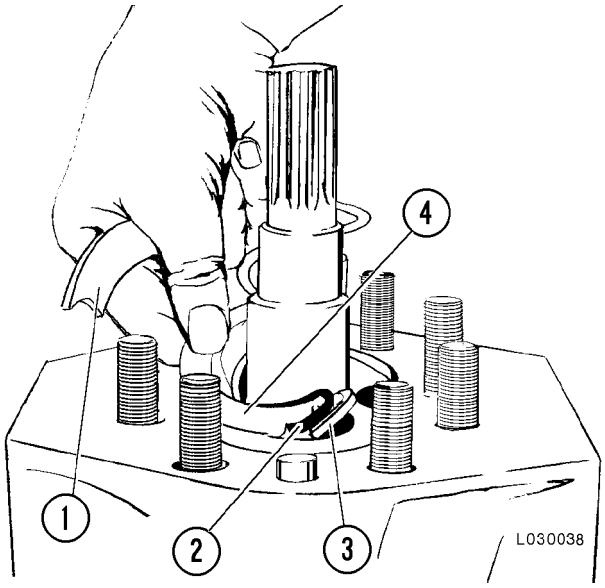

FIGURE 3-7. ISOLATION PLATE REMOVAL

1. Isolation Plate
2. O-Ring
3. Backup Ring
4. Ring Retainer

5. Remove ring retainer (4, Figure 3-7), O-ring (2), back-up ring (3), and isolation plate (1).

6. Grasp the drive gear shaft extension (1, Figure 3-8) and lift it upward to dislodge the pressure plate (2). Grasp the plate between thumb and forefinger and lift it straight up off the shafts.

NOTE: When disassembling the tandem pump, as parts are removed from each pumping section, they should be laid out in a group and in the same order in which removed.

7. Lift drive gear and idler gear straight up out of the bore of the body.

8. Examine the gear bores in body (1, Figure 3-9):

- During the initial break-in at the factory the gears cut into body. The nominal depth of this cut is 0.20 mm (.008 in.) and should not exceed 0.38 mm (.015 in.). As the gear teeth cut into the housing, metal is rolled against the pressure plates.

☐ Using a knife or sharp pointed scraper, remove the metal that was rolled against the top pressure plate. Also, remove the metal that is rolled against the pressure plate in the bottom of the body. Blow out the metal chips that were broken loose. This will help to keep the pressure plate from hanging as it is lifted from the bottom of the gear bores.

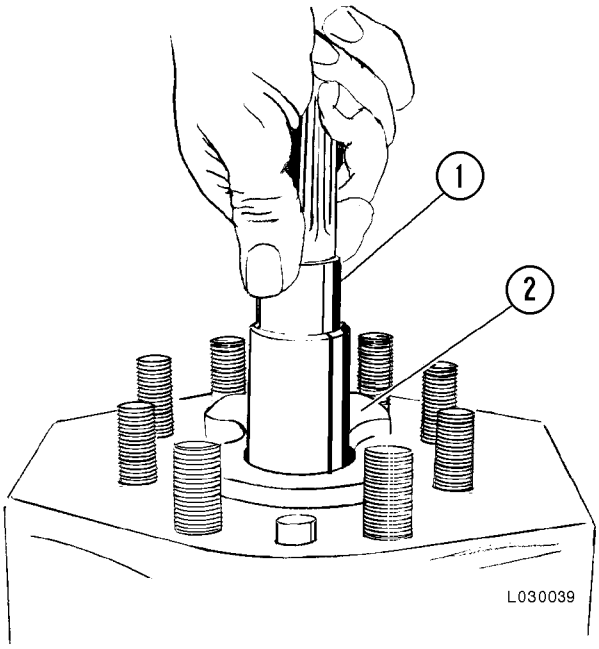

FIGURE 3-8. DRIVE GEAR REMOVAL

1. Drive Gear
2. Pressure Plate

⚠CAUTION

When removing the rolled up metal, do not attempt to remove gear track-in grooves.

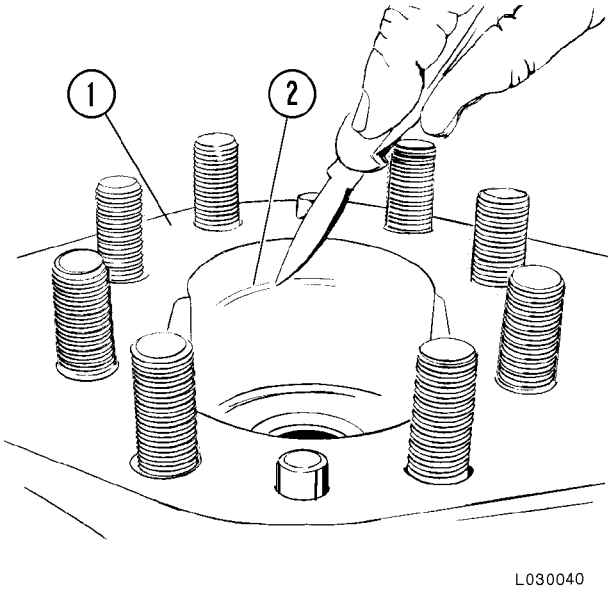

FIGURE 3-9. GEAR BORE INSPECTION

1. Body
2. Gear Track-in Grooves

9. To remove bottom pressure plate (2, Figure 3-10), insert an expandable bearing puller (1) in the shaft bore of the plate and tighten it.
   a. By applying a light forward and back force to the puller handle, the plate can be dislodged.
   b. Lift the plate straight up and out.
10. If a bearing puller is not available, grind a screwdriver shape on the short end of an Allen wrench. Insert the ground end of the wrench into the shaft bore and lift the plate up.
   a. Move the wrench to the opposite bore and lift up, repeating this action until the plate has been dislodged.
   b. With thumbs in the bores of the plate, lift it straight up and out.

⚠CAUTION

Use extreme care in removing the plate. Do not pry or force. If the plate hangs, work it up and down until free, then lift it out.

11. Remove ring retainer, O-ring, back-up ring, and isolation plate located under the pressure plate removed in step 9 (or 10).
12. Lift the body straight up and off of the studs. If the body is stuck on the dowels, use a plastic hammer or wooden mallet and tap around the body to loosen it.
13. Remove spline coupling (9, Figure 3-6) from the rear drive shaft.

NOTE: Some pumps have O-rings (19) installed around the studs in the top surface of the bearing plate (8). These O-rings are used to prevent vibration of the studs under load conditions.

14. Remove the O-rings and lift the bearing plate off. It may be necessary to tap the plate lightly with the mallet to loosen it from the dowels.
15. To complete the disassembly of the pump repeat steps 5 through 11 as applicable to the rear section.
16. Refer to “Seal Replacement” for flange plate seal removal instructions.
17. Inspect all parts to determine which if any, should be replaced.

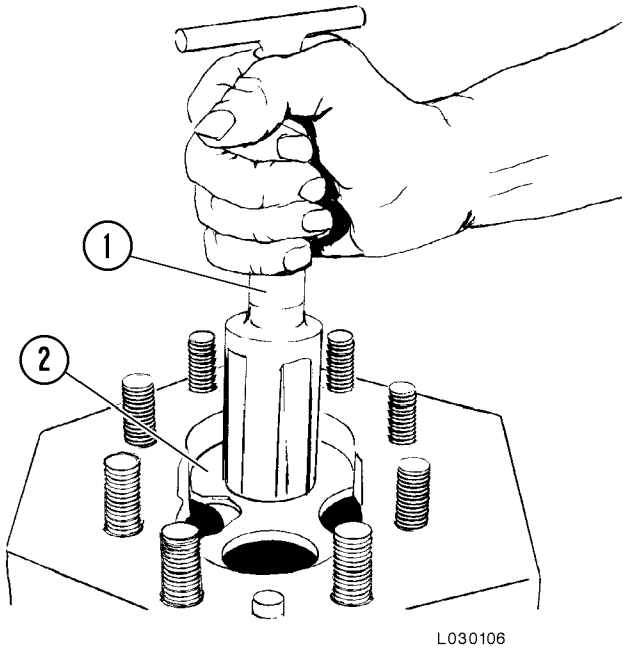

FIGURE 3-10. PRESSURE PLATE REMOVAL
1. Bearing Puller 2. Pressure Plate

Inspection Of Parts

1. Visually inspect the gear bores in the pump bodies. During initial break-in at the factory, the gears cut into the housing. The nominal depth of this cut is 0.20 mm (.008 in.) and should not exceed 0.38 mm (.015 in). Due to the hydraulic loading of the gears, the cut will start on the suction side of the body and will continue about one third of the way around each gear bore. The cut should be smooth with no deep grooves or deep scratches. Reject the body if the depth of the groove is greater than 0.38 mm (.015 in.), or if the gear bores look like they have been sand blasted. Reject the body if it is cracked or otherwise damaged.
2. Examine the pressure plates They should not show excessive wear on the bronze side. If deep curved wear marks are visible, reject them.
3. Examine the gears. If excessive wear is visible on the journals, sides, or face of the gears, or at the point where the drive gear rotates in the lip seal, reject them.

Assembly

1. Refer to "Seal Replacement" for flange plate seal installation instructions.
2. Place rear pump body (11, Figure 3-6) so that the matching mark made in disassembly step 2 will be facing you. If a new body must be used, make sure the side facing you is the same as the one marked on the old body.

NOTE: Observe that the body has a wide and a narrow boss. The side having the ***wide*** boss is always the *suction side of the body.*

3. Using clean hydraulic oil, coat the inside of pump body (11).
4. Out of the group of parts from the rear section, examine the two isolation plates. You will find that they are slightly different. Choose the one having the rounded edge as shown by the arrow in Figure 3-11. With the rounded edge down, install the plate (on the suction side) in the bottom of the body.
5. Install back-up ring (7, Figure 3-12), O-ring (6), and ring retainer (2).
6. With the bronze side facing up and the rounded trap slots toward the outlet side of the body, slide pressure plate (2, Figure 3-13) down into the gear bores until it rests firmly at the bottom of the pump body. Do not force the plate down the gear bores. If the plate hangs or binds on the way down, work it back and forth carefully until it slides freely into position.

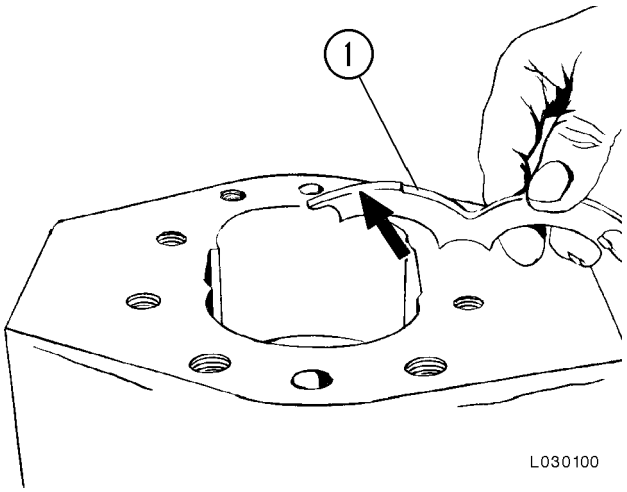

FIGURE 3-11. ISOLATION PLATE INSTALLATION

1. Isolation Plate (Rounded Edge)

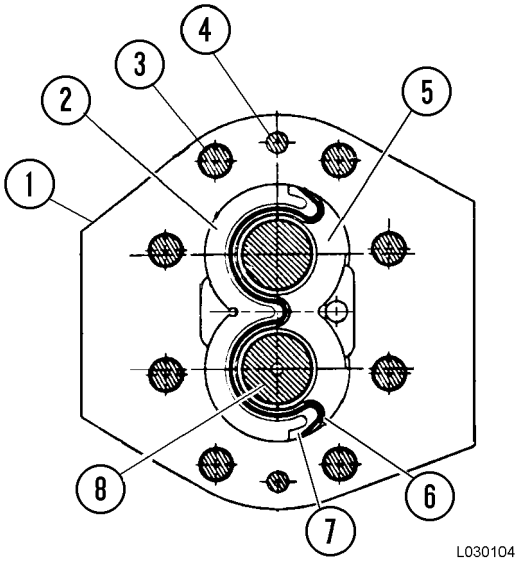

FIGURE 3-12. ISOLATION PLATE ASSEMBLY

1. Pump Body
2. Ring Retainer
3. Stud
4. Dowel Pin
5. Isolation Plate
6. O-Ring
7. Back-up Ring
8. Drive Gear

7. Coat rear drive gear (10, Figure 3-6) with clean hydraulic oil. With the splined end up, install the drive gear in the bore nearest the mark that was made in step 2.
8. Coat rear idler gear (16) with clean hydraulic oil and install it in the bore opposite the drive gear.

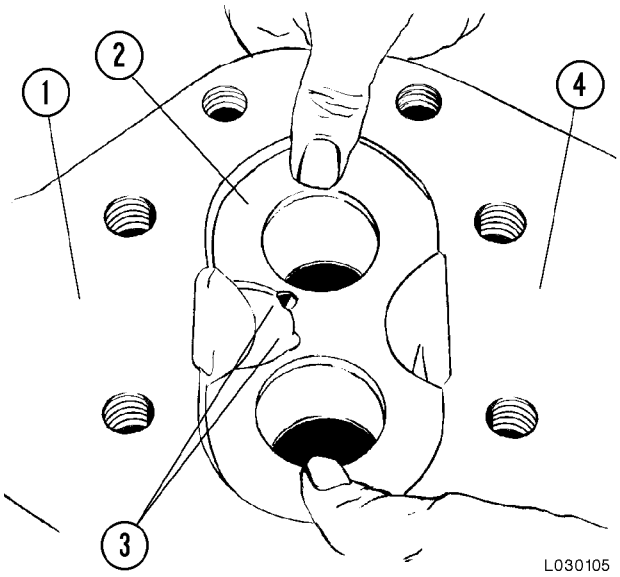

FIGURE 3-13. PRESSURE PLATE INSTALLATION

1. Outlet Side (Body)
2. Pressure Plate
3. Trap Slots
4. Inlet Side(Body)