lower Spring Carrier (14) and Spring (13) to the Piston (21).
- 13) Locate the spring housing assembly over the Spring and screw into the Body (28). Torque to 80 - 90 Nm. Lock with the Securing Screw (27).
- 14) Refit the Handwheel (3) and secure with the Bolt (1) and Washer (2).

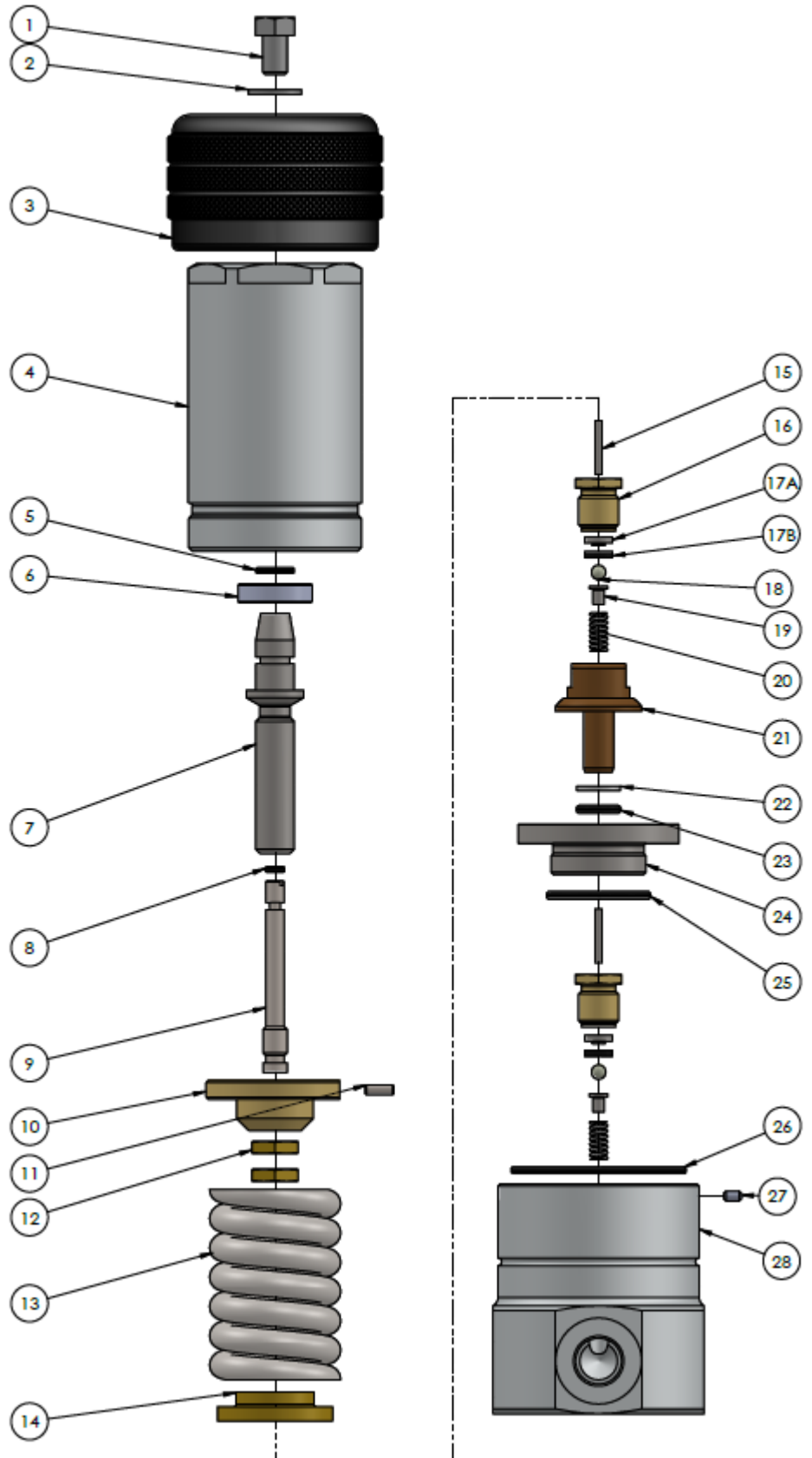
NOTE: Ensure lubricants are compatible with the system medium.

SETTING OF THE RELIVING VALVE

If your regulator has a self-venting function, then post service the relieving valve will need to be reset to ensure optimum performance.

- 1) With the handwheel wound fully counter clockwise apply pressure to the inlet. Anywhere between 500 – 1,500 Psi will be acceptable.
- 2) No leak should be detected from the outlet port. If bubble tight reduce the inlet pressure down to zero.
- 3) Fit a suitable pressure gauge to the outlet port.
- 4) Apply between 500 – 1,500 Psi to the inlet port, then slowly turn the regulator handwheel clockwise. You should see the outlet pressure rise.
- 5) Remove Screw (1) and Washer (2).
- 6) Use a flat head screw driver with a maximum blade width of 4.75 mm and screw the Adjuster (9) in clockwise until you feel some resistance. Carefully continue to wind in the Adjuster until gas begins to vent from the regulator.
- 7) Once you have determined the point of vent back the Adjuster off 0.5 turn.
- 8) Replace the Screw (1) and Washer (2)
- 9) Wind the handwheel counter clockwise to reduce the outlet pressure.
- 10) To test the venting function increase and decrease the outlet pressure three times.

A11 & A12 EXPLODED VIEW



RECOMMENDED SPARES KIT

A11 & A12 STANDARD PRESSURE REDUCING VALVE

ITEM	DESCRIPTION	QUANTITY
23	O-Ring	1
25	O-Ring	1
22	Anti-Extrusion Ring	1
17A	Valve Seat Support	2
17B	Valve Seat	2
15	Valve Pin	2
18	Ball	2
19	Washer	2
20	Spring	2