

Spencer® Carbon Ring Removal and Replacement

In blowers with single or double carbon ring seals, the carbon rings require periodic replacement—typically every two or three years—because they contact the rotating shaft and wear. (With double carbon rings, advancing wear is accompanied by a measurable increase in purge gas consumption.)

Removal

1. **Double rings only** Turn off and disconnect the purge gas line.
2. **Single and double rings** Remove the bearing(s) according to the instructions in Form WW, Power Mizer Operating and Maintenance Manual.
3. Remove the heat fan. Disk-type heat fans are secured by two set screws; bladed heat fans are clamped to the shaft.
4. Remove the four socket head cap screws and the seal follower.
5. Remove the carbon ring, which has three segments held together by a garter spring. Save the three small compression springs that stand the carbon ring off the seal housing.
6. **Double carbon rings only** Remove the lantern ring (saving the three springs mounted in either side of the lantern ring) and the second carbon ring.

Replacement

CAUTION: Carbon rings are brittle and should be handled with care to prevent chipping or cracking. Damage to the ring will reduce sealing effectiveness.

1. **Blowers with disk-type heat fans only** Use 220-320 grit emery cloth to smooth the shaft surface dimpled by the heat fan set screws.
2. Clean the shaft and surrounding area of all dust.
3. **Single carbon rings** Slide the new carbon ring into place, lining up the notch in one side of the ring with the alignment pin in the seal housing.

Double carbon rings Slide the new carbon ring into place, lining up the notch in one side of the ring with the alignment pin in the seal housing. (To hold the springs temporarily, put a small amount of grease in the spring holes on both sides of the lantern ring, then set springs in holes, slide lantern ring into place and slide second carbon ring into place.)

4. Replace the follower, lining up the notch in one side of the carbon ring with the alignment pin on the follower. Secure with four socket head cap screws.
5. **Disk-type heat fan** Use a feeler gage to position the fan .050" from the follower face, with the hub portion of the fan positioned away from the seal, and tighten.

Bladed heat fan Center the fan between the follower face and the bearing journal and tighten.

6. Replace the bearings and relubricate according to the instructions in Form WW, Power Mizer Operating and Maintenance Manual.
7. **Double carbon rings only** Reconnect and pressurize the purge line.

CAUTION: Do not operate double carbon ring seals without a properly pressurized purge connection. This will render the seal ineffective and could damage it.

