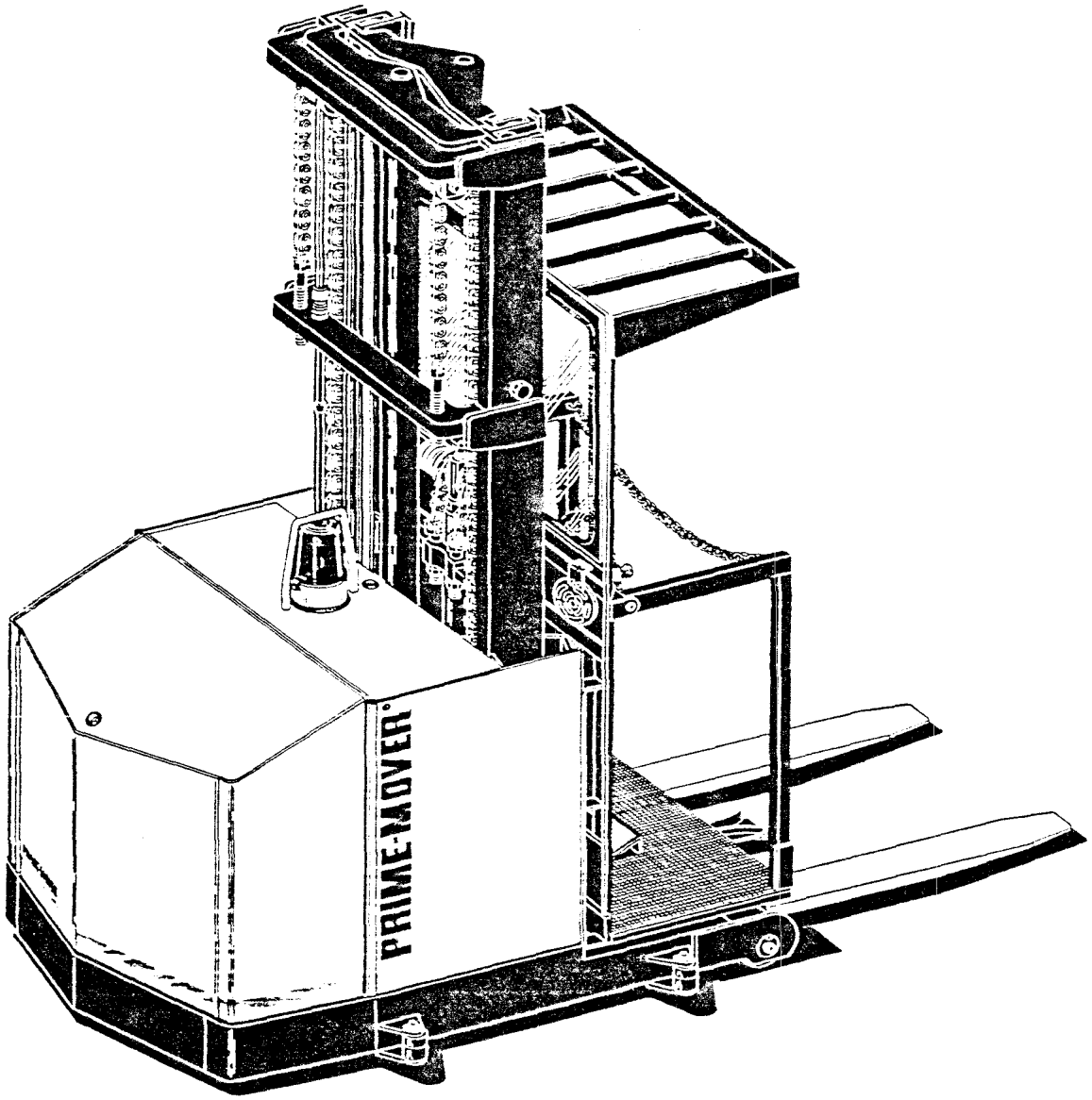
OE-30C REPAIR MANUAL

OE-30C ELECTRIC ORDER SELECTOR OE-30C

Effective Serial Number OE30C 170179



⚠ WARNING Read and observe all warnings on the unit before operating it. Do not operate this equipment unless all factory installed guards and shields are properly secured in place.

ISSUED OCTOBER 1988

PRIME-MOVER®

Return

DATE _____

PRIME-MOVER ORDER SELECTOR (OE30C)
PLANNED MAINTENANCE SCHEDULE

Year _____ Serial No._____

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
100 Hour or Monthly PM												
1. Check machine operation; all functions and safety switches												
2. Check level of hydraulic oil												
3. Service all grease fittings												
4. Lubricate door hinges												
5. Check transmission lubricant fluid level												
6. Clean and lubricate lift chains												
7. Check lift chain adjustment												
8. Inspect and adjust steering control cable												
9. Check brake adjustment and stopping distance												
10. Inspect fittings and valves for leaks												
11. Inspect all tires and wheels												
12. Check battery water level and equalize charge												
13. Lubricate side guide rollers												
14. Clean with compressed air												
500 Hour or Semi-Annual PM												
1. Change hydraulic oil filter												
2. Clean and lubricate battery rollers												
1000 Hour or Annual PM												
1. Steam clean machine												
2. Drain, flush, and refill gear case												
3. Drain, flush, and refil hydraulic reservoir												
4. Clean hydraulic reservoir outlet screens												
5. Check hydraulic pressure relief settings												
6. Inspect condition of lift chains												
7. Inspect contactor tips												
8. Inspect motor; brushes (length) & commutator												
9. Check mast and carriage - lube & adjust as needed												

Lubrication Specification

Grease - Tex. Ref. C&C #880
Hydraulic reservoir - SAE 10-40W oil
(Cold storage - ATF Dexron II)

Pivot Points - Heavy weight oil
Battery roller bearings - Tex. Ref. C&C #880
Lift chains - Heavy weight oil

Transmission Gear Case - 80W - 90/API GL-5
Cold Storage - ATF Dextron II

3. Install clamps through lift platform and on pins. Install one flat washer on pin between clamp and lift platform. Install second flat washer and secure with hairpin cotter pins.

4. Connect cable end to one each of the bracket on clamps and secure with nuts.

5. Thread cable up through lift platform to install lever.

6. Install cable to lever and secure with pin and cotter pin.

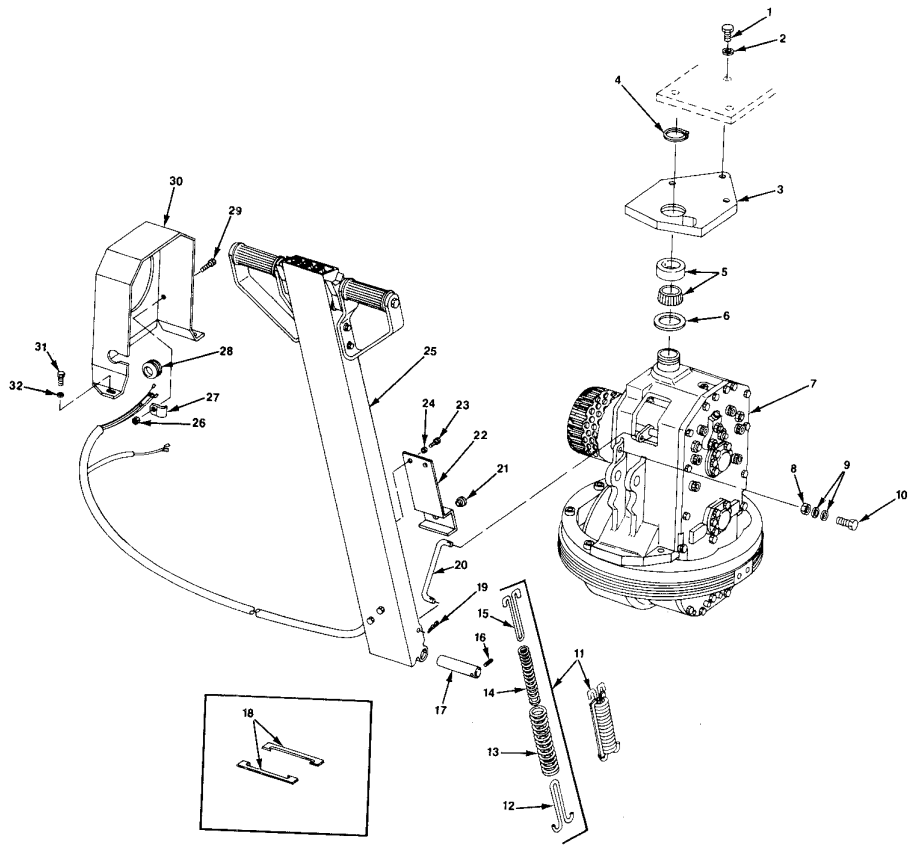
7. Install lever to lift platform as shown in illustration and secure with two (2) cap screws. Tighten screw just enough to keep lever tight but will not hinder levers action.

8. Test operation of pallet clamps and adjust to achieve proper action.

9. Remove blocks and lower lift platform.

10. Connect battery and test operation of unit.

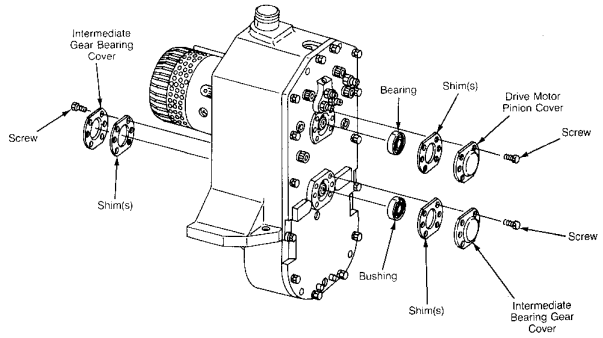
HT-45/60 TRANSMISSION AND HANDLE ASSEMBLY



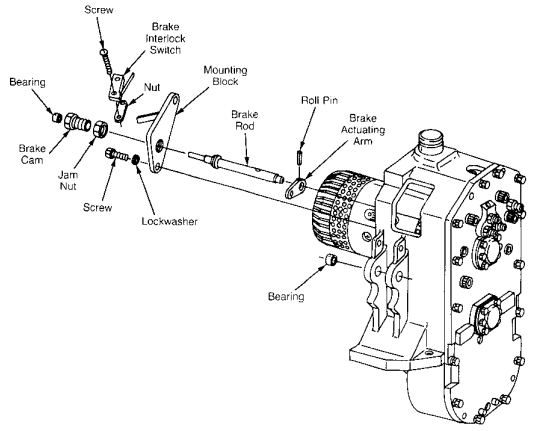
Item #	Part #	Name	# for Assy.
1	P-14994-08	Screw, cap	3
2	P-11009-08	Lockwasher	3
3	B-20970	Plate, mounting	1
4	P-11025-14	Ring, retainer	1
5	P-20070-01	Bearing	1
6	P-20069-01	Washer	1
7	W-1560004	14:1 Transmission assembly (see fig. #25)	1
8	P-11261-05	Nut, jam	1
9	P-11016-02	Washer	2
10	P-11854-05	Screw, cap	1
11	P-20405-02	Spring assembly	1
12	A-20398-02	Retainer, spring	1
13	A-27542	Spring	1
14	A-20400	Spring	1
15	A-20398-01	Retainer, spring	1
16	P-11073-04	Pin, roll	1
17	A-13813-19	Pin, handle pivot	1
17	A-20287-19	Pin, handle pivot (cold storage)	1

Item #	Part #	Name	# for Assy.
18	A-20393	Holder, spring	2
19	P-11429-04	Pin, spring clip	2
20	A-27529-01	Rod, brake	1
21	A-49788	Bumper	1
22	B-27535	Cover	1
23	A-14892-01	Screw, cap	2
24	P-11009-06	Lockwasher	2
25	W-1060004	Handle assembly	1
25	P-11009-05	Lockwasher	4
25	W-1060007	EV-1 SCR handle assembly (see fig. #8)	1
26	P-11170-04	Nut	1
27	A-20497	Clamp	1
28	P-11813-06	Grommet, rubber	1
29	P-11045-02	Screw, cap	1
30	C-27046	Shield, motor	1
31	P-11854-03	Screw, cap	4
32	P-11009-05	Lockwasher	4

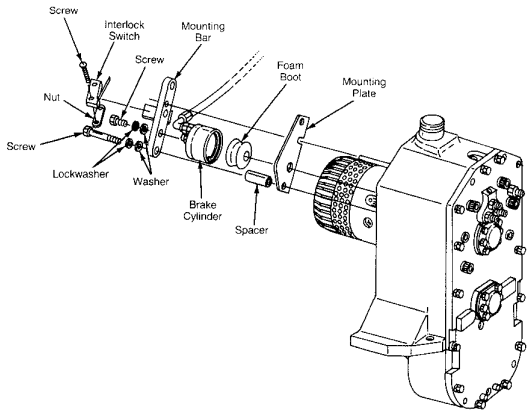
1. If it is below the outer cover, install the bearing cover using "Loctite Gasket Eliminator No. 504". **Use sparingly.** Use thread sealant "Loctite No. 601 on the bolts.
2. If it is flush with the outer cover, install on .010" shim gasket and the bearing cover using "Loctite Gasket Eliminator No. 504". **Use sparingly.** Use thread sealant "Loctite No. 601" on the bolts.
3. If it is above the outer cover, install enough shims to be even with the outer race. Install one more .010" shim and the bearing. Cover using "Loctite Gasket Eliminator No. 504" shim and the bearing. Cover using "Loctite Gasket Eliminator No. 504". **Use sparingly.** Use thread sealant "Loctite No. 601" on the bolts.



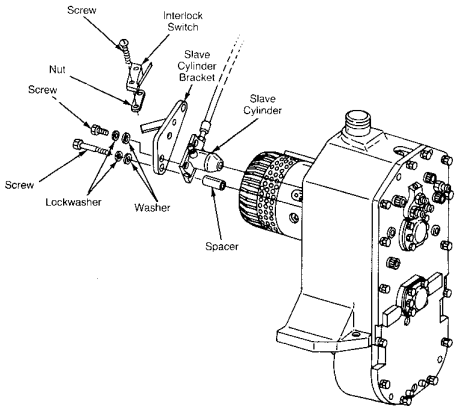
50. Install the mounting bar.
    A. TE-70, HT: Install the mounting block, brake acutating arm, brake cam rod, jam nut, adjusting cam screw, and bushings to the gear case. Be sure the brake acutator rod lines up correctly.



    B. OE-30 B: Install the mounting plate, foam, arm and mounting bar to the gear case. Be sure the brake acutator rod lines up correctly with the center of brake cylinder.



    C. RS, RC, RR (except RR-40): Install the slave cylinder bracket, spacer, and slave cylinder to gear case. Be sure the brake acutator rod lines up correctly with the center of the slave cylinder.



51. Fill the gear case with AMOCO 1000 oil or SAE 80 Transmission Grease (for cold storage use ATF Type "A" or Dextron II) up to the check plug shown under the lower bearing cover.
52. Install the air vent, magnetic pipe plug, and pipe plug in the gear case cover.

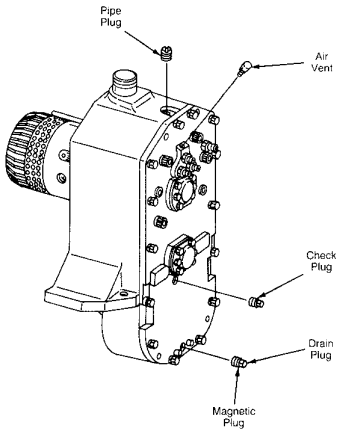
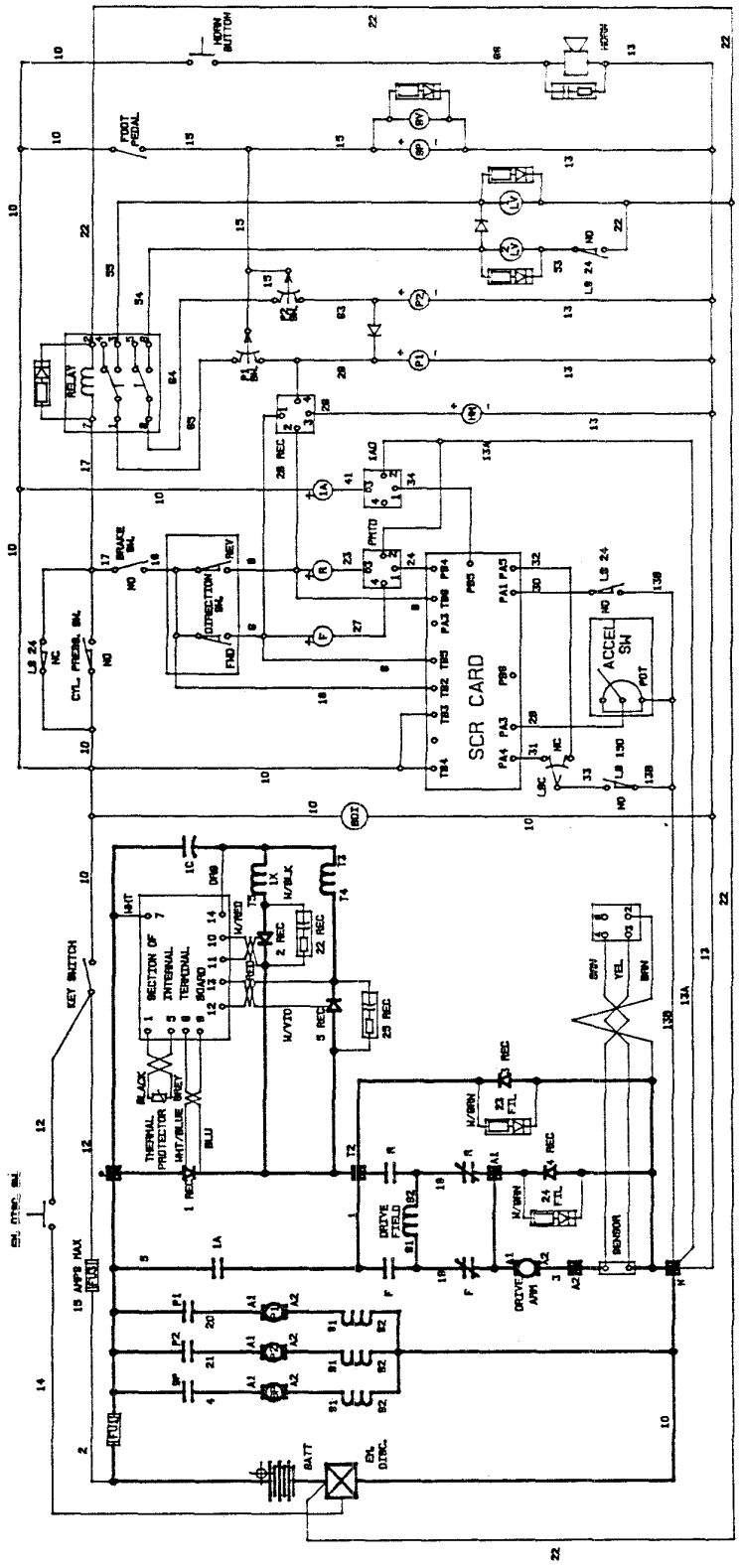


FIGURE # ELECTRICAL SCHEMATIC



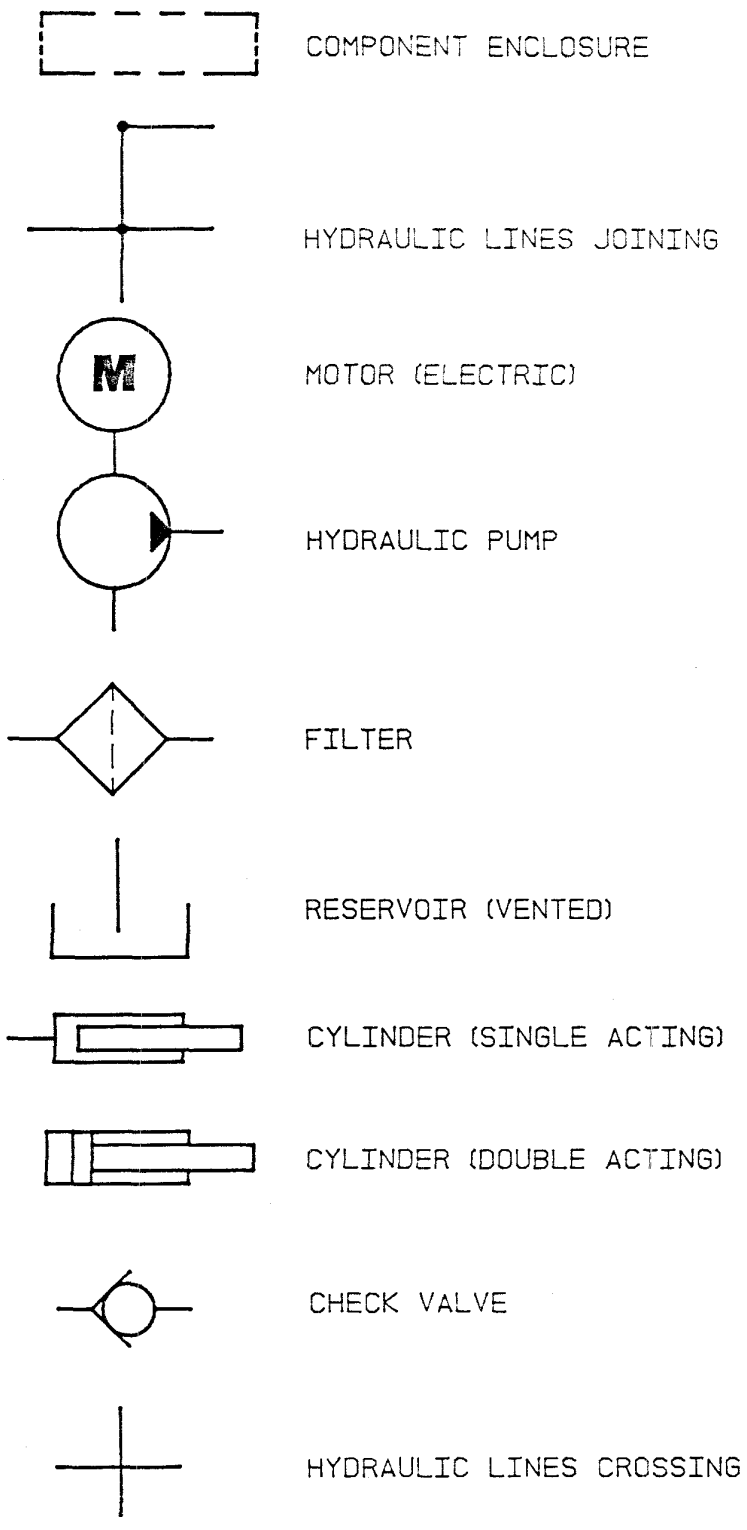
EV-100 OE-30C ELECTRICAL SCHEMATIC

SERVICE REFERENCE #

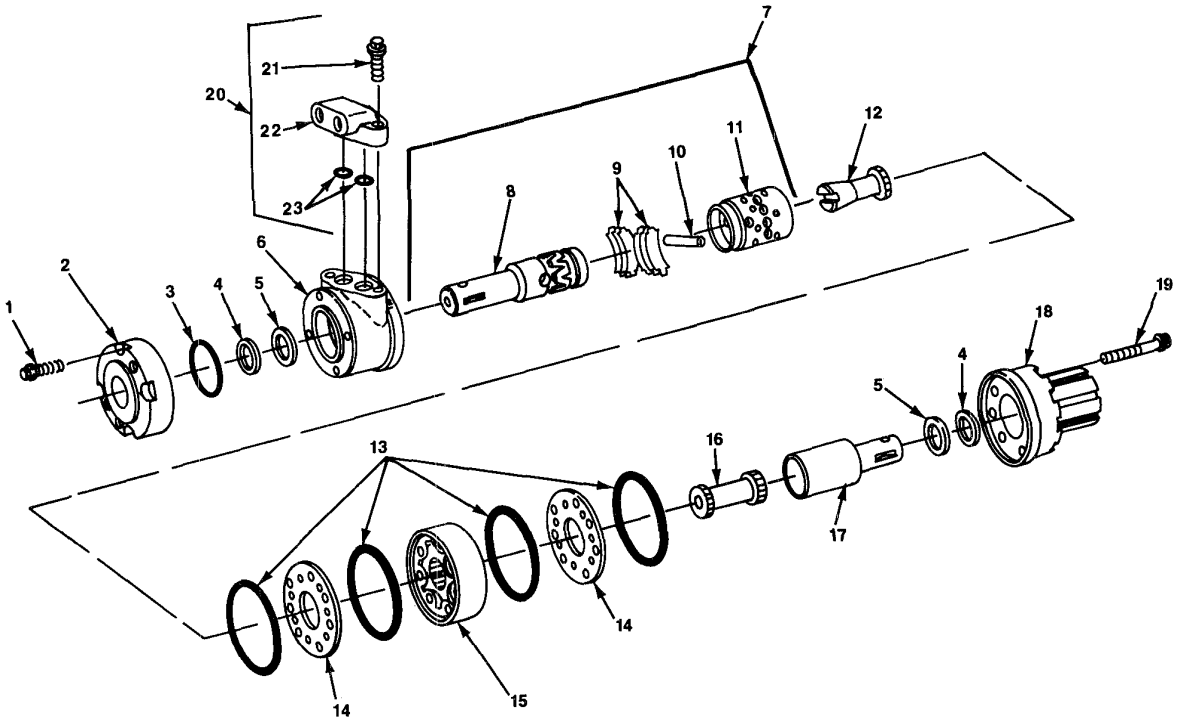
OE30BP- PRIME-MOVER DATE

	SYMPTOM	PROBABLE CAUSE
3H	FW contactor will not drop out with increasing load.	* Check drop out setting on control card. * Check for shorted FWD driver. * Replace control card.(4A)
3J	Stiff plug. (Severe reversal)	* Check plug adjustment setting on control card. * Check yellow wire on current sensor for open. * Check 4REC for open circuit.(4H) * Replace control card. (4A)
3K	Hourmeter feed faults:	
(1)	Pump contactor closes when direction is selected.	* Diode shorted HMD3 to HMD4. (4H) Replace hourmeter block.
(2)	One direction okay; opposite direction picks up both directional contactors.	* Diode shorted HMD1 to HMD4 or HMD2 to HMD4.(4H) Replace hourmeter block.
(3)	Either direction picks up both directional contactors.	* Diode shorted HMD1 to HMD4 of HMD2 to HMD4.(4H) Replace hourmeter block.
3L	Very soft reversal	* Check plug adjustment setting on control card. * Replace control card. (4A)
3M	Blown power fuse. Very hot power cables	* Check 3REC for short.(4H) (Possible damage also to 1REC.)

FIGURE # HYDRAULIC SCHEMATIC SYMBOLS



TORQUE GENERATOR (207-1018-001)



Item #	Part #	Name	# for Assy.
1	G21045-7	Screw, cap	4
2	G21108	Cap, end	1
3K	NSS	O ring	1
4K	NSS	Seal	2
5	G13	Washer	2
6	G21310-1	Housing, control	1
7	G21477	Spool and sleeve	1
8	NSS	Spool, control	1
9	G370	Spring, centering	6
10	G15	Pin	1
11	NSS	Sleeve, control	1
12	G147	Drive, control end	1
13K	NSS	O ring	4
14	G7358	Plate, spacer	2
15	G8980-3	Gerotor	1
16	G148	Drive, power end	1
17	G142	Shaft, power end	1
18	G21312-1	Housing, power end	1
19	G5389-15	Screw, cap	7
20	G208-1015-001	Kit, adapter	1
21	NSS	Screw, cap	2
22	NSS	Block, port	1
23K	NSS	O ring	2
K	G21122	Kit, seal (Contains parts indicated by letter "K")	1

NOTE: After every 100 hours of truck operation, lift chains should be inspected and lubricated. When operating in unfamiliar corrosive environment, inspect chains every 50 hours.

4. Connect lift cylinder hydraulic lines.

5. Remove hoist and connect battery. Test operation of truck and system.

STAGING CYLINDER ASSEMBLY (D-28131)

ROUTINE MAINTENANCE

No routine maintenance is necessary other than periodic check for tightness of the mounting bolts and a visual check for oil leakage. Keep the cylinder clean externally, especially in the area of the shaft oil seal.

NOTE: Dirt can wear seals and cause leakage.

The cylinder must be operated only with clean oil and the system oil filter element must be replaced according to the maintenance chart in your manual.

Do not dismantle the cylinder unnecessarily. If a loss of performance occurs, the system as a whole must be investigated before assuming that the cylinder is at fault.

DISASSEMBLY

1. Plug ports and thoroughly clean outside of cylinders.

2. Remove bearing head by turning counterclockwise.

3. Remove bearing head from rod and disassemble. Discard wiper, oil seal, wear ring, back-up ring, and O ring. Replace with new from seal kit.

4. Remove the cylinder rod from tube with piston on rod.

5. Remove retainer nut from bottom of rod.

DISASSEMBLY

1. Make certain that hydraulic pressure is at zero. Piston will then be against hydraulic end cap or at bottom of accumulator body because of gas pressure on opposite side of piston.

2. Disconnect the battery.

3. Remove guard from over gas valve.

4. To release gas, unscrew gas valve part way until gas beings to escape through safety hole drilled through side of gas valve.

   NOTE: Wait until all gas pressure is relieved, then remove gas valve.

5. Remove acculator from hydraulic system.

6. With accumulator laying horizontal, hold accumulator body with a strap wrench, or vise gripping over hydraulic end cap.

7. Install pins into holes of cap at gas end, then remove gas cap using a long bar working against the pins.

8. Remove O ring and back-up ring from end cap.

9. Remove piston using pliers on cast web and while pulling, rotate piston slightly to aid in removal.

10. Remove teflon rings.

11. To remove V O ring from piston, lift ring with small, smooth, screwdriver or similar tool, moving the tool around the piston several times while using other hand to work ring off the piston.

9. Raise lift platform up intermediate column as far as it will go under normal opertion. Check bearing shimming as the lift platform is raised. Remove shims as required. If tight spots are encounted where assembler cannot roll lift platform smoothly, check for excessive bearing clearance with platform in fully closed position by prying platform to one side and checking with a 0.060" shim. Maximum clearance must not exceed 0.060". Check for excessive bearing clearance with lift platform in the fully raised position by prying platform to one side and checking with a 0.030" shim. Maximum clearance must not exceed 0.030".

10. Lower lift platform to install lift chain anchor pins, steering wheel chain, and electrical cable. When installing lift chains, chains are to be free of twists and adjusted for equal tension with adjusting nuts (wheel nuts) and locknuts (jam nuts) torqued to 200 ft./lbs. Chains are to be centered on sheave within 1/32".

11. Remove hoist from lift platform and test operation of unit.

    Shimming mast with lift platform removed.

    The lift platform must be removed to shim the mast.

12. Attach hoist to top if intermediate column (see Hoisting Instructions in this manual) and hoist to loosen lift chain. This will allow removal of lift chain anchor pins.

13. Before disconnecting hoses and fittings from inner column, thoroughly clean off all outside dirt around fittings. After disconnecting hoses immediately cap ports on tubes and hoses to prevent contaminates from entering the hydraulic system.

    NOTE: Take note as to which port the hoses are from for easier installation.

23. Grease the grease fittings with Tex. Ref. C & C No. 880 using a standard lube gun.

FREELIFT CYLINDER ASSEMBLY

ROUTINE MAINTENANCE

CYLINDER

No routine maintenance is necessary other than periodic checks for tightness of the mounting pins and a visual check for oil leakage. Keep the cylinder clean externally, especially in the area of the rod oil seal.

NOTE: Dirt can wear seals and cause leakage.

The cylinder must be operated only with clean oil and the system oil filter element must be replaced according to the maintenance chart in this manual.

Do not dismantle the cylinder unnecessarily. If a loss of performance occurs, the system as a whole must be investigated before assuming that the cylinder is at fault.

SHEAVE SHAFT

Routine maintenance consists of periodic checks for tightness of the mounting nut and a visual check for wear. Keeping the bearings greased will prolong life and decrease wear. Cleanliness is extremely important in the area of the bearing roller surface.

NOTE: Dirt can wear bearings and cause failure.

The maintenance chart in this manual will guide you in your preventative maintenance.

LIFT CHAIN

See lift chain maintenance instructions in this section.

21. Place hinge plate in vice with rod horizontal.

22. Drive roll pins out of roller chain sprockets and remove sprockets and retainer from rod.

    WARNING: Always wear safety glass or face shield when using a hammer.

23. Rod may be removed from pillow block by pulling by hand or driven with soft metal (lead) hammer.

    WARNING: Always wear safety glass or face shield when using a hammer.

24. Remove pillow blocks from plate by removing two (2) nuts and lock-washers from each of the two (2) pillow blocks.

25. Loosen the two (2) cap screws securing the chain anchors on transmission gear case ring and loosen turnbuckle.

26. Remove chain from lower sprocket on torque generator from under frame.

27. Remove torque generator from frame by removing three (2) cap screws and lockwashers from under frame.

    Service of torque generator may be found in this manual under the "Hydraulic Section".

28. Gear case ring chain can be removed by removing the two (2) cap screws, lockwasher, and flatwashers from transmission gear case ring.

    Service on this chain can be done on work bench.

OE-30C TROUBLE SHOOTING GUIDE

1.0 HYDRAULIC

1.1 Lift

1.11 No Lift; both pump motors run

1.111 Hydraulic fluid reservoir low or empty.
Check hydraulic fluid level, fill to within 2" of filler tube with 10W40 oil (ATF in cold storage).

1.112 Manual lowering valve open. Close or repair manual lowering valve.

1.113 Lowering solenoids stuck open. Clean and repair or replace.

1.114 Load check valve open. Clean and repair or replace.

1.115 Relief pressure too low. Check pressure relief valve - set to 2400 +/- 100 PSI.

1.116 No oil flow or pressure from pumps.

a. Check flow from pumps.
3.7 gpm @ 2000 psi

b. Check supply oil to pump; hoses and strainer

c. Check pump to motor couplings.

d. Check internal pump parts.

1.12 No high speed lift; low speed lift okay.
Both lift pump motors operate.

1.121 No flow or pressure from 2nd pump. Check flow from pump. Check pump couplings. Check internal pump parts.

1.13 No low speed lift; high speed lift appears okay.

1.131 Load check on #2 pump open. Clean and repair or replace load check.

1.132 No flow or pressure from #1 pump. Check flow from pump. Check pump coupling. Check internal pump parts.

1.14 Drifts down - will not hold load

1.141 System leaks hydraulic fluid to outside. Inspect hoses, fittings, & cylinders for leaks. Repair leaks.

1.142 Load check leaks by. Clean and repair or replace load check valve.

2.322 Conditions for testing: Remove 24" limit switch from mounting base for switch test.

Test switch for continuity

a) With switch in normal position test continuity across terminals 1 to 2 and 5 to 6 on switch assembly.

b) Operate lever to actuate switch. Test for continuity across terminals 3 to 4 and 7 to 8 on switch assembly.

c) If the switch shows open in any position, replace switch.

2.323 Test continuity of wire 22 on 24" limit switch mounting base to battery negative.

Open circuit, repair open wire 22 to battery negative.

Closed circuit, reassess failure.

2.33 No low speed lowering; high speed lowering - okay.

2.331 Conditions for testing: Battery plug connected, key switch closed, foot pedal switch closed, low speed lowering switch (P1) closed.

Check for battery volts at:

a) Common terminal of P1 switch

0 volts, repair open wire 15 from foot pedal switch

b) Wire 65 terminal of P1 switch

0 volts, replace P1 switch

c) Terminal #1 on lowering control relay

0 volts, replace open wire 65 from P1 switch

d) Terminal 3 on lowering control relay.

0 volts, replace lowering control relay

e) Positive side of #1 lowering valve coil

0 volts, replace open wire 55 from lowering control relay

f) Negative side of #1 lowering valve coil

Battery volts, repair open wire 22 to battery negative

0 volts, replace #1 lowering valve coil, reassess failure