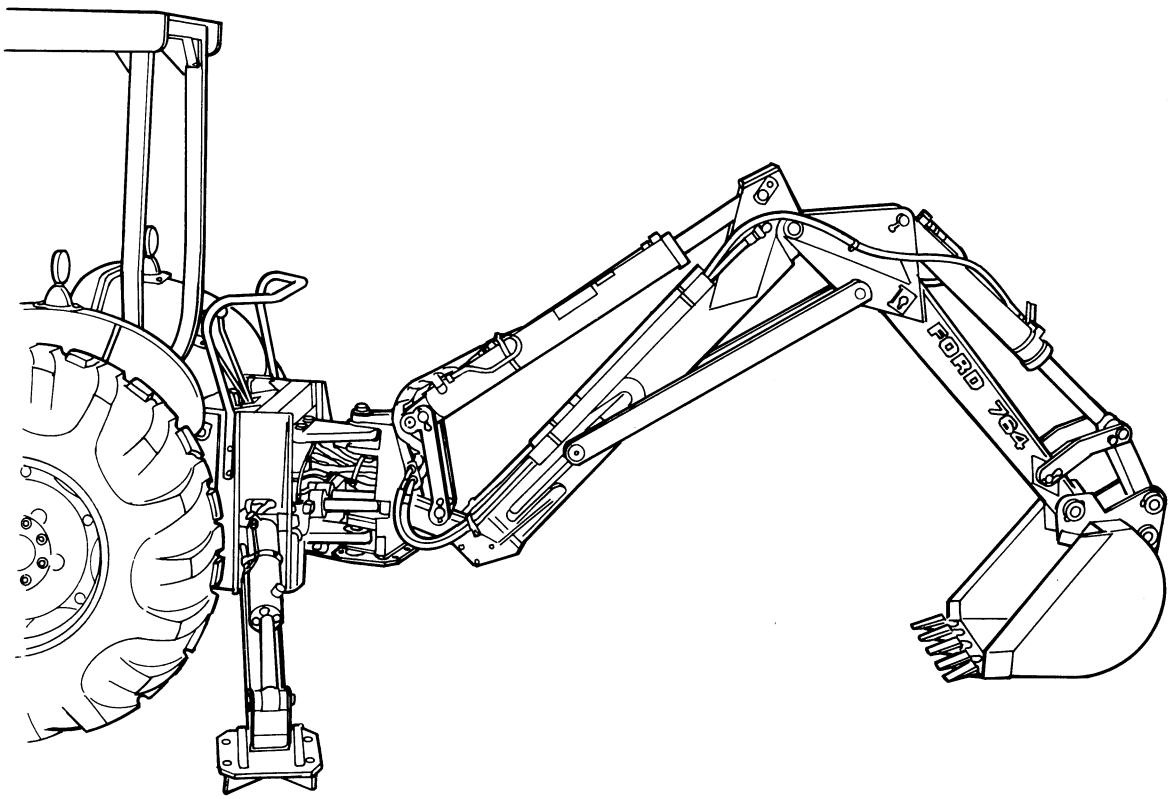
FORD

Service Manual

Series 764 Backhoe

Installed on Ford Tractors
Models 445, 445A, 545, 545A, 345C, 445C and 545C



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DESCRIPTION AND OPERATION

GENERAL

The Ford Series 764 Backhoe consists of a mainframe, swing post, cylinders, boom, dipstick, hoses and tubing, control valves and controls, bucket, sub frames and attaching hardware. Refer to Figure 1, for location of the components. Power for the backhoe is supplied by a hydraulic pump mounted on the tractor.

All components of the backhoe are of standard size measurements.

PUMP

The hydraulic pump is located at the front of the engine and is driven the by the engine crankshaft. Information covering the pump service procedures is explained in the appropriate loader service manual.

MAINFRAME

The mainframe is of welded construction. Internally it houses the swing cylinders and main control valve. Externally it supports the stabilizers and the swing post. The swing post and stabilizers are secured by means of pins.

The front of the mainframe is open, which allows access to the control valve system relief pressure check port and swing cylinders, Figure 2. The swing cylinders can be removed from the front of the mainframe without removing the unit from the tractor.

Access panels are located on the top of the mainframe to permit access to the control valve, top hoses and circuit relief valves. The main control valve can also be removed from the mainframe by removing the access panels.

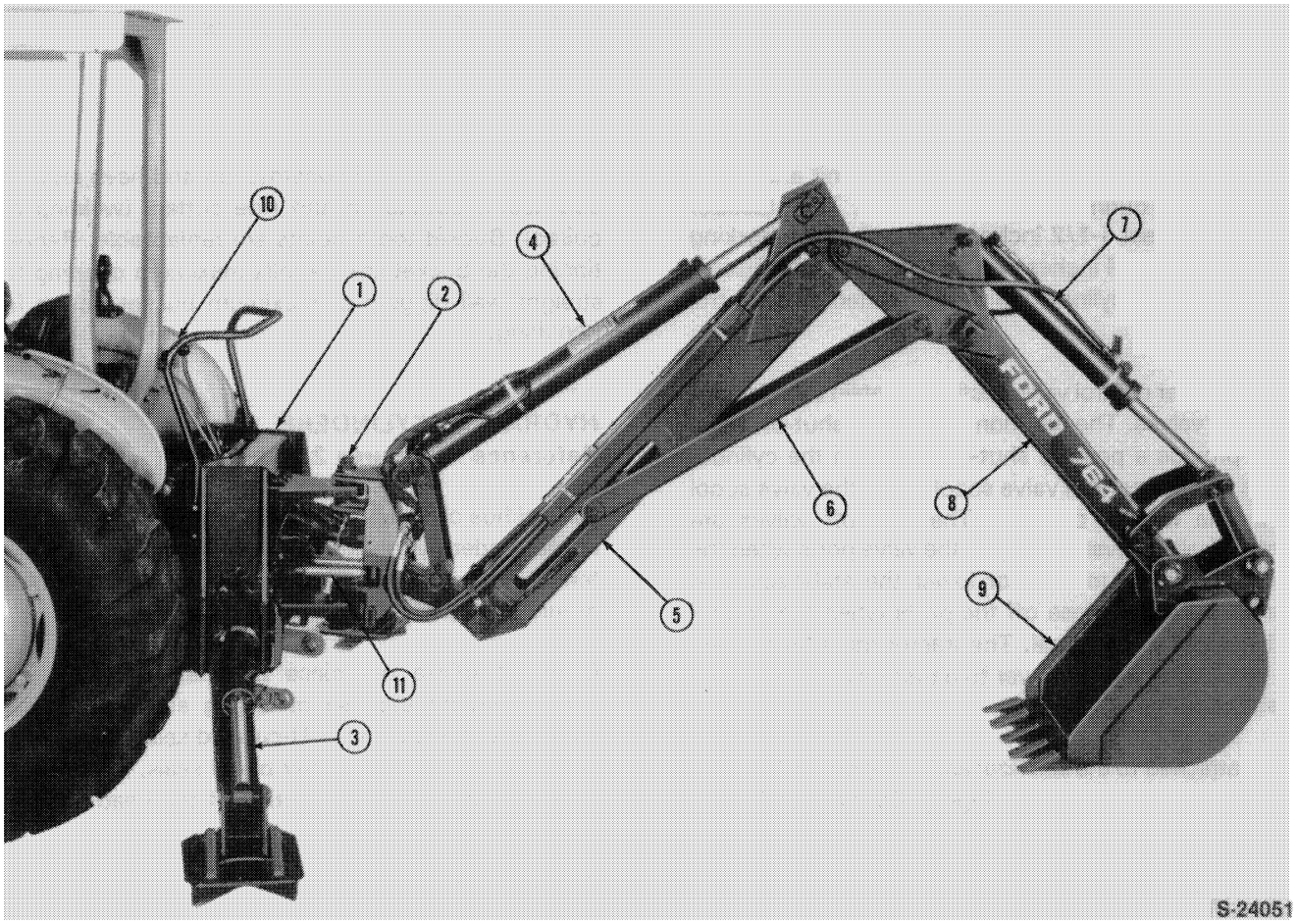

Figure 1
Backhoe Components

1. Mainframe
2. Swing Post
3. Stabilizer & Cylinder
4. Lift Cylinder
5. Boom
6. Long Bar Link
7. Bucket Cylinder
8. Dipperstick
9. Bucket
10. Control Levers
11. Swing Cylinders

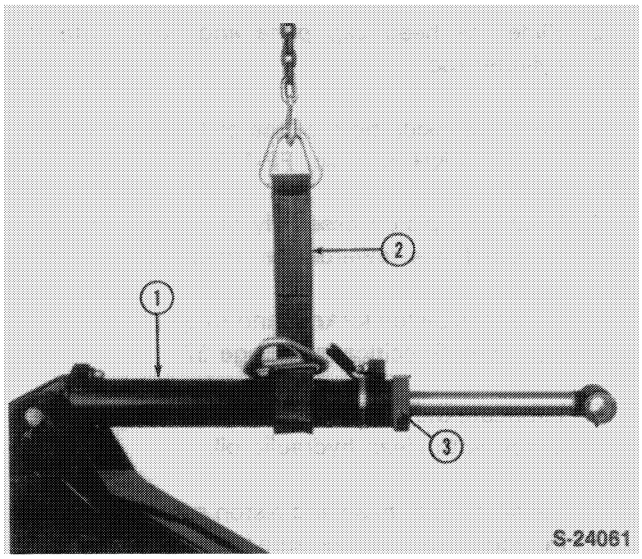

Figure 11
Cylinder Removal

1. Bucket Cylinder
2. Sling
3. Setscrew

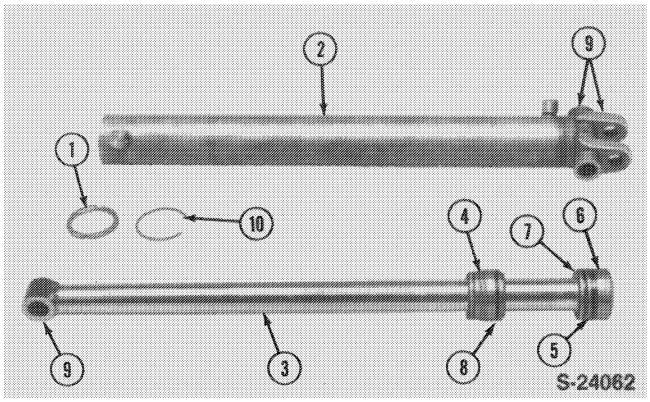

Figure 12
Cylinder Disassembly

1. Cap Bearing Nut
2. Cylinder Barrel
3. Cylinder Rod
4. Head Assembly
5. Wear Ring
6. Piston
7. Seal
8. O-Ring and Back-Up Ring
9. Bushings
10. Wire Lock Ring

5. Secure the cylinder rod trunnion in a vise, or preferably secure to an anchor point on the backhoe using an attaching pin. Remove the piston retaining locknut using a quality socket and drive system. Considerable torque may be required to loosen the locknut, Figure 13.

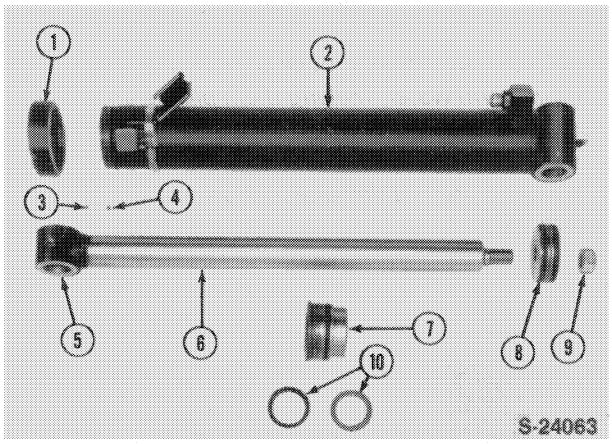

Figure 13
Piston and Head Removal

1. Cap
2. Barrel
3. Nylon Ball
4. Setscrew
5. Bushing
6. Rod
7. Head
8. Piston
9. Locknut
10. Wiper and U-Cup Seal

6. Remove the piston assembly from the cylinder rod.

7. Remove the head and cap from the cylinder rod, Figure 13.

8. Remove the O-ring and back-up ring from the outer diameter of the head.

9. Remove the internal U-cup seal and the wiper seal from the head. Discard all the old seals.

10. Remove and discard the O-rings, back-up rings and teflon rings from the piston.

NOTE: *The lift cylinder piston contains one cast iron ring at the locknut end, Figure 12.*

INSPECTION AND REPAIR

1. Clean all the components thoroughly with a suitable solvent, and air dry using compressed air.

2. Inspect all parts for damage and replace parts as necessary.

3. Install new seals and O-rings on the cylinder head assembly.

BACKHOE CONTROL VALVE AND CONTROL LEVER ASSEMBLIES

BACKHOE CONTROL VALVE AND CONTROL LEVER ASSEMBLIES

GENERAL

The top cover plate and the control lever assemblies should be removed from the valve before the control valve is removed.

NOTE: *The control valve can be removed with the control levers installed.*

Start the engine and lower the stabilizers, curl the bucket and lower the boom and dipperstick to the floor. Stop the engine and remove any residual oil pressure in the cylinder circuits by moving the control levers in all directions.

1. Remove the four bolts securing the top plate, Figure 32, from the control valve supports.

   NOTE: *Before removing the control lever assembly, clean the upper area of the control valve.*

2. Remove the cotter pins from the pins attaching the stabilizer levers to the control valve spool. Remove the cotter pins and washers from the pivot links and remove the levers.

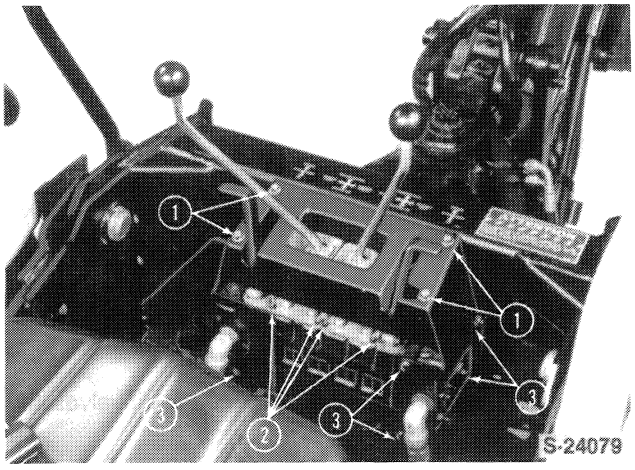

Figure 32
Control Lever Removal

1. Top Plate Screws
2. Allen Screws
3. Bracket Bolts

3. To remove the two remaining control levers, it will be necessary to remove the right side control valve support bracket to gain acess to the allen type screws securing the control lever bracket to the valve.

4. Remove the four allen type screws and remove the lever bracket assembly. This procedure is used to remove both lever assemblies, Figure 33.

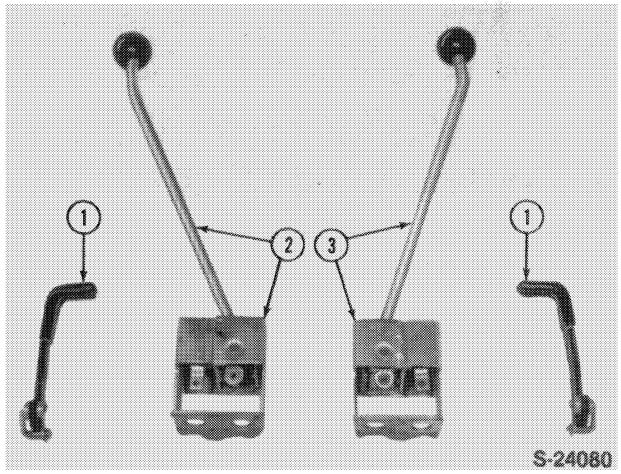

Figure 33
Control Levers

1. Stabilizer Levers
2. L.H. Lever Assembly
3. R.H. Lever Assembly

INSTALLATION

Installation procedures generally follow the removal procedure in reverse.

CONTROL VALVE

REMOVAL

1. Disconnect the three quick couplers, and remove the pump pressure and sump return tubes from the valve. Cap all open ports.

2. Attach a rope or small chain to the control valve, Figure 34, and use a hoist to place a slight tension on the valve.

3. Remove the four control valve lower mounting bolts.

FLOW DIVIDER VALVE

REMOVAL
(545 and 545A Tractors Only)

To remove the flow divider valve, the following steps must be taken.

1. Remove the backhoe from the tractor. Refer to the Operator's Manual for removal procedures.
2. Place blocks or floor jack under the backhoe mainframe to support the backhoe.
3. Disconnect the hoses, tubes and tube clamp from the flow divider valve adaptor fittings, Figure 51.
4. Remove the valve.

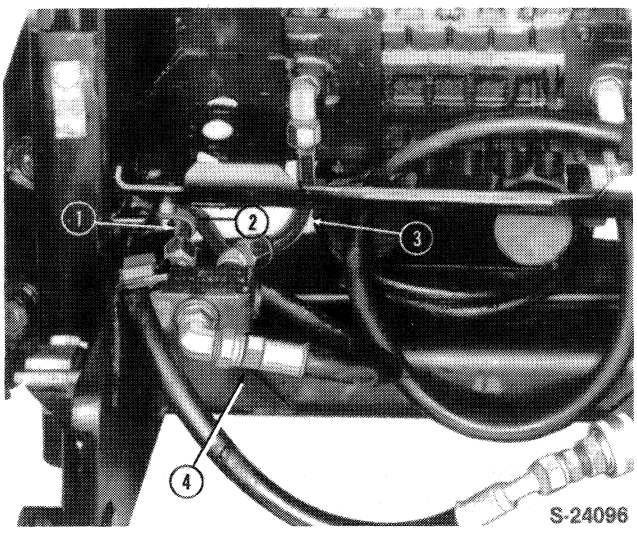

Figure 51
Flow Divider Valve Removal

1. Sump Return Tube
2. Clamp
3. Tube-Flow Divider to Control Valve
4. Hose-Pump to Flow Divider

DISASSEMBLY

1. Remove the screw plugs on each end of the valve housing, Figure 52.
2. Remove the flow divider valve spool.

INSPECTION AND REPAIR

1. Remove the O-rings from the plugs and discard. Clean all parts thoroughly.

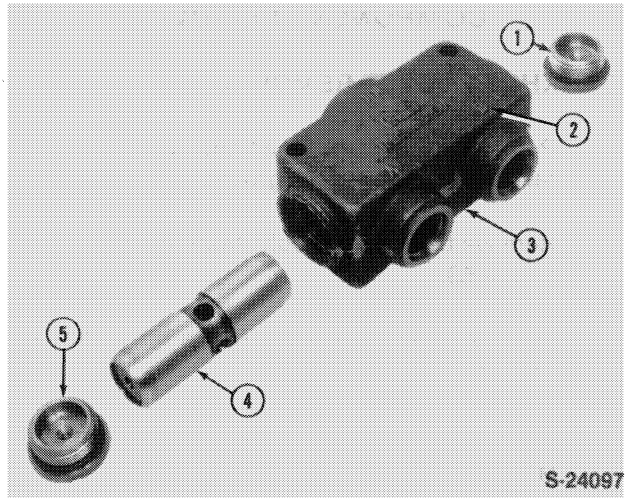

Figure 52
Flow Divider Valve

1. Screw Plug
2. "B" Identification
3. Housing
4. Valve
5. Screw Plug

2. Check valve spool for nicks or burrs.

ASSEMBLY

The valve spool has two different diameter holes on the ends, therefore it must be installed correctly. The letters A and B are embossed on the outside of the housing, Figure 52. Lubricate all parts before assembly.

1. Install new O-rings on the plugs.
2. Install the valve spool, with the larger diameter hole at the B identification on the housing.
3. Install both screw plugs and tighten.

INSTALLATION

Installation of the flow divider valve on the backhoe mainframe generally follows removal procedures in reverse.

OPERATOR ROTATING SEAT

The seat mounting used on tractors with a 764 backhoe has three working positions, (1) tractor-loader, (2) backhoe and (3) three point implement operation. Many of the mounting parts are serviced individually.

SEAT REMOVAL

1. Release the seat adjustment lever and move the seat fully rearward.
2. Remove the two front bolts securing the seat base to the slide assemblies, Figure 71.
3. Release the seat adjustment lever and move the seat fully forward.

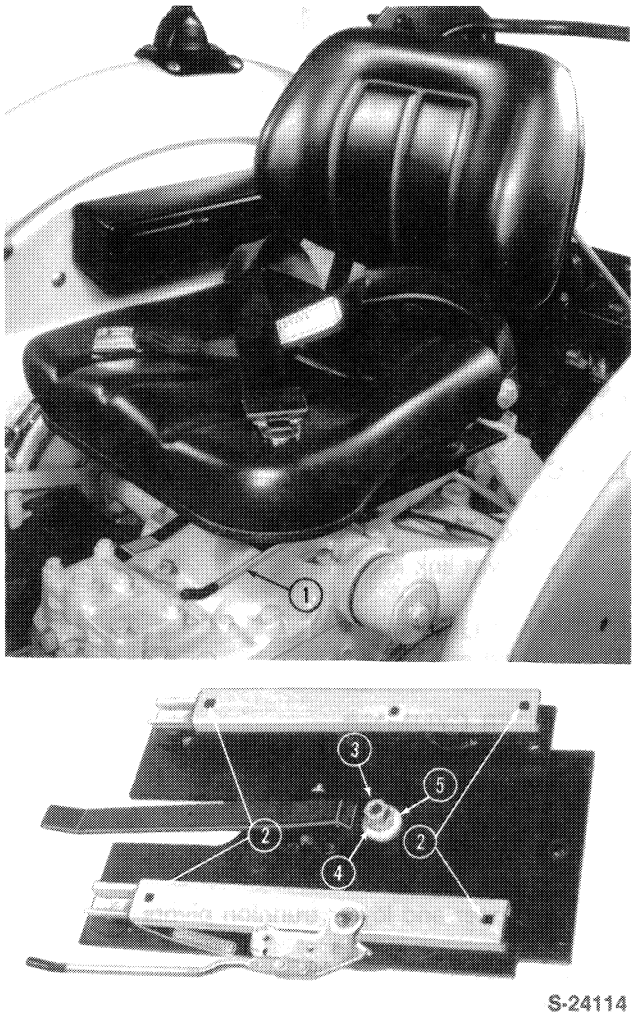

Figure 71
Seat Removal

1. Seat Lever
2. Seat Base Bolt Location
3. Locknut
4. Adjusting Nut
5. Washer

4. Remove the two remaining bolts from the seat base and slide assemblies and remove the seat, Figure 71.
5. Remove the lock and adjusting nuts and washer from the slide mounting plate, Figure 71, and remove the plate.
6. Remove the friction disc from the center stud bolt, Figure 72.
7. Remove the four nuts, bolts and spacers securing the round position plate to the tractor mounting plate, Figure 72.

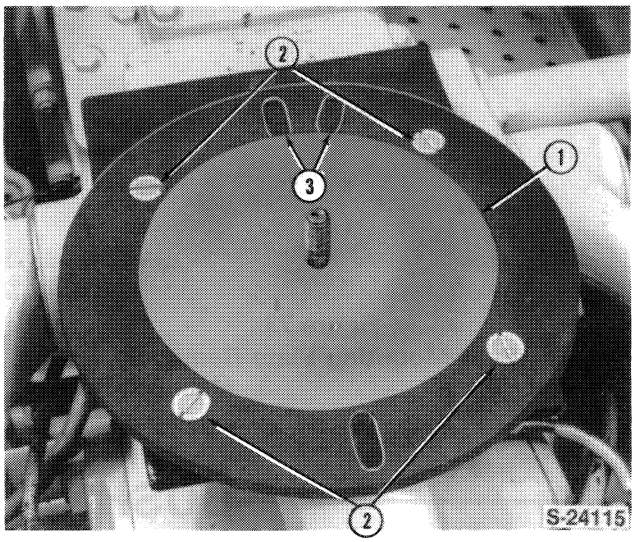

Figure 72
Seat Position Plate Removal

1. Friction Disc
2. Bolts
3. Seat Position Notches (2)

8. Remove the bolt and nut securing the mounting plate to the tractor hydraulic lift cover, Figure 73.

IMPORTANT: *When removing the mounting plate nut from the stud make sure the stud does not turn out with the nut. The stud contains a guide pin at the bottom for the three point hydraulic internal linkage.*

NOTE: *The slide assemblies and levers can be removed from the seat mounting plate, if necessary, by removing the mounting bolts.*

INSPECTION AND REPAIR

Inspect all parts for cracks or wear and replace as required.

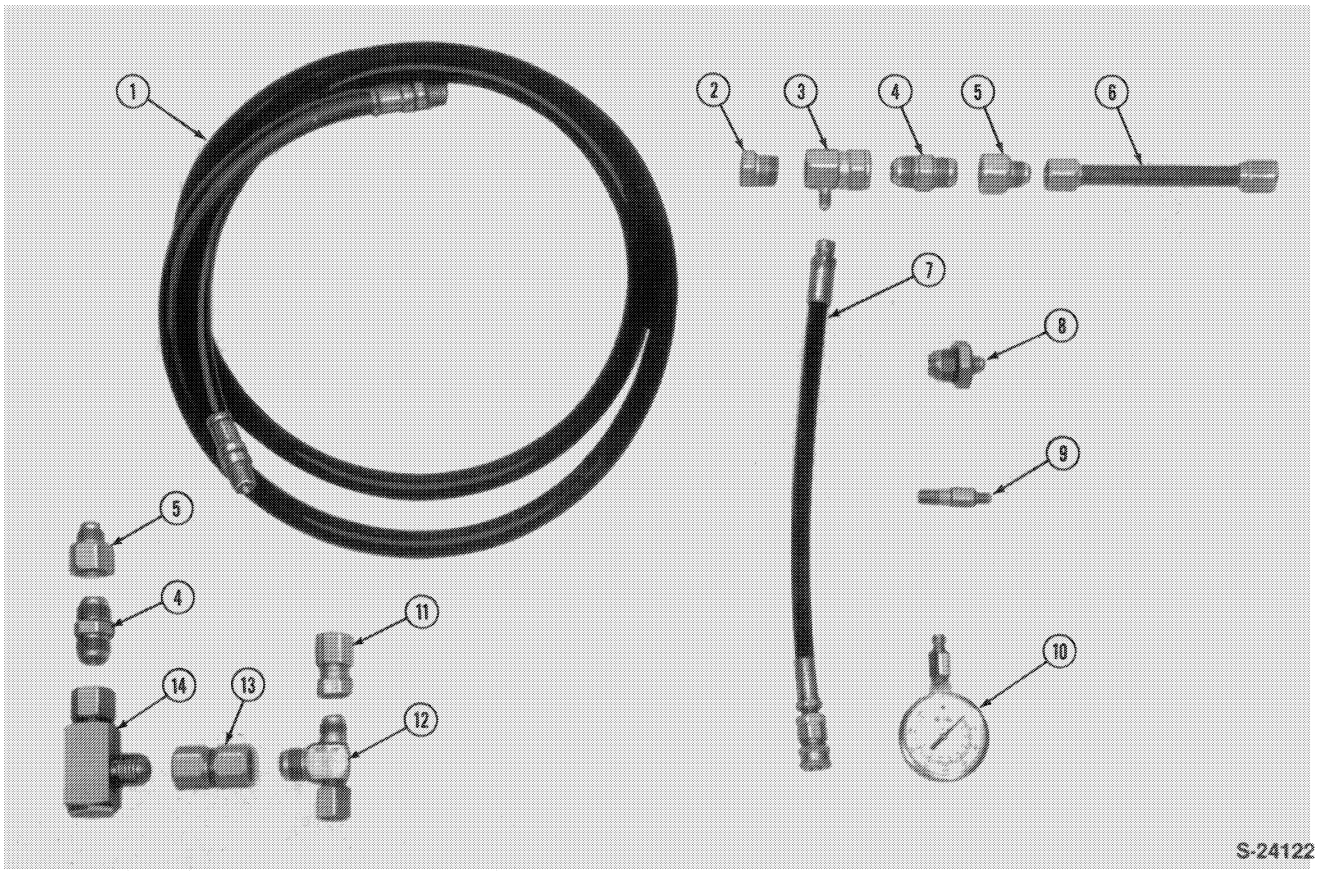

Figure 79
Special Tools — Circuit Relief Valve Test

1. 1340 Hose 3/8" ID x 118 Long with 1/2" MNPT Ends
2. Reducer 3/4" MNPT x 1/2" FNPT
3. 1361 Tee 1-1/16-12 FJIC SW x 1/2 FNPT x 7/16-20 MJIC
4. 0092 Connectors 1-1/16-12 MJIC x 1-1/16-12 MJIC
5. Adaptors 7/8-14 MJIC x 1-1/16-12 FJIC
6. Connector 7/8-14 FJIC SW x 7/8-14 FJIC
7. 2106 Hose 3/16" ID x 16-1/4" Long x 7/16-20 FJIC SW 37°F
8. Adaptor 1-1/16-12 MJIC x 9/16-18 MJIC (Swing)
9. 0035 Adaptor 7/16-20 MJIC 37° x 1/4-18 MNPT (System Relief)
10. 2028 Gauge 0-5000 psi Male Disconnect
11. Connector 7/8-14 FJIC SW x 1/2 FNPT
12. 1241 Tee 7/8-14 MJIC x 7/8-14 FJIC x 1-1/16-12 MJIC
13. 0770 Connector 1-1/16-12 FJIC x 1-1/16-12 FJIC
14. 1362 Check Valve Elbow 1-1/16-12 FJIC x 1-1/16-12 FJIC

CIRCUIT RELIEF VALVE TESTS — LIFT CYLINDER

1. Assemble the test fittings as layed out in Figure 79.
2. Start the engine and extend the dipperstick to its full reach and lower the bucket to the floor. Remove the bucket cylinder rod pin from the bucket linkage, Figure 80.
3. Stop the engine and actuate the backhoe control levers to remove any residual oil pressure from the cylinders.
4. Disconnect the bucket cylinder rod end hose at the cylinder and connect the test fitting assembly to the cylinder port as shown in Figure 81.
5. Connect the previously removed bucket cylinder hose to the remaining port on the test fitting assembly.
6. Disconnect the lift cylinder rod end hose and connect the long test hose, tee and pressure gauge assembly to the cylinder hose, Figure 82.
7. Start the engine and set the speed at 1700 rpm.