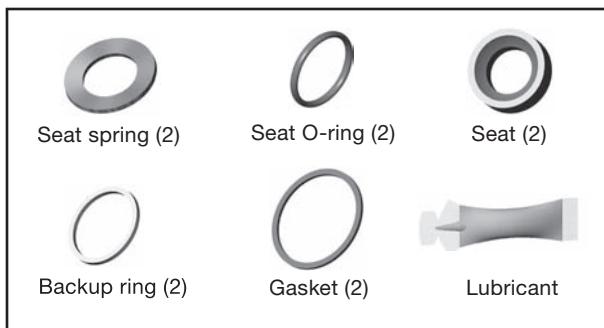


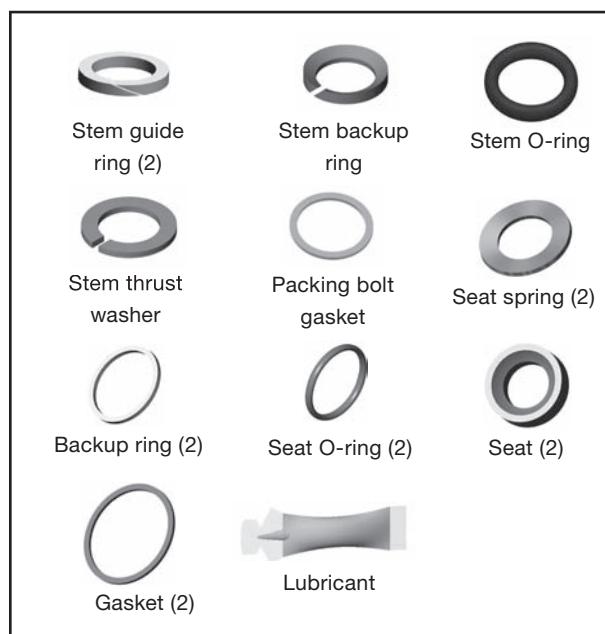


Swagelok® Alternative Fuel Service (AFS) Ball Valve Service Instructions

Seat Seal Kit



Stem and Seat Seal Kit



Tools Required

Optional: Small nonmetallic pick

Part	Tool	Size
Valve body	Bench vise	—
	Open-end wrench	1 1/2 in.
End screw	Open-end wrench	1 3/16 in. (30 mm)
	Crow's foot	
Packing bolt	Socket	13/16 in.
Packing bolt, end screw	Torque wrench	600 to 700 in·lb (68 to 79.1 N·m) (692 to 806 cm·kg)

⚠ WARNING

BEFORE REMOVING A VALVE FROM THE SYSTEM FOR SERVICE, YOU MUST

- depressurize system
- cycle the valve
- purge the valve.



Refer to the Fig. 1 while following these instructions. Complete the maintenance on one end screw assembly before proceeding to the other end screw assembly.

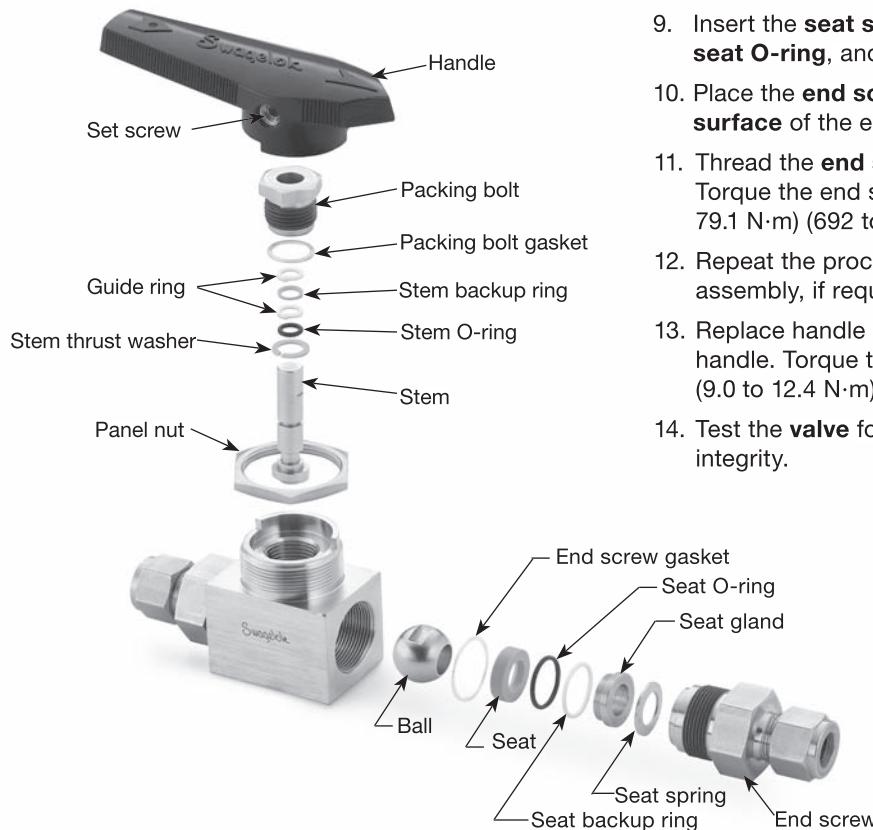
Disassembly

Seat Seal Disassembly

1. Remove the **valve** from the system. Actuate the **handle** to the OPEN position.
2. Place the **valve** in a vise or use a 1 1/2 in. wrench to hold the body.
3. Loosen and remove one **end screw assembly** from the body.
4. Remove the **seat**, **seat O-ring**, **seat backup ring**, **seat gland**, **seat spring**, and **end screw gasket** from the **end screw**. (The use of a small, non-metallic pick or similar tool is optional.) Discard all removed components except the **seat gland** and **end screw**. Proceed to **Reassembly** if not replacing stem seal components.

Stem Seal Disassembly

5. Actuate the **handle** to the CLOSED position.
6. Remove the **handle set screw** and **handle** and set aside.
7. Remove the **ball** and set aside.
8. Loosen and remove the **packing bolt** and **packing bolt gasket** from **valve body**. Remove the **packing bolt gasket** from the **packing bolt** and discard the **packing bolt gasket**.
9. Remove the stem assembly from the packing bolt.



10. Remove the **stem guide rings**, **stem backup ring**, **stem O-ring**, and **stem thrust washer** from stem and discard.

Reassembly

1. Clean all lubricant and contaminants from the **seat gland**, **end screw**, **packing bolt**, **stem**, and **ball**.

Seat Seal Reassembly

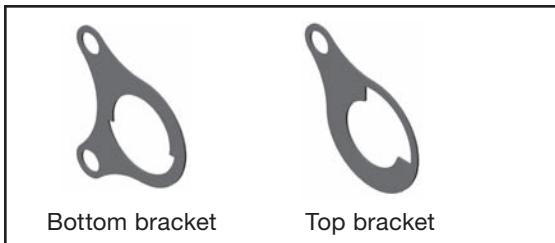
2. Apply a thin film of the provided **lubricant** to the **stem thrust washer**, **stem O-ring**, **stem backup ring**, and **stem guide rings**.
3. Place the **stem thrust washer**, **stem O-ring**, **stem backup ring**, and **stem guide rings** onto the **stem**.
Note: The chamfer on the stem backup ring should point up.
4. Insert the stem assembly into the **packing bolt**.
Note: Be careful not to pinch the stem assembly components when inserting into the packing bolt.
5. Place the **packing bolt gasket** on the **packing bolt**.
6. Place **packing bolt** in **valve body** and torque to 600 to 700 in.-lb (68 to 79.1 N·m) (692 to 806 cm·kg).
7. Lubricate the **ball** with the supplied **lubricant**. Place the ball into the body by aligning the ball slot with the stem tang.
Note: Verify the ball and stem are aligned correctly by actuating the valve.

Seat Seal Reassembly

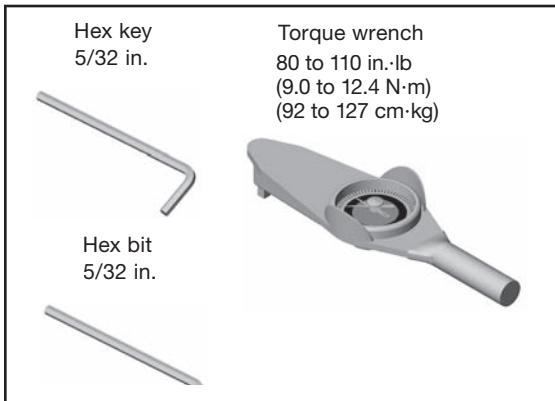
8. Apply a thin film of the provided **lubricant** to the **seat**, **seat O-ring**, **backup ring**, and **seat gland**.
9. Insert the **seat spring**, **seat gland**, **backup ring**, **seat O-ring**, and **seat** into the end screw as shown.
10. Place the **end screw gasket** on the **sealing surface** of the end screw.
11. Thread the **end screw assembly** into the body. Torque the end screw to 600 to 700 in.-lb (68 to 79.1 N·m) (692 to 806 cm·kg).
12. Repeat the procedure on the other end screw assembly, if required.
13. Replace handle and thread set screw into the handle. Torque the set screw to 80 to 110 in.-lbs (9.0 to 12.4 N·m) (92.1 to 123 cm·kg).
14. Test the **valve** for proper operation and leak-tight integrity.

Fig. 1

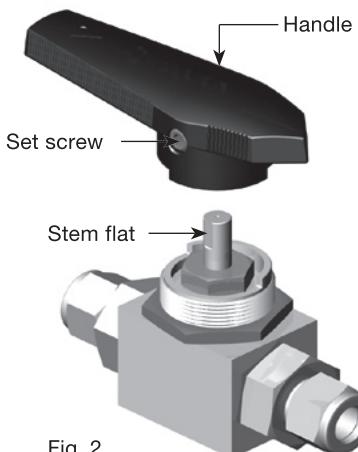
Locking Bracket Kit



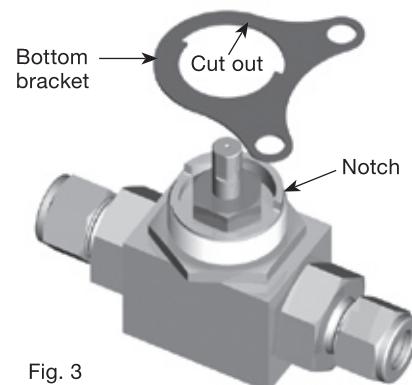
Tools Required



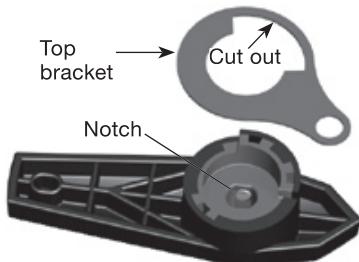
1. Loosen the **set screw** in the handle. Fig. 2
2. Remove the **handle**.



3. Place the **bottom bracket** on the valve aligning the **cut out** in the bracket with the **notch** on the valve. Fig. 3.

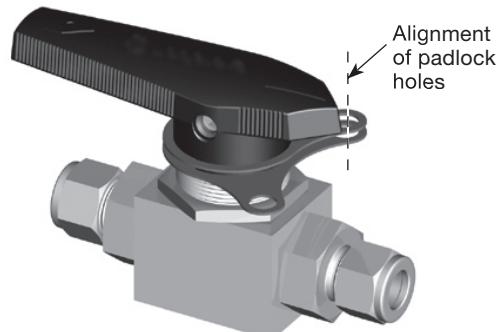


4. Turn the **handle upside down** and place the **top bracket** on the base of the handle aligning the **cut out** in the bracket with the **notch** on the handle. Fig. 4



5. Holding the **top bracket** against the **handle**, turn the handle **right side up** and place the **handle** on the valve stem, aligning the **stem flat** and **set screw**. Fig. 2.

*Note: The **padlock hole** in the top bracket must align with either one of the **padlock holes** in the bottom bracket for proper operation (Fig 5). If the holes do not align properly, remove the handle and repeat steps 3 through 5.*

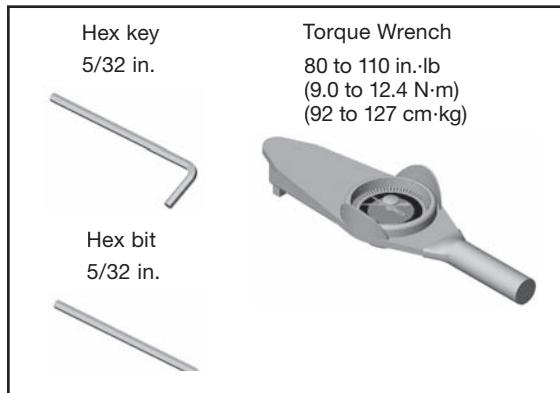


6. Thread the **set screw** into the **handle** and tighten to 80 to 110 in.-lb (9.0 to 12.4 N·m) (92 to 127 cm·kg).
7. Test the **valve** for proper operation.

Nylon Handle Kit



Tools Required



Refer to Fig. 6 during these instructions.

1. Loosen the **set screw** in the handle .
2. Remove the **handle**.
3. Place the new **handle** on the valve stem, aligning the **stem flat** and **set screw**.
4. Thread the **set screw** into the handle and tighten to 80 to 110 in.-lb (9.0 to 12.4 N·m) (92 to 127 cm·kg).
5. Test the **valve** for proper operation.

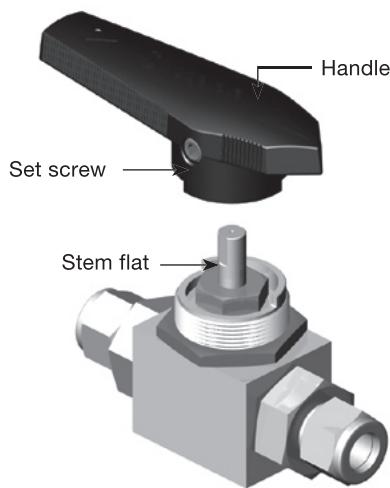


Fig. 6