Repair Instructions for Dymension® Manifold Valves using Direct Bottom Mount Valves

REPAIR PROCEDURE – DISASSEMBLY

⚠ **CAUTION: Make certain no pressure is applied to the manifold assembly, and drain any liquid entrapped within the manifold.**

1. The top cap (P1) retains spring pressure, approximately 7 kg (15 lb), for the normally closed valve. To remove original valve assembly, compress top cap (P1) onto valve manifold body and remove the four screws and lock washers. Relieve pressure from the top cap (P1). The top cap will rise until the compressive force of the spring is relieved (approximately 6.35 mm) [¼"].
2. Remove the top cap (P1), spring (P2) and the poppet assembly (P3) from the manifold assembly (Figure 1).
3. Clean the sealing detail within the valve manifold body by spraying with isopropyl alcohol (S1) and drying with clean dry air or nitrogen.

⚠ **CAUTION: Do not contact the manifold valve body seal detail with a brush, wipe, etc. as it may cause damage (see Figure 2).**

4. Inspect the poppet seat for signs of damage and/or wear. Do not touch the poppet seat. Magnification may be required. If damage is evident, (Figure 2) replace the entire manifold assembly.
5. Once repair is deemed feasible, discard the old poppet assembly (P3), spring (P2) and top cap (P1). Keep the mounting screws and lock washers for mounting the new valve.

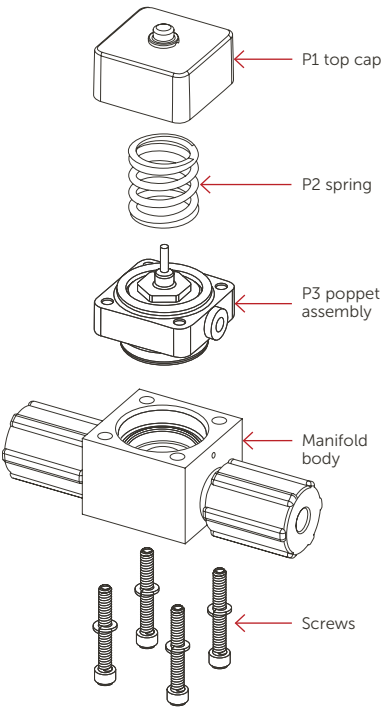


Figure 1. Manifold assembly.

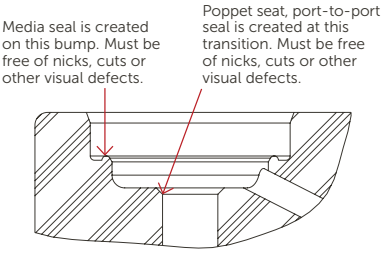


Figure 2. Seal detail.

REPAIR PROCEDURE – ASSEMBLY

1. Remove the top cap (P1) from the replacement valve kit.
2. Discard vinyl cap covering new poppet assembly (P3).
3. Install the new poppet assembly (P3) into the manifold body with the indicator facing up and the pilot port in the location desired.

   NOTE: If the old assembly has a fitting screwed into it and can be reused, it may be beneficial to install it into the new subassembly before it is installed into the manifold body.

4. Place the new spring (P2) over the red indicator on the poppet assembly (P3). Be careful to insure spring is centered over the hex of the indicator stem.
5. Place the top cap (P1) over the spring (P2), making certain the indicator is aligned with the hole in the top cap (P1).
6. Align the holes in the black diaphragm with the holes in the poppet assembly (P3).
7. Thread by hand the four screws and lock washers (removed from the manifold during disassembly) through the manifold body and poppet assembly (P3), and into the black pneumatic diaphragm. Make certain not to tear the black pneumatic diaphragm while tightening.
8. Compress the spring (P2) and top cap (P1) so the black pneumatic diaphragm is sandwiched between the top cap (P1) and poppet assembly (P3). The black diaphragm must lie flat. An arbor press, C-clamp (S4) or hand force can be used to hold the top cap (P1) in place. Make sure if using an arbor press or a C-clamp (S4) not to press on the clear indicator cover located at the center of the cap.

   NOTE: Approximately 7 kg (15 lb) is required to compress the spring.

9. With clamping force applied, tighten the four screws with lock washers in a diagonal pattern using a 2.77 mm (7⁄64") hex driver (S5) until hand tight.
10. Torque the four screws in a diagonal pattern to 0.5 N•m (64 in•oz) using a torque wrench (S2) and a 2.77 mm (7⁄64") hex drive bit (S3).
11. Remove the clamping force from the valve assembly.
12. Assembly is now complete. See testing procedure.

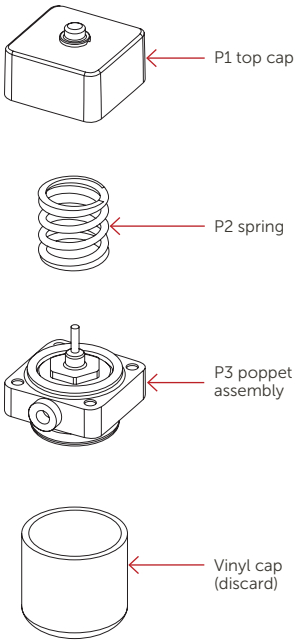


Figure 3. Replacement valve kit.

TESTING

The manifold must be tested in the following ways:

ACTUATOR LEAKAGE

Apply 483 kPa (70 psig) air pilot pressure and actuate the valve a minimum of five times. Monitor for audible air leakage at the base of the clear indicator cover located in the top center of the cap (P1), around the black diaphragm of the poppet assembly (P3), out the leak detection hole in the valve manifold body and around the four screws. No audible air leakage should be evident. Verify that the valve actuates up and down when actuator pressure is reduced to 345 kPa (50 psig) by watching the red indicator rise and fall as the valve is actuated open and closed.

INLET-TO-OUTLET LEAKAGE

Apply 552 kPa (80 psig) air pressure to the manifold inlet. No leakage at the outlet should be seen when the outlet port is submerged in water (best to use small tube connected to outlet port if possible).

EXTERNAL MEDIA LEAKAGE

Apply 552 kPa (80 psig) air pressure to the manifold outlet and inlet. Apply a soap and water solution to the manifold body around the valve assembly. No bubbles are to be present.

Repair is complete.

ORDERING INFORMATION

Repair Parts Kit: part number SG4-2C-DMB-RKIT

Item	Description	Quantity
P1	Top cap	1
P2	Spring	1
P3	Poppet assembly	1

Customer supplied items

Item	Description
S1	Isopropyl alcohol
S2	Torque wrench (0.7 N•m [100 in•oz])
S3	2.77 mm (7⁄64") hex drive bit for the torque wrench
S4	C-clamp or arbor press
S5	2.77 mm (7⁄64") hex driver

FOR MORE INFORMATION

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