INDUSTRIAL EQUIPMENT

FORD

Series 745 Loader

19-854, 19-855, 19-856
19-857 and 19-858

REPAIR MANUAL

40074510 Reprinted

CYLINDERS

All Series 745 Loaders use double-acting lift and bucket cylinders. Cylinder dimensions vary with loader capacity. Figures 10 and 11 illustrate the cylinder components. Refer to the "Specifications" section for cylinder dimensions and usage.

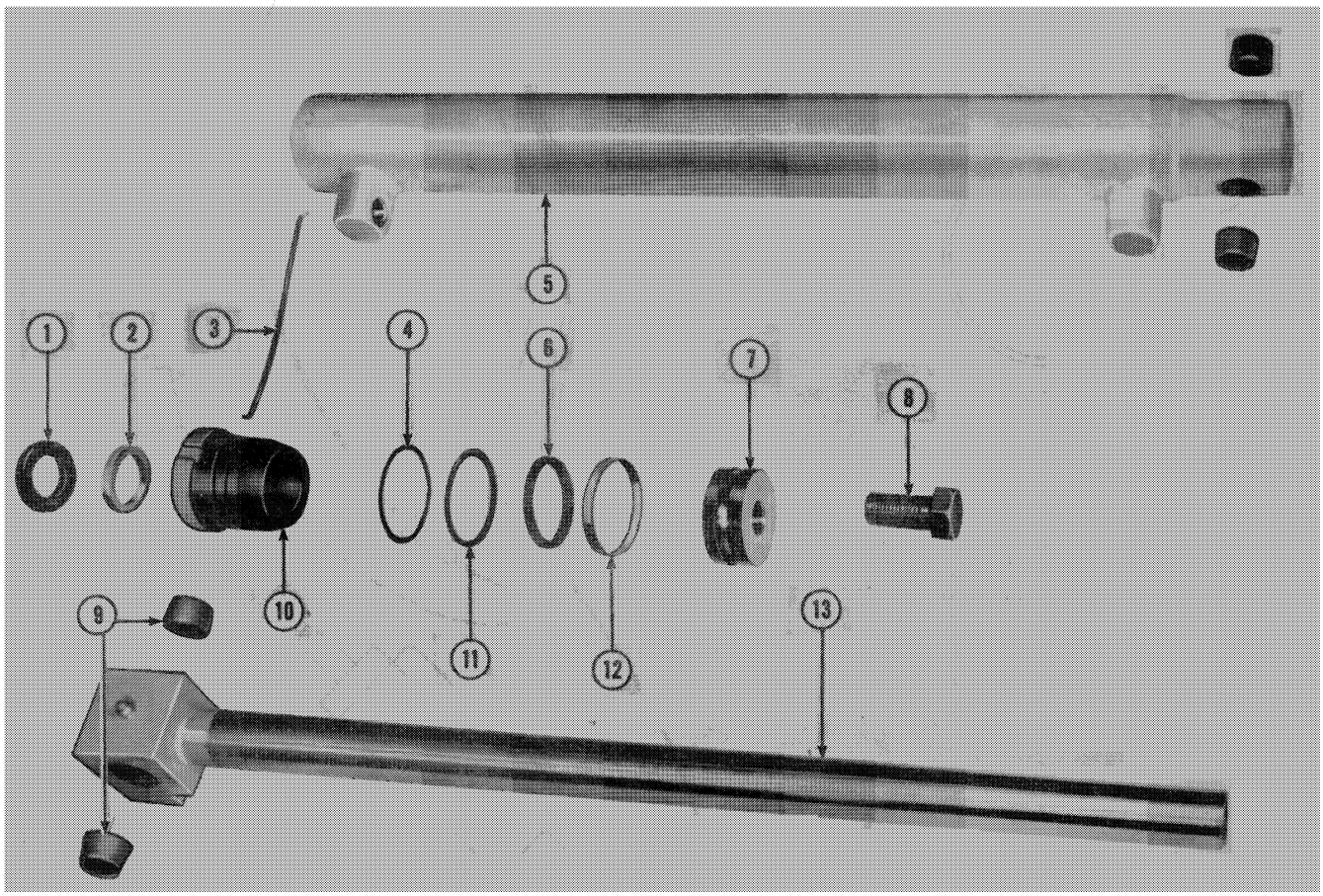

Figure 10
Cylinder Exploded View

1. Rod Wiper
2. U-Cup Seal
3. Retainer Wire
4. Gland Back-Up Ring
5. Cylinder Tube
6. Inner Piston Seal Ring
7. Piston
8. Piston Retaining Bolt
9. Bushings
10. Gland
11. Gland O-Ring
12. Outer Piston Seal Ring
13. Cylinder Rod

All cylinders on Models 19-854, 19-855, 19-856, 19-857 and 19-858 use the same type construction. Cylinder tubes are fabricated from tubings with the bore honed to a fine finish to prolong piston and seal life.

Cylinder rods are made of high-tensil die-drawn steel, polished and chrome plated. The trunnion end of the rod is arc welded to the cylinder rod and the piston end is threaded in order to secure the piston to the rod.

The piston assembly is made of leaded steal with a nylon compound coating to prevent cylinder bore damage. Sealing is accomplished by the use of a piston ring assembly consisting of two ring seals, one over the other as shown in Figure 11. The bottom seal is soft and is compressed when the cylinder is pressurized causing the rigid outer seal to be forced against the cylinder bore. The double-acting cylinder has oil ports on both ends of the piston. High pressure oil is directed to one end of the cylinder and return oil is allowed to flow from the other end to the reservoir.

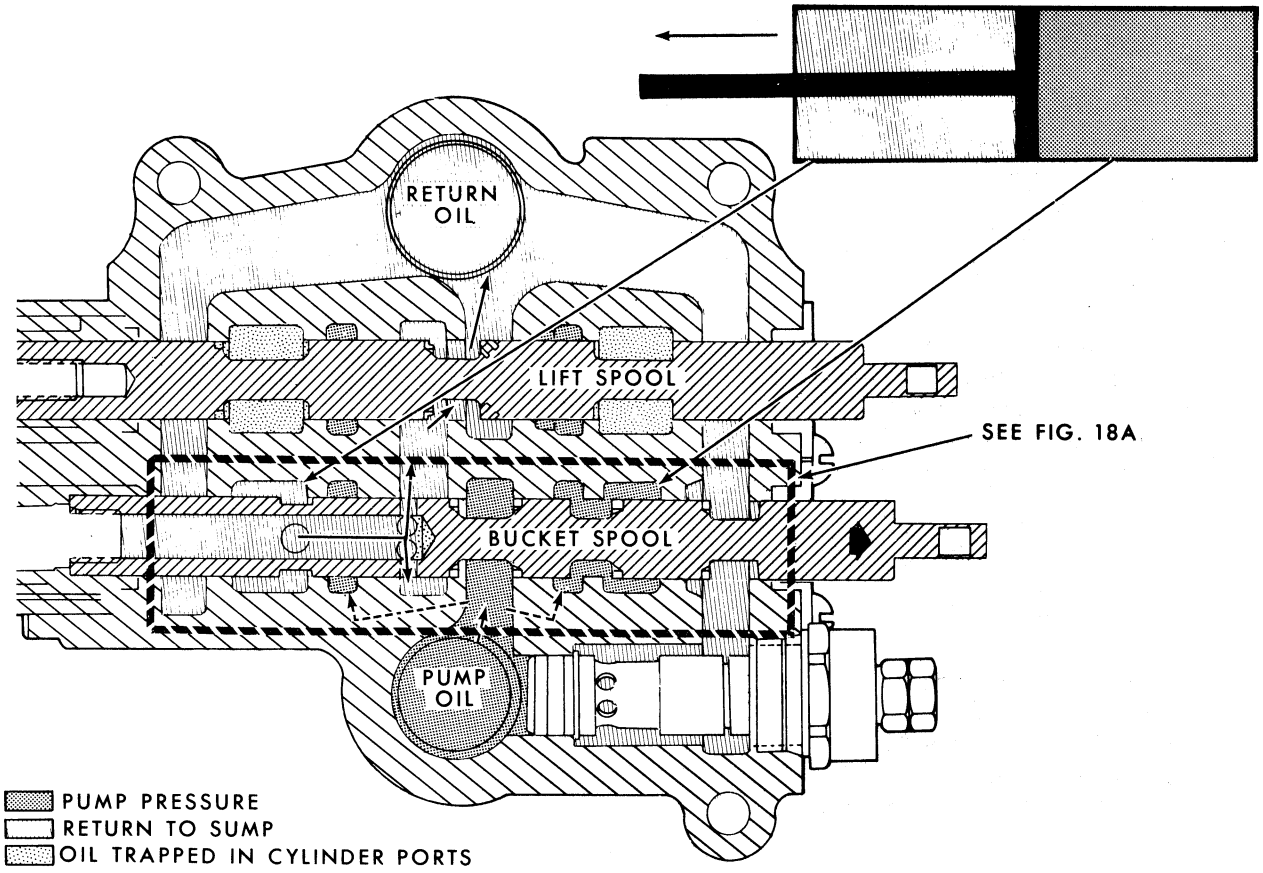

Figure 18
Bucket Spool — "Dump" Position
(Horizontal Cutaway)

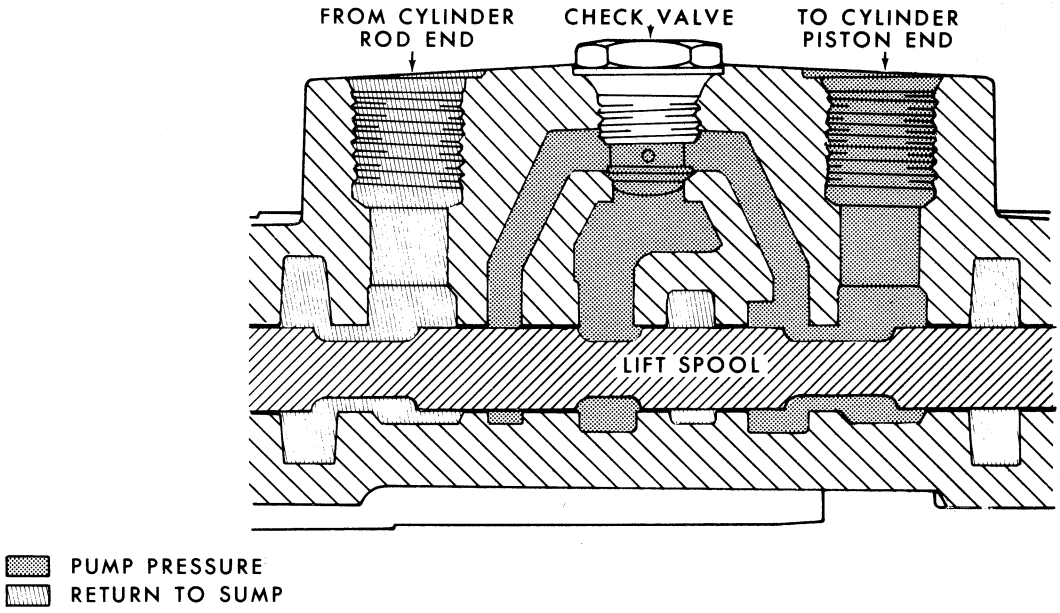

Figure 18A
Bucket Spool — "Dump" Position
(Vertical Cutaway)

3. Inspect the bearings in the front and back plates. Pump replacement is necessary if the following conditions are not met:

   a. The bearings in the front and back plates should be flush with the plate surface.

   b. The oil grooves in the bearings (2), Figure 27, should be in line with the dowel pin holes (1) and pointed toward the outside surface of the plate.

4. Inspect the gear pockets of the body for scoring or wear. If the gear pocket (3) shows signs of any wear past the point (4) shown in Figure 27, replace the pump. Wear beyond this point will severely limit the efficiency of the pump.

5. Inspect the wear plates for damage. If damage cannot be remedied with crocus cloth, replace the pump.

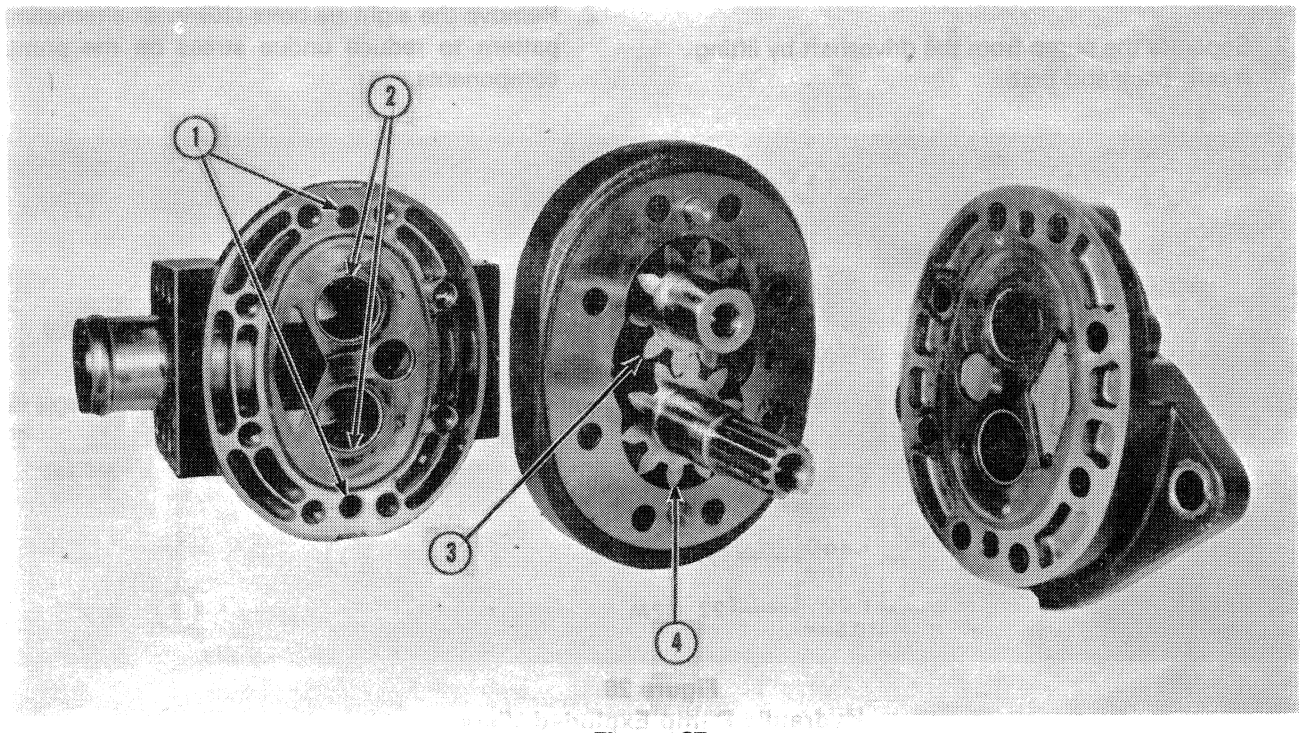

Figure 27
Hydraulic Pump Inspection

1. Dowel Holes
2. Bearing Oil Grooves
3. Low Pressure Pocket
4. Maximum Wear Point

D. ASSEMBLY

1. Install the seal rings (5), Figure 26, in the front and back plates.

2. Install the pre-load seals (2), load seals (3), and wear plates (4) in the front and back plates.

3. Dip the gear and shaft assemblies in hydraulic oil and install them in the front plate bearings.

4. Install dowel pins (7) in the body (6).

5. Apply a thin coat of heavy grease to both faces of the body. Install the body over the gears onto the front plate.

6. Slide the back plate (1) over the gear shafts (8) until the dowel pins are engaged.

7. Install the tie bolts (10), tightening them alternately and evenly to a torque of 41-45 lbs. ft. (56-61 Nm).

8. Dip the shaft seal (11) in hydraulic oil and install it on the pump shaft, being careful not to cut the rubber sealing lip.

9. Place a proper size sleeve over the pump shaft and seat the shaft seal by driving the sleeve down with a plastic mallet.

Bucket Spool Installation — With Return-to-Dig:

1. Install the O-ring (21), Figure 38, wiper seal (20) and seal retainer (19) onto the spring end of the spool.

2. Install a new O-ring seal on the threaded end of the positioner stud and apply locktite sealant to the threads.

3. Install the centering spring (18) and spring collars (17) onto the spool using the positioner stud (31) to secure them. Torque the stud to 5 lbs. ft. (6.8 Nm).

4. Slide the spool into its bore.

5. Attach the clapper (2), Figure 39, to the positioner stud (4) as follows:

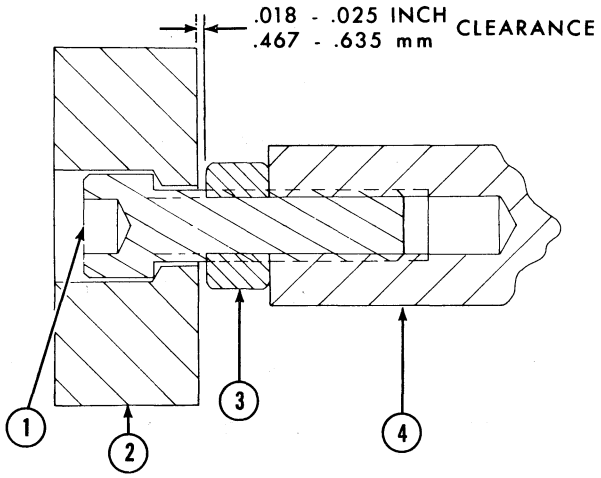

Figure 39
Installing Return-to-Dig Clapper

1. Screw
2. Clapper
3. Lock Nut
4. Positioner Stud

a. Insert the allen head screw (1) through the clapper and thread the locknut (3) onto the screw until it contacts the clapper.

b. Apply locktite sealant to the screw threads.

c. Thread the screw fully into the positioner stud.

d. Back the screw out approximately 1/2 turn. Hold the screw stationary and thread the nut against the positioner stud. Torque the nut to 10 lbs. ft. (13.6 Nm).

e. Measure the gap between the locknut and the clapper. It should be .018-.025 inch (.467-.635 mm). If the gap is not to specification, repeat the above procedure. By backing the allen head screw out more or less than 1/2 turn, the specified clearance may be obtained.

6. Reinstall the electromagnet (10), Figure 40, into the tube (8) as follows:

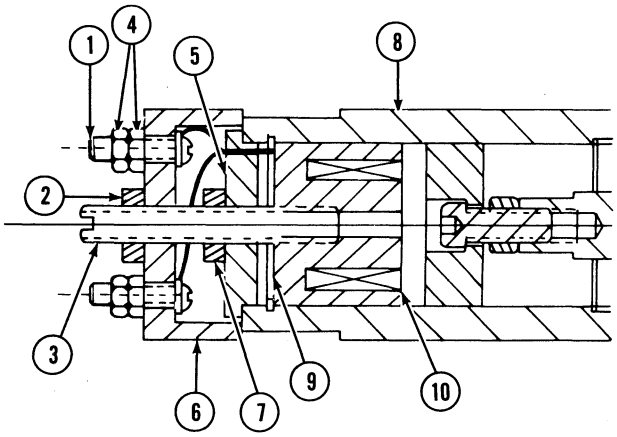

Figure 40
Return-to-Dig Assembly

1. Screw Terminals
2. Jam Nut
3. Stud
4. Jam Nut
5. End Cap
6. Plastic Cap
7. Jam Nut
8. Tube Assembly
9. Snap Ring
10. Electromagnet

a. Apply locktite sealant to the stud threads (3) and thread the stud into the electromagnet (10) until bottomed.

b. Install the snap ring (9) into the groove in the tube (8).

c. Slide the electromagnet (10) into the threaded end of the tube. Route the wires between the "ears" of the snap ring.

d. Route the wires through the slot in the end cap (5) and place the cap over the end of the tube.

e. Thread the nut (7) onto the stud (3). Torque to 5 lbs. ft. (6.8 Nm).

IMPORTANT: *Be sure that the electromagnet does not rotate when installing the nut as damaged to the wires may result.*