PDC SERIES

POWER DRIVEN COUNTERBALANCED LIFT TRUCK

Serial Number 384041 and Higher

Operation

Maintenance

Repair Parts List

Big Lift LLC
www.bigjoeforklifts.com

MANUAL NO. 902997
02/05/2014

WARNING

Do not operate this truck unless you have been trained and authorized to do so, and have read all warnings and instructions in operator's manual and on this truck.

Do not operate this truck until you have checked its condition. Give special attention to tires, horn, lights, battery, controller, lift system (including forks or attachments, chains, cables and limit switches), brakes, steering mechanism, guard and safety device.

Operate truck only from designated operating position. Never place any part of your body into the mast structure or between the mast and the truck. Do not carry passengers. Keep feet clear of truck.

Observe applicable traffic regulations. Yield right of way to pedestrians. Slow down and sound horn at cross aisles and wherever vision is obstructed.

Start, stop, travel, steer and brake smoothly. Slow down for turns and on uneven or slippery surfaces that could cause truck to slide or overturn. Use special care when traveling without load as the risk of overturn may be greater.

Travel with lifting mechanism as low as possible. Always look in direction of travel. Keep a clear view, and when load interferes with visibility travel with load or lifting mechanism trailing.

Use special care when operating on ramps - travel slowly, and do not angle or turn. Travel with lifting mechanism downhill.

Do not overload truck. Check capacity plate for load weight and load center information.

When using forks, space forks as far apart as load will permit. Before lifting, be sure load is centered, forks are completely under load, and load is as far back as possible against load backrest.

Do not handle unstable or loosely stacked loads. Use special care when handling long, high or wide loads to avoid losing the load, striking bystanders, or tipping the truck.

Do not handle loads which are higher than the load backrest or load backrest extension unless load is secured so that no part of it could fall backward.

Elevate forks of other lifting mechanism only to pick up or stack a load. Watch out for obstructions, especially overhead.

Do not lift personnel except on a securely attached specially designed work platform. **Use extreme care when lifting personnel.** Make sure mast is vertical, place truck controls in neutral and apply brakes. Lift and lower smoothly. Remain in operating position or immediate vicinity as long as personnel are on the work platform. Never transport personnel on forks or work platform.

Do not allow anyone to stand or pass under load or lifting mechanism.

When leaving truck, neutralize travel control, fully lower lifting mechanism and set brake. When leaving truck unattended, also shut off power.

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NOTES

OPERATOR INSTRUCTIONS

WARNING

Do not operate this truck unless you have been trained and authorized to do so and have read all warnings and instructions in operator's manual and on this truck.

Do not operate this truck until you have checked its condition. Give special attention to Tires, Horn, Lights, Battery, Controller, Lift System, (including forks or attachments, chains, cables and limit switches), Brakes, Steering Mechanism, Guards and Safety Devices.

Operate truck only from designated operating position. Never place any part of your body into the mast structure or between the mast and the truck. Do not carry passengers.

Observe applicable traffic regulations. Yield right of way to pedestrians. Slow down and sound horn at cross aisles and wherever vision is obstructed.

Start, stop, travel, steer and brake smoothly. Slow down for turns and on uneven or slippery surfaces that could cause truck to slide or overturn. Use special care when traveling without load as the risk of overturn may be greater.

Travel with lifting mechanism as low as possible. Always look in direction of travel. Keep a clear view, and when load interferes with visibility, travel with load or lifting mechanism trailing, except when traveling downhill.

Use special care when operating on ramps—travel slowly, and do not angle or turn. Travel with lifting mechanism or load downhill.

Do not overload truck. Check capacity plate for load weight and load center information.

When using forks, space forks as far apart as load will permit. Before lifting, be sure load is centered, forks are completely under load, and load is far back as possible against load backrest.

Do not handle unstable or loosely stacked loads. Use special care when handling long, high or wide loads to avoid losing the load, striking bystanders, or tipping the truck.

Do not handle loads which are higher than the load backrest or load backrest extension unless load is secured so that no part of it could fall backward.

Elevate forks or other lifting mechanism only to pick up or stack a load. Watch out for obstructions, especially overhead.

Do not lift personnel except on a securely attached specially designed Work Platform. Use extreme care when lifting personnel. Make sure mast is vertical, place truck controls in neutral and apply brakes. Lift and lower smoothly. Remain in operating position or immediate vicinity as long as personnel are on the Work Platform. Never transport personnel on forks or Work Platform.

Do not allow anyone to stand or pass under load or lifting mechanism.

When leaving truck, neutralize travel control. Fully lower lifting mechanism and set brake. When leaving truck unattended, also shut off power.

PREPARATION FOR USE

Upon receipt, visually inspect the truck. If any damage is found, report it to the carrier and to your Big Joe dealer immediately.

Remove cardboard banded to truck. Check lift truck for scratches and dents. Check to make sure that the lift chains are free of slack. Inspect for oil leaks and loose wiring connections. Make certain that all accessories and attachments that were ordered are supplied.

Before the lift truck is moved, the battery must be checked, recharged if necessary, and connected. Refer to “Battery Care” in Section III for battery checking instructions.

Refer to SECTION 2 for operating instructions of the brakes and lift control.

If you do not obtain the proper results, or if improper operation occurs, refer to troubleshooting in SECTION 4.

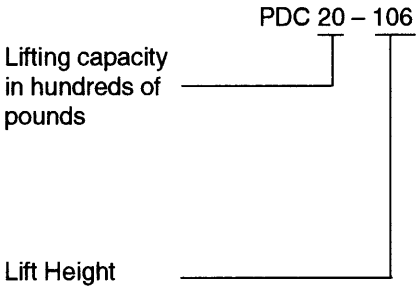
NOTES

SECTION 1
DESCRIPTION

1-1. INTRODUCTION.

This publication describes the Big Joe Power Driven Counterbalanced (PDC) lift truck manufactured by Big Lift, LLC. Included are operating instructions, planned maintenance instructions, lubrication procedures, corrective maintenance procedures and a complete parts list with By following the recommendations contained in this manual, you will receive many years of dependable service from your Big Joe lift truck.

The lift truck is identified by a model number. The model number shows truck capacity, fork and mast type, and lift height. A typical model number is explained below.



The model number will be found on the name plate (Figure 1-1) along with the serial number, lifting capacity, and load center. Figure 1-2 shows the locations of the trucks main components and controls.

Users shall comply with all requirements indicated in applicable OSHA Standards and current edition of A.N.S.I. B56.1 Part II. By following these requirements and the recommendations contained in this manual, you will receive many years of dependable service from your Big Joe Lift Truck.

1-2. GENERAL DESCRIPTION.

The self-propelled PDC truck, Figure 1-2, lifts and transports payloads on adjustable forks that can be tilted up and down. The PDC 15 can lift up to 1500 pounds. The PDC 20 can lift up to 2000 pounds. The PDC 25 can lift up to 2500 pounds. The PDC 30 can lift up to 3000 pounds. The PDC 40 can lift up to 4000 pounds.

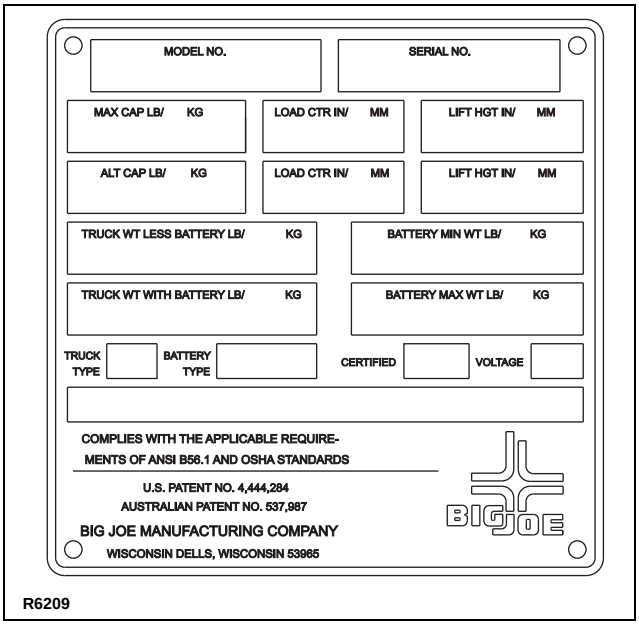


Figure 1-1 Name Plate

The forward and reverse motion is controlled by a speed controller switch in the control head. Stopping and turning is controlled by the steering arm. Lift and Lower is controlled by either a lever mounted on the chassis, optional pushbutton controls located on the steering arm, or a control box attached by a coiled cord.

The battery-powered lift truck is quiet and without exhaust fumes.

The reversible DC motor propels the lift truck in forward and reverse direction throughout the available speed range. The PDC lift truck can be driven with forks raised or lowered; however, the speed is restricted when the forks are raised above a preset limit.

1-3. SAFETY FEATURES.

The PDC is designed and engineered to provide safety for operator and payload. Some of the safety features incorporated into the design are:

Dead-man brake to apply mechanical brake and cut off drive power when the steering arm is released.

Belly-button switch to reverse truck should the operator accidentally pin himself against a wall or obstruction.

High speed limit switch to restrict speed when lift carriage is raised above the preset limit.

All control functions automatically return to “OFF” when released.

Externally accessible quick-disconnect battery plug.

Separately fused control circuits and power circuits.

Readily accessible HORN button.

Lift carriage backrest to help stabilize the load.

Pressure compensated flow control valve regulates maximum lowering speed.

High visibility color scheme of truck provides visual alert of trucks presence.

1-4. OPTIONS AND ACCESSORIES.

Big Lift offers many options and accessories for the PDC lift truck such as:

Key switch
Remote Lift Control
Cold Conditioning
Battery Capacity Meter
Hour Meter
Lift Limit Switch
Lift Limit Override Switch
Larger capacity batteries with corresponding battery chargers

1-5. SAFETY SYMBOLS.

WARNING: This WARNING sign denotes a hazard. It calls attention to a procedure, practice or the like, which if not correctly performed or adhered to could result in personal injury.

CAUTION: This CAUTION sign denotes a hazard. It calls attention to a procedure, practice or the like, which if not correctly performed or adhered to could result in personal injury or damage to the equipment.

IMPORTANT: This heading calls attention to a procedure, which if not followed, may impede the operation or normal flow of a servicing or repair procedure.

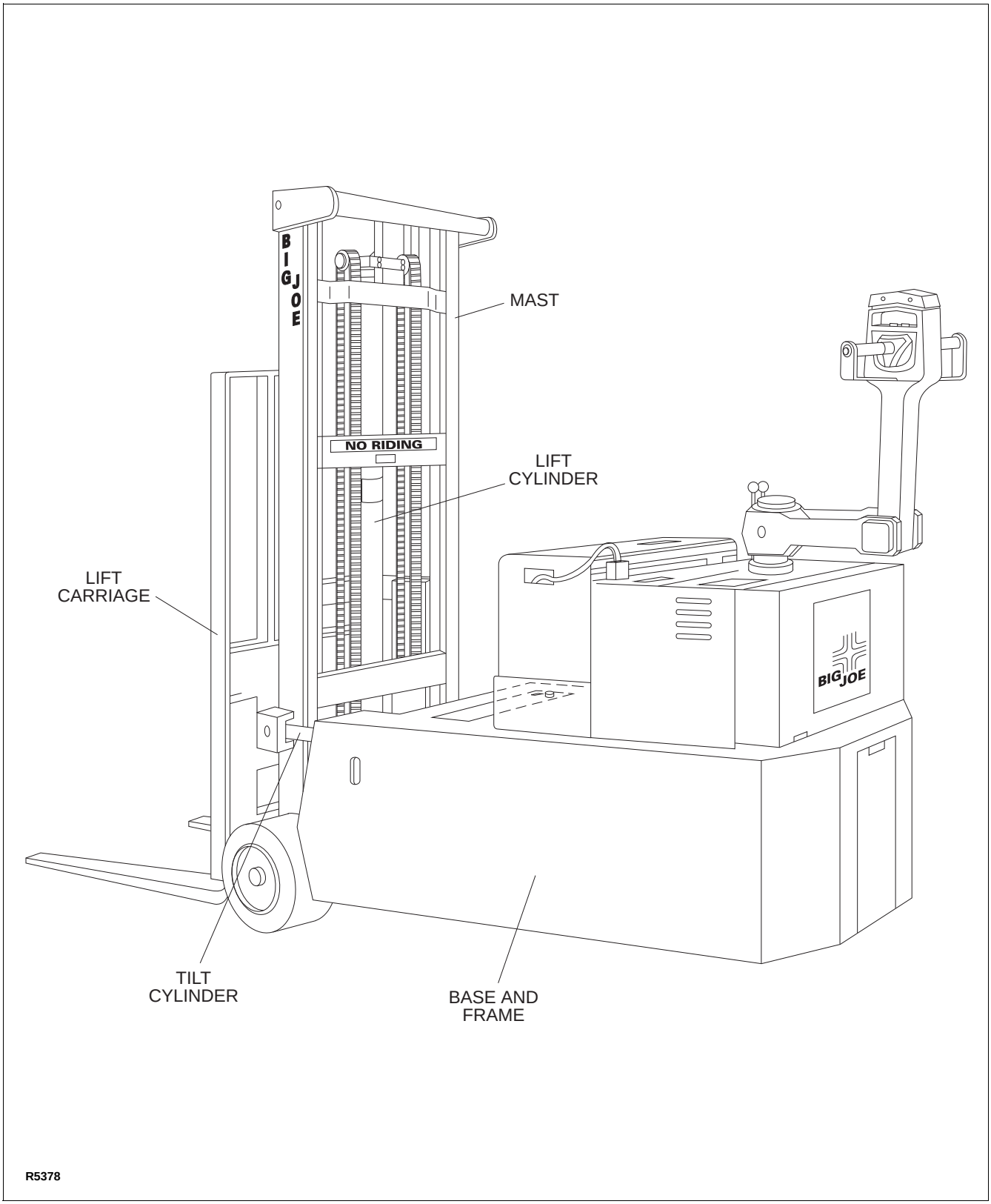


Figure 1-2 PDC Lift Truck

NOTES

SECTION 2
OPERATION

2-1. GENERAL.

This section gives detailed operating instructions for the PDC lift truck. The instructions are divided into the various phases of operations, such as operating the lift, driving, and stopping. Routine precautions are included for safe operation.

2-2. OPERATING PRECAUTIONS.

WARNING: Improper operation of the lift truck may result in operator injury, or load and/or lift truck damage. Observe the following precautions when operating the PDC lift truck.

1. Do not operate this truck unless you have been trained and authorized to do so, and have read and understand all warnings and instructions in this manual and on the lift truck.
2. Do not operate this truck until the periodic inspection or service has been completed. See Table 3-1.
3. Do not exceed the rated capacity (see name plate). Overloading may result in damage to the hydraulic system and structural components.
4. Do not handle unstable or loosely stacked loads. Use special care when handling long, high, or wide loads to avoid tipping, loss of load, or striking bystanders.
5. Center and carry the load as far back as possible toward the lift carriage back rest. Do not pick up loads on the tips of forks. The center-of-gravity of the load must not exceed the load center listed on the name plate. See Figure 2-1 for load center limitations.
6. Pick up loads on both forks. Do not pick up loads on only one fork.
7. When traveling, always lower the load as far as possible.
8. When stacking pallets in racks and it is necessary to move the load in the raised position, use caution. Operate truck smoothly.
9. Check for obstructions when raising or lowering the lift carriage.
10. Apply the brake gently except in cases of emergency.
11. Observe applicable traffic regulations. Yield right of way to pedestrians. Slow down and sound horn at cross aisles and wherever vision is obstructed.

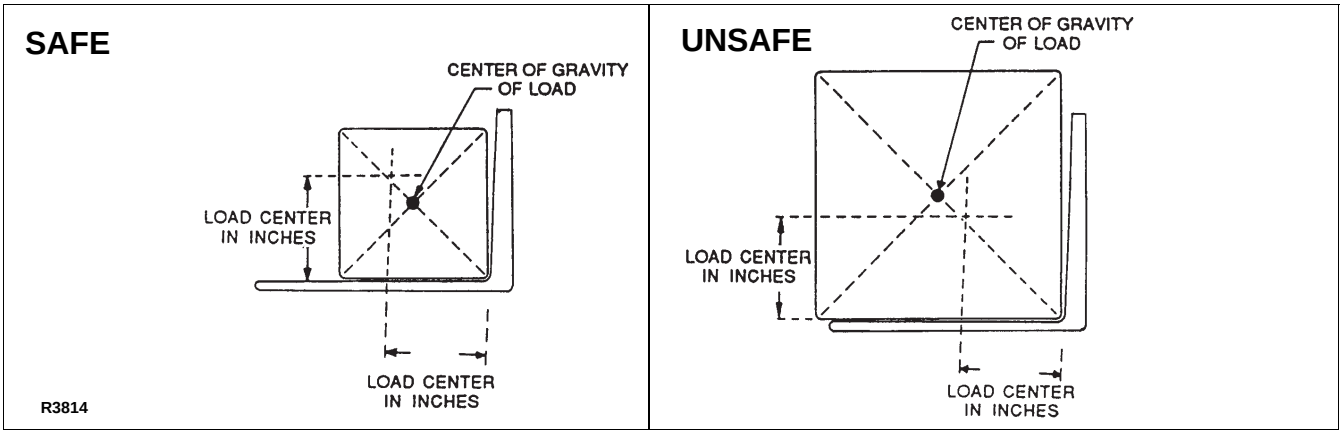


Figure 2-1 Load Center

12. Operate truck only from a walking position. Never place any part of your body between the mast uprights. Do not carry passengers.
13. Do not allow anyone to stand or pass under load or lifting mechanism.

2-3. BEFORE OPERATION

Table 2-1 covers important inspection points on PDC lift truck which should be checked prior to operation. Depending on use, some trucks may require additional checks.

Figure 2-2 shows a sample format for a Operator Checklist, which can be modified as necessary to fit your operation.

WARNING: Period maintenance of this truck by a QUALIFIED TECHNICIAN is required.

CAUTION: A QUALIFIED SERVICE TECHNICIAN should check the truck monthly for proper lubrication, proper fluid levels, brake maintenance, motor maintenance and other areas specified in the SECTION 3.

WARNING: If the truck is found to be unsafe and in need of repair, or contributes to an unsafe condition, report it immediately to the designated authority. Do not operate it until it has been restored to a safe operating condition. Do not make any unauthorized repairs or adjustments. All service must be performed by a qualified maintenance technician.

Table 2-1 Operator Checks

ITEM	PROCEDURE
Transmission and hydraulic systems.	Check for signs of fluid leakage.
Forks	Check for cracks and damage; and, that they are properly secured.
Chains, cables and hoses	Check that they are in place, properly secured and not damaged or binding.
Guards and load backrest	Check that safety guards are in place, properly secured and not damaged.
Safety signs	Check that warning labels, nameplate, etc., are in good condition and legible.
Horn	Check that horn sounds when operated.
Steering	Check for binding or looseness in steering arm when steering.
Travel controls	Check that speed controls on control handle operate in all speed ranges in forward and reverse and that belly button switch functions.
Wheels	Check drive wheel for cracks or damage. Move truck to check load wheels for freedom of rotation.
Hydraulic controls	Check operation of lift and lower to their maximum positions.
Brakes	Check that brakes actuate when steering arm is raised to upright position, and when lowered to horizontal position.
Deadman/ Parking brake	Check that steering arm raises to upright position when released and brake applies.
Battery disconnect	Check that battery can be disconnected and reconnected. Check for connector damage.
Battery charge	Check that battery capacity meter (if equipped) is on “F”.
High speed limit switch	Allow for enough space to operate truck in high speed. Elevate forks approximately two feet, then test drive truck to check if high speed is cut out.

Electric Truck
Daily Operator Check-Off List

Date _____ Operator _____

Truck No. _____ Model No. _____

Dept. _____ Shift _____

Hour Meter
Reading—Drive _____ Hoist _____

Check	O.K. (✓)	Need Maintenance
Tires		
Lights		
Horn		
Lift—Lower Control		
Tilt Control		
Attachment Operation		
Drive Control		
Steering		
Service Brakes		
Parking Brake		
Hydraulic Leaks, Cylinders, Valves, Hoses, Etc.		

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Figure 2-2 Sample of Operator Check List

2-4. INSTRUMENTS AND CONTROLS

2-4.1. Steering Arm and Control Head.

The steering arm and control handle (See Figure 2-3) provide controls for steering, forward and reverse speed control, braking, and horn. Control handles on some models have pushbuttons for raising and lowering the forks. Table 2-2 lists optional control handles. Control handles on all models have a “belly-button” reversing switch which reverses the direction of the truck upon contact with the operator.

Table 2-2 Control Handles

Type	Part Numbers
Standard	505360-01
Remote Lift in Handle	505360-02
Remote Lift and Lower in Handle	505360-03

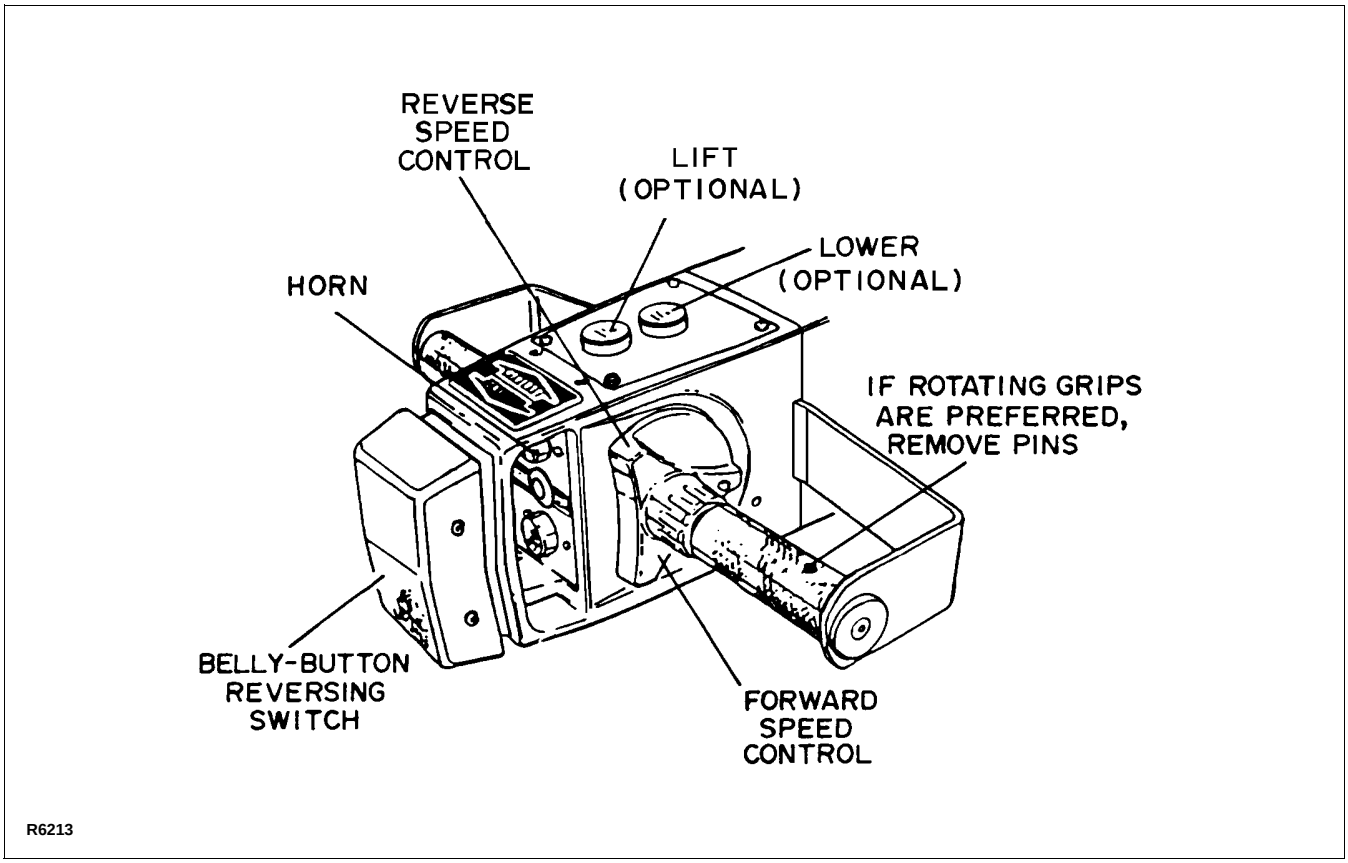


Figure 2-3 Control Handle

2-4.2. Lift/Lower and Tilt Control.

All models come standard with a lift/lower control lever and a tilt control lever mounted near the steering arm. See Figure 2-4.

2-4.3. Battery Disconnect.

A battery disconnect is mounted near the steering arm. Pulling the disconnect removes all power from truck circuits in the event of an emergency.

2-4.4. Optional Features.

The optional remote lift/lower control (if equipped) allows the operator to raise and lower the forks while standing away from the control handle. See Figure 2-5.

Other options are the battery capacity indicator, hour meter and keyswitch, which mount on the panel near the control handle. The battery capacity indicator monitors the battery discharge rate to indicate the remaining battery capacity. The hour meter records the accumulated hours that electrical energy is being drawn from the battery to run the pump and drive motors. The keyswitch provides added security to the truck, preventing unauthorized personnel from operating the machine.

Some models have additional control levers for the operation of additional accessories.

2-5. OPERATION

2-5.1. Forward and Reverse Travel and Speed Control.

All directional and speed controls are located on the control handle. See Figure 2-3.

Forward and reverse are controlled by rotating the speed control lever as shown. The lever is spring loaded to return to neutral when released. Further rotation in either direction will progress the truck from slow to maximum travel speed.

To change directions or to stop the truck, rotate the speed control lever in the opposite direction. The truck will come to a stop and then, unless the controls are returned to the center neutral position, accelerate in the opposite direction.

2-5.2. Steering.

Moving the control handle (which connects to the steering arm) right or left will turn the truck right or left. When maneuvering around corners, make square turns and be sure there is adequate clearance.

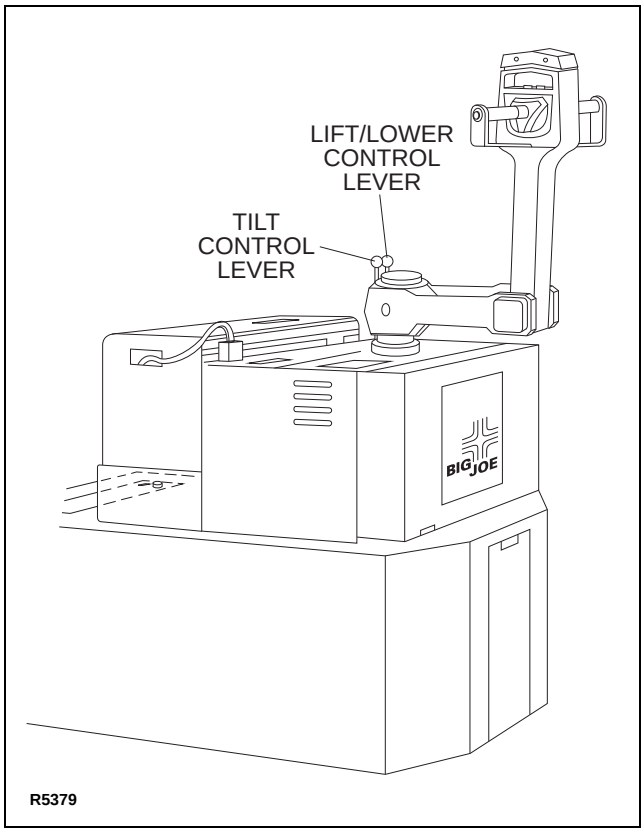


Figure 2-4 Lift/Lower Control

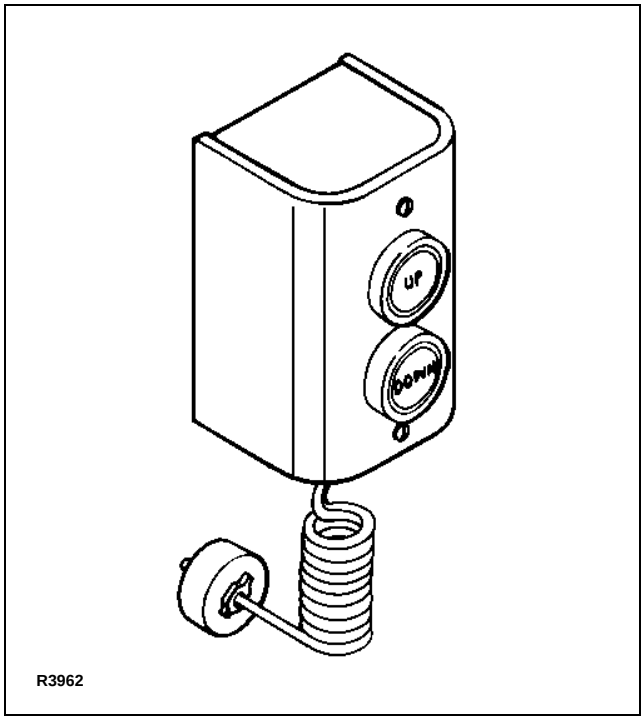


Figure 2-5 Optional Remote Lift/Lower Control

2-5.3. Stopping.

Stop the truck as gradually as possible. Unnecessary rapid stopping could be hazardous. Load could become unstable.

There are four possible ways to stop the truck:

1. **Plugging:** This electrical braking function consists of rotating the speed control lever in the opposite direction of travel and then releasing it when the truck stops. Plugging is a convenient way to stop the truck during normal operation. If the control is not released, the truck will accelerate in the opposite direction.
2. **Steering arm in horizontal position (See Figure 2-6):** Lowering the steering arm to the horizontal position applies brake pad pressure to the brake disc. Lowering the steering arm below the horizontal position increases the braking force and de-energizes the controls.
3. **Steering arm in vertical position (See Figure 2-6):** Raising the steering arm to near vertical position applies brake pad pressure to the brake disc. Further vertical positioning increases the braking force and de-energizes the controls. This position serves as a parking brake. As a safety precaution, the steering arm is spring loaded to return to the vertical position in the event the driver releases the control handle during operation. This is known as deadman braking.
4. **Dynamic Brake:** The dynamic brake serves as a secondary braking system completely independent from the mechanical brake. Pressing the dynamic brake pushbutton applies a constant DC voltage across the drive motor field coils to stop the motor.

CAUTION: The dynamic brake pushbutton should not be held in place longer than one or two seconds. Excessive use may blow the 40 Amp fuse, which will render dynamic brake inoperative.

2-5.4. Parking.

When parking the truck, do not obstruct traffic lanes or aisles.

1. Park the truck in its designated parking area.
2. Raise the steering arm until vertical to apply the parking brake.
3. Fully lower forks.
4. Turn key switch (if so equipped) to off position. Remove key for added security.
5. Pull out battery disconnect.

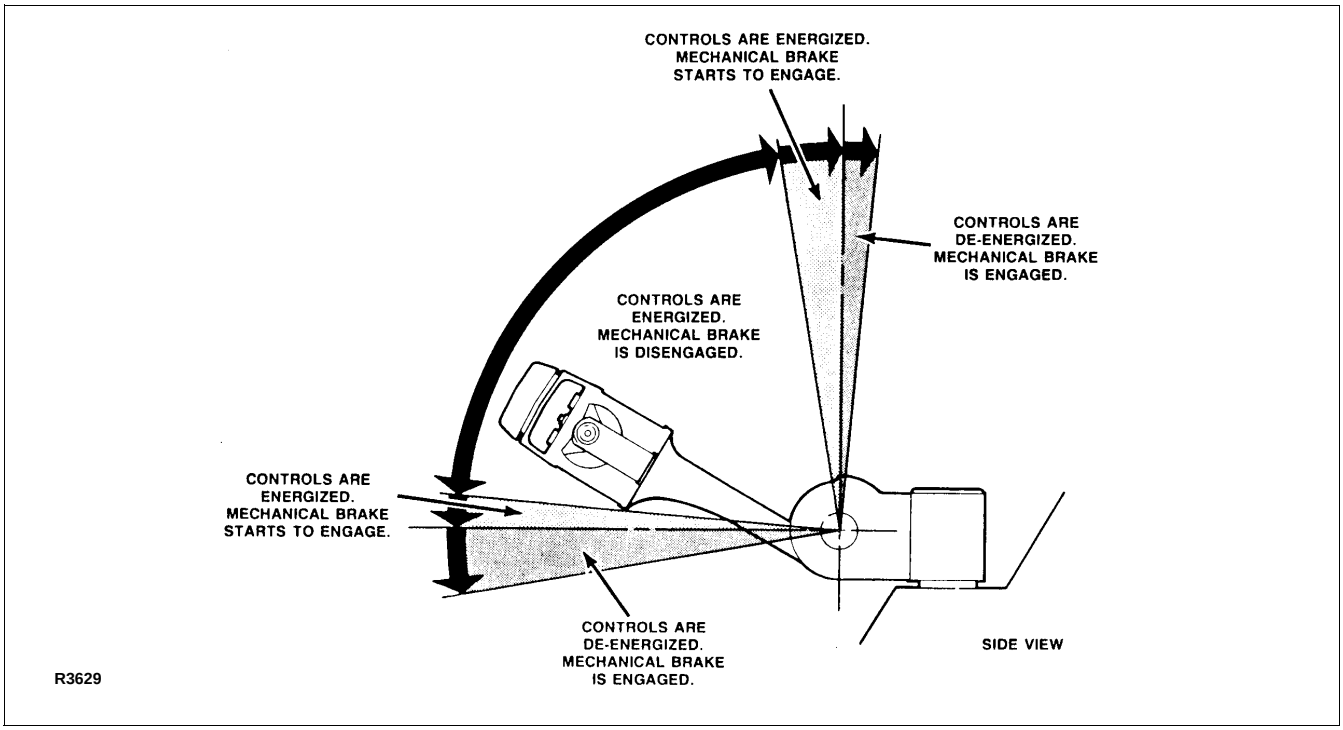
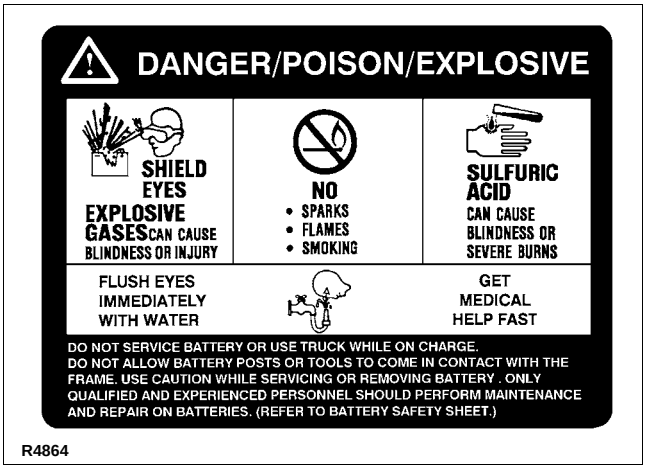


Figure 2-6 Steering Arm Braking Position

2-5.5. Battery Charging

Refer to Document 245 for battery safety and maintenance.



NOTE: Battery charging instructions are contained in SECTION 3.

2-5.6. Load Handling.

WARNING: Handle only loads arranged for stability, and always use caution. Raise and lower the load smoothly to prevent the load from falling.

WARNING: Always be sure the load and load center are within the capacity of the truck. If in doubt, check the nameplate.

1. Approach the load slowly.
2. Stop the truck when the forks are just in front of the load.
3. Adjust the forks to the maximum practical width to support the load to be lifted.
4. Raise or lower the forks until they are properly aligned with the pallet openings.
5. Move the truck slowly into position so that the forks are centered about the load.
6. Make sure the load is against the backrest and then raise the forks until the pallet clears the rack. Tilt the forks slightly backward.
7. Move the truck away from the rack until the load clears the rack and then lower the forks.
8. Lead the truck by the control handle with the load trailing except when in confined areas. Ramps should be traveled with operator uphill of truck when empty, or operator downhill of truck when load on forks.
9. Always look in the direction of travel. Move slowly and check clearances when approaching obstructions.
10. Do not make sudden starts and stops. Operate truck smoothly and gradually.
11. Travel slowly and squarely around corners. Remember that the trailing load wheels do not follow the turn path of the drive wheel. Instead they tend to cut the corner.
12. Line up the truck with the unloading area.
13. Stop the truck and raise or lower the forks until the pallet is in position with the unloading area.
14. Check the load alignment with surrounding objects.
15. Be careful not to damage or move adjacent loads and objects.
16. Slowly move into position.
17. Lower the forks and tilt forward until the load is resting on its own. Be sure there is no downward force of the forks on the rack or floor.
18. Move the truck back until the forks are clear of the pallet.
19. If forks are elevated, lower to travel position.

2-5.7. Moving a Disabled Truck

Do not attempt to move a disabled truck. Notify your supervisor or proper authority.

NOTES

SECTION 3
PLANNED MAINTENANCE

3-1. GENERAL.

Planned maintenance consists of periodic visual and operational checks, parts inspection, lubrication, and scheduled maintenance designed to prevent or discover malfunctions and defective parts. The operator performs the checks in SECTION 2, and refers any required servicing to a qualified maintenance technician who performs the scheduled maintenance and any required servicing.

3-2. MONTHLY AND QUARTERLY CHECKS.

Table 3-1 is an inspection and service chart based on normal usage of equipment eight hours per day, five days per week. If the lift truck is used in excess of forty hours per week, the frequency of inspection and service should be increased accordingly. These procedures must be performed by a qualified service technician or your Big Lift/Big Joe service representative.

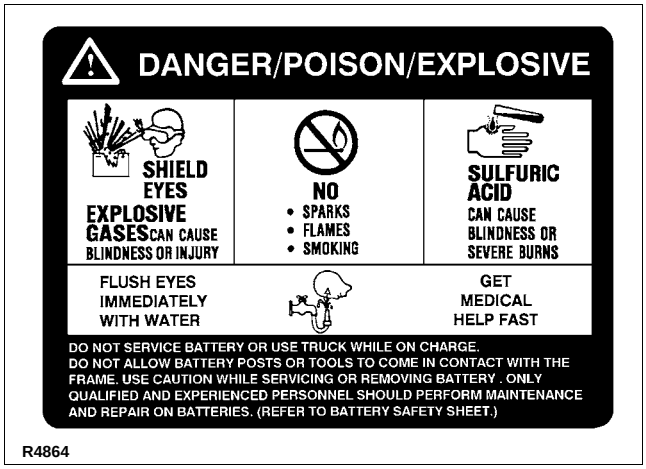
3-3. BATTERY CARE.

3-3.1. General.

The life of the battery can be extended by giving it proper care. Perform a daily check of the battery whether or not the equipment is in daily use. DO NOT overcharge the battery or battery life will be shortened. DO NOT allow battery to become completely discharged (specific gravity 1.150 or less). This will also greatly shorten battery life.

3-3.2. Battery Servicing.

Refer to Document 245 for battery safety and maintenance.



The battery cells are accessed by opening the top cover of the battery. Use the following procedure:

1. Obtain a battery hydrometer.

NOTE: These can be obtained from a local hardware store or automotive shop.

2. Use the hydrometer to check specific gravity of each cell.

Table 3-1 Monthly and Quarterly Inspection and Service Chart.

INTERVAL	INSPECTION OR SERVICE
Monthly	Check condition of drive motor commutator, brushes and springs
Monthly	Check condition of pump motor commutator, brushes and springs
Monthly	Check mechanical brake for proper operation
Monthly	Check load wheels for wear
Monthly	Check drive wheel for wear
Monthly	Inspect wiring for loose connections and damaged insulation
Monthly	Inspect contactor tips for excessive pitting and wear
Monthly	Check deadman brake switch for proper operation
Monthly	Check lift chain tension
Monthly	Lubricate unit (See Table 3-4)
Quarterly	Check lift cylinder(s) for leakage
Quarterly	Check for excessive jerking of steering arm when stopping or starting
Semi-annually	Replace hydraulic filter assembly
Semi-annually	Inspect for chain wear (See SECTION 8)

NOTE: Battery specific gravity readings should agree within ± 0.025 from cell to cell. If variation is greater, the battery may have to be repaired or replaced.

CAUTION: Be sure that no cell plates are exposed (not covered by fluid) before charging. Add distilled water sufficient to just cover top of cell plates.

CAUTION: Use distilled water. Impurities in tap water will damage battery plates.

3. Charge battery as necessary.

NOTE: A fully charged battery has a specific gravity of 1.260 to 1.275.

4. After charging, check water level in each cell again. Water level must cover plates but not be higher than the base of the battery cell filler neck.

3-4. LUBRICATION.

Refer to Table 3-2 for the recommended types of grease and oil, and Table 3-3 for hydraulic oil capacities. Table 3-4 in conjunction with Figure 3-1 identifies the items requiring lubrication.

Table 3-2 Recommended Lubricants and Oils.

No. 1	Transmission oil—EP SAE 80W-90 Transmission oil—EP SAE 10W-30 (Note) Transmission oil capacity is 3 pints.
No. 2	Grease—Lithium base, general purpose.
No. 3	Hydraulic oil-Heavy duty with a viscosity of 150 SUS (in temperatures below 32°F use 100 SUS) foam suppressing agent and rust and oxidation inhibitors Big Joe Part No. 900855 (1 galleon) 900893 (1 quart) 055784 (Note)

NOTE: USED ON COLD CONDITIONED TRUCKS

Table 3-3 Hydraulic Oil Capacity Chart

LIFT HEIGHT	OIL CAPACITY
60 in	7.7 qts
84 in	8 qts
106 in	9 qts
130 in	10 qts
154 in	11 qts
158 in	14 qts
168 in	12 qts
194 in	14 qts

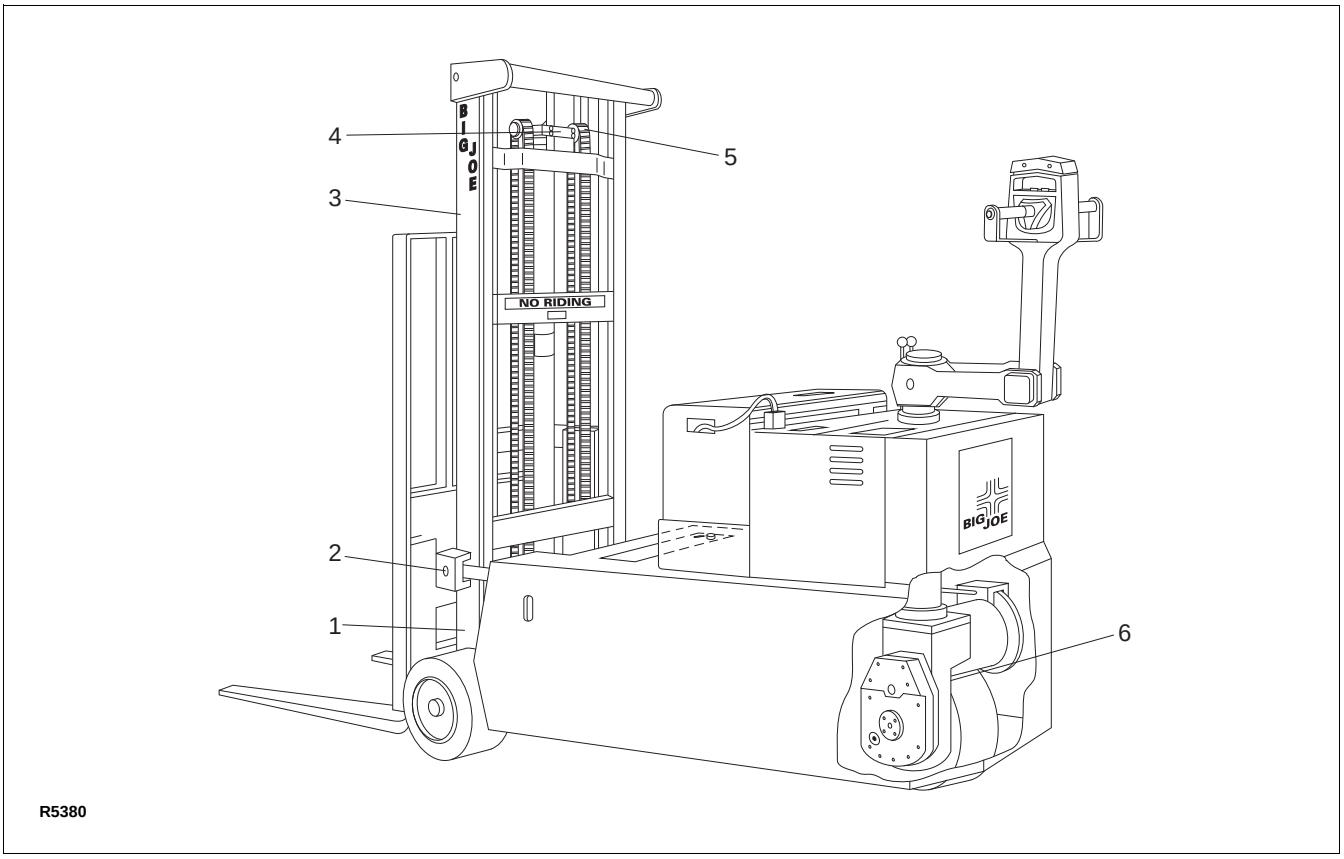


Figure 3-1 Lubrication Diagram

Table 3-4 Lubrication Chart

FIG 3-1 INDEX NO.	LOCATION	METHOD OF APPLICATION	TYPE (Table 3-3)	APPLICATION OF LUBRICANT
1	Lift carriage rollers	Gun	No. 2	Pressure lubricate.
2	Tilt cylinder mounts	Gun	No. 2	Pressure lubricate both ends of each cylinder.
3	Outer and inner masts	Brush	No. 2	Full length of mast where rollers touch.
4	Free lift slide bar (Telescopic Trucks)	Brush	No. 2	Full length of slide bar where ram head touches.
5	Chain sheaves	Gun	No. 2	Pressure lubricate
6	Transmission	Can	No. 1	Fill to plug level.

NOTES

SECTION 4
TROUBLESHOOTING

1. **SEE SUPPLEMENT 345 FOR PDC-20A, PDC-20, PDC-25, PDC-30 ADDITIONAL TROUBLESHOOTING INFORMATION.**
2. **SEE SUPPLEMENT 231 FOR PDC40 ADDITIONAL TROUBLESHOOTING INFORMATION.**

4-1. GENERAL

Table 4-1 serves as a guide to determine possible causes of trouble. The table is divided into five main categories: Truck Dead: Trouble With Travel: Trouble With Braking: Trouble With Lifting Or Lowering, and Miscellaneous malfunctions. Refer to electrical wiring schematics and diagrams (Figure 4-1 to Figure 4-6) as a supplement to the troubleshooting chart or when tracing an electrical circuit.

Table 4-1 Troubleshooting Chart

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
TRUCK DEAD		
Truck will not run forward or in reverse nor will lift system operate.	a. 300 Amp fuse blown.	Check fuse and replace if defective.
	b. Battery dead or disconnected.	Check battery quick-disconnect plug. Check battery. See SECTION 3.
	c. Defective keyswitch.	Check and replace if required.
	e. Defective wiring.	Check for open circuit. Repair as required.
TROUBLE WITH TRAVEL	Check all wiring. A loose connection may be the cause of malfunction.	Tighten all loose connections before further troubleshooting.
Truck does not run forward or reverse. Everything else is normal.	a. 15 Amp control circuit fuse blown.	Check fuse and replace if defective.
	b. Defective dead-man brake switch.	Check and replace if required.
	c. Main wire harness cut.	Replace.
	d. Belly button switch defective.	Replace.
	e. Shorted optional travel cutout.	Check and replace if required.
Truck runs forward but not in reverse.	a. Defective speed control switch or defective contactor.	Check for positive DC voltage at number 1-wire on reverse contactor. If not present when steering arm is in operating position and speed control is in reverse, speed control switch is defective. If voltage is present, contactors defective.
	b. Belly button switch out of adjustment or broken.	Adjust or replace.

Table 4-1 Troubleshooting Chart - Continued

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
TROUBLE WITH TRAVEL (CONT.)		
Truck runs in reverse but nor forward.	Defective speed control switch or defective contactor	Check for positive DC voltage at number 2-wire on forward contactor. If not present when steering arm is in operating position and speed control is pressed for forward travel, speed control switch is defective. If voltage is present, contactor is defective.
TROUBLE WITH BRAKING		
Mechanical brake does not stop truck properly.	a. Brake linkage in need of adjustment.	Adjust mechanical brake (see SECTION 6).
	b. Brake pads worn.	Replace pads and readjust mechanical brake.
Mechanical brake grabs when steering arm is in operating position.	Brake linkage over adjusted	Adjust mechanical brake (see SECTION 6).
TROUBLE WITH LIFTING OR LOWERING	Oil level too low.	Check hydraulic oil level. Fill hydraulic reservoir so that oil is shown full on dipstick (approximately 2 inches from top of reservoir) with lift carriage fully lowered. before further troubleshooting. Tighten all electrical connections.
Lift carriage does not rise; everything else is normal.	a. Defect in electrical system.	a. If pump motor does not run when LIFT control is in UP position, defect is in pump solenoids, or pump motor. Check for positive DC voltage at pump motor to locate defect. Repair or replace defective part.
		b. Check switch on spool valve. Adjust or replace as necessary.
	b. Defect in hydraulic system.	a. Check for pinched hoses. Check pump for proper operation. Replace if necessary.
		b. Check flow control valve near base of lift cylinder(s). Check for defect in lift cylinder(s).
Lift carriage does not lower, everything else is normal.	Control valve defective or defect in hydraulic system.	Check spool valve for proper operation. Check for obstruction in the hydraulic line. Repair as required.

Table 4-1 Troubleshooting Chart - Continued

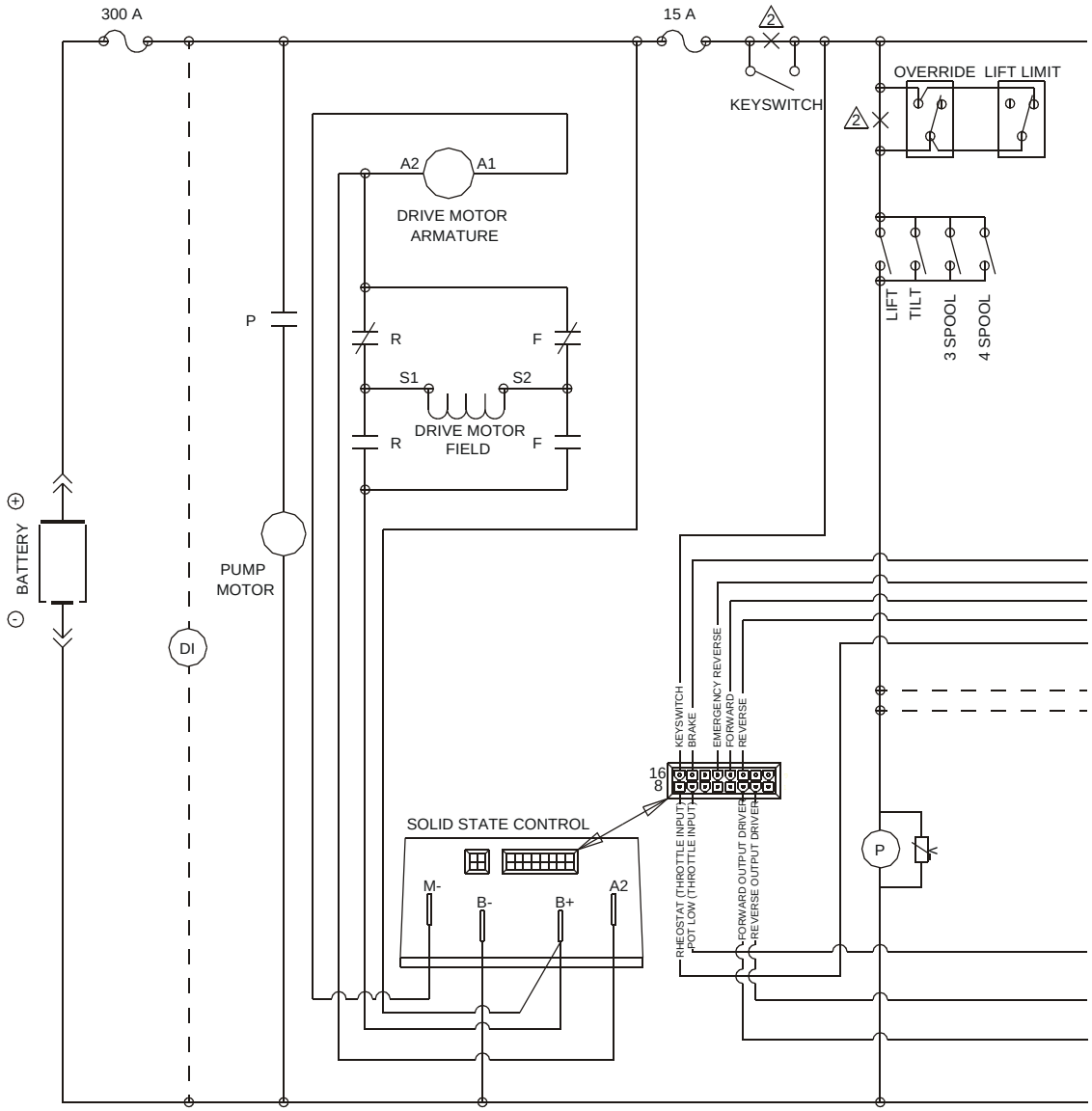
MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
TROUBLE WITH LIFTING OR LOWERING (CONT.)		
Forks creep downward under load or when unit is not in use, everything else is normal	Leak in hydraulic system, packing, control valve or pump.	Look for loose fittings in the hydraulic line, pump for leakage back into the reservoir and oil on top of packing. Repair fittings or replace pump as required. Replace pressure relief valve.
Oil sprays or flows from the top of the lift cylinder.	Defective packing in lift cylinder.	Overhaul lift cylinder and install new packing, seal, and wiper ring.
Oil foaming from vent cap on hydraulic reservoir.	Leak in suction line between the pump and the reservoir.	Check oil filter. Replace if necessary. Tighten fittings. Inspect line and replace if necessary.
Oil splashes out of vent when lowering forks.	Oil level too high.	Drain, then refill reservoir when forks are in their lowest position.
Squealing sounds when forks are raised.	a. Oil level too low.	Add oil to reservoir.
	b. Dry channels in mast.	Apply grease.
	c. Defective bearing.	Replace bearing.
Forks does not lift to top. Pump motor runs.	a. Oil level too low.	Add oil to reservoir.
	b. Load heavier than capacity.	Refer to nameplate for maximum load capacity.
	c. Defective pump or motor	Replace.
Oil leaks at control valve spools.	Defective O-rings on valve spools.	Replace O-rings or replace valve.
Control valve spring-centered handle does not return to neutral.	a. Broken spring	Replace spring or replace valve
	b. Foreign particles.	Check valve handle linkage for binding condition.
	c. Misalignment of operating linkage.	Check valve handle linkage for binding condition.
Load drops when LIFT control is moved from neutral to UP position	Dirt or foreign particles inside control valve.	Disassembly, clean and reassemble or replace valve.
No motion slow or jerky action of hydraulic system.	a. Load heavier than capacity.	Refer to data plate on side of mast for maximum lift capacity.
	b. Defective lift cylinder.	Rebuild or replace.
MISCELLANEOUS		
Steering arm does not return to the upright position.	a. Return spring improperly adjusted.	Readjust spring tension (see SECTION 5).
	b. Binding brake linkage or electrical cable.	Check and free the binding item.
	c. Broken spring.	Replace.

Table 4-1 Troubleshooting Chart - Continued

MALFUNCTION	PROBABLE CAUSE	CORRECTIVE ACTION
MISCELLANEOUS (CONT.)		
Truck moves forward in low speed when arm is pulled down.	a. Belly-button reversing switch defective.	Check for short, and repair or replace as necessary.
	b. Forward contactor stuck closed.	Repair or replace.
Steering arm jerks excessively when starting or stopping the truck.	a. Worn pivot tube bushings.	Replace upper and lower pivot tube bushings.
	b. Drive tire worn or mounted incorrectly.	Repair or replace.

NOTES

PDC-15, PDC-20,
PDC-25 & PDC-30
TYPE E & EE



NOTES:

1. SYMBOLS: F = FORWARD CONTACTOR
R = REVERSE CONTACTOR
P = PUMP SOLENOID
L = REMOTE LOWERING (OPT)
RS = REMOTE LIFT (OPT)
HM = HOUR METER (OPT)
DI = DISCHARGE INDICATOR (OPT)

2 OPTIONAL CIRCUITS DASHED. `X' DENOTES CONNECTION BROKEN WITH OPTIONAL CIRCUIT.

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Figure 4-1 Electrical Schematic (Sheet 1)

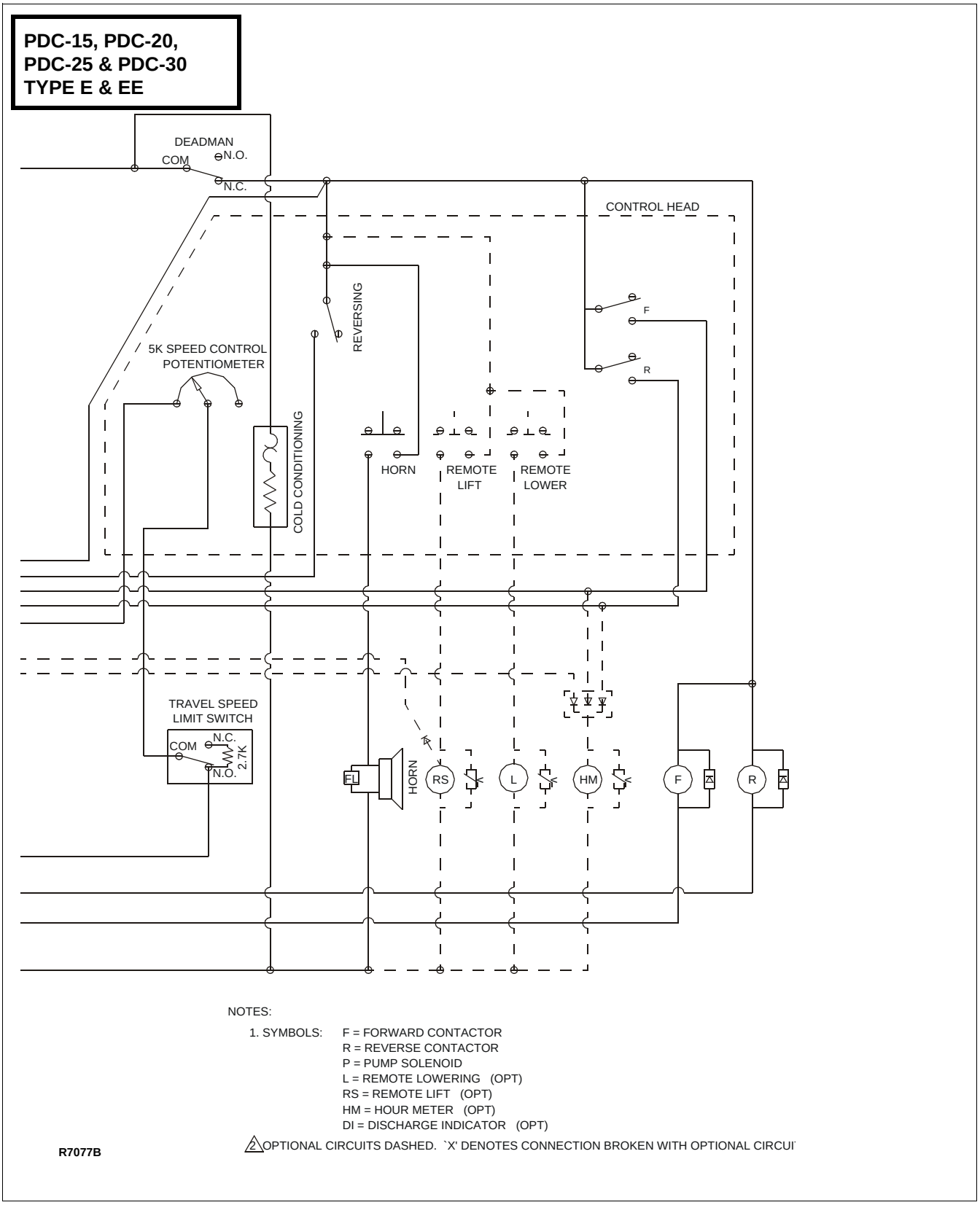
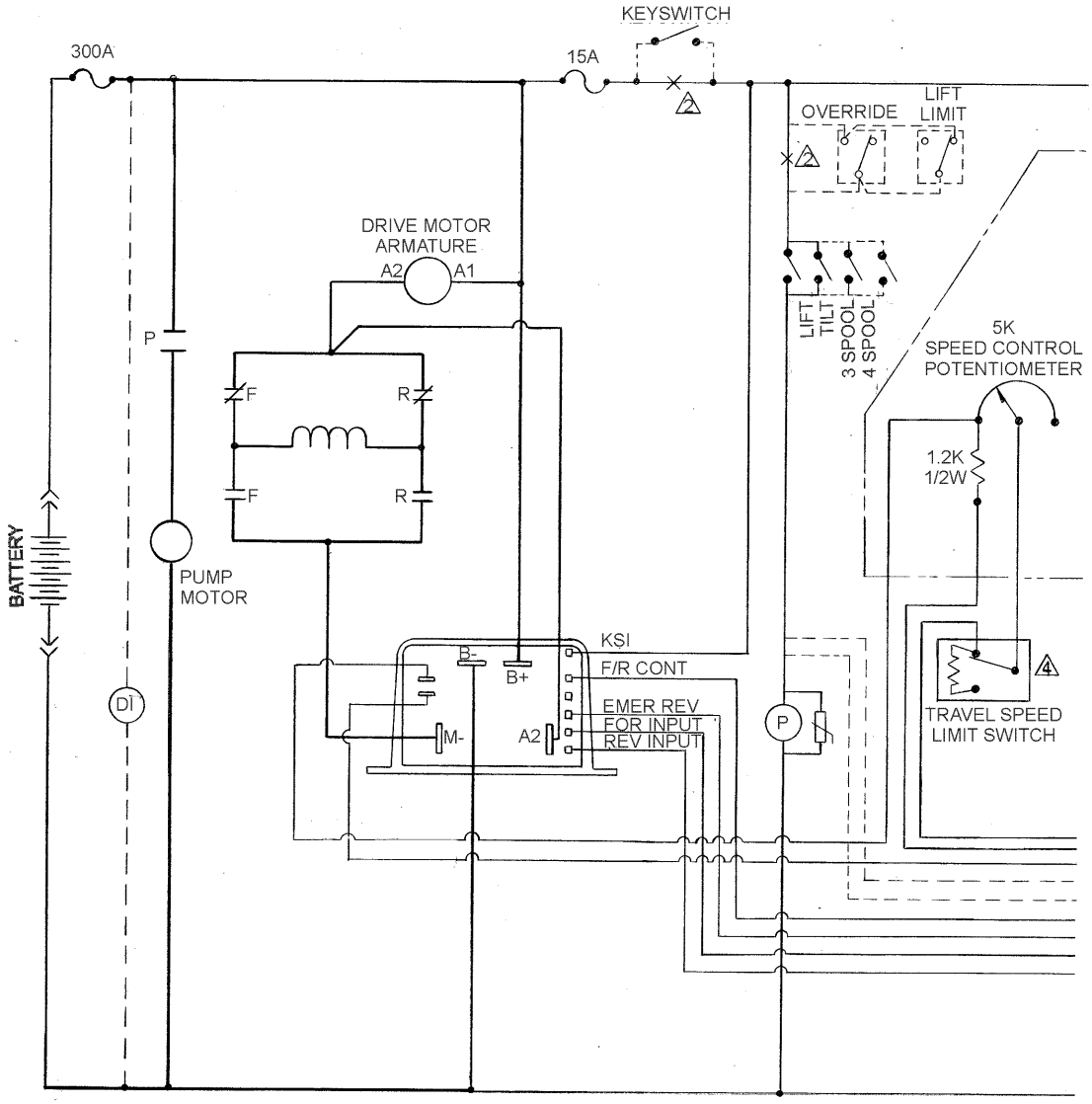


Figure 4-1 Electrical Schematic (Sheet 2)

PDC-40 TYPE E & EE



NOTES:
1. SYMBOLS: F = FORWARD
R = REVERSE
P = PUMP SOLENOID
L = REMOTE LOWERING (OPT)
RS = REMOTE LIFT (OPT)
HM = HOURMETER (OPT)
DI = DISCHARGE INDICATOR (OPT)
2. OPTIONAL CIRCUITS DASHED. "X" DENOTES CONNECTION BROKEN WITH OPTIONAL CIRCUIT.
3. SLOW REV AND DIR REV ARE ACTIVATED SIMULTANEOULY BY THE RELAY COIL.
4. TRAVEL SPEED LIMIT SWITCH RESISTOR: 12V = 1.2K 1/2W
24V = 1.5K 1/2W

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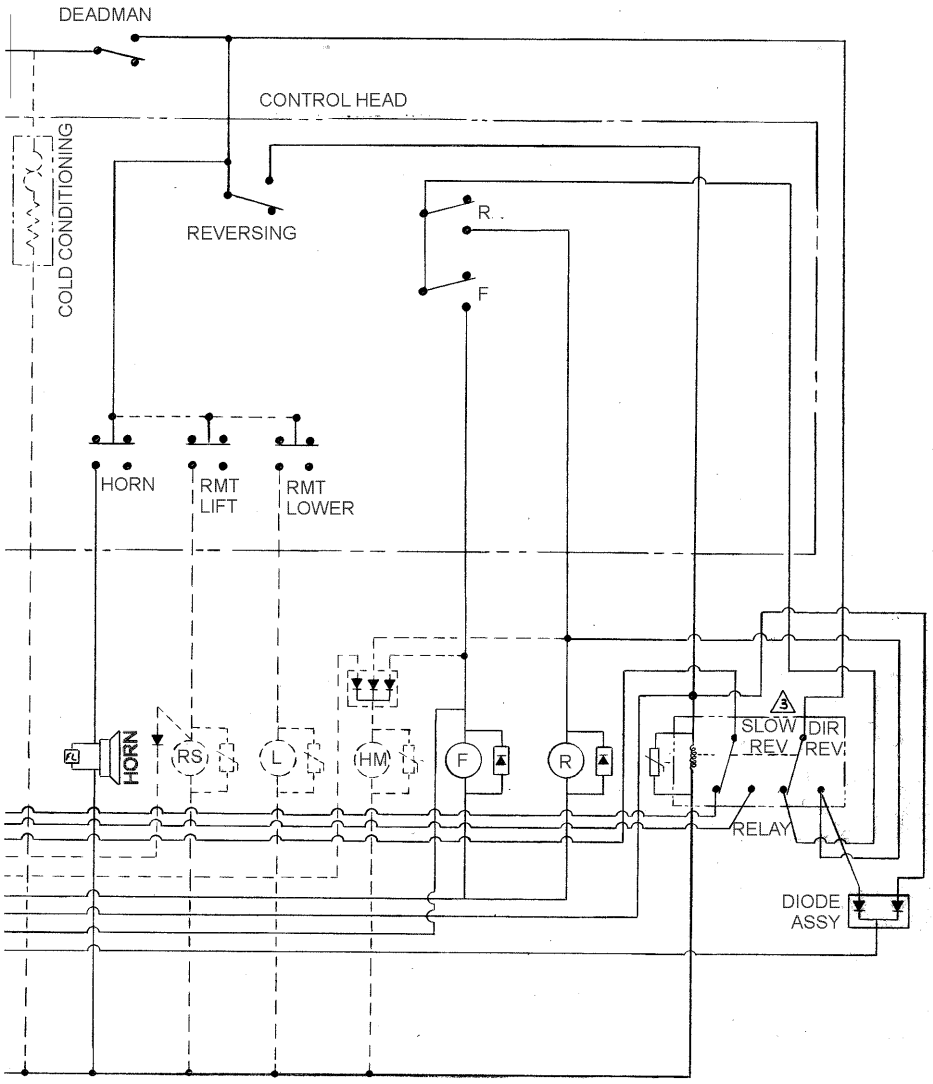
Figure 4-2 Electrical Schematic (Sheet 1)

PDC-40 TYPE E & EE



NOTES:
1. SYMBOLS: F = FORWARD
R = REVERSE
P = PUMP SOLENOID
L = REMOTE LOWERING (OPT)
RS = REMOTE LIFT (OPT)
HM = HOURMETER (OPT)
DI = DISCHARGE INDICATOR (OPT)
2. OPTIONAL CIRCUITS DASHED. "X" DENOTES CONNECTION BROKEN WITH OPTIONAL CIRCUIT.
3. SLOW REV AND DIR REV ARE ACTIVATED SIMULTANEOULY BY THE RELAY COIL.
4. TRAVEL SPEED LIMIT SWITCH RESISTOR: 12V = 1.2K 1/2W
24V = 1.5K 1/2W

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Figure 4-2 Electrical Schematic (Sheet 2)

PDC-15, PDC-20,
PDC-25 & PDC-30
TYPE E

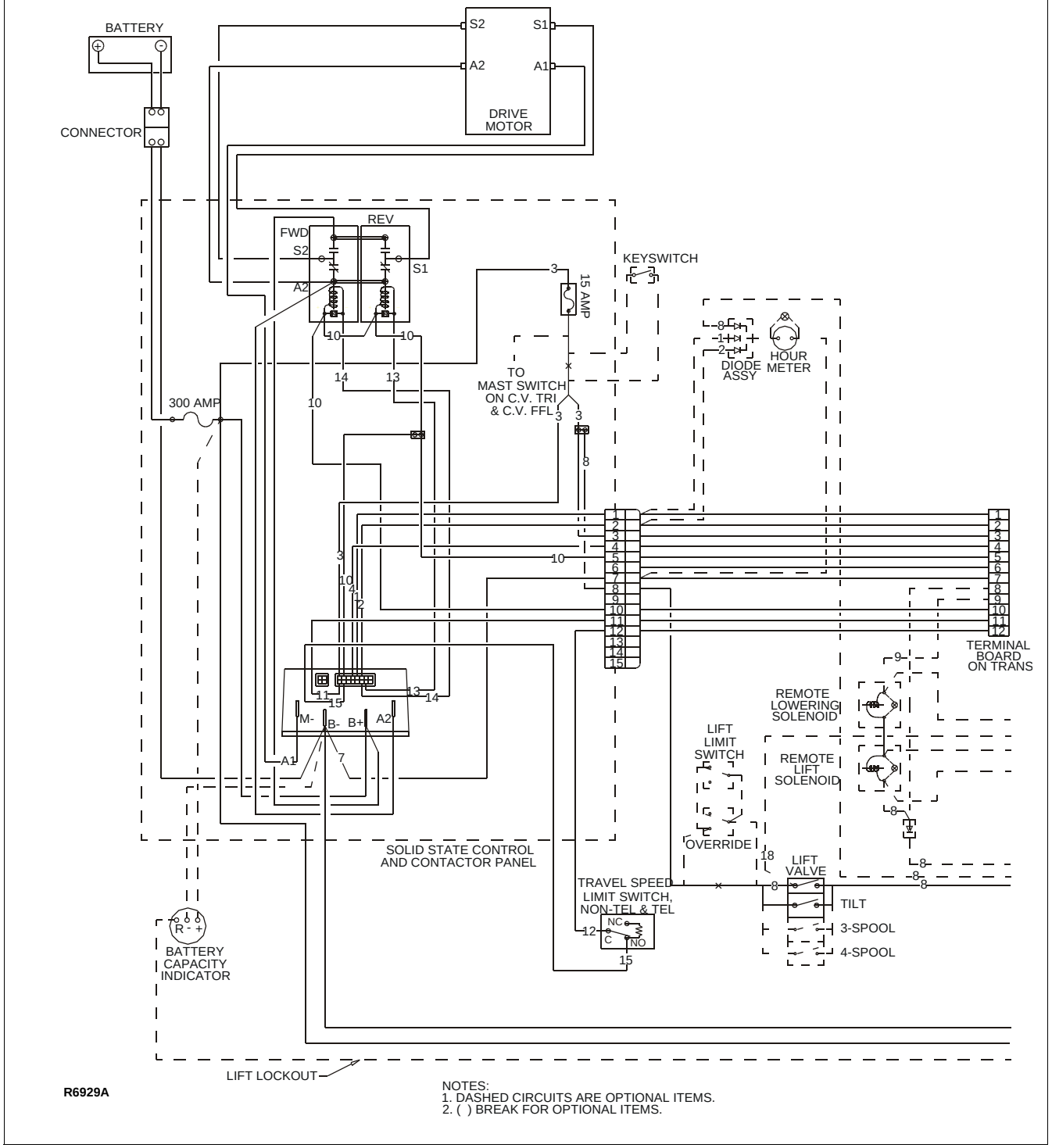


Figure 4-3 Wiring Diagram (Sheet 1)

PDC-15, PDC-20, PDC-25 & PDC-30 TYPE E

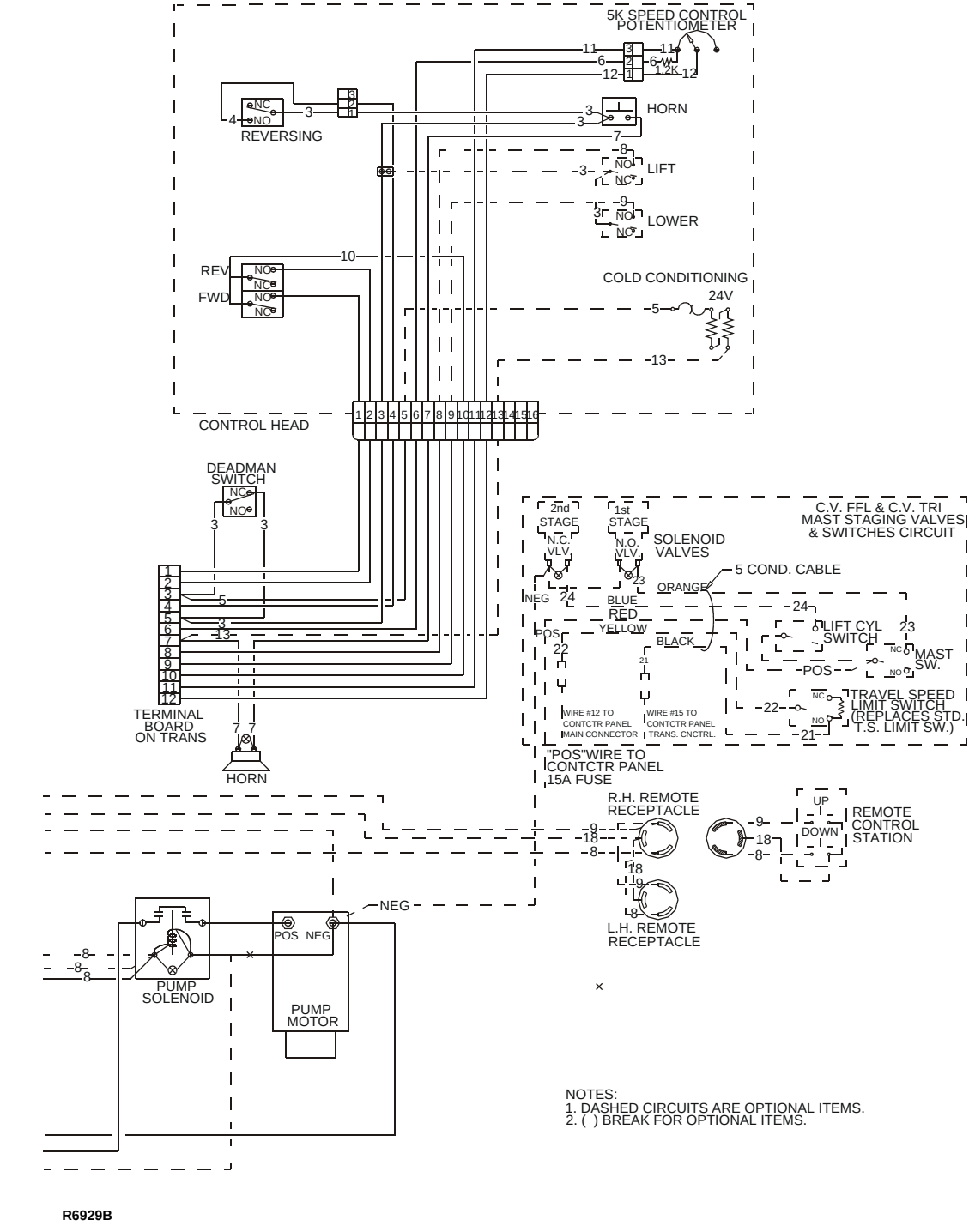
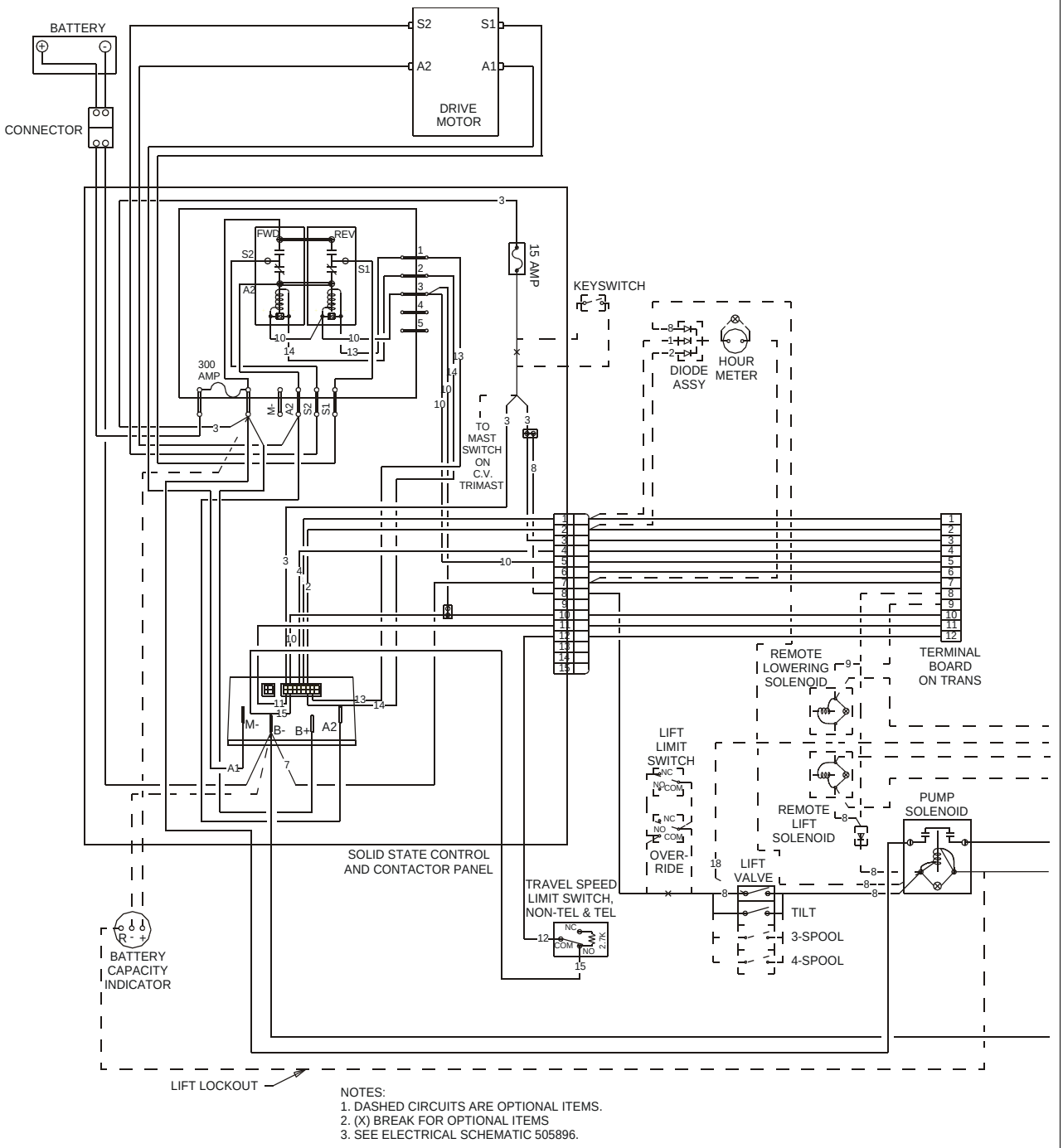


Figure 4-3 Wiring Diagram (Sheet 2)

PDC-15, PDC-20,
PDC-25 & PDC-30
TYPE EE



NOTES:
1. DASHED CIRCUITS ARE OPTIONAL ITEMS.
2. (X) BREAK FOR OPTIONAL ITEMS
3. SEE ELECTRICAL SCHEMATIC 505896.

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Figure 4-4 Wiring Diagram (Sheet 1)

PDC-15, PDC-20, PDC-25 & PDC-30 TYPE EE

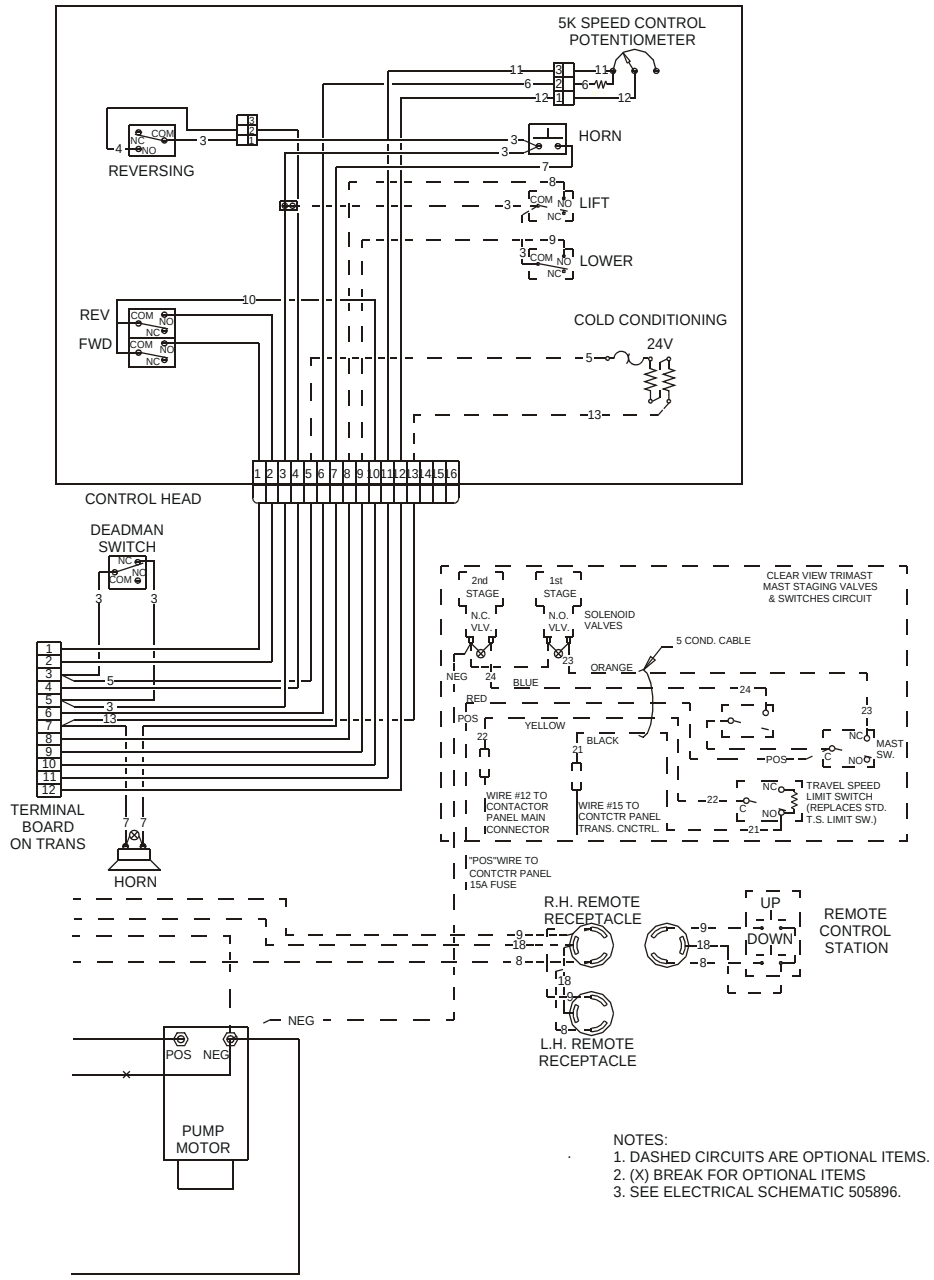


Figure 4-4 Wiring Diagram (Sheet 2)

PDC-40 TYPE E

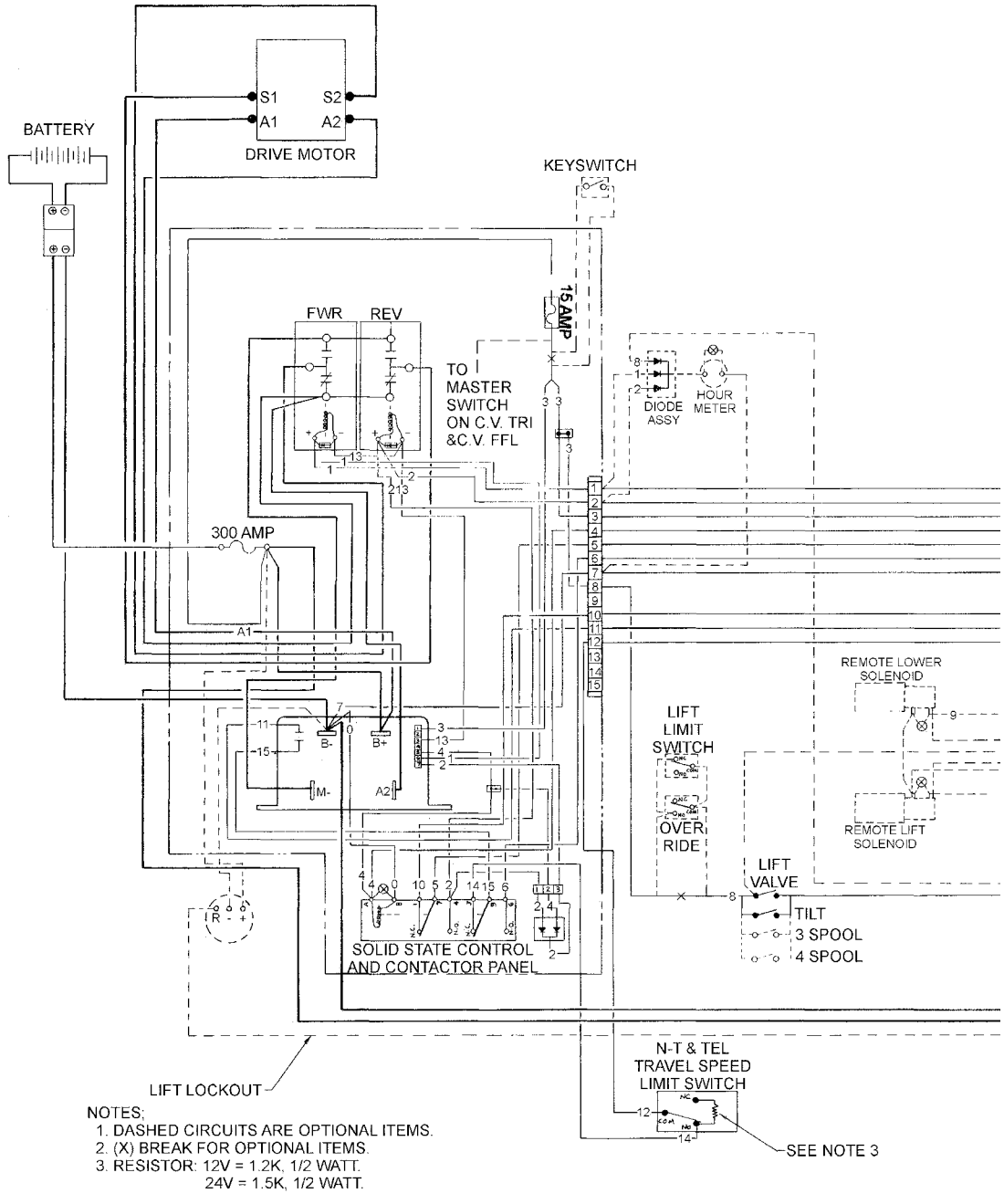


Figure 4-5 Wiring Diagram (Sheet 1)

PDC-40 TYPE E

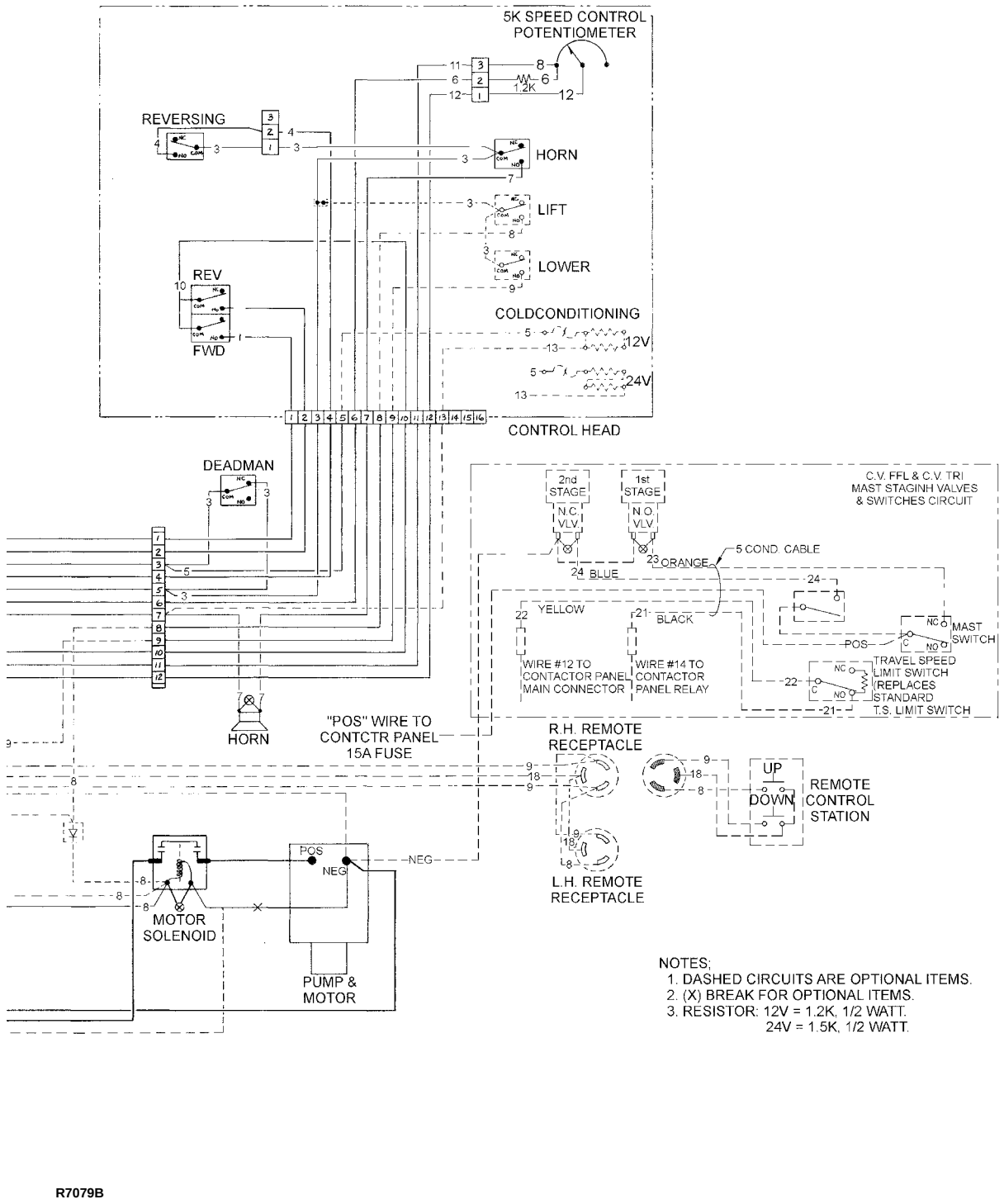


Figure 4-5 Wiring Diagram (Sheet 2)

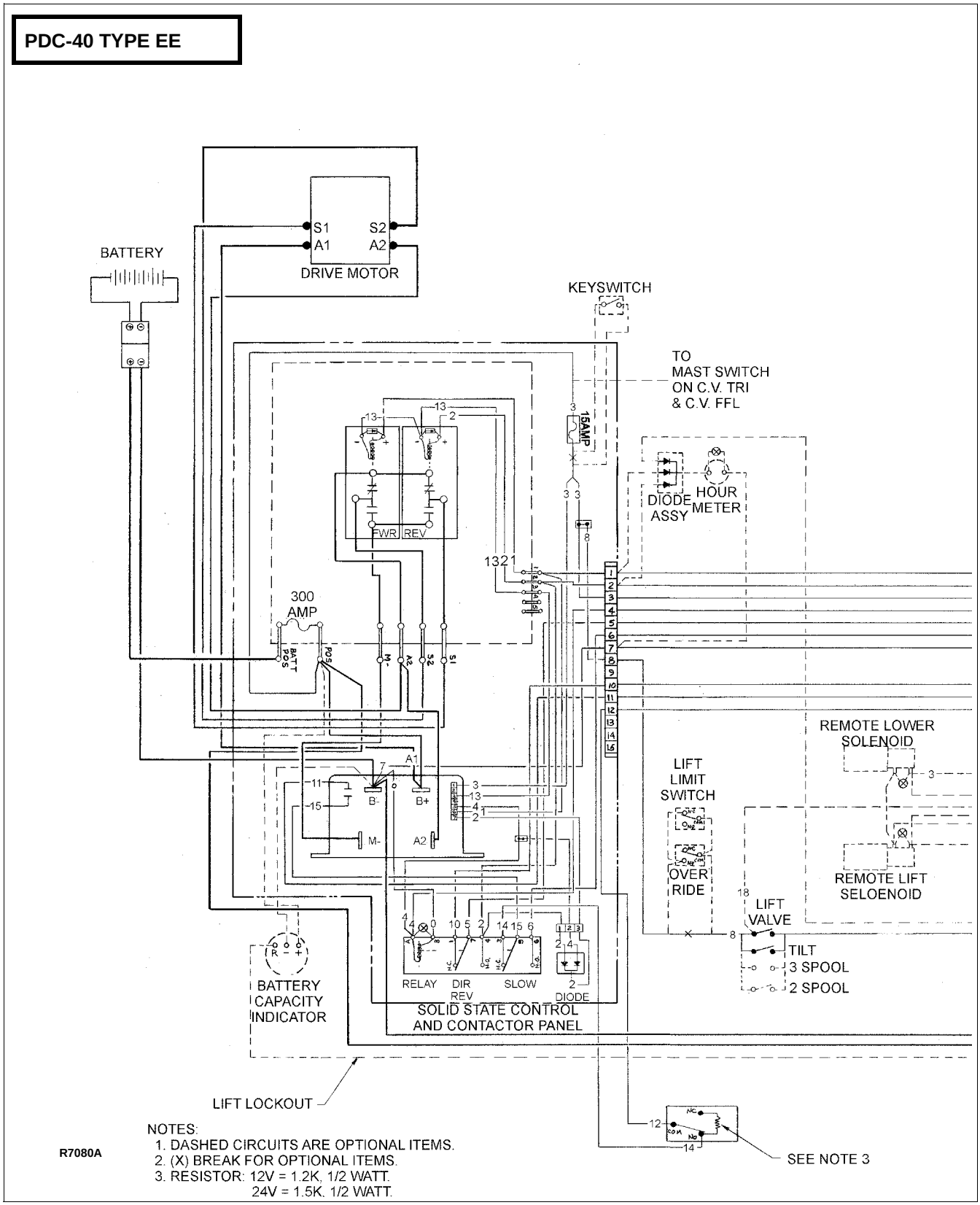


Figure 4-6 Wiring Diagram (Sheet 1)

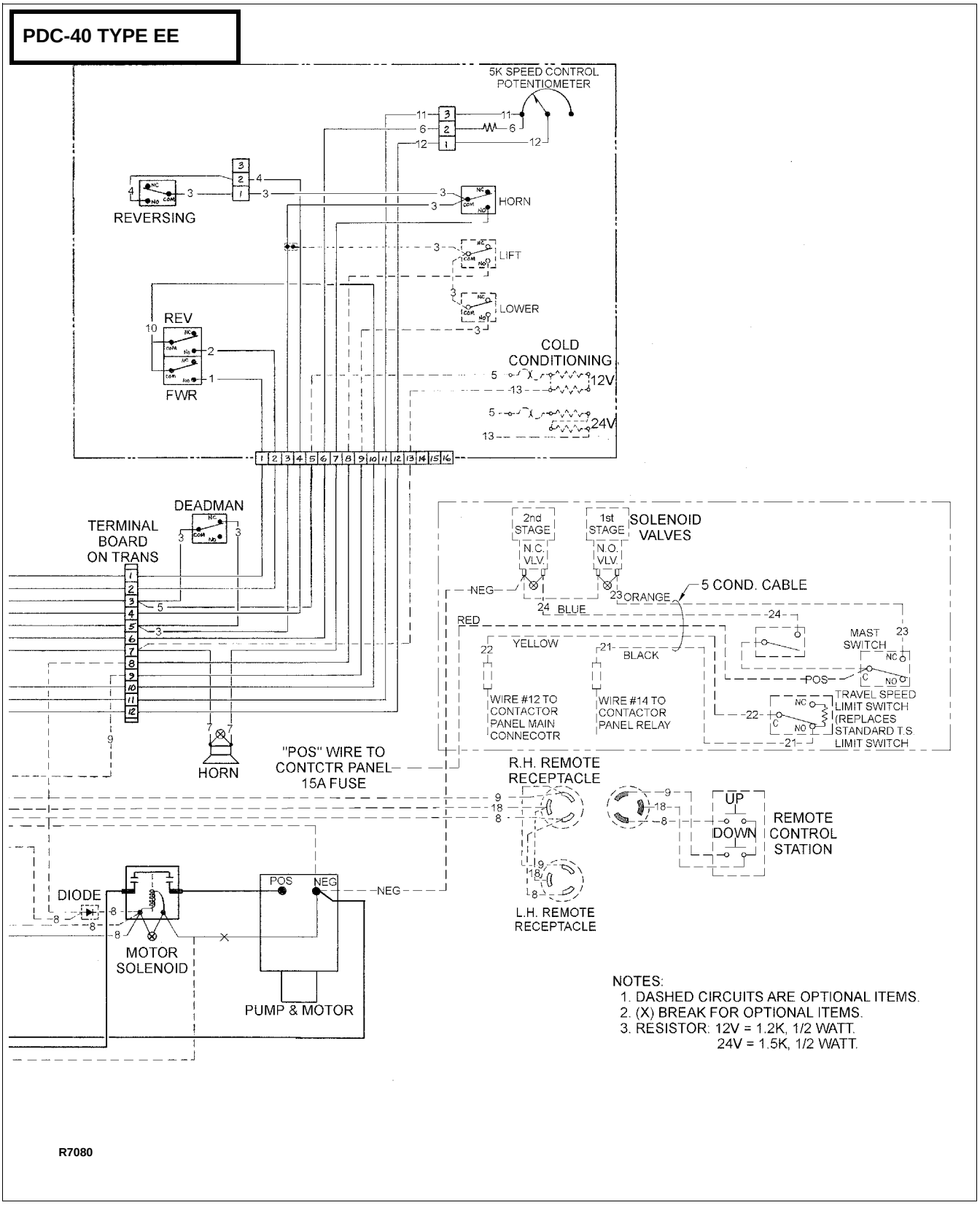


Figure 4-6 Wiring Diagram (Sheet 2)

NOTES

SECTION 5
STEERING ARM AND CONTROL HEAD SERVICING

5-1. GENERAL.

The following procedures cover adjustments, replacement, and repair of the steering arm, control head, and related assemblies and components. The procedures are independent of each other unless specifically referenced.

Speed controls are located on the inner hand grips. The control head provides an infinitely variable forward and reverse speed.

5-2. COLD CONDITIONING.

The cold conditioning version of the truck differs from the standard model where necessary to improve performance in cold temperatures. Heating resistors are provided for the control head switches, and cold resistant versions of other switches are used. Special cold temperature lubricants are also necessary for this application.

Figure 5-1 is an electrical schematic diagram of the cold conditioning circuit. Location of electrical parts in the control head and resistor wiring of cold conditioning equipment is illustrated in Figure 5-2.

CAUTION: Cold conditioning resistors consume power when energized, whether truck is used or not. To avoid power waste during storage periods, remove truck from cold temperatures.

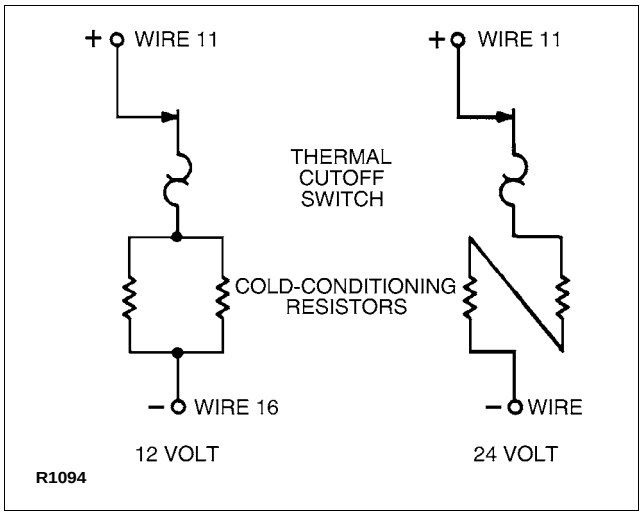


Figure 5-1 Schematic of Cold Conditioning Circuit

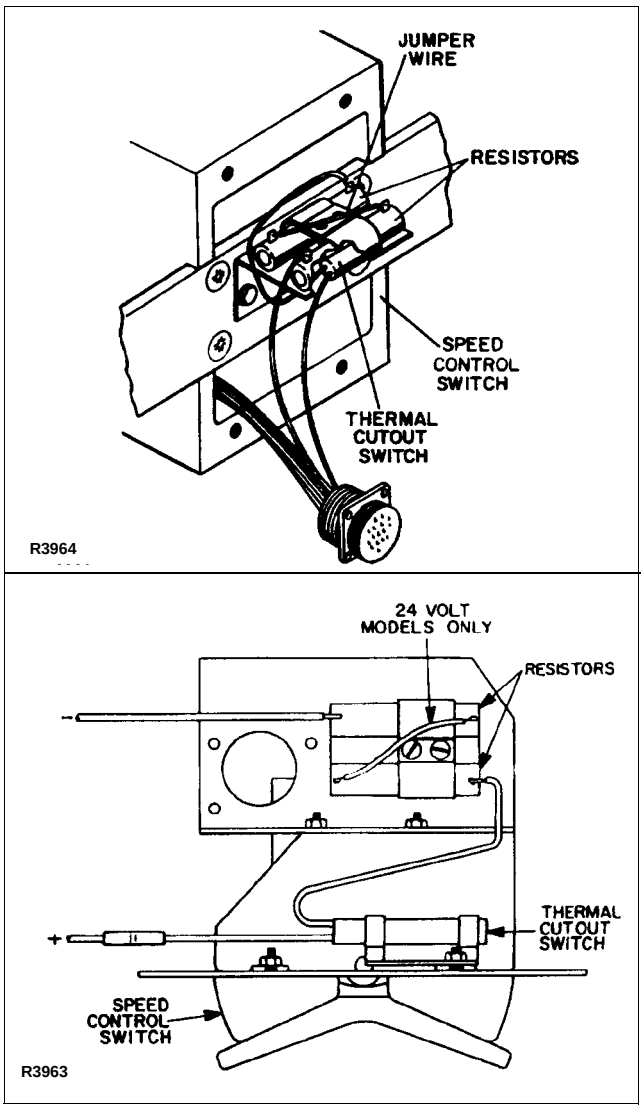


Figure 5-2 Location of Resistors and Thermal Cutout Switch

5-3. BELLY-BUTTON SWITCH ADJUSTMENT.

NOTE: All electrical connections should be tagged with identifying labels before disconnecting.

1. Disconnect battery and electrical connections.

CAUTION: While removing the belly-button casting, two springs (needed for reassembly) will fall free.

2. Being careful to catch and retain the belly-button springs (33, Figure 5-5) that may fall from the control head (53) as the belly-button casting (54) is removed, drive out the roll pins (17) that secure the belly-button casting. Drive the roll pin from left to right. The roll pin is only tight on the left side.

CAUTION: A misaligned switch will either actuate almost constantly (switch clicks early in travel) or fails to operate (switch clicks late in travel).

WARNING: Test switch in an open area to avoid being accidentally pinned.

3. Bend actuator lever of belly-button switch (Figure 5-3) to adjust gap so that switch clicks half way through travel of casting.
4. Reinstall casting, making certain all parts are back in place.
5. Check operation of the belly-button switch by pressing the belly-button casting while listening for the “click” that indicates that the switch has actuated.

NOTE: The click should be heard when the belly-button casting has moved about 50 per cent of its normal travel distance. If the click is heard at the beginning of travel, the switch may actuate at inappropriate times. If the click is heard near the end of travel, the switch could be unreliable and may not actuate in some instances.

6. Repeat steps 2. through 5. until pressing the belly-button casting actuates the switch properly.
7. Reconnect battery and electrical connections.

WARNING: Testing of belly-button switch in operation should be limited to areas clear of obstacles against which an operator could be pinned. Use low speed, reverse.

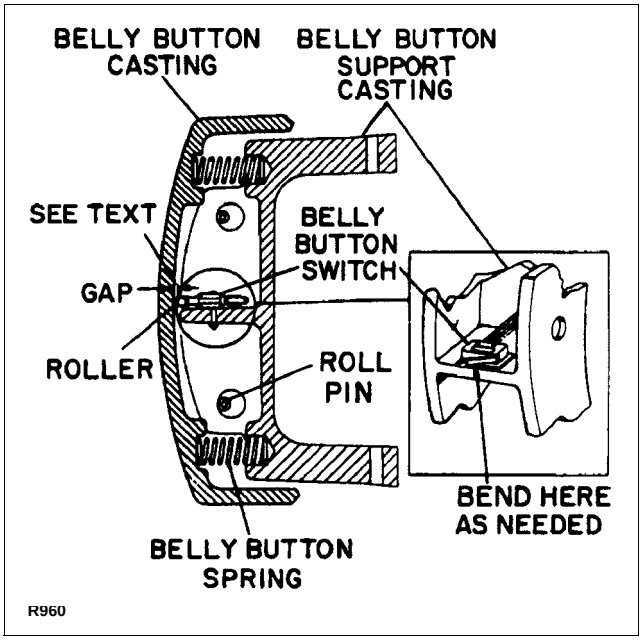


Figure 5-3 Belly-Button Switch Adjustment

5-4. POTENTIOMETER TESTING AND ADJUSTMENT

1. Disconnect the battery
2. Remove screws (12, Figure 5-6) and access covers (13, 14 or 15).
3. Remove screws (20, Figure 5-5) and access covers (40).
4. Check gap between rollers on directional switches (7) and surface of cam (46). If required, adjust position of bracket (50) to obtain a 0.03-0.06 inch clearance.
5. Disconnect the electrical control cable from the electrical control panel. Set an ohmmeter to the RXIK (1000) scale and connect across pin contacts of wires 7 and 11 at the control cable pin housing.
6. Slowly press the control lever (52) in the forward direction until a click indicating forward switch closure is heard. Ohmmeter should indicate 4550 ohms (± 250 ohms).
7. If incorrect reading is obtained, use access hole, in the side of the control head (Figure 5-4) to gain access to the potentiometer. (3, Figure 5-5). Insert a screwdriver blade into the slot on the back side of the potentiometer (Figure 5-4) and turn slightly. Vary the amount and direction of screwdriver rotation until the specified value is achieved.
8. Repeat step 6. while pressing control lever in reverse direction. Meter readings should be the

same as for the forward direction (± 200 ohms). If meter readings are not the same, adjust position of bracket (44, Figure 5-5) as necessary to obtain the same values. Adjust the potentiometer again if necessary.

9. Reassemble the control head.

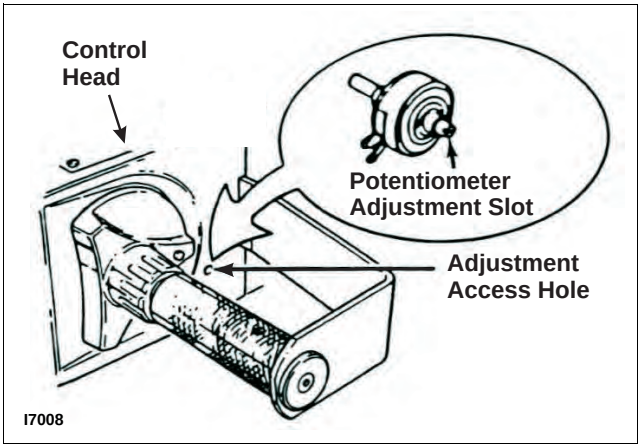


Figure 5-4 Control Head Potentiometer Adjustment

5-5. . CONTROL HEAD SWITCH REPLACEMENT.

NOTE: Refer to paragraph 5-6. for speed control switch replacement.

NOTE: For access to belly-button switch, see paragraph 5-3. For access to other switches on control head, the top cover (13, 14, or 15, Figure 5-6) and/or switch plate (16) must be removed.

NOTE: All electrical connections should be tagged with identifying labels before disconnecting.

1. Disconnect battery.
2. If necessary to gain access to defective belly-button switch, remove belly-button casting (54, Figure 5-5) by performing step 2 in paragraph 5-3.
3. Remove top cover (13, 14, or 15, Figure 5-6) by removing four screws (12).
4. Remove switch plate (16) by removing four screws (22 and 23, Figure 5-5) on top and bottom of control handle (53).
5. Replace belly-button switches (5), directional switches (7), horn switch (3, Figure 5-6), or lift and lower (2).

NOTE: If the belly-button switch is replaced, adjust it in accordance with paragraph 5-3. before using truck.

6. Replace switch plate (16) and secure with four screws (22 and 23, Figure 5-5) on top and bottom of control handle (53).
7. Replace top cover (13, 14 or 15, Figure 5-6) and secure with four screws (12).
8. Reconnect battery.

SEE Figure 5-6
FOR SWITCHS

SEE Figure 12-3
FOR COLD CONDITIONING

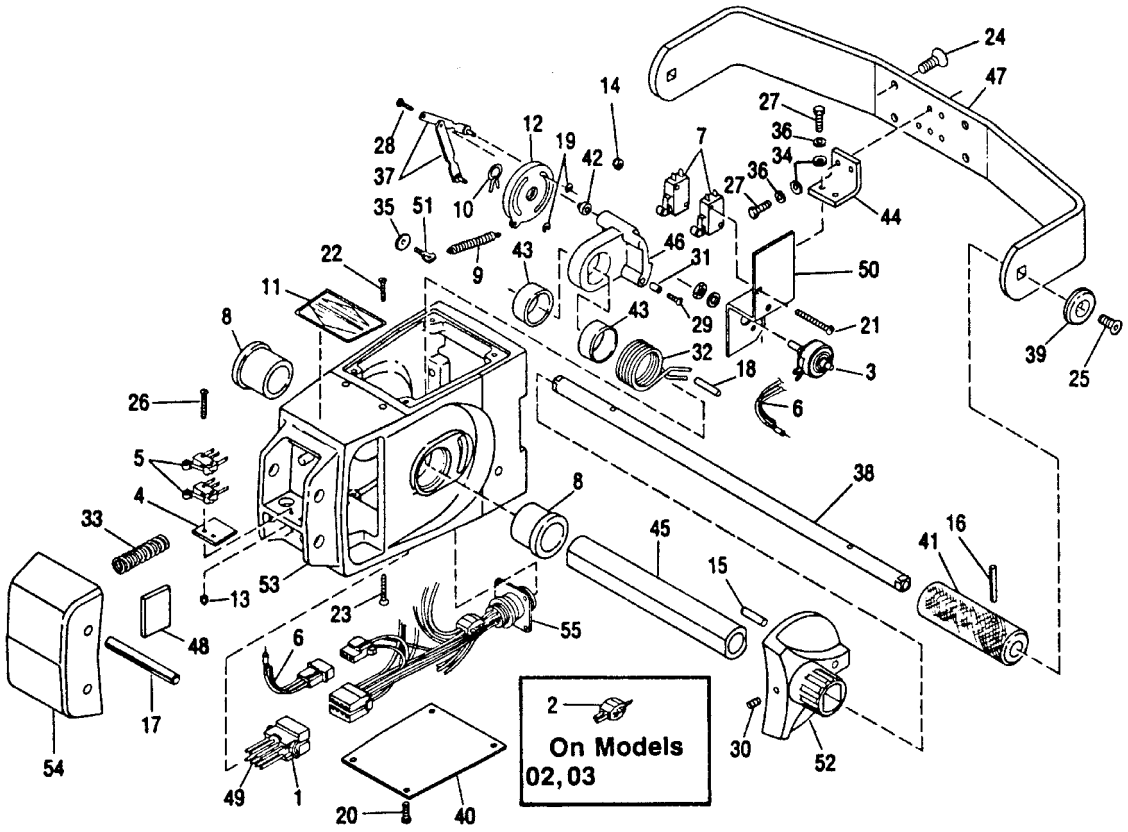


Figure 5-5 Control Head Assembly

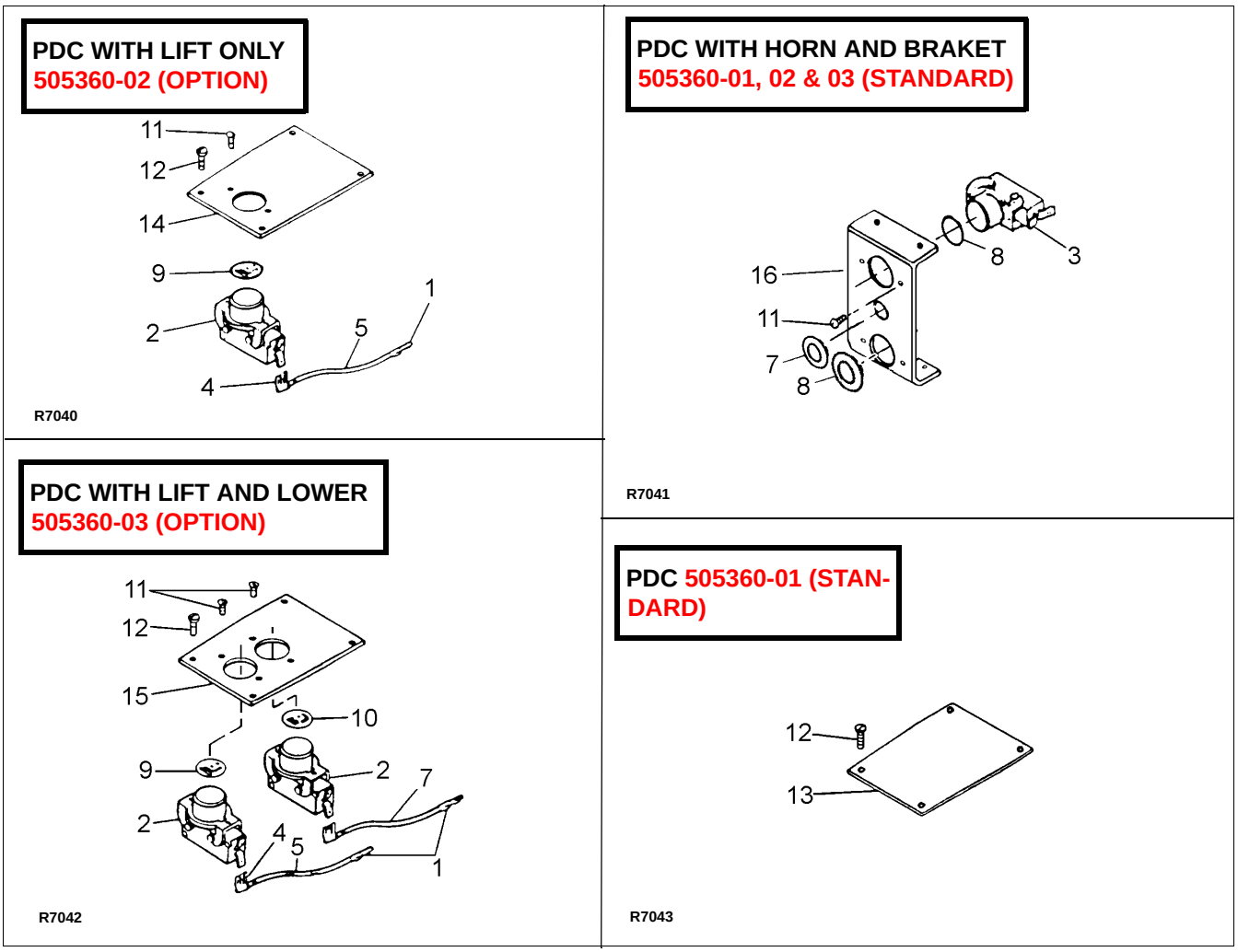


Figure 5-6 Push Button Switches, Control Head

5-6. SPEED CONTROL SWITCH AND RETURN SPRING REPLACEMENT.

1. Disconnect battery.
2. Remove four screws securing control head to steering arm.
3. Disconnect connector (8, Figure 5-10).
4. Remove four screws (12, Figure 5-6) and top cover (13, 14 or 15).
5. Disconnect directional switches (7, Figure 5-5).
6. Remove four screws (24) securing handle guard (47) to control head.
7. Remove two socket head screws (25) and caps (39) from handle guard (47).
8. Remove handle guard with two brackets (44 and 50) and directional switches (7) attached.
9. Remove roll pin (16) from right hand handle grip (41).
10. Remove right hand handle grip from shaft (38).
11. Remove set screw (30) from right hand control lever (52).
12. Remove right hand control lever from tube (45).
13. Observing through top cover opening, slide shaft (38) with tube (45) out left hand side of control head just enough to clear return spring (32).
14. Disengage return spring from spiral pin (18) and remove return spring.
15. Place new return spring in position, engage with spiral pin, and slide shaft (38) with tube (45) back through return spring and out right hand side of control head.

16. Install right hand control lever (52) onto tube (45), and secure with set screw (30).
17. Install right hand handle grip (41) onto shaft (38), align roll pin hole in handle grip with roll pin hole in shaft, and install roll pin (16).
18. Install handle guard (47), with two brackets (44 and 50) and switches (7) attached, and secure with two caps (39) and screws (25).
19. Install four screws (24) through handle guard and into control head.
20. Reconnect directional switches (7).
21. Install top cover (13, 14 or 15, Figure 5-6) with four screws (12).
22. Reconnect connector (8, Figure 5-10).
23. Install control head onto steering arm with the four screws.
24. Reconnect battery.

5-7. STEERING ARM RETURN SPRING ADJUSTMENT.

The tension on the steering arm return spring should allow the steering arm to return gently to the upright position. Excessive tension on the steering arm return spring will cause the steering arm to snap up and may cause damage to the electrical cable, brake linkage, or the spring itself. If the steering arm does not return fully, check for binding in the brake linkage or wiring harness before making any adjustments. If they do not bind, refer to Figure 5-7 and proceed as follows to adjust the steering arm return spring tension.

1. Disconnect the battery.
2. Hold the steering arm (13, Figure 5-7) in the upright position and make sure the arm cannot fall.
3. Insert a 5/16 allen wrench through hole in bottom of steering arm and loosen screw (1). The spring tube (4) will rotate counterclockwise when screw is loosened.
4. With a pair of vise grip pliers, grip the flat surfaces of the spring tube assembly (4) and rotate clockwise 180 degrees.
5. Hold spring tube assembly in rotated position and tighten screw (1) to secure.
6. Check the spring action by lowering the steering arm and returning it to the upright position two or three times.
7. If necessary, repeat steps 2. through 6., increasing or decreasing amount of rotation of the spring tube assembly until steering arm returns gently to full upright position.
8. Reconnect battery.

5-8. STEERING ARM RETURN SPRING REPLACEMENT.

NOTE: The steering arm return spring is replaced while the steering arm is in the upright position.

1. Disconnect battery.

NOTE: The steering arm has a tendency to fall downward when the tension on the return spring is released.

2. Hold steering arm (13, Figure 5-7) in upright position and make sure the arm cannot fall.
3. Insert a 5/16 allen wrench through hole in bottom of steering arm and loosen screw (1).

CAUTION: Unless properly supported, steering arm will drop out of pivot cap when spring tube is removed.

4. Put a block under steering arm at pivot cap.
5. With a piece of chalk or crayon, draw a straight line from center of spring tube assembly (4) into pivot cap (17), marking radial position of tube, to facilitate reinstallation.
6. With a pair of vise-grip pliers, grip the flat surfaces of spring tube assembly (4), and slowly pull it free from the steering arm, pivot cap and tube clamp (16).

NOTE: Steering arm return spring (5) will remain inside the spring tube assembly (4).

7. Remove steering arm return spring (5) from spring tube assembly (4). If spring is severely jammed and will not come loose, punch and drive the 1/4-inch diameter roll pin into the tube. Save pin for reuse. Remove the spring. Tap roll pin back into place.

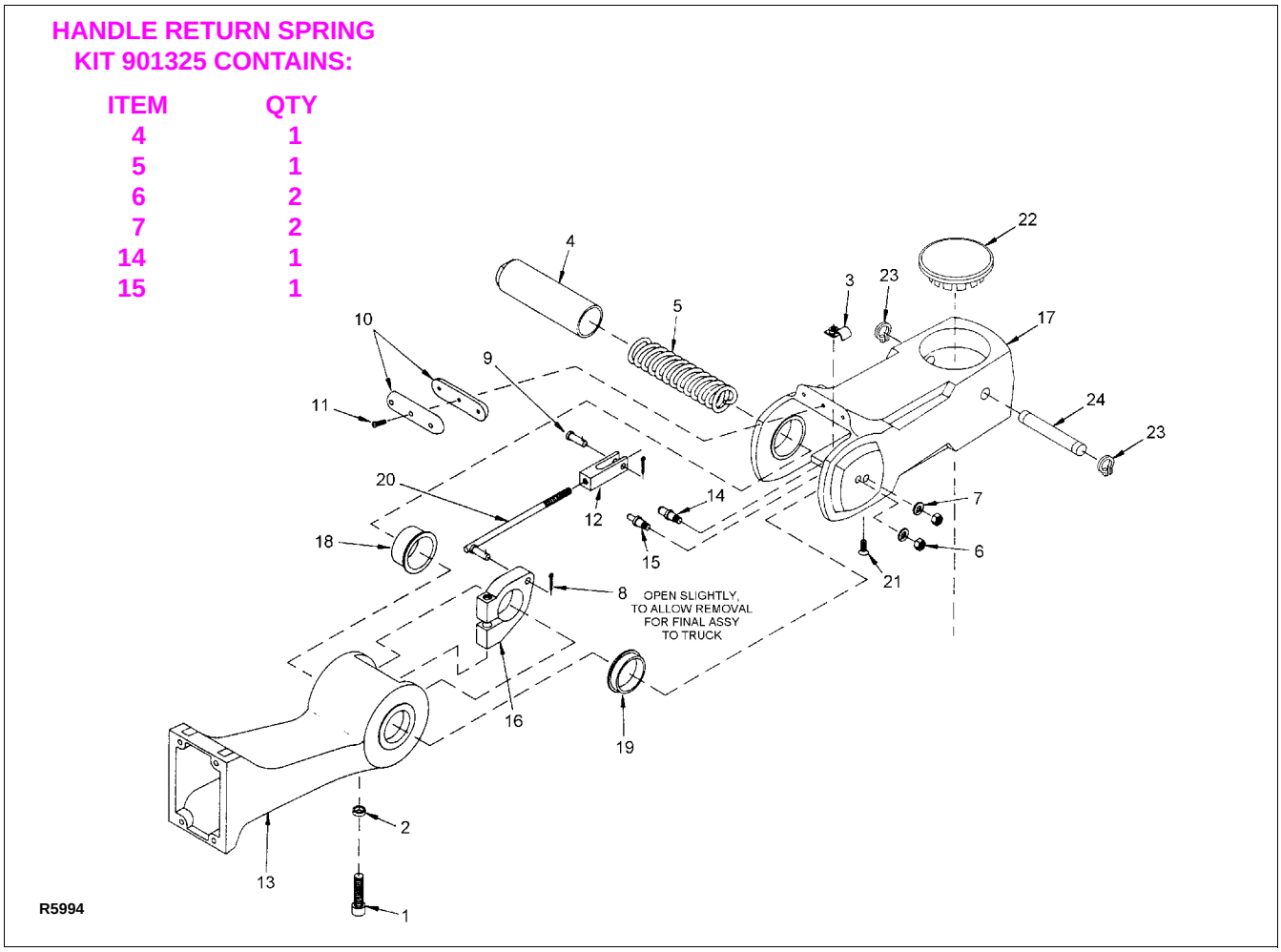


Figure 5-7 Steering Arm

8. Lubricate the ends and outer surface of the new steering arm return spring (5) with a lithium base general purpose grease.
9. Insert spring into spring tube assembly and press in, making sure that one spring loop eye fits over the 3/8-inch roll pin at the closed end of the spring tube assembly.
10. Slide spring tube assembly into pivot cap (17) and steering arm (13) through tube clamp (16) and through loop of electrical cable.
11. Align radial position of spring tube assembly in accordance with line drawn in step 5. Slowly rotate spring tube assembly a few degrees each way until the steering arm return spring snaps into place over spring pins (14 and 15) then tighten screw (1).
12. Apply engine lubricating oil (No. 2) to the steering arm elbow.
13. Remove block from under steering arm.
14. Adjust tension on steering arm return spring as explained in paragraph 5-7.
15. Reconnect battery.

5-9. PIVOT TUBE REPLACEMENT.

NOTE: All electrical connections and cabling should be tagged with identifying labels before disconnecting.

NOTE: A chain hoist is required for this procedure. It should be in position above the pivot tube before disassembly.

1. Remove the transmission as described in SECTION 7.
2. Position a support under pivot tube (7, Figure 5-9).
3. Remove snap rings (23) and remove pin (24).
4. Remove pivot cap cover (22).

5. Remove pivot cap with electrical control cable, steering arm and control head from pivot tube assembly.
6. Remove spacer (1) from the pivot tube.
7. Position a chain hoist above the pivot tube.
8. Using **tool kit part number 907151**. Position spacer, Figure 5-8, inside the pivot tube. Insert the pin through the support tube and secure with the cotter pin. Attach chain to the spacer.
9. Remove the support from under the pivot tube and remove the pivot tube from the bottom of the truck.

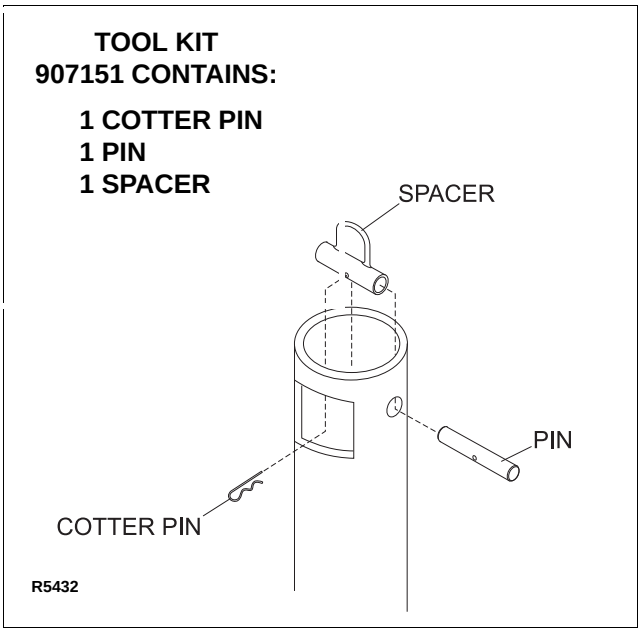


Figure 5-8 Pivot Tube Removal Tool

10. Remove three screws (2, Figure 5-9) securing bushing (3).
11. Remove pivot bushing (5) and thrust bearing (6).
12. Remove three screws (2) securing bushing (3).
13. Remove bushing (3).
14. Inspect the bearing (5) for wear. If worn, replace with new bearing.
15. Discard the two old bushings (3 and 5).

NOTE: When installing the spacer, bushings and bearing, refer to Figure 5-9 to be sure they are positioned on the pivot tube in the proper order.

16. Place bearing (6) and lower bushing (5) around pivot tube.
17. Attach hoist chain to pivot tube as described in step 8.
18. Install the pivot tube (7) through the bottom of the truck and position a support under pivot tube.
19. Remove hoist chain and the two pivot cap cover screws or pivot tube tool as applicable.
20. Install bushing (3) and secure with three screws (2).
21. Install spacer (1) on pivot tube (7).

CAUTION: Be sure to observe cable routing and positioning when reinstalling electrical control cable to prevent cable damage.

22. Reinstall steering arm onto pivot tube, being careful not to damage electrical control cable while routing it through the pivot tube. (See Figure 5-10).
23. Install pivot cap cover.
24. Install pin (24) and snap rings (23, Figure 5-7).
25. Install the transmission as described in SECTION 7.

5-10.ELECTRICAL CONTROL CABLE REPLACEMENT.

1. Disconnect battery.

NOTE: When removing control head in the following step, be sure to hold it in place until cable is disconnected.

2. Remove four screws (7, Figure 5-10) that secure control head to steering arm.
3. Disconnect connector (8), and set aside control head.
4. Use Amp Extraction Tool **part number 900750** to push out and disconnect wire pins from connector (8).
5. Remove cable clamps (1, 2) and loosen loop of cable that surrounds the spring tube assembly (3).
6. Remove pivot cap cover (6).
7. Pull disconnected end of old cable through steering arm and pivot cap, then up through pivot cap cover opening.
8. Tape the disconnected end of the old cable to the terminal end of the new cable.

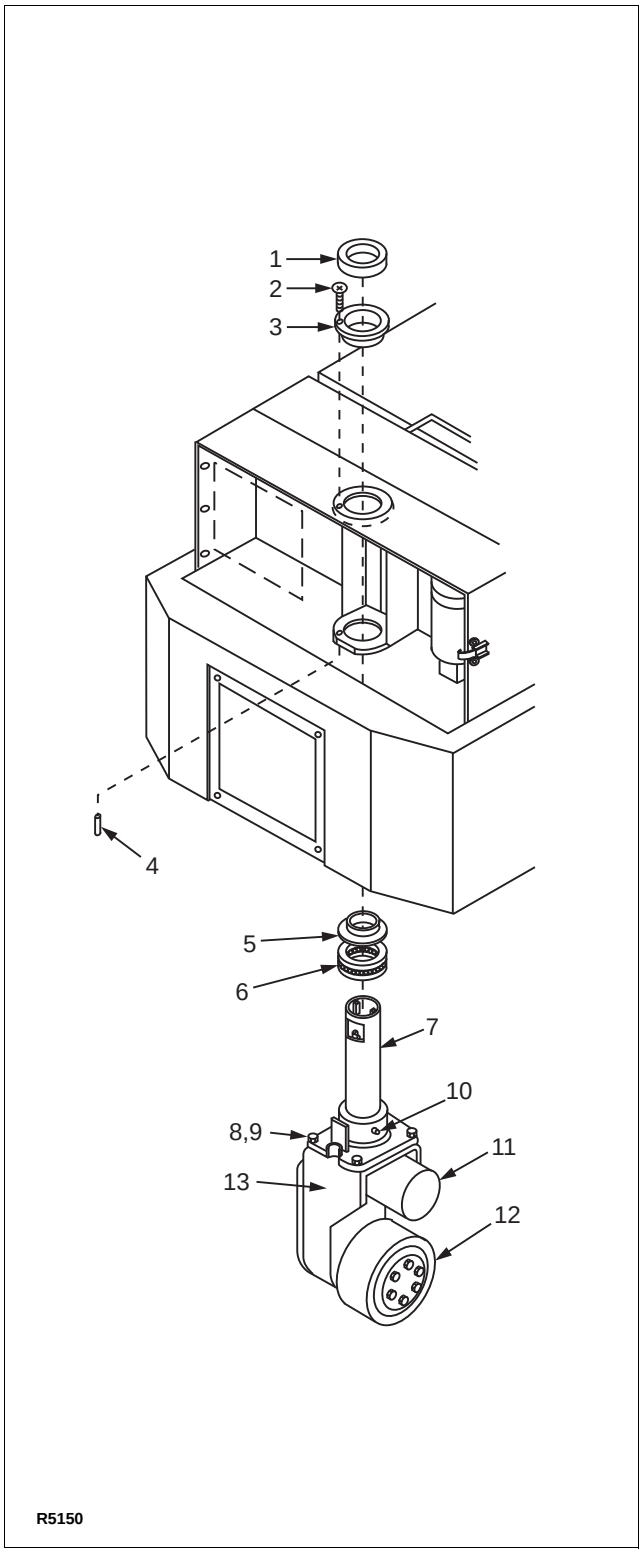
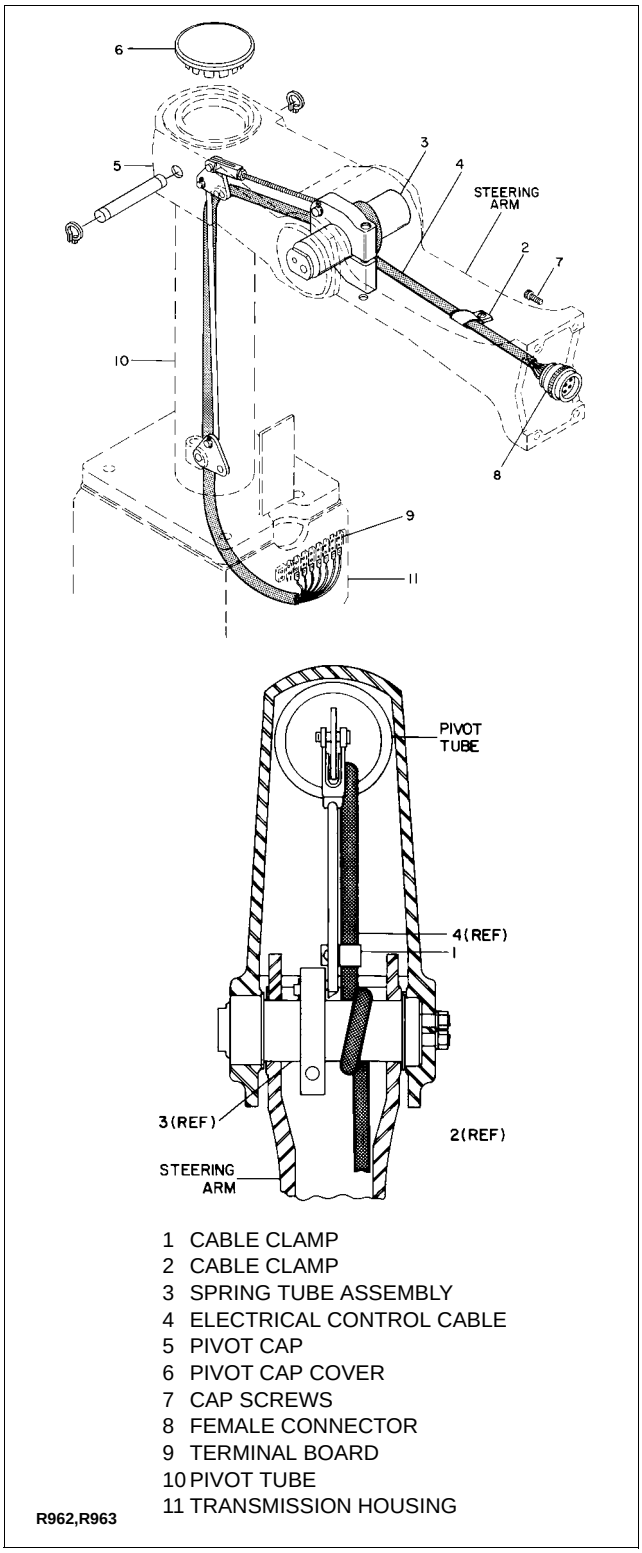


Figure 5-9 Pivot Tube Bushing Replacement



1 CABLE CLAMP
2 CABLE CLAMP
3 SPRING TUBE ASSEMBLY
4 ELECTRICAL CONTROL CABLE
5 PIVOT CAP
6 PIVOT CAP COVER
7 CAP SCREWS
8 FEMALE CONNECTOR
9 TERMINAL BOARD
10 PIVOT TUBE
11 TRANSMISSION HOUSING

Figure 5-10 Electrical Control Cable Replacement

NOTE: The dead-man switch is on the brake linkage. The wire connected to pin number 3 on the terminal board (9) is a wire that comes from

the dead-man switch. Cable wire number 3 is connected to the other lead on the dead-man switch.

9. Remove base access cover, and disconnect terminal end of old cable from transmission terminal board (9) and cable wire number 3 from deadman switch lead.
10. Draw new cable into pivot tube by pulling old cable through the base access opening.

NOTE: The cable leads are numbered consecutively.

11. Untape the old cable from the new cable and connect the new cable terminals sequentially, starting with pin 1 on the transmission terminal board (9).
12. Cut the terminal off of cable wire number 3 and connect this wire to the wire from the deadman switch.
13. Check that the other wire from the deadman switch is connected to terminal 3.
14. Route connector (8) end of cable under spring tube assembly (3) and out the opening at the elbow.
15. Eliminate cable slack in pivot tube (10), then secure cable with cable clamp (1).

CAUTION: Improper cable loop adjustment while performing the following step will damage the cable. If too tight, the cable will tear when the steering arm is in the up position. If too loose, the cable will buckle or be pinched when the steering arm is in the down position.

16. Loop cable around spring tube assembly (3) as illustrated and push connector (8) end of cable through steering arm.
17. Pull the cable until the cable is wrapped firmly around the spring tube assembly (3). Slack off approximately 1/2 inch and secure the cable in this position with cable clamp (2).
18. Work steering arm up and down a few times to assure that the electrical control cable is not binding.
19. Plug connector (8) into the control head receptacle.
20. Reinstall the control head assembly, pivot cap cover, and base access cover.
21. Reconnect battery.

SECTION 6
BRAKE SERVICING

6-1. ADJUSTMENT

If the mechanical brake does not begin to hold when the steering arm is raised or lowered into the lightly shaded area in Figure 6-1, proceed as follows:

1. Disconnect battery connections.
2. Securely block the truck to prevent slipping, then jack up the truck so the drive wheel is off the ground.
3. Remove base access cover.
4. Secure steering arm assembly in a position that is in either lightly shaded area shown in Figure 6-1.

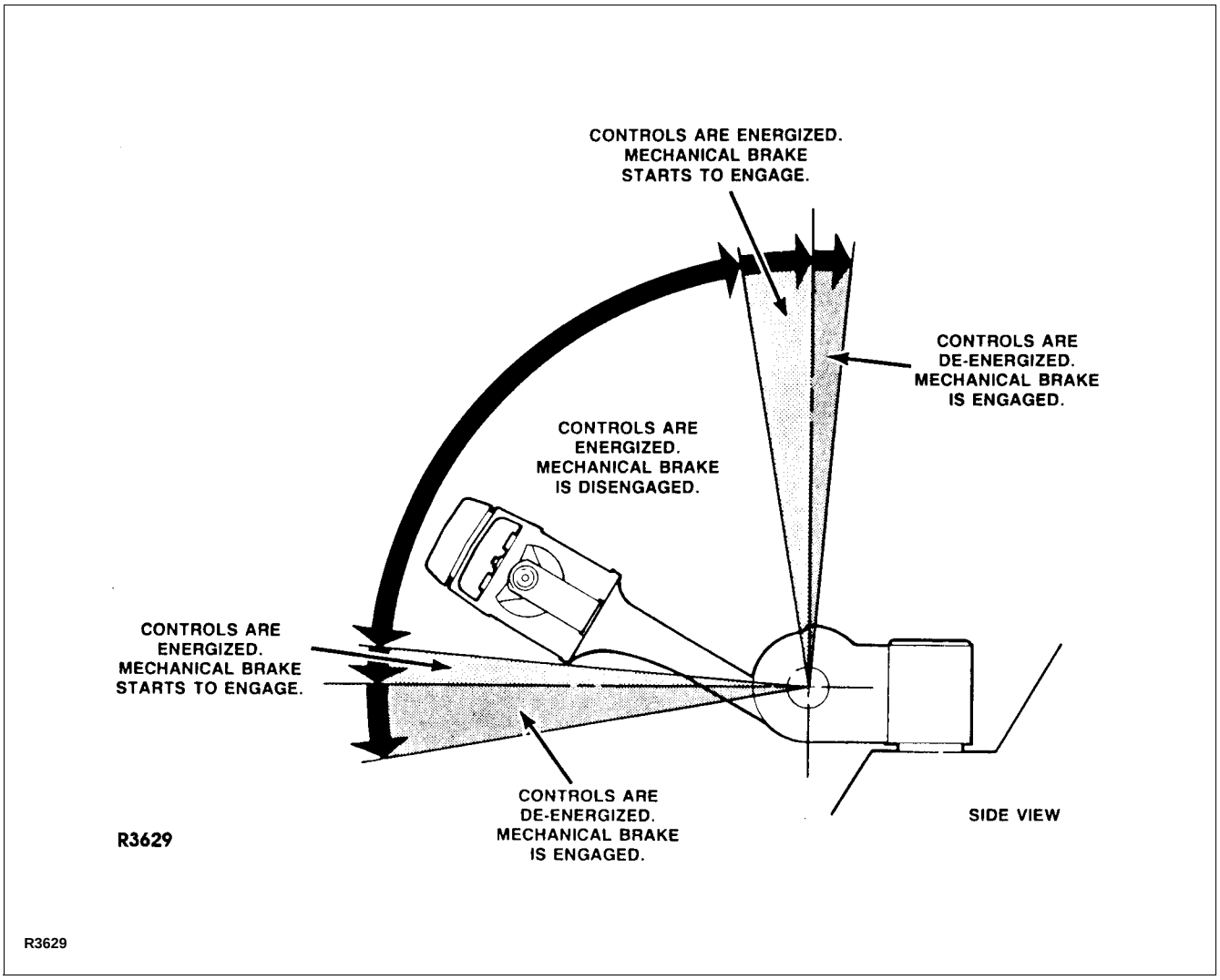


Figure 6-1 Brake Engage/Disengage

5. Remove the cotter pin (1, Figure 6-2), and pin (2) to disconnect the clevis (3) from the lever assembly.
6. Loosen the lock nut (4).
7. Turn the clevis (3) to adjust the brake.
8. Connect the clevis (3) to the lever assembly with pin (2), but do not insert the cotter pin (1) at this time.
9. Turn the brake disc by hand to check brake adjustment. If there is noticeable drag, go to step 12. If there is no drag, go to step 10.
10. Disconnect the clevis (3).
11. Repeat steps 7. through 9. until adjustment is correct.
12. Secure the steering arm in drive position and spin the drive wheel to make sure there is no drag. If there is any drag, carefully readjust only enough to eliminate drag in the drive position.
13. Tighten the lock nut (4) and secure the pin (2) with the cotter pin (1).
14. Remove the restrictions from the steering arm and let the arm return to the upright position.
15. Check that the brake lever has activated the dead-man brake switch (42, Figure 6-3) and open the control circuits. If the switch is not activated, go to step 16. If it is activated, go to step 18.
16. Adjust the position of the dead-man switch by loosening the screws (41) attaching the switch to the mounting bracket, then sliding the switch in or out in the adjustment slots, and tightening the screws.
17. Make sure that applying the brake activates the switch but does not fully depress the switch plunger. If necessary, repeat steps 15. and 16. until the switch is properly positioned.
18. Lower the truck and install the base access cover.
19. Reconnect battery connections.
20. In an area free of obstructions, accelerate the truck and apply the brake. Check for proper operation in both forward and reverse.

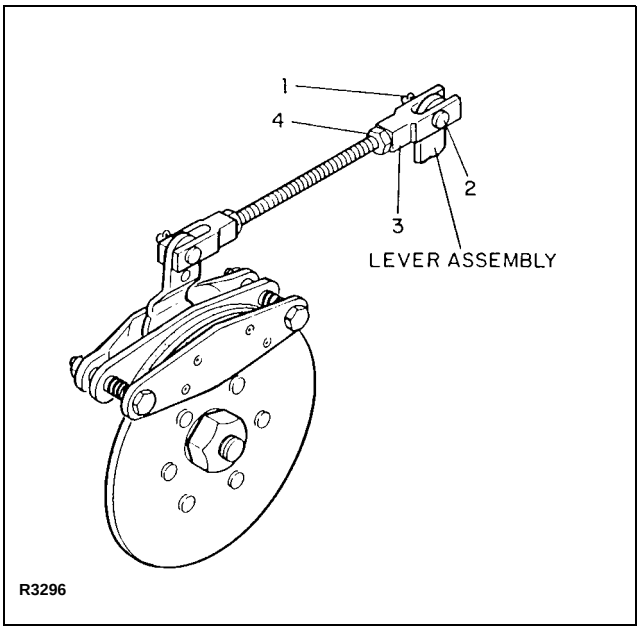


Figure 6-2 Brake Adjustment

6-2. REPLACEMENT OF BRAKE PADS

1. Disconnect battery connections.
2. Block the wheels to prevent the truck from rolling.
3. Position the steering arm to the left as far as possible, and secure the steering arm down from its park position so that the mechanical brake is disengaged.
4. Remove base access cover.
5. Remove the cotter pin (2, Figure 6-3) and link pin (7), then swing the clevis (13) up out of the way.
6. Remove two nuts (28) and lockwasher (29).
7. Carefully pull the bolts (30) just enough to clear the mounting plate weldment (17) while you hold together the remaining parts of the disc brake assembly (27), then remove the assembly.
8. Remove the bolts (30), spacers (31), springs (32), and brake pad (33).
9. Remove the retaining C-ring (34), washer (35), spring (36), bracket (38), lever (39), and washer (40) from the brake pad (37).

10. Discard the springs (32 and 36) and brake pads (33 and 37). Replace them with new parts.
11. Assemble the washer (40), lever (39), bracket (38), spring (36), washer (35), and C-ring (34) to the brake pad (37).
12. Assemble the brake pad (33), spacers (31), and springs (32) to the two bolts (30).
13. Slip the parts assembled in step 11. onto the mounting plate weldment (17) and hold them so the bolt holes are aligned.
14. Insert the bolts (30) through pad (37) and bracket (17), so the threaded portion of the bolts passes completely through.
15. Assemble the two lock washers (29) and nuts (28) to the bolts (30).
16. Engage the clevis (13) with the lever (39), then insert the pin (7) and secure it with the cotter pin (2).
17. Remove the restrictions from the steering arm.
18. Adjust the brake as described in paragraph 6-1.
19. Install the base access cover.
20. Reconnect battery connections.

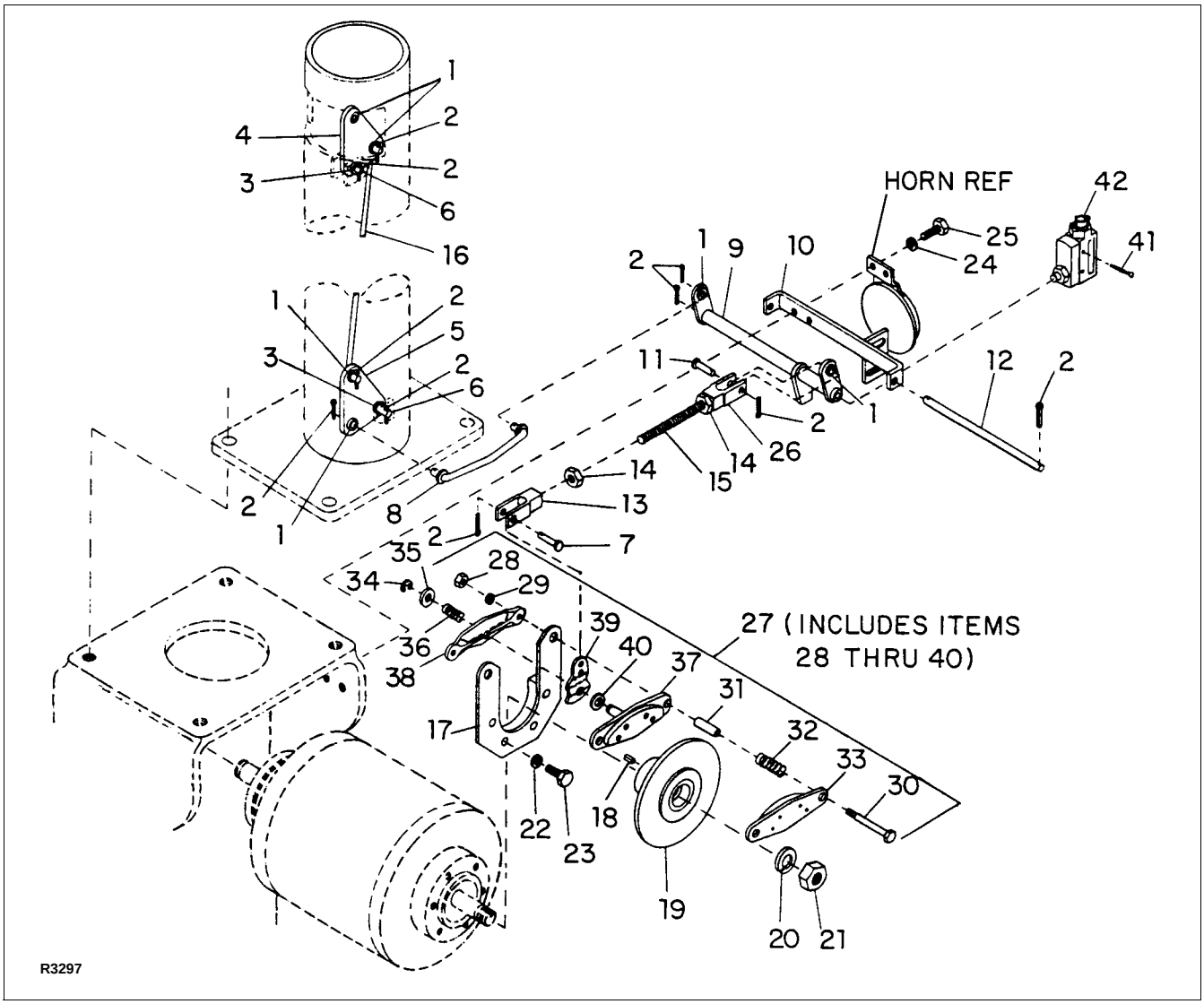


Figure 6-3 Brake and Linkage

6-2.1. Replacement of Brake Disc.

1. Disconnect the battery.
2. Block the wheels to prevent the truck from rolling.
3. Remove the base access cover.
4. Position the steering arm to the left as far as possible, and secure the steering arm down from its park position so that the mechanical brake is disengaged.
5. Remove the cotter pin (2, Figure 6-3) and pin (7), then swing the clevis (13) up out of the way.
6. Remove the two nuts (28) and lock washers (29).
7. Carefully pull the bolts (30) just enough to clear the mounting plate weldment (17) while you hold together the remaining parts of the disc brake assembly (27), then remove the assembly.
8. Remove the nut (21) and lock washer (20).
9. Remove the disc assembly (19).
10. Remove the key (18).
11. Install new disc assembly with key (18), lock washer (20) and nut (21).
12. Assemble the brake pad (33), springs (32), and spacers (31) to the two bolts (30).
13. Slip brake pad (37) with attached parts onto the mounting plate weldment (17) and hold it so the bolt holes are aligned.
14. Insert the bolts (30) through the pad (37) and bracket (17), so the threaded portion of the bolts passes completely through.
15. Assemble the two lock washers (29) and nuts (28) to the bolts (30).
16. Engage the clevis (13) with the lever (39), then insert the pin (7) and secure it with the cotter pin (2).
17. Remove the restrictions from the steering arm.
18. Adjust brake as described in paragraph 6-1.
19. Reconnect the battery.

SECTION 7
TRANSMISSION, DRIVE WHEEL AND LOAD WHEEL SERVICING

Completing the initial disassembly procedure provides access to any transmission parts requiring replacement.

7-1. TRANSMISSION REMOVAL AND DISASSEMBLY

1. Disconnect battery.
2. Securely block load wheels. Remove base access cover.
3. Disconnect the wires to the dead man switch.
4. Disconnect the wire to the horn.
5. If the cable leads connected to the terminal block (42, Figure 7-1) are not clearly labeled, label them from right to left beginning with 1 and then disconnect the cable leads from the terminal board.
6. Make sure the four cables to the drive motor (38) are properly labeled A1, A2, F1, and F2 and then disconnect the cable from the drive motor.
7. Disconnect the mechanical brake by removing cotter pin (1, Figure 7-2) clevis pin (2) that secures the rod clevis to the lower lever assembly (3).

NOTE: Transmission oil capacity is 3 pints.

8. Remove the transmission drain plug (5, Figure 7-1) and drain the transmission oil.
9. Position the drive assembly to access the two screws (24) and washers (18) which secure the motor to the transmission housing and remove the screws and washers.
10. Reposition the drive assembly to allow the motor to be pulled out through the access opening.
11. Disconnect brake rod (4, Figure 7-2) from lower lever assembly (3).
12. Remove the four screws (5) and washers (6) that secure the transmission (7) to the pivot tube weldment (8).

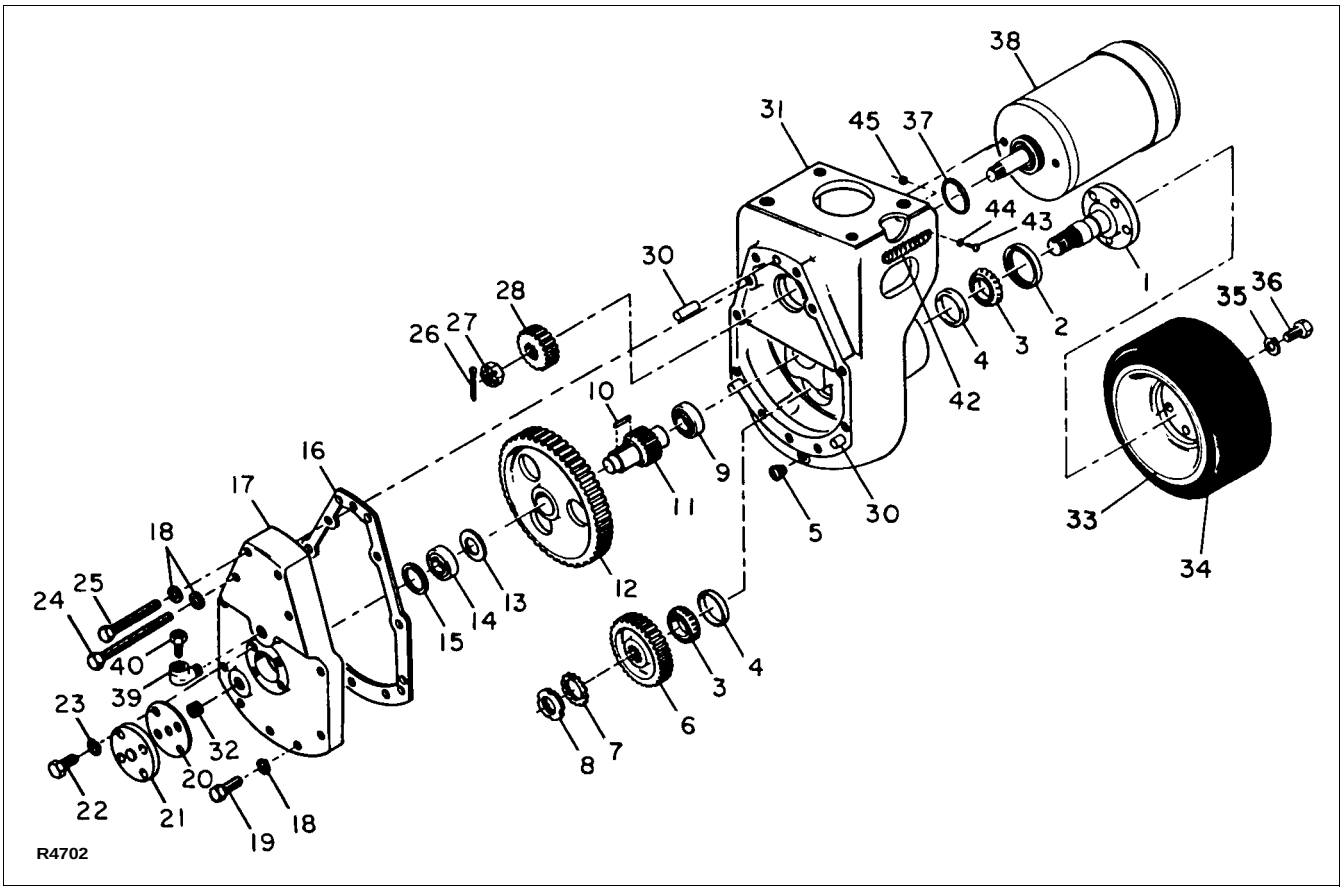


Figure 7-1 Transmission Assembly

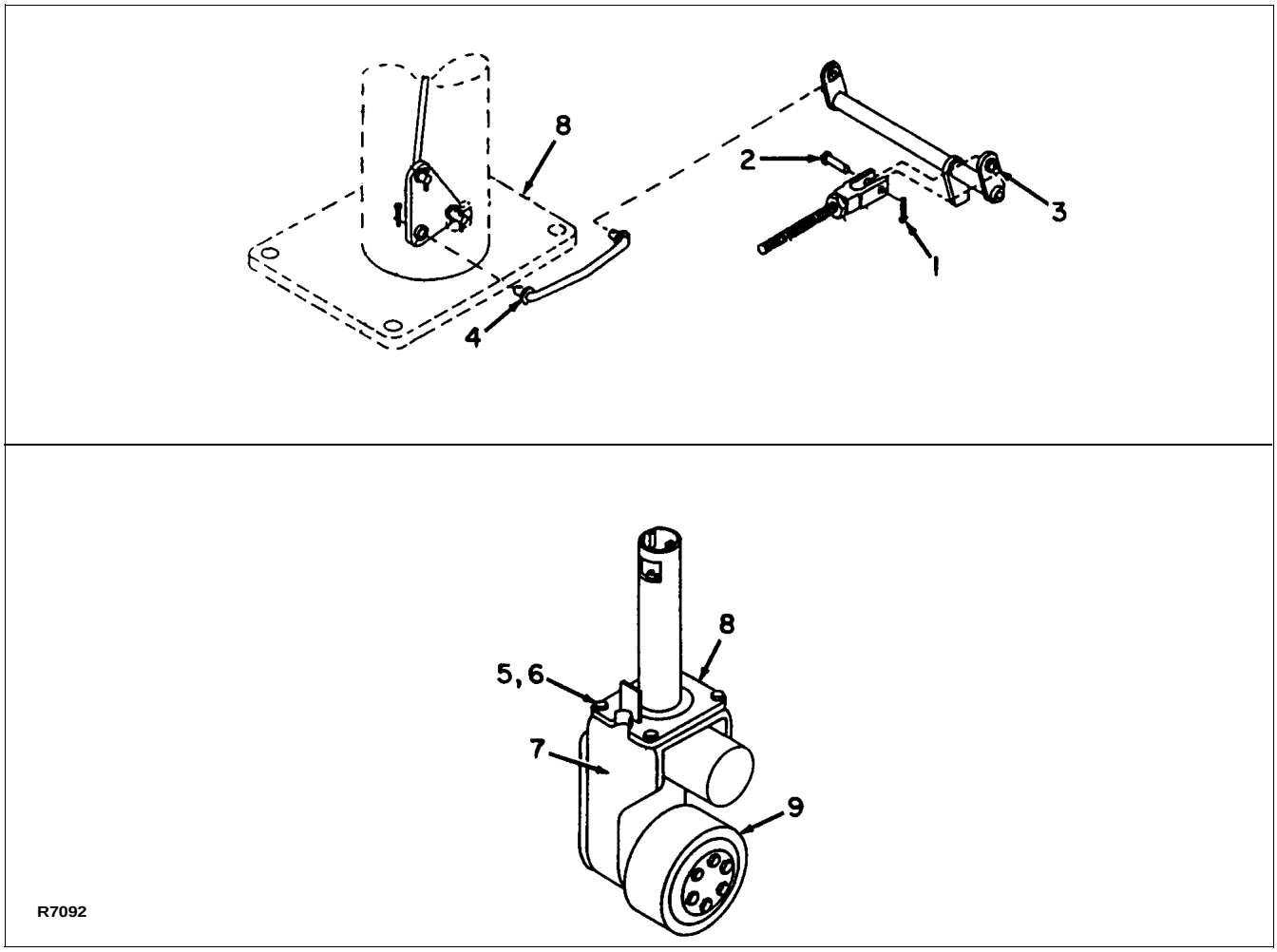


Figure 7-2 Transmission Removal

13. Remove the transmission and drive wheel (9) from the truck by raising the rear of the lift truck with jacks or other suitable means and sliding the assembly out from under the truck.
14. Remove the four hex head cap screws (22, Figure 7-1) and lock washers (23), bearing cover (21) and gasket (20).
15. Remove bearing spacer (15).
16. Remove seven screws (19), two screws (25), and lock washers (18); pry off transmission cover (17) and pull off cover gasket (16).
17. Remove ball bearing (14) and pinion spacer (13).
18. Remove intermediate gear (12) and square key (10).
19. Remove spur pinion (11).
20. Remove locknut (8) and lock washer (7).
21. Remove drive wheel and axle shaft (1) to free gear (6), roller bearing cones (3) and cups (4), and oil seal (2).
22. Remove ball bearing (9).
23. Refer to the disassembly instruction as a guide, and reverse the individual procedures of steps 22. through 1. to reassemble and reinstall the transmission.

NOTE: When reassembling, be sure to replace the gasket and reinstall the magnetic drain plug before refilling the transmission with transmission oil. **Transmission oil capacity is 3 pints.**

24. Fill the transmission to fill plug level with EP SAE 80W-90 automotive transmission oil.

7-2. DRIVE WHEEL REPLACEMENT

1. Disconnect battery.
2. Securely block the load wheels to prevent the truck from moving.
3. Remove base access cover.
4. Use a jack to raise the rear of the lift truck so that the drive wheel clears the ground.
5. Lower the truck on blocks, making certain the drive wheel is still clear of the ground.
6. Remove the five retaining screws (36, Figure 7-1) and lock washers (35) that secure the drive wheel to the axle shaft and then pry off the wheel.
7. Reverse the above procedures to install new drive wheel.

7-3. LOAD WHEELS.

1. Unload the truck and block the drive wheel.
2. Raise the lift carriage approximately three feet.
3. Disconnect battery.
4. Raise the front of the lift truck with a jack or another lift truck and place supporting boards or steel bars under the body, so that when the front end is lowered it will remain about 6 inches off the floor and the load wheel will not touch the floor.
5. Lower the lift truck onto the support.
6. Remove dust cap (10, Figure 7-3).
7. Remove nut (9) and washer (8).
8. Slide load wheel hub (4) off of spindle.
9. Remove grease seal (1) and bearings (2 and 7)
10. Clean and check bearings and grease seal for defects.
11. Apply a lithium base general purpose grease to bearing and insert into wheel hub.
12. Insert grease seal (1) into wheel hub and pack inside of wheel hub with grease.
13. Install wheel on spindle, then reinstall washer (8) and nut (9).

NOTE: Tighten the nut (9) until the load wheel cannot be turned by hand. Then gradually loosen the nut until the load wheel can be turned with one hand freely, but not loose enough to permit noticeable bearing end play.

14. Wipe away excess grease from exposed areas and reinstall dust cap (10).

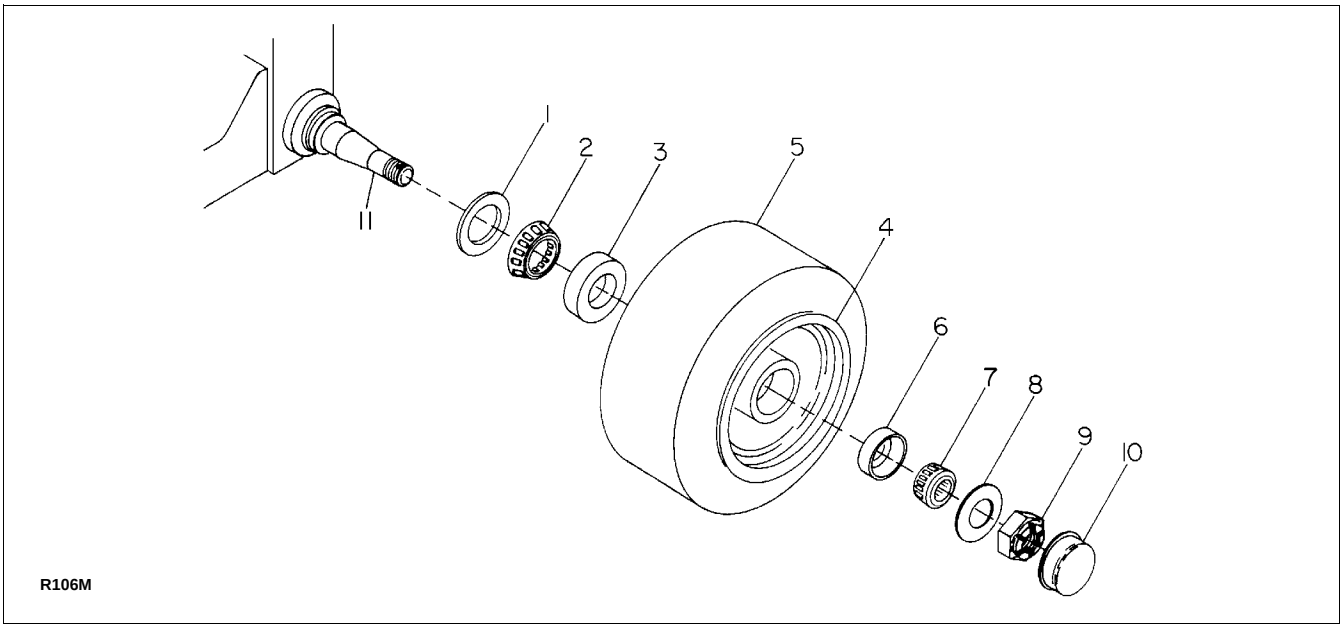


Figure 7-3 Load Wheels

NOTES

SECTION 8
ELEVATION SYSTEM SERVICING

8-1. GENERAL

The elevation system includes the mast, lift chains, lift cylinder, ram head and tilt cylinders.

8-2. LIFT CHAIN ADJUSTMENT (NON-TELESCOPIC, AND TELESCOPIC)

WARNING: Before attempting any adjustment make certain power is disconnected.

1. Fully lower lift carriage.
2. **Disconnect the battery.**
3. Loosen nut (29) on chain adjusting bolt (28) on the lift carriage.
4. Take up slack by tightening nut (31).

CAUTION: At least 3 full threads must be present below hex nut after completion of adjustment.

5. Secure adjustment by tightening nut (29) against the lift carriage.

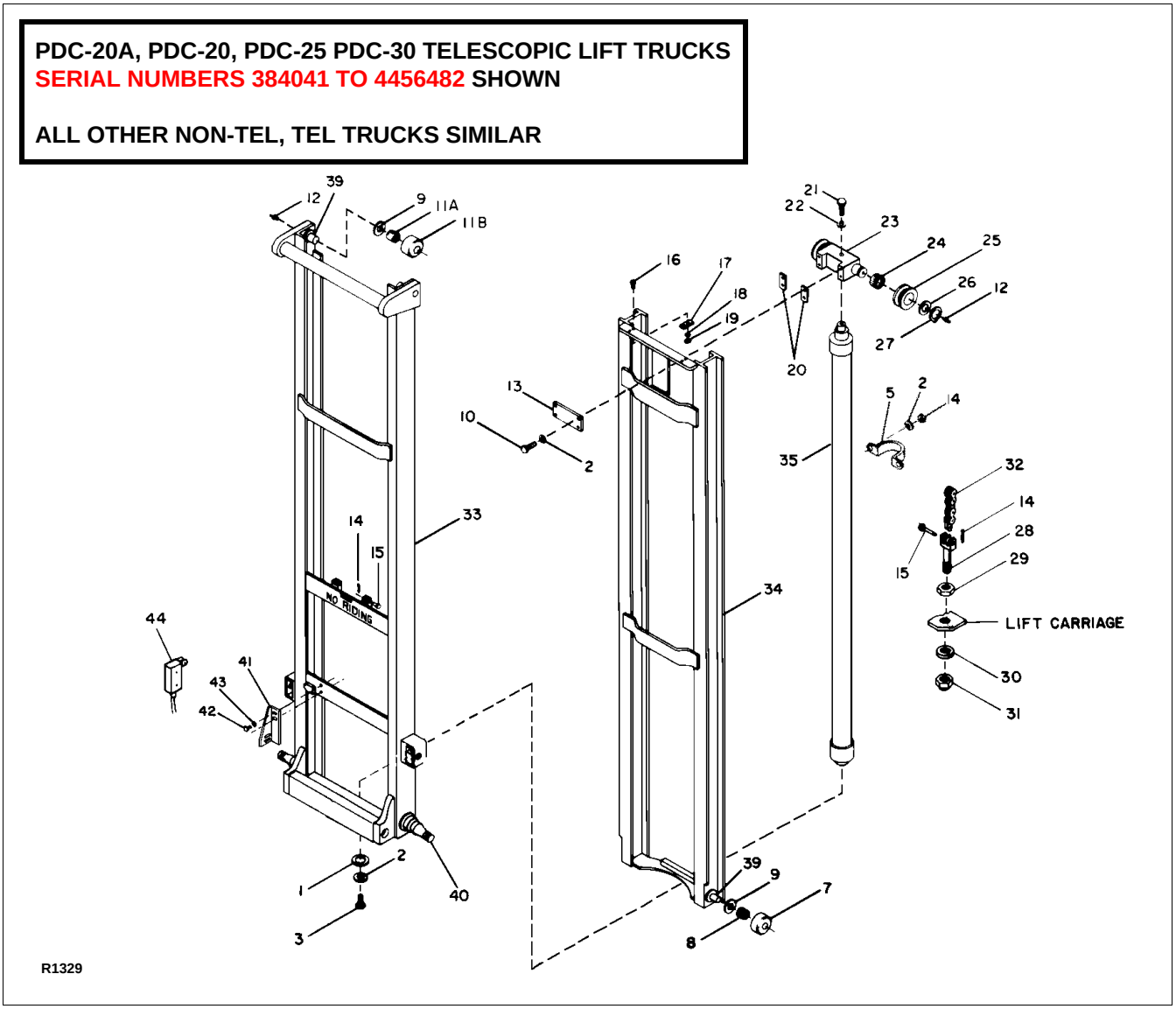


Figure 8-1 Elevation System

6. Reconnect battery.

7. Test chain by operating carriage. If slack is still apparent repeat above procedure.

8-3. LIFT CHAIN ADJUSTMENT (FULL FREE LIFT)

WARNING: Before attempting any adjustment make certain power is disconnected.

1. Fully lower lift carriage.
2. **Disconnect the battery.**
3. Loosen nut (21, Figure 8-2) on chain adjusting bolt (20) on the lift carriage.
4. Take up slack by tightening nut (23).

CAUTION: At least 3 full threads must be present below hex nut after completion of adjustment.

5. Secure adjustment by tightening nut (21) against the lift carriage.
6. Reconnect battery.
7. Test chain by operating carriage. If slack is still apparent repeat above procedure.

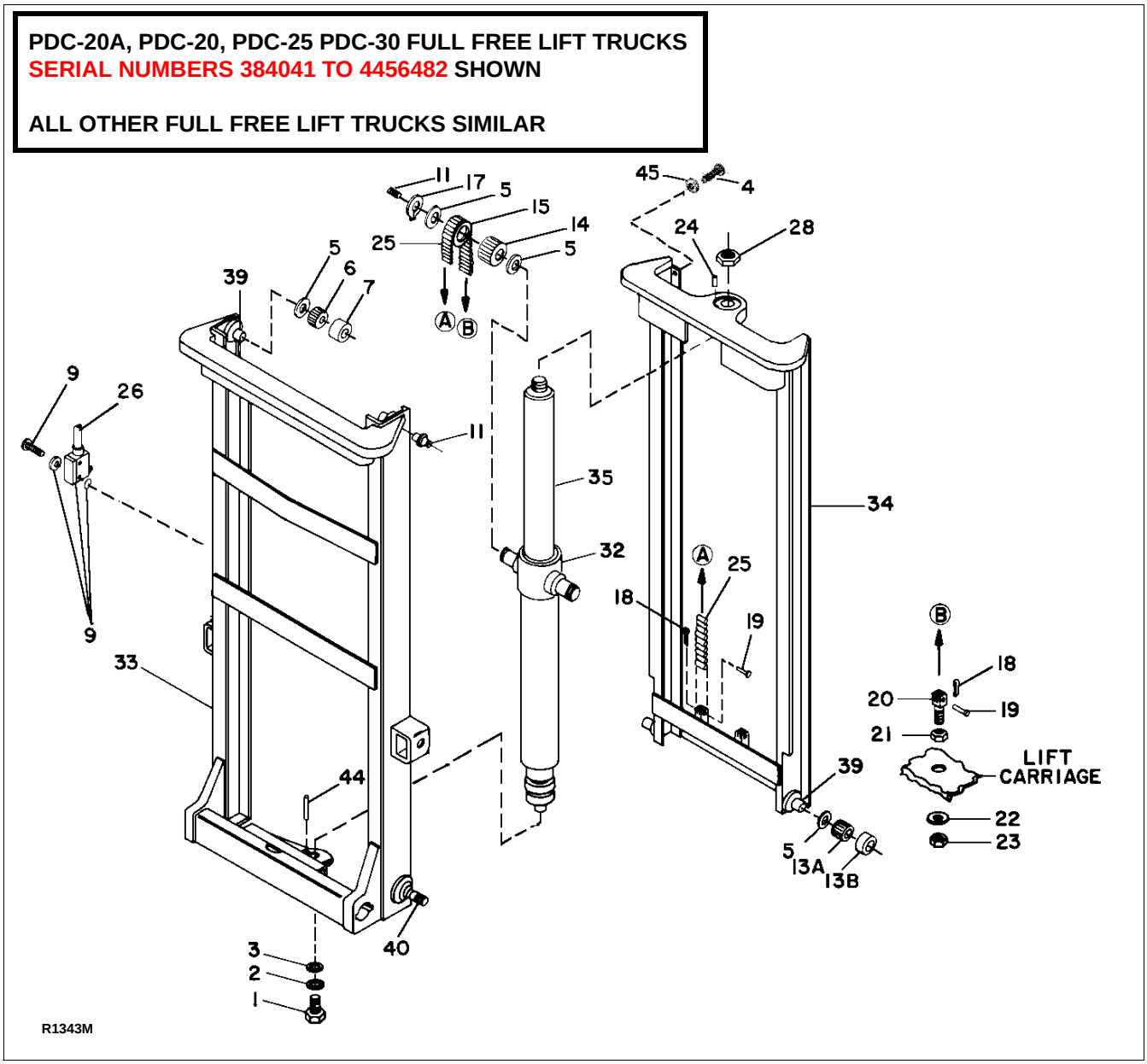


Figure 8-2 Elevation System

8-4. LIFT CHAIN ADJUSTMENT (CLEAR VIEW TRIMAST)

8-4.1. Full Free Lift Chain (37, Figure 8-3)

WARNING: Before attempting any adjustment make certain power is disconnected.

1. Fully lower the lift carriage.
2. Disconnect the battery.
3. Loosen nut (5) on chain adjusting bolt (19) on the lift carriage.
4. Take up the slack by tightening nut (3).

CAUTION: At least 3 full threads must be present below hex nut after completion of adjustment.

5. Secure adjustment by tightening nut (5) the lift carriage.
6. Reconnect the battery.
7. Test chain by operating carriage. If slack is still apparent, repeat above procedure.

8-4.2. Secondary Lift Chains (36, Figure 8-3)

WARNING: Before attempting any adjustment make certain power is disconnected.

1. Fully lower the lift carriage.
2. Disconnect the battery.
3. Loosen nut (5) on chain adjusting bolt (28) on upper cross member of outer mast (31).
4. Take up the slack by tightening nut (3).

CAUTION: At least 3 full threads must be present below hex nut after completion of adjustment.

5. Secure adjustment by tightening nut (5) against the upper cross member.
6. Adjust the remaining chain in the same manner.
7. Reconnect the battery.
8. Test chain by operating carriage. If slack is still apparent, repeat above procedure.

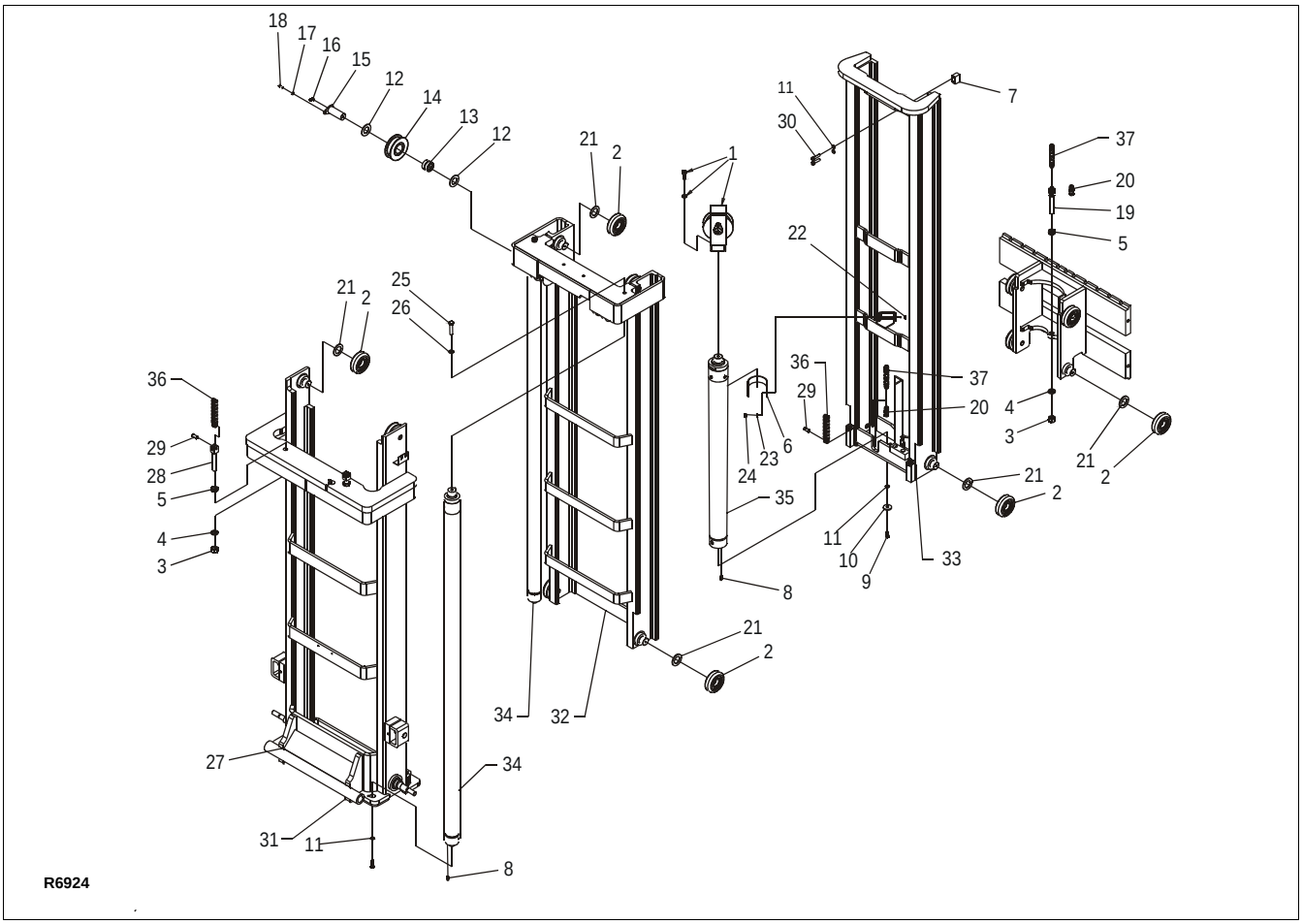


Figure 8-3 Elevation System (Clear View TRIMAST)

8-5. LIFT CHAIN INSPECTION

All chains should be replaced when any of the chains are worn enough to increase it's length by 3% or more. To make this determination proceed as follows.

Using a section of chain that sees the most frequent operation of the chain sheaves, isolate a vertical portion under tension from the weight of carriage and forks.

Measure the distance between pin centers on one vertical link, the measure the distance between pin centers on 20 vertical links.

For chains with a length of 5/8" between centers on one link, if the length between 20 links is 12.88" or more the chain should be replaced.

For chains with a length of 3/4" between centers on one link, if the length between 20 links is 15.44" or more the chain should be replaced.

New chain anchor pins should be installed when chains are replaced. Never repair a damaged chain. Refer to paragraph 8-6. when installing new chain.

8-6. LIFT CHAIN REPLACEMENT (NON-TELESCOPIC, AND TELESCOPIC)

1. Place a solid block on floor under the vertical members nearest the center of the lift carriage.
2. Lower lift carriage until it is supported by the block and the load chains are slack, then disconnect battery.

WARNING: Before attempting any actual replacement, make certain power is disconnected.

3. Remove the clevis pin (15, Figure 8-1) from end of chain connected to mast cross brace.
4. Remove the clevis pin (15) from chain adjusting bolt (28).
5. Remove chain from sheave (25).
6. Position new chain in place on sheave (25).
7. Connect end of chain to adjusting bolt (28) with new clevis pin (15).
8. Connect end of chain to mast cross brace with new clevis pin (15).
9. Adjust chain according to paragraph 8-2.

8-7. LIFT CHAIN REPLACEMENT (FULL FREE LIFT)

1. Place a solid block on floor under the vertical members nearest the center of the lift carriage.
2. Lower lift carriage until it is supported by the block and the load chains are slack, then disconnect battery.

WARNING: Before attempting any actual replacement, make certain power is disconnected.

3. Remove the clevis pin (19, Figure 8-2) from end of chain connected to mast cross brace.
4. Remove the clevis pin (19) from chain adjusting bolt (20).
5. Remove chain from sheave (15).
6. Position new chain in place on sheave (15).
7. Connect end of chain to adjusting bolt (20) with new clevis pin (19).
8. Connect end of chain to mast cross brace with new clevis pin (19).
9. Adjust chain according to paragraph 8-3.

8-8. LIFT CHAIN REPLACEMENT (CLEAR VIEW TRIMAST)

8-8.1. Full Free Lift Chain (37, Figure 8-3)

1. Place a solid block on floor under the vertical members nearest the center of the lift carriage.
2. Lower lift carriage until it is supported by the block and the load chains are slack, then disconnect battery.

WARNING: Before attempting any actual replacement, make certain power is disconnected.

3. Remove connector clevis (20) from end of chain connected to inner mast (33).
4. Remove connector clevis (20) from chain adjusting bolt (19).
5. Remove chain from ram head (1).
6. Position new chain in place on ram head (1).
7. Connect end of chain to adjusting bolt (19) with new connector clevis (20).
8. Connect end of chain to inner mast (33) with new connector clevis (20).
9. Adjust chain according to paragraph 8-4.

8-8.2. Secondary Lift Chains (36, Figure 8-3)

1. Place a solid block on floor under the vertical members nearest the center of the inner mast (33).

2. Lower inner mast until it is supported by the block and the load chains are slack, then disconnect battery.

WARNING: Before attempting any actual replacement, make certain power is disconnected.

3. Remove retaining clips and pin (29) from end of chain connected to inner mast (33).
4. Remove retaining clips and pin (29) from chain adjusting bolt (28).
5. Remove chain from sheave (14).
6. Position new chain in place on sheave (14).
7. Connect end of chain to adjusting bolt (28) with new pin (29) and retaining clips (29).
8. Connect end of chain to inner mast (33) with new pin (29) and retaining clips.
10. Adjust chain according to paragraph 8-4.

8-9. LIFT CYLINDER REPLACEMENT (NON-TELESCOPIC, AND TELESCOPIC).

1. Tilt the mast all the way forward and fully lower the lift carriage.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

2. **Disconnect the battery**.
3. Disconnect the overflow hose from top of lift cylinder.
4. Remove the hose retainers from the lift cylinder.
5. Remove the flow control valve as described in paragraph 9-6.
6. Remove the reducer and elbow from the bottom of the lift cylinder.
7. Break jam nut (31, Figure 8-1) loose from nut (30).
8. Slacken the lift chains by loosening nut (30) below chain adjusting bolt (28).
9. **Telescopic Trucks:** Remove vamp bar (13) and wear spacers (20) to free the ram head from inner mast.
10. Remove screw (21), lock washer (22) and ram head (23).
11. Remove lift cylinder clamp (5).

CAUTION: Hold lift cylinder securely during the final stages of this procedure.

12. Remove screw (3) and washers (1 and 2) from bottom of lift cylinder.
13. Raise the lift cylinder up and out of the truck.

NOTE: Disassembly of lift cylinder is covered in SECTION 9.

14. Reinstall lift cylinder in reverse order of removal.
15. Adjust chain according to paragraph 8-2.

8-10.LIFT CYLINDER REPLACEMENT (FULL FREE LIFT).

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Fully lower the lift carriage.
2. **Disconnect the battery**.
3. Disconnect hose at the bottom of lift cylinder.
4. Remove the cylinder tube and elbows from the bottom of the lift cylinder.
5. Using another lift truck or suitable jack, raise lift carriage far enough to remove chains from around sheaves. Lay chains aside and lower lift carriage.
6. Remove lock nut (28, Figure 8-2) and roll pin (24) that secures top of lift cylinder to the inner mast (34).
7. Remove the hex head cap screw, (1) lock washer (2) and flat washer (3) securing the bottom of lift cylinder to the outer mast (33).

WARNING: Lift cylinder must be supported during the next step.

8. Support lift cylinder and using another lift truck or suitable jack, raise inner mast (34) far enough to clear top of lift cylinder.
9. Lift cylinder up and out of truck.
10. Remove snap rings (17), thrust bushings (5), sheaves (15), and bearings (14) from cylinder (32).

NOTE: Disassembly procedures are covered in SECTION 9.

11. Reinstall lift cylinder in reverse order of removal.
12. Adjust lift chains as described in paragraph 8-3.

8-11.LIFT CYLINDER REPLACEMENT (CLEAR VIEW TRIMAST)

8-11.1. Full Free Lift Cylinder (35, Figure 8-3)

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Fully lower the lift carriage.
2. Disconnect the battery.
3. Remove the full free lift chain (37) as described in paragraph 8-8.1.
4. Remove ram head (1) from full free lift cylinder (35).
5. Remove ties to free wire harness from the full free lift cylinder.
6. Disconnect harness (77, Figure 12-27) from switch (11, Figure 12-36).
7. Disconnect the hose, regulator, reducer and elbow from the bottom of the full free lift cylinder.
8. Remove screw (9), flat washer (10) and lock washer (11) from the bottom of the full free lift cylinder.

WARNING: Lift cylinder must be supported during the next step.

9. Support lift cylinder and remove nut (24), lock washer (23), screw (22) and strap (6).
10. Lift cylinder up and out of truck.

NOTE: Disassembly procedures are covered in SECTION 9.

11. Reinstall lift cylinder in reverse order of removal.
12. Adjust lift chains as described in paragraph 8-4.

8-11.2. Secondary Lift Cylinders (34, Figure 8-3)

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Fully lower the lift carriage.
2. Disconnect the battery.
3. Remove ties to free tube from the secondary lift cylinder (34).
4. Disconnect the tube, connector, regulator, reducer and elbow from the bottom of the secondary lift cylinder (34).
5. Remove screw and lock washer (11) from the bottom of the secondary lift cylinder.
6. Remove screw (25) and lock washer (26) from the top of the secondary lift cylinder.

WARNING: Lift cylinder must be supported during the next step.

7. Support lift cylinder and using another lift truck or suitable jack, raise center mast (32) far enough to clear top of the lift cylinder.
8. Lift cylinder up and out of truck.

NOTE: Disassembly procedures are covered in SECTION 9.

9. Reinstall lift cylinder in reverse order of removal.
10. Adjust lift chains as described in paragraph 8-4.

8-12.TILT CYLINDER REPLACEMENT.

WARNING: Mast must be supported by a hoist before removing tilt cylinders.

1. Secure mast with a hoist
2. Raise the forks to approximately three feet. Tilt the mast all the way forward.
3. Drive out roll pin (51, Figure 8-4) that secures pin (52) to mast.
4. Insert a 5/16-18 x 1 bolt into threaded hole in pin (52). Extract pin by pulling on bolt.
5. Pull tilt control to BACK position to free tilt cylinder from mast.
6. Reach inside access hole to remove snap rings (42) and extract pin (41).

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

7. Tag and disconnect the hoses from the tilt cylinder.

NOTE: Disassembly procedures are covered in SECTION 9.

8. Install the new or repaired cylinder in reverse order of disassembly.

PDC 20A, PDC 20, PDC 25, PDC 30 SHOWN

ALL OTHER NON TEL, TEL & FLL TRUCKS SIMILAR

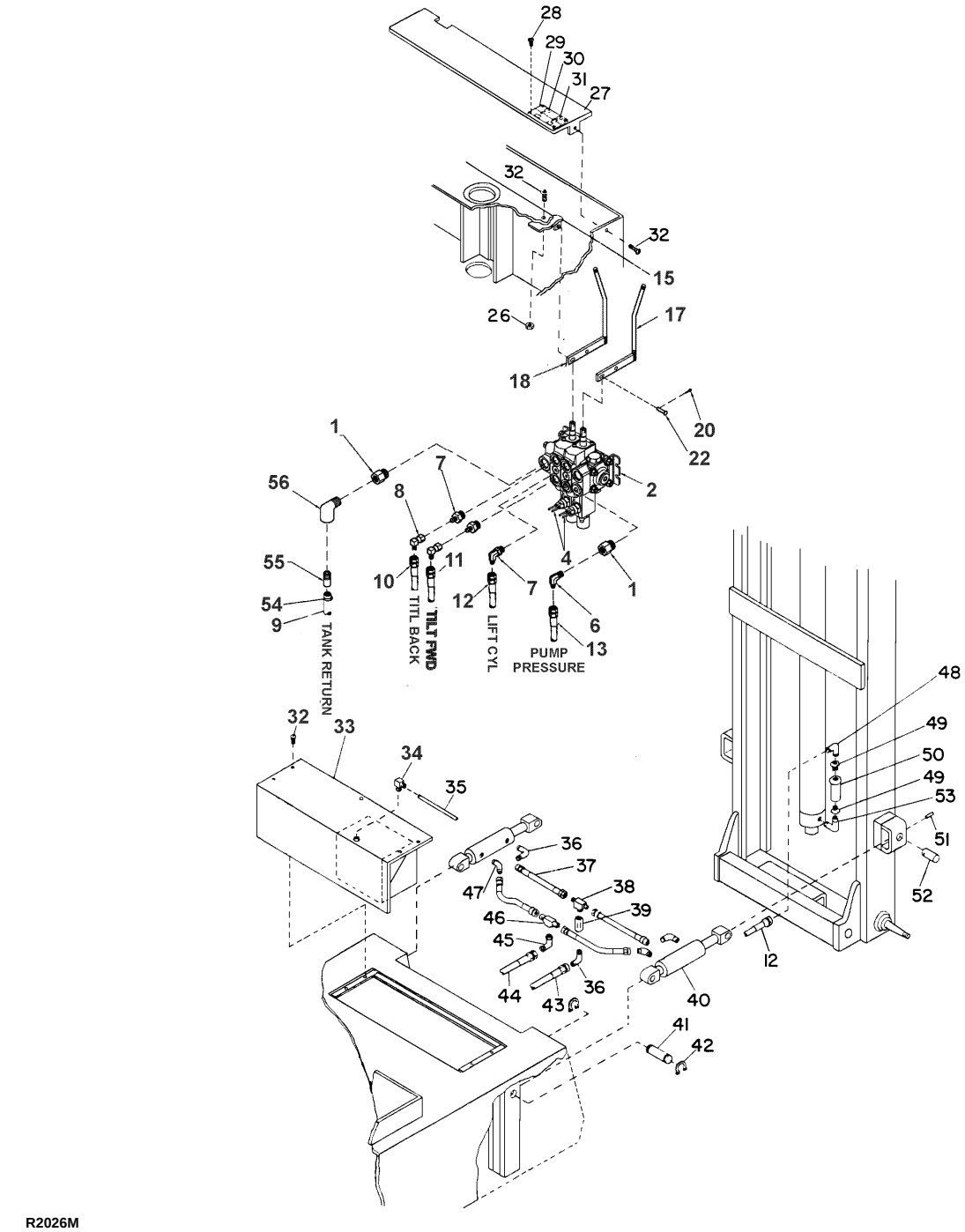


Figure 8-4 Hydraulic System

PDC 20, PDC 25, PDC 30 CLEAR VIEW TRIMAST SHOWN

PDC 40 CLEAR VIEW TRIMAST TRUCKS SIMILAR

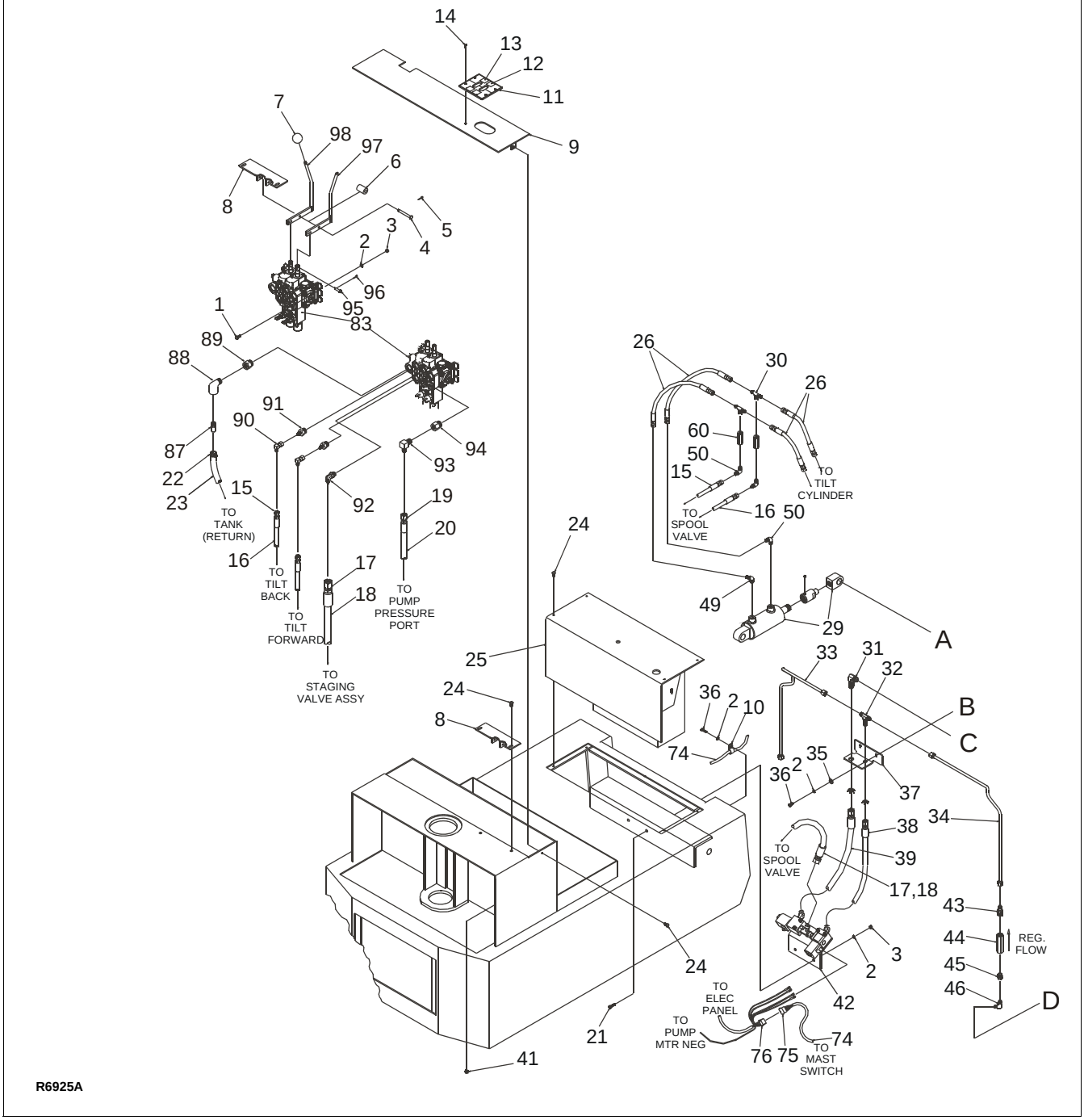


Figure 8-5 Hydraulic System (Clear View TRIMAST) (Sheet 1)

PDC 20, PDC 25, PDC 30 CLEAR VIEW TRIMAST SHOWN

PDC 40 CLEAR VIEW TRIMAST TRUCKS SIMILAR

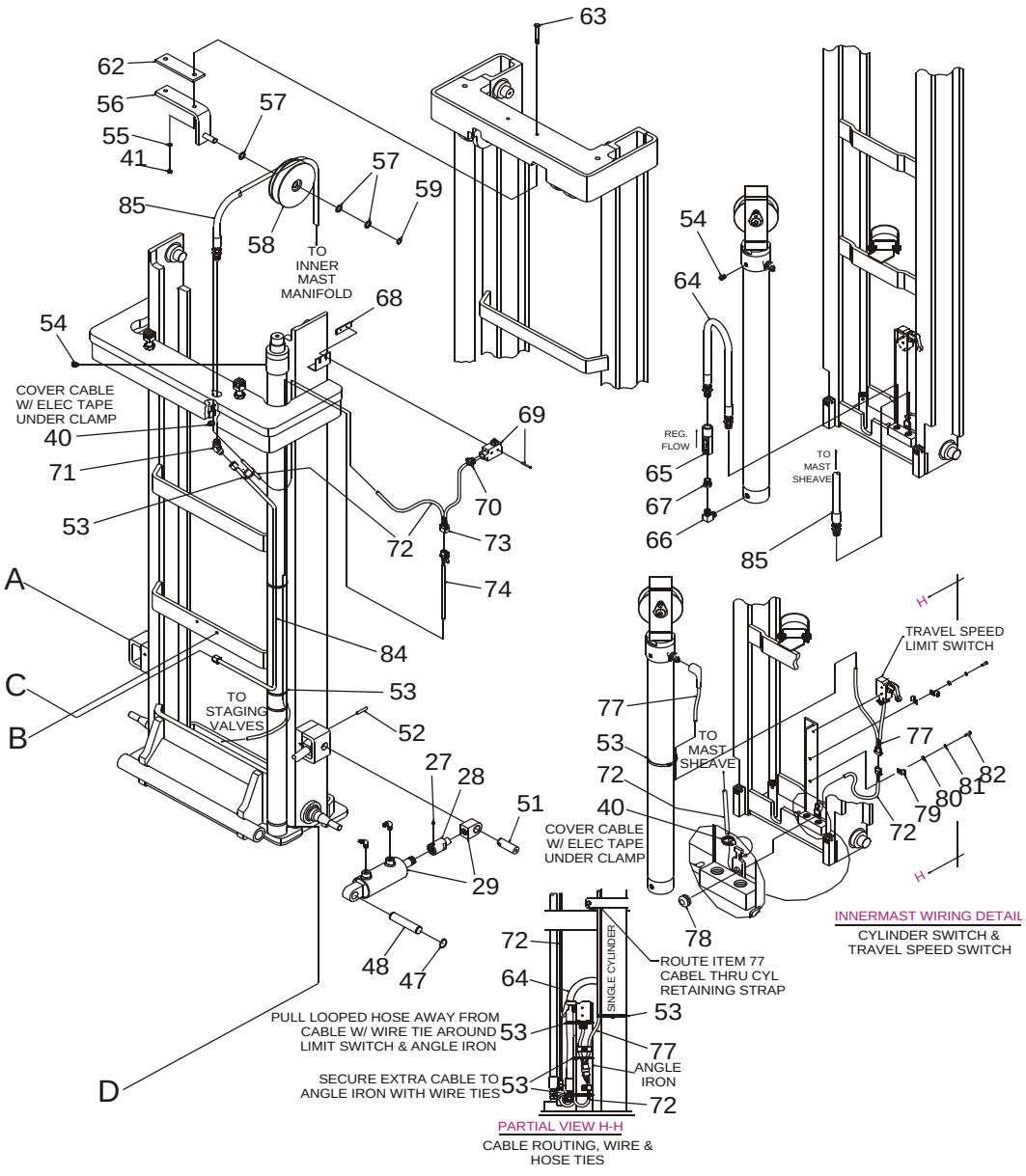


Figure 8-5 Hydraulic System (Clear View TRIMAST) (Sheet 2)

8-13.HOSE BRACKET REPLACEMENT.

The hose bracket holds the hose lines to prevent them from rubbing on the frame.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Disconnect the battery.
2. Tag and remove hose assemblies held by brackets (35, Figure 8-7).
3. Remove screws (31), washers (32) and locknuts (33).
4. Remove brackets (35) and grommets (34).
5. Reassemble brackets by reversing the removal procedure.

8-14.MAST REMOVAL.

1. Remove the lift carriage as described in paragraph 8-15.

WARNING: Block the drive wheel securely so it cannot move.

2. Raise front end of lift truck with jacks or another lift truck and place support blocks under truck body to hold it approximately 6 inches off floor.
3. Lower lift truck onto the block support and remove both load wheels as describe in SECTION 7.
4. Secure mast with a hoist or similar device.
5. Tilt the mast all the forward.
6. Drive out roll pin (51, Figure 8-4) that secures pin (52) to mast.
7. Insert a 5/16-18 x 1 bolt into threaded hole in pin (52). Extract pin by pulling on bolt.
8. Pull tilt control to BACK position to free tilt cylinder from mast.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

9. Disconnect the hydraulic hoses form the lift cylinder.
10. Remove external retainer rings (13, Figure 8-7), mast support shaft (12), standard washers (20) and round washers (21).
11. Lift the masts from chassis frame together as a unit.
12. Installation of new or modified mast is performed in the reverse order of removal.
13. Lubricate the newly installed mast as described in SECTION 3.

8-15.LIFT CARRIAGE REPLACEMENT.

1. Place a solid block on floor under the vertical members nearest the center of the lift carriage.
2. Lower lift carriage until it is supported by the block and the load chains are slack, then disconnect battery.

WARNING: Before attempting any actual replacement, make certain power is disconnected.

3. Remove cotter pin and clevis pin securing chain to lift carriage.
4. **Telescopic, Full Free Lift and Trimast:** Remove stop blocks on top of mast.
5. Secure a hoist or similar device to the lift carriage.
6. Remove lift carriage from mast.
7. Installation of new or modified lift carriage is performed in the reverse order of removal.
8. Adjust chain according to paragraph 8-2., 8-3. or 8-4.

PDC 20A, PDC 20, PDC 25, PDC 30 FULL FREE LIFT SHOWN

PDC 40 FULL FREE LIFT SIMILAR

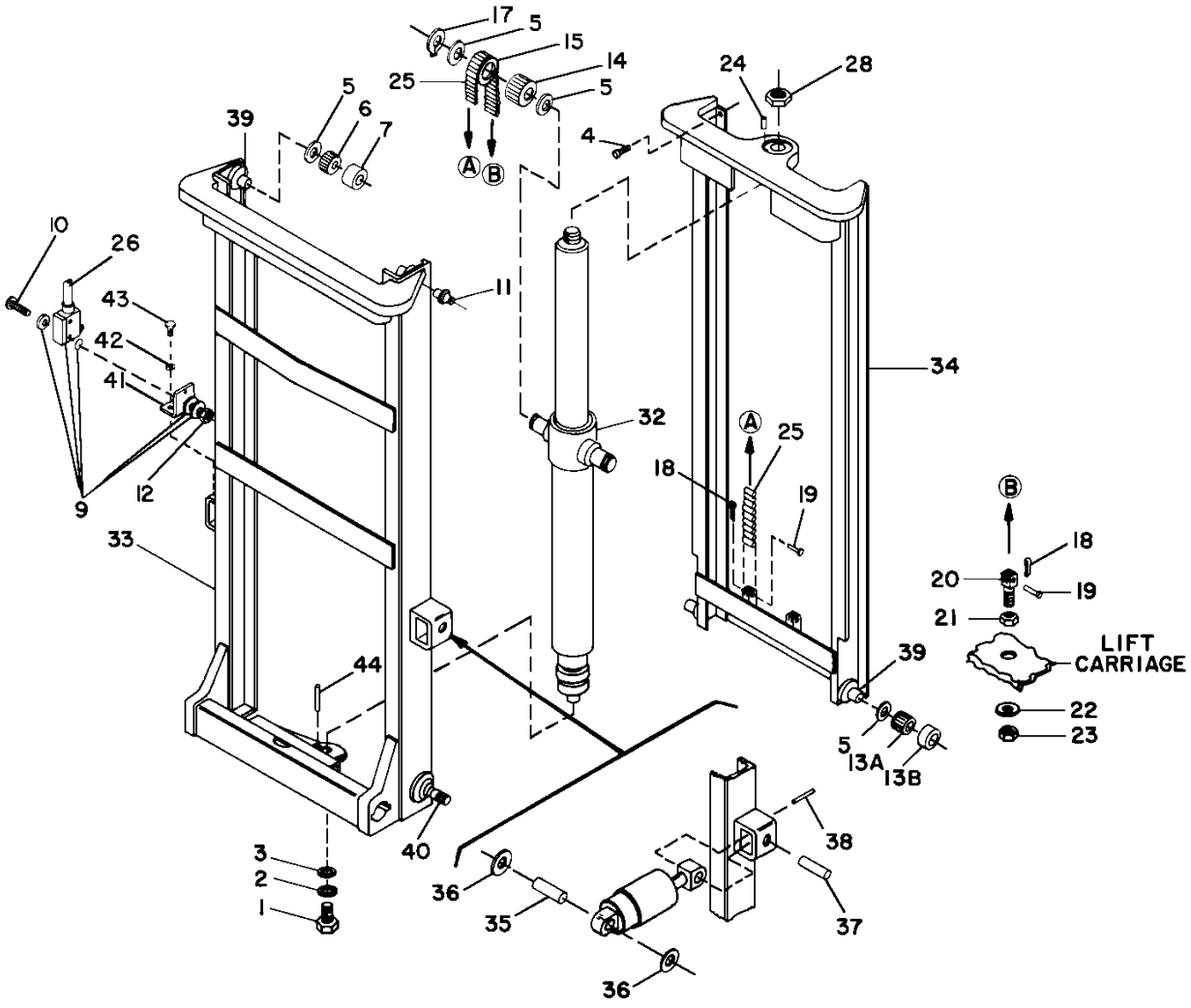


Figure 8-6 Inner and Outer Masts (Full Free Lift)

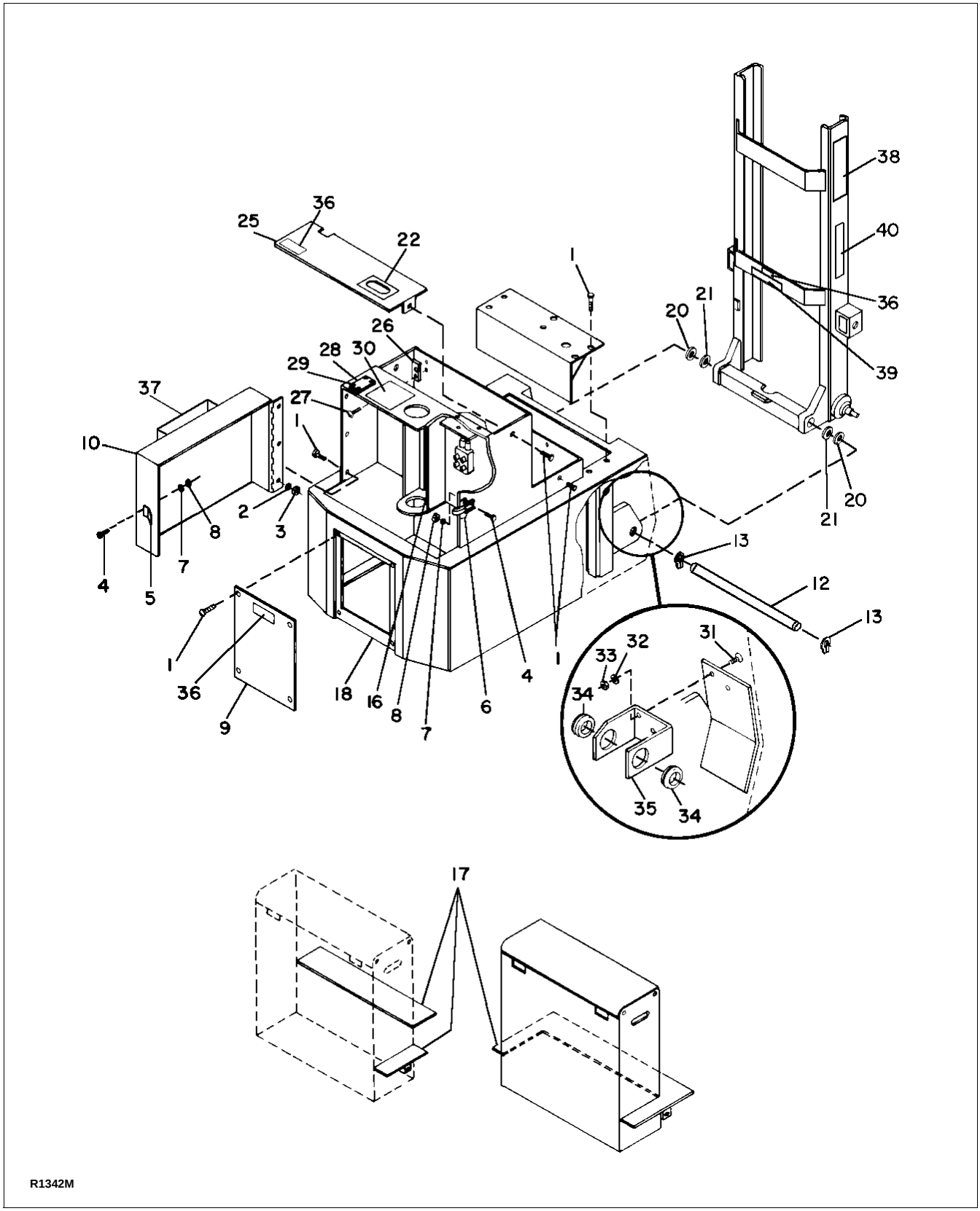


Figure 8-7 Base and Frame

SECTION 9
HYDRAULIC SYSTEM SERVICING

9-1. RELIEVING SYSTEM PRESSURE.

WARNING: Hydraulic system pressure must be relieved before removing hydraulic system components. Use the following procedure to relieve system pressure:

1. Fully lower the lift carriage unless the procedure for a component directs differently.
2. Disconnect battery.

CAUTION: Use rags and a suitable container to catch any dripping oil when the hydraulic lines are disconnected. Wipe off any spilled oil immediately.

3. Obtain a suitable container to catch any oil that may escape when opening a line.
4. Open the low pressure line at any convenient connection near the component that is to be repaired or replaced.

9-2. LINE, FITTING and HOSE REPLACEMENT.

9-2.1. Standard Trucks.

NOTE: Leaking hydraulic fittings can sometimes be remedied by simply tightening the fitting. If this does not remedy the leak, the fitting or line must be replaced. A leak in the suction line between the pump and the reservoir will sometimes cause hydraulic oil to foam through the vent.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Remove reservoir drain plug (21, Figure 9-7) and drain hydraulic oil into a suitable container.
2. Remove the leaking line or fitting and replace it with a new one. Refer to Figure 9-1 through Figure 9-6.
3. Clean the drain plug thoroughly.
4. Reinstall the drain plug.

NOTE: Refill only with Big Joe hydraulic oil, and only while the lift carriage is completely lowered. Refill until oil is to the “FULL” mark on the dip stick. Refer to SECTION 3 for oil capacities.

5. Remove the reservoir vent cap, fill the reservoir to the “FULL” mark on the dip stick, and replace the vent cap.
6. Reconnect battery.
7. Operate the hydraulic controls and check for leaks.

PDC-20A
PDC-20
PDC-25
PDC-30

SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS

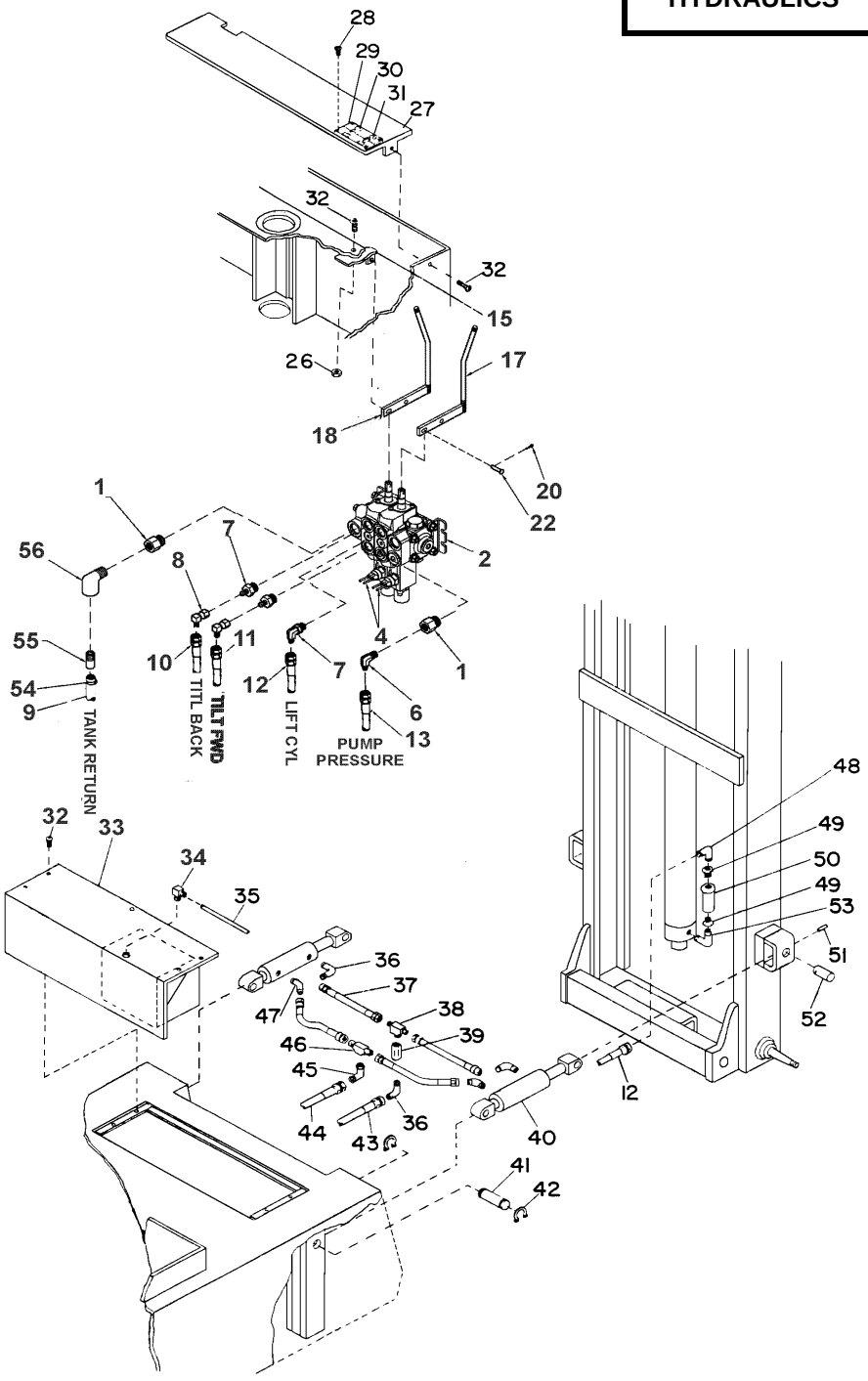


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Figure 9-1. Hydraulic System (Non-Telescopic and Telescopic)

PDC-40

SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS

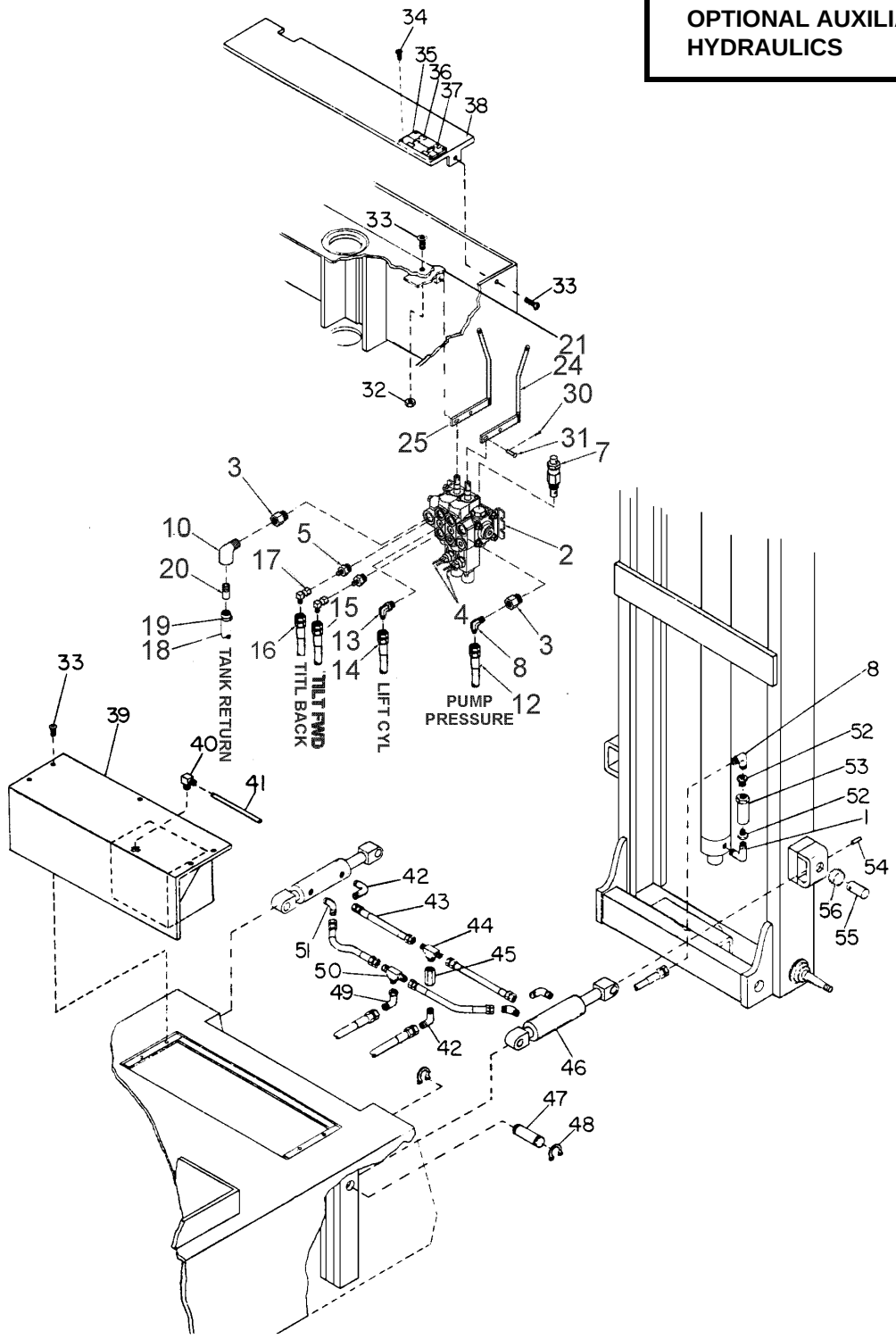
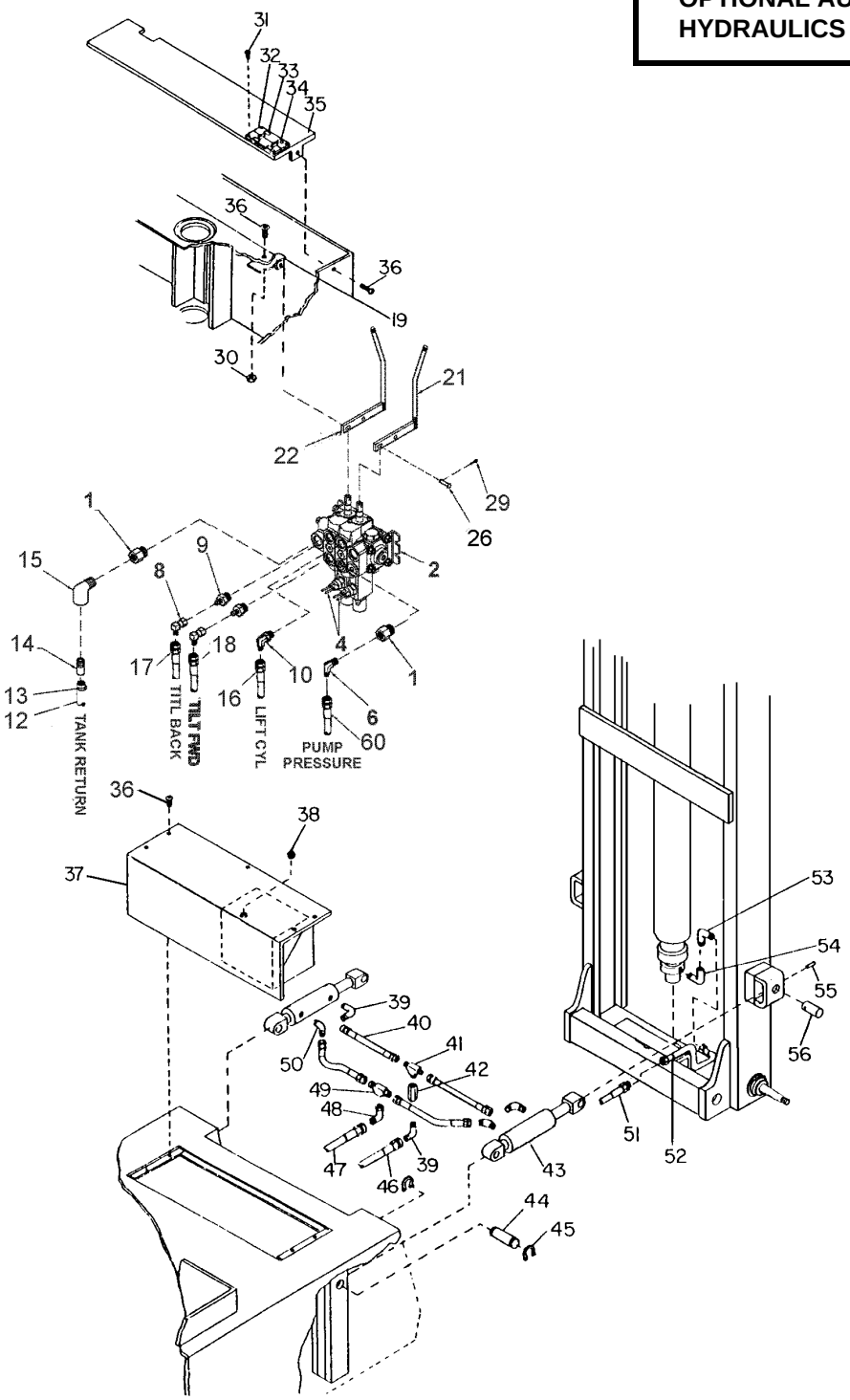


Figure 9-2 Hydraulic System (Non-Telescopic and Telescopic)

PDC-20
PDC-25
PDC-30

SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS

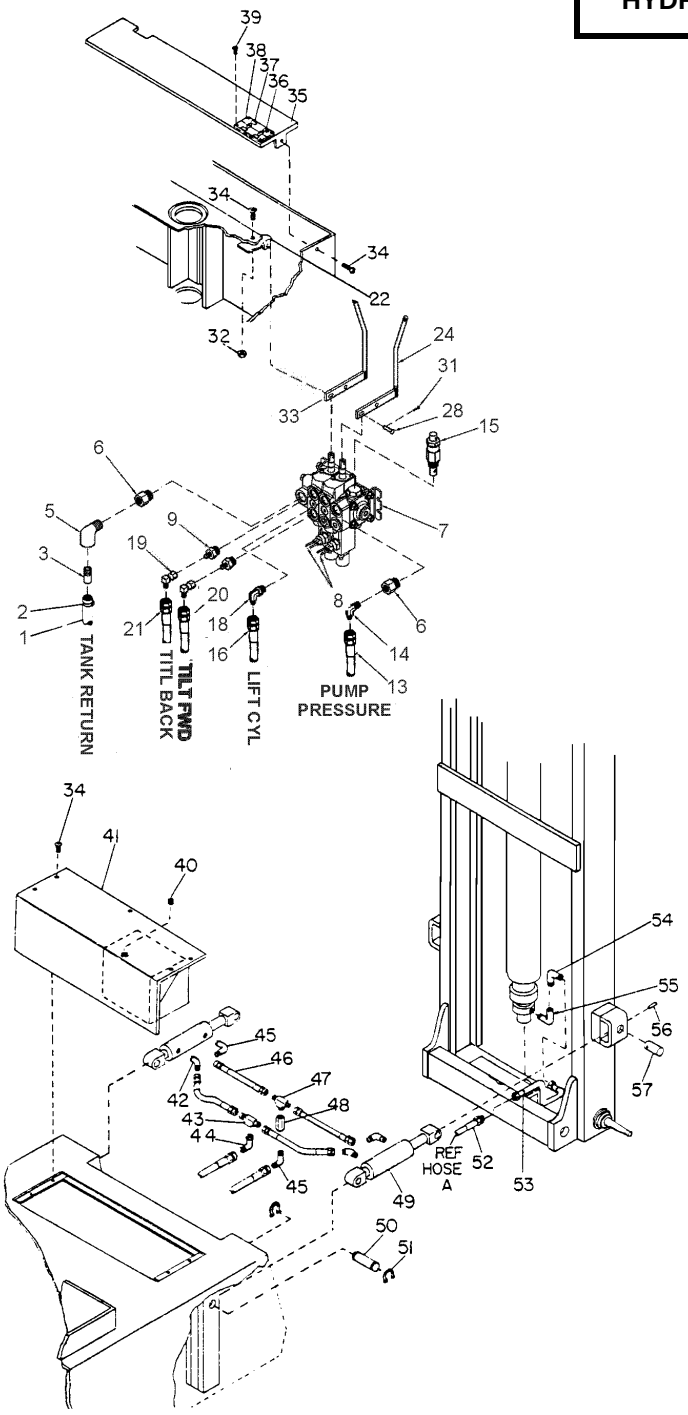


R2028M

Figure 9-3 Hydraulic System (FFL)

PDC-40

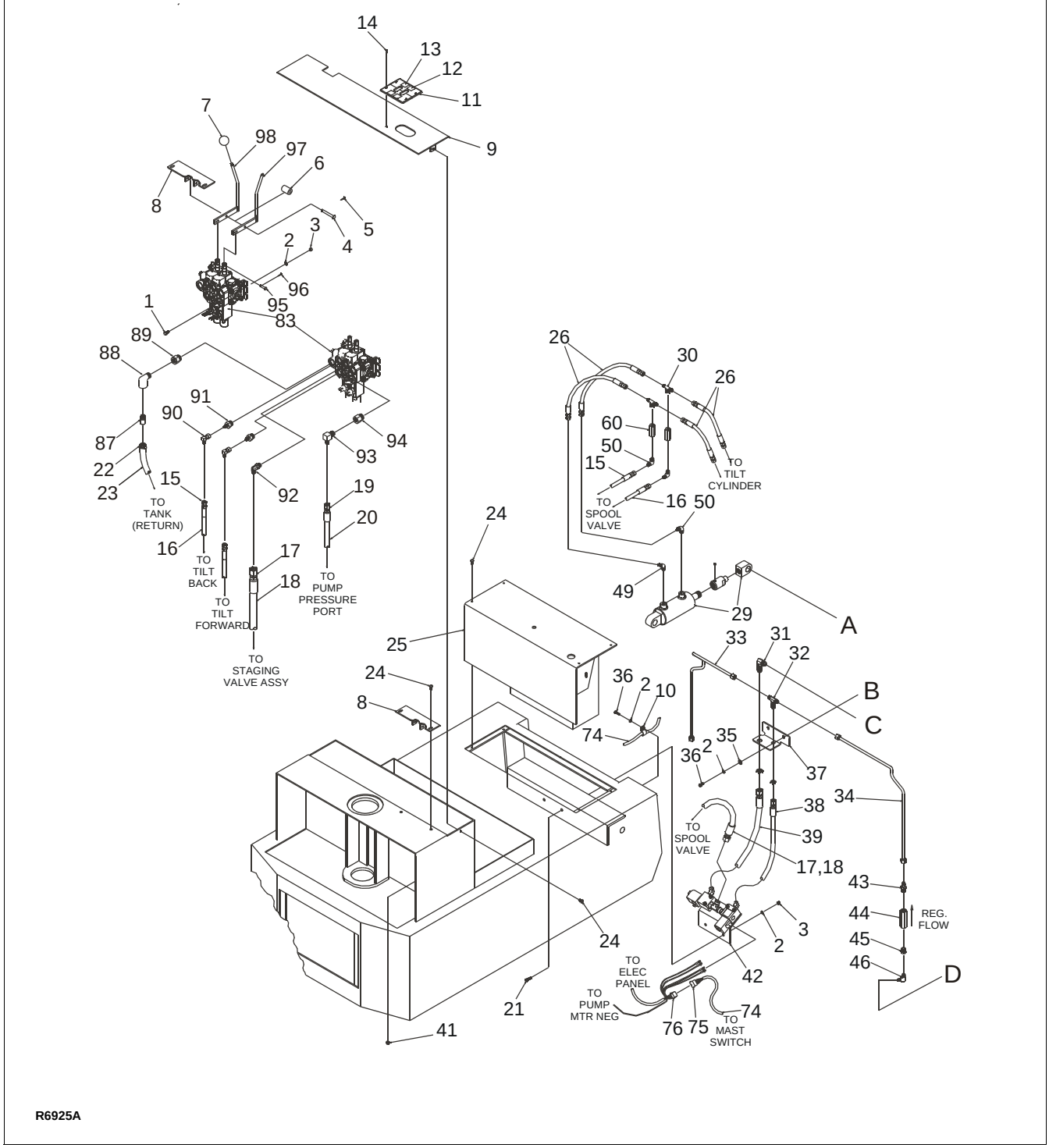
SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS



R2029M

Figure 9-4 Hydraulic System (FFL)

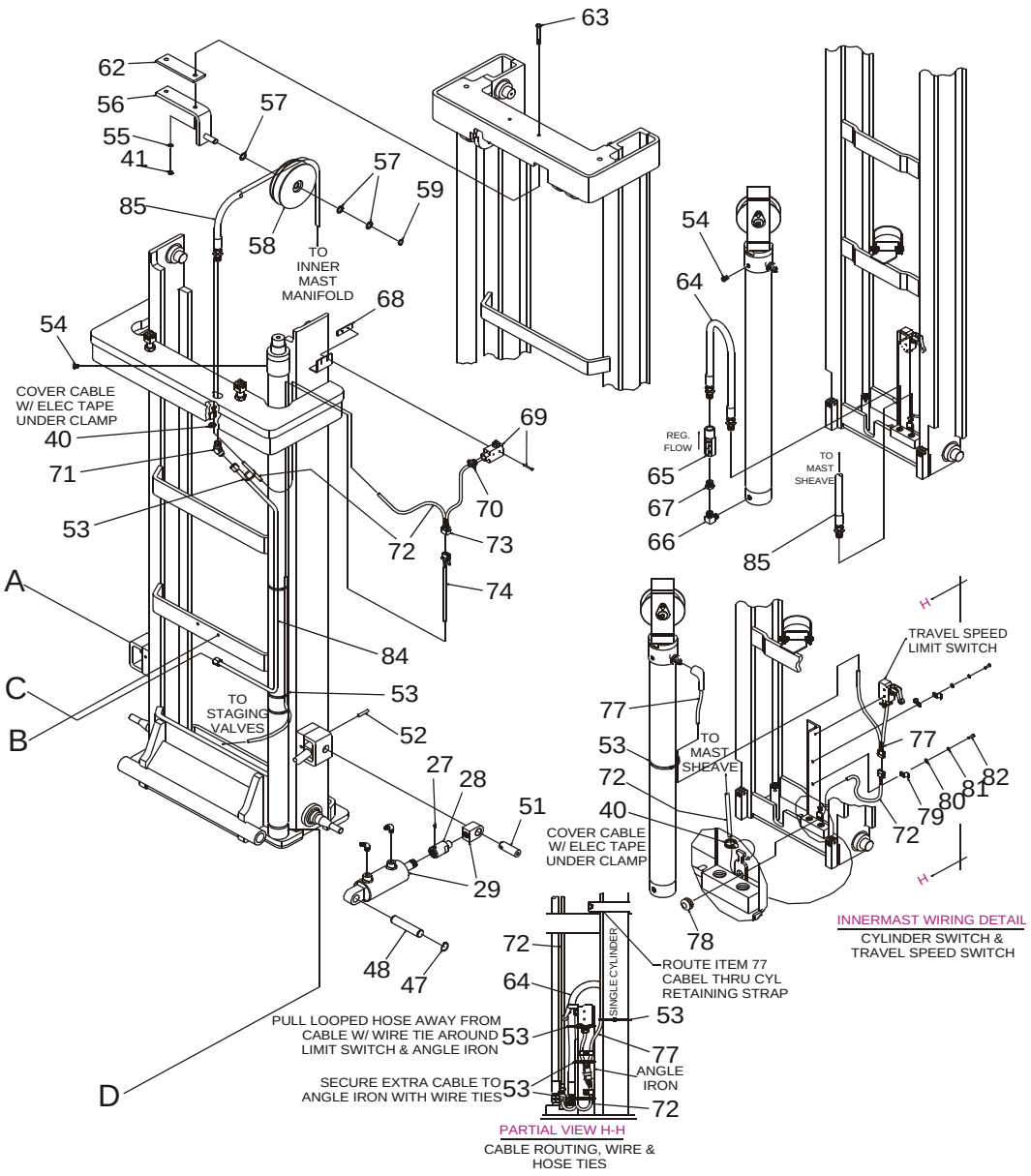
PDC-20
PDC-25
PDC-30



R6925A

Figure 9-5 Hydraulic System (Clear View TRIMAST) (Sheet 1)

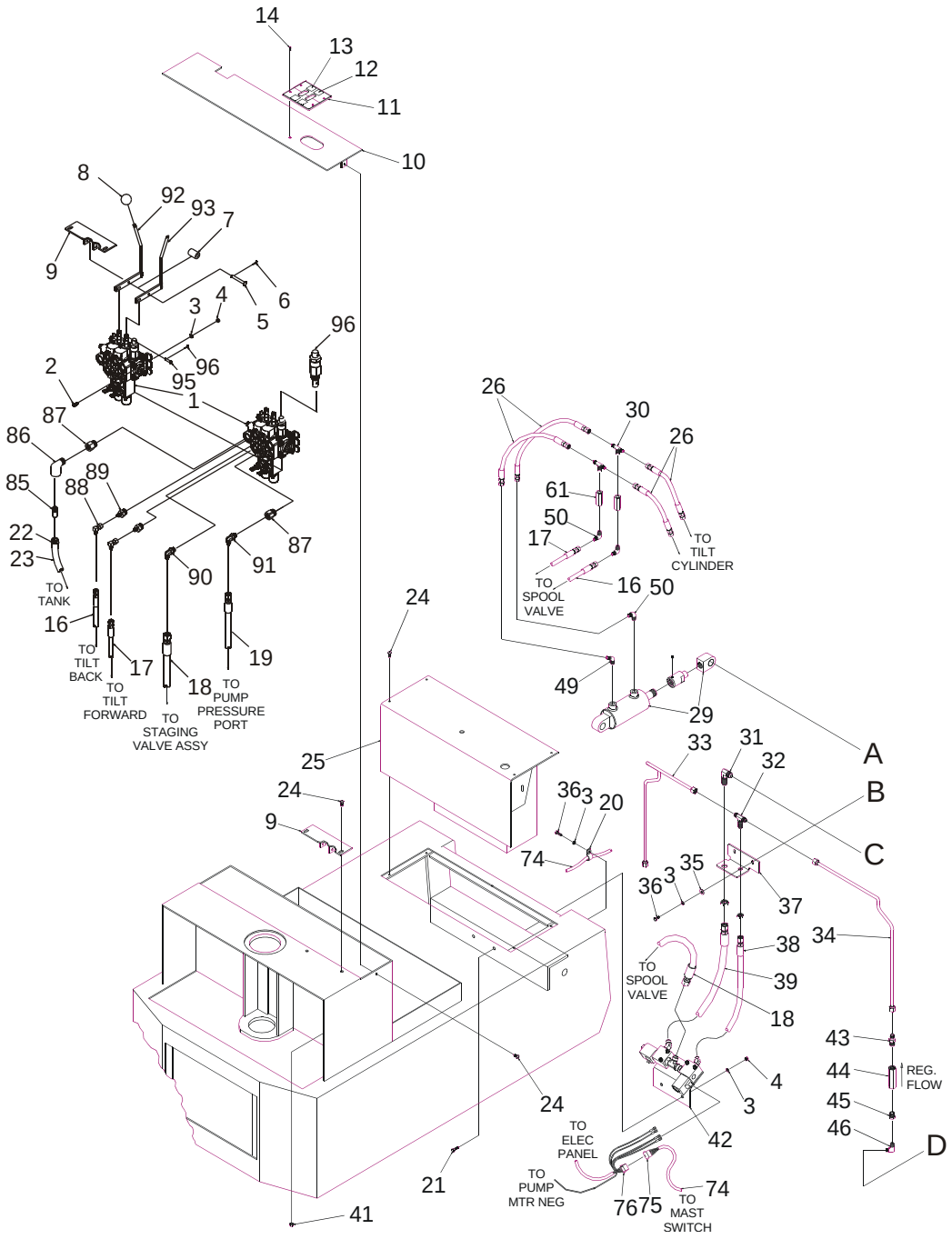
PDC-20
PDC-25
PDC-30



R6925B

Figure 9-5 Hydraulic System (Clear View TRIMAST) (Sheet 2)

PDC-40



R6926A

Figure 9-6 Hydraulic System (Sheet 1)

PDC-40

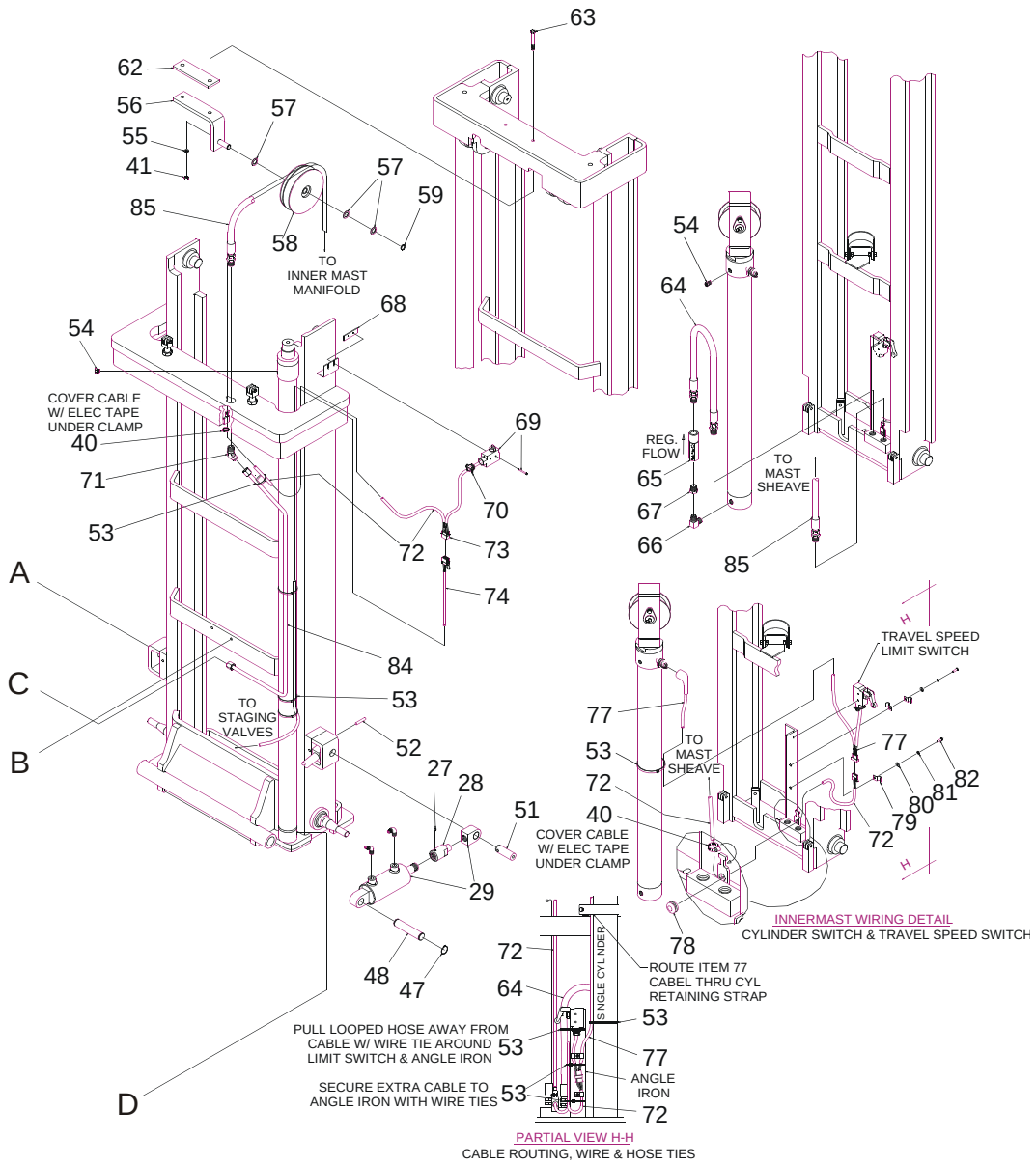


Figure 9-6 Hydraulic System (Sheet 2)

9-3. FILTER REPLACEMENT.

9-3.1. Sump Filter.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Lower the lift carriage fully, and tilt mast all the way forward.
2. **Disconnect the battery.**
3. Remove reservoir drain plug (21, Figure 9-7) and drain hydraulic oil into a suitable container.
4. Remove filter (20).
5. Install new filter.
6. Clean the drain plug thoroughly.
7. Reinstall the drain plug.

NOTE: Refill only with Big Joe hydraulic oil, and only while the lift carriage is completely lowered. Refill until oil is to the “FULL” mark on the dip stick. Refer to SECTION 3 for oil capacities.

8. Remove the reservoir vent cap, fill the reservoir to the “FULL” mark on the dip stick, and replace the vent cap.
9. Reconnect battery.
10. Operate the hydraulic controls and check for leaks.

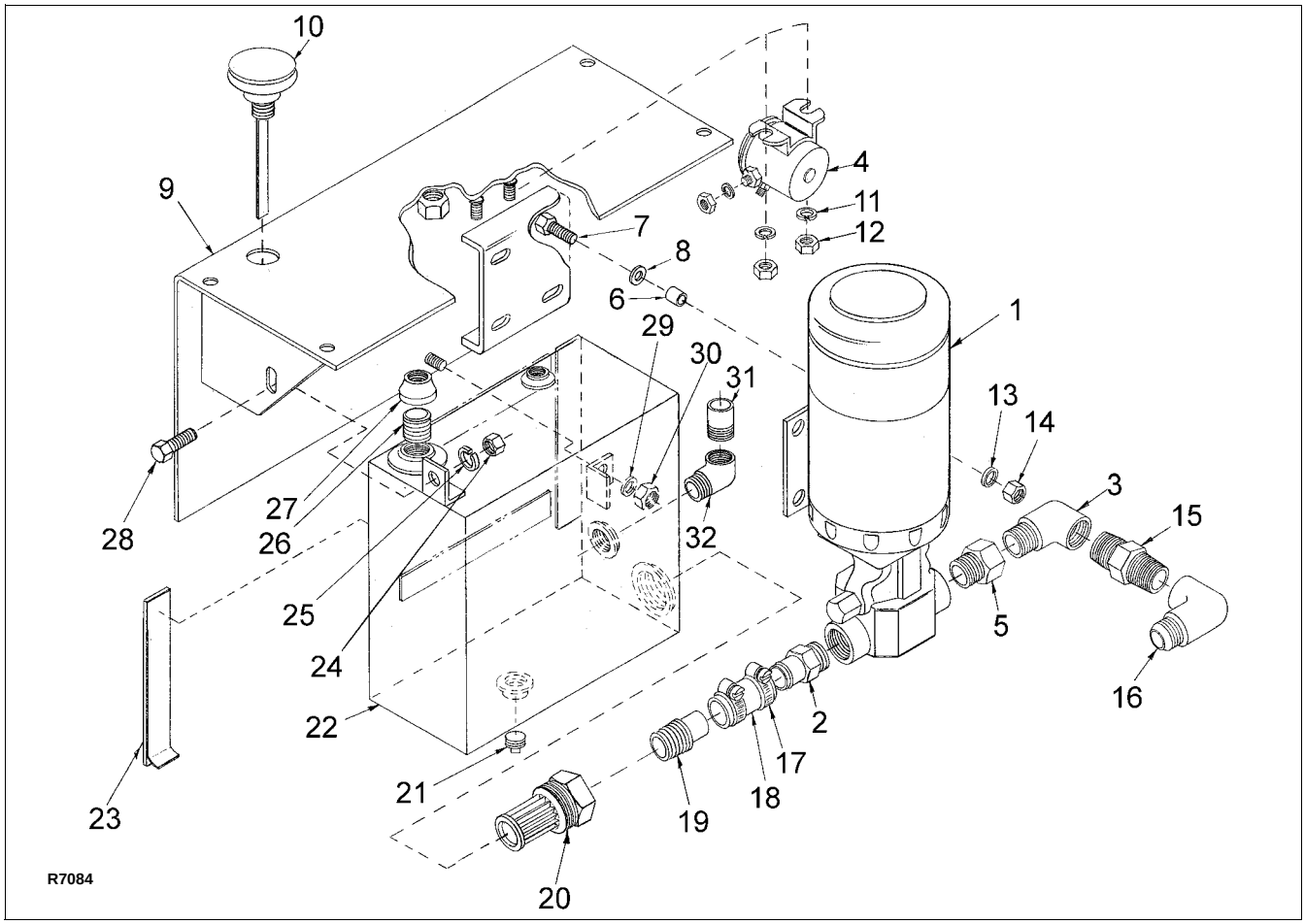


Figure 9-7 Hydraulic Panel Assembly

9-4. HYDRAULIC PUMP AND MOTOR ASSEMBLY

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Remove reservoir drain plug (21, Figure 9-7) and drain hydraulic oil into a suitable container.
2. Disconnect hydraulic lines from pump.
3. Operate the hydraulic controls and check for leaks.
4. Disconnect electrical wires from motor.
5. Remove the four hex nuts (14, Figure 9-7), lock washers (13), spacers (6), pump and motor assembly (1) and screws (7).
6. Remove the four screws (4, Figure 9-8) and lock washers (3) to disassemble pump (2) from motor (1).
7. If the pump is defective, install a new pump. If motor is defective, a new motor may be installed, or motor may be rebuilt (see SECTION 10).
8. Reinstall assembly in truck and connect hydraulic lines to pump and electrical wires to motor.
9. Clean the drain plug thoroughly.
10. Reinstall the drain plug.

NOTE: Refill only with Big Joe hydraulic oil, and only while the platform is completely lowered. Refill until oil is to the “FULL” mark on the dip stick. Refer to SECTION 3 for oil capacities.

11. Remove the reservoir vent cap, fill the reservoir to the “FULL” mark on the dip stick, and replace the vent cap.
12. Reconnect battery.
13. Operate the hydraulic controls and check for leaks.

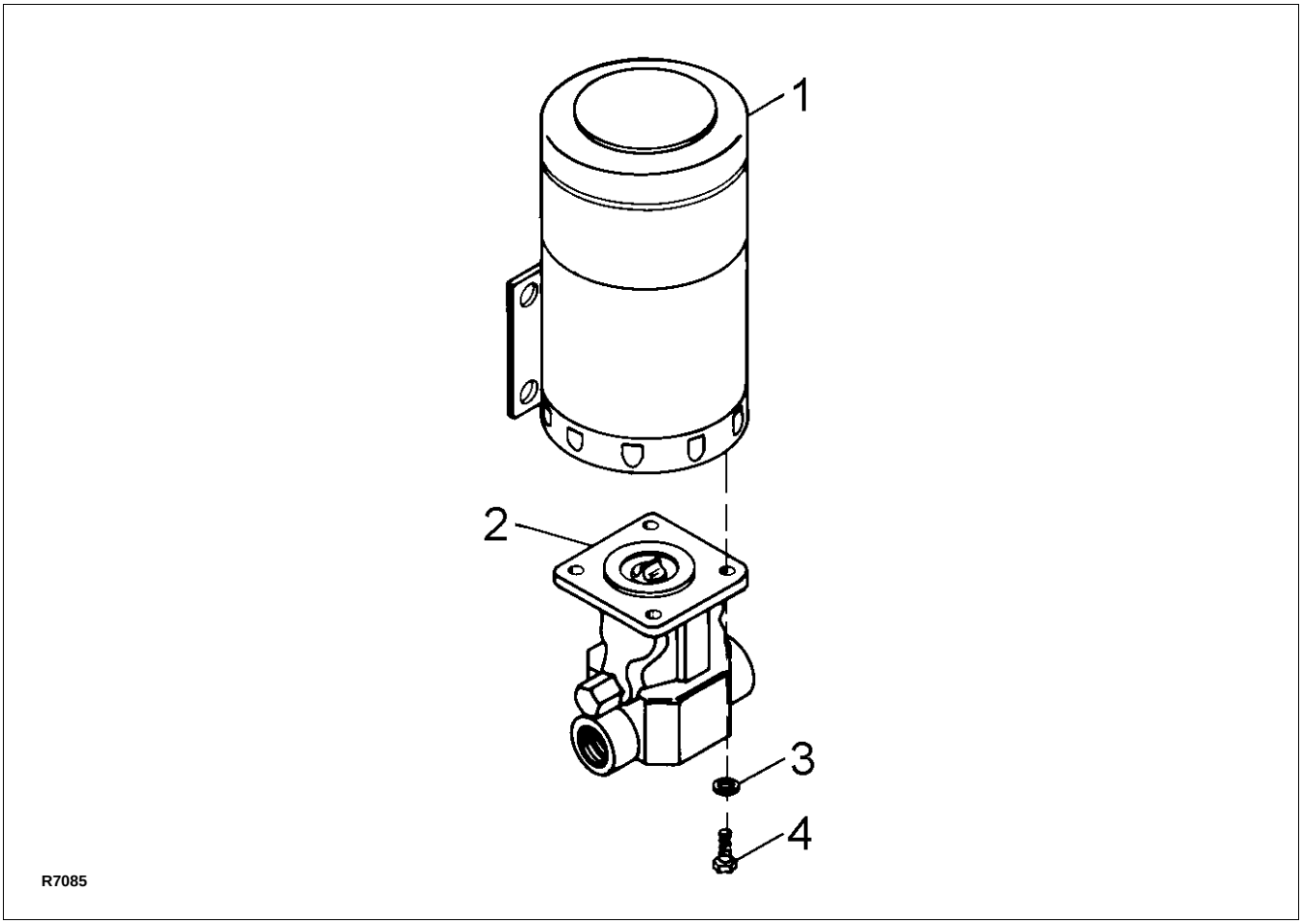


Figure 9-8 Pump and Motor

9-5. CONTROL VALVE REPLACEMENT

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

1. Open cabinet door.
2. Remove hydraulic compartment cover.
3. Remove reservoir drain plug (21, Figure 9-7) and drain hydraulic oil into a suitable container.
4. Label, disconnect and plug the hydraulic lines from the control valve. Label and disconnect the harness wires (16, Figure 9-9) from the switches (15) at the bottom of the control valve.
5. Remove pivot pin (9) and spacer (7) that attach control levers (5 and 6) to truck body.
6. Disconnect levers (5 and 6) from valve by removing clevis pins (13).
7. Remove the control valve by removing the four screws (17), washers (11) and nuts (10).

NOTE: Refer to Figure 12-21 and Figure 12-22 for disassembly and reassembly.

8. Connect levers (5 and 6) to the rebuilt or new valve with clevis pins (13).
9. Install the valve and secure with four screws (17), washers (11) and nuts (10).

Figure 9-9 Standard Control Valve

10. Attach control levers (5 and 6) to truck body with pivot pin (9) and spacer (7).
11. Connect the wires and hoses to the control valve.
12. Reinstall hydraulic compartment cover making certain dust cover is in place.
13. Clean the drain plug thoroughly.
14. Reinstall the drain plug.

NOTE: Refill only with Big Joe hydraulic oil, and only while the platform is completely lowered. Refill until oil is to the "FULL" mark on the dip stick. Refer to SECTION 3 for oil capacities.

15. Remove the reservoir vent cap, fill the reservoir to the "FULL" mark on the dip stick, and replace the vent cap.
16. Reconnect battery.
17. Operate the hydraulic controls and check for leaks.
18. Close cabinet door.

9-6. FLOW CONTROL VALVE REPLACEMENT (NON-TELESCOPIC AND TELESCOPIC)

9-6.1. Lift Flow Control Valve

1. Raise the forks high enough to gain access to the flow control valve (50, Figure 9-1) and tilt the mast all the way forward.
2. Place a strong support under the inner mast on telescopic models or under lift carriage on non-telescopic models and lower forks so that inner mast or lift carriage rests on the support.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

3. Disconnect hose assembly (12) at swivel connector from elbow (48). Remove elbow from control valve.
4. Remove flow control valve (50).
5. Remove reducers (49) from flow control valve (50) and install them in the new flow control valve.
6. Install new flow control valve making certain direction of free flow (as marked on valve) is toward lift cylinder.
7. Install elbow (48) and reconnect hose (12).
8. Reconnect battery.
9. Raise forks, then remove support.
10. Fully lower the lift carriage and check the hydraulic oil level.
11. Raise and lower the lift carriage and check for leaks.

9-6.2. Tilt Flow Control Valve

1. Raise the forks high enough to gain access to the tilt flow control valve (39, Figure 9-1) and tilt the mast all the way forward.
2. Place a strong support under the inner mast on telescopic models or under lift carriage on non-telescopic models and lower forks so that inner mast or lift carriage rests on the support.

WARNING: Before disconnecting any hydraulic lines, make certain the system is not under pressure. Refer to paragraph 9-1.

3. Disconnect hose (43) at elbow (36). Remove elbow from control valve.
4. Remove flow control valve (39).
5. If valve is in good condition, clean and reinstall the valve; if valve is damaged install replacement valve.
6. Install elbow (36) and reconnect hose (43).
7. Reconnect battery.
8. Raise forks, then remove support.
9. Fully lower the lift carriage and check the hydraulic oil level.
10. Raise and lower the lift carriage and check for leaks.

9-7. LIFT CYLINDER REPAIR

9-7.1. Non-Telescopic, Telescopic and Clear View TRIMAST

NOTE: Removal procedures are covered in SECTION 8.

CAUTION: Use proper pipe clamp-type vise. The cylinder will be distorted if the vise is tightened too much.

1. **Clear View TRIMAST:** Remove limit switch (11, Figure 12-36) from the cylinder tube.
2. Secure lift cylinder tube assembly in vise and remove gland nut (3, Figure 9-10), then wiper ring (2), and top O-ring (4).
3. Pull out cylinder ram rod (5).
4. Remove lift cylinder tube assembly from vise.

CAUTION: Use proper pipe clamp-type vise with non-marring jaws to prevent damaging the finish on the ram.

5. Secure cylinder ram rod (5) in vise.
6. Remove nut (11) and pull off piston (14), and O-ring (7). Remove PSP seal (15) from piston (14).

NOTE: Refer to Figure 12-33, Figure 12-35 or Figure 12-36 for the proper Packing Kit.

7. Install new PSP seal (15) on piston (14).
8. Install new O-ring (7), piston (14) and nut (11) on cylinder ram (5).
9. Remove cylinder ram (5) from vise.

CAUTION: To prevent cylinder damage, use proper pipe clamp vise. The cylinder will be distorted if the vise is tightened too much.

10. Secure lift cylinder tube (1) in vise.
11. Install cylinder ram (5) into cylinder tube (1).
12. Install new O-ring (4), and gland nut (3) with new wiper ring (2).
13. Remove lift cylinder assembly from vise.
14. **Clear View TRIMAST:** Install limit switch (11, Figure 12-36) on the cylinder tube.

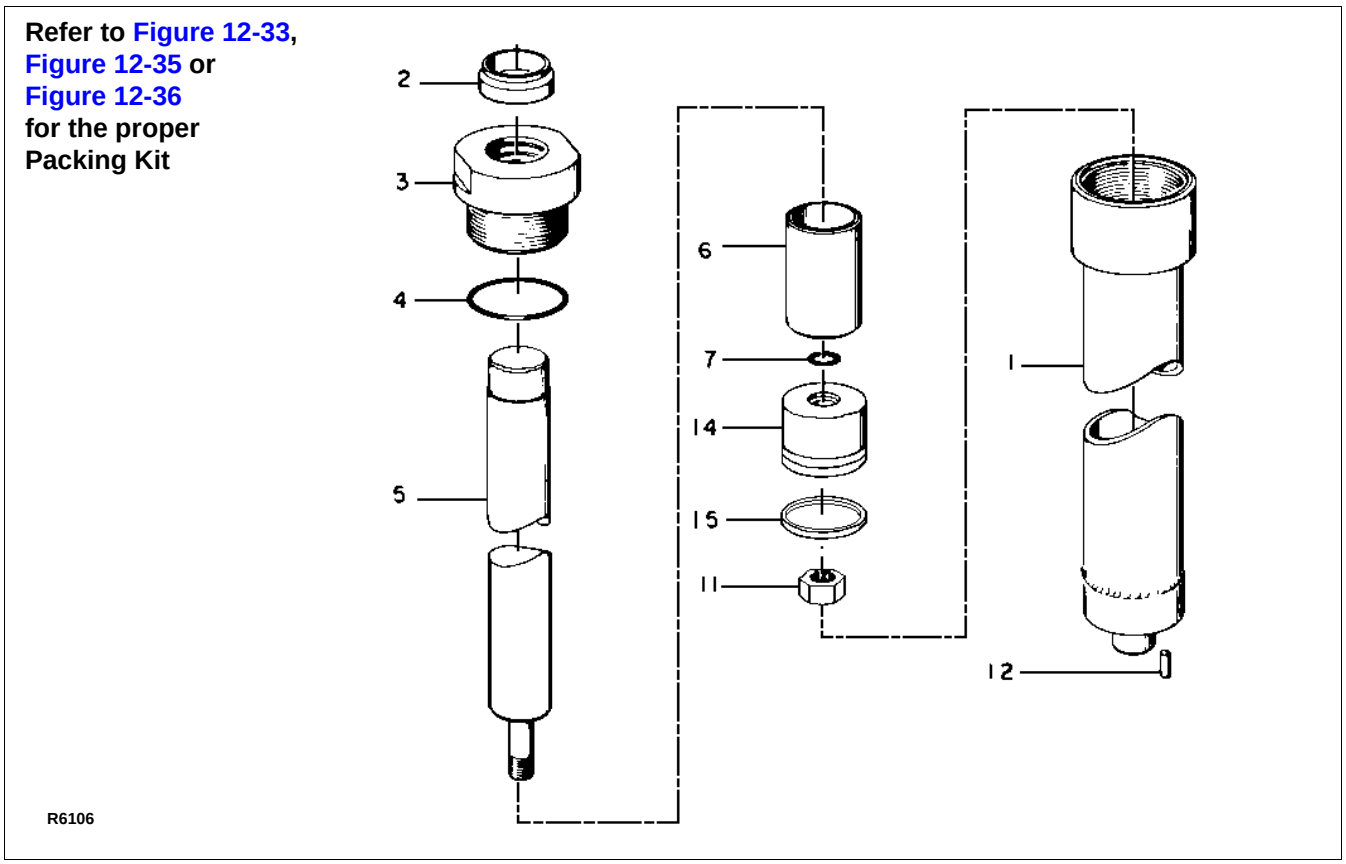


Figure 9-10 Lift Cylinder (Non-Telescopic and Telescopic)

9-7.2. Full Free Lift

NOTE: Removal procedures are covered in SECTION 8. Refer to Figure 9-11 for proper packing kit.

CAUTION: Use the proper clamp-type vise. The cylinder will be distorted if the vise is tighten too much.

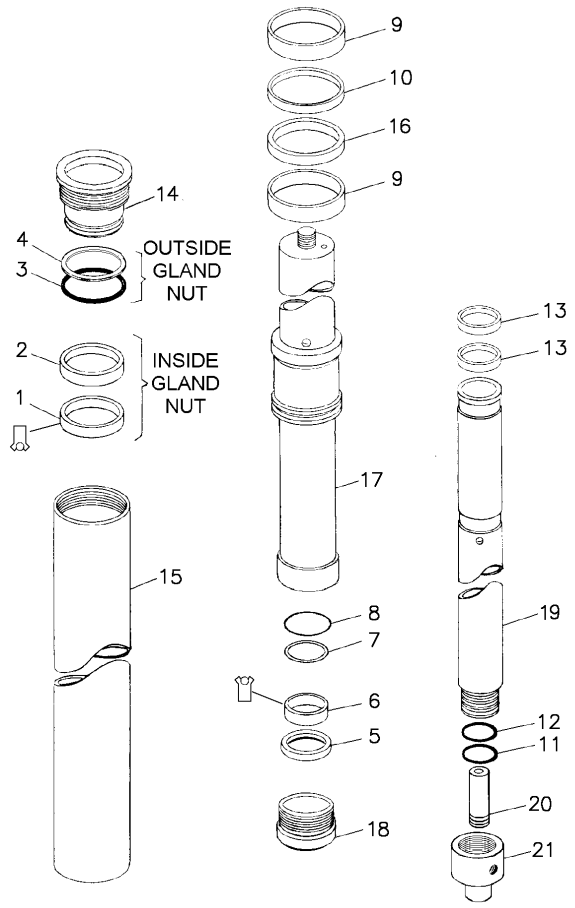
1. Secure lift cylinder tube assembly in vise.

CAUTION: Use proper spanner wrench when removing gland nut to prevent damage to cylinder.

2. Unthread gland nut (14) from the top of outer jacket tube (15).
3. Remove O-ring (3) and backup ring (4) from the outside of gland nut (14).
4. Remove polypack (1) and rod wiper (2) from the inside of gland nut (14).
5. Slide primary rod (17) out of outer jacket tube (15).
6. Remove wear ring (9), PSC seal (10), felt ring (16) and wear ring (9) from outside of primary rod (17).
7. Unthread gland nut (18) from the bottom of the primary rod (17).
8. Remove rod wiper (5), polypack (6), backup ring (7) and O-ring (8).
9. Slide secondary rod (19) out of the primary rod (17).
10. Remove wear rings (13) from the outside of secondary rod (19).
11. Unthread rod end (21) from the bottom of the primary rod (19).
12. Remove O-ring (11) and backup ring (12).
13. Unthread flow regulator (20) from rod end (21).

Assemble lift cylinder by reversing the disassembly procedure. **Be sure to use the proper seal kit.** For ease of assembly when assembling threaded parts, apply a coating of white lead replacement to threads.

FULL FREE LIFT



PACKING KIT 907211 CONTAINS:

ITEM	QTY
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
‘10	1
11	1
12	1
13	1

R7093

Figure 9-11. Lift Cylinder Assembly (Full Free Lift)

9-8. TILT CYLINDER REPAIR

9-8.1. BMP Model Cylinder

NOTE: Removal procedures are covered in SECTION 8.

WARNING: To prevent cylinder damage, use proper pipe clamp vise. The cylinder will be distorted if the vise is tightened too much.

1. Secure the cylinder assembly in a vise and remove rod end (14, Figure 9-12). Unthread gland nut (12) from barrel (2) using spanner wrench and remove barrel (2).
2. Unthread nut (3).
3. Remove piston (5), o-ring (4), and gland nut (12) from piston rod (8).
4. Remove grease fittings (1) from barrel (6) and rod end (14).

NOTE: Before reassembling the hydraulic cylinder, it is recommended that Packing kit items (4, 6, 7, 9, 11, and 13) be replaced.

5. Reassemble the cylinder in reverse order of disassembly.

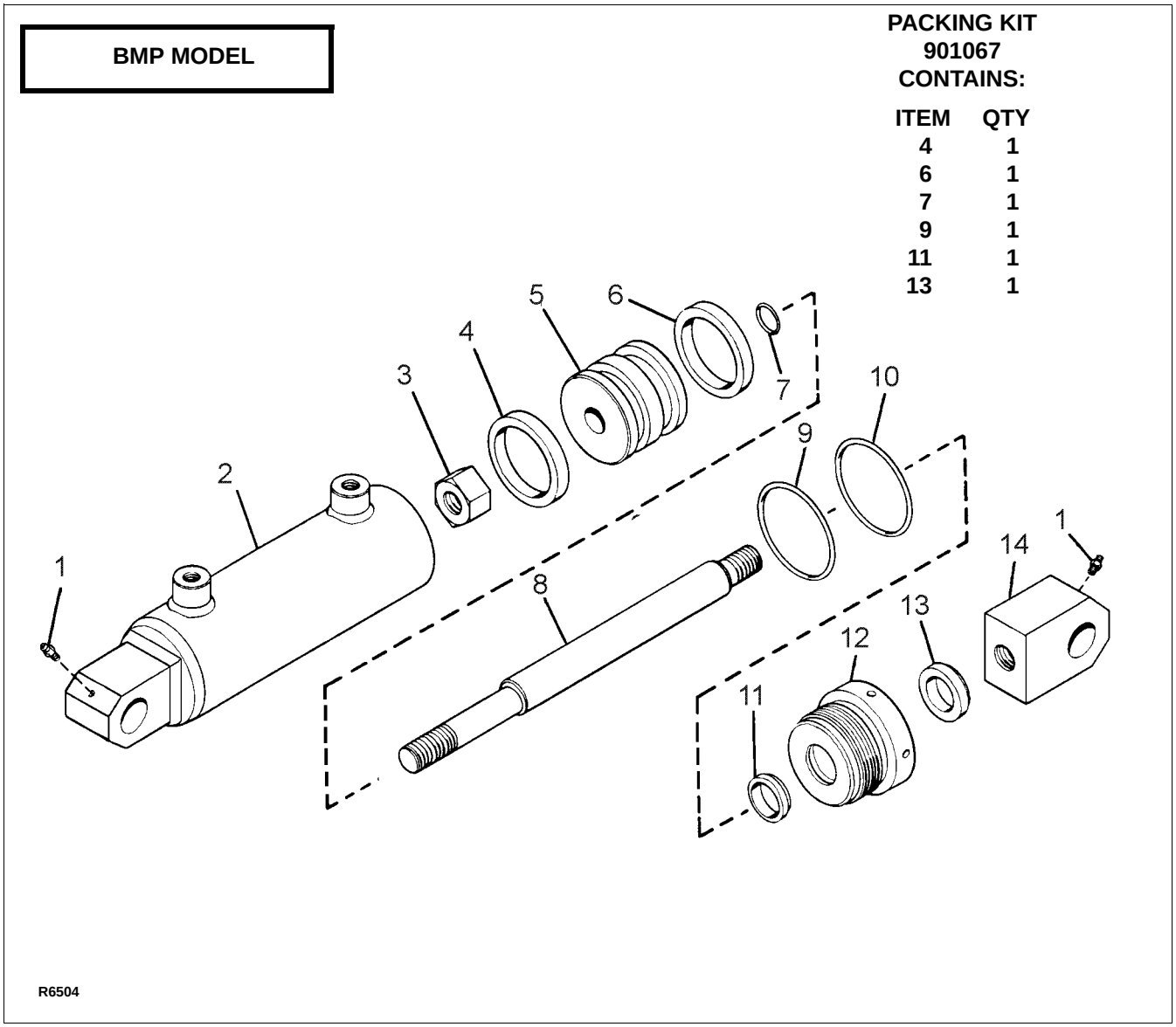


Figure 9-12 Tilt Cylinder

9-8.2. CH Model Cylinder

NOTE: Removal procedures are covered in SECTION 8.

WARNING: To prevent cylinder damage, use proper pipe clamp vise. The cylinder will be distorted if the vise is tightened too much.

1. Secure the cylinder assembly in a vise and remove rod end (14, Figure 9-13).
2. Work internal retaining ring (12) out the hole in barrel (2).
3. Pull piston rod (13) out of barrel (2).
4. Remove barrel (2) from the vise.
5. Remove nut (3) while holding piston rod (13) with a wrench on its flats.
6. Remove piston (6) and head (9) from piston rod (13).
7. Remove seal (4) from piston (6).
8. Remove O-ring (7) and backup ring (8) from the OD of head (9).
9. Remove dust seal (11) and rod seal (10) from the ID of head (9).
10. Remove grease zerks (1) from barrel (2) and rod end (14).

NOTE: Before reassembling the hydraulic cylinder, it is recommended that packing kit items (4, 6, 7, 8, 10, and 11) be replaced.

11. Reassemble the cylinder in reverse order of disassembly.

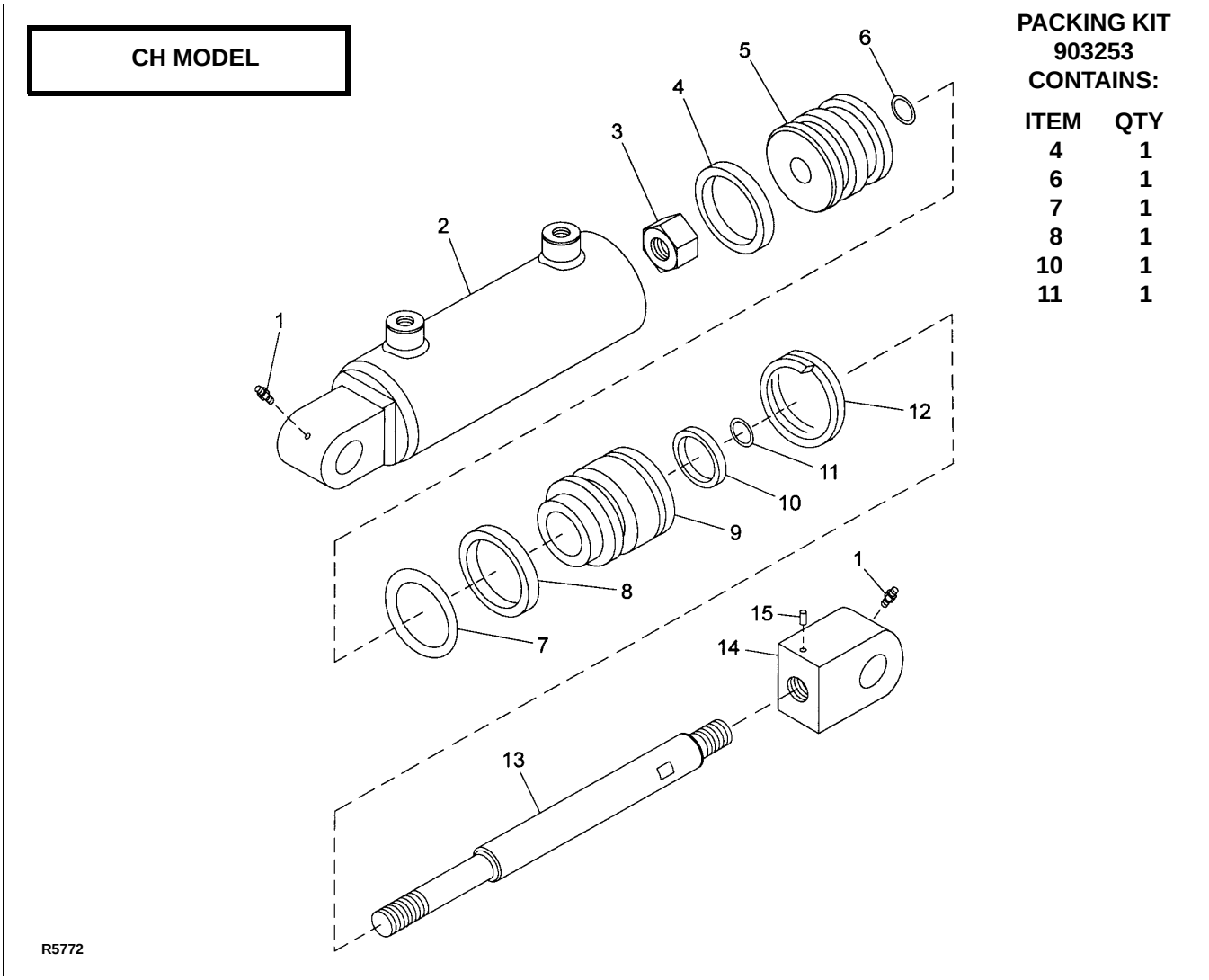


Figure 9-13 Tilt Cylinder

9-8.3. EM Model Cylinder

NOTE: Removal procedures are covered in SECTION 8.

WARNING: To prevent cylinder damage, use proper pipe clamp vise. The cylinder will be distorted if the vise is tightened too much.

1. Secure the cylinder assembly in a vise and remove rod end (12, Figure 9-14). Unthread gland nut (10) from jacket assembly (6) using spanner wrench and remove jacket assembly (6).
2. Unthread locknut (1).
3. Remove piston (3), o-ring (4), spacer (5) and gland nut (10) from piston rod (7).
4. Remove grease fittings (13) from jacket assembly (6) and rod end (12).

NOTE: Before reassembling the hydraulic cylinder, it is recommended that Packing kit items (2, 4, 8, 9, and 11) be replaced.

5. Reassemble the cylinder in reverse order of disassembly.

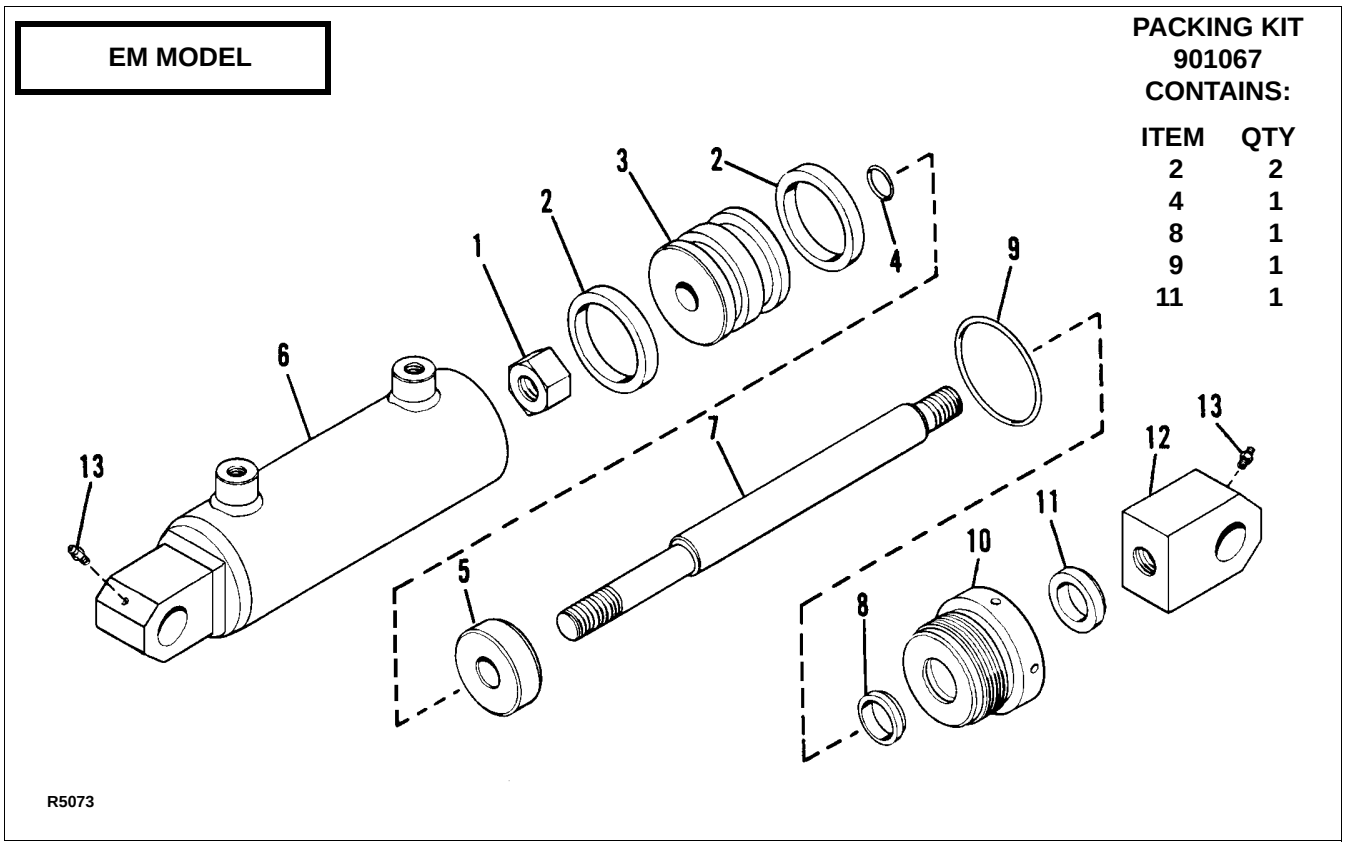


Figure 9-14 Tilt Cylinder

SECTION 10
ELECTRICAL COMPONENTS

10-1. ELECTRICAL CONTROL PANELS.

There are four different control panels used on PDC trucks, refer to Table 10-1.

There are no user-serviceable parts inside the controller. No attempt should be made to open the controller. Opening the controller may damage it and will void the warranty.

The controller is programmed at the factory specifically for the truck model on which it is equipped. It is important to replace the controller with the correct preprogrammed unit to assure proper performance settings intended for that particular truck. Refer to Table 10-1 for the preprogrammed controller number.

It is recommended that the controller exterior be cleaned periodically, and if a handheld programmer is available, this periodic cleaning provides a good opportunity to check the controller's diagnostic history file. It is also recommended that the controller's fault detection circuitry be checked whenever the vehicle is serviced.

10-1.1. Cleaning

1. Disconnect the battery
2. Discharge the capacitors in the controller by connecting a load (such as a contactor coil or a horn) across the controller's B+ and B- terminals.
3. Remove any dirt or corrosion from the bus bar area. The controller should be wiped clean with a moist rag. Allow it to dry before reconnecting the battery.
4. Make sure the connections to the bus bars are tight. Use two well insulated wrenches for this task in order to avoid stressing the bus bars.

Table 10-1 Electrical Control Panels

MODEL	TYPE	PANEL PART NO.	FIG. NO.
PDC 20A, PDC 20, PDC 25, PDC 30	E	505892-02	Figure 12-43
PDC 20A, PDC 20, PDC 25, PDC 30	EE	505888-02	Figure 12-44
PDC 40	E	505362-02	Figure 12-45
PDC 40	EE	505314-02	Figure 12-46

10-1.2. Panel Removal.

1. Disconnect the battery.
2. Open the cabinet door (1, Figure 12-8).
3. Refer to Figure 4-3, Figure 4-4, Figure 4-5 or Figure 4-6 and tag and disconnect all electrical wires and cables from the control panel.

10-1.3. Panel Disassembly.

1. Refer to Figure 10-1, Figure 10-2, Figure 10-3 or Figure 10-4 for identity of components of the electrical panel and remove defective components as required.

10-1.4. Contactor Box Disassembly and Reassembly (Type EE Trucks Only).

1. Thoroughly clean the exterior of the contactor box before opening.
2. Remove the side cover plates (15, Figure 10-2 or Figure 10-4) from each side of the enclosure. Clean all residue of gaskets (16) from cover plates and the enclosure.
3. Tag and disconnect wire leads as necessary for component removal.
4. Remove fuse (30) and/or contactors (2) as required. (See paragraph 10-1.5. for contactor repair.)
5. Reassemble the contactor box in reverse of disassembly, referring to Figure 4-4 or Figure 4-6 for electrical connections.
6. When reinstalling the cover plates (15), use new gaskets (16) ensuring that the adhesive side of gasket is toward cover.

**PDC-20A, PDC-20,
PDC-25 PDC-30
TYPE E**

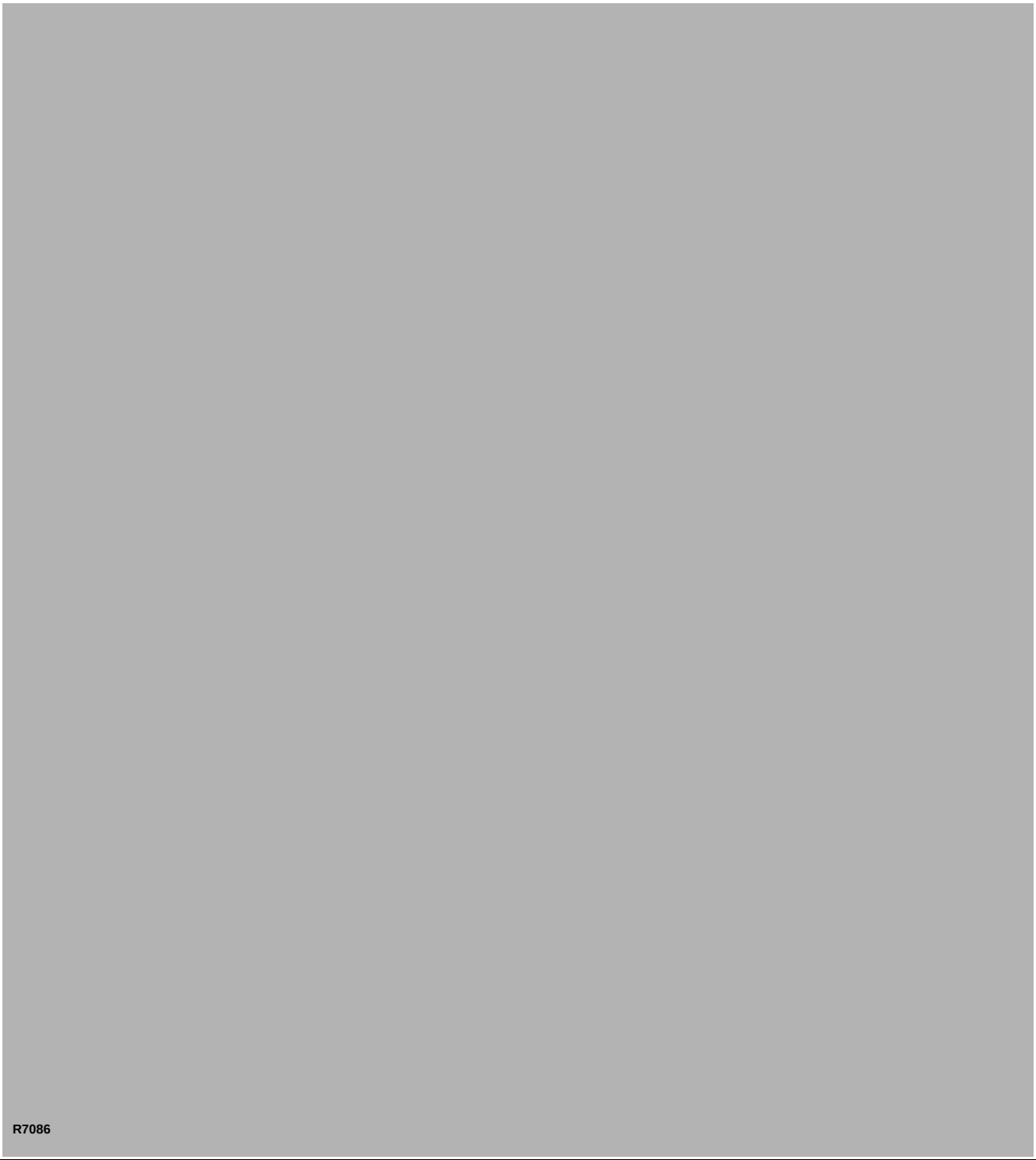


Figure 10-1 Control Panel Assembly (Type E)

**PDC-20A, PDC-20,
PDC-25 PDC-30
TYPE EE**

R7087

Figure 10-2 Control Panel Assembly (Type EE)

PDC-40
TYPE E

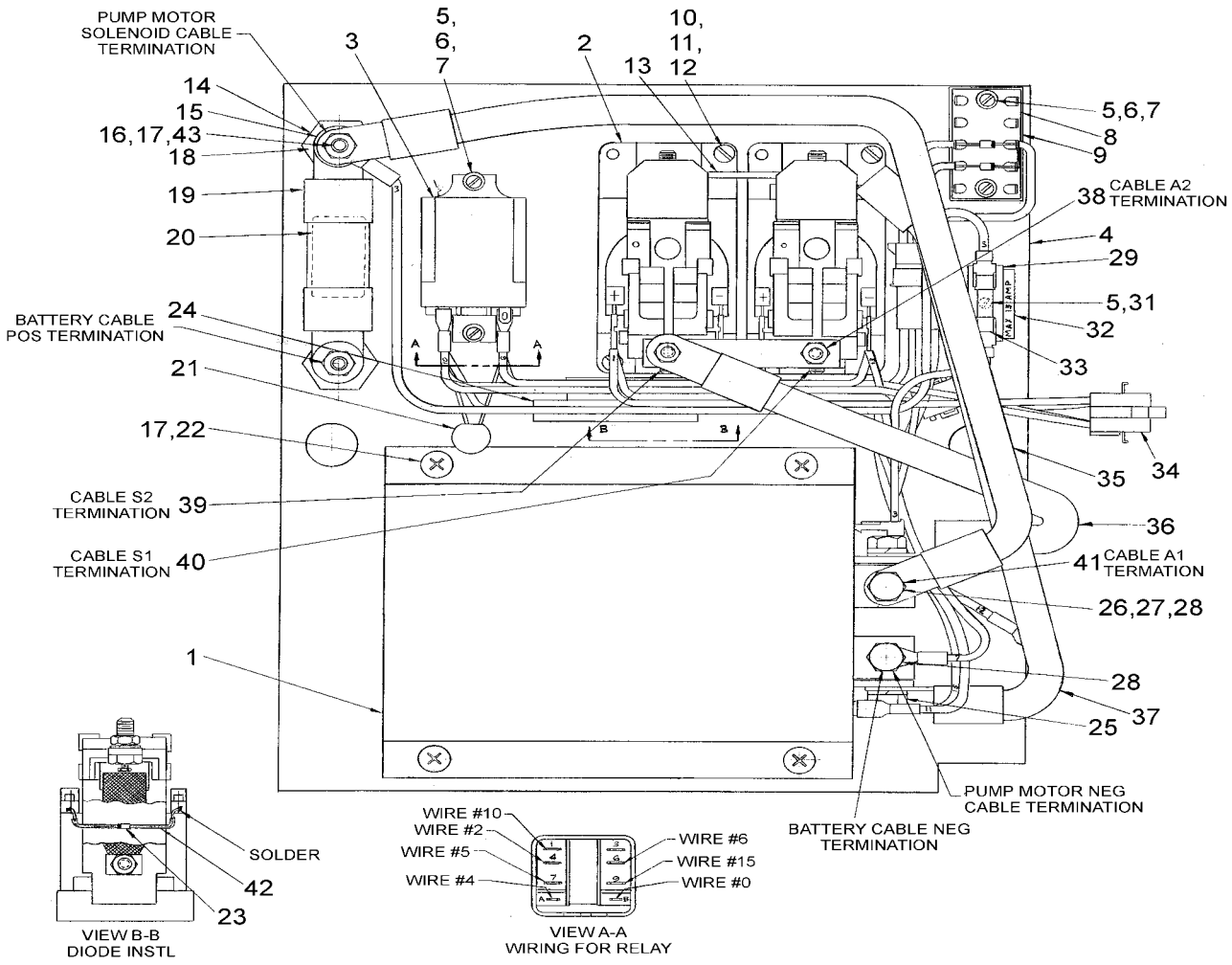


Figure 10-3 Control Panel Assembly (Type E)

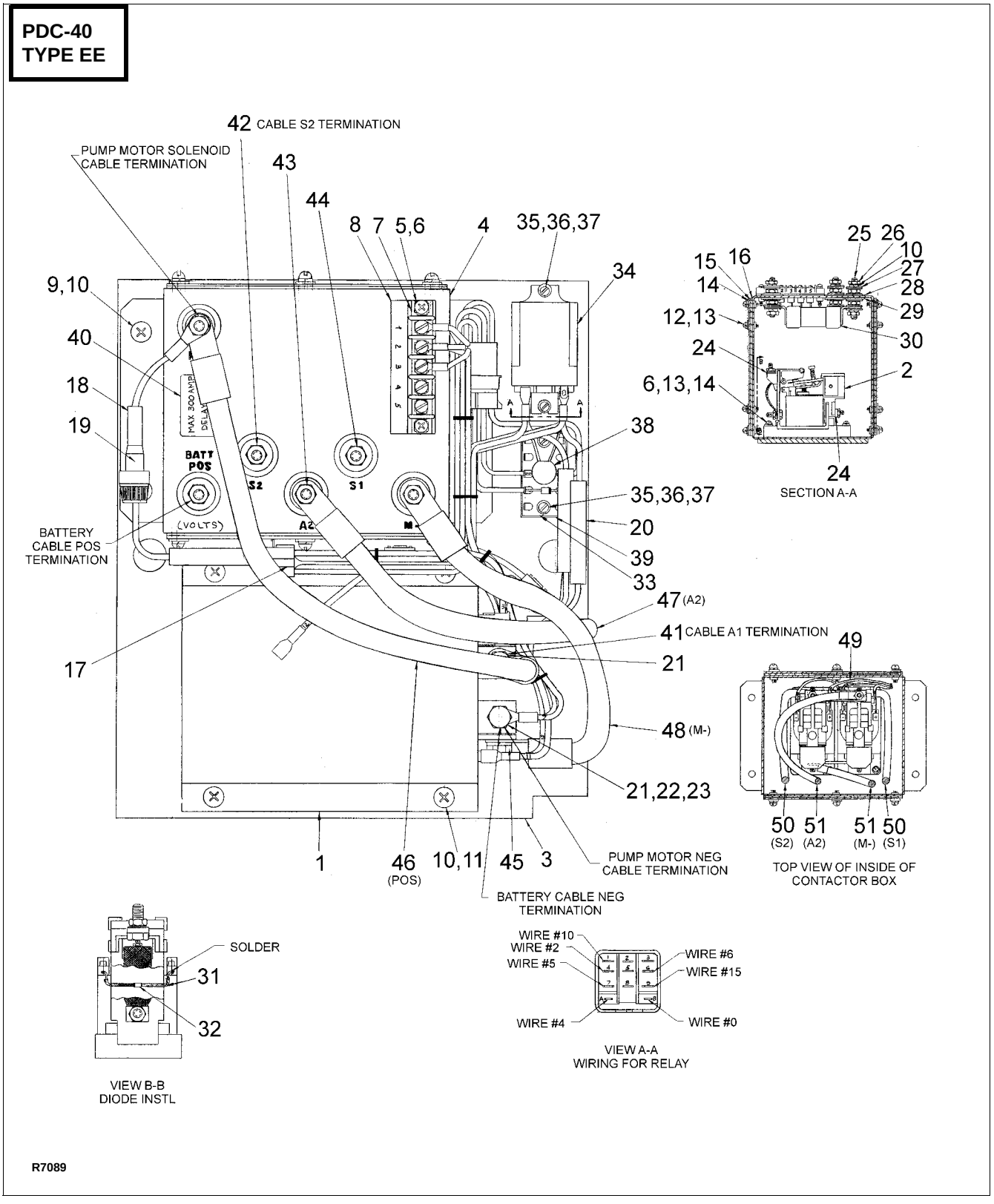


Figure 10-4 Control Panel Assembly (Type EE)

10-1.5. Contactor Servicing.

NOTE: Contactor tip kit **part number 900531-09** contains contacts for the forward-reverse contactor.

10-1.5.1. Disassembly. (Refer to Figure 10-5)

NOTE: Order contactor tip kit **part number 900531-09**. One kit repairs one contactor. Kit includes items (3, 5, 8, 12 and 16).

1. Remove spring (7) and spring (6).
2. Remove nut bolt and washer securing bus bar (14), (if used) to back contact (16).
3. Slide back contact (16) up as far as possible then squeeze sides of rear molding (17) together and lift off frame (2). Separate two sides of rear molding and remove back contact (16).
4. Remove nut holding armature plate retainer (5) and remove retainer by squeezing in on tabs and lifting up.
5. Slide braid assembly (3) off contact (8) and remove contact (8) and armature plate (9) and spring (6).
6. Use a 10 mm wrench to remove nut holding front contact (12) and remove contact.

NOTE: If only contacts are to be replaced, no further disassembly is required. Proceed to step 7 to replace coil.

7. Remove spacer (13).
8. Squeeze sides of front molding (4) and pull forward to disengage from base molding (1). Remove base molding and remove front molding from frame (2).
9. Coil can now be removed from frame (2) by removing 3/4 inch long hex head screw and flat washer.

10-1.5.2. Reassembly. (Refer to Figure 10-5)

1. Place 1-1/4 inch long hex head bolt through bottom of front molding (4) and slide molding onto frame (2).
2. Attach coil (11) to frame (2) with flat washer and 5/8 inch long hex head bolt. Be sure braid assembly (3) has been attached to frame (2) with 3/4 inch bolt, lock washer, flat washer and nut. Use 10 mm wrench on nut.
3. Attach frame (2) to base molding (1) by engaging slots of bottom of frame (2) behind flanges near lower edge of base molding (1).
4. Snap slots at top of front molding (4) into flanges of base (1). Coil assembly should now be securely attached to base (1).
5. Install spacer (13) in front molding (4) and install front contact (12) secure with washer, lock washer and hex nut. Use a 10 mm wrench on nut.
6. Place contactor on work surface with base molding down. Place spring (6) on center of pole piece (10).
7. Position armature plate (9) against frame (2).
8. Place moving contact assembly (8) on armature plate then attach braid assembly (3) to contact stud.
9. Place retainer (5) on contact stud and slip the two tabs on retainer (5) into the two slots in armature plate (9). Secure with hex nut.
10. Place two parts of back molding (17) together and slide contact (16) into slot in molding.
11. Squeeze back molding together and place grooves in back molding on frame (2). Push molding all the way down.
12. Release back molding and press back contact (16) down into position. Armature will need to be pressed down to position back contact.
13. Reattach bus bar (14) (if used) to back contact (16) using hex nut and washers.
14. Secure moving contact (8) to armature (9) with spring (6) and spring stud (7).

CONTACTOR TIP KIT PART NUMBER 901531-09 CONTAINS:

ITEM	QTY
3	1
5	1
8	1
12	1
16	1

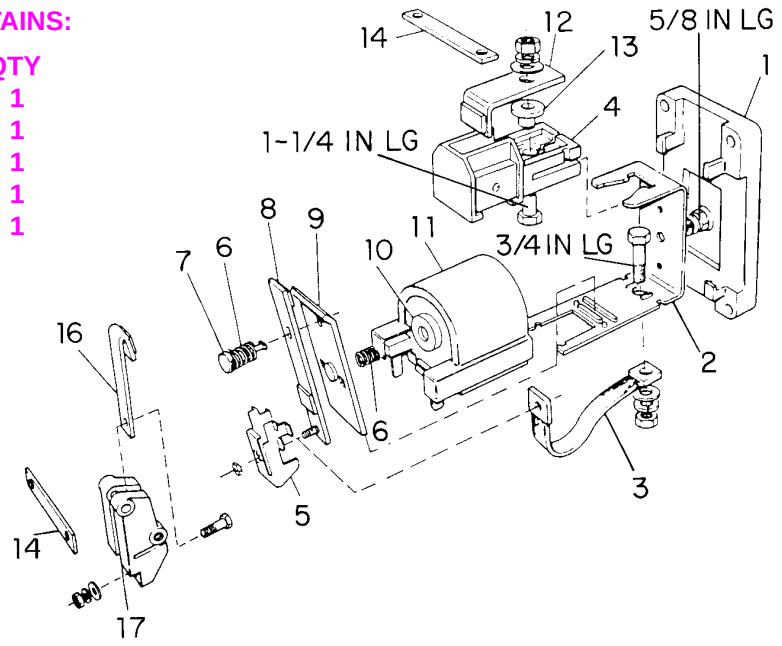


Figure 10-5 Double Pole Contactor, Forward, Reverse

10-2.PUMP MOTORS.

Two different pump motor assemblies have been used on the PDC truck. However, both assemblies use the same motor.

NOTE: Removal procedures are covered in SECTION 9.

Refer to applicable Figure 12-41 for motor disassembly.

10-3.DRIVE MOTORS.

NOTE: Removal procedures are covered in SECTION 7.

Refer to Figure 12-42 for motor disassembly.

10-4.BATTERIES.

1. Turn key to off, and remove from key switch.

NOTE: Batteries are heavy. Use care when lifting out of battery compartment.

2. Disconnect the battery quick disconnect (2, Figure 10-6).
3. Lift the battery out of the battery compartment.
4. Lower the new battery in the battery compartment.
5. Reconnect the battery quick disconnect (2).

10-5.HIGH SPEED LIMIT SWITCH.

1. Remove the two screws, two lockwashers, and two washers securing switch mounting bracket to frame.
2. Remove high speed limit switch (4, Figure 10-6) from bracket, and then disconnect wiring from the switch.
3. Connect the wiring to the new switch and install the switch onto the bracket.

NOTE: Bracket must be positioned so that switch is operated when lift carriage is down.

4. Position bracket with new switch in place on frame, and secure with two washers, two lock-washers, and two screws.

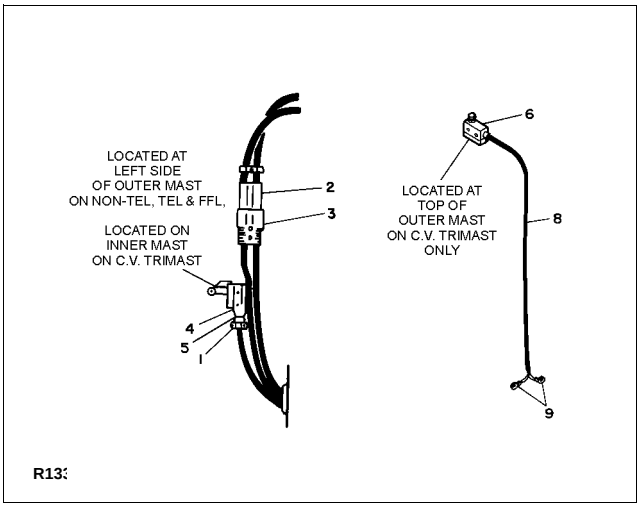


Figure 10-6 Mast Related Electrical Components

SECTION 11
OPTIONAL EQUIPMENT

11-1.KEYSWITCH

Those trucks which have a keyswitch installed will have the wiring modified. The modification and the schematic diagram are shown in Figure 12-53.

11-2.HOUR METER

The hour meter is attached to the motor circuits to indicate actual usage of the drive and lift function. Refer to Figure 12-50 for replacement parts and to the diagrams, Figure 4-3, Figure 4-4, Figure 4-5 or Figure 4-6, for wiring information.

11-3.BATTERY CAPACITY INDICATOR.

Refer to Figure 12-51 and Figure 12-52 for the battery capacity indicator replacement parts.

11-4.HAND HELD REMOTE CONTROL.

Refer to Figure 12-49 for removal and parts identification of the hand held remote control option.

11-5.AUXILIARY HYDRAULICS

Refer to Document 269 for additional maintenance information and parts identification of the optional auxiliary hydraulics.

NOTES

SECTION 12
ILLUSTRATED PARTS BREAKDOWN

Following is an illustrated parts breakdown of assemblies and parts associated with the PDC Lift Truck.

SEE FIGURE 12-2
FOR SWITCHS

SEE FIGURE 12-3
FOR COLD CONDITIONING

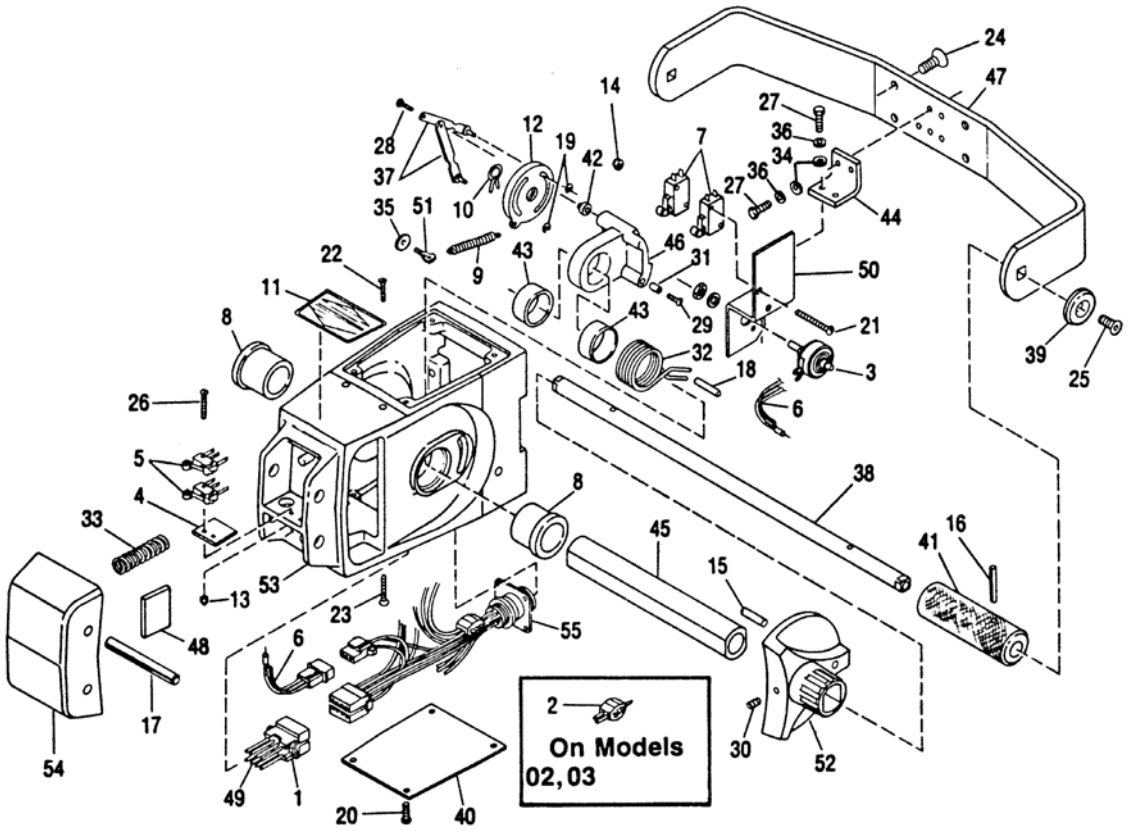


Figure 12-1 Control Head Assembly

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505360-01	CONTROL HEAD (STANDARD)	1
—	505360-02	CONTROL HEAD (REMOTE LIFT IN HANDLE)	1
—	505360-03	CONTROL HEAD (REMOTE LIFT AND LOWER IN HANDLE)	1
1	005648	. CONNECTOR	1
2	005649	. CONNECTOR	1
3	017580	. POTENTIOMETER	1
4	018202	. SWITCH INSULATOR	1
5	020669	. MICRO SWITCH	2
6	505323	. POTENTIOMETER WIRE HARNESS	1
7	020775	. MICRO SWITCH	2
8	052956	. FLANGED BEARING	2
9	053366	. RETURN SPRING	1
10	056131	. HOSE CLAMP	1
11	056617	. FORWARD-REVERSE DECAL	1
12	057262	. POTENTIOMETER DISK	1
13	059633	. HEX LOCK NUT, 2-56	2
14	059634	. HEX LOCK NUT, 4-40	2
16	060942	. ROLL PIN, 1/8 X 1-1/4	2
17	061016	. ROLL PIN, 1/4 X 3	2
18	061200-01	. SPIROL PIN, 3/16 X 1	1
19	061750	. E RETAINER RING	2
20	067416	. PAN HD SCREW, 6-32 X 1/2	4
22	069462	. FLAT HD SLOTTED SCREW, 6-32 X 3/4	2
23	069463	. FLAT HD SLOTTED SCREW, 6-32 X 1	2
24	069478	. PHILLIPS FLAT HD SCREW, 1/4-20 X 3/4	4
25	069715	. SOCKET FLAT HD SCREW, 1/4-20 X 3/4	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
26	070486	. PAN HD SCREW, BRASS	2
27	072400-01	. SLOTTED HEX SCREW, 6-32 X 1/2	4
28	072414	. SLOTTED PAN HD SCREW	1
29	072415	. PAN HD SCREW, THREAD CUTTING, 4-40 X 5/8	1
30	073461	. SOCKET SET SCREW	2
31	074711	. CONNECTING ROD SPACER	1
32	075088	. RETURN SPRING	1
33	075510	. COMPRESSION SPRING	2
34	077007	. WASHER	4
35	077032	. WASHER, 3/16 X 1/2 X 13GA	1
36	077204	. SPLIT LOCK WASHER #6	4
37	400546	. CONNECTING ROD ASSEMBLY	2
38	402827	. SHAFT	1
39	402828	. CAP	2
40	402830	. BOTTON COVER	1
41	402834	. TUBE	2
42	402835	. SPACER	1
43	402836	. SPACER	2
44	402837	. BRACKET	1
45	402839	. TUBE	1
46	402840	. CAM	1
47	402841	. NANDLE GUARD	1
48	402843	. PAD	2
49	504538-01	. WIRE ASSEMBLY	5
50	505052	. SWITCH BRACKET ASSEMBLY	1
51	800224	. THUMB SCREW, 6-32	1
52	800272	. CONTROL LEVER	2
53	800273	. CONTROL HANDLE	1
54	800274	. SAFETY COVER	1
55	023197	. WIRE HARNESS ASSEMBLY	1

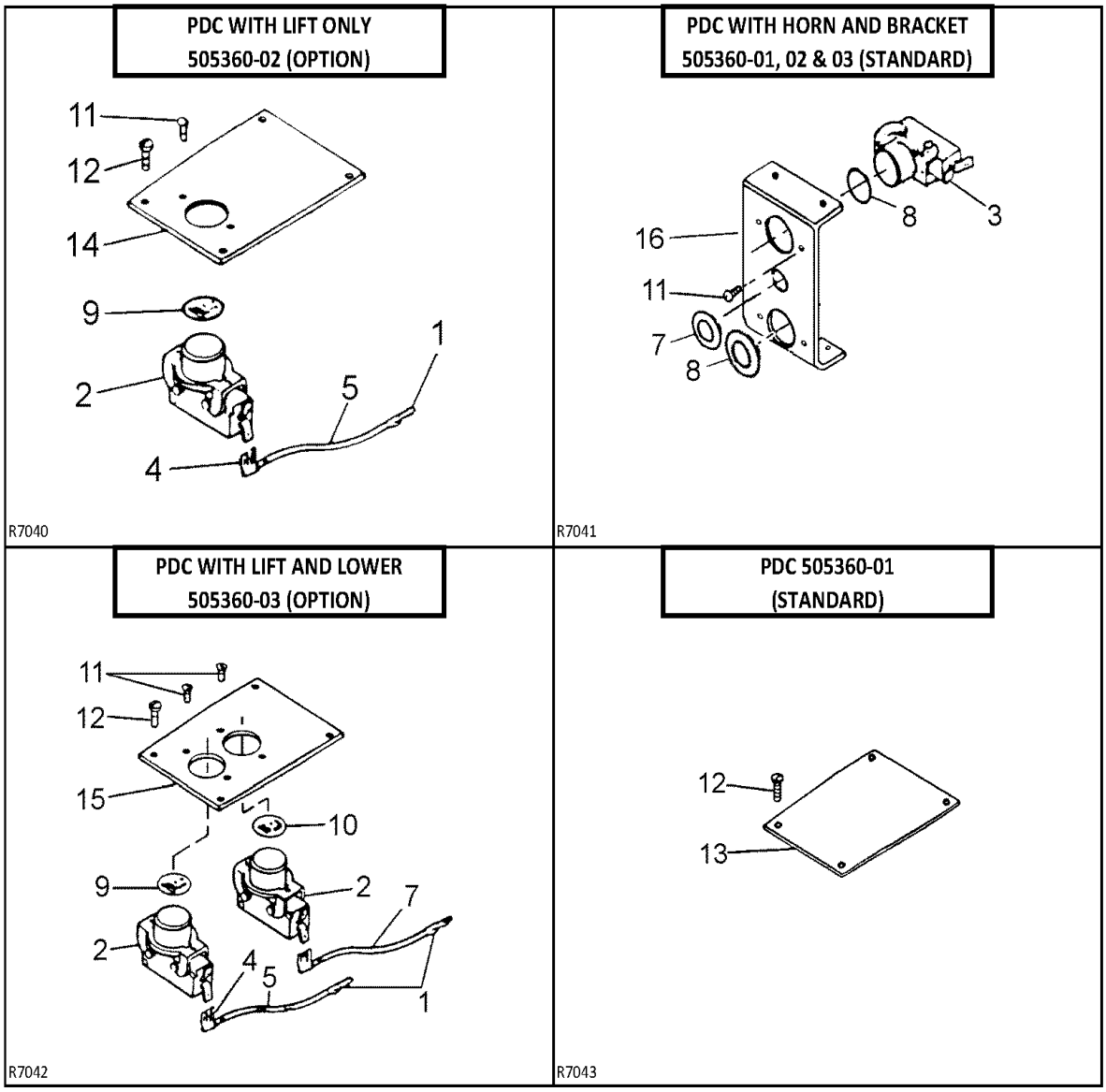


Figure 12-2 Push Button Switches, Control Head

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	005643	CONTACT PIN	2 MAX
2	020697	PUSHBUTTON SWITCH - BLACK	2 MAX
3	020698	PUSHBUTTON SWITCH - RED	1
4	021208	TERMINAL	4 MAX
5	023014	WIRE	A/R
6	053215-02	HOLE PLUG	1
7	053215-03	HOLE PLUG	1
8	056619-01	HORN DECAL	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
9	056641-03	LIFT DECAL	1
10	056641-04	LOWER DECAL	1
11	067415	PAN HD, SCREW 6-32 X 1/4	A/R
12	067416	PAN HD, SCREW 5-32 X 1/2	4
13	402830	TOP COVER	1
14	402831	TOP COVER	1
15	402832	TOP COVER	1
16	402842	SWITCH PLATE	1

A/R - AS REQUIRED

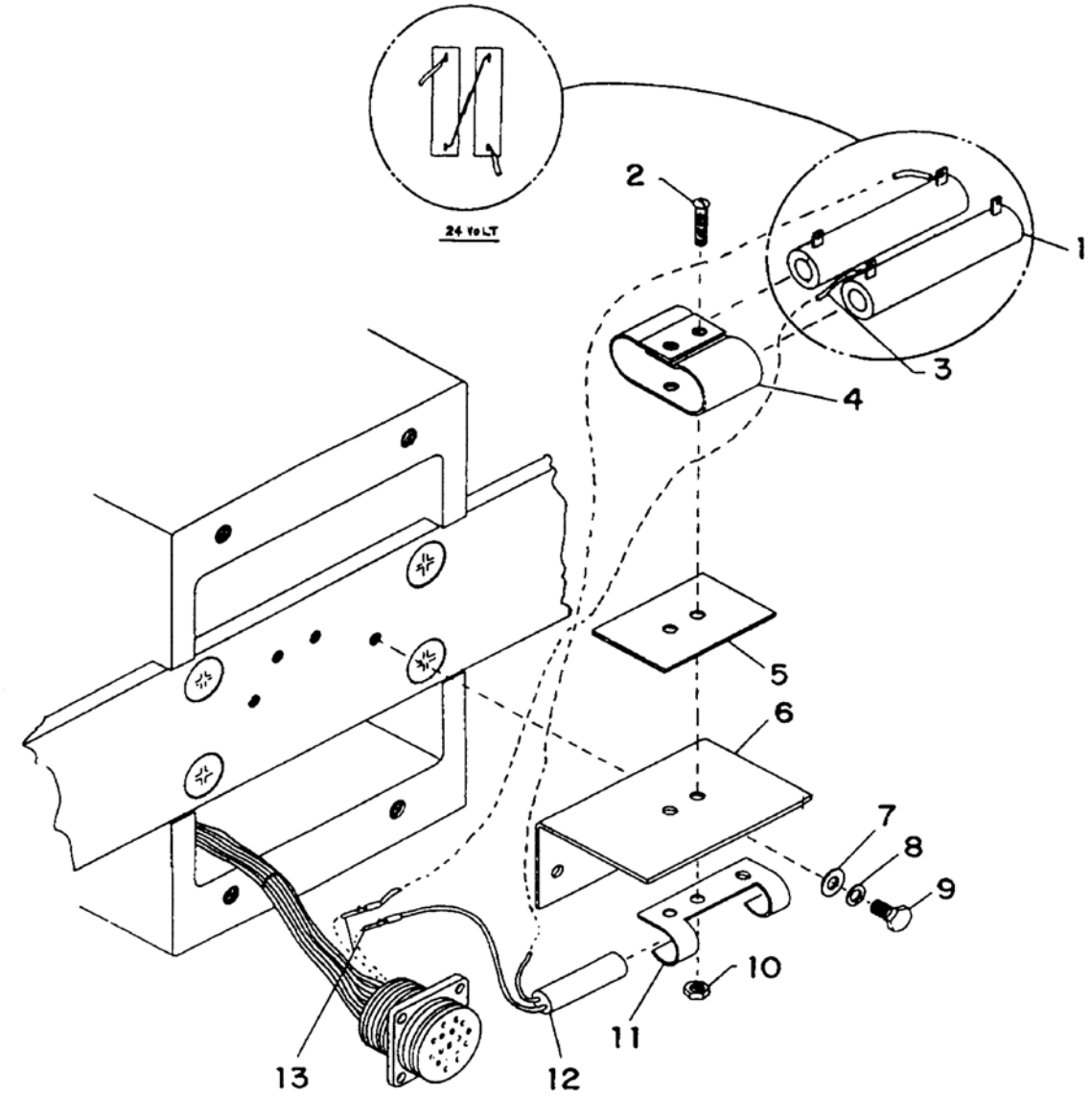


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Figure 12-3 Cold Conditioning, Control Head Assembly

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	018909	RESISTOR	2
2	068186	SCREW	2
3	023014	WIRE	A/R
4	400544	BRACKET, RESISTOR	1
5	018214	INSULATOR, SWITCH	1
6	402829	BRACKET	1
7	077007	WASHER	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	077204	SPLIT LOCK WASHER #6	2
9	072400-01	HEX HD. SLOTTED SCREW, 6-32 X 1/2	2
10	059632	NUT, HEX, 5-40	2
11	400044	BRACKET THERMAL CUTOUT	1
12	020736	THERMAL CUTOUT SWITCH	1
13	005643	CONTACT PIN	2

A/R - AS REQUIRED

HANDLE RETURN SPRING KIT 901325 CONTAINS:

ITEM	QTY
4	1
5	1
6	2
7	2
14	1
15	1

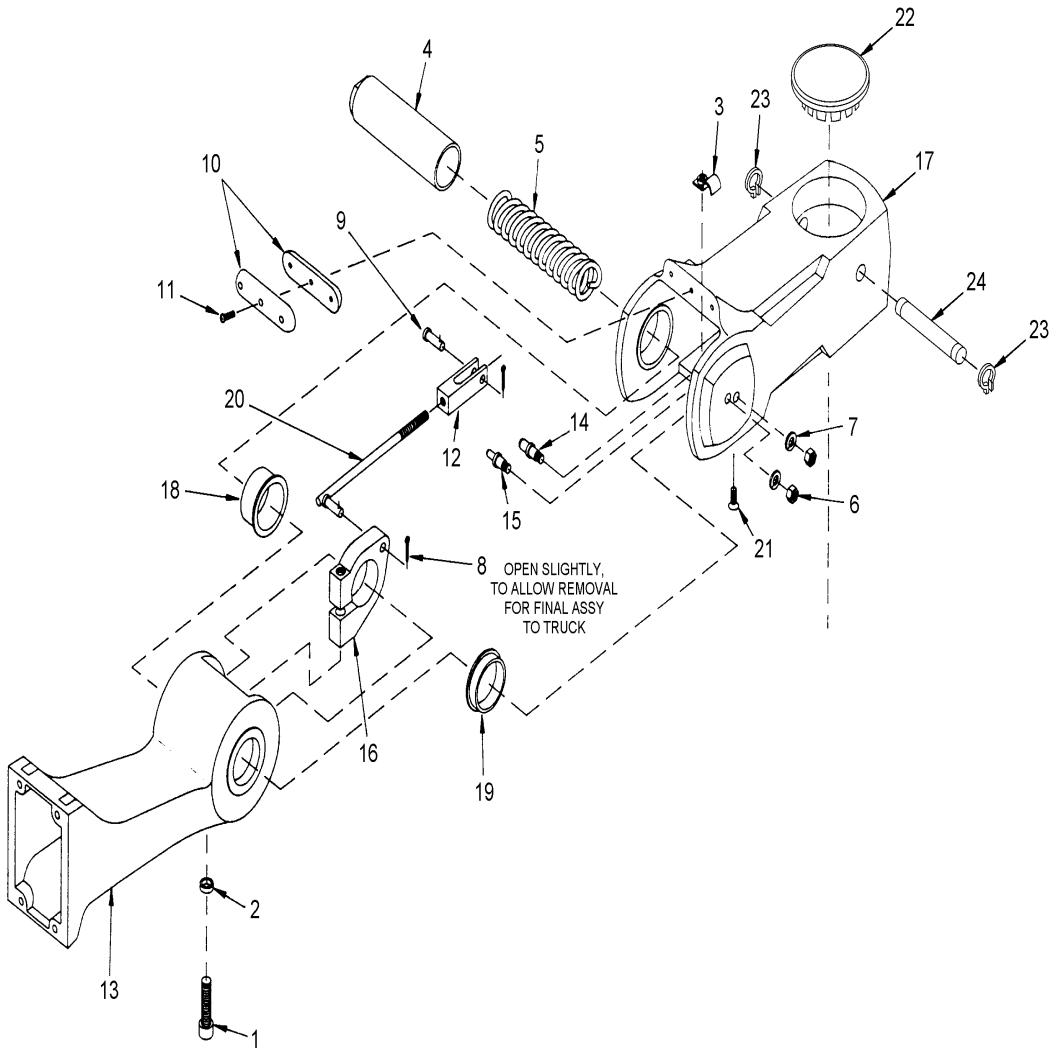

Figure 12-4 Steering Arm

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505765-01	CONTROL ARM ASSY	1
1	065569	. SCREW, 7/16-14 X 2-1/4	1
2	401127	. SPACER	1
3	504364	. CLAMP ASSY	1
4	501371 *	. HOUSING SPRING	1
5	075060 *	. SPRING	1
6	059426 *	. NUT, HEX, 5/16-18	2
7	077210 *	. WASHER, LOCK, SPLIT, 5/16	2
8	060417	. PIN, COTTER	2
9	060300	. PIN, CLEVIS	1
10	052876	. BUMPER	2
11	071377	. SCREW, 10-32 X 3/4	3
12	056200	. CLEVIS	1
13	800275	. HANDLE	1
14	285302 *	. PIN SPRING	1
15	285303 *	. PIN SPRING	1
16	800204	. CLAMP	1
17	402363	. ARM PIVOT	1
18	052925	. . BEARING FLANGED	1
19	052922	. . BEARING FLANGED	1
20	501673	. ROD, BRAKE	1
21	069478	. SCREW, HEX CAP, 1/4-20 X 3/4	1
22	402459	COVER, PIVOT CAP	1
23	061716	SNAP RING	2
24	402452	PIN	1

*** HANDLE RETURN SPRING KIT PART NUMBER 901325**

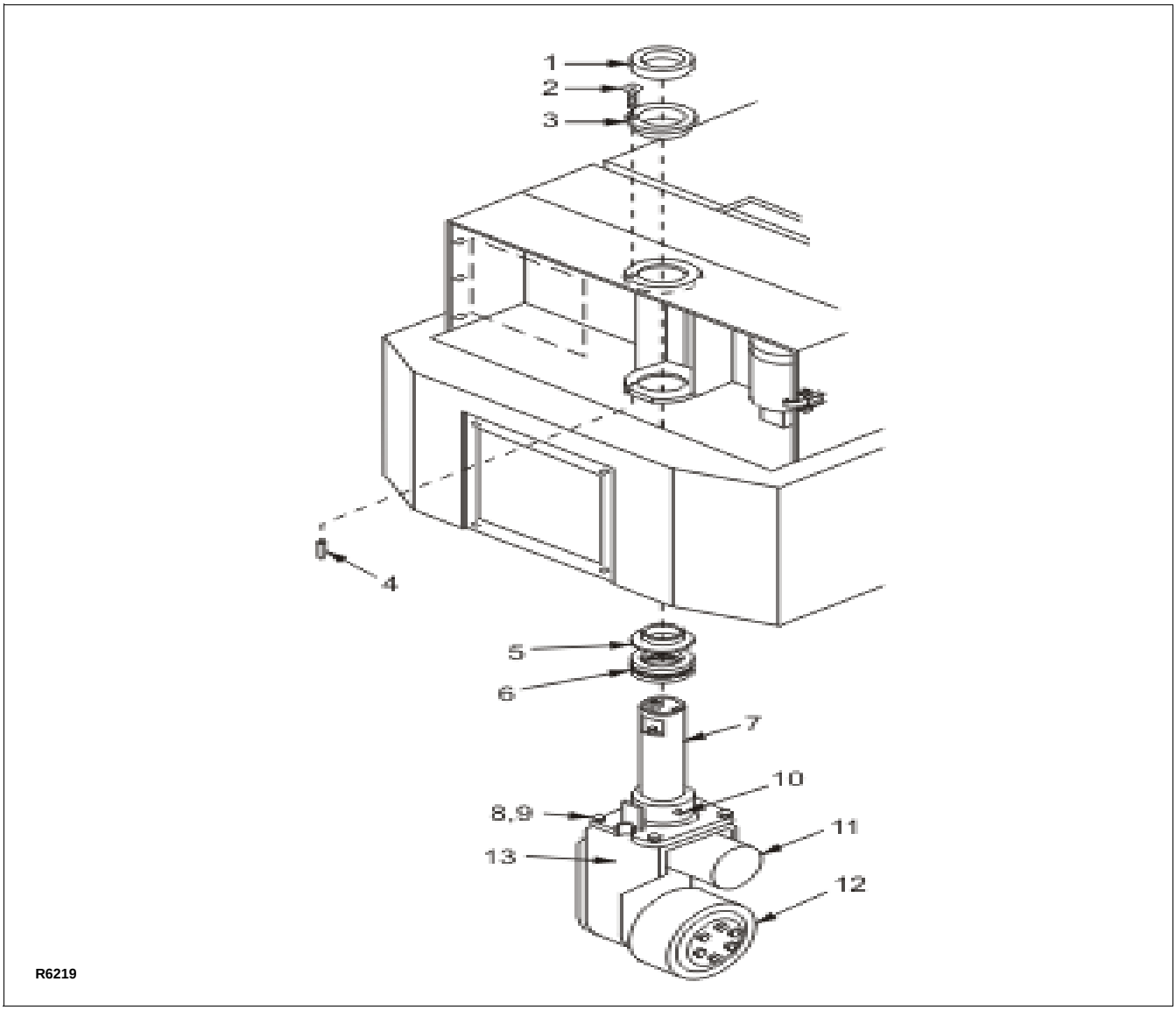

Figure 12-5 Pivot Tube Assembly

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	283901	SPACER	1
2	065538	SCREW, 5/16-18 X 5/8	3
3	053107	BUSHING, UPPER	1
4	061002	ROLL PIN, 1/4 X 3/4	1
5	053108	BUSHING, LOWER	1
6	051146	BEARING, THRUST	1
7	505681-01	PIVOT TUBE WELDMENT	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	064709	SCREW, HEX HEAD, 1/2-13 X 1-1/2	4
9	077412	LOCKWASHER EXTERNAL	4
10	025712	FITTING, GREASE	1
11	—	DRIVE MOTOR (FIGURE 12-42)	REF
12	—	DRVIE WHEEL (FIGURE 12-7)	REF
13	—	TRANSMISSION (FIGURE 12-7)	REF

NOTES

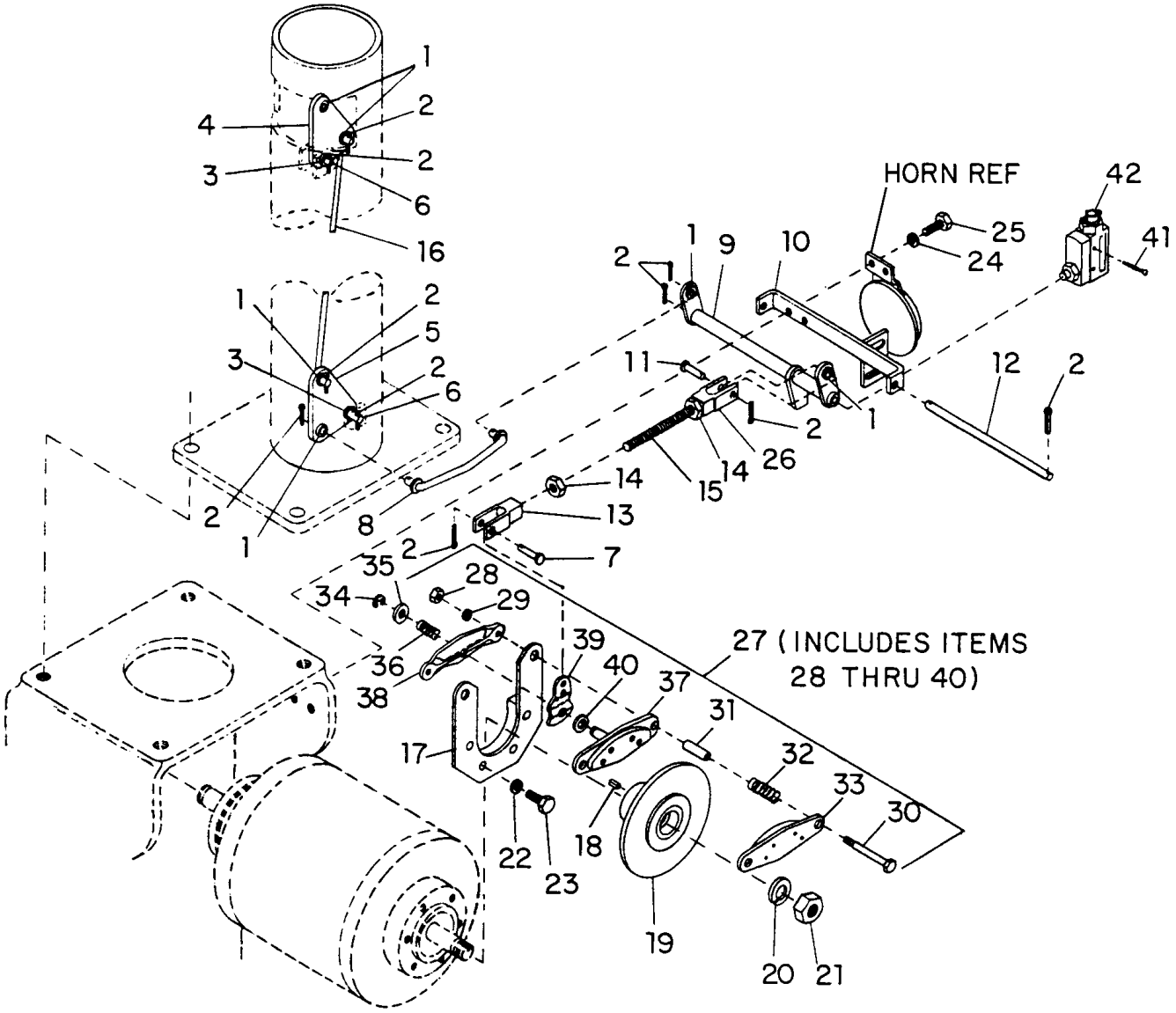

Figure 12-6 Brake and Linkage

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	053109	LOCK BUSHING	6
2	060417	COTTER PIN, 3/32 X 3/4	10
3	053106	FLANGED BUSHING	2
4	111104	UPPER PIVOT PLATE	1
5	111105	LOWER PIVOT PLATE	1
6	060320	CLEVIS PIN	2
7	060218	CLEVIS PIN, 1/4 X 1	1
8	500202	BRAKE ROD	1
9	505206	LEVER ASSEMBLY	1
10	505199	BRACKET	1
11	060310	CLEVIS PIN	1
12	258127	PIN	1
13	800284	CLEVIS	1
14	059427	NUT, 5/16-24	2
15	258126	ROD, THREADED	1
16	500201	TUBE BRAKE ROD	1
17	505208	MOUNTING PLATE	1
18	057903	KEY, 1/4 X 1/4 X 1	1
19	505207	DISC ASSEMBLY	1
20	077215	LOCKWASHER, SPLIT 5/8	6
21	059645	LOCKNUT, 5/8-18	1
22	077210	LOCKWASHER, 5/16	4
23	063567	SCREW, CAP, HEX HEAD, 5/16-18 X 1-1/4	4
24	077211	LOCKWASHER, 3/8	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
25	064605	HEX HEAD CAP SCREW, 3/8-16 X 1, HEAT TREATED	2
26	800119	CLEVIS	1
27	052821	DISC BRAKE CALIPER ASSEMBLY	1
28	059421	. NUT-HEX, 1/4-20	2
29	077209	. LOCKWASHER	2
30	901189	. BOLT	2
31	901190	. SPACER	2
32	901191	. SPRING	2
33	901188	. BRAKE PAD	1
34	901198	. O-RING	1
35	901197	. WASHER	1
36	901196	. SPRING	1
37	901192	. BRAKE PAD WITH PIN	1
38	901195	. BRACKET	1
39	901194	. LEVER	1
40	901193	. WASHER	1
41	068336	ROUND HEAD SCREW, 6-32 X 1-1/2	2
42	—	DEAD-MAN SWITCH (FIGURE 12-48)	REF
—	009600	HORN 12V	1
—	009602	HORN 24V	1

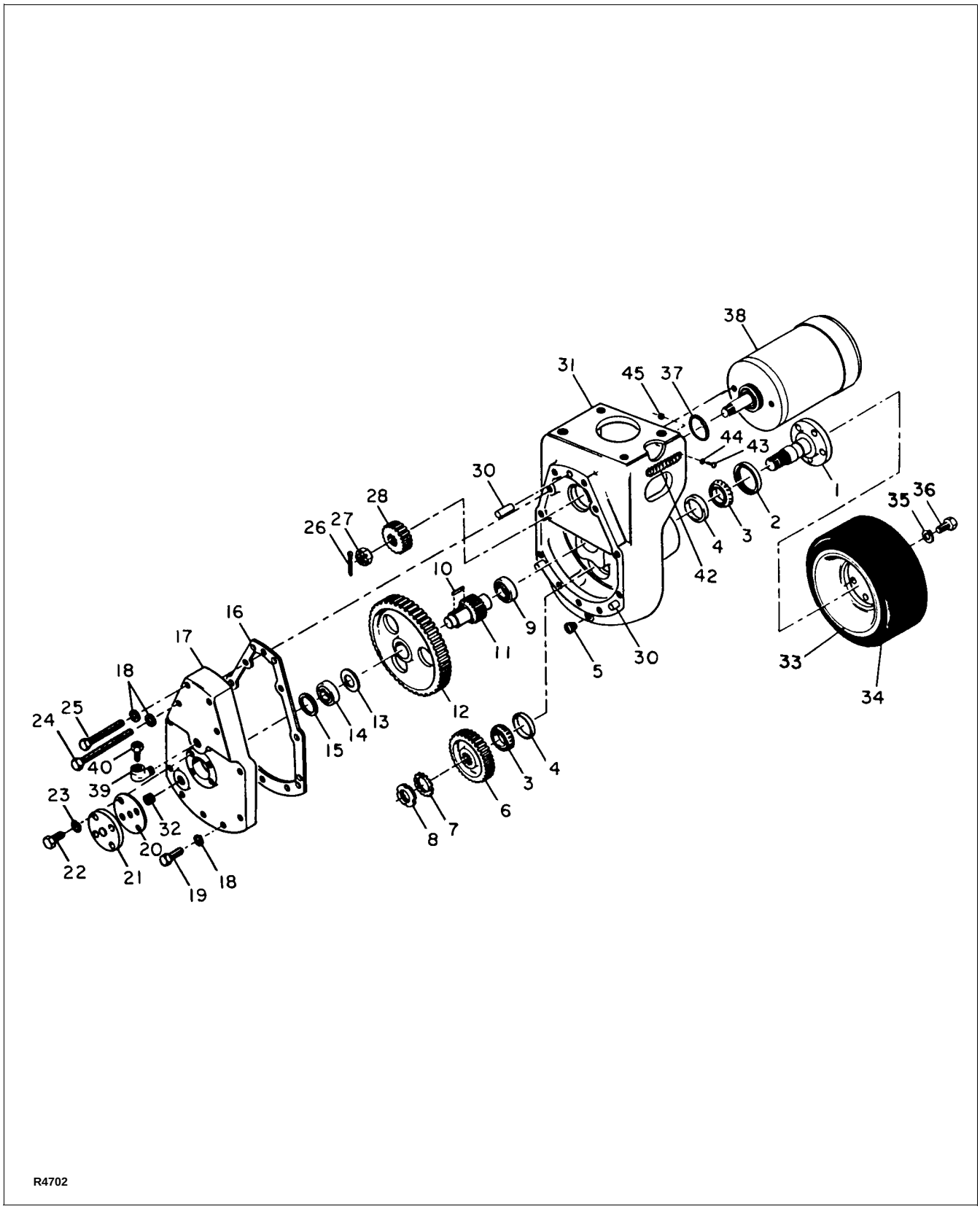

Figure 12-7 Standard Transmission Assembly

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	501720	TRANSMISSION ASSEMBLY	1
1	050700	. AXLE SHAFT	1
2	073504	. OIL SEAL	1
3	051112	. ROLLER BEARING CONE	2
4	051111	. ROLLER BEARING CUP	2
5	026302	. DRAIN PLUG	1
6	057210	. SPUR GEAR	1
7	077600	. LOCK WASHER	1
8	059680	. LOCKNUT	1
9	051126	. BALL BEARING	1
10	057902	. SQUARE KEY, 5/16 X 1-3/8	1
11	057211	. SPUR PINION	1
12	057233	. INTERMEDIATE GEAR	1
13	074701	. PINION SPACER	1
14	051125	. BALL BEARING	1
15	074706	. BEARING SPACER	1
16	036105	. COVER GASKET	1
17	800073	. TRANSMISSION COVER	1
18	077211	. SPLIT LOCK WASHER, 3/8	11
19	064611	. HEX HEAD CAP SCREW, 3/8-16 X 1-3/4	7
20	036106	. BEARING COVER GASKET	1
21	051159	. BEARING COVER	1
22	063555	. HEX HEAD CAP SCREW, 5/16-18 X 1	4
23	077210	. LOCK WASHER, 5/16	4
24	064620	. HEX HEAD CAP SCREW, 3/8-16 X 3-3/4	2
25	064615	. HEX HEAD CAP SCREW, 3/8-16 X 2-1/4	2
26	060428	. COTTER PIN	1
27	059745	. HEX NUT, 5/8-18	1
28	057234	. MOTOR PINION SPUR	1
30	060585	. DOWEL PIN	2
31	800072	. TRANSMISSION HOUSING	1
32	026304	. FILL PLUG	1
—	500935	DRIVE WHEEL ASSEMBLY	1
33	800035	. HUB	1
34	079160	. POLYURETHANE WHEEL, 10-1/2 IN. DIA.	1
35	077215	LOCK WASHER, 5/8	5
36	064828	HEX HEAD CAP SCREW, 5/8-18 X 1	5
37	042114	O-RING	1
38	—	MOTOR DRIVE (FIGURE 12-42)	REF
39	026704	STREET ELBOW, 3/8	1
40	076701	VENT	1
42	021226	TERMINAL BLOCK	1
43	068185	SCREW, 5-40 X 1-3/8	4
44	077203	LOCK WASHER	4
45	059410	HEX NUT	4

YELLOW PAINT PART NUMBER 901201

YELLOW PAINT PART NUMBER 901201 **(TRUCKS FROM 2011)**
BLACK PAINT PART NUMBER 901202

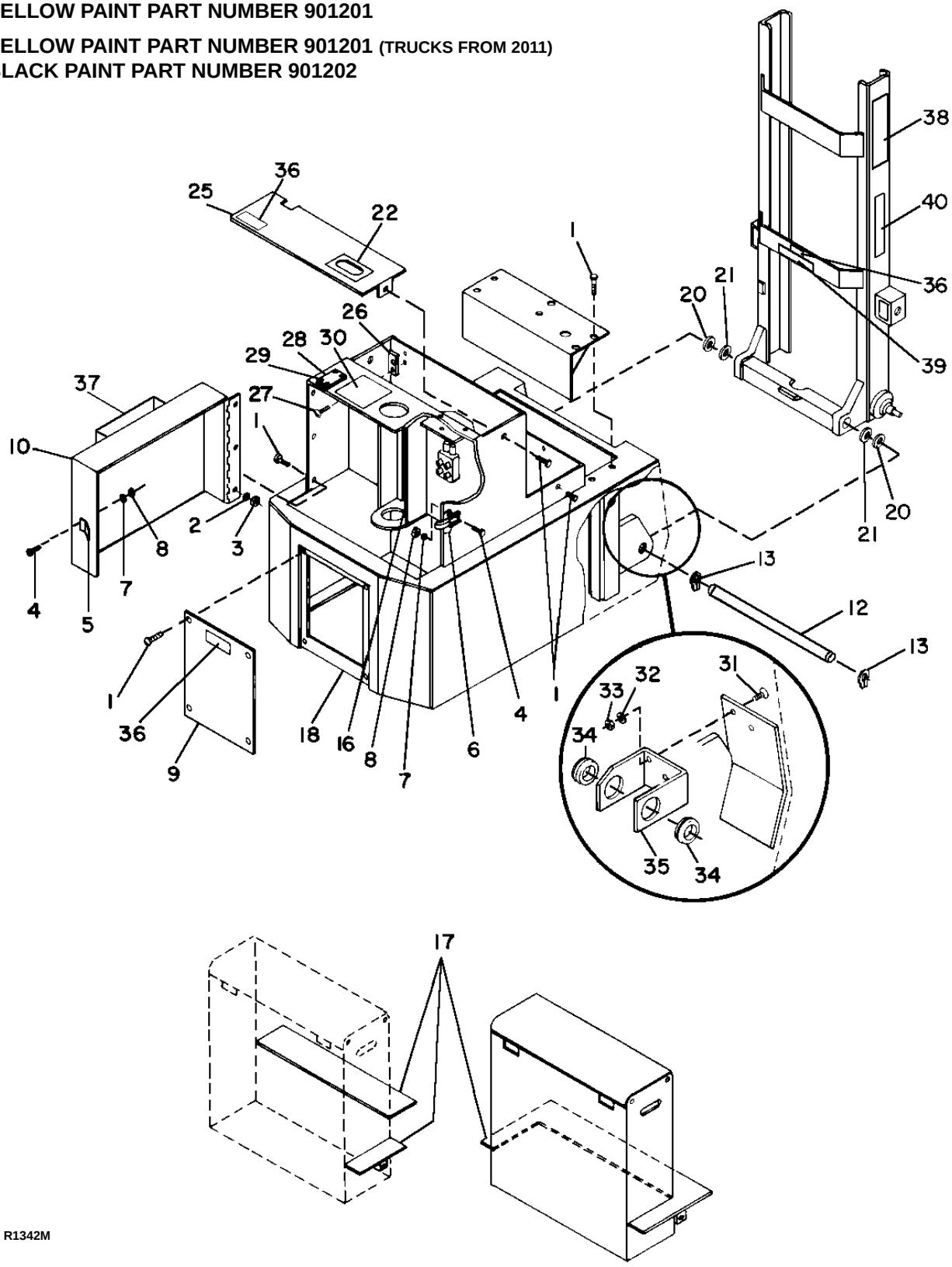

Figure 12-8 Base & Frame

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	065538	SCREW, 5-16-18 X 5/8	16
2	069602	SCREW, FL, 3/8-16 X 5/8	4
3	059628	NUT, LOCK, 5-16-18	3
4	071376	SCREW, TRUSS HEAD, 10-32 X 1/2	4
5	055500	CATCH, FASTENER	1
6	058100	LATCH, DOOR	1
7	077208	WASHER, LOCK, #10	4
8	059416	NUT, HEX, #10-32	4
9	400468	DOOR, ACCESS	1
10	503262	CABINET DOOR,	1
11	—	NOT USED	
12	400309	MAST SUPPORT SHAFT	2
13	061729	RING, SNAP, 1-1/4	2
14	—	NOT USED	
15	—	NOT USED	
16	501827	TRACTION TUBE HOUSING	1
17	VAR	BATTERY SPACER	1
18	VAR	BODY	1
19	—	NOT USED	
20	077029	WASHER, 11 GA	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
21	077074	WASHER, 14 GA	1
22	056479	LIFT DECAL	1
23	—	NOT USED	
24	—	NOT USED	
25	505678	HYDR COMPARTMENT COVER	1
26	005401	BATTERY CONNECTOR	1
27	068480	ROUND HEAD MACHINE SCREW, 1/4-28 X 1	2
28	VAR	NAME PLATE	1
29	066050	ROUND HEAD MACHINE SCREW	4
30	056592	WARNING DECAL	1
31	069712	SCREW, FLAT HD	4
32	077056	WASHER	4
33	059629	LOCKNUT	4
34	057518	GROMMET	2
35	403868	BRACKET, HOSE (RH & LH)	2
36	056564	CAUTION DECAL	2
37	056631	BIG JOE DECAL	1
38	056633	BIG JOE DECAL (MAST)	2
39	056499	NO RIDER DECAL	1
40	056634	TRIMAST DECAL	2

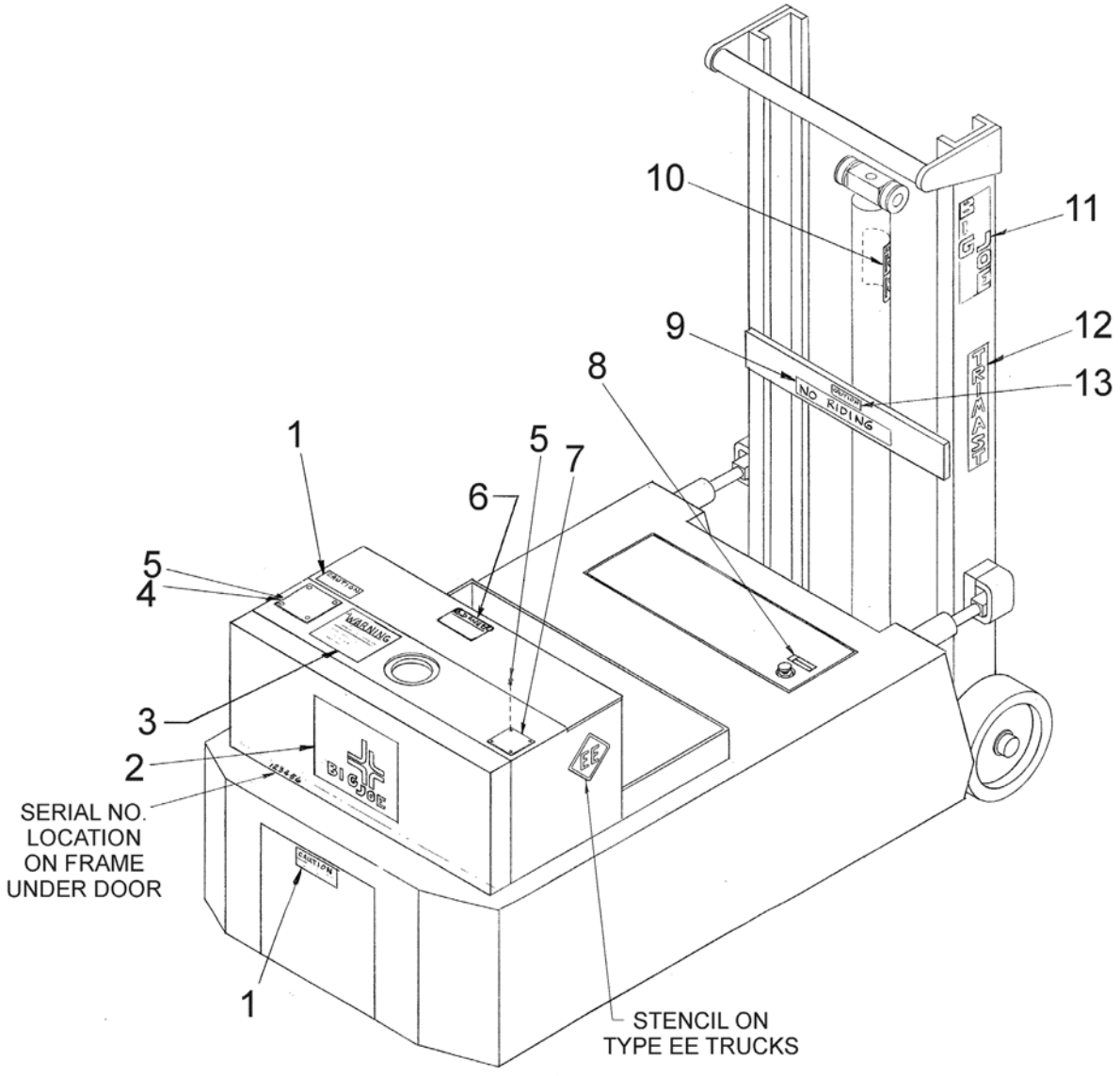

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Figure 12-9 Decal Location

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	056564*	DECAL-CAUTION, ACCESS PANEL	2
2	056631*	DECAL-DOOR	1
3	056592*	WARNING DECAL	1
4	061334	NAMEPLATE (STD)	1
4	061335	NAMEPLATE (W/ATTACHMENT)	1
5	066050	SCREW-DRIVE, RD HD, #2U X 1/4	8
6	056646*	DECAL-CAUTION, BATTERY	1
7	061299	NAMEPLATE (FM)	1
8	056626*	DECAL-OIL LEVEL	1
9	056499*	DECAL-NO RIDING	1
10	056625*	DECAL-WARNING	1
11	056633*	DECAL-MAST, BIG JOE, LARGE	2
12	056634	DECAL-TRIMAST	2
13	056494*	DECAL WARNING, LWR FORKS	1
—	056683	DECAL-AMERICAN BUILT	2
—	056696	DECAL-BIG JOE SUPPORT	2
—	900598*	DECAL KIT	

*** PART OF KIT NUMBER 900598.**

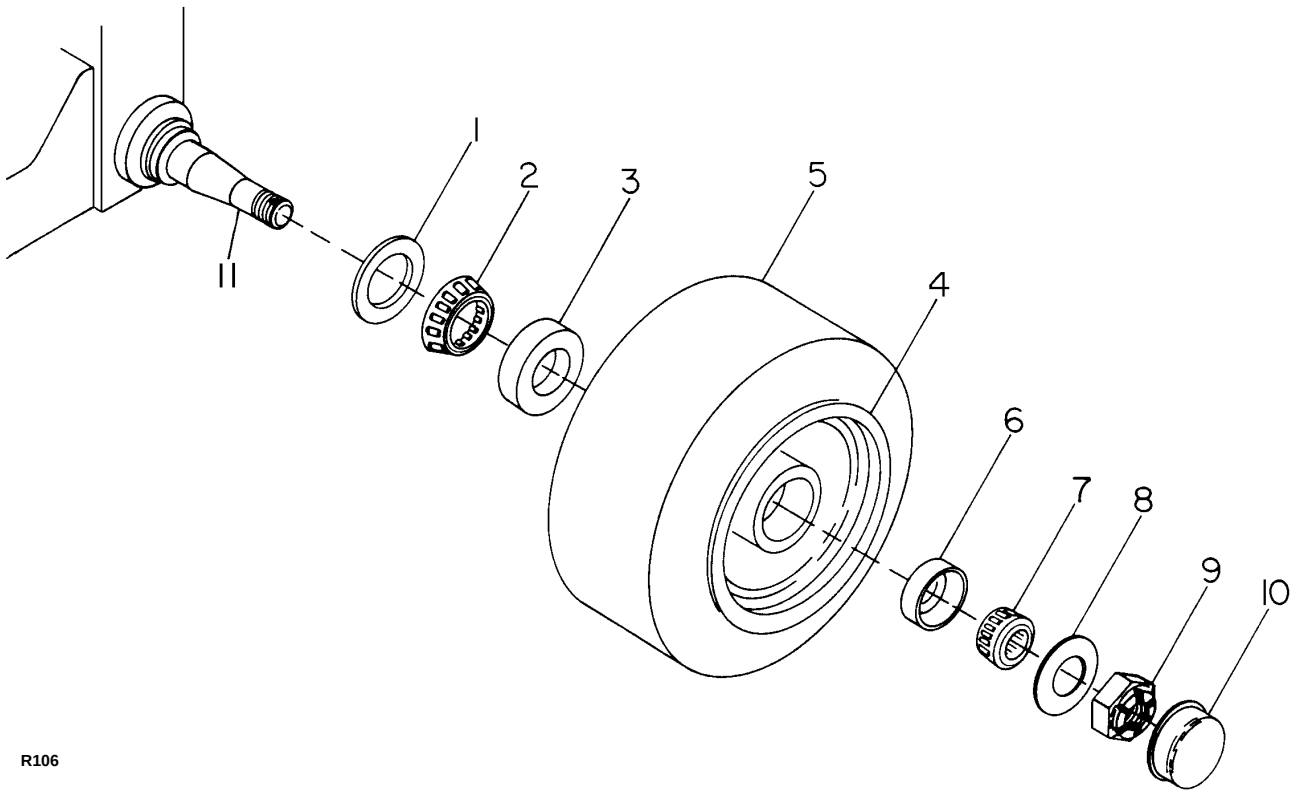


Figure 12-10 Load Wheels

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	073507	GREASE SEAL	2
2	051141	BEARING CONE	2
3	051142	BEARING CUP	2
—	503389	WHEEL ASSY (POLYURETHANE)	2
4	800202	. HUB	1
5	079163	. POLYURETHANE WHEEL, 10-1/2 IN	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
6	051144	BEARING CUP	2
7	051143	BEARING CONE	2
8	077124	WASHER	2
9	059128	LOCKNUT	2
10	053400	DUST CAP	2
11	074810	SPINDLE	2

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
384041 TO 4456482

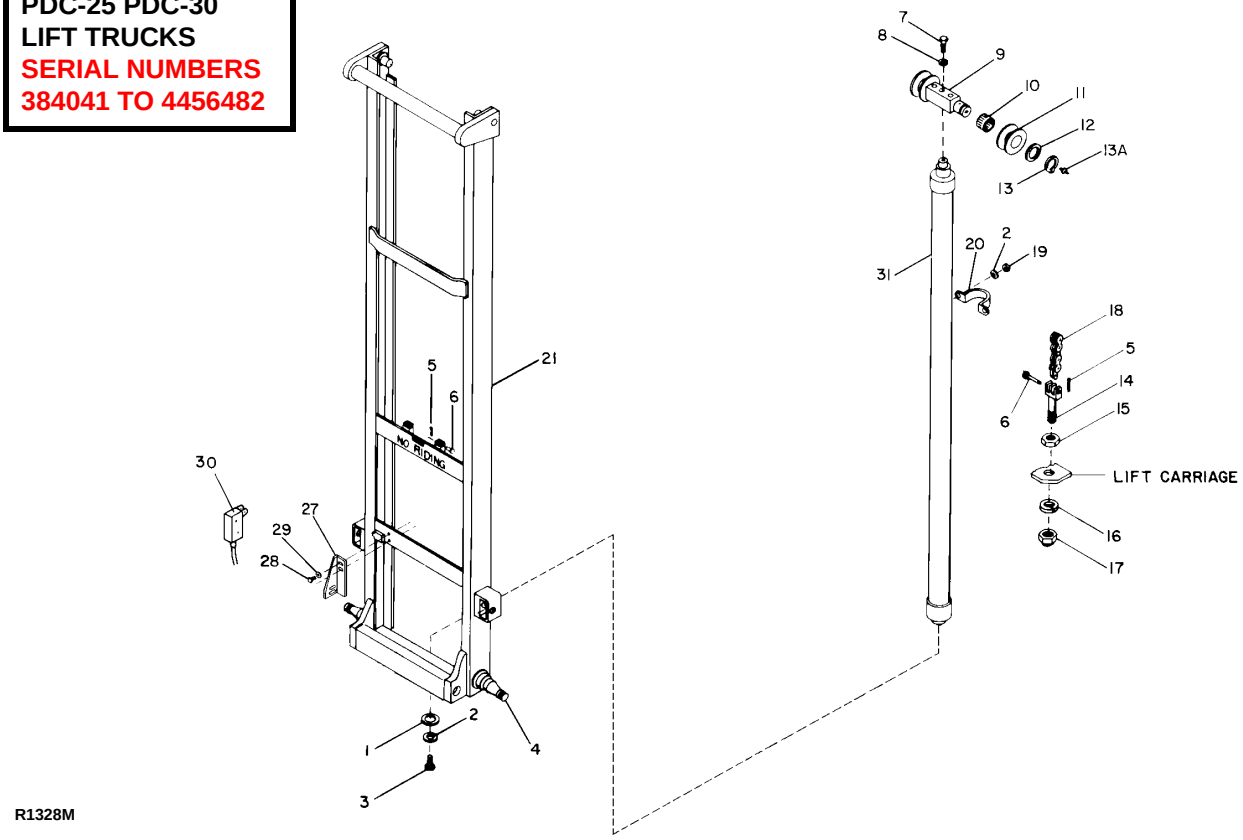


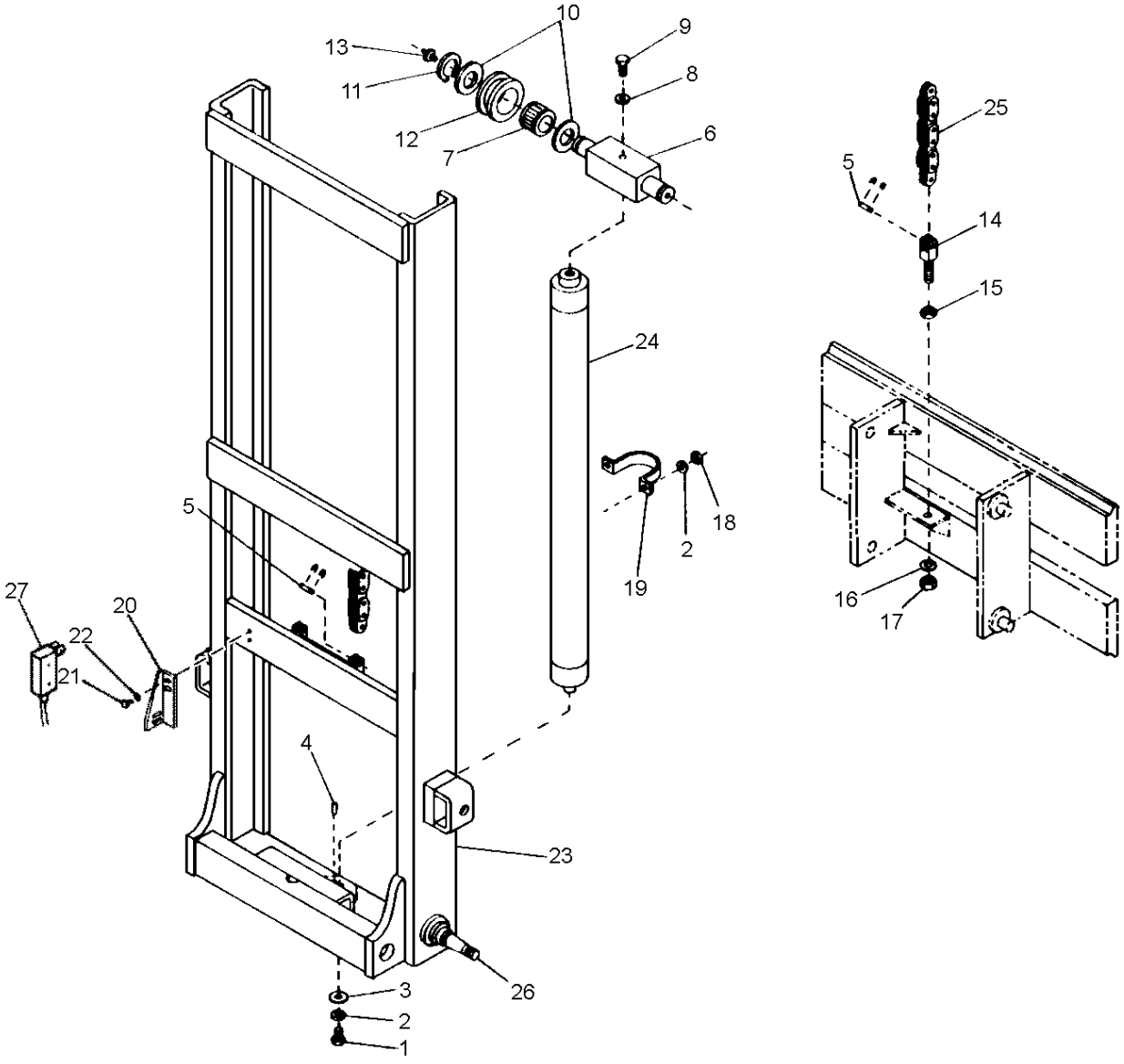
Figure 12-11 Elevation System (Non-Telescopic)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
2	077211	SPLIT LOCK WASHER, 3/8	3
3	064605	HEX HEAD CAP SCREW, HEAT TREATED	1
4	074810	SPINDLE	2
5	060402	COTTER PIN	4
6	402055	CLEVIS PIN	4
7	064711	HEX HEAD CAP SCREW	1
8	077213	SPLIT LOCK WASHER, 1/2	1
—	505807	RAM HEAD ASSEMBLY	1
9	057761	. RAM HEAD	1
10	051120	. BEARING	2
11	074251	. SHEAVE	2
12	077022	. FLAT WASHER	2
13	061728	. RETAINING RING	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
13A	025712	. GREASE ZERK	2
14	402051	ADJUSTING BOLT	2
15	059545	SPLIT LOCK WASHER, 5/8	2
16	077215	SPLIT LOCK WASHER, 5/8	2
17	059445	HEX NUT, 5/8-18	2
18	402034	LIFT CHAIN (LIFT HEIGHT 60 IN., CHAIN LENGTH 3.4 FT)	2
19	059429	HEX NUT, 3/8-16	2
20	101072	CYLINDER CLAMP	1
21	VAR	OUTER MAST	1
27	402322	SWITCH PLATE	1
28	063478	HEX HEAD CAP SCREW, 1/4-20 X 3/4	2
29	077209	LOCK WASHER, 1/4	2
30	020703	HIGH SPEED CUTOFF SWITCH	1
31	—	LIFT CYLINDER (FIGURE 12-33)	REF

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
4454693, 4471137
AND HIGHER

PDC-40 LIFT TRUCKS
SERIAL NUMBERS
384041 AND HIGHER



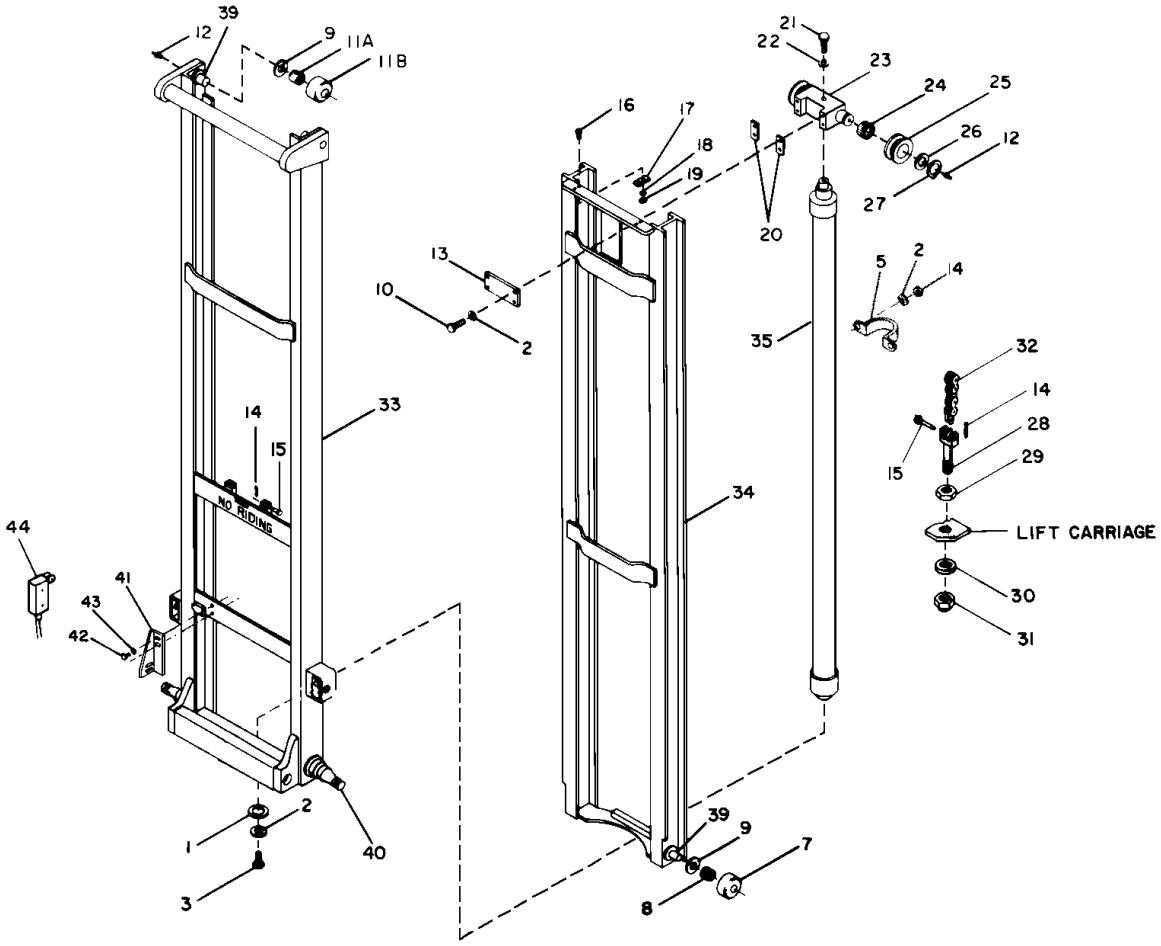
R2030

Figure 12-12 Elevation System (Non-Telescopic)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	064605	HEX HEAD CAP SCREW, HEAT TREATED	1
2	077211	SPILT LOCK WASHER, 3/8	3
3	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
4	061023	ROLL PIN, 5/16 X 3/4	1
5	060314	CLEVIS PIN, RETAINING RING	4
—	—	RAM HEAD ASSEMBLY	1
6	313101	. RAM HEAD	1
7	051120	. BEARING	2
8	077213	. LOCK WASHER, 1/2	1
9	064711	. SCREW,HEX HEAD CAP 1/2-13 X 1-3/4	1
10	053013	. FLAT WASHER	4
11	061729	. EXTERNAL RETAINING RING	2
12	289202	. SHEAVE	2
13	025712	. GREASE FITTING	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
14	312203	ADJUSTING BOLT	2
15	059547	JAM NUT, 3/4-16	2
16	077217	LOCK WASHER, 3/4	2
17	059447	HEX NUT, 3/4-16	2
18	059429	HEX NUT, 3/8-16	2
19	402043-01	. CYLINDER CLAMP	1
20	402322	. SWITCH BRACKEY	1
21	063478	HEX HEAD CAP SCREW, 1/4-20 X 3/4	2
22	077209	LOCK WASHER, 1/4	2
23	503921-01	OUTER MAST	1
24	—	LIFT CYLINDER (FIGURE 12-33)	REF
25	313200	CHAIN (LIFT HEIGHT 60 IN., CHAIN LENGTH 7.45 FT)	2
26	074810	SPINDLE	2
27	020703	HIGH SPEED CUTOFF SWITCH	1

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
384041 TO 4456482



R1329

Figure 12-13 Elevation System (Telescopic)

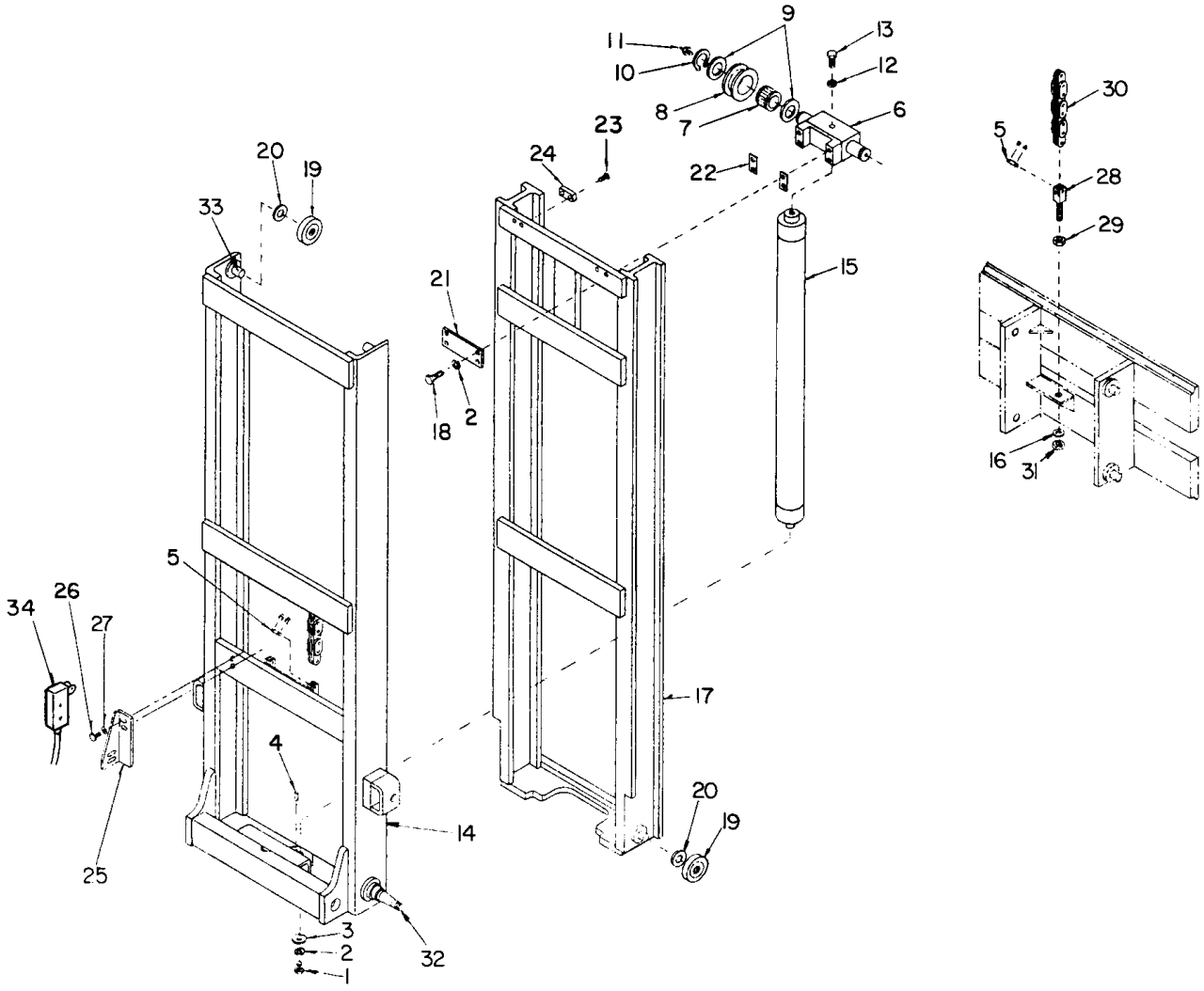
INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
2	077211	SPLIT LOCK WASHER, 3/8	7
3	064605	HEX HEAD CAP SCREW, HEAT TREATED	1
4	059429	HEX NUT, 3/8-16	2
5	101072	CYLINDER CLAMP	1
6	—	NOT USED	
—	506654	ROLLER ASSEMBLY	2
7	405129	. ROLLER	1
8	051145	. BEARING	2
9	053012	THRUST WASHER, 3/32 THK.	A/R
9	053013	THRUST WASHER, 1/8 THK.	A/R
9	053014	THRUST WASHER, 5/32 THK.	A/R
9	053015	THRUST WASHER, 3/16 THK.	A/R
10	064607	HEX HEAD CAP SCREW, 3/8-16 X 1-1/4	4
—	500167	ROLLER ASSEMBLY	2
11A	051145	. BEARING	2
11B	401046	. ROLLER	1
12	025712	GREASE FITTING	4
13	239520	CLAMP BAR	1
14	060402	COTTER OIN, 1/16 X 3/8	4
15	402055	CLEVIS PIN, 0.200 DIA. X 1	4
16	069483	FLAT HEAD SCREW	4
17	191089	STOP BLOCK	2
18	077209	LOCK WASHER, 1/4	4
19	059421	HEX NUT, 1/4-20	4
20	100016	SPACER	2
21	064711	SCREW, HEX HEAD, 1/2-13 X 1-3/4	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
22	077213	LOCK WASHER, 1/2	1
—	505806	RAM HEAD ASSY	1
23	505805	. RAM HEAD	1
24	051120	. BEARING	2
25	074251	. SHEAVE	2
26	077022	. FLAT WASHER	2
27	061728	. RETAINING RING	2
28	402051	ADJUSTING BOLT	2
29	059545	JAM NUT, 5/8-18	2
30	077215	LOCKWASHER, 5/8	2
31	059445	HEX NUT, 5/8-18	2
32	402034	LIFT CHAIN LIFT HEIGHT 106 IN., CHAIN LENGTH 6.21 FT LIFT HEIGHT 130 IN., CHAIN LENGTH 8.38 FT LIFT HEIGHT 154 IN., CHAIN LENGTH 10.42 FT LIFT HEIGHT 168 IN., CHAIN LENGTH 11.52 FT	7
33	VAR	OUTER MAST	1
34	VAR	INNER MAST	1
35	—	LIFT CYLINDER (FIGURE 12-33)	REF
39	236001	SPINDLE	6
40	074810	SPINDLE	2
41	402322	SWITCH PLATE	1
42	063478	HEX HEAD CAP SCREW, 1/4-20 X 3/4	2
43	077209	LOCK WASHER, 1/4	2
44	020703	HIGH SPEED CUTOFF SWITCH	1

A/R - AS REQUIRED

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
4454693, 4471137
AND HIGHER

PDC-40 LIFT TRUCKS
SERIAL NUMBERS
384041 AND HIGHER



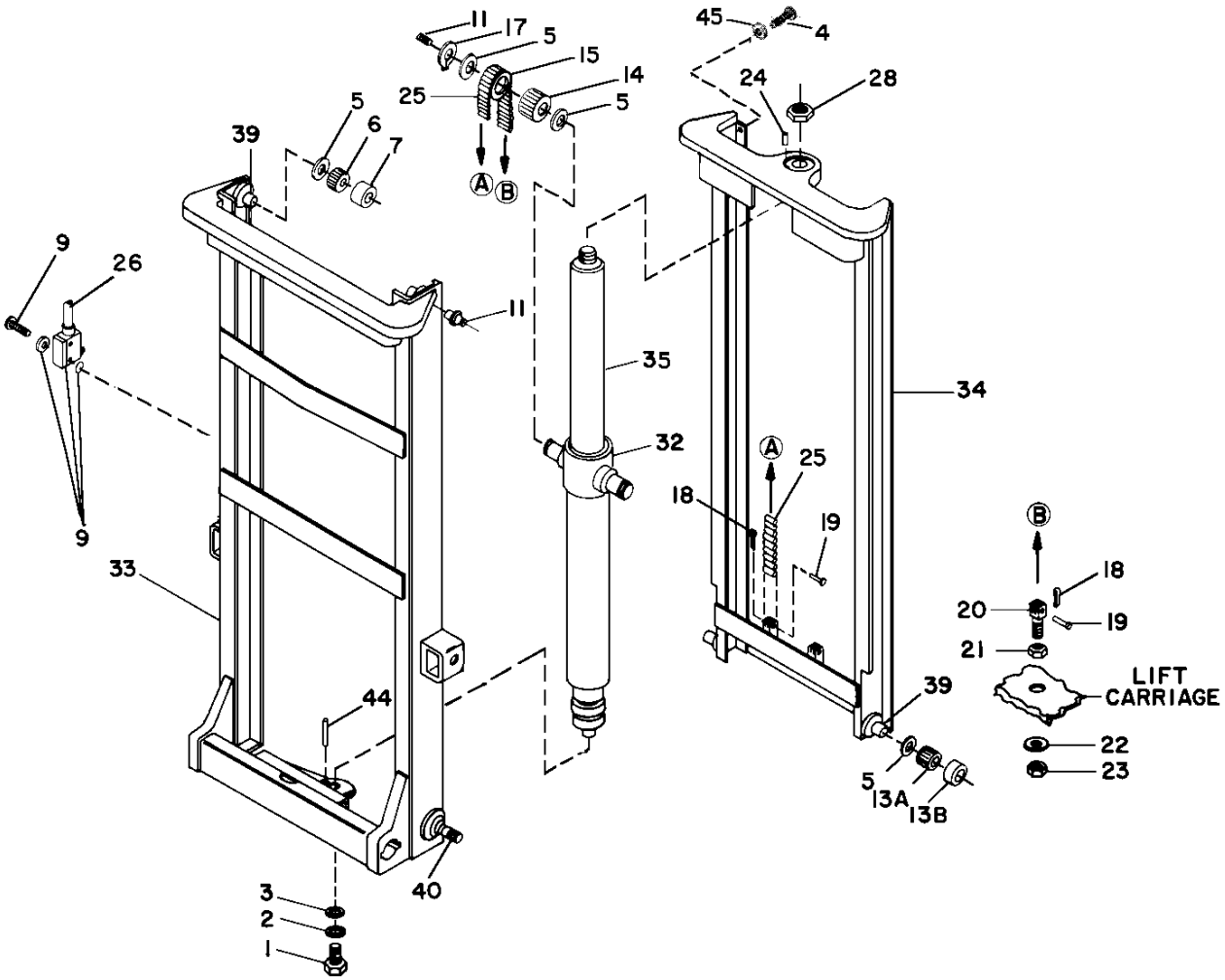
R2031

Figure 12-14 Elevation System (Telescopic)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	064605	HEX HEAD CAP SCREW, 3/8 X 1, HEAT TREATED	1
2	077211	SPILT LOCK WASHER, 3/8	5
3	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
4	061023	ROLL PIN, 5/16 X 3/4	1
5	060314	CLEVIS PIN, RETAINING RING	4
—	—	RAM HEAD ASSEMBLY	1
6	501437	. RAM HEAD	1
7	051210	. BEARING	2
8	289202	. SHEAVE	2
9	053013	. FLAT WASHER	4
10	061729	. EXTERNAL RETAINING RING	2
11	025712	. GREASE FITTING	2
12	077213	. LOCK WASHER, 1/2	1
13	064711	. SCREW,HEX HEAD CAP 1/2-13 X 1-3/4	1
14	VAR	OUTER MAST	1
15	—	LIFT CYLINDER (FIGURE 12-33)	REF
16	077217	LOCK WASHER, 3/4	2
17	VAR	INNER MAST	1
18	064609	HEX HEAD CAP SCREW, 3/8 X 1-1/2, HEAT TREATED	4
19	062320	BEARING	8
20	077077	THRUST WASHER, 0.09 THK.	A/R
20	077078	THRUST WASHER, 0.12 THK.	A/R
20	077079	THRUST WASHER, 0.15 THK.	A/R
20	077080	THRUST WASHER, 0.18 THK.	A/R
21	239520	BAR CLAMP	1
22	100016	SPACER	2
23	069607	FLAT HEAD MACHINE SCREW, 3/8-16 X 1-1/2	4
24	191162	STOP BLOCK	2
24A	402812	STOP BLOCK SHIM PLATE	A/R
25	402322	SWITCH BRACKET	1
26	063478	HEX HEAD CAP SCREW, 1/4-20 X 3/4	2
27	077209	LOCK WASHER, 1/4	2
28	312203	ADJUSTING BOLT	2
29	059547	JAM NUT, 3/4-16	2
30	313200	LIFT CHAIN LIFT HEIGHT 106 IN CHAIN LENGTH 7.42 FT. LIFT HEIGHT 130 IN., CHAIN LENGTH 9.42 FT LIFT HEIGHT 154 IN., CHAIN LENGTH 11.42 FT LIFT HEIGHT 168 IN., CHAIN LENGTH 12.58 FT	7
31	059447	HEX NUT, 3/4-16	2
32	074810	SPINDLE	2
33	303601	SPINDLE	6
34	020703	HIGH SPEED CUTOFF SWITCH	1

A/R - AS REQUIRED

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
384041 TO 4456482



R1343M

Figure 12-15 Elevation System (Full Free Lift)

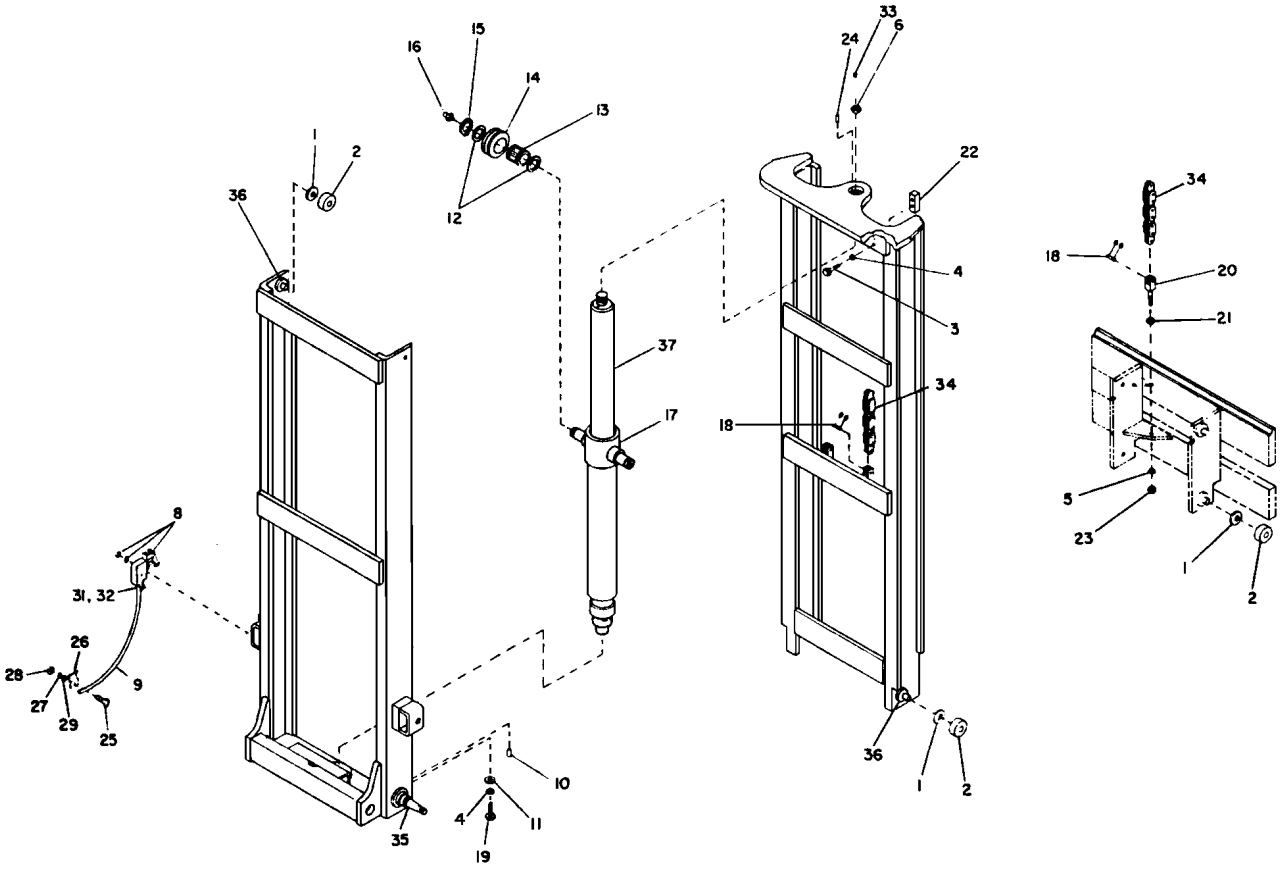
INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	064605	HEX HEAD CAP SCREW, 3/8-16 X 1	1
2	077211	LOCK WASHER, 3/8	1
3	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
4	069712	FLAT HEAD CAP SCREW, 3/8-16 X 3/4	2
5	053012	THRUST WASHER, 1-1/4 X 3/32 THK	A/R
5	053013	THRUST WASHER, 1-1/4 X 1/8 THK	A/R
5	053014	THRUST WASHER, 1-1/4 X 5/32 THK	A/R
—	500167	ROLLER ASSEMBLY	2
6	051145	. BEARING, ROLLER	2
7	401046	. ROLLER	2
8	400629	MOUNTING BLOCK	1
9	020703	HIGH SPEED CUTOFF SWITCH	1
11	025712	GREASE FITTING	4
—	506654	ROLLER ASSEMBLY	2
13A	051145	. BEARING, ROLLER	2
13B	405129	. ROLLER	2
14	051210	ROLLER BEARING	2
15	074269	SHEAVE	2
16	—	NOT USED	
17	061729	EXTERNAL RETAINING RING	2
18	060402	COTTER PIN, 1/16 X 3/8	4

INDEX NO.	PART NO.	PART NAME	NO. REQD.
19	402055	CLEVIS PIN, 0.200 DIA. X 1	4
20	402051	CHAIN BOLT	2
21	059545	JAM NUT, 5/8-16	2
22	077215	LOCK WASHER, 5/8	2
23	059445	HEX NUT, 5/8-18	2
24	061020	ROLL PIN,	1
25	402034	LIFT CHAIN LIFT HEIGHT 106 IN CHAIN LENGTH 5.38 FT LIFT HEIGHT 130 IN., CHAIN LENGTH 6.88 FT	7
26	—	CABLE	A/R
27	—	NOT USED	
28	059129	LOCKNUT	1
29	—	NOT USED	
30	—	NOT USED	
31	—	NOT USED	
32	503712	SHEAVE COLLAR	1
33	VAR	OUTER MAST	1
34	VAR	INNER MAST	1
35	504488	LIFT CYLINDER (106 LIFT)	1
35	504489	LIFT CYLINDER (130 LIFT)	1
—	907211	LIFT CYLINDER PACKING KIT	1
39	236001	SPINDLE	4
40	074810	LOAD WHEEL AXLE	REF
44	061023	ROLL PIN, 5/16 X 3/4	1
45	403475	WASHER, STOP	2

A/R - AS REQUIRED

PDC-20A, PDC-20,
PDC-25 PDC-30
LIFT TRUCKS
SERIAL NUMBERS
4471137 AND HIGHER

PDC-40 LIFT TRUCKS
SERIAL NUMBERS
384041 AND HIGHER



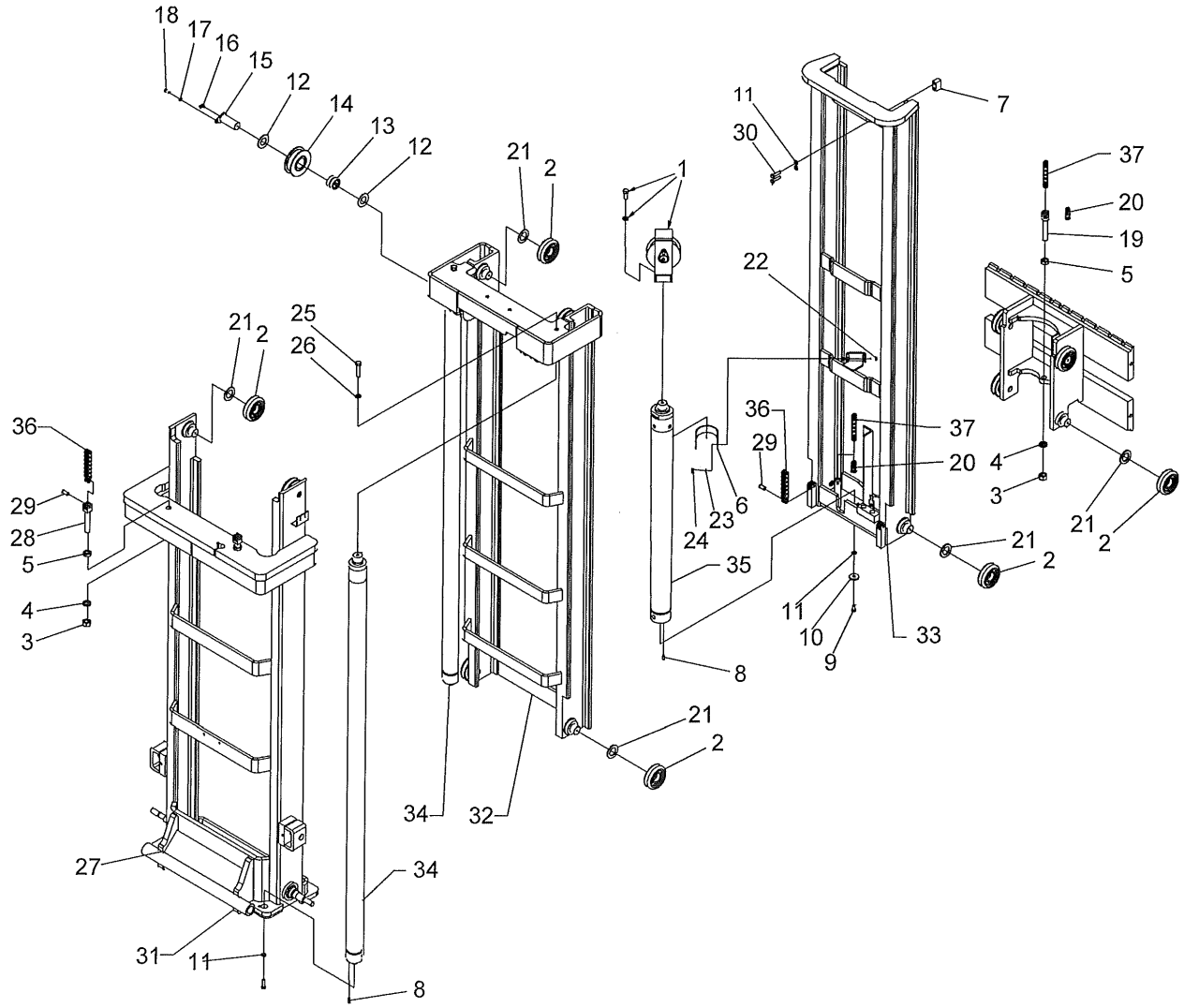
R1609

Figure 12-16 Elevation System (Full Free Lift)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	077077	WASHER, 0.09 THK	A/R
1	077078	WASHER, 1.12 THK	A/R
1	077079	WASHER, 0.15 THK	A/R
1	077080	WASHER, 0.18 THK	A/R
2	062320	ROLLER	8
3	064607	HEX HEAD CAP SCREW, 3/8-16 X 1-1/4	4
4	077211	LOCK WASHER, 3/8	5
5	077217	LOCK WASHER, 3/4	2
6	059129	LOCK NUT	1
8	020703	HIGH SPEED CUTOFF SWITCH	1
9	004724	CABLE	REF
10	061023	ROLL PIN, 5/16 X 3/4	1
11	077076	FLAT WASHER, 1-1/2 X 13/32 X 7	1
12	053012	THRUST WASHER, 0.09 THK	A/R
12	053013	THRUST WASHER, 0.12 THK	A/R
13	051210	ROLLER BEARING	2
14	289202	SHEAVE	2
15	061729	EXTERNAL SNAP RING	2
16	025712	GREASE FITTING	2
17	503712	COLLAR, SHEAVE	1
18	060314	CHAIN CLEVIS PIN	4
19	064609	HEX HEAD CAP SCREW, 3/8-16 X 1-1/2, HEAT TREATED	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
20	312203	ADJUSTING BOLT	2
21	059547	NUT, JAM 3/4-16	2
22	401895	CARRIAGE STOP	2
23	059447	HEX NUT, 3/4-16	2
24	0610200	ROLL PIN	1
25	063480	HEX HEAD CAP SCREW, 1/4-20 X 1	1
26	800257	CABLE CLAMP	1
27	077209	LOCK WASHER, 1/4	1
28	059421	HEX NUT, 1/4-20	1
29	077011	WASHER	2
31	005405	STRAIN RELIEF	1
32	021236	TERMINAL-RING #6	2
33	026312	PIPE PLUG	1
34	313200	LIFT CHAIN LIFT HEIGHT 106 IN CHAIN LENGTH 7.00 FT LIFT HEIGHT 130 IN., CHAIN LENGTH 9.00 FT	2
35	074810	LOAD WHEEL AXLE	REF
36	303601	SPINDLE	2
37	504488	LIFT CYLINDER (106 LIFT)	1
37	504489	LIFT CYLINDER (130 LIFT)	1
—	907211	LIFT CYLINDER PACKING KIT	1

A/R - AS REQUIRED



R6924

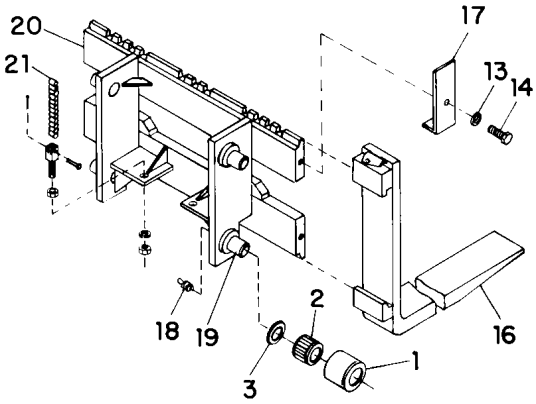
Figure 12-17 Elevation System (Clear View TRIMAST)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	506610	RAM HEAM ASSY	1
2	062320	ROLLER	12
3	059447	NUT, HEX, 3/4-16	3
4	077217	WASHER, LOCK, SPLIT, 3/4	3
5	059547	NUT, HEX, JAM3/4-16	3
6	404821	STRAP, CYLINDER CLAMP	1
7	404829	BLOCK, CARRIAGE STOP	2
8	061023	PIN, ROLL, 5/16 X 3/4	3
9	063603	SCREW, HEX, 3/8-16 X 3/4	1
10	077076	WASHER, 13/32 X 1-1/2 X 7 GA	1
11	077211	WASHER, LOCK, SPLIT, 3/8	7
12	053012	WASHER, THRUST	AR
12	053013	WASHER, THRUST	AR
13	051210	BEARING, ROLLER, SHEAVE	2
14	289202	SHEAVE, HEAVY DUTY	2
15	506630	SHAFT, CHAIN SHEAVE	2
16	025702	GREASE FITTING	2
17	077209	WASHER, LOCK, SPLIT, 1/4	2
18	063477	SCREW, HEX, 1/4-20 X 5/8	2
19	404819	CHAIN LUG, ADJUSTING	1
20	056215	CLEVIS, CONNECTOR	2
21	077077	WASHER	AR
21	077078	WASHER	AR
21	077079	WASHER	AR
21	077080	WASHER	AR
22	063553	SCREW, HEX, 5/16-18 X 3/4	2
23	077210	WASHER, LOCK, SPLIT, 5/16	2
24	059426	NUT, HEX, 5/18-18	2
25	063712	SCREW, HEX, 1/2-13 X 2-1/4	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
26	077213	WASHER, LOCK, SPLIT, 1/2	2
27	064507	SCREW, HEX, 3/8-16 X 1.25	2
28	312203	CHAIN LUG, ADJUSTING	2
29	060314	PIN, W/RETAINING RINGS	4
30	064609	SCREW, HEX, 3/8-16 x 1-1/2	4
31	506627-01	OUTER MAST (158” LIFT)	1
31	506627-02	OUTER MAST (194” LIFT)	1
31	506627-03	OUTER MAST (212” LIFT)	1
32	506106-01	CENTER MAST (158” LIFT)	1
32	506106-02	CENTER MAST (194” LIFT)	1
32	506106-03	CENTER MAST (212” LIFT)	1
33	504407-01	INNER MAST (158” LIFT)	1
33	504407-02	INNER MAST (194” LIFT)	1
33	504407-03	INNER MAST (212” LIFT)	1
34	—	SECONDARY LIFT CYLINDER (FIGURE 12-35)	REF
35	—	FULL FREE LIFT LIFT CYLINDER (FIGURE 12-36)	REF
36	363200-01	SECONDARY LIFT CHAIN (158” LIFT) (11.6 FT LONG)	2
36	363200-02	SECONDARY LIFT CHAIN (194” LIFT) (11.6 FT LONG)	2
36	363200-03	SECONDARY LIFT CHAIN (212” LIFT) (14.6 FT LONG)	2
37	313215-01	FULL FREE LIFT CHAIN (158” LIFT) (6.3 FT LONG)	2
37	313215-02	FULL FREE LIFT CHAIN (194” LIFT) (6.8 FT LONG)	2
37	313215-03	FULL FREE LIFT CHAIN (212” LIFT) (7 FT LONG)	2

TELESCOPIC AND NON-TELESCOPIC

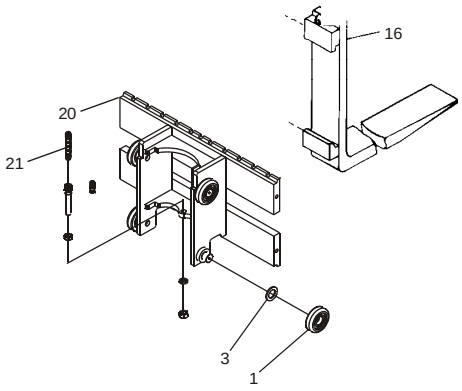
PDC-20A, PDC-20, PDC-25 PDC-30 LIFT TRUCKS SERIAL NUMBERS 384041 to 4459343



R5067

CLEAR VIEW TRIMAST

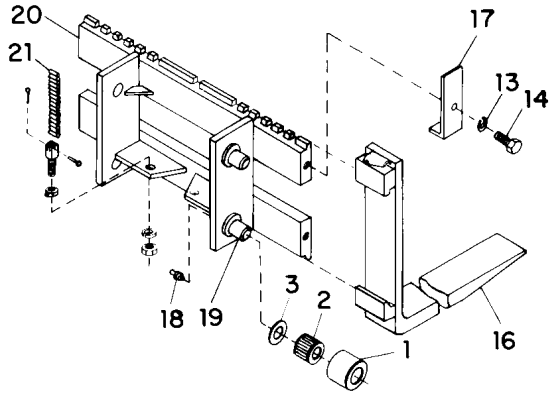
PDC-20A, PDC-20, PDC-25 PDC-30 LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER



R7044

FULL FREE LIFT

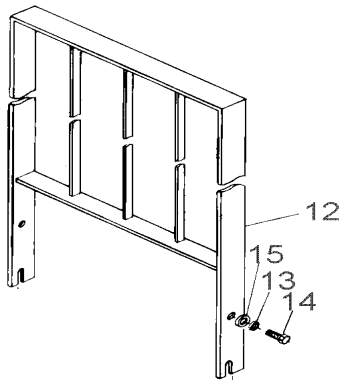
PDC-20A, PDC-20, PDC-25 PDC-30 LIFT TRUCKS SERIAL NUMBERS 384041 to 4459343



R5068

ALL

LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER



R7045

Figure 12-18 Lift Carriages

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	500167	ROLLER ASSEMBLY (TEL, FFL)	4
1	401046	. ROLLER	4
2	051145	. BEARING, ROLLER	4
—	506654	ROLLER ASSEMBLY (NON-TEL)	4
1	405129	. ROLLER	4
2	051145	. BEARING, ROLLER	4
—	—	ROLLER ASSEMBLY (CLEAR VIEW TRIMAST)	4
1	062320	. ROLLER	4
3	053012	THRUST WASHER, 3/32 THK.	A/R
3	053013	THRUST WASHER, 1/8 THK.	A/R
3	053014	THRUST WASHER, 5/32 THK.	A/R
3	053015	THRUST WASHER, 3/16 THK.	A/R
4	—	NOT USED	
5	—	NOT USED	
6	—	NOT USED	
7	—	NOT USED	
8	—	NOT USED	
9	—	NOT USED	
10	—	NOT USED	
11	—	NOT USED	
12	503695	LOAD BACKREST, 24 IN WIDE	1
12	503696	LOAD BACKREST, 32 IN WIDE	1
12	503697	LOAD BACKREST, 35 IN WIDE	1
12	505990	LOAD BACKREST, 36 IN WIDE	1

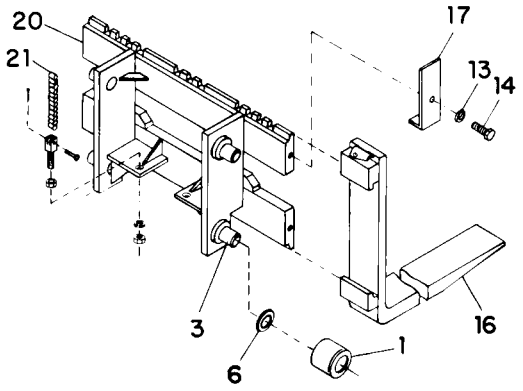
INDEX NO.	PART NO.	PART NAME	NO. REQD.
13	077215	LOCK WASHER, 5/8	4
14	063820	HEX HEAD CAP SCREW	4
15	077066	ROUND WASHER	2
16	057115	HOOK-TYPE FORK, 30 X 1-1/2	2
16	057172	HOOK-TYPE FORK, 36 X 1-1/2	2
16	057173	HOOK-TYPE FORK, 42 X 1-1/2	2
16	057174	HOOK-TYPE FORK, 48 X 1-1/2	2
17	401527	BAR, FORK RETAINER (TRUCKS WITHOUT BACKREST	2
18	025712	GREASE FITTING	4
19	500126	SPINDLE	4
20	504304-01	LIFT CARRIAGE, 32 IN. WIDE (NON-TEL)	1
20	504722-01	LIFT CARRIAGE, 32 IN. WIDE (TELESCOPIC)	1
20	506507-01	LIFT CARRIAGE, 32 IN. WIDE (TRIMAST)	1
20	504307-01	LIFT CARRIAGE, 32 IN. WIDE (FULL FREE LIFT)	1
21	402034	LIFT CHAIN (NON-TEL, TEL, FFL)	A/R
21	313215	LIFT CHAIN (TRIMAST)	A/R

A/R - AS REQUIRED

TELESCOPIC AND NON-TELESCOPIC

PDC-40 LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER

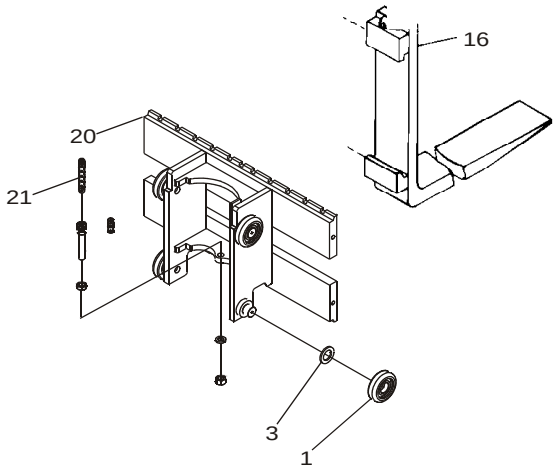
PDC-15, PDC-20, PDC-25, PDC-30, LIFT TRUCKS SERIAL NUMBERS 4454693, 4471137 AND HIGHER



R5070

CLEAR VIEW TRIMAST

PDC-15, PDC-20, PDC-25, PDC-30, PDC-40 LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER

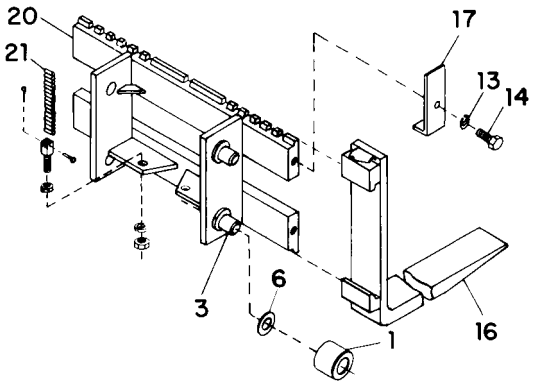


R7044

FULL FREE LIFT

PDC-40 LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER

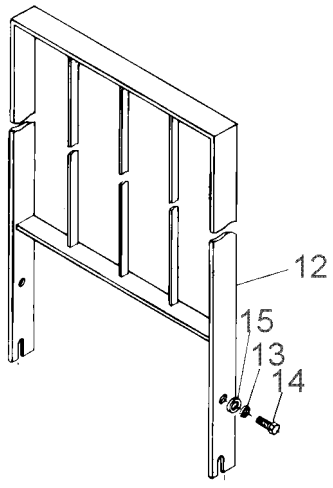
PDC-15, PDC-20, PDC-25, PDC-30, LIFT TRUCKS SERIAL NUMBERS 4454693, 4471137 AND HIGER



R5071

ALL

LIFT TRUCKS SERIAL NUMBERS 384041 AND HIGHER



R7045

Figure 12-19 Lift Carriages

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	062320	CARRIAGE MAST ROLLER)	4
2	—	NOT USED	
3	303601	SPINDLE	4
6	077077	THRUST WASHER, 0.09 THK.	A/R
6	077078	THRUST WASHER, 0.12THK.	A/R
6	077079	THRUST WASHER, 0.15 THK.	A/R
6	077080	THRUST WASHER, 0.18THK.	A/R
12	503695	LOAD BACKREST, 24 IN WIDE	1
12	503696	LOAD BACKREST, 32 IN WIDE	1
12	503697	LOAD BACKREST, 35 IN WIDE	1
12	505990	LOAD BACKREST, 36 IN WIDE	1
13	077215	LOCK WASHER, 5/8	4
14	063820	HEX HEAD CAP SCREW	4
15	077066	ROUND WASHER	2
16	057115	HOOK-TYPE FORK, 30 X 1-3/4 (PDC-15, 20, 25, 30)	2
16	057172	HOOK-TYPE FORK, 36 X 1-3/4 (PDC-15, 20, 25, 30)	2
16	057173	HOOK-TYPE FORK, 42 X 1-3/4 (PDC-15, 20, 25, 30)	2
16	057174	HOOK-TYPE FORK, 48 X 1-3/4 (PDC-15, 20, 25, 30)	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
16	057159	HOOK-TYPE FORK, 30 X 1-3/4 (PDC-40)	2
16	057129	HOOK-TYPE FORK, 36 X 1-3/4 (PDC-40)	2
16	057112	HOOK-TYPE FORK, 42 X 1-3/4 (PDC-40)	2
16	057113	HOOK-TYPE FORK, 48 X 1-3/4 (PDC-40)	2
16	057116	HOOK-TYPE FORK, 60 X 1-3/4 (PDC-40)	2
17	401527	BAR, FORK RETAINER (TRUCKS WITHOUT BACKREST	2
20	504381-01	LIFT CARRIAGE, 32 IN. WIDE (NON-TEL)	1
20	504664-01	LIFT CARRIAGE, 32 IN. WIDE (TELESCOPIC)	1
20	506507-01	LIFT CARRIAGE, (TRIMAST)	1
20	504274-01	LIFT CARRIAGE, 32 IN. WIDE (FULL FREE LIFT)	1
21	313200	LIFT CHAIN	A/R
21	313215	LIFT CHAIN	A/R

A/R - AS REQUIRED

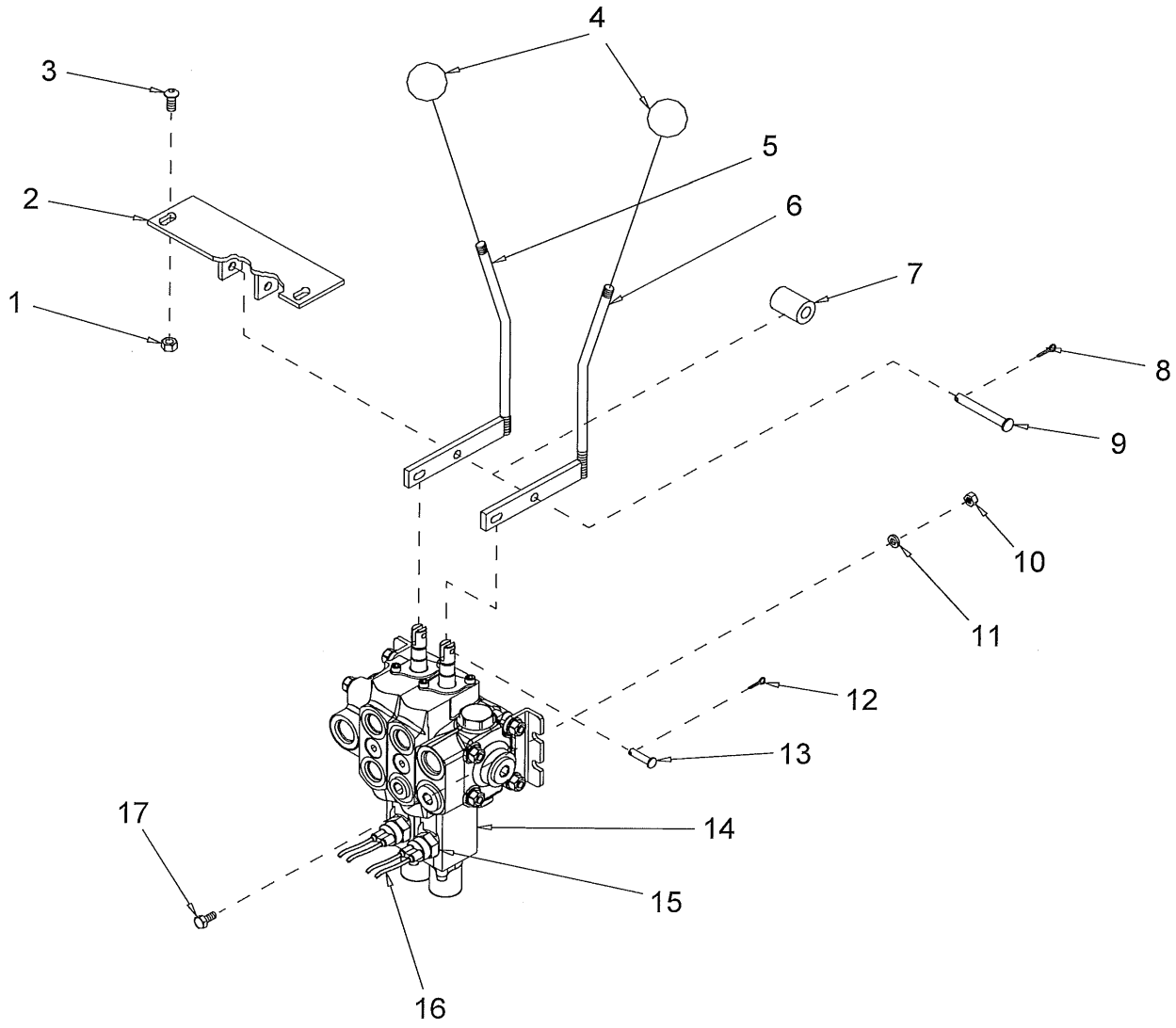


Figure 12-20 Standard Control Valve

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	059426	NUT, HEX, 5/16-18	2
2	505688	ANCHOR, PLATE, HANDLE	1
3	065538	SCREW, BTN HD, 5/16-18 x 5/8	2
4	057952	KNOB, ROUND, BLACK	2
5	506741	LEVER, VALVE, LH	1
6	506740	LEVER, VALVE, RH	1
7	401220	SPACER, TUBE	1
8	060425	PIN, COTTER	1
9	060317	PIN, CLEVIS	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
10	059421	NUT, HEX, 1/4-20	4
11	077209	WASHER, LOCK, SPLIT, 1/4	4
12	060402	PIN, COTTER	2
13	060335	PIN, CLEVIS	2
14	—	VALVE, 2 SPOOL (FIGURE 12-21)	REF
15	—	. SWITCH, SPOOL VALVE (FIGURE 12-22)	REF
16	023324	. WIRE HARNESS, SPOOL VALVE	1
17	065476	SCREW, HEX HD, 1/4-20 X 1/2	4

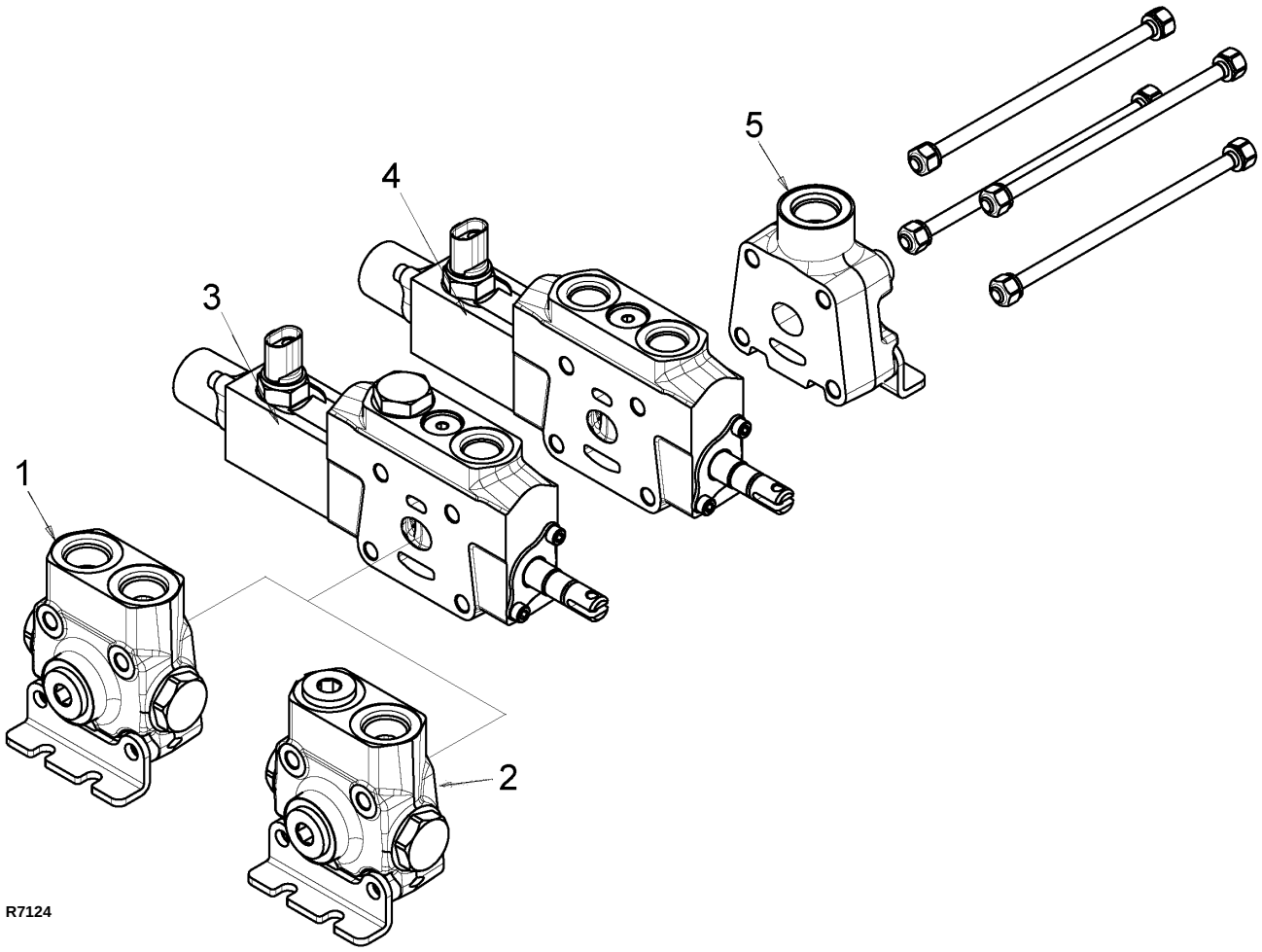


Figure 12-21 Control Valve

INDEX NO.	PART NAME	WITHOUT REMOTE LIFT	WITH REMOTE LIFT	NO. REQD.
—	VALVE, 2 SPOOL	048188	048189	1
1	. INLET SECTION (WITH PLUG)	907218-01	—	1
2	. INLET SECTION (WITHOUT PLUG)	—	907218-02	1
3	. LIFT SECTION (FIGURE 12-22)	907218-03	907218-03	1
4	. TILT SECTION (FIGURE 12-22)	907218-04	907218-04	1
5	. OUTLET SECTION	907218-05	907218-06	
—	. SEAL KIT	907214	907215	4

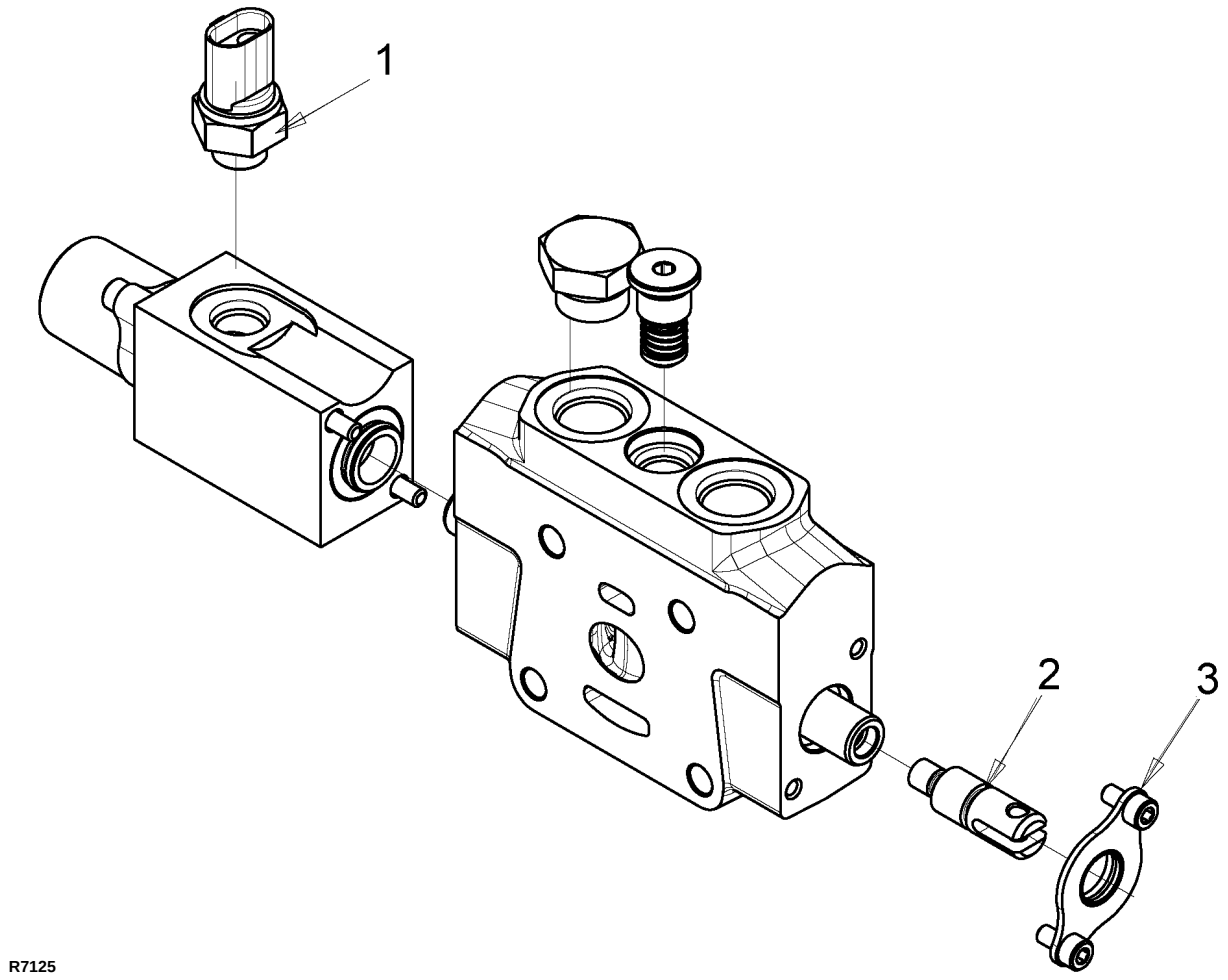


Figure 12-22 Valve Section

INDEX NO.	PART NAME	LIFT SECTION	TILT SECTION	NO. REQD.
—	LIFT	907218-03	—	1
—	TILT	—	907218-04	1
1	. SWITCH	907210	907210	1
2	. CLEVIS END	907218-07	907218-07	1
3	. BRACKET WITH SCREWS	907218-08	907218-08	1

PDC-20A
PDC-20
PDC-25
PDC-30

1. **SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS**
2. **SEE SUPPLEMENT 337 FOR ADDITIONAL INFORMATION**

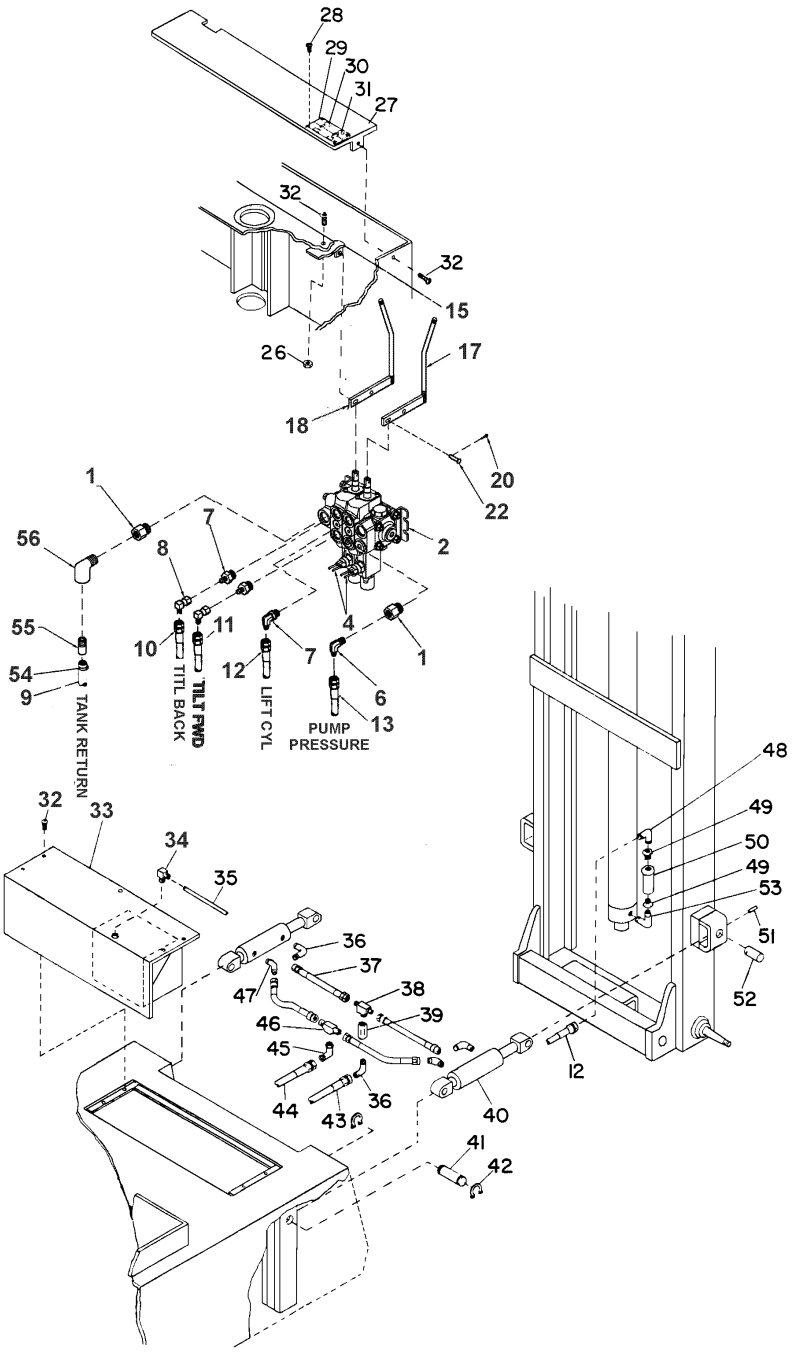


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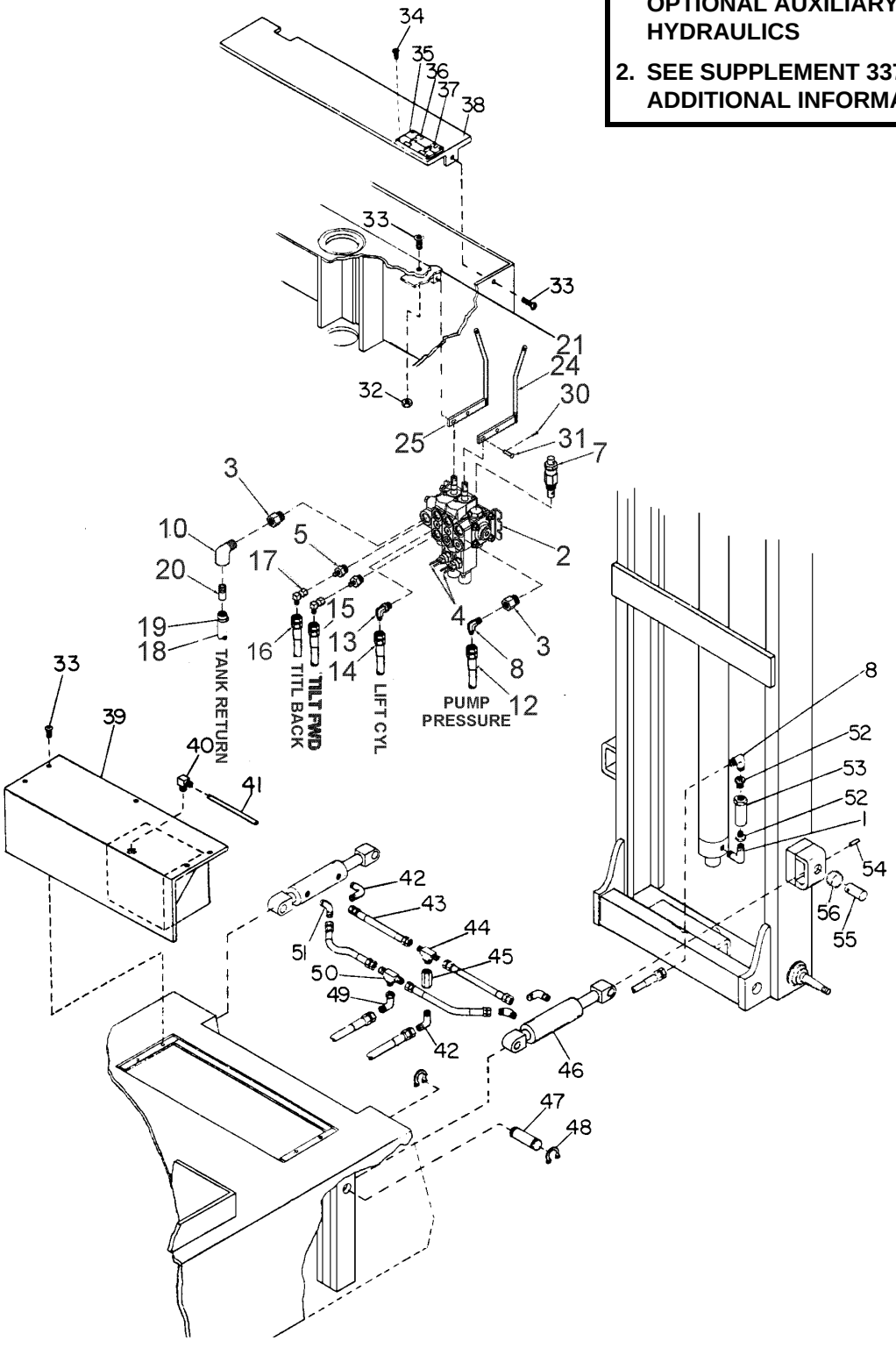
Figure 12-23 Hydraulic System (Non Telescopic and Telescopic)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	025111	STRAIGHT FITTING, 3/8	1
2	—	2 SPOOL VALVE WITH MICRO SWITCHES (FIGURE 12-20)	REF
3	025535	ELBOW ADAPTER, 3/8	1
4	023123	HARNESS ASSEMBLY WIRE	1
6	026917	HOSE COUPLING, 3/8 JIC SWVL	4
7	026911	ADAPTER	2
8	025536	MALE ELBOW ADAPTER, 7/16-18 X 1/4	2
9	308900	HOSE, RUBBER. LOW PRESSURE	7 FT
10	504314-03	HYDRAULIC HOSE, BASE 42 IN.	1
10	504314-05	HYDRAULIC HOSE, BASE 48 IN.	1
10	504314-07	HYDRAULIC HOSE, BASE 54 IN.	1
11	504314-02	HYDRAULIC HOSE, BASE 42 IN.	1
11	504314-04	HYDRAULIC HOSE, BASE 48 IN.	1
11	504314-06	HYDRAULIC HOSE, BASE 54 IN.	1
12	504312-01	HYDRAULIC HOSE, BASE 42 IN.	1
12	504312-02	HYDRAULIC HOSE, BASE 48 IN.	1
12	504312-04	HYDRAULIC HOSE, BASE 54 IN.	1
13	504312-03	HYDRAULIC HOSE, BASE 42 IN.	1
13	504312-05	HYDRAULIC HOSE, BASE 48 IN.	1
13	504312-07	HYDRAULIC HOSE, BASE 54 IN.	1
15	503806	ANCHOR WELDMENT PLATE	1
17	506741	TILT CONTROL LEVER (FIGURE 12-20)	1
18	506740	LIFT CONTROL LEVER (FIGURE 12-20)	1
20	060402	COTTER PIN (FIGURE 12-20)	1
22	060335	CLEVIS PIN (FIGURE 12-20)	2
23	063480	HEX HEAD CAP SCREW, 1/4-20 x 1	3
24	077209	LOCK WASHER, 1/4	3
25	060403	COTTER PIN, 1/16 x 1/2	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
26	059628	HEX NUT, 5/16-18	2
27	505687	THROTTLE VALVE COVER	1
28	072413	PAN HEAD SCREW, 4-40 X 1/2	4
29	056635	DECAL-VALVE	1
30	056637-02	DECAL-TILT	1
31	056637-01	DECAL-LIFT	1
32	065538	SCREW, 5/16-18 X 5/8	9
33	—	HYDRAULIC PANEL ASSEMBLY (FIGURE 12-31)	REF
34	025501	ELBOW, 1/4, NPT TUBE, 90°	2
35	282500	TUBE, VINYL, 1/4 OD - 1/8 ID	A/R
36	025524	ELBOW, 90°, 1/4 JIC	3
37	504312-01	HYDRAULIC HOSE	4
38	027112	MALE BRANCH TEE-1/4 TUBE, 1/4 PIPE	1
39	048134	VALVE RESTRICTOR	1
40	—	TILT CYLINDER (FIGURE 12-37 OR FIGURE 12-38)	REF
41	296601	PIN	2
42	061725	SNAP RING	4
43	026916	HOSE FITTING, 1/4, JIC SWIVEL	4
44	282700	HYDRAULIC HOSE, 1/4	1
45	0251200	ELBOW, 3/8, 90°, SWIVEL NUT	1
46	027110	UNION TEE, 1/4	1
47	025526	ELBOW, 45°, 1/4 JIC	1
48	025525	ELBOW, 90°, 3/8 JIC	1
49	026504	REDUCER BUSHING, 1/2 TO 3/8	2
50	047107	FLOW REGULATOR	1
51	060976	ROLL PIN, 3/16 X 1-1/2	2
52	296602	PIN	2
53	025538	ELBOW, 90° ADAPTER, 9/16 TO 1/4	1
54	056110	HOSE CLAMP	2
55	026128	NIPPLE, HOSE, 3/8	1
56	026707	ELBOW, STREET, 3/8 NPT, 90°	1

A/R - AS REQUIRED

1. SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS
2. SEE SUPPLEMENT 337 FOR ADDITIONAL INFORMATION



R2027M

Figure 12-24 Hydraulic System (Non Telescopic and Telescopic)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	025538	ELBOW, 90°, ADAPTER, 9/16 TO 1/4	1
2	—	2 SPOOL VALVE WITH MICRO SWITCHES (FIGURE 12-20)	REF
3	025111	STRAIGHT FITTING, 3/8	2
4	023123	HARNESS ASSEMBLY WIRE	1
5	026911	ADAPTER, HEX	2
7	048194	VALVE (SEE NOTE)	1
8	025525	ELBOW, 90°, 3/8 JIC	2
10	026707	ELBOW, STREET, 3/8 NPT, 90°	1
12	504312-08	HYDRAULIC HOSE	1
13	025121	ELBOW, 3/8	1
14	504312-06	HYDRAULIC HOSE, 3/8	1
15	504314-08	HYDRAULIC HOSE, 1/4	1
16	504314-09	HYDRAULIC HOSE, 1/4	1
17	025120	ELBOW	2
18	308900	HOSE, RUBBER, LOW PRESSURE	7 FT
19	056110	HOSE CLAMP	2
20	026128	NIPPLE, HOSE, 3/8	1
21	503806	ANCHOR WELDMENT PLATE	1
24	506741	TILT CONTROL LEVER (FIGURE 12-20)	1
25	506740	LIFT CONTROL LEVER (FIGURE 12-20)	1
27	060317	PIVOT PIN, 5/16 X 2-1/4	1
28	063480	HEX HEAD CAP SCREW, 1/4-20 X 1	3
29	077209	LOCK WASHER, 1/4	3
30	060402	COTTER PIN (FIGURE 12-20)	2

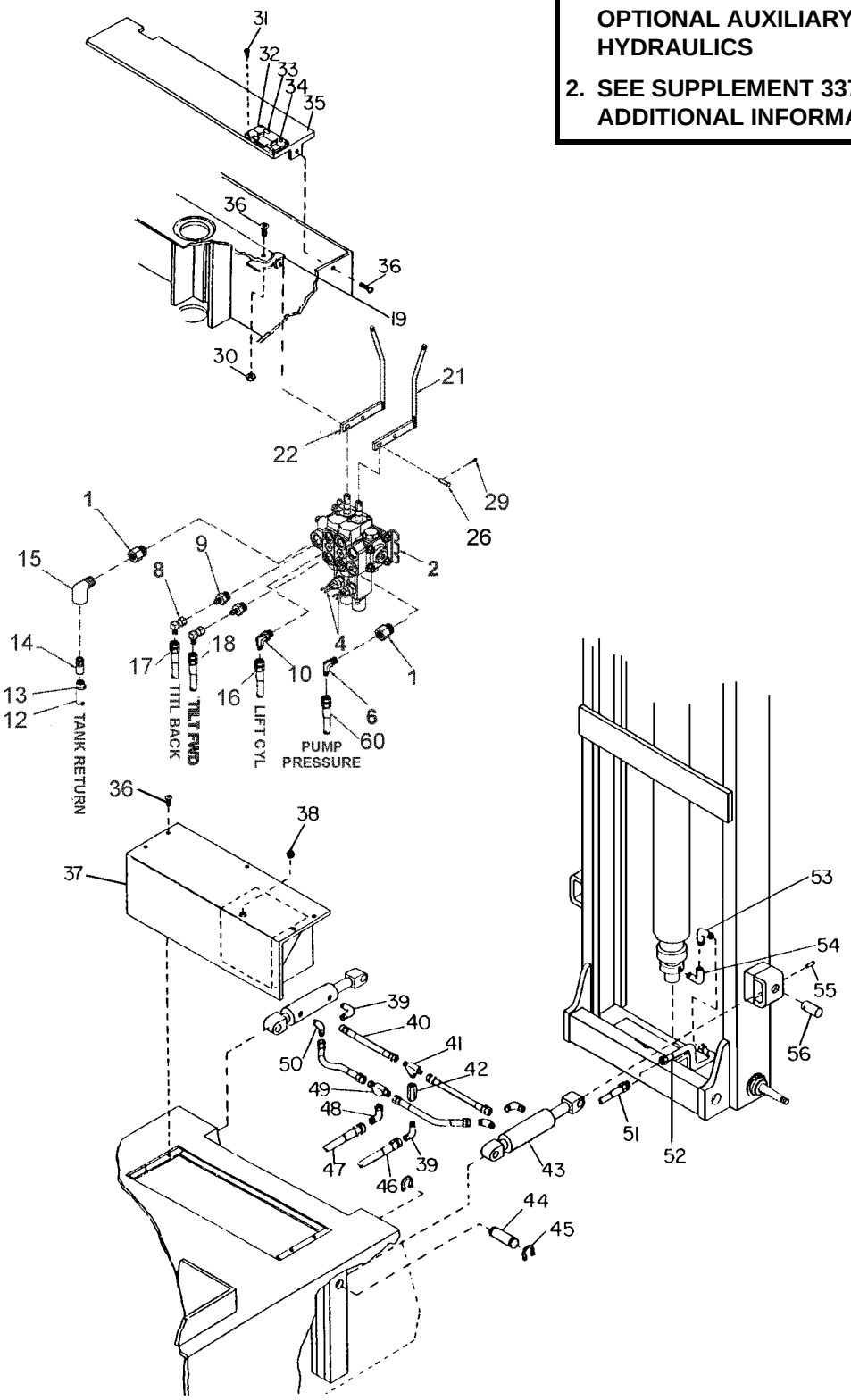
INDEX NO.	PART NO.	PART NAME	NO. REQD.
31	060335	CLEVIS PIN (FIGURE 12-20)	2
32	059628	HEX NUT, 5/16-18	2
33	065538	SCREW, 5/16-18 X 5/8	9
34	072413	PAN HEAD SCREW, 4-40 X 1/2	4
35	056635	DECAL-VALVE	1
36	056637-02	DECAL-TILT	1
37	056637-01	DECAL-LIFT	1
38	505687	THROTTLE VALVE COVER	1
39	—	HYDRAULIC PANEL ASSEMBLY (FIGURE 12-31)	REF
40	025501	ELBOW, 1/4, NPT TUBE, 90°	2
41	282500	TUBING, VINYL, 1/4 OD - 1/8 ID	A/R
42	025524	ELBOW 90°, 1/4 JIC	3
43	504314-01	HYDRAULIC HOSE ASSEMBLY, 1/4	4
44	027112	MALE BRANCH TEE-1/4 TUBE, 1/4 PIPE	1
45	048134	VALVE RESTRICTOR	1
46	—	TILT CYLINDER (FIGURE 12-37 OR FIGURE 12-38)	REF
47	296601	PIN	2
48	061725	SNAP RING	4
49	025120	ELBOW, 3/8, 90°, SWIVEL NUT	1
50	027110	UNION TEE, 1/4	1
51	025526	ELBOW, 45°, 1/4 JIC	1
52	026504	REDUCER BUSHING, 1/2 TO 3/8	2
53	047107	FLOW REGULATOR	1
54	061033	ROLL PIN, 5/16 X 2	2
55	404752	PIN	2
56	405026	SPACER	2

A/R - AS REQUIRED

NOTE: REMOVE STEEL PLUG FROM VALVE AND REPLACE WITH VALVE.

PDC-20
PDC-25
PDC-30

1. **SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS**
2. **SEE SUPPLEMENT 337 FOR ADDITIONAL INFORMATION**



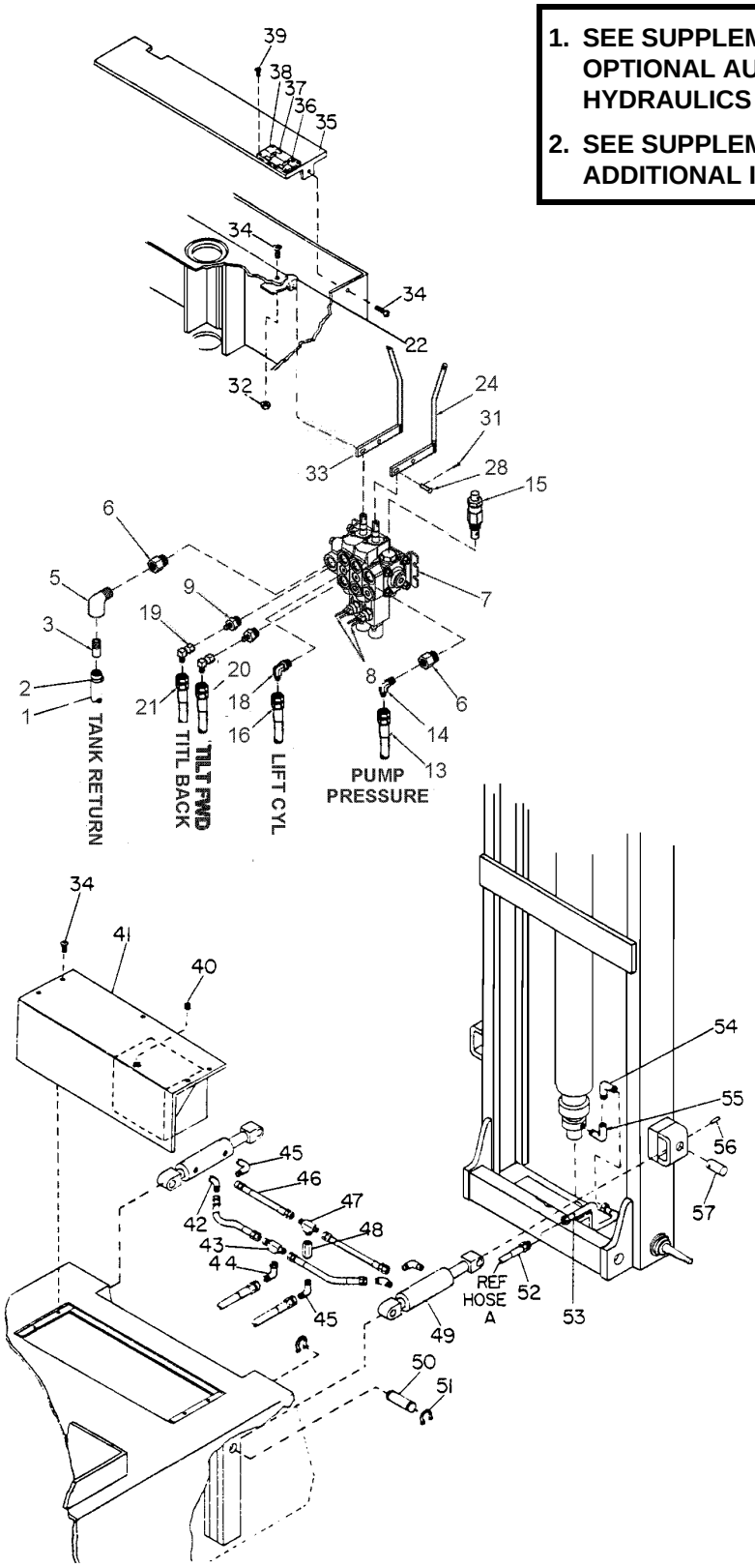
R2028M

Figure 12-25 Hydraulic System (Full Free Lift)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	025111	STRAIGHT FITTING, 3/8	2
2	—	2 SPOOL VALVE WITH MICRO SXITCHES (FIGURE 12-20)	REF
6	025525	MALE ELBOW	1
7	023324	HARNESS ASSEMBLY WIRE	1
8	025120	ELBOW	2
9	026911	FITTING	2
10	025121	ELBOW, 3/8	1
12	308900	HOSE, RUBBER, LOW PRESSURE	7 FT
13	056110	HOSE CLAMP	2
14	026128	NIPPLE, HOSE, 3/8	1
15	026707	ELBOW, STREET, 3/8 NPT, 90°	1
16	504313-07	HYDRAULIC HOSE ASSEMBLY (42 IN BASE)	1
16	504313-08	HYDRAULIC HOSE ASSEMBLY (48 IN BASE)	1
16	504313-09	HYDRAULIC HOSE ASSEMBLY (54 IN BASE)	1
17	504314-03	HYDRAULIC HOSE ASSEMBLY (42 IN BASE)	1
17	504315-05	HYDRAULIC HOSE ASSEMBLY (48 IN BASE)	1
17	504314-07	HYDRAULIC HOSE ASSEMBLY (54 IN BASE)	1
18	504314-02	HYDRAULIC HOSE ASSEMBLY (42 IN BASE)	1
18	504314-04	HYDRAULIC HOSE ASSEMBLY (48 IN BASE)	1
18	504314-06	HYDRAULIC HOSE ASSEMBLY (54 IN BASE)	1
19	503806	ANCHOR WELDMENT PLATE	1
21	—	TILT CONTROL LEVER (FIGURE 12-20)	REF
22	—	LIFT CONTROL LEVER (FIGURE 12-20)	REF
26	—	CLEVIS PIN (FIGURE 12-20)	REF

INDEX NO.	PART NO.	PART NAME	NO. REQD.
29	—	COTTER PIN (FIGURE 12-20)	REF
30	059628	HEX NUT, 5/16-18	2
31	072413	PAN HEAD SCREW, 4-40 X 1/2	4
32	056635	DECAL-VALVE	1
33	056637-02	DECAL-TILT	1
34	056637-01	DECAL-LIFT	1
35	505687	THROTTLE VALVE COVER	1
36	065538	SCREW, 5/16-18 X 5/8	9
37	—	HYDRAULIC PANEL ASSEMBLY (FIGURE 12-31)	REF
38	026303	HEX SOCKET PLUG, 1/4	1
39	025524	ELBOW, 90°, 1/4 JIC	3
40	504314-01	HYDRAULIC HOSE ASSY, 1/4	4
41	027112	MALE BRANCH TEE-1/4 TUBE 1/4 PIPE	1
42	048134	VALVE RESTRICTOR	1
43	—	TILT CYLINDER (FIGURE 12-37 OR FIGURE 12-38)	REF
44	296601	PIN	2
45	061725	SNAP RING	4
46	026916	HOSE FITTING, 1/4, JIC SWIVEL	4
47	282700	HYDRAULIC HOSE, 1/4, 10 FT.	1
48	025120	ELBOW, 3/8, 90° SWIVEL NUT	1
49	027110	UNION TEE, 1/4	1
50	025526	ELBOW, 45° 1/4 JIC	2
51	026921	HOSE COUPLING	1
52	047700	CYLINDER TUBE	1
52	026117	NIPPLE, 3/8 X 4	1
53	025518	90° MALE ELBOW (12V AND 24V, PDC-25, -30, FFL)	1
54	026707	ELBOW, STREET, 3/8 NPT, 90°	1
55	060976	ROLL PIN, 3/16 X 1-1/2	2
56	296602	PIN	2
60	026917	HOSE COUPLING, 3/8 JIC SWVL	1

1. SEE SUPPLEMENT 269 FOR OPTIONAL AUXILIARY HYDRAULICS
2. SEE SUPPLEMENT 337 FOR ADDITIONAL INFORMATION



R2029M

Figure 12-26 Hydraulic System (Full Free Lift)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	308900	HOSE, RUBBER, LOW PRESSURE	8 FT
2	056100	HOSE CLAMP	4
3	026128	NIPPLE, HOSE, 3/8	1
5	026707	ELBOW	1
6	025111	STRAIGHT FITTING, 3/8	1
7	—	2 SPOOL VALVE WITH MICRO SXITCHES (FIGURE 12-20)	REF
8	023324	HARNESS ASSEMBLY WIRE	1
9	026911	FITTING	2
13	504312-08	HYDRAULIC HOSE	1
14	025525	ELBOW	1
15	048194	VALVE (SEE NOTE)	1
16	282900	HOSE, NEOPRENE, 3/4	A/R
18	025121	ELBOW	1
19	025120	ELBOW	2
20	504312-08	HYDRAULIC HOSE	1
21	504312-09	HYDRAULIC HOSE	1
22	503806	ANCHOR WELDMENT PLATE	1
24	—	TILT CONTROL LEVER (FIGURE 12-20)	REF
28	—	CLEVIS PIN (FIGURE 12-20)	REF
31	—	COTTER PIN (FIGURE 12-20)	REF
32	059628	HEX NUT, 5/16-18	2
33	—	LIFT CONTROL LEVER (FIGURE 12-20)	REF
34	065538	SCREW, 5/16-18 X 5/8	9
35	505687	THROTTLE VALVE COVER	1
36	056637-01	DECAL-LIFT	1
37	056637-02	DECAL-TILT	1
38	056635	DECAL-VALVE	1
39	072413	PAN HEAD SCREW, 4-40 X 1/2	4
40	026303	HEX SOCKET PLUG, 1/4	1
41	—	HYDRAULIC PANEL ASSEMBLY (FIGURE 12-31)	REF
42	025526	ELBOW, 45° 1/4 JIC	2
43	027110	UNION TEE, 1/4	1
44	025120	ELBOW, 3/8, 90° SWIVEL NUT	1
45	025524	ELBOW, 90°, 1/4 JIC	3
46	504314-01	HYDRAULIC HOSE ASSEMBLY, 1/4	4
47	027112	MALE BRANCH TEE-1/4 TUBE 1/4 PIPE	1
48	048134	VALVE RESTRICTOR	1
49	—	TILT CYLINDER (FIGURE 12-37 ***OR*** FIGURE 12-38)	REF
50	296601	PIN	2
51	061725	SNAP RING	4
52	026921	HOSE COUPLING	1
53	047700	CYLINDER TUBE	1
54	025518	90° MALE1ELBOW	1
55	026707	ELBOW, STREET, 3/8 NPT, 90°	1
56	060976	ROLL PIN, 3/16 X 1-1/2	2
57	296602	PIN	2

A/R - AS REQUIRED

NOTE: REMOVE STEEL PLUG FROM VALVE AND REPLACE WITH VALVE.

PDC-20
PDC-25
PDC-30

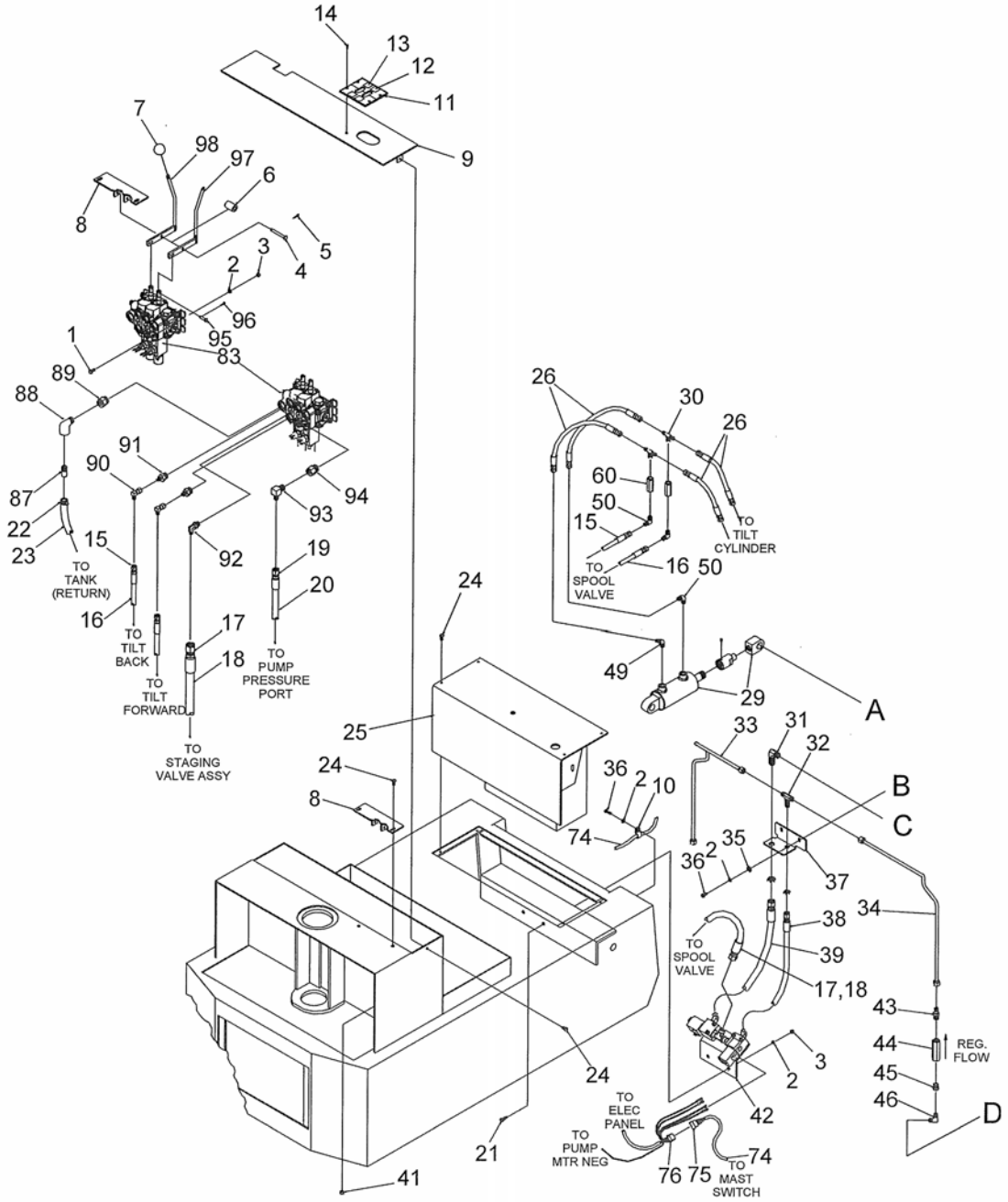
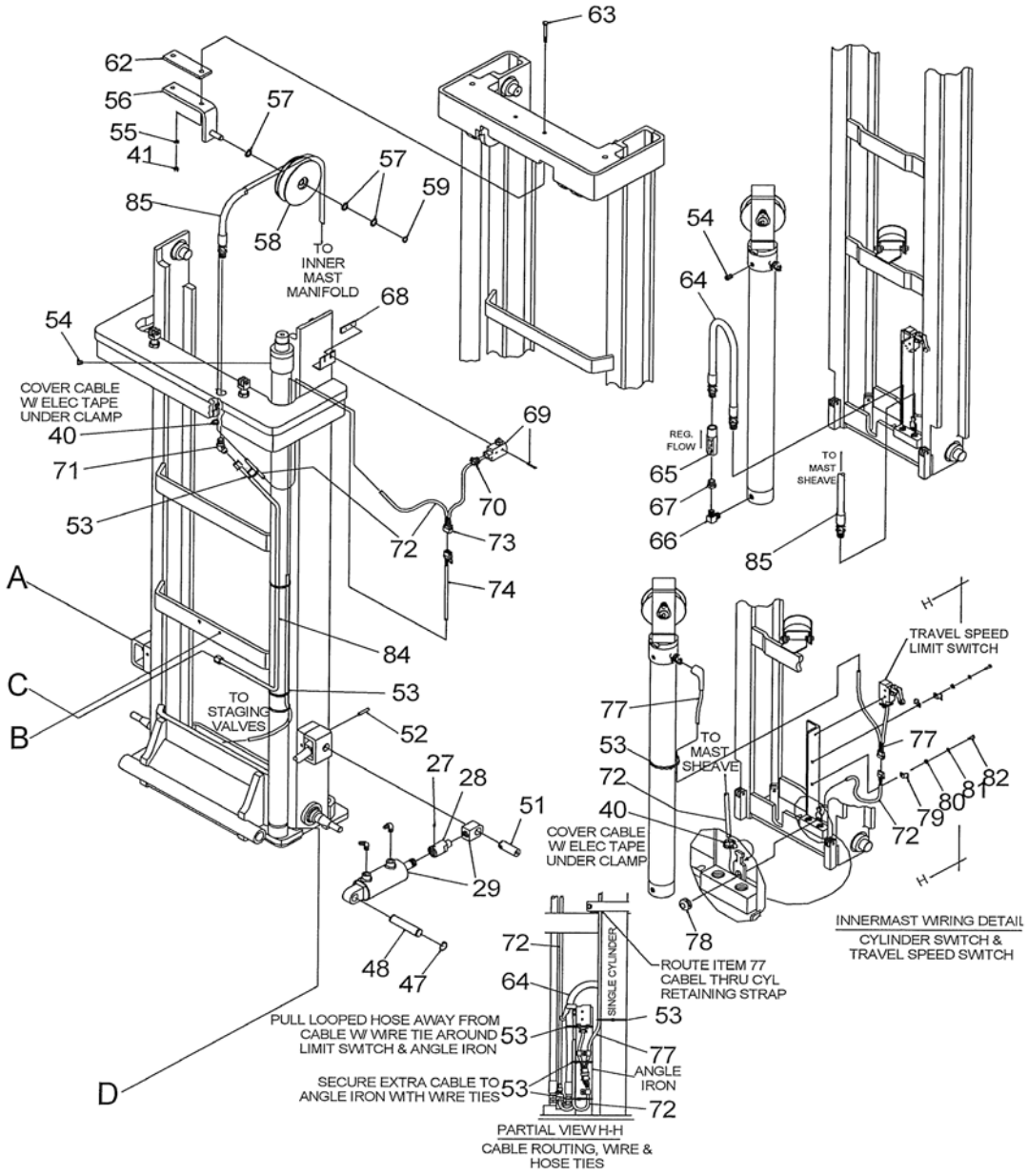


Figure 12-27 Hydraulic System (Clear View TRIMAST) (Sheet 1)



R6925B

Figure 12-27 Hydraulic System (Clear View TRIMAST) (Sheet 2)

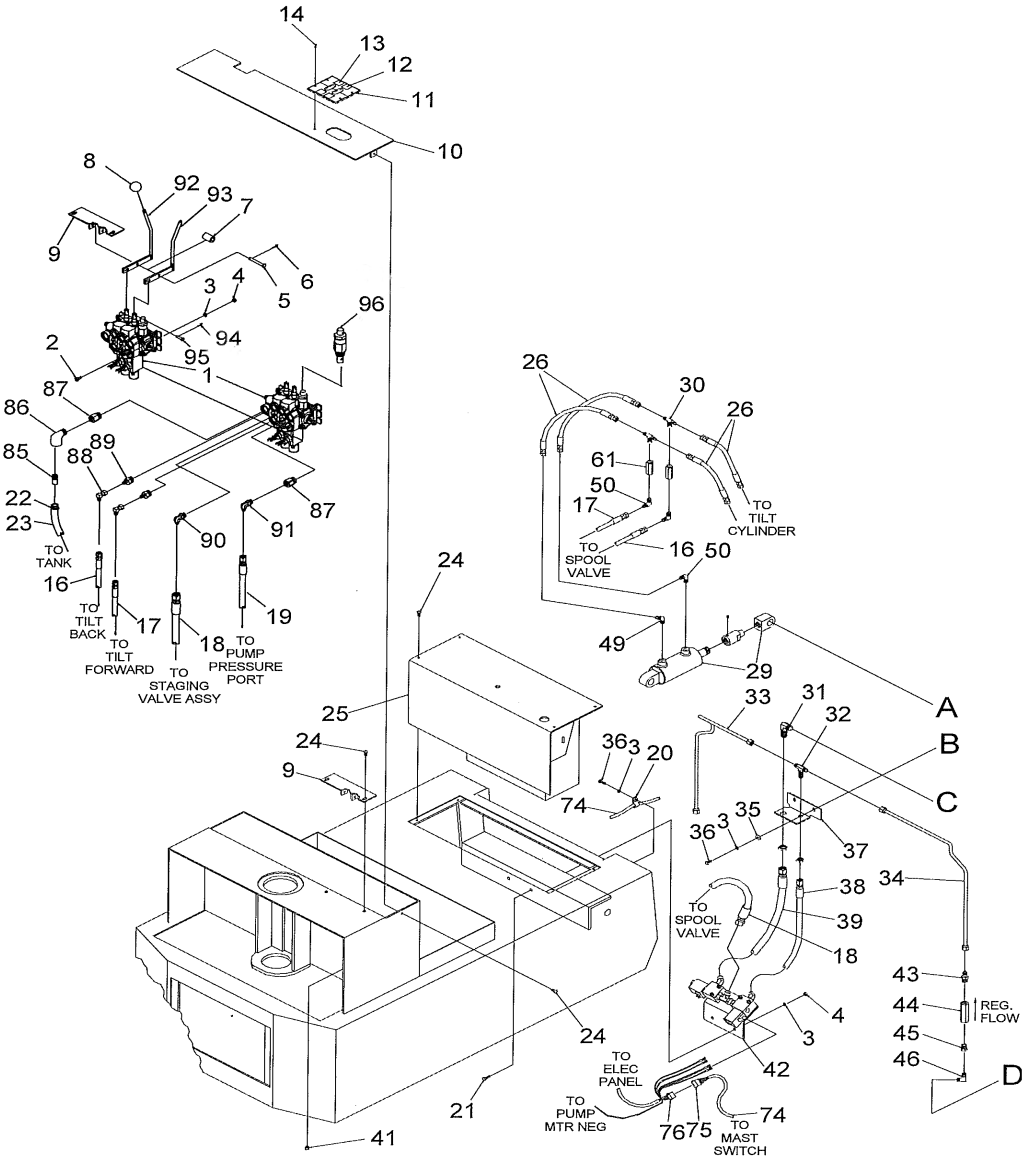
INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	—	SCREW, HEX (FIGURE 12-20)	REF
2	—	WASHER, LOCK (FIGURE 12-20)	REF
3	—	NUT, HEX (FIGURE 12-20)	REF
4	—	PIN, CLEVIS (FIGURE 12-20)	REF
5	—	PIN, COTTER (FIGURE 12-20)	REF
6	—	SPACER (FIGURE 12-20)	REF
7	—	KNOB (FIGURE 12-20)	REF
8	—	ANCHOR, PLATE (FIGURE 12-20)	REF
9	505687	COVER, VALVE, 2 SPOOL	1
10	504364	CABLE CLAMP	1
11	056635	DECAL, VALVE, 2 SPOOL	2
12	056637-01	DECAL, INSERT, LIFT	1
13	056637-02	DECAL, INSERT, TILT	1
14	072413	SCREW, FL HD, #5-40 X 1/2	4
15	026916	FITTING, 1/4 HOSE, FFM JIC SWVL	4
16	504314-03	HOSE, TILT BACK (42” BASE)	1
16a	504314-05	HOSE, TILT BACK (48” BASE)	1
16b	504314-07	HOSE, TILT BACK (54” BASE)	1
17	026930	. FITTING, 1/2 HOSE, FFM JIC SWVL	2
18	506621-05	HOSE, STAGING VALVE (42” BASE)	1
18a	506621-06	HOSE, STAGING VALVE (48” BASE)	1
18b	506621-07	HOSE, STAGING VALVE (54” BASE)	1
19	026917	. FITTING, 3/8 HOSE, FFM JIC SWVL	2
20	504312-03	HOSE, PUMP PRESSURE (42” BASE)	1
20a	504312-05	HOSE, PUMP PRESSURE (48” BASE)	1
20b	504312-07	HOSE, PUMP PRESSURE (54” BASE)	1
21	063480	SCREW, HX HD, 1/4-20 X 1	2
22	056110	CLAMP, HOSE, SCREW TYPE	2
23	308900	HOSE, SUCTION, 62 ID X 90 OD	AR
24	065538	SCREW, BTN HD, 5/16-18 X 5/8	8
25	504311-03	PANEL ASSY, HYDR, 24V	1
26	504314-01	HOSE, HYDR, PRESSURE, 1/4 ID	4
27	073478	SCREW, SET, SOC HD, BRS TIP, 1/4-28	2
28	405081-01	ROD, EXTENSION, TILT CYL	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
29	047543	HYD CYLINDER. TILT	2
30	027112	TEE, MALE, 1/4 NPT, 1/4 JIC	2
31	025548	ELBOW, 90, MALE, 1/2 JIC	1
32	027104	TEE, MALE, 3/8 JIC	1
33	506635-02	TUBE ASSY, HYDRAULIC, 3/8, LH	1
34	506635-01	TUBE ASSY, HYDRAULIC, 3/8, RH	1
35	077031	WASHER, FLAT, 1/4	2
36	063478	SCREW, HX HD, 1/4-20 X 3/4	3
37	405071	BRACKET, MANIFOLD, MAST	1
38	505086-03	HOSE, HYDR PRESSURE, 3/8 ID	1
39	505621-02	HOSE, HYDR PRESSURE, 1/2 ID	1
40	056106	CLAMP, HOSE, MINI	2
41	059426	NUT, HEX, 5/16-18 UNC	4
42	506634	VALVE ASSY, STAGING MAST	1
43	026912	CONNECTOR, MALE, 3/8 NPT, 3/8 JIC	2
44	047104	REGULATOR, FLOW, 5 GPM	2
45	026500	REDUCER, PIPE, 3/8 TO 1/4	2
46	025546	ELBOW, MALE, 1/4 NPT	2
47	061725	RING, SNAP, EXTERNAL, 1” SHAFT	4
48	296601	PIN, REAR, TILT RAM	2
49	025526	ELBOW, 45, MALE, 1/4 NPT, 1/4 JIC	2
50	025524	ELBOW, 90, MALE, 1/4 NPT, 1/4 JIC	4
51	296602	PIN, FRONT, TILT RAM	2
52	060976	PIN, ROLL, 3/16 X 1.50	2
53	056137-01	TIE, CABLE	AR
54	076704	VENT, 1/4 NPTF	3
55	077210	WASHER, LOCK, SPLIT, 5/16	2
56	506629	BRACKET, SHEAVE	1
57	077063	WASHER, FLAT, 5/8 X 1 X 16 GA	3
58	506631	SHEAVE ASSY, 1/2” HYDR HOSE	1
59	061716	RING, SNAP, EXTERNAL, 5/8” SHAFT	1
60	048134-01	VALVE, RESTRICTOR	2
62	405138	PLATE, SPACER, SHEAVE BRACKET	1
63	063564	SCREW, HX HD, 5/16-18 X 2.75	2
64	506621-03	HOSE, HYDR PRESSURE, 1/2 ID	1
65	047107	REGULATOR, FLOW, 7 GPM	1
66	025538	ELBOW, 90, MALE, 3/8 NPT	1
67	026504	REDUCER, 1/2 NPT MALE, 3/8 NPT FFM	1
68	405124	BRACKET, RETAINER, SWITCH	1
69	020729	SWITCH, LIMIT	1
70	005405	STRAIN RELIEF, 3/8	1
71	025549	ELBOW, 45 MALE, 1/2 NPT X 1/2 JIC	1
72	023322	CABLE ASSY, SHEAVE, 5 COND	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
73	203321	CABLE ASSY, OUTERMAST SWITCH	1
74	023319	CABLE ASSY, MAST, 5 COND	1
75	005652	CONNECTOR, HOUSING, 8 PIN	1
76	023323	HARNESS, STAGING VALVES	1
77	023320	HARNESS, DM & CYL SWITCHES	1
78	057510	GROMMET, RUBBER	1
79	056136	CLAMP, CABLE, 7/16” DIA	3
80	077030	WASHER, FLAT, #10	2
81	077207	WASHER, LOCK, SPLIT, #10	2
82	071377	SCREW, TRS HD, #10-32 X 3/4	2
83	—	VALVE ASSY (FIGURE 12-20)	1
84	606643-01	TUBE ASSY (158 IN LIFT)	1
84	606643-02	TUBE ASSY (194 IN LIFT)	1
84	606643-03	TUBE ASSY (212 IN LIFT)	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
85	506621-01	HOSE ASSY (158 IN LIFT)	1
85	506621-08	HOSE ASSY (194 IN LIFT)	1
85	506621-08	HOSE ASSY (212 IN LIFT)	1
86	504314-02	HOSE, TILT FORWARD (42” BASE)	1
86	504314-04	HOSE, TILT FORWARD (48” BASE)	1
86	504314-06	HOSE, TILT FORWARD (54” BASE)	1
87	026128	NIPPLE, HOSE, 3/8	1
88	026707	ELBOW	1
89	025111	STRAIGHT FITTING, 3/8	1
90	025120	ELBOW	2
91	026911	FITTING	2
92	025118	ELBOW	1
93	025525	MALE ELBOW	1
94	025111	STRAIGHT FITTING, 3/8	1
95	060317	CLEVIS PIN (FIGURE 12-20)	2
96	060425	COTTER PIN (FIGURE 12-20)	2
97	506741	LEVER, VALVE (FIGURE 12-20)	1
98	506740	LEVER, VALVE (FIGURE 12-20)	

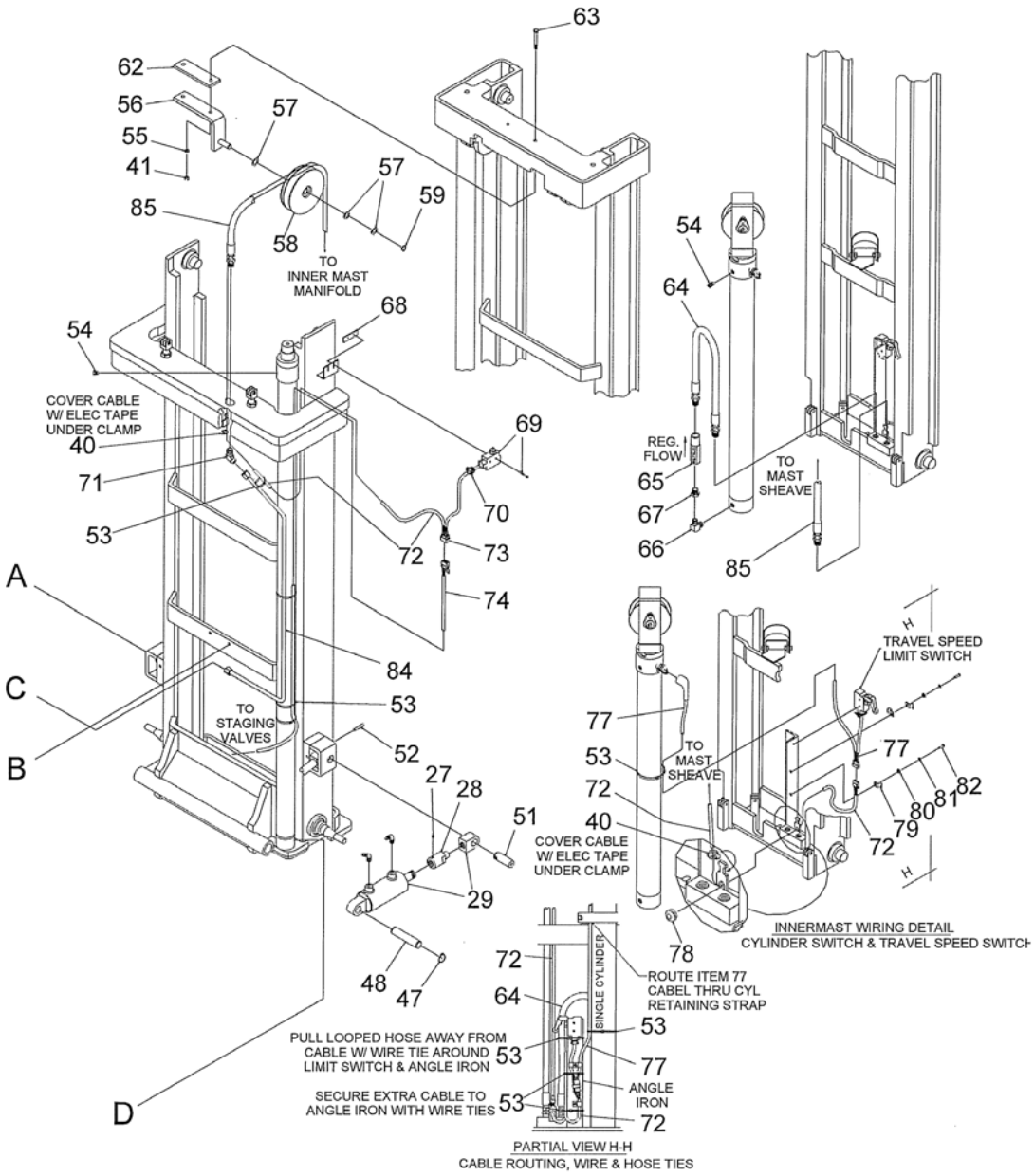
PDC-40



R6926A

R6926A

Figure 12-28 Hydraulic System (Clear View TRIMAST) (Sheet 1)



R6926B

Figure 12-28 Hydraulic System (Clear View TRIMAST) (Sheet 2)

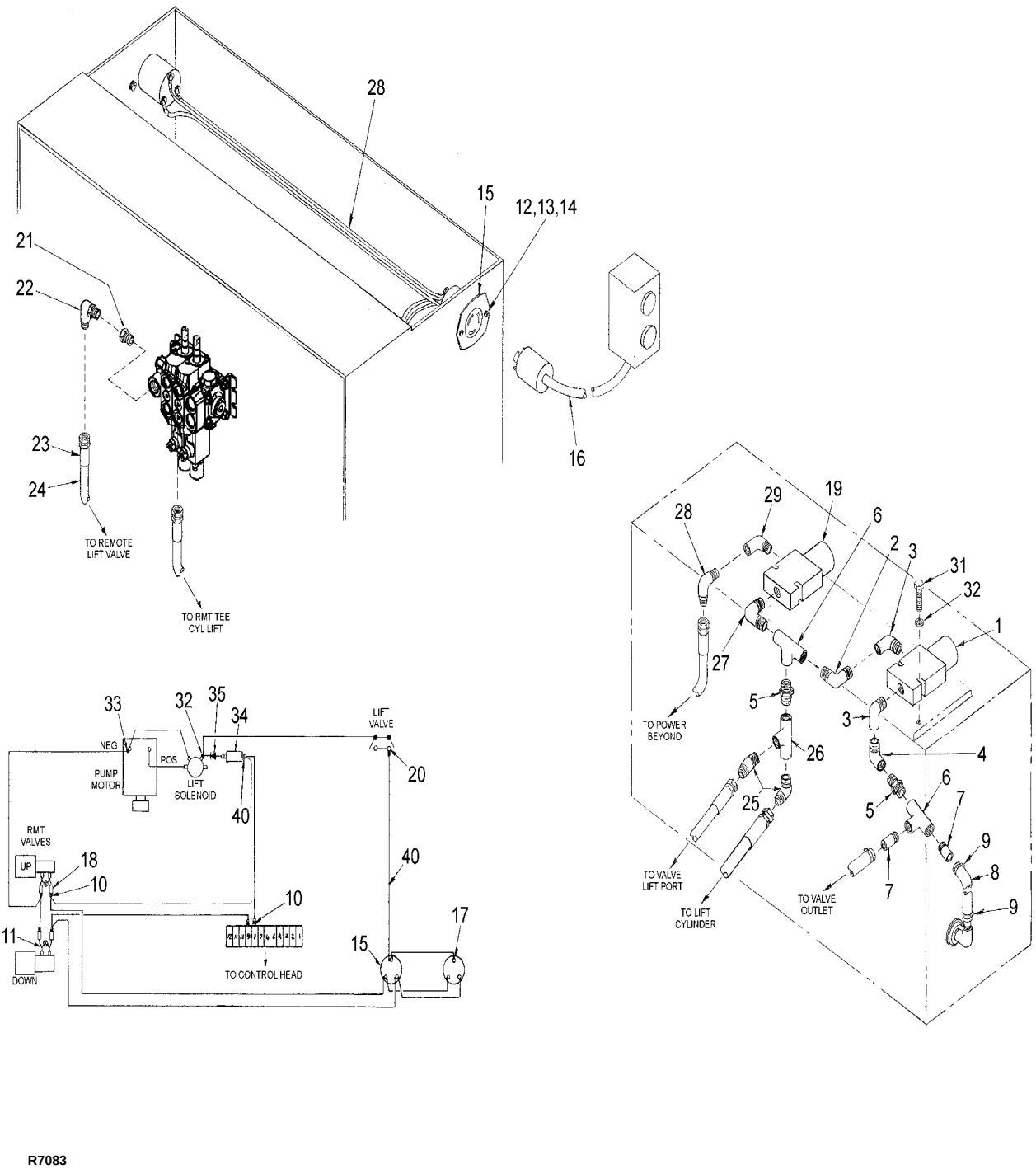
INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	—	VALVE ASSY (FIGURE 12-20)	REF
2	065476	SCREW, HEX (FIGURE 12-20)	4
3	077209	WASHER, LOCK (FIGURE 12-20)	4
4	059421	NUT, HEX (FIGURE 12-20)	4
5	060317	PIN, CLEVIS (FIGURE 12-20)	1
6	060425	PIN, COTTER (FIGURE 12-20)	1
7	401220	SPACER (FIGURE 12-20)	1
8	057952	KNOB, ROUND (FIGURE 12-20)	2
9	505688	ANCHOR, PLATE (FIGURE 12-20)	REF
10	505687	COVER, VALVE, 2 SPOOL	1
11	056635	DECAL, VALVE, 2 SPOOL	2
12	056637-01	DECAL, INSERT, LIFT	1
13	056637-02	DECAL, INSERT, TILT	1
14	072413	SCREW, FL HD, #5-40 X 1/2	4
16	504314-09	HOSE HYDR, PRESSURE, 1/4 ID	1
17	504314-08	HOSE HYDR, PRESSURE, 1/4 ID	1
18	506621-04	HOSE HYDR, PRESSURE, 1/2 ID	1
19	504312-08	HOSE HYDR, PRESSURE, 3/8 ID	1
20	505364	CABLE CLAMP ASSY	1
21	063480	SCREW, HX HD, 1/4-20 X 1	2
22	056110	CLAMP, HOSE, SCREW TYPE	2
23	308900	HOSE, SUCTION, 62 ID X 90 OD	AR
24	065538	SCREW, BTN HD, 5/16-18 X 5/8	8
25	504311-03	PANEL ASSY, HYDR, 24V	1
26	504314-01	HOSE, HYDR, PRESSURE, 1/4 ID	4
27	073478	SCREW, SET, SOC HD, BRS TIP, 1/4-28	2
28	405081-01	ROD, EXTENSION, TILT CYL	2
29	047543	HYD CYLINDER. TILT	2
30	027112	TEE, MALE, 1/4 NPT, 1/4 JIC	2
31	025548	ELBOW, 90, MALE, 1/2 JIC	1
32	027104	TEE, MALE, 3/8 JIC	1
33	506635-02	TUBE ASSY, HYDRAULIC, 3/8, LH	1
34	506635-01	TUBE ASSY, HYDRAULIC, 3/8, RH	1
35	077031	WASHER, FLAT, 1/4	2
36	063478	SCREW, HX HD, 1/4-20 X 3/4	3
37	405071	BRACKET, MANIFOLD, MAST	1
38	505086-03	HOSE, HYDR PRESSURE, 3/8 ID	1
39	505621-02	HOSE, HYDR PRESSURE, 1/2 ID	1
40	056106	CLAMP, HOSE, MINI	2
41	059426	NUT, HEX, 5/16-18 UNC	4
42	026912	VALVE ASSY, STAGING MAST	1
43	026912	CONNECTOR, MALE, 3/8 NPT, 3/8 JIC	2
44	047104	REGULATOR, FLOW, 5 GPM	2
45	026500	REDUCER, PIPE, 3/8 TO 1/4	2
46	025546	ELBOW, MALE, 1/4 NPT	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
47	061725	RING, SNAP, EXTL, 1” SHAFT	4
48	296601	PIN, REAR, TILT RAM	2
49	025526	ELBOW, 45, MALE, 1/4 NPT, 1/4 JIC	2
50	025524	ELBOW, 90, MALE, 1/4 NPT, 1/4 JIC	4
51	296602	PIN, FRONT, TILT RAM	2
52	060976	PIN, ROLL, 3/16 X 1.50	2
53	056137-01	TIE, CABLE	AR
54	076704	VENT, 1/4 NPTF	3
55	077210	WASHER, LOCK, SPLIT, 5/16	2
56	506629	BRACKET, SHEAVE	1
57	077063	WASHER, FLAT, 5/8 X 1 X 16 GA	3
58	506631	SHEAVE ASSY, 1/2” HYDR HOSE	1
59	061716	RING, SNAP, EXTERNAL, 5/8” SHAFT	1
61	048134-01	VALVE, RESTRICTOR	2
62	405138	PLATE, SPACER, SHEAVE BRACKET	1
63	063564	SCREW, HX HD, 5/16-18 X 2.75	2
64	506621-03	HOSE, HYDR PRESSURE, 1/2 ID	1
65	047107	REGULATOR, FLOW, 7 GPM	1
66	025538	ELBOW, 90, MALE, 3/8 NPT	1
67	026504	REDUCER, 1/2 NPT, 3/8 NPT	1
68	405124	BRACKET, RETAINER, SWITCH	1
69	020729	SWITCH, LIMIT	1
70	005405	STRAIN RELIEF, 3/8	1
71	025549	ELBOW, 45 MALE, 1/2 NPT X 1/2 JIC	1
72	023322	CABLE ASSY, SHEAVE, 5 COND	1
73	203321	CABLE ASSY, OUTERMAST SWITCH	1
74	023319	CABLE ASSY, MAST, 5 COND	1
75	005652	CONNECTOR, HOUSING, 8 PIN	1
76	023323	HARNESS, STAGING VALVES	1
77	023320	HARNESS, DM & CYL SWITCHES	1
78	057510	GROMMET, RUBBER	1
79	056136	CLAMP, CABLE, 7/16” DIA	3
80	077030	WASHER, FLAT, #10	2
81	077207	WASHER, LOCK, SPLIT, #10	2
82	071377	SCREW, TRS HD, #10-32 X 3/4	2
83	606643-01	TUBE ASSY (158 IN LIFT)	1
83a	606643-02	TUBE ASSY (194 IN LIFT)	1
83b	606643-03	TUBE ASSY (212 IN LIFT)	1
84	506621-01	HOSE ASSY (158 IN LIFT)	1
84a	506621-08	HOSE ASSY (194 IN LIFT)	1
84b	506621-09	HOSE ASSY (212 IN LIFT)	1
85	026128	NIPPLE, HOSE, 3/8	1
86	026707	ELBOW	1
87	025111	STRAIGHT FITTING, 3/8	2

INDEX NO.	PART NO.	PART NAME	NO. REQD.
88	025120	ELBOW	2
89	026911	FITTING	2
90	025118	ELBOW	1
91	025525	MALE ELBOW	1
92	506741	LEVER, VALVE (FIGURE 12-20)	REF

INDEX NO.	PART NO.	PART NAME	NO. REQD.
93	506740	LEVER, VALV (FIGURE 12-20)	1
94	060402	COTTER PIN (FIGURE 12-20)	2
95	060335	CLEVIS PIN (FIGURE 12-20)	2
96	048194	VALVE (SE NOTE)	1

NOTE: REMOVE STEEL PLUG FROM VALVE AND REPLACE WITH VALVE.



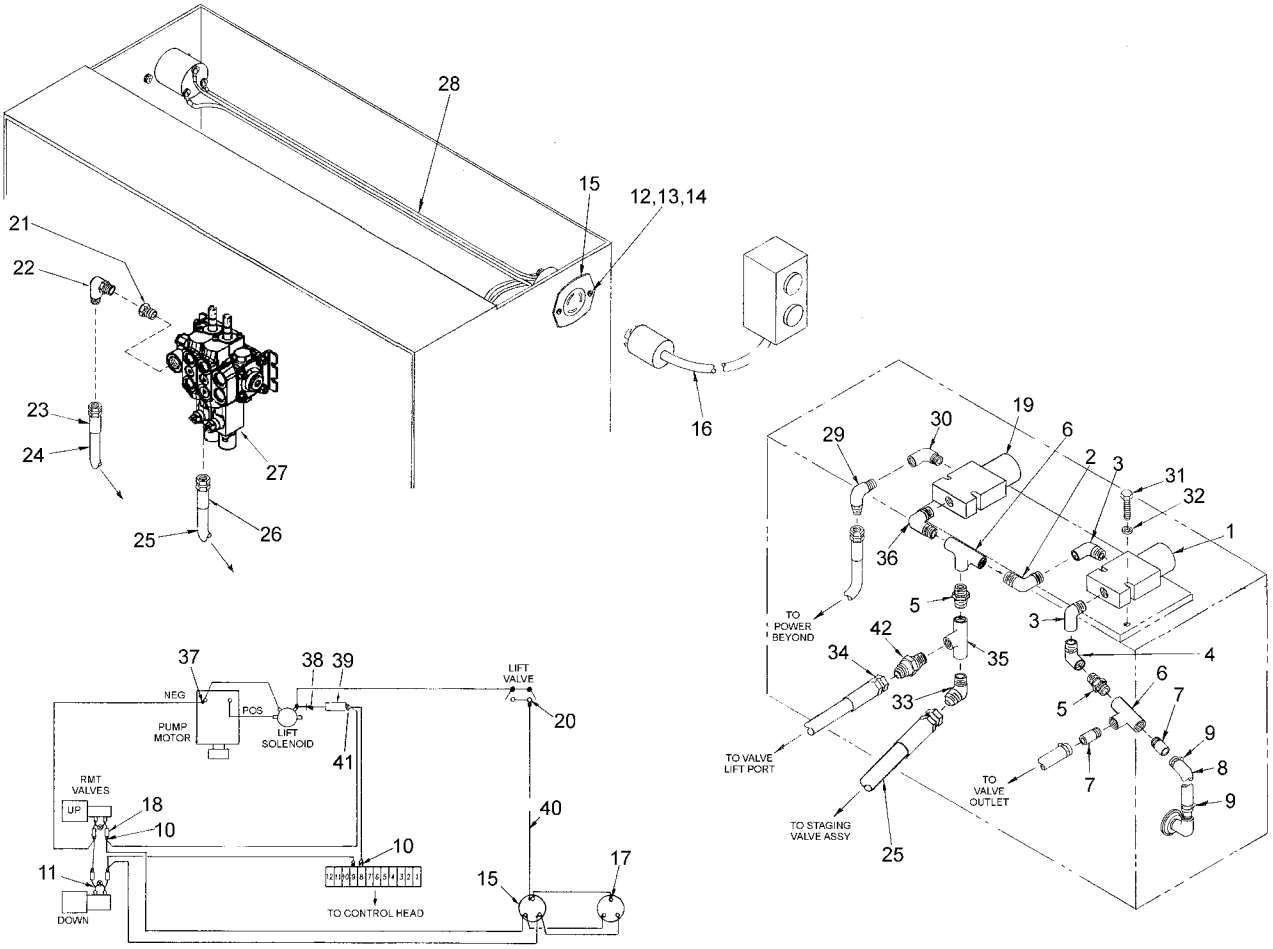
R7083

Figure 12-29 Remote Control Option Hydraulic Assemblies

INDEX NO.	PART NAME	LIFT ONLY IN HEAD	LIFT/LOWER IN HEAD	LIFT/LOWER IN BOX	LIFT/LOWER IN HEAD & BOX	NO. REQD.
1	SOLENOID VALVE - POPPET	—	048155	048155	048155	1
2	ELBOW, 90° ADAPTER, 9/16 TO 1/4	—	025538	025538	025538	1
3	ELBOW, STREET, 3/8 NPT, 90°	—	026707	026707	026707	2
4	ELBOW, STREET, 3/8 X 45°	—	026711	026711	026711	1
5	NIPPLE, HOSE, 3/8	—	026109	026109	026109	2
6	TEE	—	927107	927107	927107	2
7	NIPPLE, HOSE, 3/8	—	026128	026128	026128	2
8	HOSE, RUBBER, LOW PRESSURE	—	308900	308900	308900	1
9	HOSE CLAMP	—	056110	056110	056110	2
10	TERMINAL, SLIDE CLIP, 1/4	021204	—	—	—	1
10	TERMINAL, SLIDE CLIP, 1/4	—	021204	—	—	4
10	TERMINAL, SLIDE CLIP, 1/4	—	—	021204	—	3
10	TERMINAL, SLIDE CLIP, 1/4	—	—	—	021204	5
11	SUPPRESSOR ASSY	504116	504116	504116	504116	2
12	SCREW, RD HD, #5-40	—	—	068116	068116	4
13	WASHER, LOCK, #5	—	—	077203	077203	4
14	HEX NUT, #5-40	—	—	059410	059410	4
15	PLUG, FEMALE, FLUSH MOUNT	—	—	017800	017800	2
16	REMOTE ASSY, PUSHBUTTON	—	—	501736	501736	1
17	TERMINAL-RING #6	—	—	021236	021236	6
18	NOT USED	—	—	—	—	
19	SOLENOID VALVE, SPOOL	048166-02	048166-02	048166-02	048166-02	1
21	REDUCER	025135	025135	025135	025135	1
22	ELBOW, 90°	025535	025535	025535	025535	1
23	HOSE COUPLING, 3/8 JIC SWVL	026917	026917	026917	026917	4
24	HOSE	028900	028900	028900	028900	A/R
25	MALE ELBOW	025543	025543	025543	025543	2
26	TEE, HEAVY DUTY, 3/8	027107	027107	027107	027107	1
27	ELBOW, 90° ADAPTER, 9/16 TO 1/4	025538	025538	025538	025538	1
28	ELBOW, 90° 3/8 JIC	025525	025525	025525	025525	1
29	ELBOW, STREET, 3/8 NPT, 90°	026707	026707	026707	026707	1
30	NOT USED	—	—	—	—	
31	SCREW	—	063481	063481	063481	2
32	TERMINAL, RING, 3/16, 16 GA	021203	021203	021203	021203	1
33	TERMINAL, RING, 5/16	021207	021207	021207	021207	1
34	CONNECTOR, INLINE, INSUL	005422	005422	005422	005422	2
35	DIODE ASSY	005990	005990	005990	005990	1
40	WIRE	023014	023014	023014	023014	A/R

A/R - AS REQUIRED

CLEAR VIEW TRIMAST

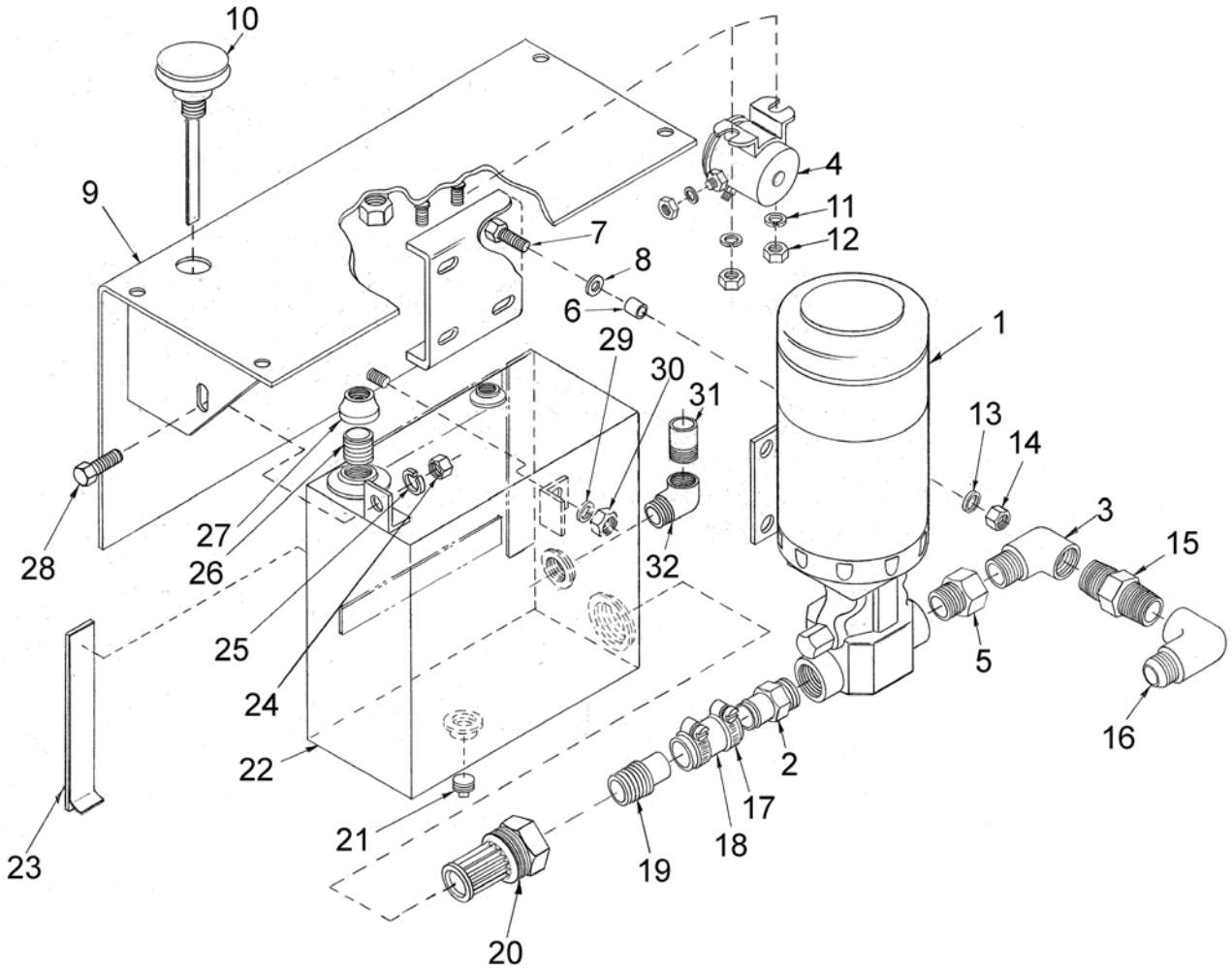


R7082

Figure 12-30 Remote Control Option Hydraulic Assemblies

INDEX NO.	PART NAME	LIFT/LOWER IN HEAD	LIFT/LOWER IN BOX	LIFT/LOWER IN HEAD & BOX	NO. REQD.
1	SOLENOID VALVE	048155	048155	048155	1
2	ELBOW, 90° ADAPTER, 9/16 TO 1/4	025538	025538	025538	1
3	ELBOW, STREET, 3/8 NPT, 90°	026707	026707	026707	2
4	ELBOW, STREET, 3/8 X 45°	026711	026711	026711	1
5	NIPPLE, HOSE, 3/8	026109	026109	026109	2
6	TEE	027107	027107	027107	2
7	NIPPLE, HOSE, 3/8	026128	026128	026128	2
8	HOSE, RUBBER, LOW PRESSURE	308900	308900	308900	1
9	HOSE CLAMP	056110	056110	056110	2
10	TERMINAL, SLIDE CLIP, 1/4	021204	021204	021204	4
11	SUPPRESSOR ASSY	504116	504116	504116	2
12	SCREW, RH HD #5-40	—	068179	068179	4
13	WASHER, LOCK	—	077203	077203	4
14	NUT, HEX	—	059410	059410	4
15	PLUG, FEMALE, FLUSH MOUNT	—	017800	017800	2
16	REMOTE ASSY, PUSHBUTTON	—	501736	501736	1
17	TERMINAL-RING #6	—	021236	021236	9
18	CONNECTOR, INLINE, INSUL	005422	005422	005422	4
19	SOLENOID VALVE	048166-02	048166-02	048166-02	1
20	TERMINAL, RING, 3/16, 16 GA	—	021203	021203	1
21	REDUCER	025135	025135	025135	
22	ELBOW, 90°	025535	025535	025535	1
23	HOSE COUPLING, 3/8 JIC SWVL	026917	026917	026917	4
24	HOSE	028900	028900	028900	A/R
25	HOSE - 1/2	283100	283100	283100	A/R
26	FITTING	026930	026930	026930	A/R
27	VALVE ASSY (SEE FIGURE 12-20)	—	—	—	REF
28	WIRE	023014	023014	023014	AR
29	ELBOW, 90° 3/8 JIC	025525	025525	025525	1
30	ELBOW, STREET, 3/8 NPT, 90°	026707	026707	026707	1
31	SCREW	063481	063481	063481	2
32	WASHER, FLAT	077031	077031	077031	2
34	FITTING	026930	026930	026930	2
35	TEE, HEAVY DUTY, 3/8	027107	027107	027107	1
36	ELBOW, 90° ADAPTER, 9/16 TO 1/4	025538	025538	025538	1
37	TERMINAL, RING, 5/16	021207	021207	021207	1
38	DIODE ASSY	055995	055995	055995	1
39	CONNECTOR, INLINE	005422	005422	005422	1
40	WIRE	023014	023014	023014	A/R
41	TERMINAL, SLIDE CLIP, 1/4	021204	021204	021204	3
42	FITTING	026902	026902	026902	1

A/R - AS REQUIRED



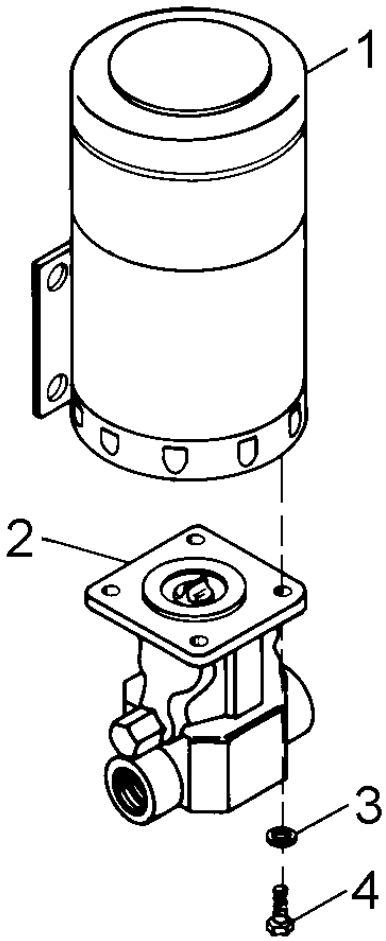
R7084

Figure 12-31 Hydraulic Panel Assembly

INDEX NO.	PART NO.	PART NAME	NO. REQD.
	504311-03	HYDRAULIC PANEL ASSEMBLY	1
1	—	. PUMP AND MOTOR ASSEMBLY (FIGURE 12-32)	REF
2	025133	. HOSE ADAPTER, 7/8 X 3/4	1
3	026707	. ELBOW, STREET, 3/8 NPT, 90°	1
4	020715	. SOLENOID	1
5	025114	. ADAPTER, HEX, 3/8,	1
6	401937-02 *	. TUBE SPACER	4
7	064612 *	. HEX HEAD CAP SCREW	4
7a	064607 **	. HEX HEAD CAP SCREW	4
8	077011	. WASHER	6
9	503533	. PANEL WELDMENT	1
10	503518	. DIPSTICK ASSY	1
11	077208	. LOCK WASHER, 1/4	2
12	059421	. HEX NUT, 1/4-20	2
13	077211	. LOCK WASHER, 3/8	4
14	059429	. HEX NUT, 3/8-16	4
15	026109	. NIPPLE, HOSE, 3/8	1
16	025542	. ELBOW, FEMALE, 90°	1
17	056105	. HOSE, CLAMP, SCREW TYPE	2
18	318200	. HOSE, 3/4	1
19	800145	. NIPPLE	1
20	035114	. SUMP FILTER	1
21	026302	. DRAIN PLUG	1
22	505831	. HYDRAULIC RESERVOIR	1
23	403665	. PAD	4
24	059421	. HEX NUT, 1/4-20	1
25	077208	. LOCK WASHER, 1/4	1
26	026146	. NIPPLE, 3/4-14	1
27	026512	. THREADED REDUCER	1
28	063478	. HEX HEAD CAP SCREW, 1/4-20 X 3/4	1
29	077211	. LOCK WASHER, 3/8	1
30	059429	. HEX NUT, 3/8-16	1
31	026128	. NIPPLE, HOSE, 3/8	1
32	026707	. ELBOW, STREET, 3/8 NPT, 90°	1

*** USED ON TRUCKS SERIAL NUMBER 384041 TO 4446092**

**** USED ON TRUCKS SERIAL NUMBER 4446093 & HIGHER**



R7085

Figure 12-32 Pump and Motor

INDEX NO.	PART NAME	24V PDC S/N 384041 TO 4446092	24VPDC S/N 4446093 AND HIGHER	NO. REQD.
	PUMP AND MOTOR ASSEMBLY	016913	016973	1
1	MOTOR (FIGURE 12-41)	—	—	REF
2	PUMP	900896-09	906012	1
3	LOCK WASHER, 5/16	077210	077210 *	4
4	HEX HEAD SCREW, 5/16-18 X 3/4	063553	063553 *	4

*** PUMP 906012 USES ONLY (2) EACH OF ITEMS 3 & 4 WHICH ARE SUPPLIED WITH PUMP**

NOTES

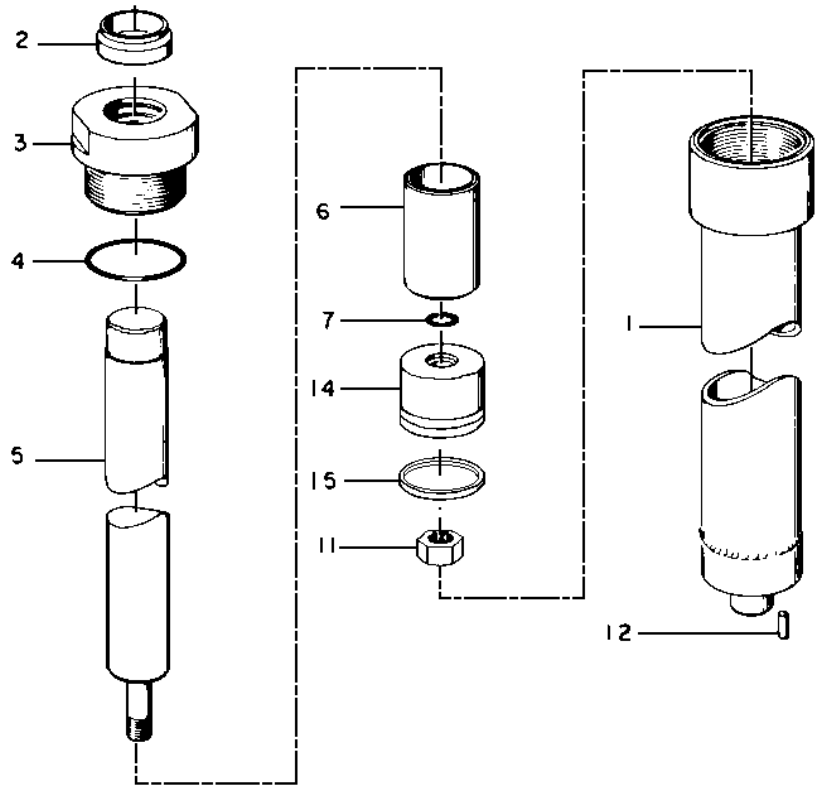
NON-TEL & TEL

2.75 DIA CYL PACKING KIT 907119

2.50 DIA CYL PACKING KIT 907121

CONTAIN:

ITEM	QTY
2	1
4	1
7	1
11	1
15	1



R6106

Figure 12-33. Lift Cylinder Assembly (Non Telescopic and Telescopic)

2000, 2500, and 3000 lb Lift (2-1/2 inch I.D. cylinder with 2 inch diameter rod)
On Trucks SERIAL NUMBER 384041 TO 4456482

INDEX NO.	PART NAME	60 INCH LIFT	106 INCH LIFT	130 INCH LIFT	154 INCH LIFT	168 INCH LIFT	NO. REQD.
—	HYD. LIFT CYLINDER ASSY	503568-09	503568-05	503568-07	503568-11	503568-12	1
1	. TUBE ASSY	—	—	—	—	—	1
2	. WIPER RING	049509	049509	049509	049509	049509	1
3	. GLAND NUT	800024	800024	800024	800024	800024	1
4	. TOP O-RING	042113	042113	042113	042113	042113	1
5	. RAM ROD	—	—	—	—	—	1
6	. RAM STOP	300501	300509	300509	300509	300509	1
7	. BOTTOM O-RING	042105	042105	042105	042105	042105	1
11	. JAM NUT, 3/4-16	800293	800293	800293	800293	800293	1
12	. ROLL PIN, 5/16 X 3/4	061023	061023	061023	061023	061023	1
14	. PISTON	403864	403864	403864	403864	403864	1
15	. PSP SEAL	042205-02	042205-02	042205-02	042205-02	042205-02	1

2000, 2500, and 3000 lb Lift (2-3/4 inch I.D. cylinder with 2-1/4 inch diameter rod)
On Trucks SERIAL NUMBER 4456483, 4471137 AND HIGHER

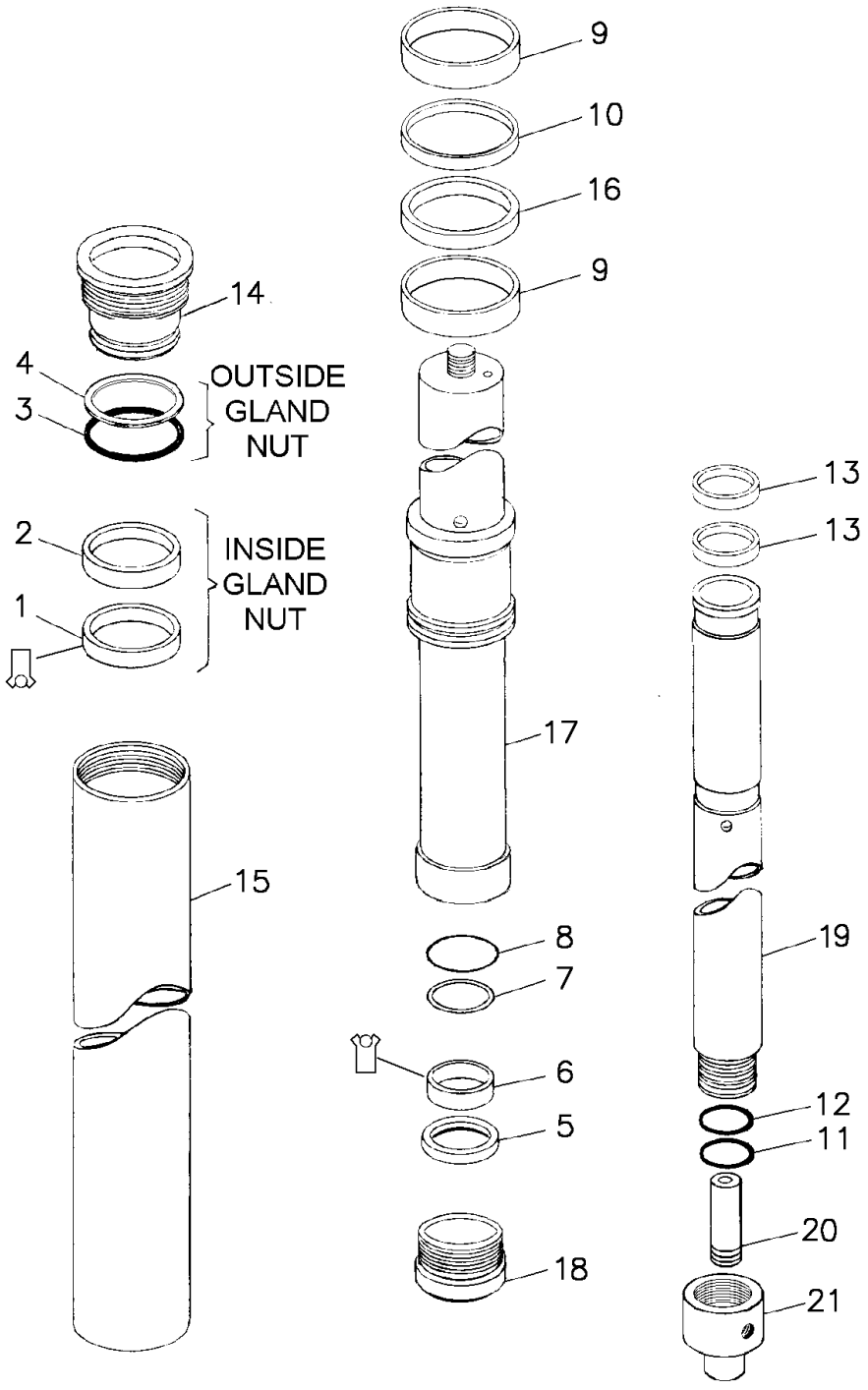
4000 LB Lift (2-3/4 inch I.D. cylinder with 2-1/4 inch diameter rod)
On Trucks SERIAL NUMBER 384041 AND HIGHER

INDEX NO.	PART NAME	60 INCH LIFT	106 INCH LIFT	130 INCH LIFT	154 INCH LIFT	168 INCH LIFT	NO. REQD.
—	HYD. LIFT CYLINDER ASSY	504386-01	504386-02	504386-03	504386-04	504386-05	1
1	. TUBE ASSY	—	—	—	—	—	1
2	. WIPER RING	049502	049502	049502	049502	049502	1
3	. GLAND NUT	800049	800049	800049	800049	800049	1
4	. TOP O-RING	042114 *	042114 *	042114 *	042114 *	042114 *	1
5	. RAM ROD	—	—	—	—	—	1
6	. RAM STOP	272215	272216	272216	272216	272216	1
7	. BOTTOM O-RING	042105	042105	042105	042105	042105	1
11	. JAM NUT, 3/4-16	800293	800293	800293	800293	800293	1
12	. ROLL PIN, 5/16 X 3/4	061023	061023	061023	061023	061023	1
14	. PISTON	403949	403949	403949	403949	403949	1
15	. PSP SEAL	042205-03	042205-03	042205-03	042205-03	042205-03	1

FULL FREE LIFT

PACKING KIT 907211 CONTAINS:

ITEM	QTY
1	1
2	1
3	1
4	1
5	1
6	1
7	1
8	1
9	1
‘10	1
11	1
12	1
13	1



R7093

Figure 12-34. Lift Cylinder Assembly (Full Free Lift - Telescopic)

INDEX NO.	PART NAME	106 INCH LIFT	130 INCH LIFT	NO. REQD.
—	HYD. LIFT CYLINDER ASSY	504488	504489	1
1	. POLYPACK	— *	— *	1
2	. ROD WIPER	— *	— *	1
3	. 0-RING	— *	— *	1
3	. GLAND NUT	— *	— *	1
4	. BACKUP WASHER	— *	— *	1
5	. ROD WIPER	— *	— *	1
6	. POLYPACK	— *	— *	1
7	. BACKUP WASHER	— *	— *	1
8	. 0-RING	— *	— *	1
9	. WEAR RING	— *	— *	1
10	. PSC SEAL	— *	— *	1
11	. 0-RING	— *	— *	1
12	. BACKUP WASHER	— *	— *	1
13	. WEAR RING	— *	— *	2
14	. GLAND NUT	—	—	1
15	. OUTER JACKET TUBE	—	—	1
16	. FELT RING (NOT IN PACKING KIT)	—	—	1
17	. PRIMARY ROD	—	—	1
18	. GLAND NUT	—	—	1
19	. SECONDARY ROD	—	—	1
20	. FLOW REGULATOR	—	—	1
21	. ROD END	—	—	1

*** CONTAINED IN PACKING KIT, PART NUMBER 907211**

CLEAR VIEW TRIMAST

PACKING KIT 907123

CONTAINS:

ITEM	QTY
1	1
3	1
6	1
8	1
9	1

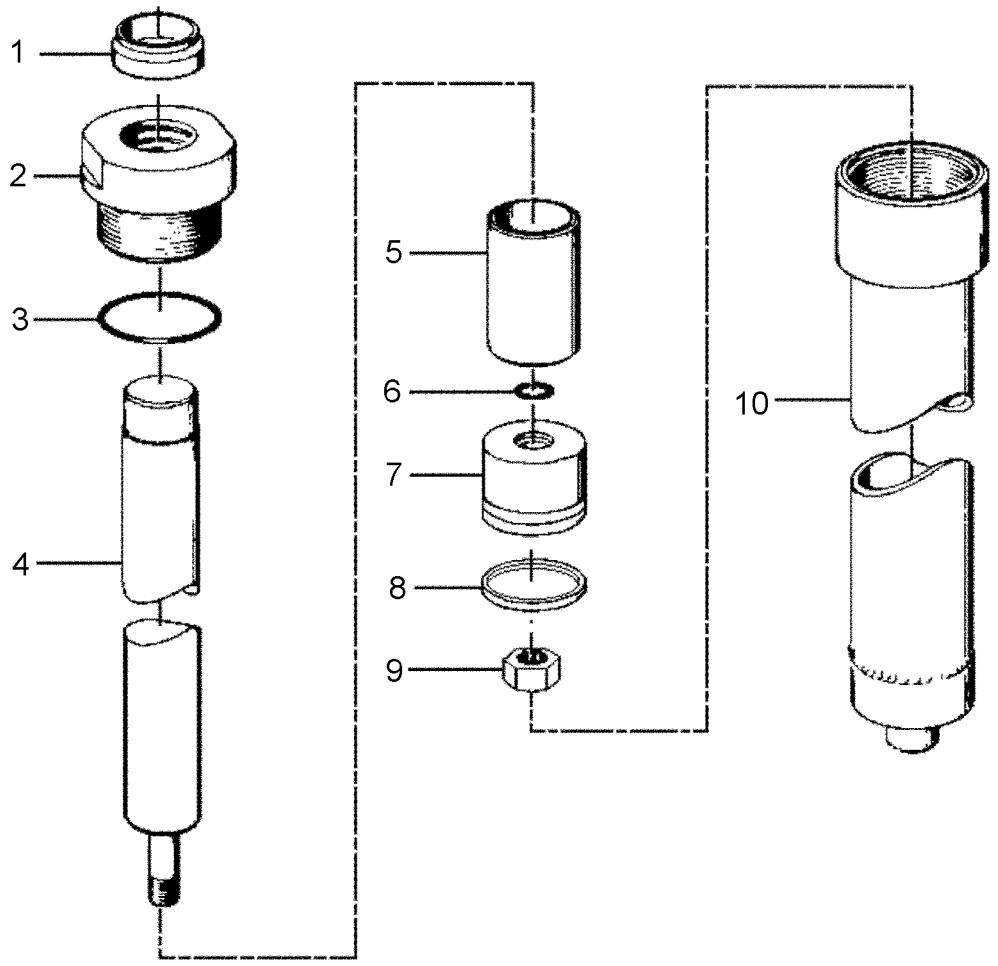


Figure 12-35. Secondary Lift Cylinder (2 inch) (Clear View TRIMAST)

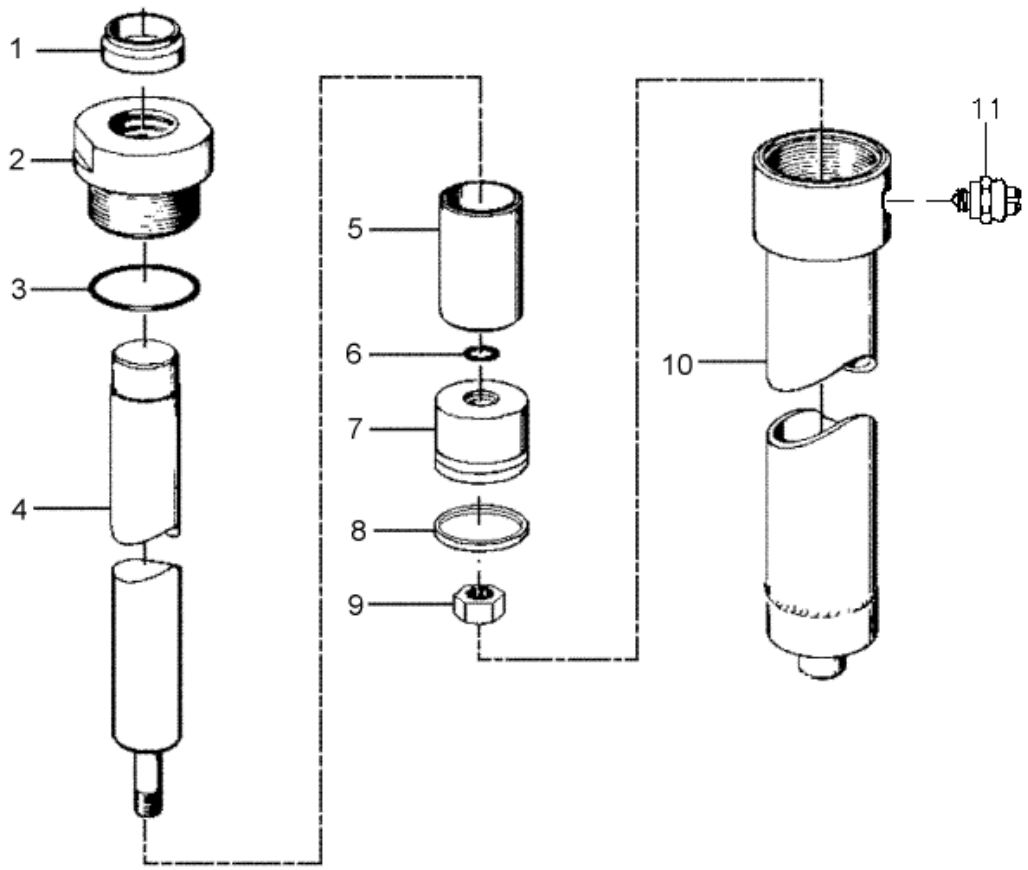
INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	503600-01	SECONDARY LIFT CYLINDER (158" LIFT)	2
—	503600-02	SECONDARY LIFT CYLINDER (194" LIFT)	2
1	049508	. WIPER RING	1
2	800023	. GLAND NUT	1
3	042122	. O-RING	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
4	VAR	. PISTON ROD	1
5	296001-01	. RAM STOP	1
6	042105	. O-RING	1
7	403863	. PISTON	1
8	042205-01	. SEAL	1
9	800293	. JAM NUT, 3/4-16	1
10	VAR	. TUBE ASSEMBLY	1

CLEAR VIEW TRIMAST

PACKING KIT 907119 CONTAINS:

ITEM	QTY
1	1
3	1
6	1
8	1
9	1



R7036

Figure 12-36. Full Free Lift Lift Cylinder (2.75 inch) (Clear View TRIMAST)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	506617-01	FULL FREE LIFT LIFT CYLINDER (158” LIFT)	2
—	506617-02	FULL FREE LIFT LIFT CYLINDER (194” LIFT)	2
1	049502	. WIPER RING	1
2	800049	. GLAND NUT	1
3	042114	. O-RING	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
4	VAR	. PISTON ROD	1
5	272205	. RAM STOP (158” LIFT)	1
5a	272214	. RAM STOP (194, 212” LIFT)	1
6	042105	. O-RING	1
7	403949	. PISTON	1
8	042205-03	. SEAL	1
9	800293	. JAM NUT, 3/4-16	1
10	VAR	. TUBE ASSEMBLY	1
11	907130	. SWITCH, LIMIT	1

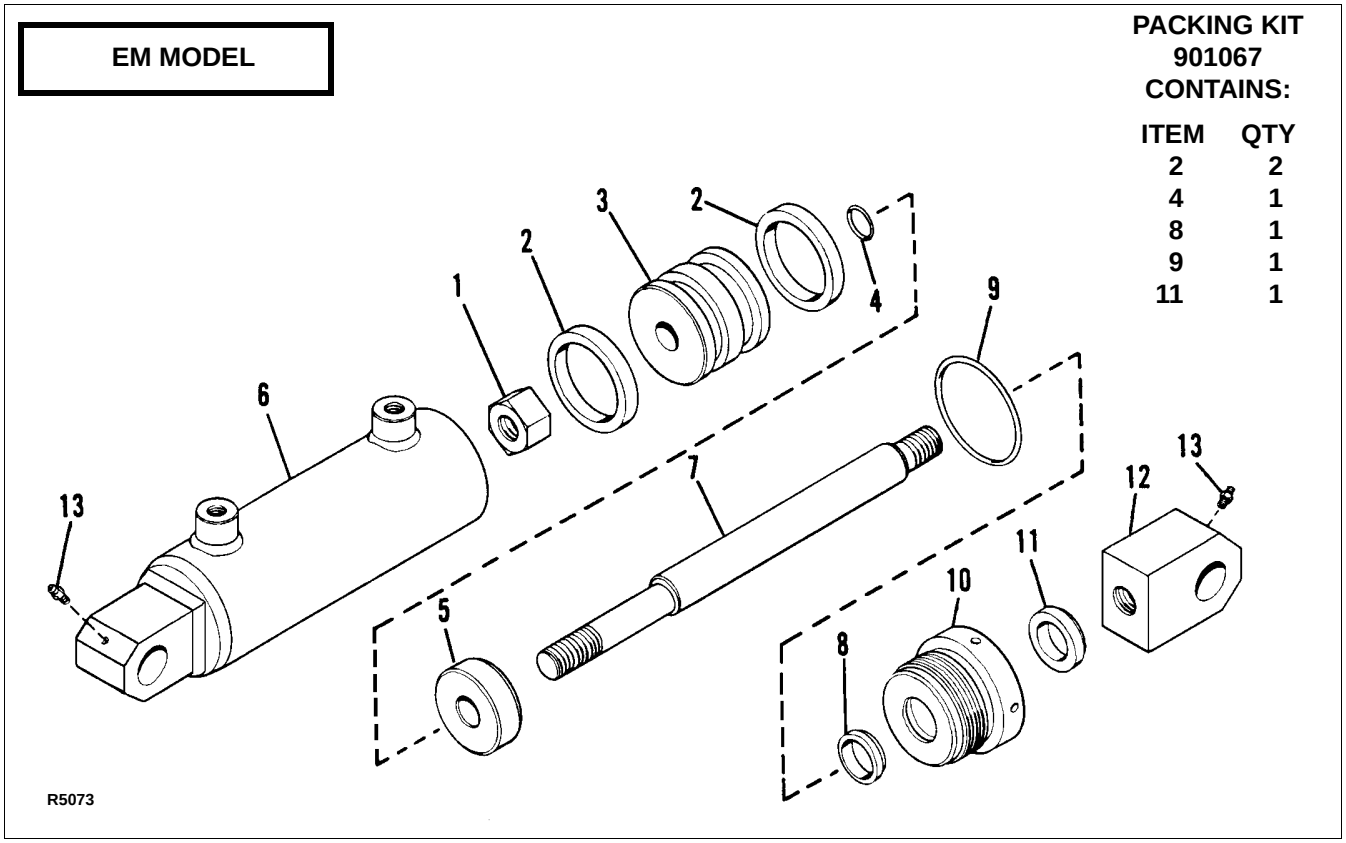


Figure 12-37. Tilt Cylinder

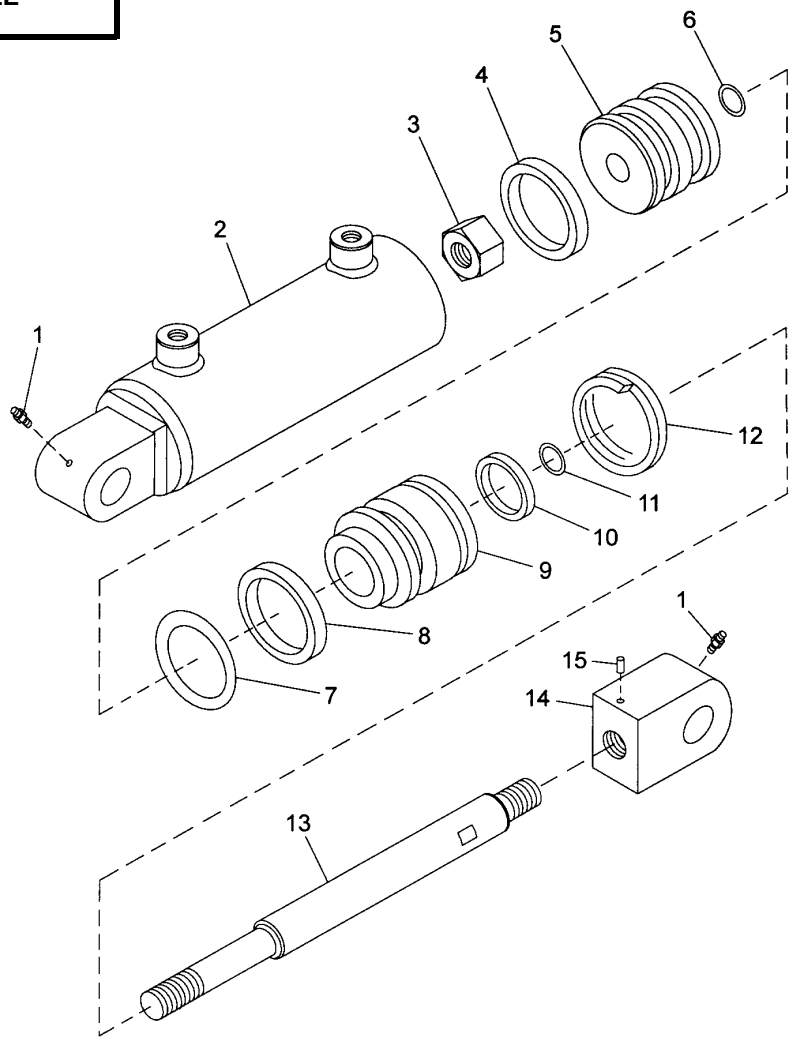
INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	047543	COMPLETE CYLINDER ASSEMBLY	1
1	901061	. LOCKNUT	1
2	— *	. POLYPAK	2
3	901065	. PISTON (ALUM.)	1
4	— *	. O-RING	1
5	901062	. SPACER	1
6	—	. JACKET ASSEMBLY	1
7	901064	. PISTON ROD	1
8	— *	. POLYPAK	1
9	— *	. O-RING	1
10	901066	. GLAND NUT	1
11	— *	. ROD WIPER	1
12	901068	. ROD END	1
13	901063	. GREASE ZERK	2

*** CONTAINED IN PACKING KIT, PART NUMBER 901067**

CH MODEL

PACKING KIT 903253 CONTAINS:

ITEM	QTY
4	1
6	1
7	1
8	1
10	1
11	1



R5772

Figure 12-38. Tilt Cylinder

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	047543	COMPLETE CYLINDER ASSEMBLY	1
1	—	. GREASE ZERK	2
2	—	. BARREL	1
3	903250	. NUT	1
4	— *	. SEAL	1
5	903252	. PISTON	1
6	— *	. O-RING	1
7	— *	. O-RING	1
8	— *	. BACKUP RING	1

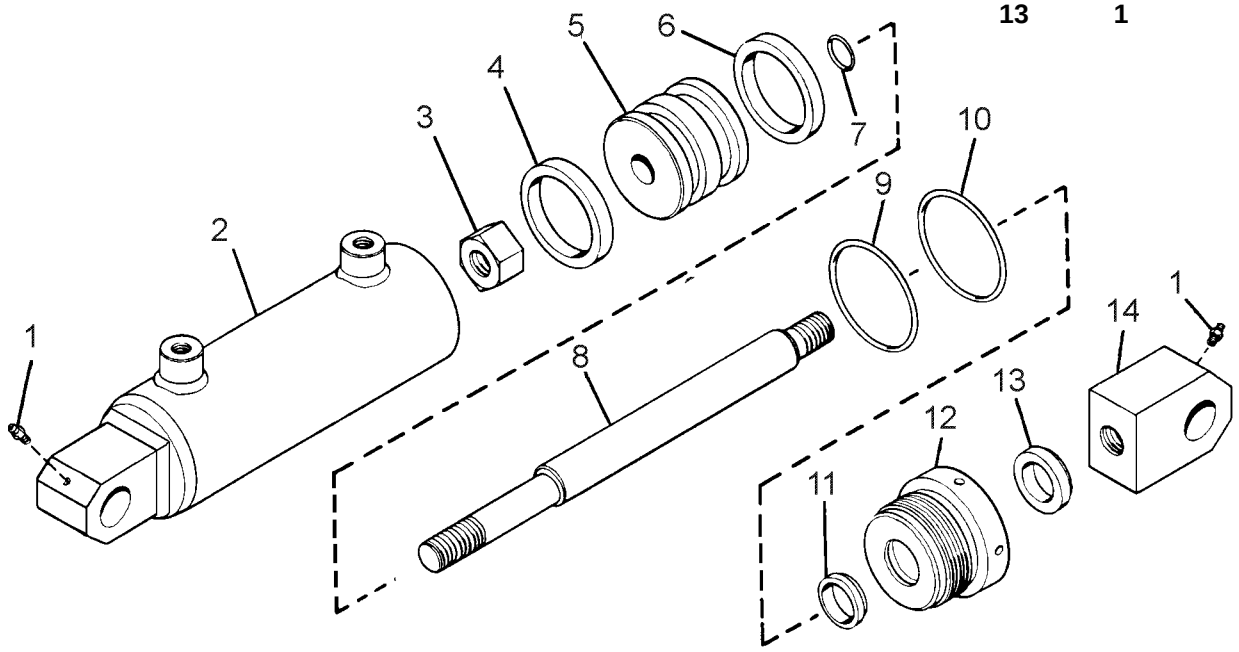
INDEX NO.	PART NO.	PART NAME	NO. REQD.
9	903251	. HEAD	1
10	— *	. ROD SEAL	1
11	— *	. DUST SEAL	1
12	903254	. RETAINING RNG	1
13	903255	. PISTON ROD	1
14	903257	. ROD END	1
15	—	. BRASS SETSCREW, 1/4-28 NYLOCK	1

*** CONTAINED IN PACKING KIT, PART NUMBER 903253**

BMP MODEL

PACKING KIT 901067 CONTAINS:

ITEM	QTY
4	1
6	1
7	1
9	1
11	1
13	1



R6504

Figure 12-39. Tilt Cylinder

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	047543	COMPLETE CYLINDER ASSEMBLY	1
1	—	. GREASE ZERK	2
2	—	. BARREL	1
3	23075	. NUT	1
4	30251 *	. WEAR RING	1
5	22259	. PISTON	1
6	21521 *	. PSP SEAL	1
7	18116 *	. O-RING	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	047543-R	. PISTON ROD	1
9	18330 *	. O-RING	1
10	39330	. BACKUP WASHER	1
11	21114 *	. POLYPAK (TYPE B)	1
12	13533	. GLAND NUT	1
13	12101 *	. ROD WIPER	1
14	—	. ROD END	1
—	—	. SETSCREW,	1
		.	

*** CONTAINED IN PACKING KIT, PART NUMBER 901067**

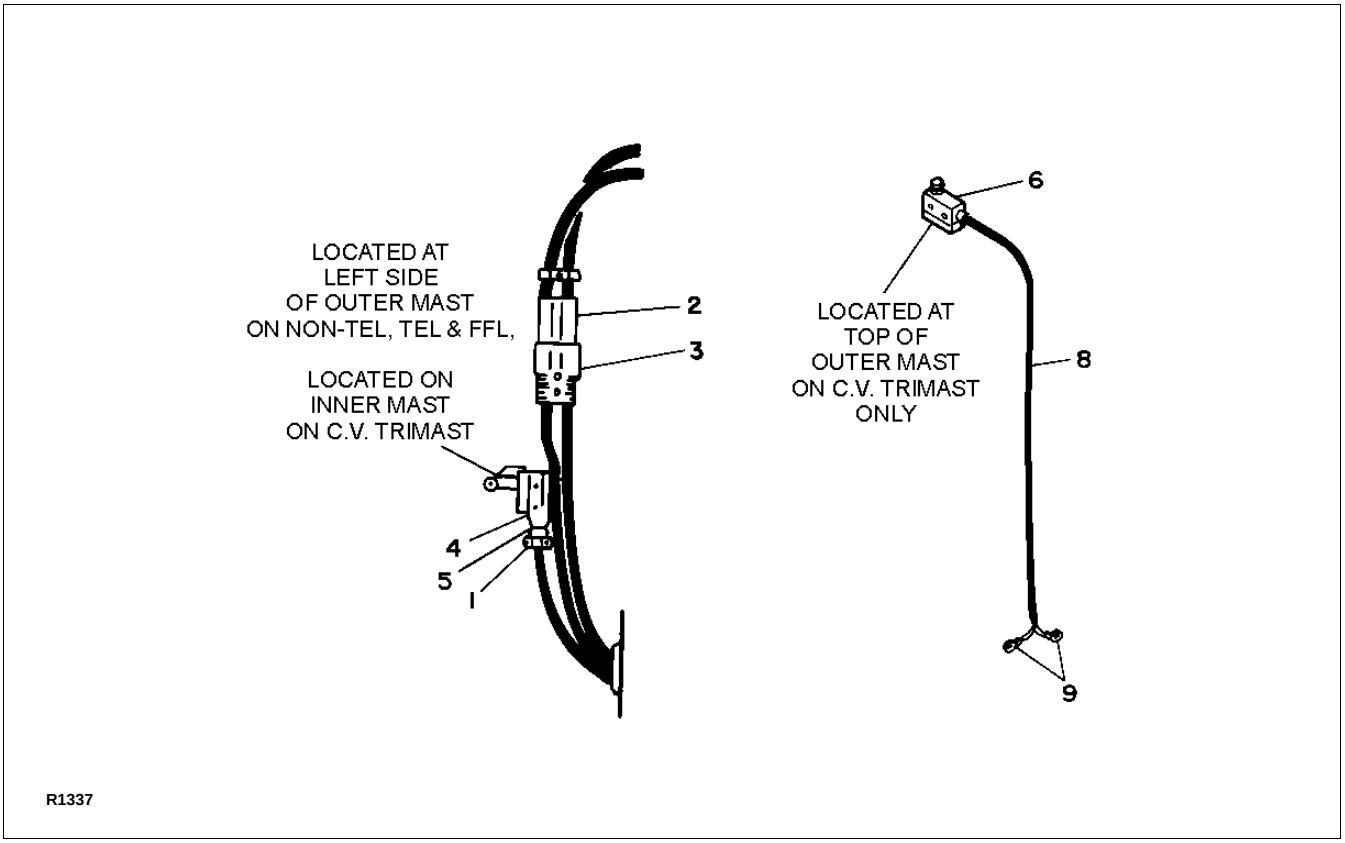


Figure 12-40. Mast Related Electrical Components

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	019910	STRAIN RELIEF (PDC-25, 30)	1
1a	005405	STRAIN RELIEF (PDC-40)	1
2	005421	BATTERY QUICK DISCONNECT	1
3	005401	BATTERY CONNECTOR	1
4	020689	HIGH SPEED CUTOFF SWITCH (COLD-CONDITIONING ONLY)	1
4	020703	HIGH SPEED CUTOFF SWITCH	1
5	021236	TERMINAL-RING #6	2
6	020729	LIMIT SWITCH (MICROSWITCH)	1
7	—	NOT USED	1
8	004724	CABLE	A/R
9	—	TERMINAL, RING, 3/16, 16 GA	4

A/R - AS REQUIRED

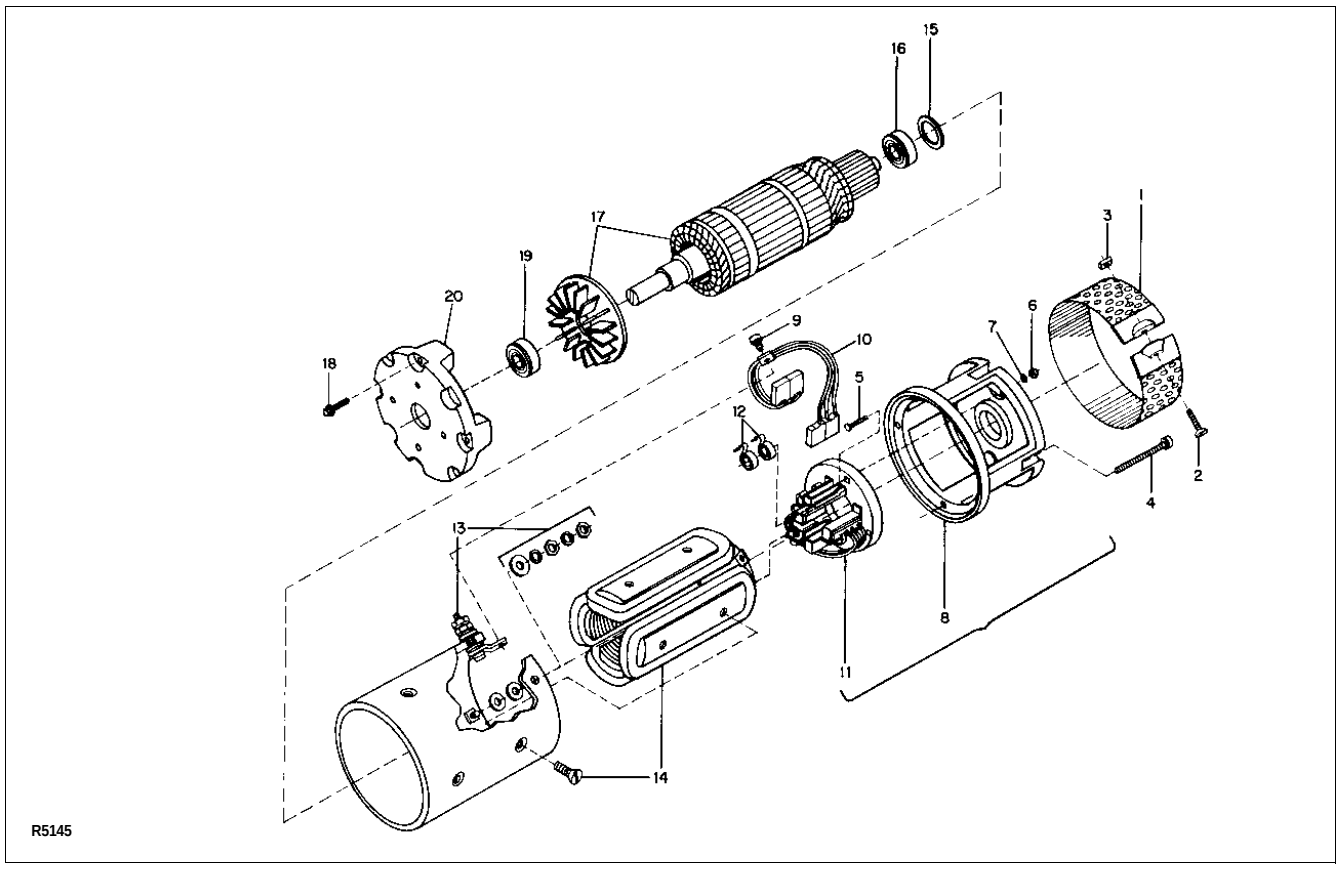


Figure 12-41 Pump Motor

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	905053	MOTOR, PUMP	1
1	905055	. BAND, COVER	1
2	—	. SCREW, RD. HEAD, 10-32 X 1-3/4	1
3	—	. NUT, SQUARE, 10-32	1
4	905056	. SCREW, HEX HD THD ROLLING, 1032 X 2	4
5	905057	. BOLT, SQUARE NECK, 10-32 X 7/8	4
6	—	. NUT, HEX, 10-32	4
7	—	. LOCKWASHER, #10	4
8	905058	. HEAD, COMMUTATOR END	4
9	—	. SCREW, RD HEAD, 1/4-20 X 3/8	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
10	905059	. BRUSH SET, SERVICE	1
11	905060	. BRUSH HOLDER PLATE	1
12	905061	. SPRING SET, BRUSH	1
13	905063	. TERMINAL, STUD PKG.	1
14	905064	. FIELD COIL (INCLUDES HARDWARE)	1
15	905065	. WASHER, SPRING	1
16	905066	. BEARING, COMMUTATOR END	1
17	905067	. ARMATURE & FAN ASSY	1
18	—	. SCREW, FILLISTER HEAD, 10-32 X 3/4	8
19	905068	. BEARING, DRIVE END	1
20	905069	. HEAD, DRIVE END	1

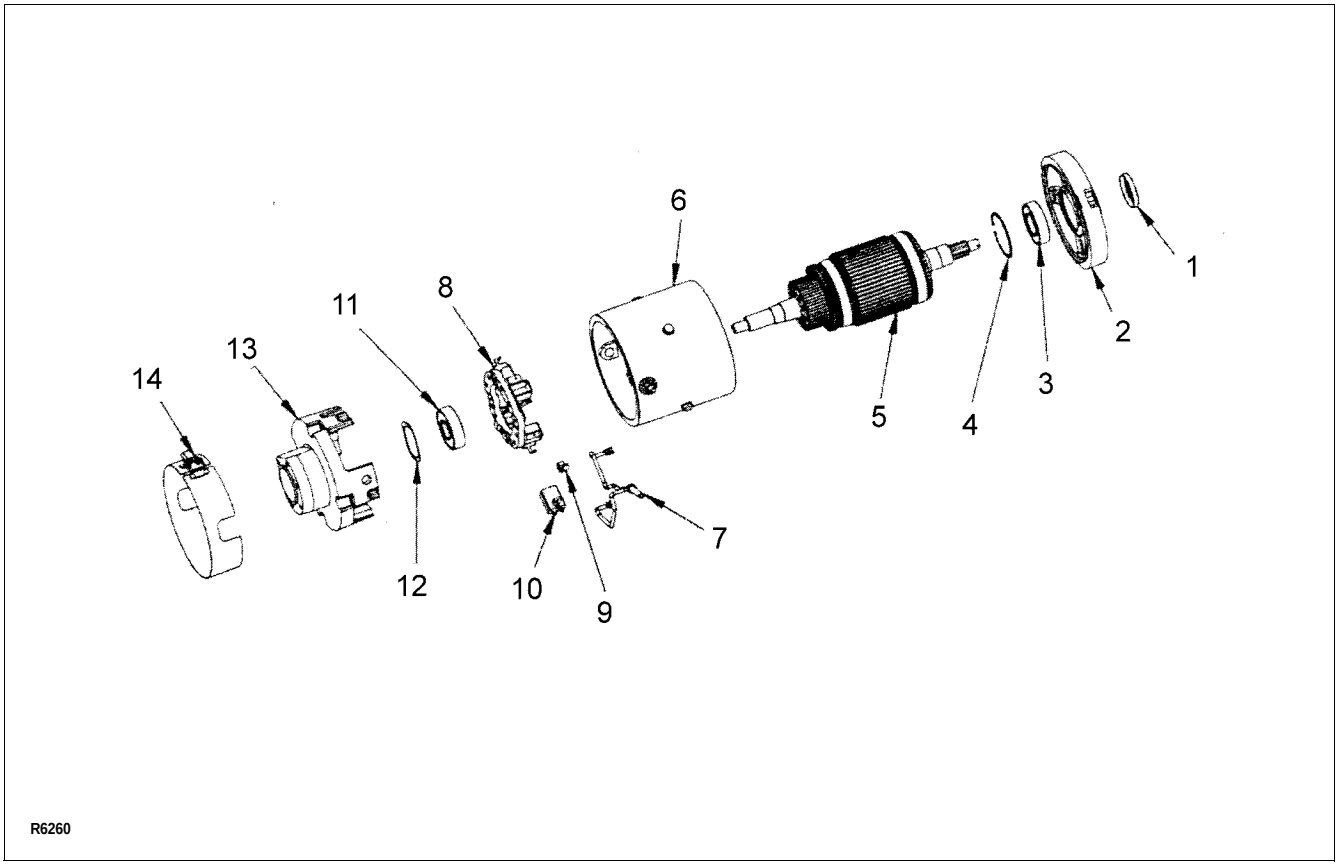


Figure 12-42 Drive Motor

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	016053	DRIVE MOTOR	1
1	903267	. SEAL	1
2	903268	. DRIVE ENDHEAD	1
3	903269	. BEARING	1
4	903266	. . RETAINING RING	1
5	903270	. . ARMATURE ASSEMBLY	1
6	903271	. FRAME & FIELD ASSEMBLY	1
7	903265	. BRUSHLEAD & TERMINAL	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	903258	. BRUSH BOX ASSEMBLY	1
9	903260	. BRUSH, SPRING SET	1
10	903262	. BRUSH SET	1
11	903263	. BEARING	1
12	903272	. WAVE WASHER	1
13	903273	. COMMUTATOR, ENDHEAD	1
14	903274	. HEADBAND ASSEMBLY	1

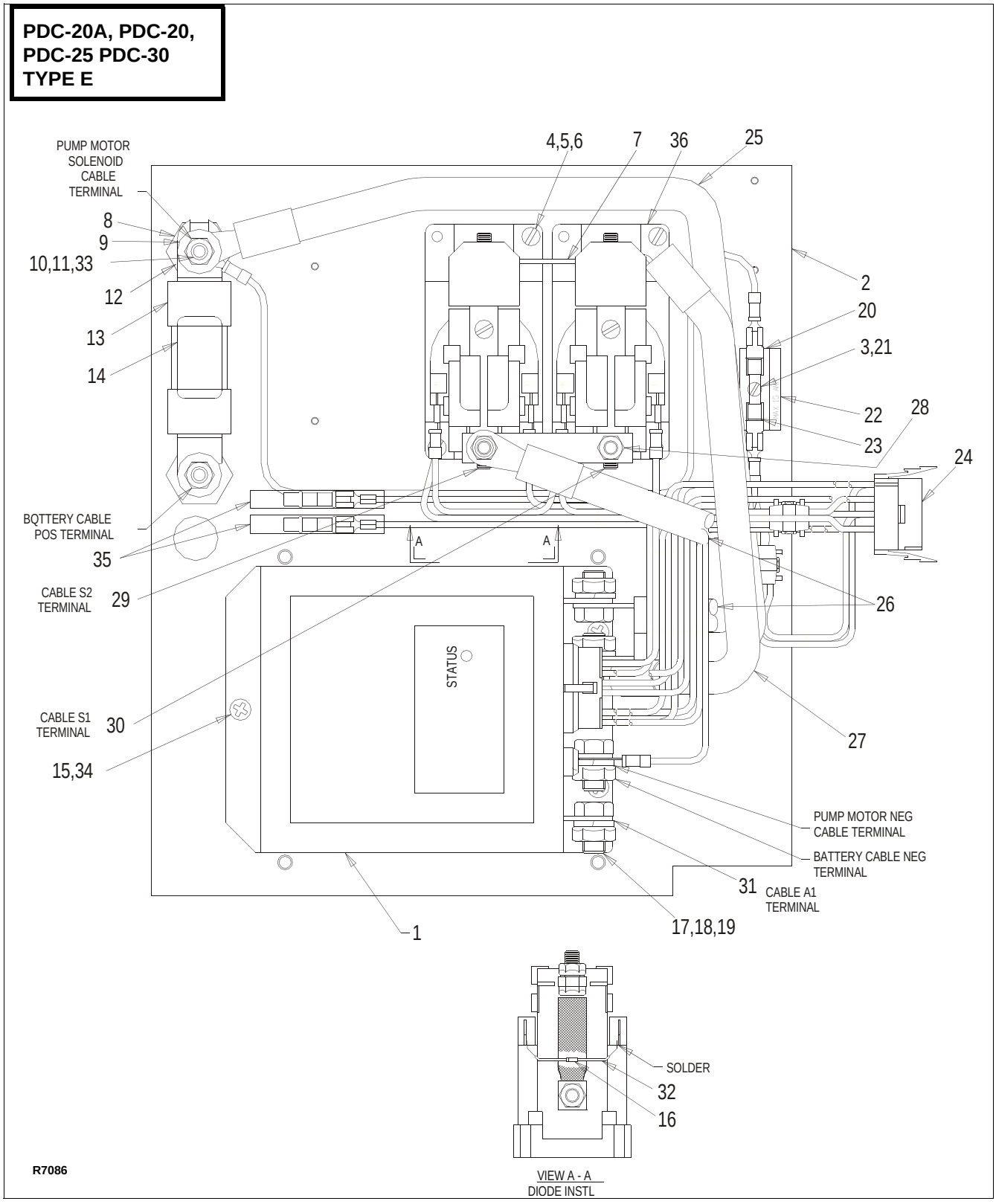


Figure 12-43 Control Panel Assembly (Type E)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	504892-02	CONTACTOR PANEL ASSEMBLY	1
1	005469	. CONTROLLER	1
2	403289	. BASE PLATE	1
3	068177	. SCREW, RD HD, #5-40 X 3/8	1
4	070491	. SCREW, RH HD, 8-32 X 1	4
5	077205	. SPLIT LOCK WASHER, #8	4
6	077032	. WASHER, 3/16 X 1/2 X 13GA	4
7	401181	. BUS BAR	2
8	010614	. STAND-OFF	2
9	077105	. FLAT BRONZE WASHER	4
10	075620	. STUD-THREADED, BRS, 1/4-20 X 1-7/8	2
11	077209	. LOCK WASHER, 1/4	2
12	069477	. SCREW, PH FL HD, 1/4-20 X 1/2	2
13	008906	. 300 AMP FUSE	1
14	056507	. FUSE, DECAL, 300 AMP	1
15	071376	. PAN HEAD SCREW, 10-32 X 1/2	3
16	005976	. DIODE	2
17	059426	. NUT, HEX, 5/16-18	4
18	077210	. WASHER, LOCK, SPLIT, 5/16	4
19	063552	. SCREW, HEX CAP, 5/16-18 X 5/8	4
20	008904	. FUSE HOLDER	1
21	077203	. LOCK WASHER	1
22	056504	. DECAL, FUSE, 15A	1
23	008910	. 15 AMP FUSE	1
24	023255	. WIRE HARNESS ASSEMBLY	1
25	503965-82	. CABLE ASSY #2, POS	1
26	503965-34	. CABLE ASSY #2, A2	1
27	503965-06	. CABLE ASSY #2, M-	1
28	503965-45	. CABLE ASSY #2, A2	1
29	503965-46	. CABLE ASSY #2, S2	1
30	503965-11	. CABLE ASSY #2, S1	1
31	503965-88	. CABLE ASSY #2, A1	1
32	010613	.	A/R
33	059421	. NEX NUT, 1/4-20	2
34	077207	. WASHER, LOCK, SPLIT, #10	3
35	005422	. CONNECTOR, INLINE, INSUL	2
36	005657	. CONTACTOR DOUBLE POLE 100 AMP (FIGURE 12-47)	2

A/R - AS REQUIRED

NOTE: FOR A COMPLETE SET OF CONTACTOR TIPS FOR ALL CONTACTORS ORDER PART NUMBER 900531-01

**PDC-20A, PDC-20,
PDC-25 PDC-30
TYPE EE**

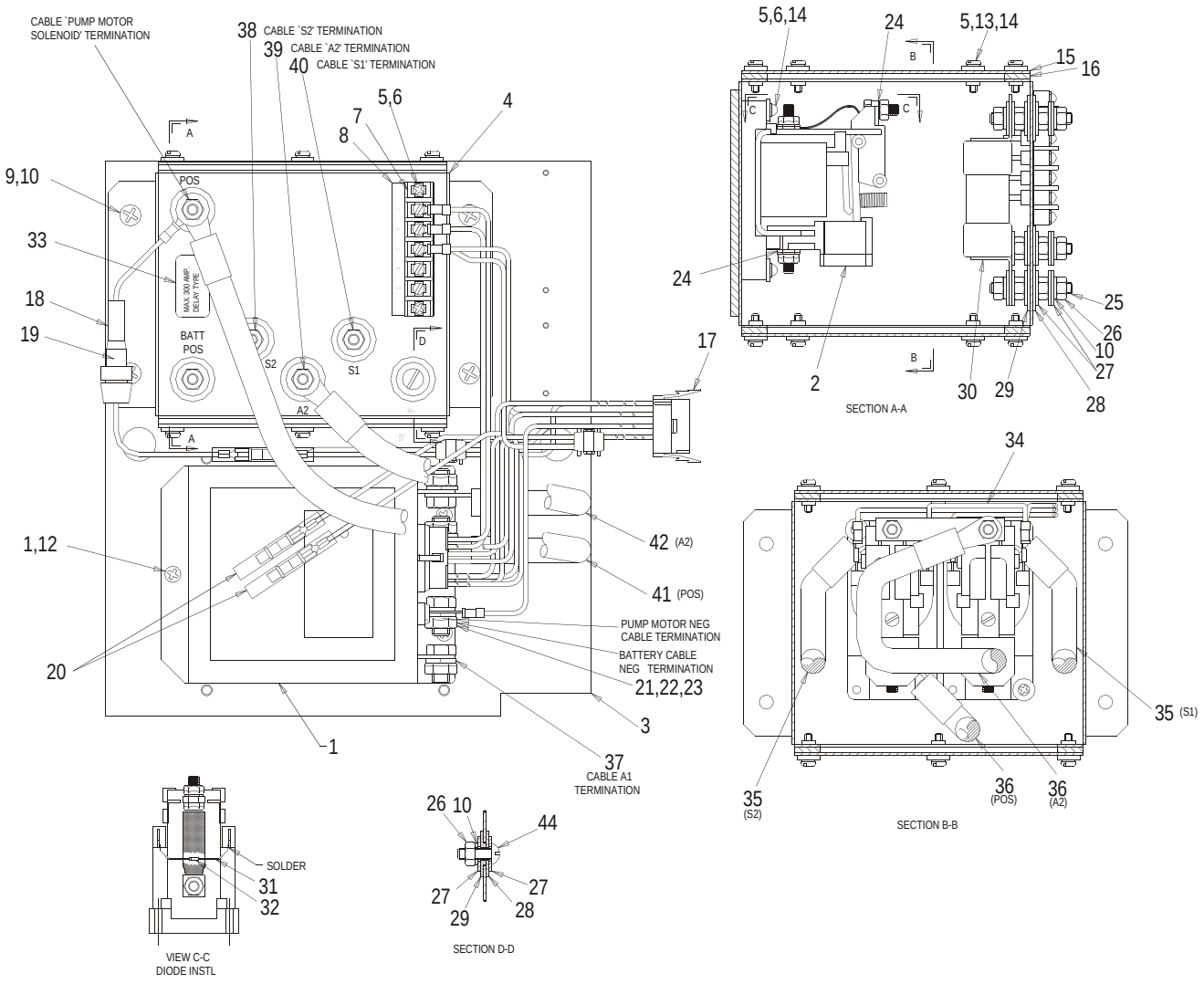


Figure 12-44 Control Panel Assembly (Type EE)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505888-02	CONTACTOR PANEL ASSEMBLY	1
1	005469	. CONTROLLER	1
2	005657	. CONTACTOR DOUBLE POLE 100 AMP (FIGURE 12-47)	2
3	403325	. BASE PLATE	1
4	505284	. ENCLOSURE	1
5	077205	. SPLIT LOCK WASHER, #8	18
6	070491	. SCREW, RH HD, 8-32 X 1	6
7	021250	. TERMINAL BOARD	1
8	021251	. STRIP MARKER	1
9	070476	. SCREW, PH RD HD, 1/4-20 X 1/2	4
10	077209	. LOCK WASHER, 1/4	15
11	071376	. PAN HEAD SCREW, 10-32 X 1/2	3
12	077207	. WASHER, LOCK, SPLIT, #10	3
13	072410	. SCREW, THREAD CUTTING	12
14	077032	. WASHER, 3/16 X 1/2 X 13GA	16
15	403294	. COVER, BOX, CONTACTOR	2
16	036121	. COVER GASKET	2
17	023254	. WIRE HARNESS ASSEMBLY	1
18	505117	. FUSE HOLDER	1
19	008910	. 15 AMP FUSE	1
20	005422	. CONNECTOR, INLINE, INSUL	3
21	063552	. SCREW, HEX CAP, 5/16-18 X 5/8	4
22	059426	. NUT, HEX, 5/16-18	4

INDEX NO.	PART NO.	PART NAME	NO. REQD.
22	059426	. NUT, HEX, 5/16-18	4
23	077210	. WASHER, LOCK, SPLIT, 5/16	4
24	401181	. BUS BAR	2
25	075621	. STUD-BRASS, 1/4-20 X 1-7/8	5
26	059422	. NUT, HEX, BRAS, 1/4-20 UNC 2B	21
27	077105	. FLAT BRONZE WASHER	32
28	402894	. WASHER, INSULATING	6
29	402895	. WASHER, SHOULDER, INSULATING	6
30	008906	. 300 AMP FUSE	1
31	010613	. TUBE, INSULATING	A/R
32	005976	. DIODE	2
33	056507	. FUSE, DECAL, 300 AMP	1
34	023253	. WIRE HARNESS ASSEMBLY	1
35	503965-79	. CABLE ASSY #2	2
36	504857-02	. CABLE ASSY	2
37	503965-88	. CABLE ASSY #2	1
38	503965-71	. CABLE ASSY #2	1
39	503965-45	. CABLE ASSY #2	1
40	503965-47	. CABLE ASSY #2	1
41	503965-78	. CABLE ASSY #2	1
42	503965-07	. CABLE ASSY #2	1
44	070490	. SCREW, SL RD HD, 1/4-20 X 3/4	1

A/R - AS REQUIRED

NOTE: FOR A COMPLETE SET OF CONTACTOR TIPS FOR ALL CONTACTORS ORDER PART NUMBER 900531-01

PDC-40
TYPE E

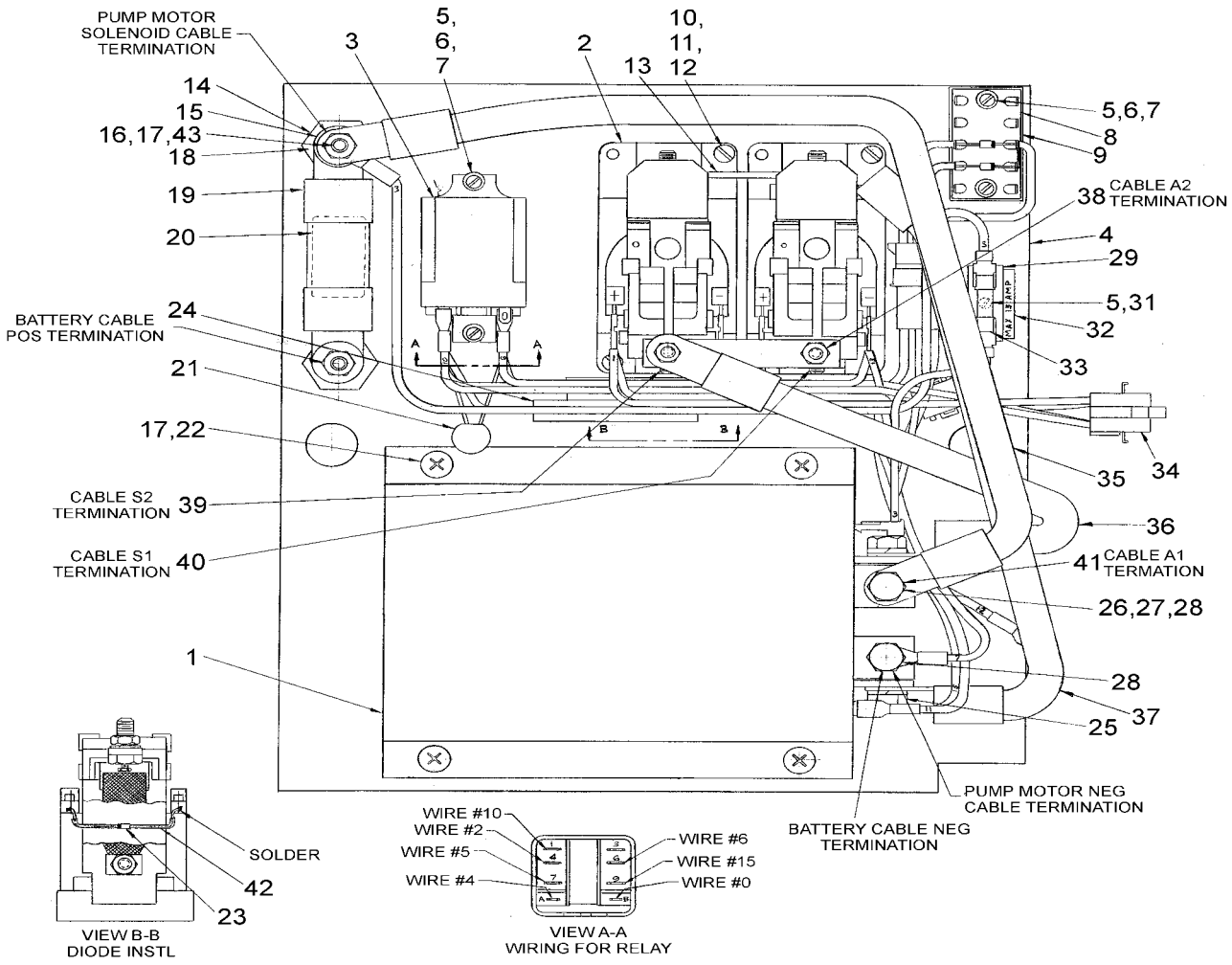


Figure 12-45 Control Panel Assembly (Type E)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505362-02	CONTACTOR PANEL ASSEMBLY	1
1	005467-02	. CONTROLLER	1
2	005657	. CONTACTOR DOUBLE POLE 100 AMP (FIGURE 12-47)	2
3	018409-02	. RELAY	1
4	403289	. BASE PLATE	1
5	068177	. SCREW, RD HD, #5-40 X 3/8	5
6	077203	. LOCK WASHER	4
7	077007	. WASHER	6
8	505320	. DIODE ASSY.	1
9	010610	. PAD, INSUL, DIODE	1
10	070491	. SCREW, RH HD, 8-32 X 1	4
11	077205	. SPLIT LOCK WASHER, #8	4
12	077032	. WASHER, 3/16 X 1/2 X 13GA	4
13	401181	. BUS BAR	2
14	010614	. STAND-OFF	2
15	077105	. FLAT BRONZE WASHER	4
16	075620	. SCREW, RD HD, BRASS	2
17	077209	. LOCK WASHER, 1/4	6
18	069477	. SCREW, FL HD, 1/4-20 X 1/2	2
19	008906	. 300 AMP FUSE	1
20	056507	. FUSE, DECAL, 300 AMP	1
		.	

INDEX NO.	PART NO.	PART NAME	NO. REQD.
21	505321	. SUPPRESSOR ASSY.	1
22	070475	. SCREW, FD HD, 1/4-20 X 3/8	4
23	005976	. DIODE	2
24	005422	. CONNECTOR, INLINE, INSUL	2
25	063552	. SCREW, HEX HD, 5/16-18 X 5/1	2
26	059426	. NUT, HEX, 5/16-18	4
27	077210	. WASHER, LOCK, SPLIT, 5/16	4
28	063553	. SCREW, HEX, 5/16-18 X 3/4	2
29	008904	. FUSE HOLDER	1
31	077203	. LOCK WASHER	1
32	056504	. DECAL, FUSE, 15A	1
33	008910	. 15 AMP FUSE	1
34	023204	. WIRE HARNESS ASSY., PANEL	1
35	503965-82	. CABLE ASSY #2, POS	1
36	503965-34	. CABLE ASSY #2, A2	1
37	503965-06	. CABLE ASSY #2, M-	1
38	503965-45	. CABLE ASSY #2, A2	1
39	503965-46	. CABLE ASSY #2, S2	1
40	503965-11	. CABLE ASSY #2, S1	1
41	503965-81	. CABLE ASSY #2, A1	1
42	010613	. INSULATING TUBING	A/R
43	059421	. NEX NUT, 1/4-20	2

A/R - AS REQUIRED

NOTE: FOR A COMPLETE SET OF CONTACTOR TIPS FOR ALL CONTACTORS ORDER PART NUMBER 900531-01

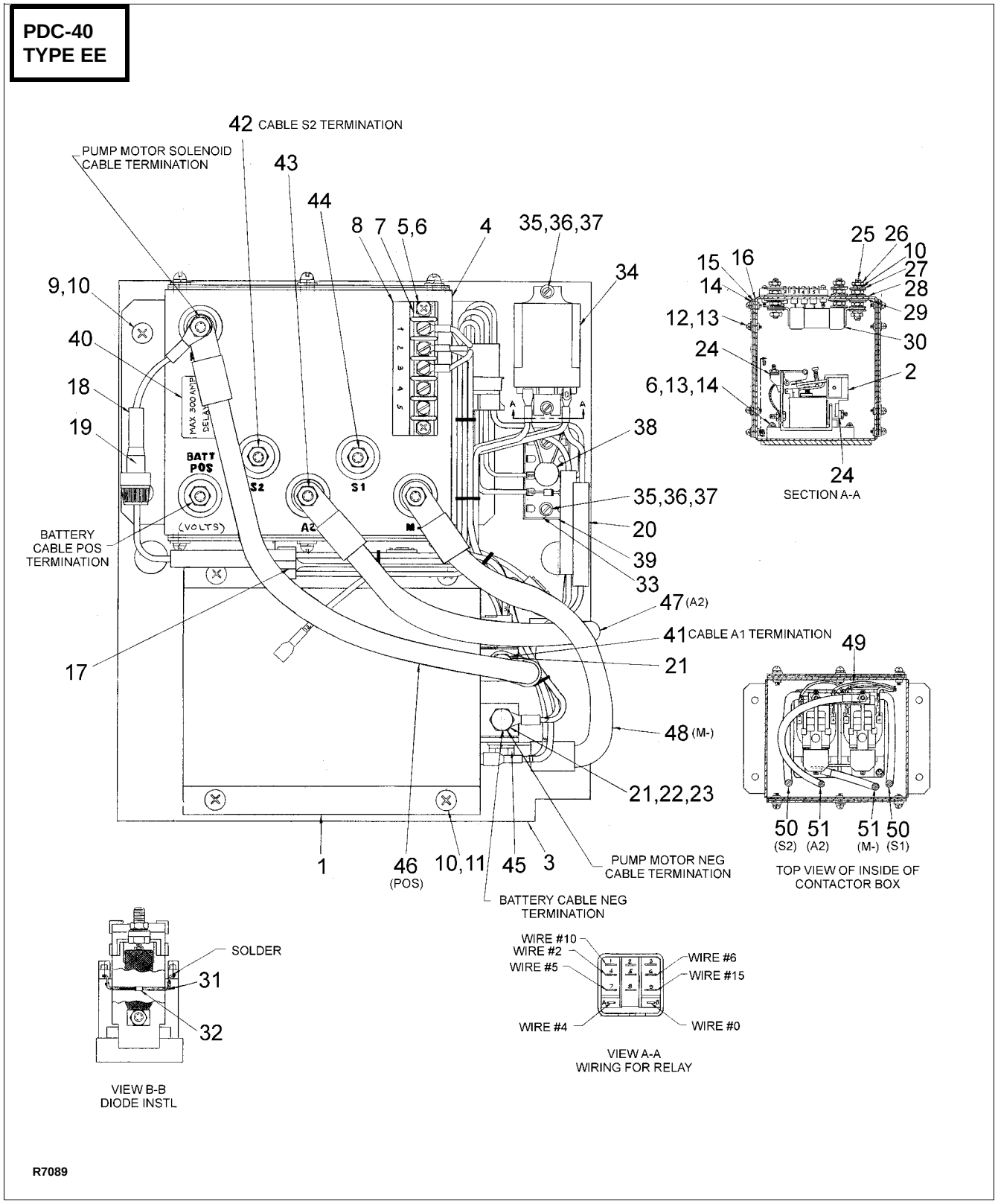


Figure 12-46 Control Panel Assembly (Type EE)

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505314-02	CONTACTOR PANEL ASSEMBLY	1
1	005467-02	. CONTROLLER	1
2	005657	. CONTACTOR DOUBLE POLE 100 AMP (FIGURE 12-47)	2
3	403325	. BASE PLATE	1
4	505284	. ENCLOSURE	1
5	077205	. SPLIT LOCK WASHER, #8	2
6	070491	. SCREW, RH HD, 8-32 X 1	6
7	021250	. TERM BOARD, FED THRU, #5	1
8	021251	. MARKER, STRIP, #5	1
9	070476	. SCREW, RD HD, 1/4-20 X 1/2	4
10	077209	. LOCK WASHER, 1/4	20
11	070475	. SCREW, FD HD, 1/4-20 X 3/8	4
12	072410	. SCREW, RD HD	12
13	077205	. SPLIT LOCK WASHER, #8	16
14	077032	. WASHER, 3/16 X 1/2 X 13GA	16
15	403294	. COVER, BOX, CONTACTOR	2
16	036121	. COVER, GASKET	2
17	023203	. WIRE HARNESS ASSY., PANEL	1
18	505117	. HOLDER ASSY, FUSE	1
19	008910	. 15 AMP FUSE	1
20	005422	. CONNECTOR, INLINE, INSUL	3
21	063553	SCREW, HEX, 5/16-18 X 3/4	2
22	059426	. NUT, HEX, 5/16-18	4
23	077210	. WASHER, LOCK, SPLIT, 5/16	4
24	401181	. BUS BAR	2
25	075621	. STUD, BRASS, 1/4-20 X 1-7/8	6
26	059422	. NUT, HEX, BRASS, 1/4-20 UNC 2B	24
27	077105	. FLAT BRONZE WASHER	36
28	402894	. WASHER, INSULATING	6
29	402895	. WASHER, SHOULDER, INSULATING	6
30	008906	. 300 AMP FUSE	1
31	010613	. TUBING, INSULATING	A/R
32	005976	. DIODE	2
33	505320	. DIODE ASSY.	1
34	018409-02	. RELAY	1
35	068177	SCREW, RD HD, #5-40 X 3/8	4
36	077203	. LOCK WASHER	4
37	077007	. WASHER	6
38	505321	. SUPPRESSOR ASSY.	1
39	010610	. PAD, INSUL, DIODE	1
40	056507	. FUSE, DECAL, 300 AMP	1
41	503965-81	. CABLE ASSY #2	2
42	503965-71	. CABLE ASSY #2	2
43	503965-45	. CABLE ASSY #2	1
44	503965-47	. CABLE ASSY #2	1
45	063552	. SCREW, HEX HD, 5/16-18 X 5/8	2
46	503965-78	. CABLE ASSY #2	1
47	503965-07	. CABLE ASSY #2	1
48	503965-06	. CABLE ASSY #2	1
49	023202	. WIRE HARNESS ASSY, CONTACTOR	1
50	503965-79	. CABLE ASSY #2	2
51	504857-02	. CABLE ASSY	2

A/R - AS REQUIRED

NOTE: FOR A COMPLETE SET OF CONTACTOR TIPS FOR ALL CONTACTORS ORDER PART NUMBER 900531-01

CONTACTOR TIP KIT PART NUMBER 901531-09 CONTAINS:

ITEM	QTY
3	1
5	1
8	1
12	1
16	1

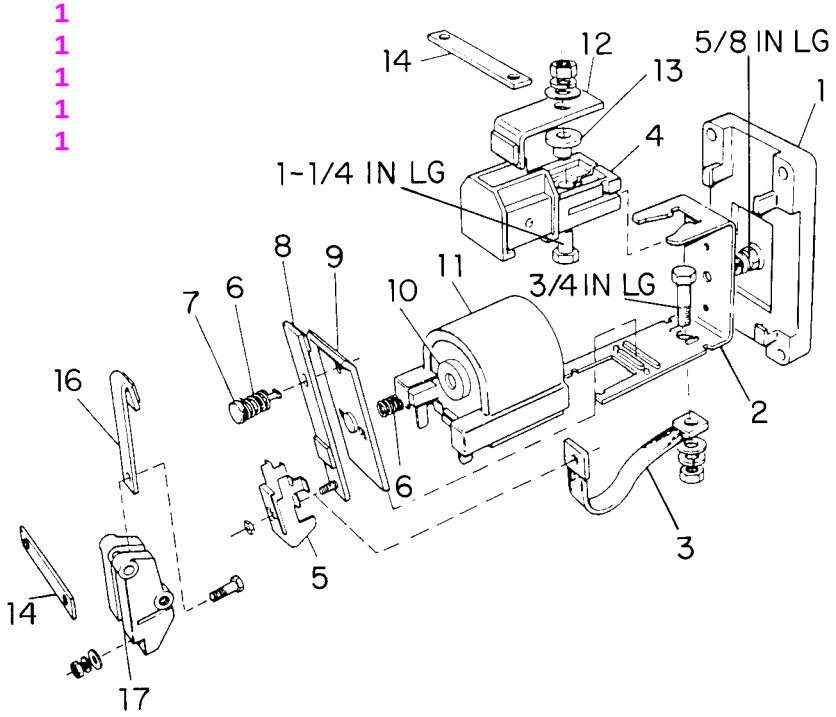


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Figure 12-47 Contactor, Forward, Reverse

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	005657	CONTACTOR DOUBLE POLE 100 AMP, 24V	2
1	905010	. BASE MOLDING	1
2	905024	. MAGNET FRAME	1
3	905013 *	. BRAIS ASSEMBLY	1
4	905025	. FRONT MOLDING WITH BLOWOUT	1
5	905015 *	. ARMATURE PLATE RETAINER	2
6	905016	. COMPRESSION SPRING	1
7	905017	. SPRING STUD	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	905018 *	. MOVING CONTACT ASSEMBLY	1
9	905019	. ARMATURE PLATE	1
10	905020	. POLE PIECE	1
11	905028	. COIL ASSEMBLY, 24 VOLTS	1
12	905022 *	. FRONT CONTACT	1
13	905023	. SPACER	1
14	401181	. BUSBAR (NOT PART OF CONTACTOR)	1
16	905026 *	. BACK CONTACT	1
17	905027	. REAR MOLDING	1

* **FOR FORWARD/REVERSE CONTACTOR TIP KIT ORDER PART NUMBER 900531-09. ONE KIT REPAIRS ONE CONTACTOR.**

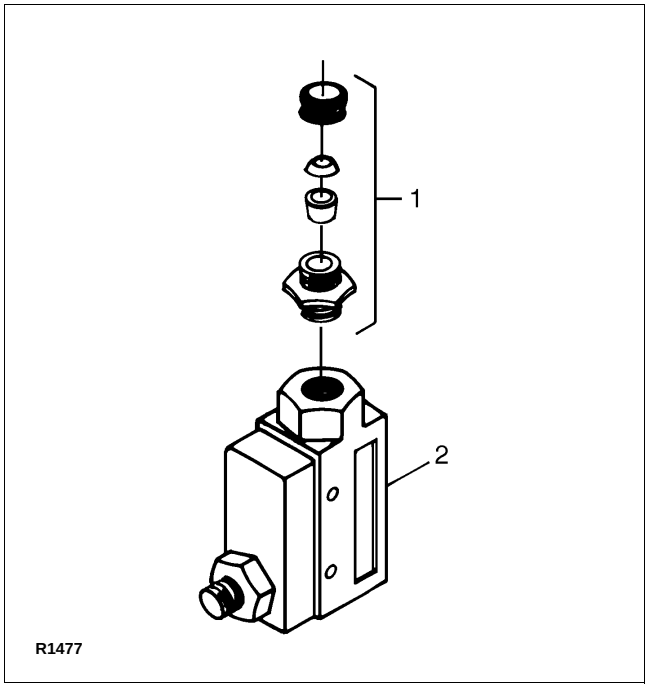

Figure 12-48 Dead-Man Brake Switch

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	019910	BUSHING, STRAIN RELIEF (TRUCKS WITH COLD CONDITIONING)	1
1	005405	STRAIN RELIEF (TRUCKS WITHOUT COLD CONDITIONING)	1
2	020690	DEAD-MAN SWITCH (TRUCKS WITH COLD CONDITIONING)	1
2	020729	DEAD-MAN SWITCH (TRUCKS WITHOUT COLD CONDITIONING)	1

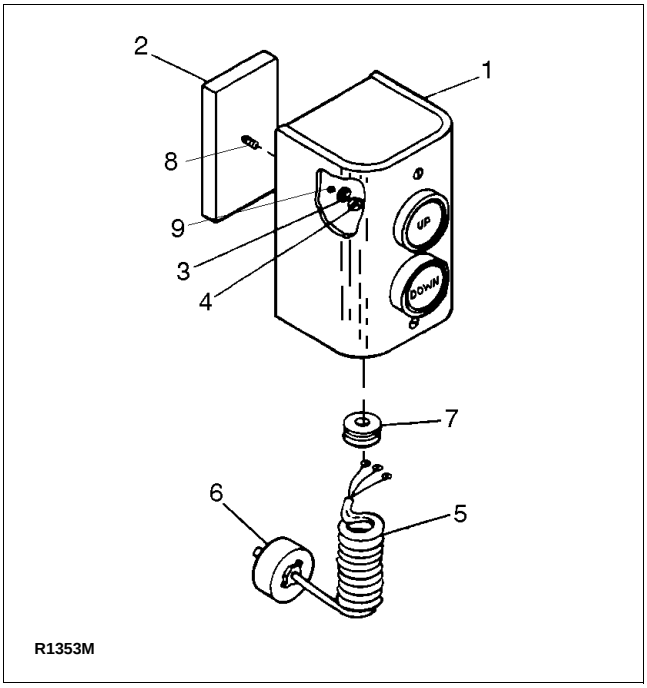

Figure 12-49 Remote Control Option

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	501736	CONTROL STATION ASSEMBLY	1
1	800306	. CONTROL BOX	1
2	058501	. MAGNET	1
3	077407	. LOCKWASHER, #10	2
4	059416	. HEX NUT, #10-32	2
5	314003	. COIL CORD, 3 FEET	1
6	017801	. MALE PLUG	1
7	052905	. STRAIN RELIEF	1
8	067401	. SCREW, FILISTER HD	2
9	077030	. WASHER, FLAT, #10	2
—	017800	PLUG, FEMALE, FLUSH MOUNT	2

NOTES

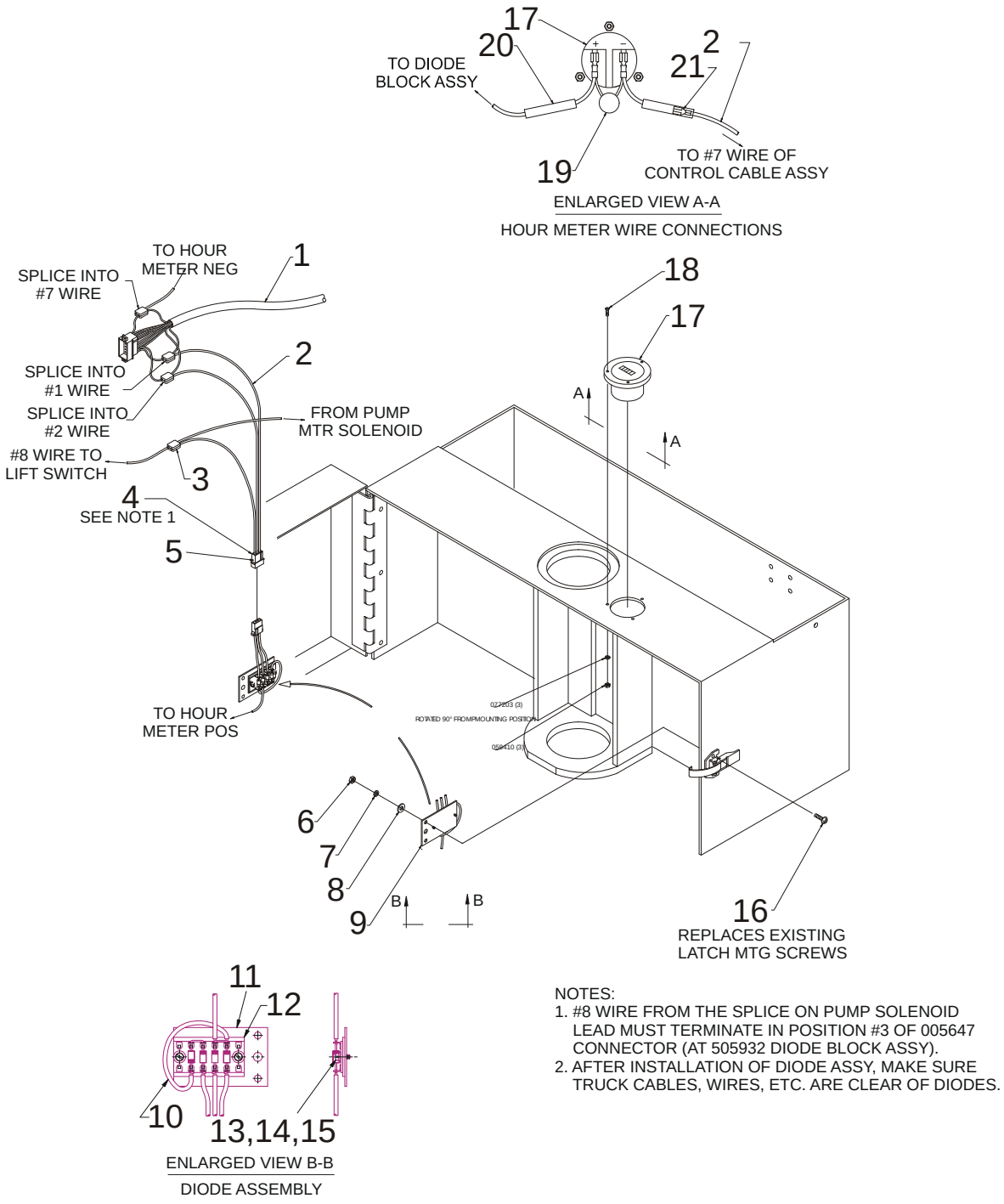

Figure 12-50 Optional Hour Meter Installation

INDEX NO.	PART NO.	PART NAME	NO. REQD.
—	505361	HOUR METER INSTALLATION	1
1	023195	. CONTROL CABLE ASSY	1
2	023018	. WIRE, BLACK, #16 STRAINDED	A/R
3	005649	. CONNECTOR	4
4	005647	. CONNECTOR	1
5	005626	. CONTACT-PIN	3
6	059416	. NUT, HEX, #10-32	2
7	077207	. WASHER, LOCK, SPLIT, #10	2
8	077030	. WASHER, FLAT, #10	2
9	505932	. DIODE ASSEMBLY	1
10	505931	. . DIODE	1
11	403855	. . MOUNTING PLATE	1
12	010625	. . PAD, INSULATING	1
13	068177	. . SCREW, SL RD HD, #5-40 X 3/8	2
14	077203	. . WASHER, SPLIT LOCK, #5	2
15	077007	. . WASHER, 5/32 X 3/8 X 18 GA	2
16	071377	. SCREW, 10-32 X 3/4	2
17	015604	. METER, HOUR	1
18	068179	. SCREW, RD HD, #5-40 x 5/8	3
19	504116	. SUPPRESSOR ASSY	1
20	005422	. CONNECTOR, INLINE, INSUL	2
21	021718	. CONNECTOR	1

A/R - AS REQUIRED

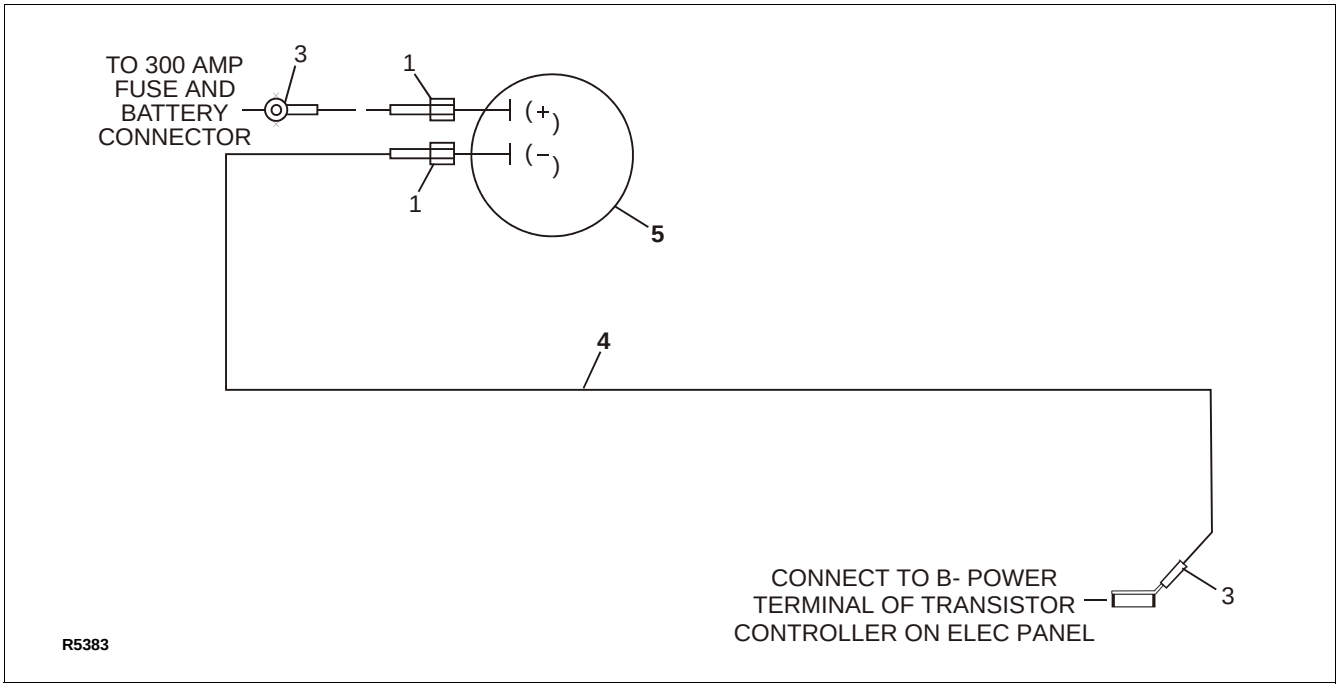

Figure 12-51 Battery Capacity Indicator Wiring Diagram
Systems Without Lockout

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	021718	CONNECTOR	2
3	021207	TERMINAL	2
4	023014	WIRE	A/R
5	010617-02	INDICATOR, BAT CAPACITY	1

A/R - AS REQUIRED

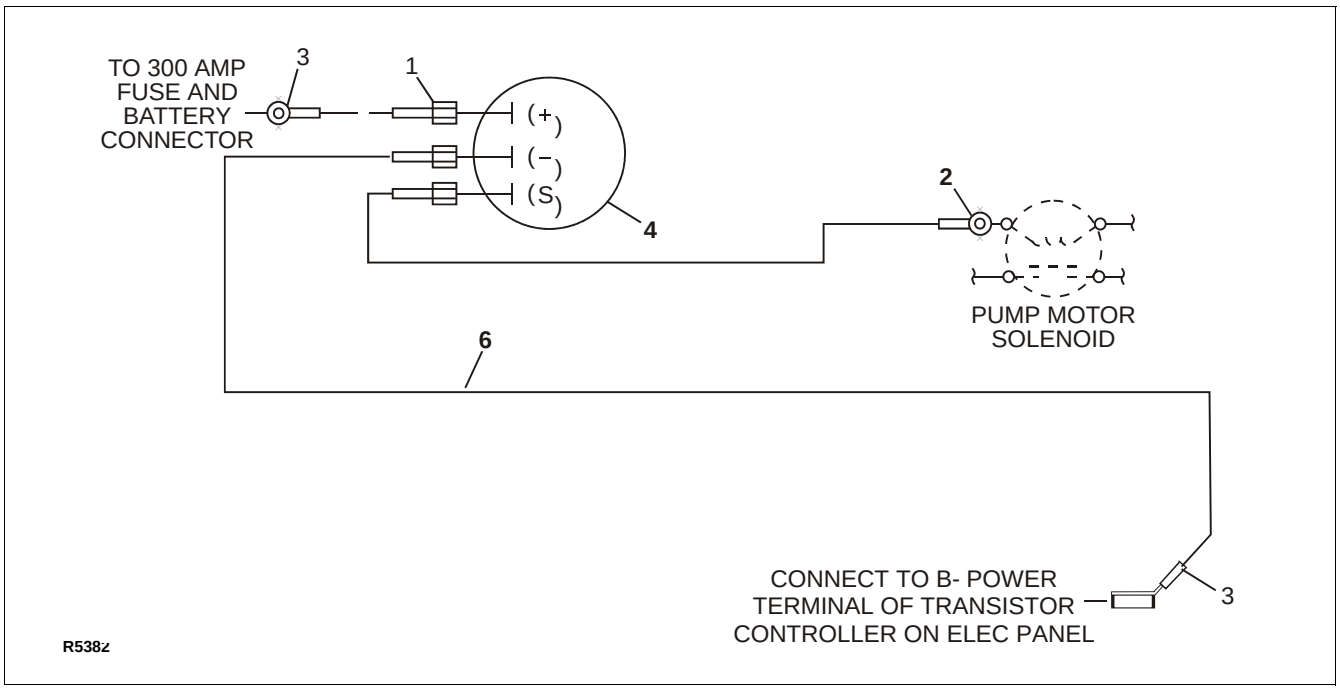

Figure 12-52 Battery Capacity Indicator Wiring Diagram
Systems With Lockout

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	021718	CONNECTOR	3
2	021203	TERMINAL	1
3	021207	TERMINAL	2
4	010618-02	INDICATOR, BAT CAPACITY	1
6	023014	WIRE	A/R

A/R - AS REQUIRED

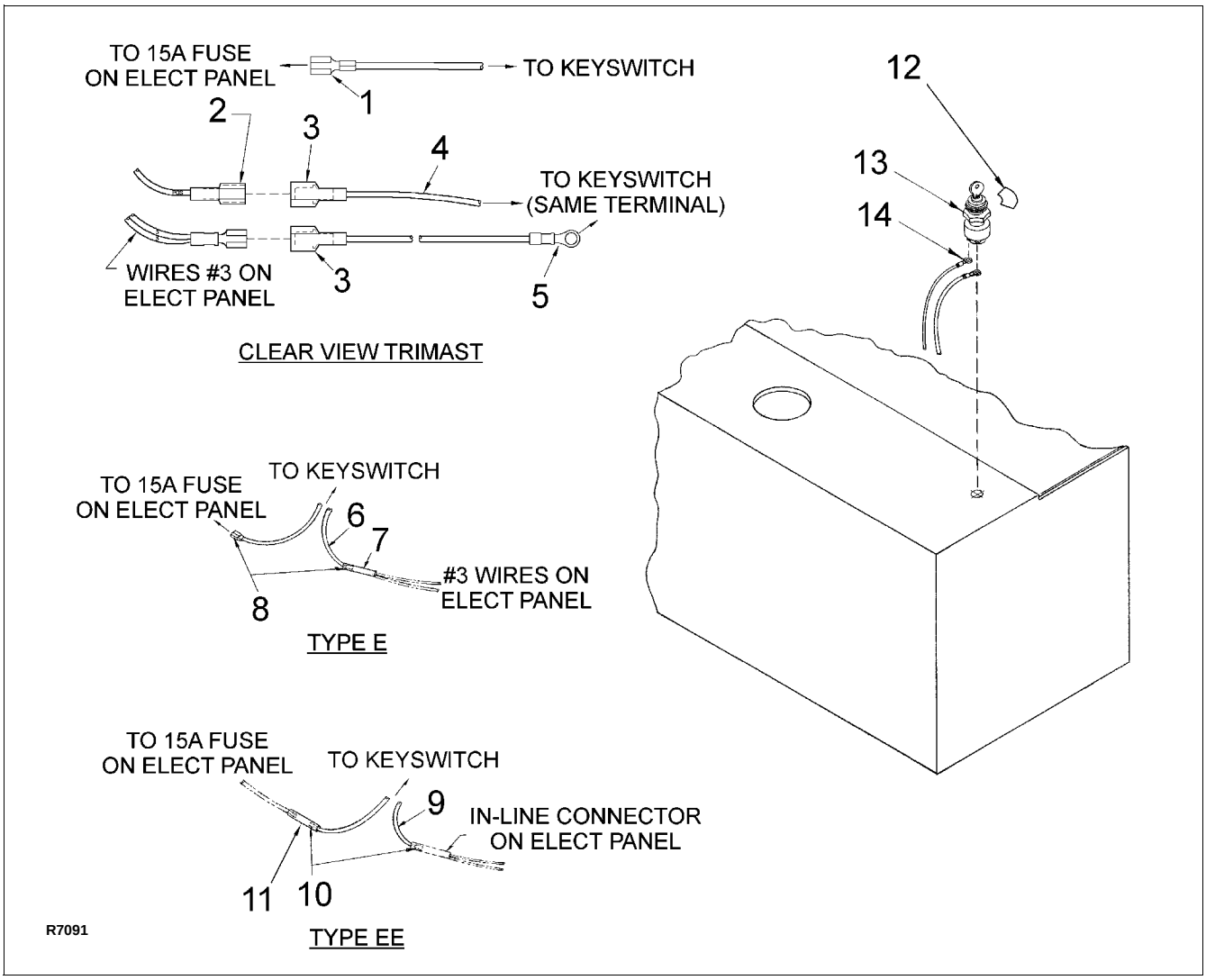

Figure 12-53 Optional Key Switch

INDEX NO.	PART NO.	PART NAME	NO. REQD.
1	021204	TERMINAL, QUICK DISCONNECT, FEMALE	2
2	021252	TERMINAL, QUICK DISCONECT, FEMALE	1
3	021257	TERMINAL, QUICK DISCONECT, MALE	2
4	023018	WIRE, BLACK, #16 STRAINDED	A/R
5	021203	TERMINAL, RING	2
6	023014	WIRE	A/R
7	005422	CONNECTOR, IN-LINE, INSU-LATED	1

INDEX NO.	PART NO.	PART NAME	NO. REQD.
8	021204	TERMINAL, QUICK DISCONNECT, FEMALE	2
9	023014	WIRE	A/R
10	021204	TERMINAL, QUICK DISCONNECT, FEMALE	2
11	005422	CONNECTOR, IN-LINE, INSU-LATED	1
12	056689	DECAL	1
13	020725	SWITCH KEY	1
—	900621-01	. KEY SET	A/R
14	021203	TERMINAL, RING	2

A/R - AS REQUIRED

Big Joe Manufacturing Company