

Installation Operation and Maintenance Manual

H100 & H101

DOME LOADED BACK PRESSURE MAINTAINING VALVE

THIS DOCUMENT is only applicable to the service of H100 and H101 valves only. General instructions regarding installation, operation and maintenance for all types of dome loaded back pressure maintaining valves (BPMV) must be read prior.

TYPE H100 & H101 OPERATING INSTRUCTIONS

H100: INTERNALLY LOADED
H101: EXTERNALLY LOADED

OPERATING INSTRUCTIONS.

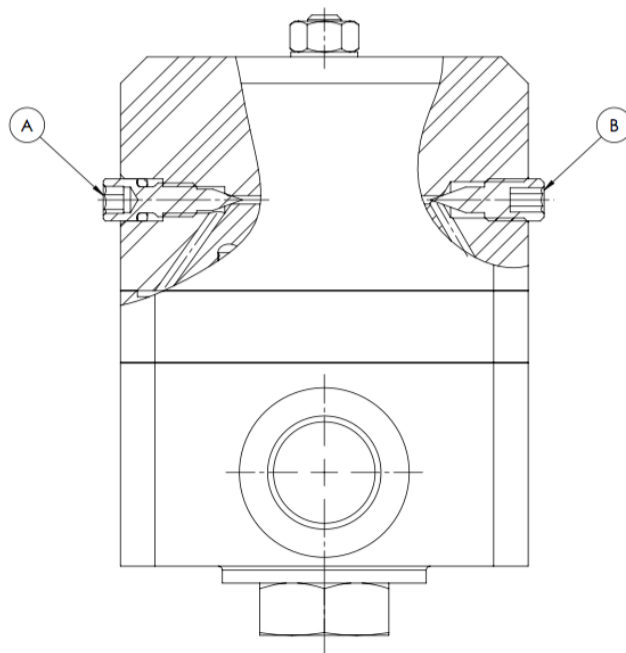
To aid valve setting it is advisable to have a pressure gauge available downstream of the BPMV, this will enable accurate indication of BPMV set pressure and precise and positive adjustment.

Internal Charging of Dome – H100 Valves only.

1. Ensure needle valves (A) and (B) are firmly closed.
2. Check the dome is de-pressurised by opening the dome needle valve (B) one full turn and then close firmly when no gas is escaping from the needle valve.
3. Ensure the outlet port is open to atmosphere.
4. Apply pressure to the inlet port. The valve should open, and flow should occur.
5. Shut off pressure to the inlet and open needle valve (A) one full turn.
6. Apply the desired set pressure to the inlet. The valve should not pass any flow.
7. Once the desired set pressure has been achieved close needle valve (A). Pressure is now locked in the dome and the valve is now set.
8. Shut off pressure to the inlet.
9. To test the valve, slowly increase the inlet pressure, when the set pressure is met the valve should open and pass flow. You may want to fit a pressure gauge to the outlet to a more positive indication of set pressure.

ADJUSTMENTS.

If the set pressure is too high or too low the valve must be reset. First release pressure from the dome by gently cracking open vent needle valve (A), then follow the above steps to recharge the dome.

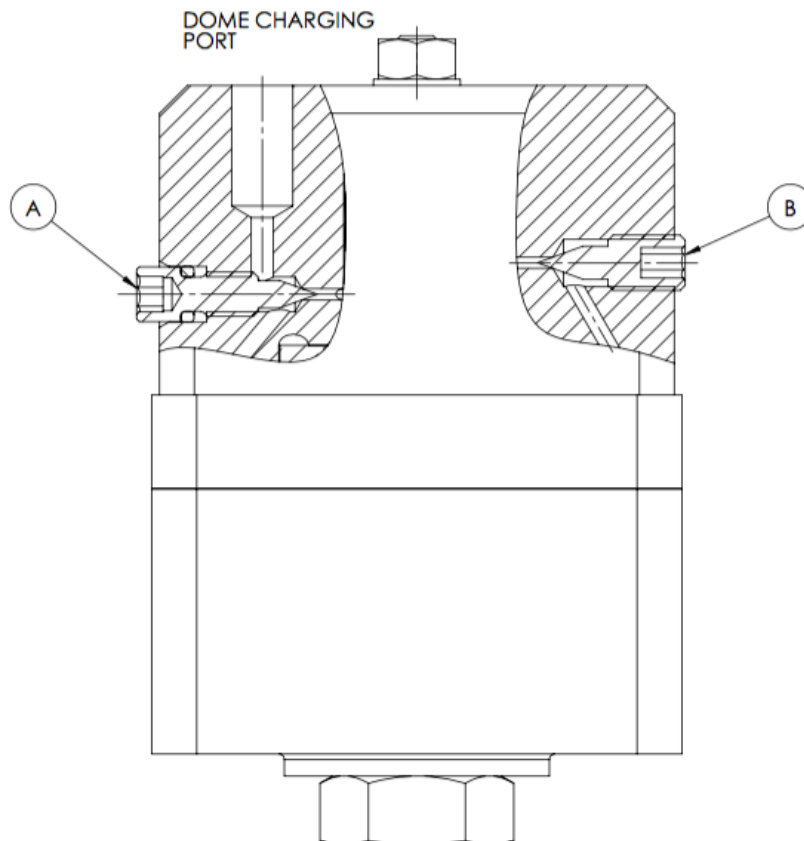


External Charging of Dome – H101 Valves only.

1. Ensure needle valves (A) and (B) are firmly closed.
2. Check the dome is de-pressurised by opening the dome needle valve (B) one full turn and then close firmly when no gas is escaping from the needle valve.
3. Ensure the outlet port is open to atmosphere.
4. Apply pressure to the inlet port. The valve should open, and flow should occur.
5. Shut off pressure to the inlet and open needle valve (A) one full turn.
6. Apply the desired set pressure to the dome charging port.
7. Once the desired set pressure has been achieved close needle valve (A). Pressure is now locked in the dome and the valve is now set.
8. To test the valve, slowly increase the inlet pressure, when the set pressure is met the valve should open and pass flow. You may want to fit a pressure gauge to the outlet to a more positive indication of set pressure.

ADJUSTMENTS.

If the set pressure is too high or too low the valve must be reset. First release pressure from the dome by gently cracking open vent needle valve (A), then follow the above steps to recharge the dome.



DOME LOADED PRESSURE REDUCING VALVE
SERVICE INSTRUCTIONS.

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

Before undertaking any servicing of the valve, ensure the valve is completely isolated from the supply and outlet pressures, any pressure in the valve has been removed and the dome has been de-pressurised by unscrewing all needle valves one full turn.

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

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

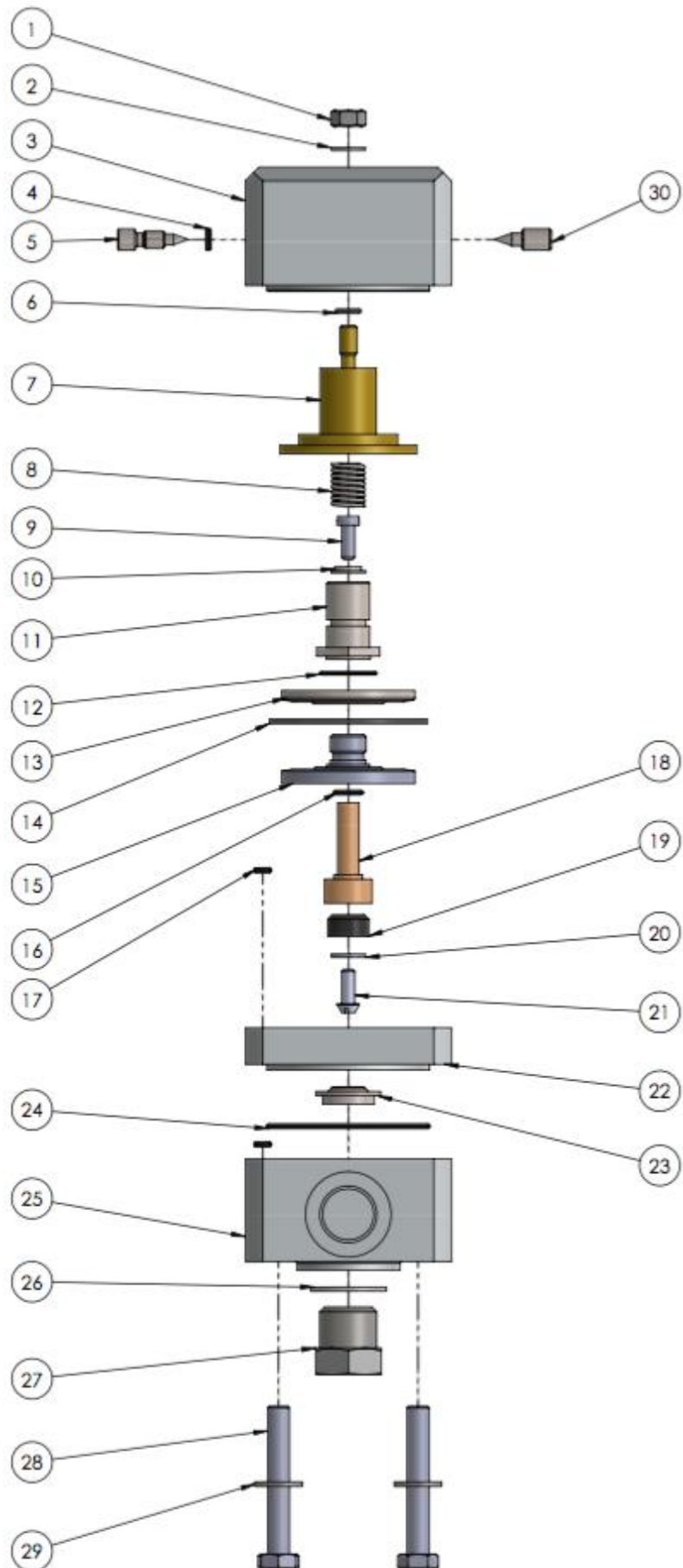
BEFORE SERVICE, REFER TO THE DOME LOADED BACK PRESSURE MAINTAINING VALVES GENERAL INSTRUCTIONS

H100 & H101 SERVICING

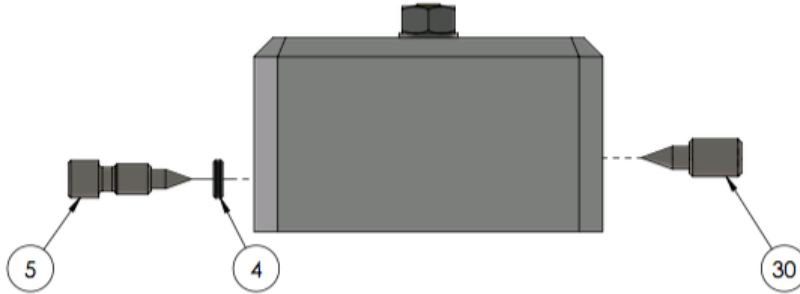
1. Unscrew the dome securing bolts (28) complete with Washers (29) and separate the Dome (3), Sandwich Plate (22) and Body (25).
2. Remove Sandwich Plate (22) and Body O-Rings (17 & 24). Item 17 applies to the H100 only.
3. Pull the Diaphragm and Plunger assembly (9 – 16 and 18 – 21) and Spring (8) out from the Plunger Guide (7).
4. Unscrew the retaining nut (1) and remove the Bonded Seal (2). Remove the Plunger Guide (7) and check for wear. Replace the O-Ring (6) and Bonded Seal (2) and re-assemble Plunger Guide (7) into the Dome (3). Torque Nut (1) to 5 – 7 Nm.
5. Unscrew Body Plug (27) and remove Bonded Seal (26). Replace the Bonded Seal and re-assemble. Torque Body Plug (27) to 45 – 50 Nm.
6. Unscrew the Valve Plunger Retaining Screw (9) and remove the Plunger assembly (16 & 18-21).
7. Unscrew the Valve Pad retaining screw (21) and remove the Washer and Valve Pad (19,20).
8. Check all components for damage or wear. Replace if necessary.
9. Replace Valve Pad (19) and O-Ring (16). Secure Valve Pad with screw and washer (20,21). Do not over tighten to distort the Valve Pad.
10. Unscrew the Lower Diaphragm Plate (15) from Guide (11) and remove the Diaphragm (14) and O-Ring (12).
11. Check all components for damage or wear. Replace if necessary.
12. Fit the new Diaphragm (14) and securely clamp between the Diaphragm Plates (13,15). Tighten items 11 & 15 to 10 – 12 Nm. Replace O-Ring (12).
13. Fit the Plunger (18) and retain with the Retaining Screw (9). Torque to 5 – 7 Nm.
14. Refit the Diaphragm / Plunger assembly (9 – 16 and 18 – 12) and Spring (8) ensuring the plunger slides freely in the Plunger Guide (7). A light application of a suitable lubricant on the Plunger is advisable.
15. Replace the Body and Sandwich Plate O-Rings (17). Applies to the H100 only.
16. Replace O-Ring (24) and re-assemble the Dome (3), Sandwich Plate (22) and Body (25), and secure with the bolts and washers. Tighten bolts to 15 - 17 Nm.
17. Remove the charging Needle Valve (5) and replace the O-Ring (4), refit the Needle Valve.
18. Check condition of Dome Vent Needle.
19. The Valve is ready for test and re-installation.

NOTE: Ensure lubricants are compatible with the system medium.

H100 EXPLODED VIEW



H101 EXPLODED VIEW ADDITIONAL DETAIL



RECOMMENDED SPARES KIT

H100 STANDARD VALVE

ITEM	DESCRIPTION	QUANTITY
19	Valve Pad	1
8	Valve Spring	1
14	Diaphragm	1
17	O-Ring	2
4	O-Ring	1
6	O-Ring	1
12	O-Ring	1
16	O-Ring	1
24	O-Ring	1
2	Bonded Seal	1
26	Bonded Seal	1

H101 STANDARD VALVE

ITEM	DESCRIPTION	QUANTITY
19	Valve Pad	1
8	Valve Spring	1
14	Diaphragm	1
4	O-Ring	1
6	O-Ring	1
12	O-Ring	1
16	O-Ring	1
24	O-Ring	1
2	Bonded Seal	1
26	Bonded Seal	1