

REPAIR MANUAL FOR "GC-1" AND "MC-1" SERIES LOW-CAPACITY SMITH PUMPS

This manual contains valuable repair information for the "GC-1" and "MC-1" model types including the following use-specific modifications: "GC-1", "GC-1 L", "GC-1 LZ", "NS", "SA", "NSSA" and "S" versions of the same; "MC-1", "MC-1 L", "MC-1 LZ", "NS", "SA", "NSSA", and "S" versions of the same. Proper procedures are mentioned for changing a mechanical shaft-seal assembly, idler gear shafts, gear set, and bypass valve parts. This manual is an addendum to other repair manuals, parts views, illustrations, and parts lists.

To accomplish a pump repair, the pump must be depressurized. This procedure must be performed according to all applicable Safety Codes and practices consistent with local, State, or Federal Law, and company procedures. NFPA-58 should be consulted. If you do not know how to safely depressurize the pump and isolate it from the piping system, either contact your immediate supervisor, call our local representative, or communicate with us at 805 / 498 - 6616. After the pump has been safely depressurized and isolated by valving-off the pump from the piping system, the following procedure as described in this manual and others should be followed.

A repair kit generally consists of an "MC-100" or "MC-100Z" shaft-seal assembly, a drive gear ("649-5", "649-5 NS", "649-5 L", "649-5 NSL"), two idler gears with bushings ("649-6", "649-6 NS", "649-6 L", "649-6 NSL"), a gear end cover bushing ("649-11"), o-ring for valve cap on "MC-1" Series only ("6227-12"), o-ring for valve seat in "GC-1" series only ("6227-14"), and a drive coupling insert ("FD-20") or a complete drive coupling ("VC-20").

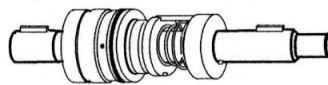


Figure 1. Typical Shaft-Seal Assembly for "GC-1" and "MC-1" Series



Figure 2. Typical gear set for "GC-1" and "MC-1" Series, consisting of one drive gear ("649-5" configuration), and two idler gears with bushings ("649-6" configuration). The drive gear is always the center gear.

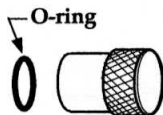


Figure 3. O-ring for Valve Cap "6227-12", "MC-1" Series Only.

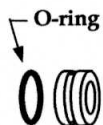


Figure 4. O-ring for Valve Seat "6227-14", "GC-1" Series Only.

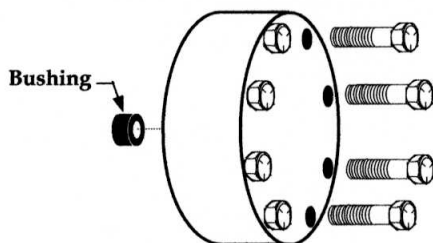


Figure 5. Main Shaft Bushing for Cover "649-11".

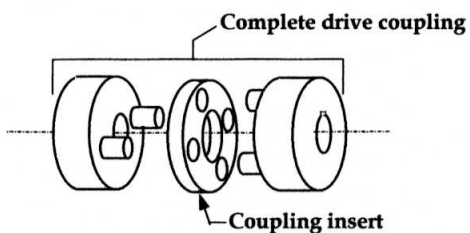
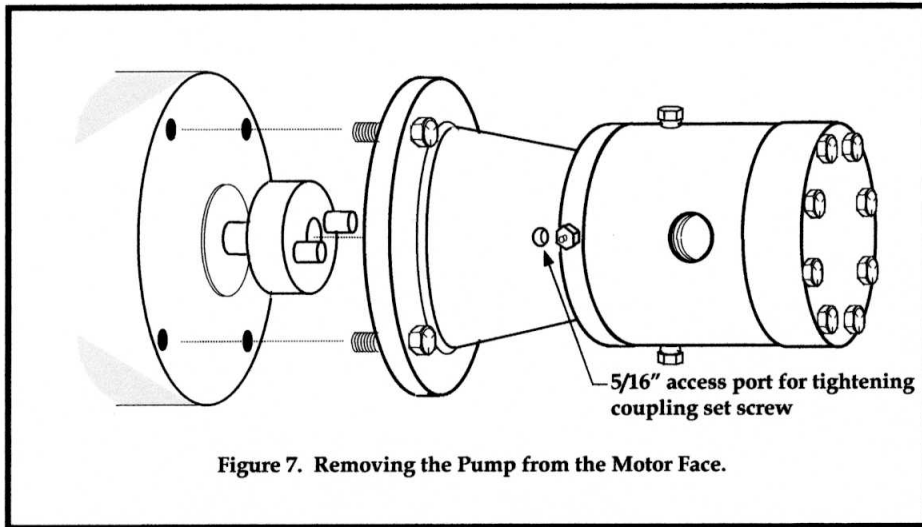


Figure 6. Drive Coupling "VC-20" with Coupling Insert "FD-20".

FOR A SHAFT-SEAL ASSEMBLY REPLACEMENT

STEP 1.

Separate the pump and motor. Four bolts hold the pump onto the motor. These bolts pass through the mounting flange of the pump shaft end cover and screw directly into the motor face.



STEP 2.

Remove the eight cap screws that attach the gear end cover to the main housing, and remove the gear end cover, being very careful not to damage the shaft bushing. Slide the drive gear (center gear) off the drive shaft, and remove the drive gear key. Locate the setscrew in the coupling half mounted to the pump drive shaft. In the configuration shown above, access to the setscrew is through a 5/16" hole drilled through the flanged shaft end cover as shown. Insert an Allen Wrench through this hole to loosen the setscrew, and remove the coupling half from the pump drive shaft.

Remove the small screws from the bearing retainer plate, which is exposed once the coupling half is removed from the pump drive shaft. With a properly sized soft metal drift, lightly tap the gear end of the drive shaft to remove the shaft-seal assembly straight out of the pump from the flanged end of the assembly.

The bearing retainer plate cannot be removed from the shaft-seal assembly until the coupling drive key is removed. Remove the drive key, and the bearing retainer plate from the coupling end of the shaft-seal assembly. Check the bearing retainer plate for damage. If it is in good condition, use it again for the replacement shaft-seal assembly. If not, replace it.

