

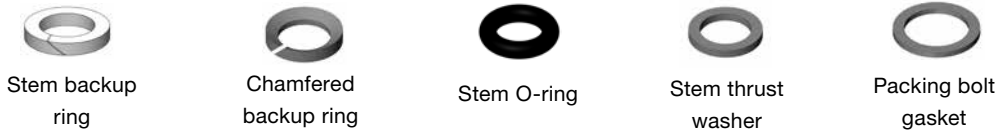
Swagelok® SK Series Ball Valve

Service Instructions

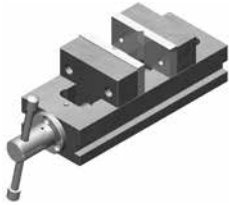






Seat Seal Kit Contents



Stem and Seat Seal Kit - includes Seat Seal Kit contents and the following:



Tools Required

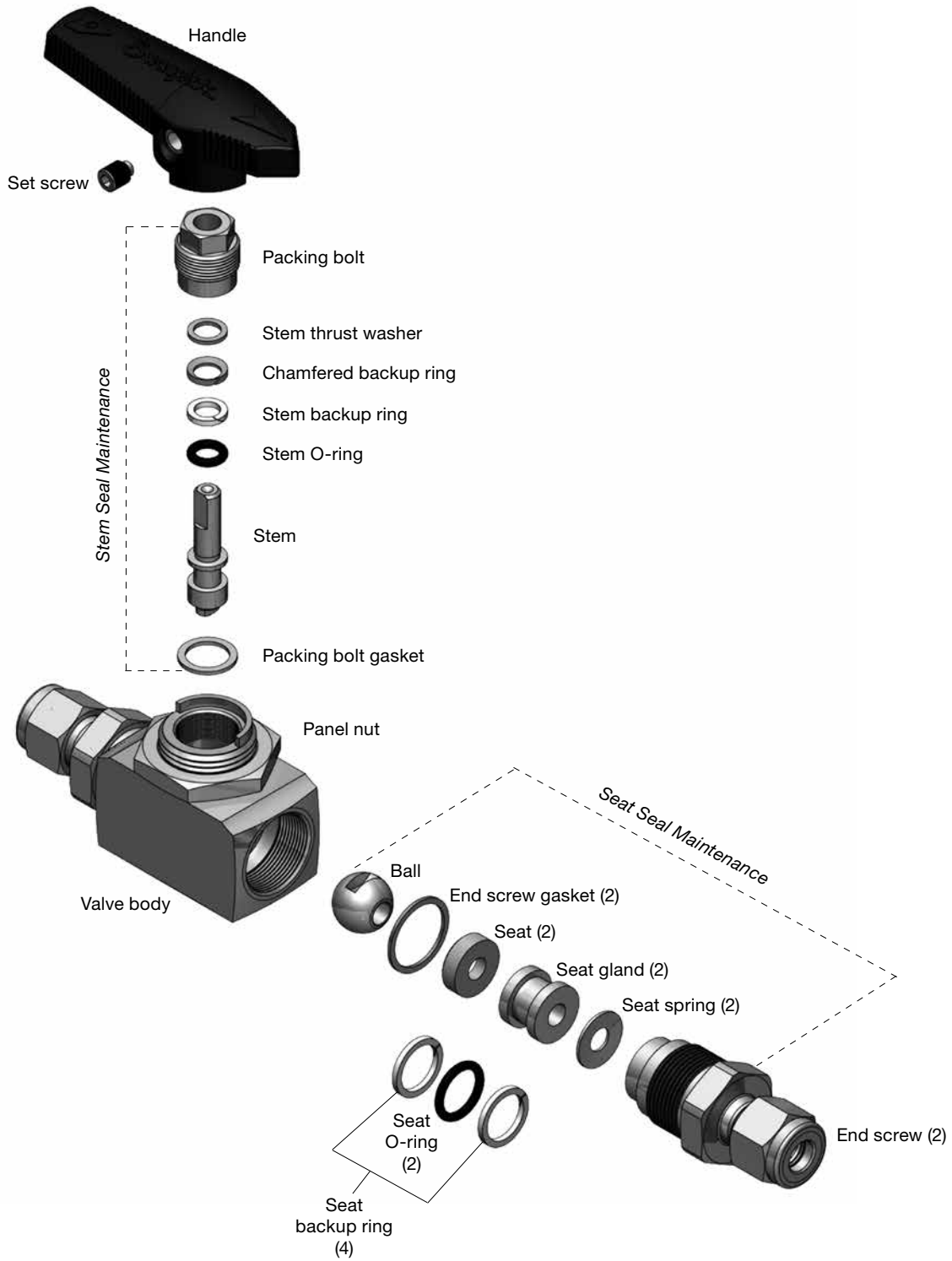
Part	Tool		Size
Valve body	Bench vise		—
	Open-end wrench		1 5/16 in.
Panel Nut	Open-end wrench		1 in.
End screw	Open-end wrench		3/4 in.
	Crow's foot		3/4 in.
	Socket		3/4 in.
Packing bolt	Socket		3/8 in.
Packing bolt, end screw	Torque wrench		Capable of 600 in.·lb (67.8 N·m, 691 cm·kg)
Gland	Pick		—
Handle	Hex Key		3/32 in.

Symbol



Discard

Exploded View



⚠ WARNING

Before removing a valve from the system for service, you must

- depressurize system
- cycle the valve

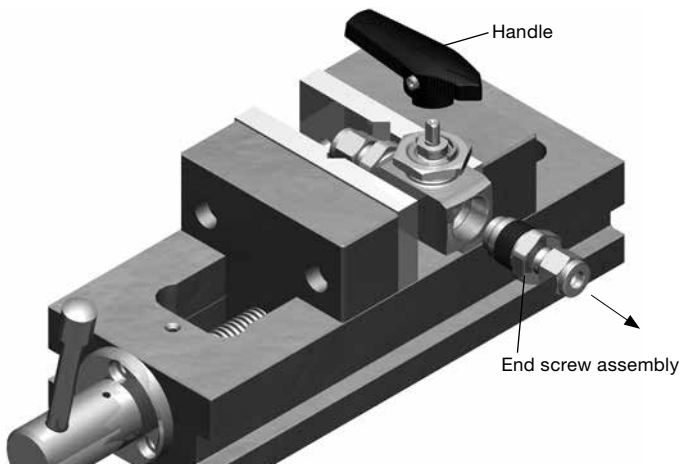
⚠ WARNING

Residual system media may be left in the valve.

Seat Seal Maintenance

Disassembly

1. Remove the valve from the system. Place the valve in the open position to retain ball.
2. Loosen the handle set screw using a hex key and remove the **handle**.
3. Place valve in a vise or 15/16 in. wrench.
4. Press down on the stem to retain the ball and remove one **end screw assembly**.

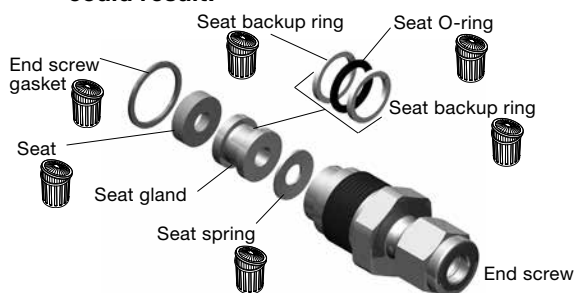


Complete the maintenance on one end screw assembly before proceeding to the other end screw assembly.

5. Use a pick or similar tool to remove parts from the **end screw** as shown. Set **seat gland** and **end screw** on a clean surface.

⚠ CAUTION

Do not to scratch the seat gland. Leakage could result.

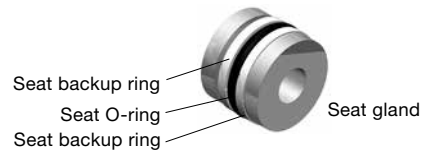


⚠ CAUTION

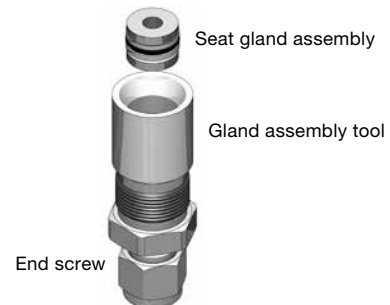
All parts must be kept clean and lint-free. Contamination of the parts will cause leakage.

Reassembly

6. Wipe seat gland and end screw clean with a lint-free cloth.
7. Insert seat spring into the end screw. Either orientation for the spring is acceptable.
8. Lubricate **seat O-ring**. Place **seat backup rings** and seat O-ring on **seat gland**.



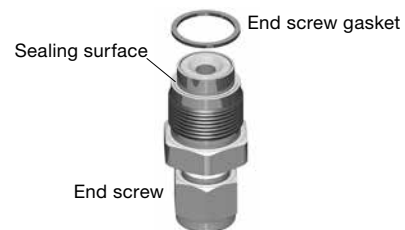
9. Place the **gland assembly tool** over the **end screw** and push the **seat gland assembly** into the end screw.



10. Lubricate the **top and bottom surfaces** of the seat and place in end screw, bottom surface first.

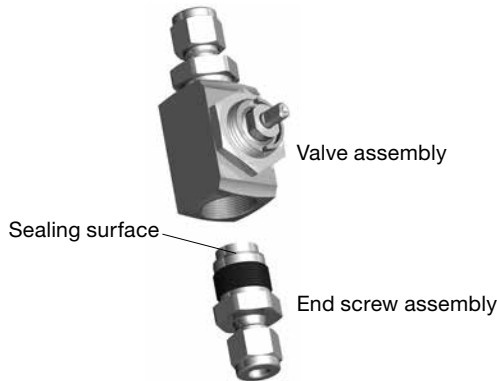


11. Place the **end screw gasket** onto the **sealing surface** of the **end screw**.



12. Push down on the stem to retain the ball with the valve in the open position.

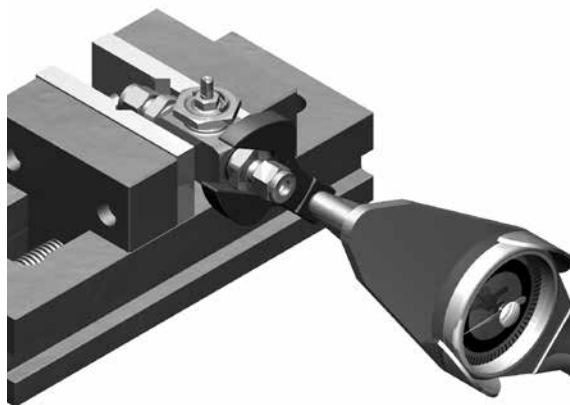
- Remove valve assembly from vise and hold with the open end facing downward.
- Ensure the end screw gasket is resting on the **sealing surface** of the end screw. For SC-11 cleaned end screws only, lube threads with lube provided. Orient the **end screw assembly** as shown and screw into the **valve assembly** until no threads are visible.



- Place the valve assembly into the vise. Torque the end screw to 300 to 350 in.·lb (33 .9 to 39.5 N·m, 345 to 403 cm·kg). For SC-11 cleaned end screw Torque the end screw to 500 to 550 in.·lb (56 .5 to 62.1 N·m, 576 to 633 cm·kg)

NOTICE

Ensure end screw gasket remains on sealing surface or damage to the gasket could result.



Note: If also performing stem seal maintenance, proceed to **Stem Seal Maintenance, Disassembly**.

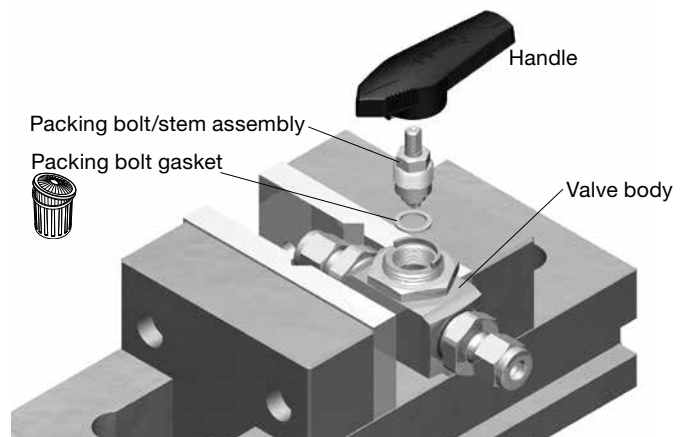
- Repeat steps 4 through 15 for the other end screw assembly.
- Place the handle on the valve stem, aligning the larger stem flat and set screw hole, with the set screw hole opposite the logo side of the valve. Tighten set screw with a hex key.
- Test the fully assembled valve for proper operation and leak-tight integrity.

Stem Seal Maintenance

Note: Whenever removing the valve from the system and not performing seat seal maintenance, secure the end screw using a 3/4 in. wrench when loosening the end fitting in order to preserve the end screw seal.

Disassembly

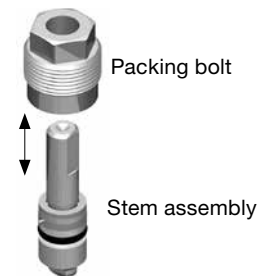
- Loosen the handle set screw using a hex key.
- Remove the **handle, packing bolt/stem assembly, and the packing bolt gasket** from the **valve body**.



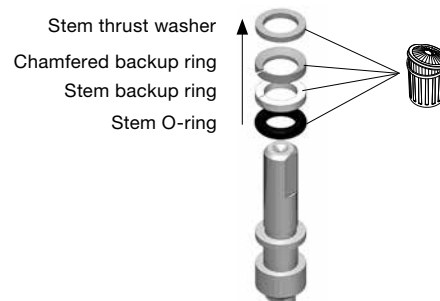
- Remove one end screw assembly and set on a clean surface.

Note: If also performing seat seal maintenance, remove the end screw not removed and replaced during **Seat Seal Maintenance**.

- Remove the **stem assembly** from the **packing bolt** and set on a clean surface.



- Remove parts shown using a pick or similar tool.



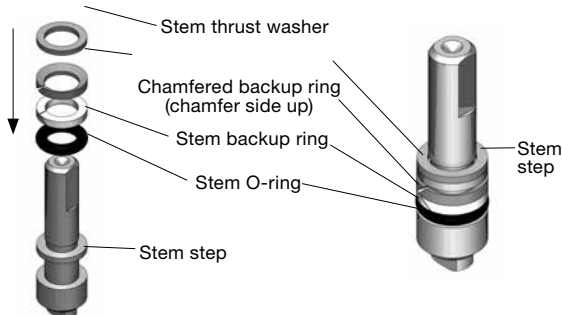
CAUTION

Do not to scratch the stem. Leakage could result.

Stem Seal Maintenance

Reassembly

- Wipe packing bolt and stem clean with a lint-free cloth.
- Apply a thin film of lubricant to the **stem thrust washer** and **stem O-ring**. Place parts on stem in order and orientation shown.

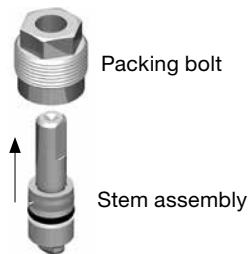


- Insert the **stem assembly** into the **packing bolt**.

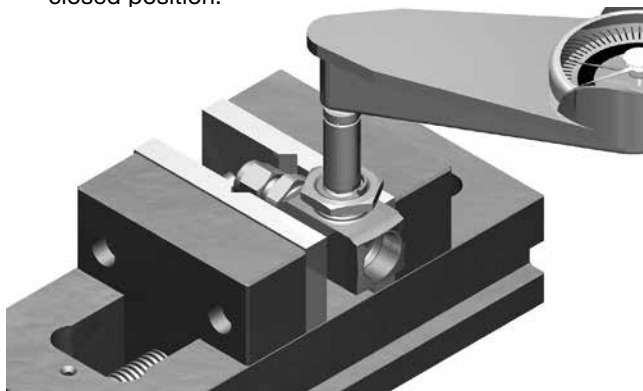


CAUTION

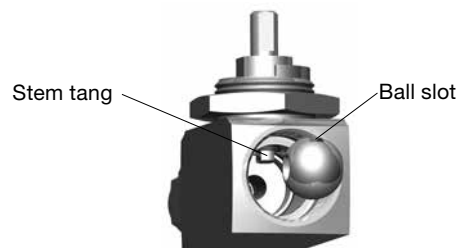
Do not pinch the stem assembly components when inserting into the packing bolt. The components could be damaged and leakage result.



- Remove the valve assembly from the vise and tilt to remove the ball. Rotate stem if necessary.
- Place the packing bolt gasket into the body.
- Thread packing bolt/stem assembly in valve body and tighten by hand until it meets resistance.
- Torque the packing bolt to 200 to 250 in.·lb (22.6 to 28.2 N·m, 230 to 290 cm·kg). Put the stem in the closed position.

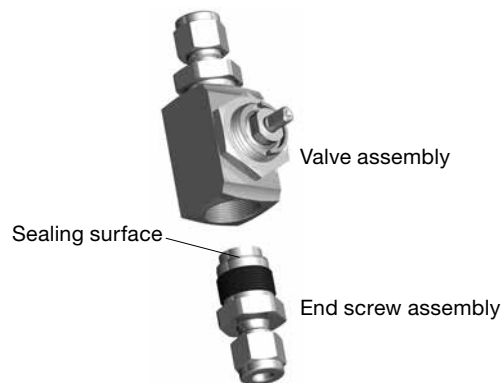


- Pull stem up and install ball. Make sure the stem tang is aligned with the slot on the ball. Push down on the stem and rotate to the open position.



Note: If also performing seat seal maintenance on the removed end screw, follow step 5 of **Seat Seal Maintenance, Disassembly** and steps 6 through 11 of **Reassembly** before proceeding with stem seal maintenance.

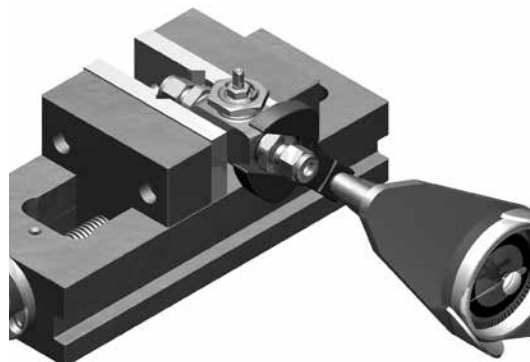
- Ensure the end screw gasket is resting on the **sealing surface** of the end screw. For SC-11 cleaned end screws only, lube threads with lube provided. Orient the **end screw assembly** as shown and screw into the **valve assembly** until no threads are visible.



- Place the valve assembly into the vise. Torque the end screw to 300 to 350 in.·lb (33 .9 to 39.5 N·m, 345 to 403 cm·kg). For SC-11 cleaned end screw Torque the end screw to 500 to 550 in.·lb (56 .5 to 62.1 N·m, 576 to 633 cm·kg)

NOTICE

Ensure end screw gasket remains on sealing surface or damage to the gasket could result.



- Place the handle on the valve stem, aligning the larger stem flat and set screw hole, with the set screw hole opposite the logo side of the valve. Tighten set screw with a hex key.
- Test the fully assembled valve for proper operation and leak-tight integrity.

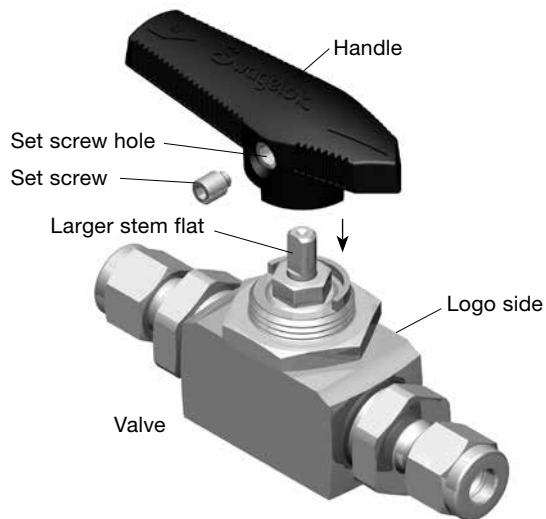
Nylon Handle Kit



Tools Required



1. Loosen the **set screw** using a hex key.
2. Remove the **handle**.
3. Place the new **handle** on the valve stem, aligning the **larger stem flat** and **set screw hole**, with the set screw hole opposite the **logo side** of the **valve**.



4. Thread the **set screw** into the handle and tighten with a hex key.
5. Test the **valve** for proper operation.