

ezSPC Manifold Ball and Seat Installation Tool



WARNING: Relieve system fluid pressure before performing maintenance on the ezSPC manifold. Failure to observe this warning may cause personal injury or equipment damage.



CAUTION: Always perform maintenance with the flow selector knob (7) in *Bypass* mode. Performing maintenance with the flow selector knob in *Orifice* mode may damage the seals or orifice ball.

Description

The ezSPC manifold requires periodic maintenance when system performance has been impacted by worn seals or a damaged or blocked orifice ball. The available ball and seat installation tool is reversible and allows for complete installation of the orifice ball and the seats into the ezSPC manifold body.

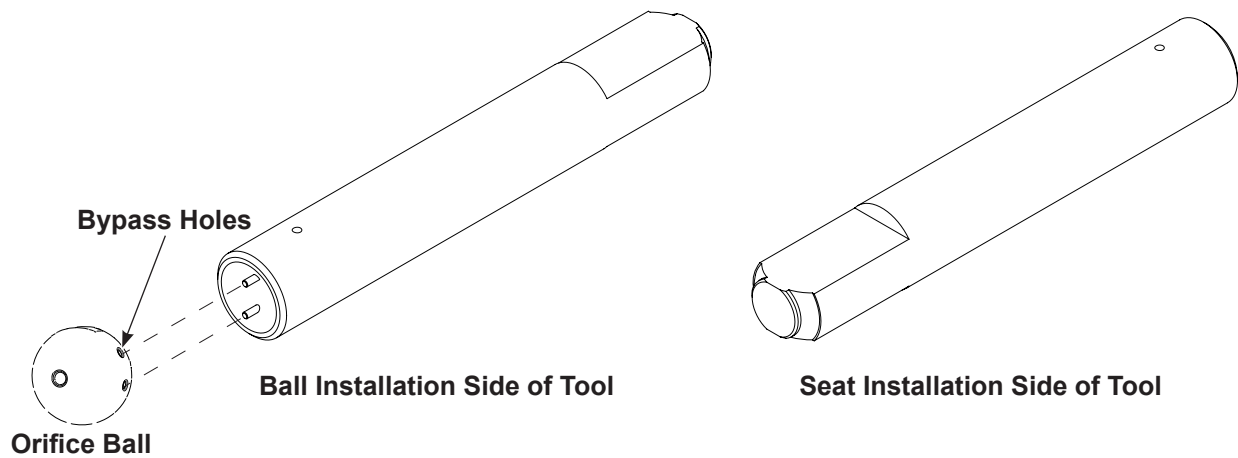


Figure 1 ezSPC Ball and Seat Installation Tool

Removing the Orifice Ball and Seats

See Figure 2.

1. With the flow control knob (1) in *Bypass* position, use a fixed or adjustable wrench to remove the retainer (2) from the bottom of the ezSPC manifold body.
2. If the orifice ball (3) does not fall from the ezSPC manifold (8), use a straight pick to remove it from the upper seat (7) within the ezSPC manifold body.
3. Using a 90 degree pick, carefully remove the upper seat (7) from the manifold body (8).
4. Remove the lower seat (4) from the retainer (2) using a 90 degree pick.
5. Remove the used upper O-ring (5) and lower O-ring (6) from the retainer (2).

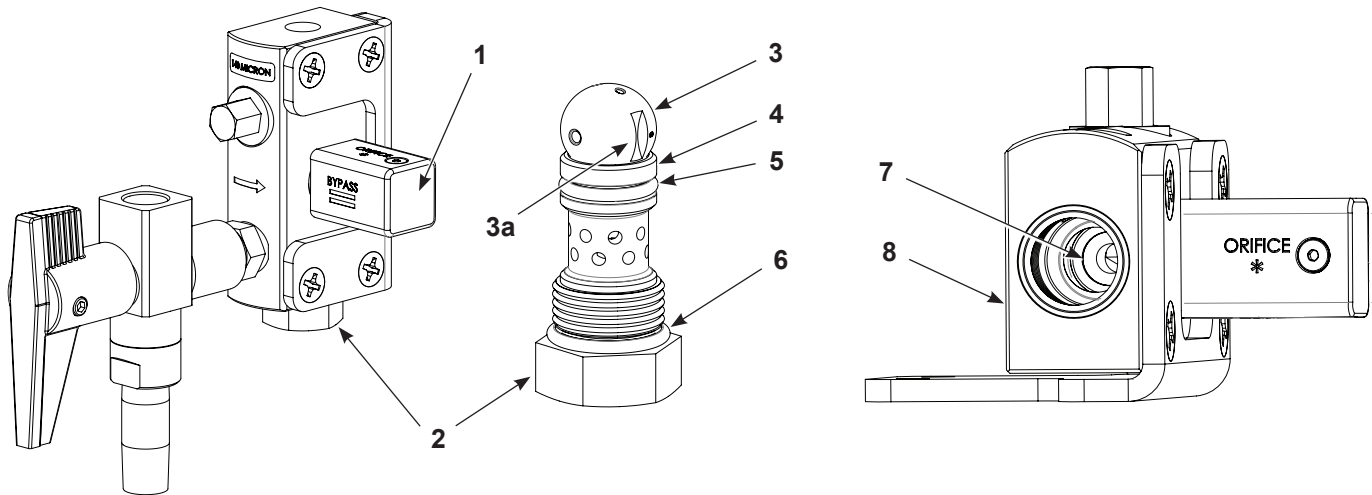


Figure 2 ezSPC Manifold Ball and Seat Installation

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|-----------------------|-----------------|------------------|
| 1. Flow selector knob | 3a. Notch | 6. Lower O-ring |
| 2. Retainer | 4. Lower seat | 7. Upper seat |
| 3. Orifice ball | 5. Upper O-ring | 8. Manifold body |

Installing the Orifice Ball and Seats

See Figure 1 and Figure 2.

1. Apply low temperature lithium grease to the replacement lower seat (4) and upper seat (7).
2. Place the concave side of a greased replacement seat onto the installation tool.
3. Using the installation tool, insert the upper seat (7) into the manifold body (8), ensuring the flat bottom side is seated properly in the manifold.
4. Turn the the flow selector knob (1) to the *Bypass* position to ready the knob's internal stem to engage with the machined notch (3a) on the orifice ball.
5. Align the bypass holes on the orifice ball (3) and the installation tool. Note, the installation tool ensures the machined notch (3a) on the orifice ball will install in a vertical position.

6. See Figure 3. Install the orifice ball (3) into the manifold body (8), ensuring the machined notch (3a) on the orifice ball fits onto the flow selector knob's stem (9) which protrudes into the inside of the manifold body (8).
7. Gently holding the orifice ball (3) in place with the installation tool, temporarily rotate the flow selector knob (1) into *Orifice* position to keep the orifice ball (3) in place. Remove the installation tool.



CAUTION: Performing maintenance with the flow selector knob (8) in *Orifice* position outside of these steps may damage the seats or orifice ball.

8. Install a new upper O-ring (5) and lower O-ring (6) onto the retainer (2).
9. Apply Parker® O-ring lubricant to both O-rings on the retainer (2).
10. Install a new greased lower seat (4) onto the retainer (2).



CAUTION: Do not overtighten the retainer (5). Overtorquing may result in damage to the seats and O-rings.

11. Begin threading the retainer (2) into the manifold body until it is finger tight. Once the retainer is finger tight, rotate the flow selector knob (1) into *Bypass* mode so that the slot in the ball and stem are vertical and won't restrict tightening. Using a fixed or adjustable wrench, continue tightening the retainer until the retainer is completely installed in the manifold body.

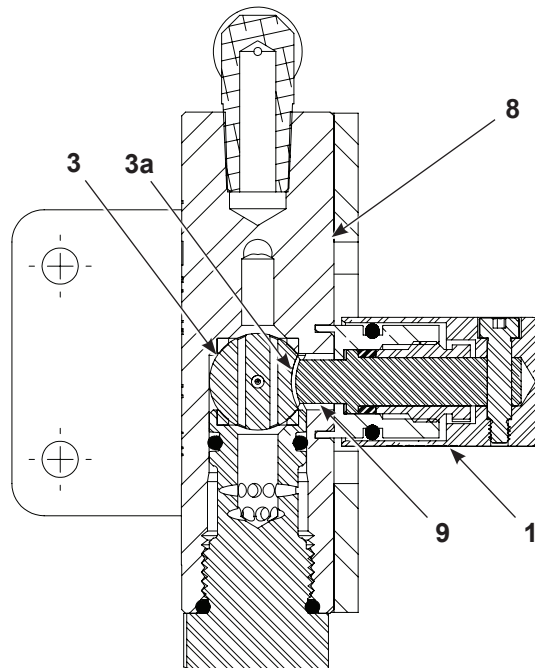


Figure 3 Cross-section View of Stem Seated in Notch

- | | | |
|-----------------------|------------------|---------|
| 1. Flow selector knob | 3a. Notch | 9. Stem |
| 3. Ball Orifice | 8. Manifold body | |

Parts

See Figure 4 and the following parts list.

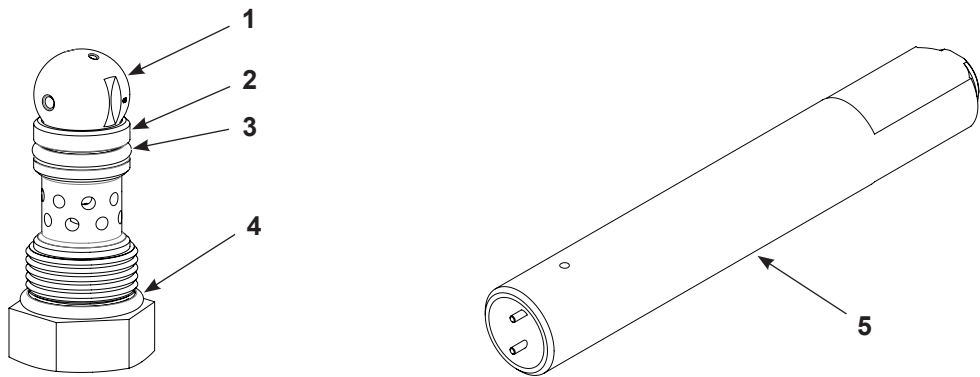


Figure 4 ezSPC Manifold Ball and Seat Kit

Item	Part	Description	Quantity	Note
—	1620638	SERVICE KIT, ball, bypass/orifice, 0.008 in.	—	A
1	-----	• BALL, bypass/orifice, ezSPC	1	
2	-----	• SEAT, 5150, ball	2	
3	941136	• O-RING,Viton™, .562 X .750, black	1	
4	-----	• O-RING,Viton™, .737 X .103 TK, black	1	
5	1620641	TOOL KIT, installation, ball/seat ,ezSPC	—	
—	-----	• TOOL, installation, ball/seat ,ezSPC	1	
NS	1620652	TOOL KIT, ball/seat removal	—	
NS	-----	• PICK KIT, 4 piece picks,180, 90, 35, hook	1	
NS	1612251	LUBRICANT, O-ring, Parker®	AR	
NS	900336	GREASE, lithium , low temperature	AR	

NOTE: A. 0.008 in. orifice is standard. Order part number 1620639 for the optional 0.010 in. orifice ball service kit.

AR: As Required

NS: Not Shown