

Introduction

The following instructions cover replacement of shaft seals in Falk E and C Series drives. Drawings are representative and may not agree in exact detail with all drive sizes. When ordering parts or requesting information, specify the M.O. number, the drive size, model number, RPM, ratio and the date stamped on the drive nameplates.

CAUTION: Consult applicable local and national safety codes for proper guarding of rotating shafts and couplings. Lock out power source and remove all external loads from drive before servicing drive or accessories.

FELT SEALS — The felt seal assembly illustrated in Figure 1, has been discontinued and is automatically replaced on parts orders with the retainer and lip type seal illustrated in Figure 2 or 3.

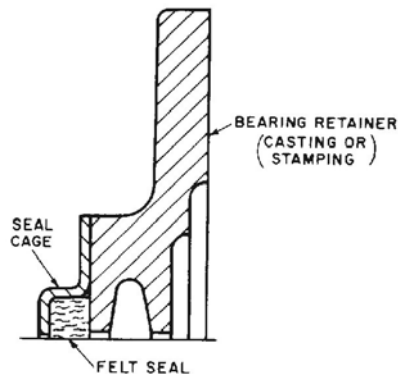


Figure 1

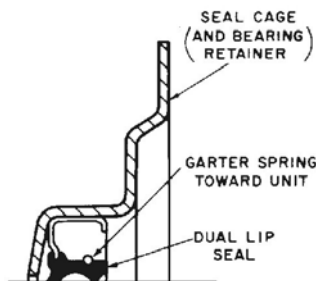


Figure 2

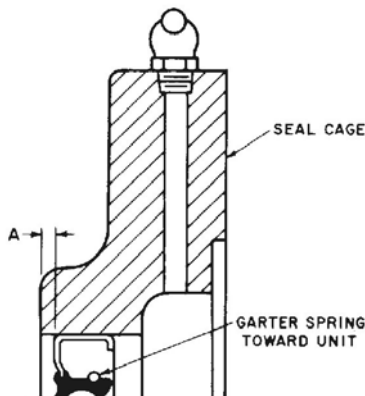


Figure 3

Seal Replacement

NOTE: Before removing seals, clean external surfaces of drive to prevent dirt from entering drive. Record the mounting dimensions of accessories for reference when re-assembling.

1. Drain oil from drive.
2. Clean shaft extension and remove all sharp edges. Slide the seal assembly off the shaft.
3. Block up the seal cage and press or drive out the lip type seal. Replace the seal cage if it has been damaged or bent during seal removal.
4. Remove old sealing compound from seal cage bore. Then coat the bore with Permatex No. 3 or equivalent.
5. Note the position of the seal lips and garter spring in Figure 2. Assemble with the garter spring toward the inside of drive.

CAUTION: New seals will leak if the seal lips are cut or if the seal's rubbing surface on the shaft has been altered. Protect seal lips at all times. Clean the shaft, but do not use any abrasive material on the surface polished by the seal.

6. Carefully work seal into position. DO NOT strike seal directly. For seal cages similar to that in Figure 2, place a square ended cylindrical tool against the seal and drive or press the seal until fully seated. For seals for Size 8 drives and the low speed shaft of CB, CBT, CBA, EB, EBT and EBA drives refer to Figure 3 and Table 1.

TABLE 1 — Dimension "A" for Figure 3 – Inches

DRIVE SIZE	Low Speed Shaft			High Speed Shaft
	EB, CB	EBA, CBA, EBT, CBT	E, C	E, C
1 & 15	1/8	...	...	...
2 & 25	1/8	1/4	...	...
3 & 35	1/8	1/4	...	...
4 & 45	1/8	1/8	...	...
5 & 55	1/8	1/4	...	...
6 & 65	1/8	1/4	...	...
7 & 75C2	1/8	3/16	...	...
8	...	...	1/8	Flush

7. Coat seal lips with No. 2 ball bearing grease. If the seal cage is equipped with a grease fitting, pack cores with No. 2 ball bearing grease.

CAUTION: Protect seal lips from the sharp edges of the keyway by wrapping a thin strong paper around the shaft and coating it with grease before sliding the seal assembly into position. Do not expand the seal lips more than 1/32" diameter.

8. Lightly bolt new gasket and seal cage assembly to drive. Center the seal cage assemblies shown in Figures 1 and 2 on the shaft by checking the clearance between the cage and shaft with feelers or shim stock. Tighten cap screws. The seal cage in Figure 3 is self-centering.
9. Fill the drive with an oil specified in Service Manual 128-010 to the level indicated by oil lever arrow on drive.
10. If there are grease fittings, use No. 2 ball bearing grease.

Falk vertical Motoreducers are doubly protected against oil leakage at the low speed shaft by two specially designed lip type seals. The seals depend upon adequate lubrication for long life and efficient operation. The upper seal is lubricated by oil from the drive housing and the lower seal is lubricated from the grease and oil compartments.

The oil compartment is independent of the drive housing; it is a lubricant reservoir for the lower seal and also a trap to protect the seals from direct contact with dust or dirt. If one seal fails, the second seal will prevent oil leakage. If both seals fail, oil from the drive housing will pass into the oil compartment and then overflow through the notch in the oil cup. Consequently, unless the oil cup has been filled above the recommended level, oil leakage from the cup indicates the failure of both seals.

The following instructions apply to the lip type seals, but may be followed with slight modification for removing and replacing Mercury or Contact seals with the double lip type seal assembly.

Disassembly

1. Drain all oil from drive and seal retainer assembly.
2. Remove nipple (6AX-6), oil cup (6AX-7), seal retainer (6AX-1) and gasket (6AX-A).
3. Clean gasket surface of seal retainer and drive, then place retainer with flanged side down on clean, flat surface.
4. Remove the two pipe plugs (6AX-5) from retainer.
5. Insert a drift punch alternately into the pipe plug holes and gently top seals (6AX-3) and spacer (6AX-2) out of retainer. Replace pipe plugs.
6. If there are nicks or scratches on the sleeve (5AX-9), or if wear grooves exceed .010 inch, replace the sleeve.
7. To remove the sleeve, heat it rapidly and evenly with a torch and then withdraw with pliers.

Assembly

1. Clean all parts thoroughly and inspect for damage, particularly the rubbing surfaces of the seals and the sleeve. They must be free from nicks and scratches.
2. Assemble the seal ring (5AX-8) snugly against the shoulder of the low speed shaft.
3. Heat the sleeve (5AX-9) in an oil bath or in an oven to 275° F (135° C). The oil flashpoint must be 350° F (177° C) or higher. **WARNING:** Do not heat sleeve in an open flame. Mount hot sleeve tightly against inner bearing race on low speed shaft.
4. Insert seals (6AX-3) into seal retainer (6AX-1) so that exposed rubber lip extends upward toward bearing. When inserting seal, apply pressure against the metal face of the seal with a square faced cylindrical tool. Do not apply pressure against the rubber. Press one seal into seal retainer until fully seated; insert seal spacer (6AX-2) and then press second seal into retainer until fully seated.
5. Pack grease compartment with No. 2 ball bearing grease.
6. Apply a light coat of oil to the outside diameter of the sleeve. Place a new 1/32 inch thick gasket (6AX-4) on the retainer flange and mount the seal retainer assembly on the Motoreducer.
7. Assemble nipple (6AX-6) and oil cup (6AX-7) to retainer.
8. Remount drive and fill drive with oil to proper level. Also fill oil cup to level of notch in cup.

