Important Instructions

Z-Series Sliding Vane Pumps
Seal Replacement

Warning: (1) Periodic inspection and maintenance of Corken products is essential. (2) Inspection, maintenance and installation of Corken products must be made only by experienced, trained and qualified personnel. (3) Maintenance, use and installation of Corken products must comply with Corken instructions, applicable laws and safety standards (such as NFPA Pamphlet 58 for LP-Gas and ANSI K61.1-1972 for Anhydrous Ammonia). (4) Transfer of toxic, dangerous, flammable or explosive substances using Corken products is at user's risk and equipment should be operated only by qualified personnel according to applicable laws and safety standards.

Solutions beyond products...

CORKEN®

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Z-Series Coro-Vane® Seal Replacement Instructions

Please Note: The photos listed below contain a Z2000; however, all Z-Series pumps use the same procedures for seal replacement.

To determine the parts needed for repair, refer to Appendix A—Model Number and Identification Code, and Appendix E—Parts Details.

⚠ CAUTION! BLEED ALL PRESSURE FROM THE PUMP AND PIPING BEFORE STARTING TO INSTALL YOUR SEAL ASSEMBLY.

Cleanliness

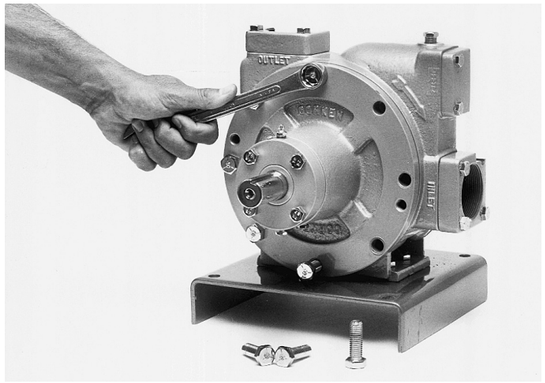
Even the smallest amount of dirt on your new seal can cause early failure. Keep all parts, tools and your hands clean while installing the seal. Never touch the smooth lapped faces of the carbon rotor or seal seat. For LP-Gas, anhydrous ammonia and similar liquids, you are trying to seal a fluid that is 5 to 10 times thinner than water! Your new seal needs every chance it can get, so keep it clean.

Workmanship

Your Corken pump is a precision piece of equipment with very close clearances. Treat it as such. Never use force during assembly or disassembly (see steps 1 through 10).

Step 1

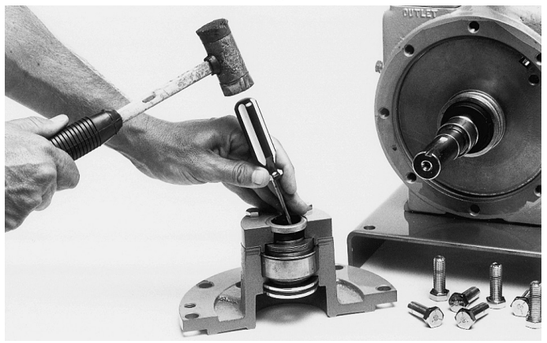
Depressurize and open the pump



Loosen the head bolts and remove one head with the bearing cap attached, while holding in on the shaft.

Step 2

Remove the seal seat and grease seal



NOTE: The photo above is using a cutaway view for better details.

After the head has been removed from the pump, remove the head O-ring and place to the side. Place the head on the workbench as shown in the photo. When replacing the seal assembly, there is no need to remove the bearings. With a long screwdriver, reach through the opening of the bearing cap and lightly tap the seal seat until it falls out of the head. The seal seat is located at the bottom of the head. Next, remove the grease seal using same process. The old seal seat and grease seal will not be reused.

Step 3

Install the new grease seal

NOTE: The photo above is using a cutaway view for better details.

Turn the head over as shown in the photo and install the new grease seal smooth side up by pressing into the bore next to the main bearing. To assist with the installation of the grease seal, place the old seal seat without the O-ring over the top of the grease seal and press into place as show in the photo. The grease seal should fit flush with the shoulder of the bore (see Figure 6.1 for details).

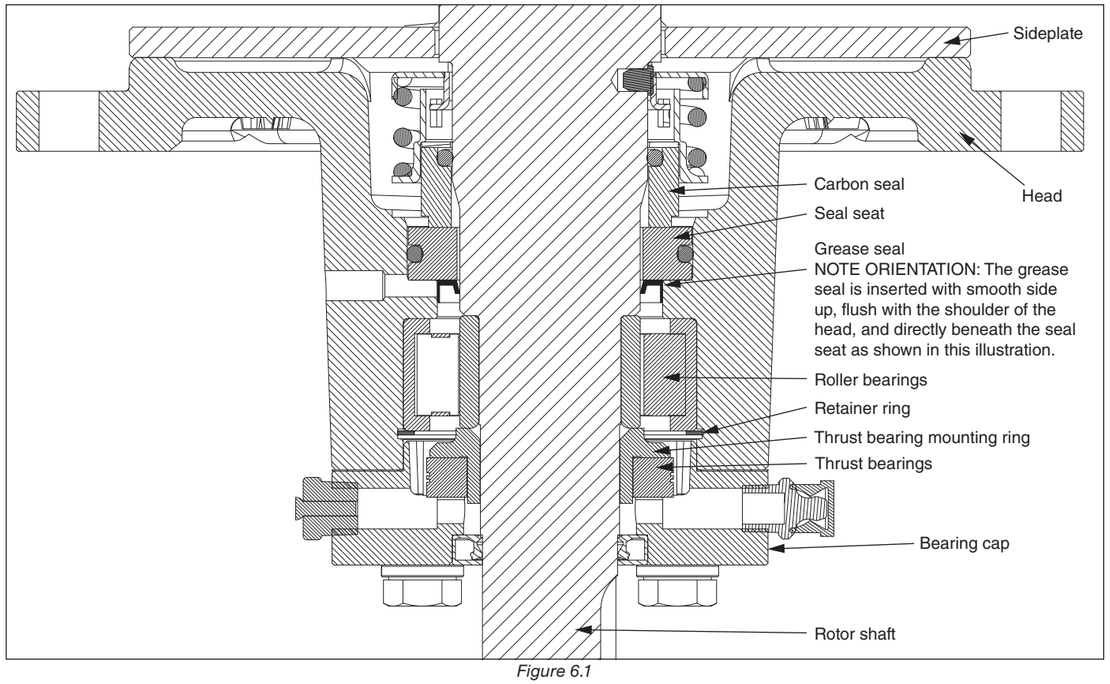


Figure 6.1

Step 4

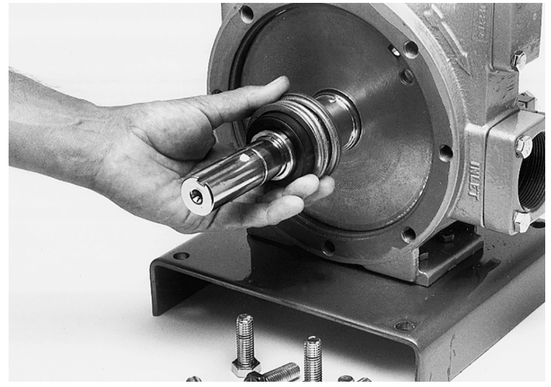
Install the new seal seat

NOTE: The photo above is using a cutaway view for better details.

Be careful not to touch the smooth, shiny surfaces of the seal seat. The smooth shiny surfaces must stay clean at all times. Foreign material on these surfaces can cause seal failure. Before installing the new seal seat, spray or apply a generous amount of light oil to the new seal seat and O-ring. This will allow the O-ring on the outside of the seal seat to easily slide into place during installation. Before you press the seal seat in place, make sure you cover the seal seat with the protective cardboard disc as shown in the photo.

Step 5

Remove the old seal assembly (carbon seal and retainer)



Remove the old seal assembly from the pump shaft while holding the sideplate against the pump casing. This will allow the seal retainer assembly to be removed without pulling the rotor-shaft out of the pump. Inspect the rotor shaft for burrs or scratches. If present remove with an emery or polishing cloth.

Step 6

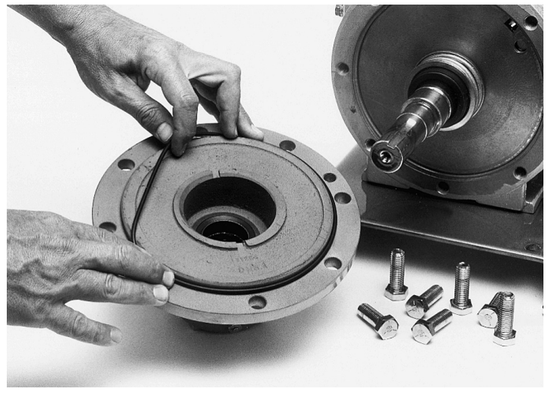
Install the new seal assembly (retainer and carbon)

Clean the pump shaft and apply a generous amount of light oil to the shaft and seal assembly.

Install the new seal assembly by aligning the seal retainer slot with the seal drive pin on the shaft.

Step 7

Mechanical seal installation

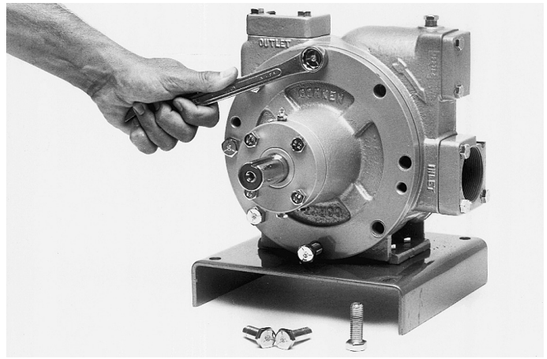


Install the new case O-ring onto the head.

Apply a generous amount of light oil to each seal face and carefully install the head assembly over the pump shaft.

Step 8

Completing installation



Torque the head bolts in a crossing pattern. There is no need to disassemble or re-shim the bearing caps. Repeat all of the above steps when replacing the seal assembly on the opposite side.

Step 9

Lubrication and re-pressurizing

Note: Both sides of the pump are identical; duplicate procedure to change the seal on the opposite side.

Lubrication

There are two lubrication points on the Z-Series pumps. A grease zerk is located on each bearing cap. To prevent over greasing the bearings, a grease relief fitting is located on the opposite side of each bearing cap. Always clean each grease zerk and relief fitting before lubricating the bearings. This practice helps prevent foreign material from reaching the bearings through the grease zerk and ensures the grease relief fitting is not blocked. If the grease relief fitting is blocked, the excessive grease that cannot be relieved may cause premature seal failure.

If you use a hand grease gun, put the grease in slowly and stop as soon as the relief fitting opens. Grease the U-joints and the spline of the drive shaft when greasing the pump.

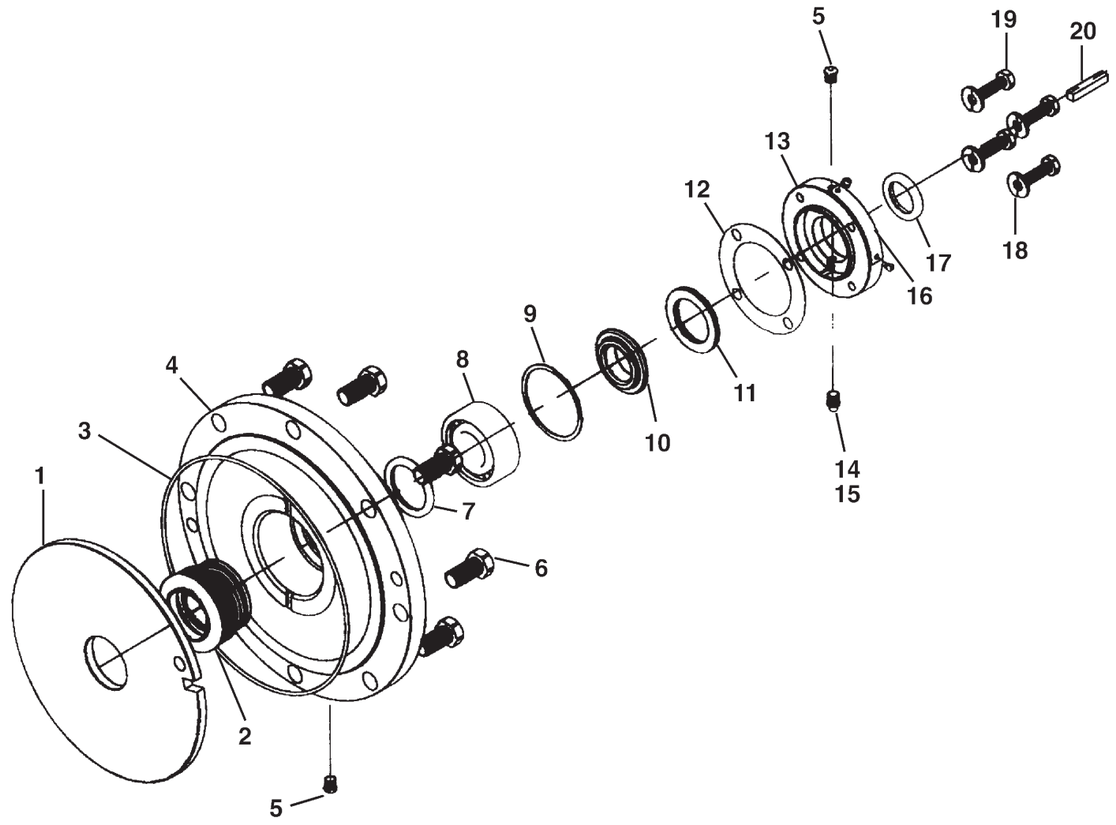
NOTE: Always use ball bearing grease (MIL-G-10924C) with a temperature rating of -65°F.

Re-pressurize

For best results, slowly pressurize with vapor pressure.

Please Note: If you pressurize with liquid, it will sometimes refrigerate even though it enters the pump slowly. As a result, the seal elastomers will not seal properly thereby causing them to leak.

Parts Details for Z-Series Coro-Vane® Truck Pumps



Ref. No.	Description
1.	Sideplate
2.	Seal assembly
3.	O-ring—case
4.	Head
5.	1/8" NPT relief fitting
6.	Bolt—hexagon head
7.	Grease seal
8.	Roller bearing
9.	Retainer ring
10.	Bearing race mounting ring
11.	Thrust bearing assembly

Ref. No.	Description
12.	Bearing cap shim (.002) red
	Bearing cap shim (.010) brown
	Bearing cap shim (.020) yellow
13.	Bearing cap
14.	1/8" NPT grease zerk
15.	Lubricap
16.	Lubrication instruction plate
17.	Grease seal
18.	Lockwasher
19.	Bolt—hexagon head
20.	Shaft key—5/16 x 1fl