Dymension® SG Manifold Valves Using Direct Mount Manifold Technology

Repair instructions for 710 series manifolds

Manifold Assembly

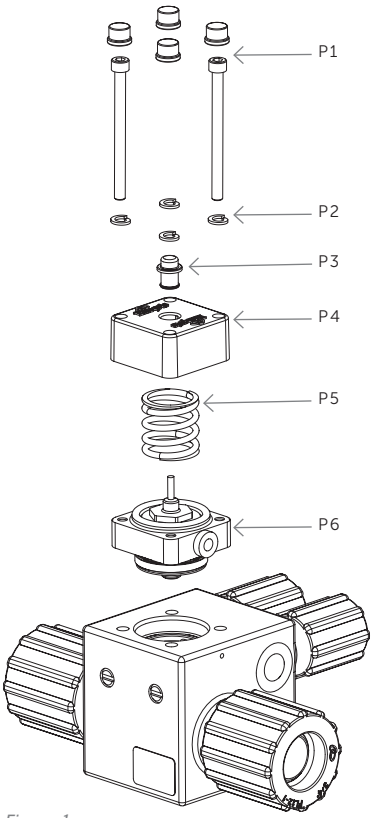


Figure 1.

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 (P4) retains spring pressure, approximately 7 kg (15 lbs), for the normally closed valve. To remove original valve assembly, push down on the top cap (P4) and remove the four screws (P1) and lock washers (P2) from the top. Relieve pressure from the top cap (P4). It will rise until the compressive force of the spring is relieved (approximately ¼").
2. Remove the top cap (P4), spring (P5) and the poppet assembly (P6) from the manifold (see Figure 1).
3. Clean the detail within the valve manifold body with isopropyl alcohol (S1) and clean dry air or nitrogen.

CAUTION! Do not contact it 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, replace the entire manifold assembly (see Figure 2).
5. Once repair is deemed feasible, discard the old poppet assembly (P6), spring (P5), top cap (P4), screws (P1) and washers (P2).

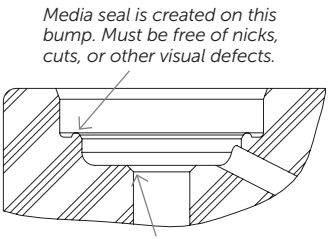


Figure 2.

REPAIR PROCEDURE – ASSEMBLY

1. Remove the top cap (P4) from the replacement valve module by removing the two hex nuts (P7) and threading out the two screws (P1). The screws must be turned out to prevent damage to the black pneumatic diaphragm. Discard the two nuts (P7). (See Figure 3).

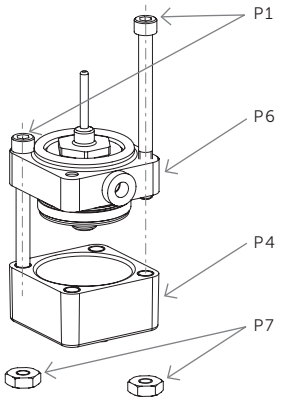


Figure 3.

2. Install the new poppet assembly (P6) 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.
3. Place the spring (P5) over the red indicator on the poppet assembly (P6) and top cap (P4) over the spring (P5), making certain the indicator is aligned with the hole in the top cap (P4).
4. Align the holes in the black diaphragm with the holes in the poppet assembly (P6).
5. Thread by hand the four screws (P1) with lock washers (P2) into the top cap (P4) and through the black pneumatic diaphragm on the poppet assembly (P6). Make certain not to tear the black pneumatic diaphragm while tightening.
6. Compress the spring (P5) and top cap (P4) so the black pneumatic diaphragm is sandwiched between the top cap and diaphragm retainer. The black diaphragm must lie flat. An arbor press, C-clamp (S4) or hand force can be used to hold the top cap (P4) in place. Make sure if using an arbor press or a C-clamp (S4) not to press on the red indicator.

   NOTE: Approximately 7 kg (15 lbs) is required to compress the spring.
7. With clamping force applied, tighten the four screws (P1) with lock washers (P2) in a diagonal pattern using a 7⁄64" hex wrench (S5) until hand tight.
8. Torque the four screws (P1) in a diagonal pattern to 0.5 N•m (64 in•oz) using a torque wrench (S2) and a 7⁄64" hex drive bit (S3). Remove the clamping force from the valve module.
9. Assembly is now complete. See testing procedure.

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 cap (located in the top center of the cover), around the black diaphragm, out the leak detection hole in the body and around the four screws. None must 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

For normally closed valves, apply 552 kPa (80 psig) air pressure to the inlet. No leakage at the outlet should be seen when the outlet port is submerged in water. On normally open valves, apply 345 kPa (50 psig) pneumatic pressure to the pilot port and then apply 552 kPa (80 psig) pressure to the inlet. No leakage at the outlet should be seen when the outlet port is submerged in water.

External Media Leakage

Apply 552 kPa (80 psig) air pressure to the valve outlet and inlet and submerge the manifold assembly in water so the manifold body-to-valve module seal is submerged, or apply a soap and water solution to the manifold body and valve module seals areas. No bubbles are to be present.

Trim Red Indicator

1. With the valve in the closed position, trim the red indicator stem flush with the top cap (P4).
2. Install the indicator cover (P3) into the center hole on the top cap (P4) by pushing down on the center of the cover.
3. Repair is complete.

ORDERING INFORMATION

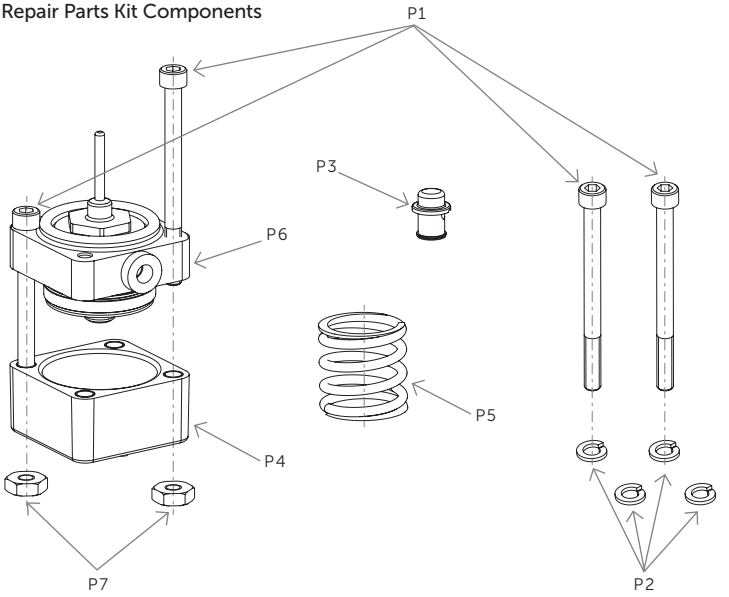
Repair Parts Kit
Part number SG4-710-NC-193

ITEM	DESCRIPTION	QUANTITY
P1	Screws	4
P2	Lock washers	4
P3	Indicator cover	1
P4	Top cap	1
P5	Spring	1
P6	Poppet assembly	1
P7	Nuts (to be discarded)	2

Customer supplied items

ITEM	DESCRIPTION
S1	Isopropyl alcohol
S2	Torque wrench 0.7 N•m (100 in•oz)
S3	7⁄64" hex drive bit for the torque wrench
S4	C-clamp or Arbor press
S5	7⁄64" hex wrench

Repair Parts Kit Components



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