TROUBLE SHOOTING

SYMPTOM	CAUSE	CORRECTIVE ACTION
DRIVE SYSTEM		
A. System Noisy	1. Air in system	1. Check reservoir oil level, replenish if required, and purge system of air.
	2. Loose suction line	2. Tighten connections.
	3. Clogged suction filter	3. Replace filter element.
	4. Oil too thick	4. Replace with correct grade of oil.
	5. Oil cold and stiff	5. Run system at low speed and no load until warm.
	6. Internal pump or motor damage	6. Disassemble, inspect and repair.
B. System Overheating	1. Internal leakage	1. Isolate and repair.
	2. Fluid level low	2. Replenish reservoir oil level.
	3. Oil cooler blocked	3. Clean oil cooler externally and flush internally.
C. System Not Developing Pressure	1. Relief valve damaged or malfunctioning	1. Install a new relief valve.
	2. Internal leakage in pump or motor	2. Isolate and repair.
	3. Pump drive failure	3. Locate and repair.
	4. Control linkage failure	4. Locate and repair.
	5. Charge pump defective or worn	5. Repair or replace charge pump components.
D. Loss of Fluid	1. Loose fittings	1. Check and tighten hose and tube connections.
	2. Ruptured hydraulic line	2. Locate and repair.
	3. Leaking gaskets or seals in pump or motor	3. Visually inspect mating sections of pump, shaft seal areas, etc., for signs of leakage. Repair as required.
E. Pump Vibration	1. Clogged pump	1. Clean.
	2. Loose pump mounts	2. Tighten.
	3. Defective bearings	3. Repair or replace.
F. Filter Gauge Indicates Red	1. Filter is clogged	1. Install new filter cartridge.

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HYDRAULIC PUMP REMOVAL

Drive Motor and Pump Circuit

The two 18 gpm (68.2 lpm) (15 Imp. gpm) drive pumps supply power to the drive motors. The rear pump (10)

Tools

a. 500 lbs. (226.8 kg) hoist.

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HYDRAULIC PUMP DISASSEMBLY

Disassembly

1. Open rear counterweight (9), Figure 1.

7. Drain and remove oil reservoir and cap all openings (11), Figure 1.
8. Remove and tag four wires from electrical junction

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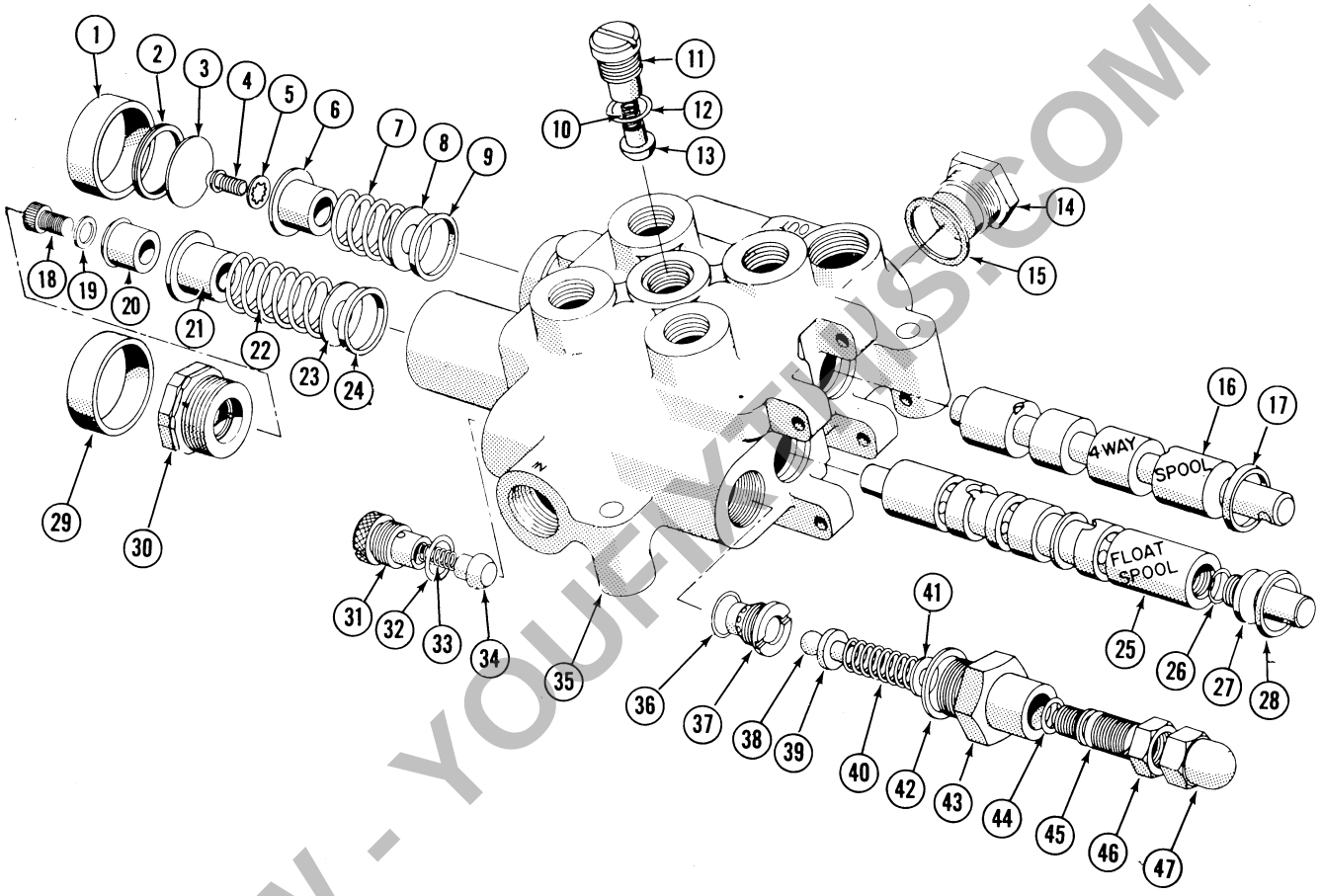

Figure 13
Lift and Tilt Valve Assembly

1. Rubber Bonnet
2. Snap Ring
3. Stop Disc
4. 1/4 in. Bolt
5. Lock Washer
6. Stop Collar
7. Centering Spring
8. Stop Washer
9. Seal
10. Check Poppet Spring
11. Check Ball Plug
12. O-Ring
13. Check Poppet
14. Plug
15. Gasket
16. 4-Way Spool
17. Seal
18. Float Detent Adapter
19. 1/4 in. Lock Washer
20. Float Detent Plunger
21. Float Spring Collar
22. Float Centering Spring
23. Stop Washer
24. Seal
25. Float Spool
26. Float Spool Adapter Spool
27. Float Spool Adapter
28. Seal
29. Rubber Bonnet
30. Float Detent
31. Check Ball Plug
32. O-Ring Plug
33. Check Poppet Spring
34. Check Poppet
35. Housing
36. O-Ring
37. Relief Valve Seat
38. Relief Valve Ball
39. Spacer
40. Relief Spring
41. Washer
42. Gasket
43. Relief Valve Body
44. O-Ring Screw
45. Adjusting Screw
46. Jam Nut
47. Acorn Cap

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four washers (49), capscrews and torque to 17-20 ft. lbs. (2.35 - 2.7 kgm). Use capscrews (50) on mounting plate.

17. Remove pump from vise and install relief valve ball (42), spring (43), and washer (44), retain with snap ring (45).
18. Install new O-Ring (35) on relief valve assemblies (36) and install seats (34) and relief valves in back plate (33).
19. Install new O-Ring (53) on mounting face of gear pump and middle piston pump.
20. Assemble the three pumps and retain with the capscrews (55) and washers (54). Torque capscrews to 27-31 ft. lbs. (3.7-4.28 kgm).
21. Install the charging line connecting the two piston pumps. Install pump assembly in vehicle.

Starting Up Procedure

1. Fill pump half full of system oil and complete installation. Check all fittings to be sure they are tight.
2. Fill oil reservoir with approved oil.
3. With pump cam plate in neutral position, start engine and run at low idle.
4. The charge pump should immediately pick up oil and fill system, if there is no indication of fill in 60 seconds, stop engine and determine cause.
5. After system starts to show signs of fill, slowly move pump cam plate to a slight cam angle. Continue to operate system slowly with no load on motors until system responds fully.
6. Check fluid lines for leaks. Tighten if necessary.
7. Check reservoir fluid level and add if necessary.
8. Machine is now ready to operate.
9. The filter should be changed after the first 25 hours of operation.

LUBRICATION AND MAINTENANCE

Periodic Service Inspections

The following paragraphs contain the periodic service inspection procedures to be performed at the intervals designated. All inspections of assemblies, subassemblies, and parts must include any supporting members and connections, and must determine that the unit is in good condition, securely mounted or requires repair or replacement.

	Before Use	Every Day	Every Week	Every Month
Vehicle Appearance				
Inspect entire vehicle. Check panels and covers for proper closing.	X		X	
Inspect frame and sheet metal for damage or missing parts.	X		X	
Engine Assembly				
Check oil level in crankcase	X	X		
Inspect oil lines to filter.			X	
Check tightness of head bolts.				X
Inspect engine mounting and support brackets.				X
Fuel System				
Inspect fuel lines and connections. Replace or tighten as necessary.			X	
Check fuel pump mounting and connections				X
Check mounting and connections to fuel filter.			X	
Check fuel supply level.	X	X		
Exhaust System				
Inspect exhaust system for leakage.			X	
Check exhaust system components for secure connections.				X
Battery				
Check battery tray for damage and corrosion.			X	
Check battery cables for condition and cleanliness.			X	
Inspect battery electrolyte level.			X	
Check tightness of terminal posts and connections			X	
Inspect battery for cracks and/or electrolyte leakage.			X	

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5. After drying, check for damage by holding a light inside the element. If an even, fine pattern of light is seen, the element is clean and undamaged. A large

ELECTRICAL SYSTEM

The loader electrical system schematics are shown in

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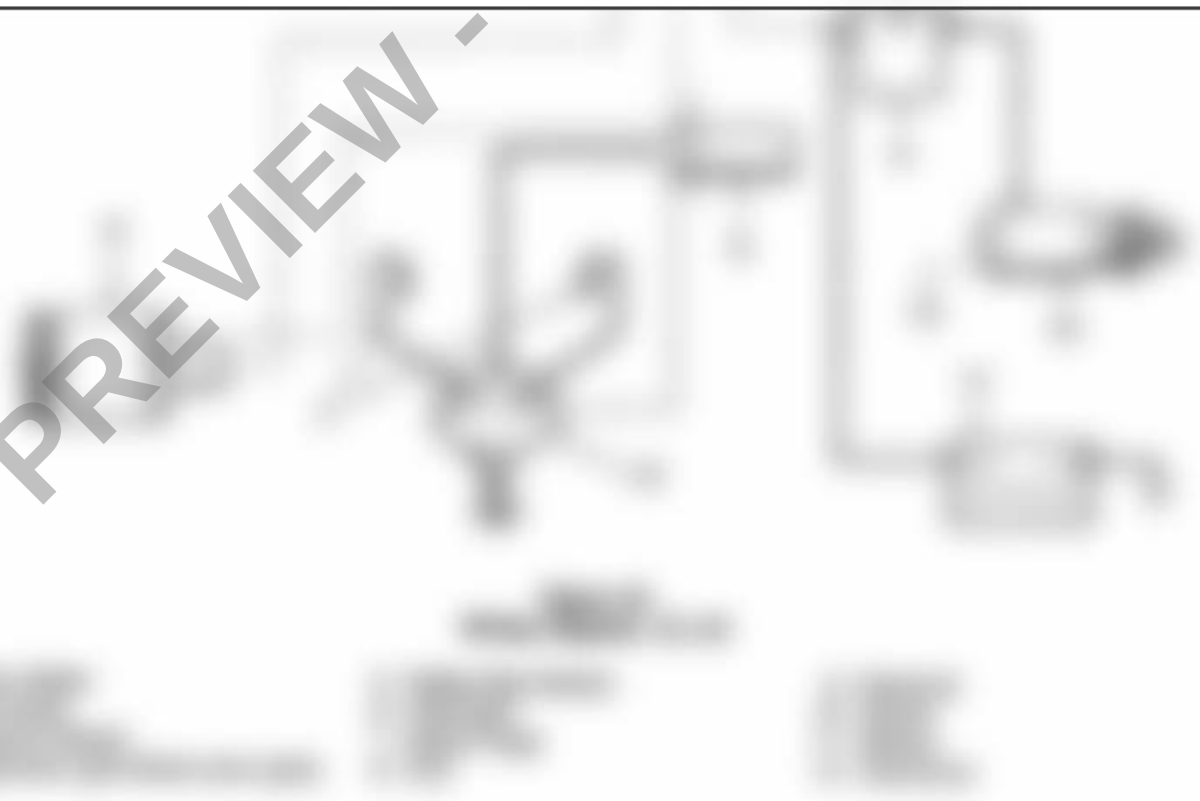

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