

Installation Operation and Maintenance Manual

H120 & H121

DOME LOADED BACK PRESSURE MAINTAINING VALVE

THIS DOCUMENT is only applicable to the service of H120 and H121 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 H120 & H121 OPERATING INSTRUCTIONS

H120: INTERNALLY LOADED
H121: EXTERNALLY LOADED

OPERATING INSTRUCTIONS.

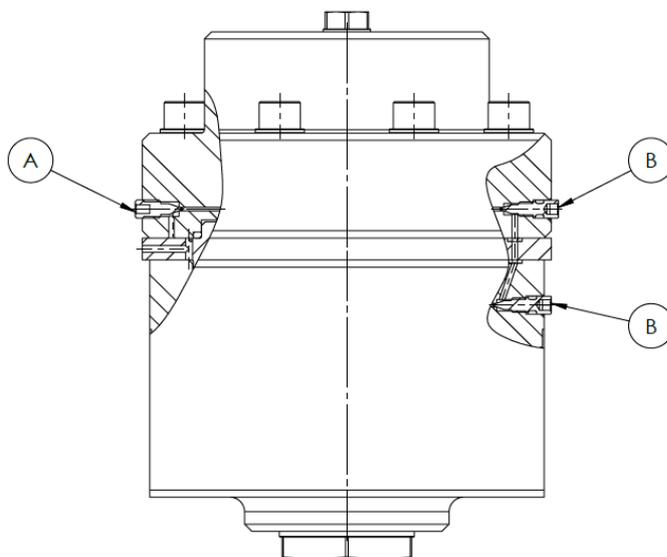
To aid valve setting it is advisable to have a pressure gauge available downstream of the BPMV, this will enable accurate indication of BPMV set pressure and precise and positive adjustment.

Internal Charging of Dome – H120 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 (A) 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 both needle valves (B) 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 both needle valves (B). 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.

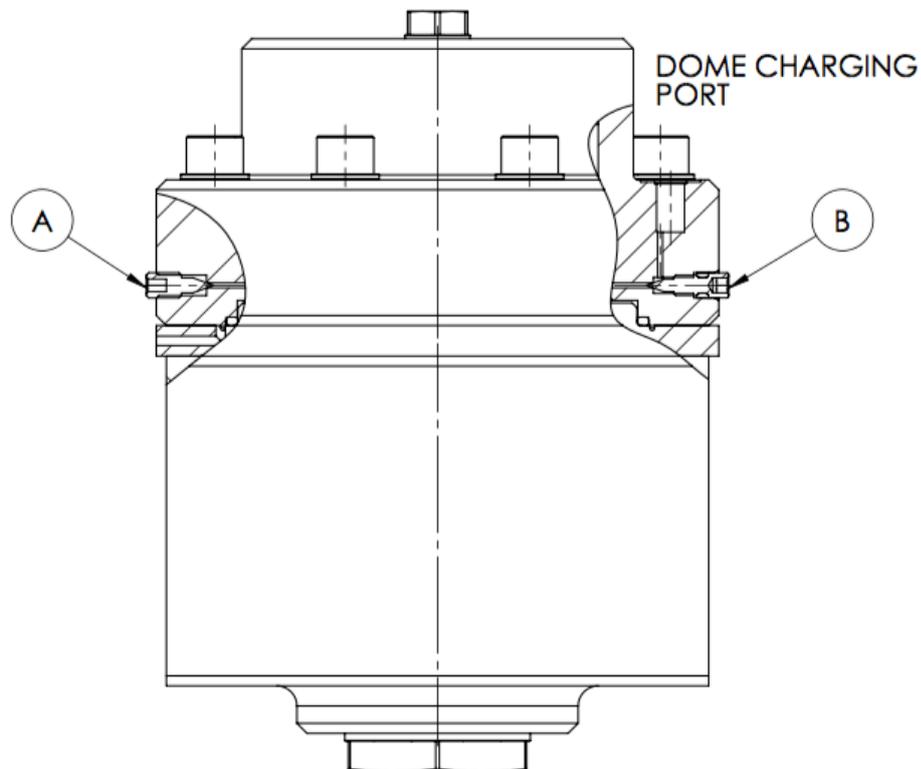


External Charging of Dome – H121 Valves only.

1. Ensure needle valves (A) and (B) are firmly closed.
2. Check the dome is de-pressurised by opening the dome needle valve (A) 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 (B) 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 (B). 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.

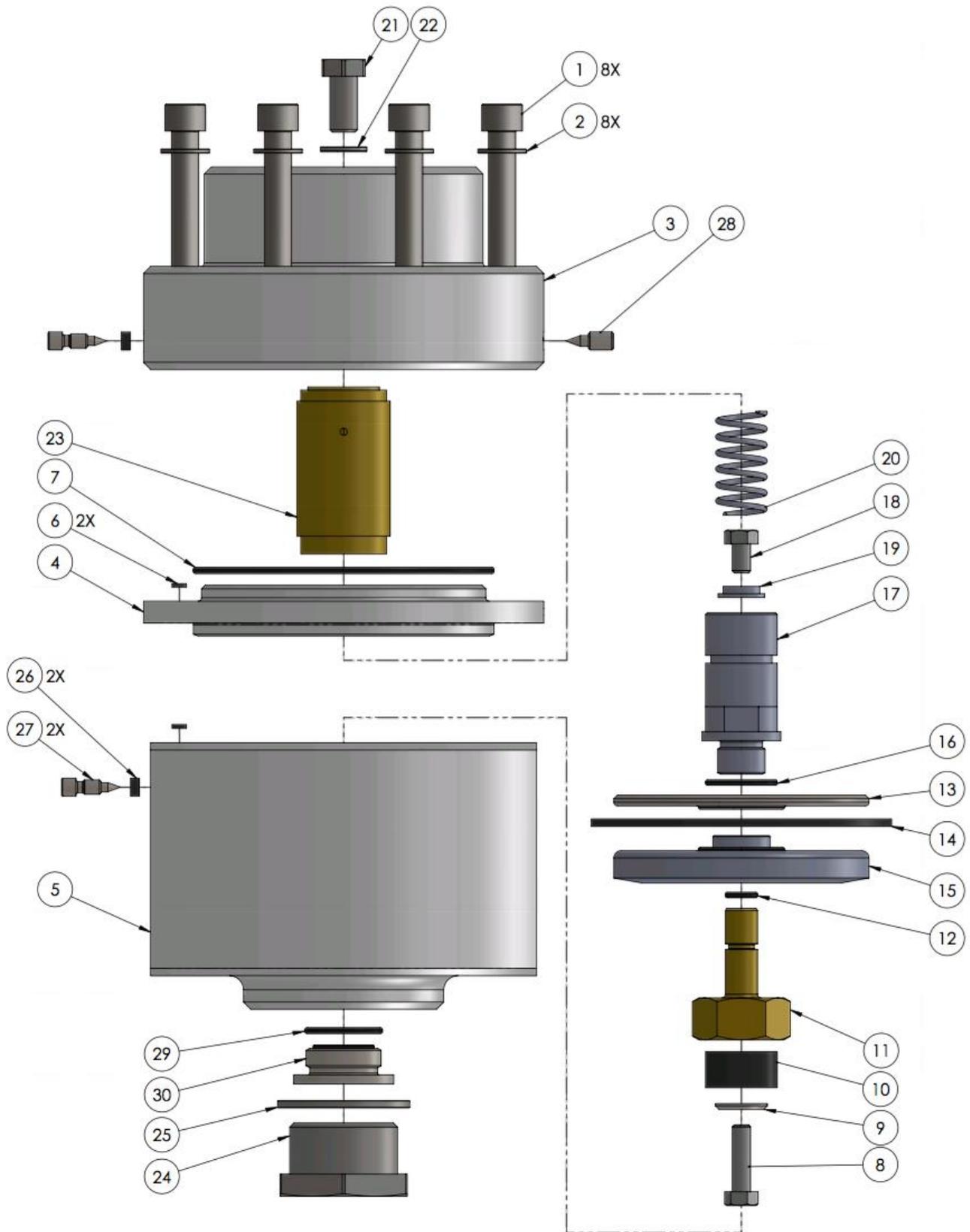
BEFORE SERVICE, REFER TO THE DOME LOADED BACK PRESSURE MAINTAINING VALVES GENERAL INSTRUCTIONS

H120 & H121 SERVICING

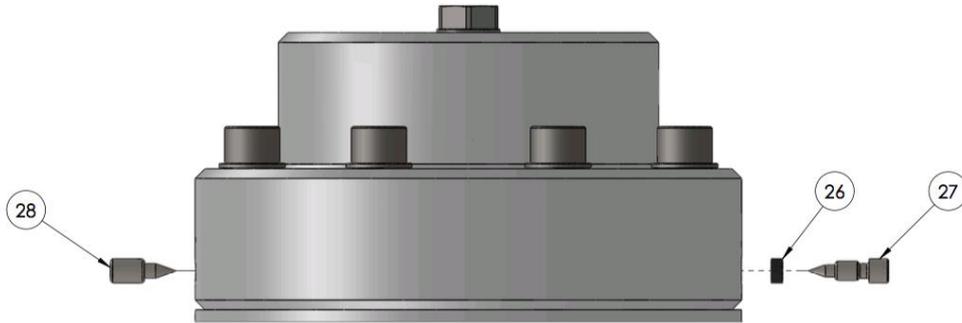
1. Unscrew the dome securing bolts (1) complete with washers (2) and separate the Dome, Sandwich Plate and Body (3,4 & 5).
2. Remove Sandwich Plate and Body 'O' rings (6 & 7). (6) applies to H120 only.
3. Lift out the Diaphragm and Plunger assembly (8-19) out from the body. Remove the Spring (20).
4. Unscrew the retaining Screw (21) and remove the Bonded Seal (22) and Plunger assembly Guide (23). Replace Bonded Seal and re-assemble. Torque Screw (21) to 6 – 8 Nm.
5. Unscrew Body Plug (24) and remove Seal (25).
6. Unscrew Valve Seat (30) and remove 'O' ring (29). Check Valve Seat for Damage, replace if damaged, Replace 'O' ring (29) and re-assemble. Torque Valve seat (30) to 50 – 55 Nm
7. Fit new Seal (25) onto Body Plug (24) and assemble into Valve Body (5). Torque to 70 – 75 Nm
8. Unscrew the Valve Plunger Retaining Screw (18) and remove the Spring Locator (19) and Plunger assembly (8-12).
9. Unscrew the Lower Diaphragm Plate (15) from the Valve Guide (17) and remove the Diaphragm (14) and 'O' ring (16).
10. Unscrew the Valve Pad retaining screw (8) and remove the Washer (9) and Valve Pad (10) Remove 'O' ring (12)
11. Check all components for damage or wear. Replace if necessary.
12. Fit new Valve Pad (10) and secure with screw (8) and washer (9). Do not over tighten to distort the Valve Pad. Fit new 'O' ring (12) to Plunger (11).
13. Fit the new Diaphragm (14) and securely clamp between the Diaphragm Plates (13,15). Tighten item 15 onto 17 to 25 – 30 Nm. Fit new 'O' ring (16).
14. Replace the Plunger assembly (8-12) and retain with the Retaining Screw (18) and Spring Locator (19). Torque item 18 to 5 – 7 Nm.
15. Refit the Diaphragm / Plunger assembly ensuring the Plunger (11) slides freely in the Guide (23) and the Spring (20) is fitted. A light application of a suitable lubricant on the Plunger is advisable.
16. Replace the Body and Sandwich Plate 'O' rings (6,7). (6) Applies to H120 only.
17. Re-assemble the Dome, Sandwich Plate and Body and secure with the bolts (1) and washers (2). Tighten bolts to 50 - 55 Nm.
18. Remove the charging Needle Valves (27) and replace the 'O' rings (26), refit the Needle Valves or new replacement.
19. Check the condition of Dome Vent Needle Valve (28) or replace with new Needle Valve.
20. The Valve is ready for test and re-installation.

NOTE: Ensure lubricants are compatible with the system medium.

H120 EXPLODED VIEW



H121 EXPLODED VIEW ADDITIONAL DETAIL



RECOMMENDED SPARES KIT

H120 STANDARD VALVE

ITEM	DESCRIPTION	QUANTITY
6	O-Ring	2
7	O-Ring	1
8	Bolt	1
9	Washer	1
10	Valve Pad	1
12	O-Ring	1
14	Diaphragm	1
16	O-Ring	1
22	Bonded Seal	1
25	Bonded Seal	1
26	O-Ring	2
27	Needle Valve	2
29	O-Ring	1

H121 STANDARD VALVE

ITEM	DESCRIPTION	QUANTITY
7	O-Ring	1
8	Bolt	1
9	Washer	1
10	Valve Pad	1
12	O-Ring	1
14	Diaphragm	1
16	O-Ring	1
22	Bonded Seal	1
25	Bonded Seal	1
26	O-Ring	1
27	Needle Valve	1
29	O-Ring	1