

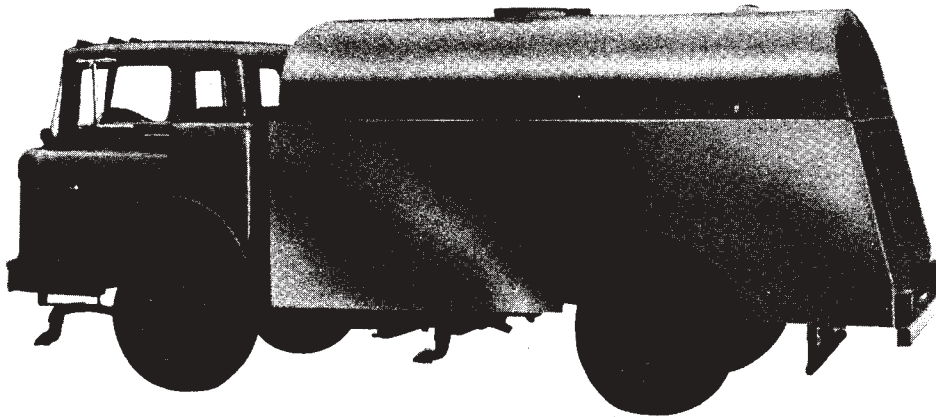
M-802-92

Serial Number Range L-1650, L-1663 thru Present Models

Supersedes M-802-78



STREET FLUSHER
OPERATION, MAINTENANCE, PARTS
and SAFETY MANUAL



E. D. ETNYRE & CO., Oregon, Illinois 61061

How To Order Parts & Warranty

ETNYRE STREET FLUSHER OPERATION, MAINTENANCE, PARTS AND SAFETY MANUAL

M-802-92

HOW TO ORDER PARTS

To assure prompt delivery when ordering parts, please furnish the following information: 1) Complete name and address of consignee. 2) Method of shipment preferred. 3) Is shipment to be prepaid or collect? 4) Serial numbers of units to which parts apply. 5) Complete part numbers and descriptions. 6) Any special instructions.

SPECIFY UNIT SERIAL NUMBER WHEN ORDERING PARTS

WARRANTY

E. D. Etnyre & Co. guarantees for a period of one year from the date of the shipment to repair or replace, F.O.B. its factory, any part which requires replacement due to defect in material or workmanship, but will not be responsible for consequential damages or any further loss by reason of such defect. This guarantee does not cover products that were not manufactured by E. D. Etnyre & Co. except to the extent of the guarantee given by the actual manufacturer.



E. D. ETNYRE & CO., Oregon, Illinois 61001, Phone Area Code 815/732-2116, Cable Address "EDECO"

Warnings & Reporting Safety Defects

WARNING

Unsafe operation of equipment may cause injury.
Read, understand and follow the manuals when operating or performing maintenance.

Remain clear of all moving parts.

CAUTION

Make certain everyone is clear of machine before starting engine or operation.

Always have shields, covers and guards in place when operating.

Keep loose clothing away from rotating parts.

Do Not Run when pump is dry or when filling.

IMPORTANT

Keep nozzles clean. Any foreign material in nozzles causes spray to split.

Take nozzles off to clean. Clean by pushing foreign matter back, not by forcing through slot.

Keep nozzle slot surfaces smooth. Avoid scratching or hitting slot edges. Polish if necessary.

Turn pumping unit off when tank is empty. Do not operate pumping unit at engine idling speed.

Do not run when pump is dry or when filling.

Drain unit thoroughly before storing in temperatures below freezing.

Clean valves after storing for a long period.

Clean fill line strainer regularly.

REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying E. D. Etnyre & Co.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or E. D. Etnyre & Co.

To contact NHTSA, you may either call the Auto Safety Hotline toll-free at 1-800-424-9393 (or 366-0123 in Washington, D.C. area) or write to: NHTSA, U.S. Department of Transportation, Washington, D.C. 20696. You can also obtain other information about motor vehicle safety from the hotline.

Introduction

This manual is divided into six sections . . . 1) Introductory Pages, 2) Operating Instructions, 3) Trouble Shooting, 4) Maintenance, 5) Illustrations and Complete Serviceable Parts List, and 6) Numerical Index.

The Introductory Pages contain Ordering Procedure, Warranty, Unit Specification, Table of Contents, and Introduction Page.

The Operating Instructions were prepared for the operator to aid him in starting, operating and adjusting his unit to attain satisfactory flushing results.

A trouble shooting section is provided to aid the dealer, customer, and the operator in locating and correcting Street Flusher malfunctions.

The maintenance section gives the recommended procedure for proper lubrication and maintenance of the Street Flusher, which, if followed, will save costly and premature failure of system components.

The individual parts in each illustration are shown in their normal relationship to one another. Reference numbers are used on each illustration and should not be used when ordering parts. A parts list accompanies each illustration.

A numerical index at the rear of the manual contains a listing of all part numbers with page numbers showing where each part is listed and described.

WARNING

Unsafe operation of equipment may cause injury.

Read, understand and follow the manuals when operating or performing maintenance.

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Operating Instructions

IMPORTANT

The following instructions are in **OPERATION SEQUENCE**.

1. Check Oil Reference Figure 1. Page 7.

Hydraulic oil should always be visible in the oil level site glass in the side of the hydraulic oil reservoir. If air or foam in oil is visible check Trouble Shooting Section, Item No. 3, page 11.

2. Pre-Filling Reference Figure 1. Page 7.

Close all drains. They are located as follows: Two drain cocks (20) on each water control valve (19), one 3/8 inch drain valve on bottom of water pump and one drain cock on bottom of pressure transfer diaphragm (21) located at the rear center of the discharge header. **NOTE:** Do not remove hex plug located in top of diaphragm. There is one drain cock (20) on the bottom of each of the 2 inch pipe elbows in flushing water line below the water control valve (19). On units equipped with a rear hose reel, close the line valve (26) (1½ inch Ball) and the one drain cock (20) in the inlet elbow to the hose reel.

3. Fill Tank Reference Figure 1. Page 7.

Fill tank with water from a hydrant using a filling hose equipped with connectors that will accept both the tank and hydrant threads. A 2½ inch ID x 16 foot large fill hose equipped with a coupling to fit tank connection is provided as standard equipment. The standard fill connection is provided as standard equipment. The standard fill hose is furnished less coupling on one end for the customer to apply a coupling suitable to accommodate the hydrant. The fill strainer (22) at the rear of the tank will back flush when the fill hose is disconnected from the hydrant.

WARNING

Filling should be done only through the fill line. The man-hole is designed for inspection and maintenance only.

The amber full lamp (23) on the rear of the tank will light when the tank is approximately 95 percent full. The overflow pipe will carry off the water when the tank is completely full. The full lamp will remain lit until the water level drops below the 95 percent full mark.

4. Activate Hydraulic System

Engage the P.T.O. by pushing or pulling the knob marked "Pump". This will begin operation of the hyd

raulic pump. See P.T.O. Operating Instructions on p 8.

CAUTION

Make certain everyone is clear of machine before starting engine or operation.
Always have shields, covers and guards in place when operating.
Keep loose clothing away from rotating parts.

5. Flushing Pressure Selection Reference Figure 1

With the transmission in neutral, accelerate the truck engine to provide 1500-1800 R.P.M. on the hydrostatic pump tachometer (7) located in the control panel. Select the desired flushing pressure using the discharge Pressure Selection valve (8) located on right hand side of the control panel. Rotate the knob of the valve until desired pressure is obtained. Turning the knob clockwise increases the pressure; turning the knob counterclockwise decreases the pressure. The valve is equipped with a locking nut. Be sure the locking nut is released before adjusting pressure. This pressure is read on the Pre-determined Operating Pressure gauge (9) located in the control panel.

6. Water Pump Start Up Reference Figure 1

CAUTION

Do not run when pump is dry or when filling.

Ignition switch must be on and all control panel switches off (down position). Turn on the red System Power switch (11) in the control panel. The amber System Power pilot light (17) will now be on. (Note: The following sequence applies to a stationary or moving vehicle) With the hydrostatic pump operating at 1500-1800 R.P.M., press the white System Activate switch (12). This is a momentary contact switch. The green System Activate pilot light (15) will come on at the time the white switch (12) is closed. At this time the white switch (12) may be released. The amber pilot light (17) will go out and the green pilot light (15) will remain lit. The water pressure in the discharge header will increase to the pre-determined pressure and the operating water pressure gauge (10) and the pre-determined operating pressure gauge (9) should indicate the same pressure. If the engine R.P.M. is decreased to a point where the header water pressure drops below the set pressure, the

engine speed is increased, the water discharge from system will not be operating at a speed sufficient to discharge much water. However, as soon as the the pump will be evident from the nozzles. When the system is turned off, or if the tank water level is lowered to the cutout point, the system will drop out automatically and the start-up sequence must be repeated to put the system back into operation.

⚠ CAUTION
Hydrostatic pump speed must not exceed 2800 R.P.M.

7. Nozzle Operation Reference Figure 1

Water pressure is now available for flushing. Either turn on the Master Nozzle Switch (1) and select each nozzle switch (2,3,5,6) as desired or pre-select all nozzles to be used and then turn on the master nozzle switch. (1) When using the master switch all the nozzles selected will operate at the same time. During the flushing operation additional nozzle/s may be turned on or any nozzles already in service may be turned off and the system will automatically maintain the pre-determined pressure.

At intersections or other locations as desired, if the transmission is shifted into neutral and the engine speed is maintained, the water discharged from the nozzles will be continued until the Master Switch (1) or Nozzle Switches (2, 3, 5, 6) are turned off.

⚠ IMPORTANT
Keep nozzles clean. Any foreign material in nozzles causes spray to split. Take nozzles off to clean. Clean by pushing foreign matter back, not by forcing through slot.

8. Nozzle Adjustment Reference Figure 1

The spray should strike the pavement from 5 to 8 feet in front of the nozzle. Whether a unit is equipped with 3 or 4 nozzles, the side nozzles (28) (29) should always be adjusted so the inside edge of the spray fans just miss the front wheels of the truck. When a unit is equipped with 3 nozzles and flushing only the right side of street is desired, the left hand front nozzle (30) should be adjusted toward the right so that the left edge of spray fan is directed straight forward. When a unit is equipped with 3 nozzles and flushing the entire street is desired, adjust the left hand front nozzle straight ahead so that the spray fan is equally distributed on either side of the center of the street.

When a unit is equipped with 4 nozzles and flushing only the right hand side of the street is

desired, set the right hand front nozzle (31) so that the left hand edge of spray fan is directed straight ahead. The left hand front nozzle is not used in this application. When a unit is equipped with 4 nozzles and flushing the entire street is desired both the left hand (30) and the right hand (31) front nozzles should be adjusted so that the inside edges of the spray fans intersect each other just before they reach the street surface.

⚠ CAUTION
Do not run when pump is dry or when filling.

9. Automatic Shut Down Reference Figure 1

When the red Low Water Warning light is activated it indicates that there is only a short period remaining before the pressure system drop-out occurs. When system drop-out occurs the green pilot light (15) will go out and the amber pilot light (17) will relight. The tank will have to be refilled (Ref. Section 3) for further operation.

10. Operational Speeds

The recommended ground speeds for flushing are from 4 to 12 M.P.H. The hydrostatic pump speed should not exceed 2800 R.P.M. Most flushing will be accomplished in first gear. If gear changing occurs, the system pressure may drop and the water discharged from the nozzles will diminish. As soon as the engine speed is resumed, the water pressure and nozzle flow will be as before.

11. Hydraulic System Caution Reference Figure 1

The unit is equipped with a water immersed oil cooler and the red Hydraulic Oil Overheat pilot light (16) should never be lit. If the red light comes on, shut down the system immediately to prevent damage to the hydraulic components. Refer to maintenance section of this manual.

12. Auxiliary Equipment Reference Figure 1

1. Spray Bar and Sprinkler Nozzle. Pressure selection for the bar (27) or the sprinkler is accomplished in the same manner as it is for the flushing nozzles (Section 5). The bar (27) or sprinkler operation is selected with the black switch marked "Auxiliary" (4) on the control panel. The Master Switch (1) must be on.

2. Hose Reel, Manual and Electric. Pressure selection for the hose reels is accomplished in the same manner as for the flushing nozzles (Section 5). Hose reel (24) operation is usually accomplished with the unit in a stationary position thus the truck hand throttle will have to be used to obtain hydraulic pump R.P.M. The hose reel is equipped with a wind lock (25). Be sure this lock has been released before unwinding the hose

from the reel. To operate hose, turn ball valve handle 90 degrees (parallel with flow is open). The ball valve (26) is located on the left hand side of the hose reel. To wind hose back on a manual reel, use crank provided. When the unit is equipped with an electric reel, use push button located at the left hand bottom of the reel.

13. Draining System Reference Figure 1

To drain the water from the unit to prevent freezing damage, all the valves described in section

2 must be opened. The residual water in the tank may be drained more quickly and all settled debris which has accumulated in the system may be removed by removing the 3 inch drain plug in the bottom of the pump suction header.

CAUTION

Remain clear of all rotating drives (truck and hydraulic pump propeller shafts and water pump drive) during operation or maintenance.

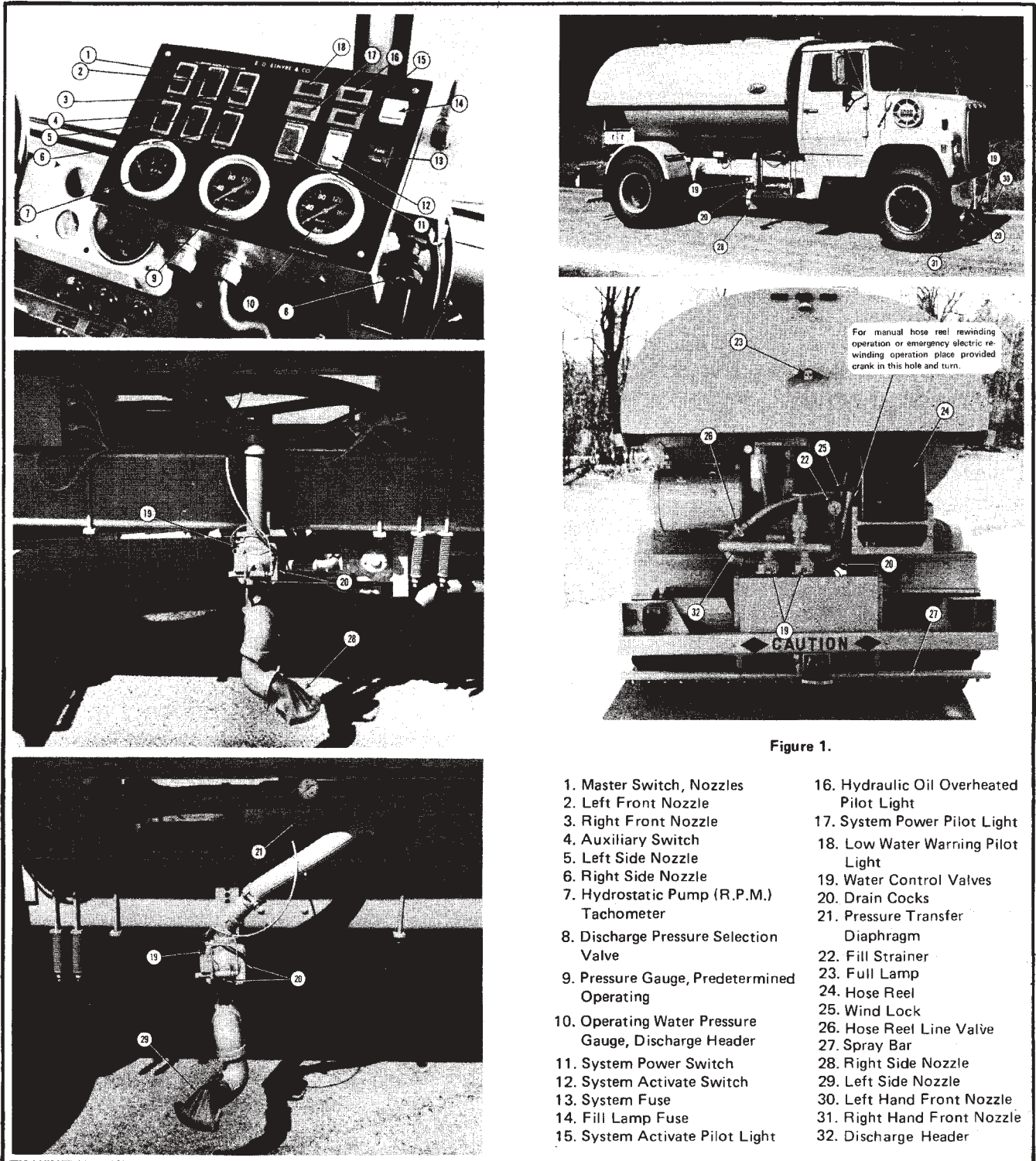


Figure 1.

- | | |
|--|--|
| 1. Master Switch, Nozzles | 16. Hydraulic Oil Overheated Pilot Light |
| 2. Left Front Nozzle | 17. System Power Pilot Light |
| 3. Right Front Nozzle | 18. Low Water Warning Pilot Light |
| 4. Auxiliary Switch | 19. Water Control Valves |
| 5. Left Side Nozzle | 20. Drain Cocks |
| 6. Right Side Nozzle | 21. Pressure Transfer Diaphragm |
| 7. Hydrostatic Pump (R.P.M.) Tachometer | 22. Fill Strainer |
| 8. Discharge Pressure Selection Valve | 23. Full Lamp |
| 9. Pressure Gauge, Predetermined Operating | 24. Hose Reel |
| 10. Operating Water Pressure Gauge, Discharge Header | 25. Wind Lock |
| 11. System Power Switch | 26. Hose Reel Line Valve |
| 12. System Activate Switch | 27. Spray Bar |
| 13. System Fuse | 28. Right Side Nozzle |
| 14. Fill Lamp Fuse | 29. Left Side Nozzle |
| 15. System Activate Pilot Light | 30. Left Hand Front Nozzle |
| | 31. Right Hand Front Nozzle |
| | 32. Discharge Header |

Maintenance

1. Lubricate water pump every 90 operating days. Use lithium base general purpose grease. Grease is applied through the zerk fitting located on bearing and shaft housing of the pump. A zerk type grease gun must be used to apply grease.

2. Monthly check and tighten if necessary all tank and pump base mountings, tie downs and fasteners.

3. Monthly check to be sure the 4 inch overflow is clean. This may be done by removing manhole cover and visually inspecting the hole in the overflow pipe for obstructions.

4. Weekly check vacuum gauge attached to hydraulic filter. This check should be made with the hydraulic oil warm (100°F. min) and unit at operating speed. If the vacuum gauge reads in the red, change the filter.

5. If the unit is equipped with a hose reel, lubricate the reel bearings. Apply three or four drops of a light grade of lubricating oil thru the two oil cups provided. This should be done twice a year under normal conditions.

▲ IMPORTANT

6. Keep nozzles clean. Any foreign material in nozzles causes spray to split.
7. Take nozzles off to clean. Clean by pushing foreign matter back, not by forcing through slot.
8. Keep nozzle slot surfaces smooth. Avoid scratching or hitting slot edges. Polish if necessary.
9. Drain unit thoroughly before storing in temperatures below freezing.
10. Clean valves after storing for a long period.
11. Clean fill line strainer regularly.
12. Daily check oil level in hydraulic reservoir. Oil should be visible in sight glass located on the outside of the reservoir. If oil is low add suffix "A" transmission fluid until oil level reaches top of the sight glass.
13. At intervals of no more than four months (120 days) enter the tank through the manhole and carefully inspect the rust preventive coating covering the inside surface of the tank for scratches, chipping or other damage that could allow the tank to rust.
Any area where the coating is damaged should be cleaned, sanded, and recovered with the same type material as the original.
14. Monthly check and tighten, if necessary, the studs, nuts, and bolts attaching the power take-off to the main truck transmission.

Consult your dealer or write direct to factory if you have any special problems.

P.T.O. OPERATION

Automatic Transmission

On automatic transmissions, the gears in the transmission turn when the transmission is in neutral, therefore, gear clashing will occur if the power take-off is shifted into gear at this time.

To operate power take-off properly:

1. Shift transmission lever into any of the drive positions. (This will stop transmission gears from turning.)

2. Shift power take-off into gear.

3. Shift transmission into neutral. (This will start transmission gears turning.)

This procedure should eliminate gear clash.

Mechanical Transmission

1. A power take-off is, and should be, operated as an integral part of the main transmission.

2. Before shifting the power take-off into or out of gear . . . disengage the clutch and wait for transmission or P.T.O. gears to stop rotating.

Trouble Shooting

⚠ WARNING

**Make certain everyone is clear of machine before starting engine or operation.
Keep loose clothing away from rotating parts.
Remain clear of all moving parts.**

Mechanical Drive System

Malfunction	Probable Cause	How To Determine	Corrective Action
1. Noisy drive line (Hyd Pump/PTO) (Water Pump/Hyd Mtr)	Worn Universal Joints	Sharp thud on Acceleration or Deceleration of Drive Line	Replace Universal Joint
2. Noisy P.T.O.	Too much backlash	Rumble	Tighten bolts or remove gas-kets until proper backlash is obtained
	Too little backlash	Whine	Place additional spacer gas-kets between P.T.O. and transmission opening
	Worn bearing or gear	Rumble-Remove and inspect	Replace if necessary
Electrical System-Lighting (See Wiring Diagram Figure 10. And Parts Page 34)			
1. Will Not Light-Tail clearance, marker, license plate, back-up rotating beacon and brake lights	Bulb burnt out	Remove lens & check	Replace if necessary
	Fuse blown	Visibly check fuse in panel in truck cab	Replace if fuse is blown. Again find short circuit and correct
	Loose connection	Check terminations with a 12V test light	Reconnect or cut out existing terminal and replace
	Defective switch	With switch on check with test light	Remove and replace if necessary
2. Turn signal will not light	Bulb burnt out	Remove lens & check	Replace if necessary
	Fuse blown	Visibly check fuse in panel in truck cab	Replace if fuse is blown. Again find short circuit and correct
	Loose connection	Check terminations with a 12V test light	Reconnect or cut out existing terminal and replace
	Defective Switch	When all other possibilities have been exhausted & the switch is determined as the problem, consult your manual or truck dealer	Replace

Malfunction	Probable Cause	How To Determine	Corrective Action
	Defective Flasher	Check flasher socket with test light. If power is present try new flasher	Replace
3. Rotating beacon will light but not rotate	Defective motor or drive	Visually observe	Replace drive, motor or entire beacon
Water System (See Wiring Diagram Figure 11. And Parts Pages 30-33)			
<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">CAUTION</p> <p>Make certain everyone is clear of machine before starting engine or operation. Keep loose clothing away from rotating parts. Do Not Run when pump is dry or when filling.</p> </div>		<div style="border: 1px solid black; padding: 5px;"> <p style="text-align: center;">WARNING</p> <p style="text-align: center;">Remain clear of all moving parts.</p> </div>	
1. Clayton valve will not open	Solenoid does not operate	Turn switch on and listen for solenoid to click	Replace coil or entire solenoid
	Switch is defective	Check switch-If pilot light operates, switch is alright	Replace Switch
	Loose Connections	Check terminations with test light	Reconnect or replace terminals
2. Clayton valve will not close	Plugged valve strainer	Remove strainer and visually check	Blow or wipe strainer clean and reinstall
3. Pump suddenly stops pumping	Clogged impeller	Visual-No discharge, Hydraulic motor high pressure relief valve will clatter	Clean out debris
4. Excessive leakage around the pump shaft	Worn seal	Visual	Install new seal
5. Poor water pump performance	Worn Impeller	Will not maintain desired discharge pressure-Check operating pressure gauge	Replace Impeller
	Hydraulic pump or motor problems		See hydraulic trouble shooting section
6. Noisy water pump operation	Low discharge head	Water pump chatters or rattles	Speed up pump if possible
	Debris lodged in impellers	Water pump rattles	Remove cover and clean out debris
7. Nozzle plugged	Debris lodged in nozzle slot	When nozzle is turned on spray will split or no water at all will come out of nozzle	Clean nozzle-remove nozzle and push foreign material back through slot being careful not to scratch or nick nozzle spraying surface. Never force debris out of nozzle slot from inside
8. Spray pattern split (Nozzle not plugged) WARNING: Never Run Water Pump Dry	Scratches or nicks in nozzle slot surfaces	Observe	File and polish all nicks and scratches from nozzle slots



Malfunction	Probable Cause	How To Determine	Corrective Action
Hydraulic Drive System 1. Loss of Oil – Inspect for external leakage under load *	Fittings	Check for loose hose fittings or damaged “O” ring	Tighten fittings or replace “O” ring
	Hose or Tubing	Check for cracked or worn spots in hose or tubing	Replace hose or tubing
*If oil loss is due to gaskets, seals or “O” rings of the hydraulic pump or motor consult dealer or qualified service personnel.			
2. Loss of Control ** <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">⚠ WARNING</p> <p style="text-align: center;">Remain clear of all moving parts.</p> </div> <div style="border: 1px solid black; padding: 5px; margin: 5px 0;"> <p style="text-align: center;">⚠ CAUTION</p> <p>Make certain everyone is clear of machine before starting engine or operation. Keep loose clothing away from rotating parts. Remain clear of all moving parts.</p> </div>	Low Oil Level	Check reservoir	Replenish to proper level
	Plugged Oil Filter	If filter is plugged vacuum gauge will read in the red. Remove filter housing and check filter	Replace filter element
	Insufficient oil supply	Check for plugged lines or dirty filter. If filter is plugged vacuum gauge will read in the red.	Clean or replace as necessary
		Check oil level in reservoir	Add oil as necessary
Relief valve malfunction		See “Loss of pressure” (Section 5)	
**If loss of control is due to check valves or charge pump malfunction or pump hsg. control asm. “O” ring or other internal failures, consult dealer or qualified service personnel.			
3. Excessive noise, cavitation and internal damage	Filter	Check for dirty filter. If filter is plugged vacuum gauge will read in the red	Replace filter
	Suction Lines	Check inlet line for collapsed wall or other restrictions	Clean hose or replace as necessary
	Oil	Check oil for excessive viscosity	Replace as necessary
		Check for water in oil	Replace as necessary-Check heat exchanger for possible leaks
	Contamination	Check case drain line for steel or brass particles	Unit probably beyond field repair. Remove and overhaul
	Air in oil	Check inlet line for leaks. Oil will appear milky or foamy and system pressure may be low	Tighten fittings or replace as necessary
Check oil level in reservoir		Add oil as necessary. Maintain oil level to sight glass	
Low pressure relief valve (See Figure 7. Page 16)	Check low pressure on loop circuit. Should be 175 to 200 P.S.I.	Adjust or replace as necessary	

Malfunction	Probable Cause	How To Determine	Corrective Action
4. Overheating	Excessive internal wear (See Figures 2, 3 and 5. Page 16)	Check case drain of pump and motor. Volume should not exceed 1/2 G.P.M. per 1000 P.S.I. working pressure per unit	Unit probably beyond field repair. Remove and overhaul or replace
	High Pressure Relief valve (See Figures 4 and 6. Page 16)	Check relief valve setting	Set relief valves a minimum of 500 P.S.I. above normal operating pressure
	Heat exchanger-water type	Check for plugged oil lines or excessive external corrosion or paint coating	Clean or replace as necessary

5. Loss of Pressure	High Pressure relief valve malfunction (See Figures 4 and 6. Page 16)	Check pressure with motor stalled. Pressure should be within 100 P.S.I. of value on name plate	Adjust relief valve or replace as necessary
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WARNING:

- Throughout the entire operation, hands, parts, tools and immediate area *must be kept clean*. Introduction of foreign material into the system may damage or hinder its operation.
- Do not operate the hydraulic motor at maximum by-pass pressure for extended periods of time since this will cause overheating of hydraulic oil and result in system damage.

Control System	 WARNING		 CAUTION	
	Remain clear of all moving parts.		Make certain everyone is clear of machine before starting engine or operation.	
(See Wiring Diagram Figure 11. And Parts Pages 30-33)				
Be sure operating instructions are fully understood before attempting to operate or troubleshoot this system				
1. Fill light inoperative	Fuse	Visual Inspection	Replace-1 Amp Max.	
	Bulb/s	Visual or Continuity Check	Replace	
	Jumper/Main Terminals Loose or Broken	Visual or Continuity Check	Tighten/Repair/Replace	
	Defective Switch	Visual or Multi-meter	Replace	
2. Tach Not Operating	P.T.O. not engaged	Visual	Engage	
	Hyd. Pump not operating	Visual, Check P.T.O. and Drive Shaft	Repair-Refer to Mechanical and Hyd. Drive Trouble Sections	
	2-Wire/Main Cable Terminals Loose or Broken	Visual	Tighten/Repair/Replace	

Malfunction	Probable Cause	How To Determine	Corrective Action
	Tach circuit connections reversed	Needle tends to negative indication	Reverse tach connection in junction box panel or Reverse 2 pin connector on generator
	Broken tach gauge	Visual, Use Multi-Voltmeter	Replace
	Broken tach generator	Visual, Use Multi-Voltmeter or proven tach gauge Output should be 1.24V DC @ 1000 RPM	Replace
	Twisted or broken drive tang	Remove tach generator and inspect	Replace
3. No "Select" Pressure	Regulator out of Adjustment	Gauge remains at zero	Loosen locknut, turn stem clockwise to correct pressure
	Hydraulic Pump not operating	Visual-tach at zero	Engage P.T.O.
	Hydraulic pump operating slow	Check speed on tach	Increase speed to 1500-1800 R.P.M.
	Dirty/inoperative Reg. valve	Gauge doesn't respond	Rework valve or replace valve
	Inoperative Gauge	Gauge remains at one pressure	Replace
	Trouble in Hydraulic System/No oil pressure available	See Hydraulic drive System Troubles	
4. No electric power in Panel No amber pilot light	Truck ignition not turned on	Visual	Turn on ignition
	Main fuse blown Red fuse Holder	Visual	Replace Fuse 7.5A
	Loose connections Power cord to truck power panel	Visual	Tighten
	Burned out pilot bulb	Multi-meter	Replace
	Bad Switch	Multi-meter	Replace
5. Low-Water pilot won't light	Tank full of water	Visual	Lower level of water
	Pilot bulb burnt out	Multi-meter	Replace
	Jumper/Main Cable Terminals Loose/Broken circuit	Visual or Continuity Check	Tighten/Repair/Replace
	Float switch inoperative	Visual or Multi-meter	Replace switch, Replace float on switch stem
6. Low-Water pilot stays lit	Low water level in tank	Visual	Add water (100 Gal. Min.)

Malfunction	Probable Cause	How To Determine	Corrective Action
	Float switch contacts stuck in closed position, Float is off stem.	Visual and Multi-meter	Replace switch, Replace float on switch stem
	Jumper/Main Cable Wires shorted	Multi-meter	Repair
7. Oil temp pilot light stays lit	Defective thermostwitch in oil reservoir	Multi-meter	Replace
	Shorted wires at thermo switch or terminals	Visual/Multi-meter	Repair/Replace
	Oil overheated 200°F.	Check dial thermometer in tank	Stop system-Refer to hydraulic system (overheated)
8. Water pump won't speed up	No "Select Press"	Visual	See "No Select Press" section
	Solenoid not operating	Listen, Check circuit with multi-meter	Repair circuit/replace solenoid
	Modulator Asm. inoperative (See Figure 8. Page 17 and Accompanying Instructions)	*Visual: Coupling-Control arm asm. doesn't travel from end to end when activate switch is closed	Remove Asm.-Drain *oil from bellows-Check bellows for easy operation-Re-assemble/Replace
9. System won't lock in -- System won't stay locked in System surges when Activate switch is depressed	Main Cable/Jumper wires loose	Visual and Multi-meter	Clean/Repair/Tighten
	Interlock float switch inoperative, clip missing & float missing	Multi-meter, Visual	Replace switch or Replace float & retaining wire clip
9A. System won't lock in but operates ok if Activate Button is held down	Transfer Bellows Asm. Trouble (Out of oil, plugs loose or out, broken hose, gauge ruptured, bellows collapsed -- loose outer clamp)	Visual Inspection Remove hex plug Insert Probe No flicker in Pilot Lights	Repair/Replace Tighten fittings Replace oil in closed system
10. No green pilot light	Light burnt out	Multi-meter	Replace
	Broken white switch	Multi-meter	Replace

Malfunction	Probable Cause	How To Determine	Corrective Action
11. Discharge pressure doesn't match selected pressure	Hydraulic pump not operating fast enough	Visual	Increase Hydraulic Pump R.P.M.
	Select pressure set too high	Visual	Decrease select press.
	Water flow too great	Visual	Turn off nozzle-Check for open hose allowing free flow of water
	Gauge broken	Visual-Gauge doesn't return to zero	Replace
	Hydraulic Oil Cold	Sluggish, slow response	Warm system
	Modulator Trouble	Visual Inspection (Refer to Section 8)	Check oil level in bellows-Tighten plugs *Repair/Replace

⚠ IMPORTANT

Do not force move the modulator assembly coupling in either direction with oil in bellows. This action will collapse the belloframs and make the unit inoperative.

If this happens, the assembly must be removed from the hydraulic pump, the oil drained, and new bellofram unit installed. The assembly coupling must move freely back and forth with air only in the bellows.

With the bellows assembly complete, remount the assembly on the hydraulic pump, refill the system with hydraulic oil and seal the system with the 1/4 inch pipe plugs.

See figure 8 for details.

12. Discharge pressure won't remain constant as nozzles are opened or closed	Water demand at pressure selected is greater than input speed of P.T.O. will deliver	Visual	Reduce flow and pressure or increase pump speed
	Modulator Malfunction	Visual-Pump won't return to Neutral and stop	*Repair/Replace Refer to Section 8)
13. Electric hose reel won't operate Wiring Diagram Figure 9. Page 19	Fuse	Visual	Replace, 3A
	Switch	Multi-meter/Jumper	Replace
	Solenoid	Multi-meter/Jumper	Replace
	Motor	Multi-meter/Service man	Repair/Replace
	Elbow and Line Frozen or broken	Visual	Replace/Drain water

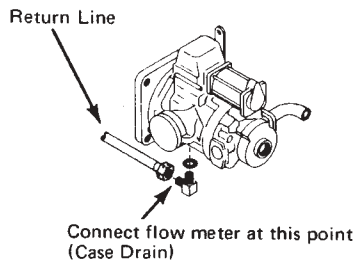


Figure 2. Pump Case Drain Flow Rate Check

1. Disconnect case return line indicated above.
2. Attach flow meter as noted or direct drain flow into a container of known volume for a given period of time. Then from dividing volume by time, a flow rate can be determined. If this flow rate is above maximum allowed, pump is worn internally and should be replaced before proceeding.

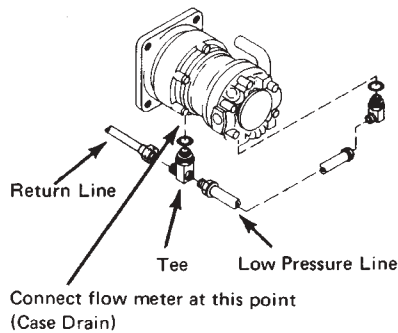


Figure 3. Motor Case Drain Flow Rate Check

1. Disconnect low pressure line at motor tee. If flow from this line is directed into a *clean dry* container the oil may be saved and returned to the reservoir. Extreme care should be taken to insure that while this line is disconnected the hydraulic system is not accidentally pumped dry resulting in a damaged system.
2. Disconnect return line and remove tee from motor.
3. Connect flow meter as indicated above or direct flow from tee port (case drain) into a container of known volume for a given period of time. Then from dividing volume by time a flow rate can be determined. If this flow rate is above maximum allowed motor is worn internally and should be replaced before proceeding.

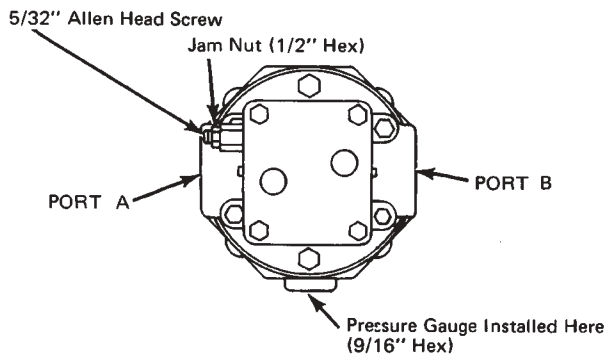


Figure 4. Type IV Hydraulic Motor
Viewed from front of flusher

1. Loosen jam nut (1/2" hex) and turn 5/32" Allen head screw in so as to increase pressure. A pressure increase of 800 P.S.I. per turn may be expected.
2. Increase pressure to recommended level of 4000 to 4500 P.S.I.
3. Retighten jam nut while holding screw.
4. Remove gauge and replace 9/16" hex plug.

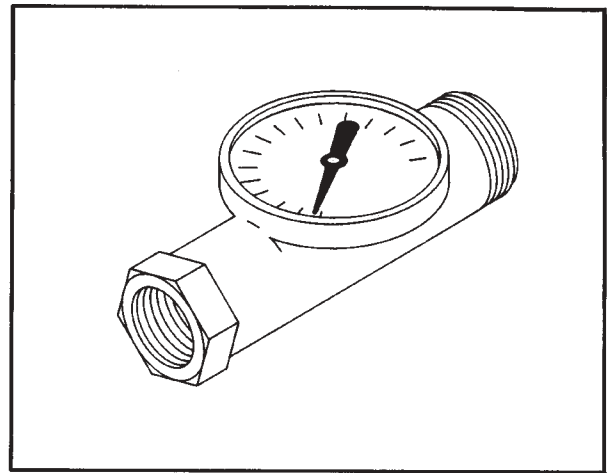


Figure 5. Flow Meter

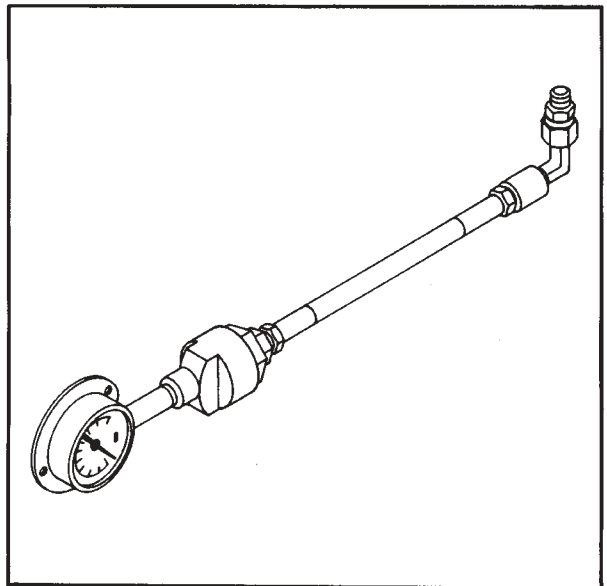


Figure 6. Pressure Gauge

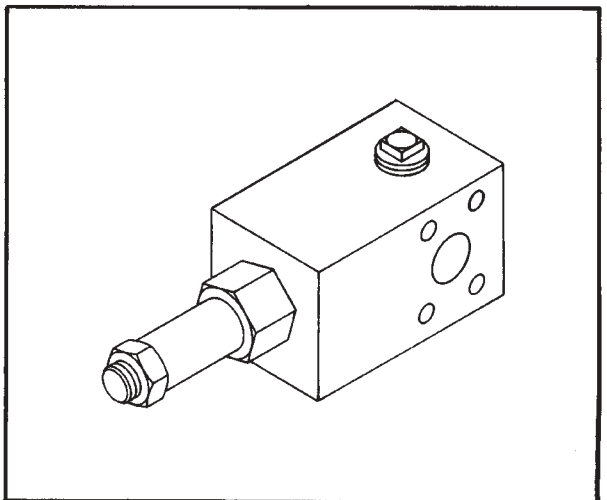


Figure 7. Low Pressure Relief

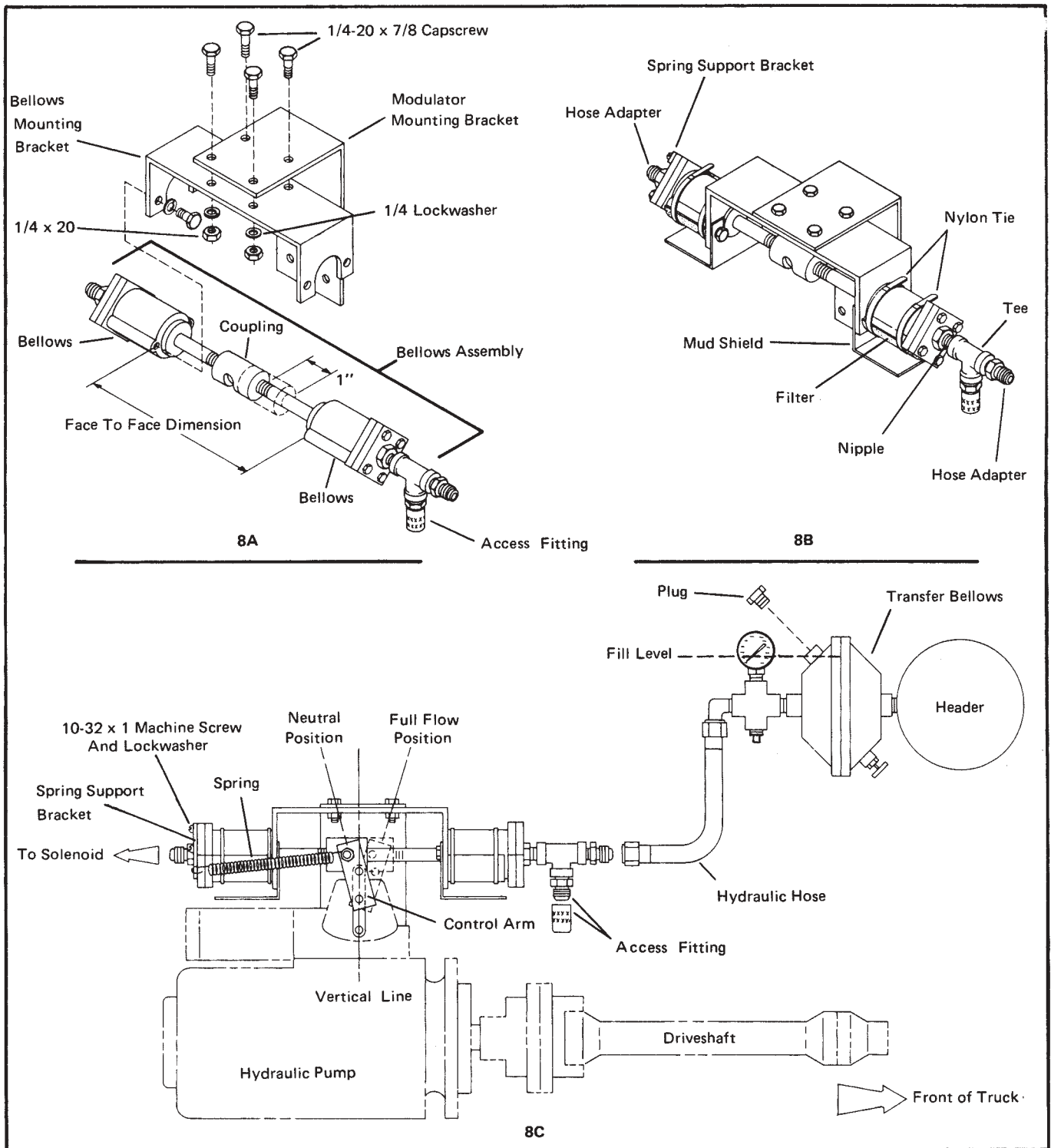


Figure 8. Assembly, Installation and Adjustment of Modulator

CAUTION

The bellows assembly is a rugged, precision piece of equipment but there are some precautions to be observed when assembling or servicing. The shaft will not stand any twisting because the bellows will be damaged. Therefore, the shaft coupling must be able to rotate freely at all times.

Assembly: (Ref. Figure 8A) Lightly screw 2 bellows assemblies together using the brass coupling. The face to face dimension with one bellows extended and the other retracted should be approximately 5½ inches. Center the brass coupling on the shafts and adjust the face to face dimension of the bellows to match the face to face dimension of the mounting bracket. The bellows assemblies must be mounted with the vent holes down. The

modulator mounting bracket must be assembled to the bellow mounted bracket using (4) 1/4-20 x 7/8 capscrews, lockwashers and nuts. Assemble as shown (Figure 8A). Tighten bellows assembly to mounting bracket using (4) 1/4-20 x 7/8 capscrews and lockwashers. The bellows shafts and coupling must slide back and forth freely when both bellows are tight on the bracket. If the shafts do not move freely, shims must be added until they do. Ref. Figure 8B.

Cover the vent hole in each bellows with a filter pad and secure each pad with two nylon ties. The inner tie must be tight against the bellows mounting bracket, otherwise it will cover the vent hole and impede the free movement of the shaft.

Remove the bellows mounting screws one end at a time and install the mud shield as shown in Figure 8B. Next assemble the hose adapters, pipe tee, nipple and access port fitting, using hydraulic grade locktite. Ref. Figure 8C.

The spring support bracket is mounted to the end cap of bellows as shown. Replace the existing screws with (2) 10-32 x 7/8 machine screws and 3/16 lockwashers.

Installation: The Modulator assembly is mounted to the hydraulic pump as follows. Remove the (4) 1/4-20 x 5/8 capscrews from the cover plate of the swash plate control housing on the top of the pump and discard them. These are on the opposite end from the swash plate control arm. Attach the modulator assembly to the hydraulic pump with (4) 1/4-20 x 7/8 Grade 5 capscrews and lockwashers. The bellows with the pipe tee is mounted toward the front or drive line end of the pump.

Remove the 5/16 lock nut holding the swash plate adjusting lever onto the hydraulic pump control shaft. Also remove and discard the flat washer. Insert the control arm thru the shaft coupling and attach the adapter plate assembly to the face of the swash plate adjusting lever. A 1/4-20 x 3/4 cap-screw with locknut goes thru the end of the swash plate lever and the middle hole in the adapter plate. Replace the 5/16 locknut and tighten. The spring is attached between the end of the spring support bracket and the end of the control arm. This will hold the swash plate adjusting lever in the neutral position. The 5/16 nut and the 1/4 attaching capscrew should be in a vertical line. Connect

the hydraulic hose from the pressure transfer bellows assembly to the pipe tee in the modulator bellows. The hydraulic hose from the solenoid is connected to the bellows on the opposite side.

Remove the hex head plug from the top of the transfer bellows.

Remove the brass seal cap from the schrader type access valve.

Connect a charging hose to the access valve and add hydraulic oil until the system is full to the top of the transfer bellows assembly. Remove the charging hose and replace the brass seal cap onto the access valve. Tighten a 1/4 hex head plug into the transfer bellows case.

This will seal this system from the atmosphere so it can perform properly. If this procedure is not followed and the system is not kept sealed, the system will not function. After an operating period of 5-10 hours, check the oil level in the transfer bellows and add oil if necessary to bring oil level to top. The entire hydraulic system should now be ready to operate. Be sure the main system is full of hydraulic oil.

Adjustment: Engage the P.T.O. and operate the hydraulic pump. Observe the hydraulic motor/water pump combination. The pump should *not* be rotating in either direction. Turn on the control system in the truck cab and depress the white "activate" switch. Follow the Operating Instructions for operating the control panel – except, this is a dry run to check water pump rotation only.

CAUTION
Make certain everyone is clear of machine before starting engine or operation.

Check to see that the water pump rotates in a counterclockwise direction (looking from suction side of pump). A creep of one revolution in 4-5 seconds in the proper direction is permissible.

WARNING
Remain clear of all moving parts.

This is the proper operation mode. If the pump does not stop but continues to rotate in either direction when the controls are turned off, the following modulator adjustment will have to be made.

If the pump rotates rapidly in the wrong direction, the main hoses are connected improperly. This must be corrected immediately. This trouble is not just a control problem but is a basic pump/motor flow problem.

To stop the slow rotation of the water pump that occurs when the system is turned off, adjust the modulator as follows:

Refer back to assembly directions for installing the control arm to the swash plate lever.

Remove the 5/16 locknut and the 1/4-20 x 3/4 capscrew from the adaptor plate. Remove the control arm from the shaft connector coupling. Gently rotate the brass coupling 1/2 to 2 turns as needed to put the swash plate control arm in the neutral position. Moving the coupling towards the back

end of the hydraulic pump will slow down or stop the forward rotation of the water pump.

If the coupling is too far towards the back end at the original setting the pump will rotate slowly in the reverse direction when the control system is turned off. Moving the coupling forward will correct this condition.

Reinsert the control arm into the coupling and refasten the adapter plate to the swash plate control lever.

Recheck the running and stopping of the Water Pump.

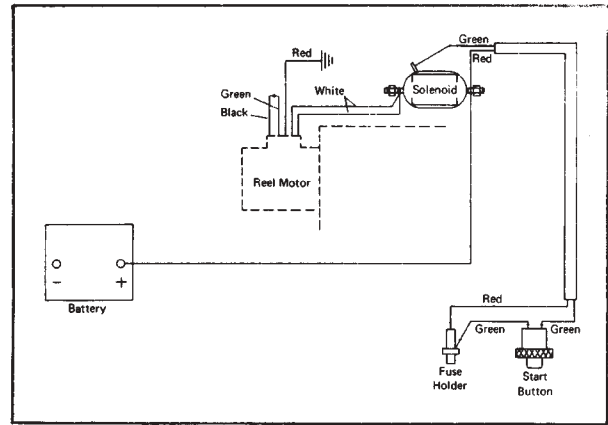


Figure 9. Electric Hose Reel Wiring Diagram

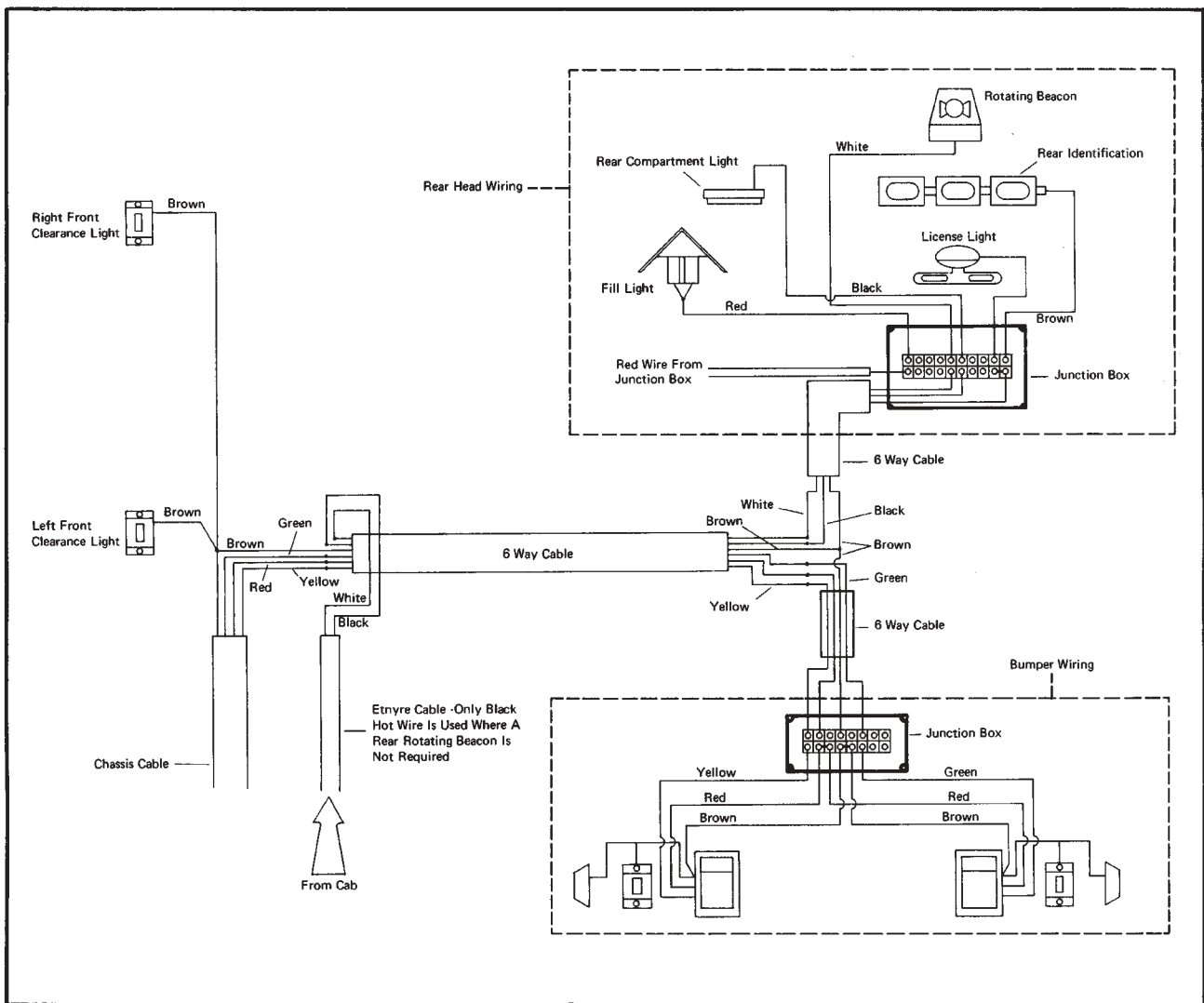
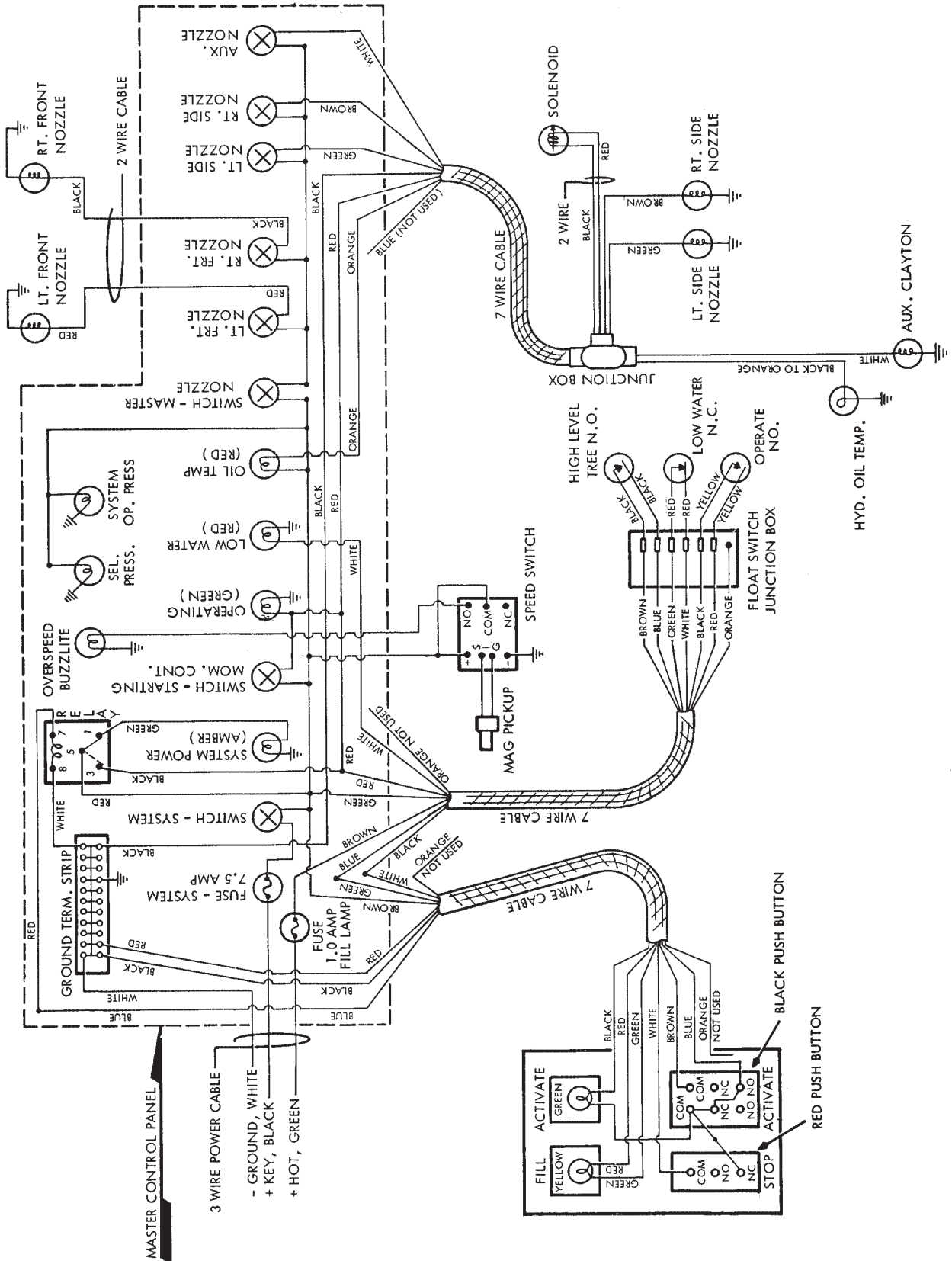


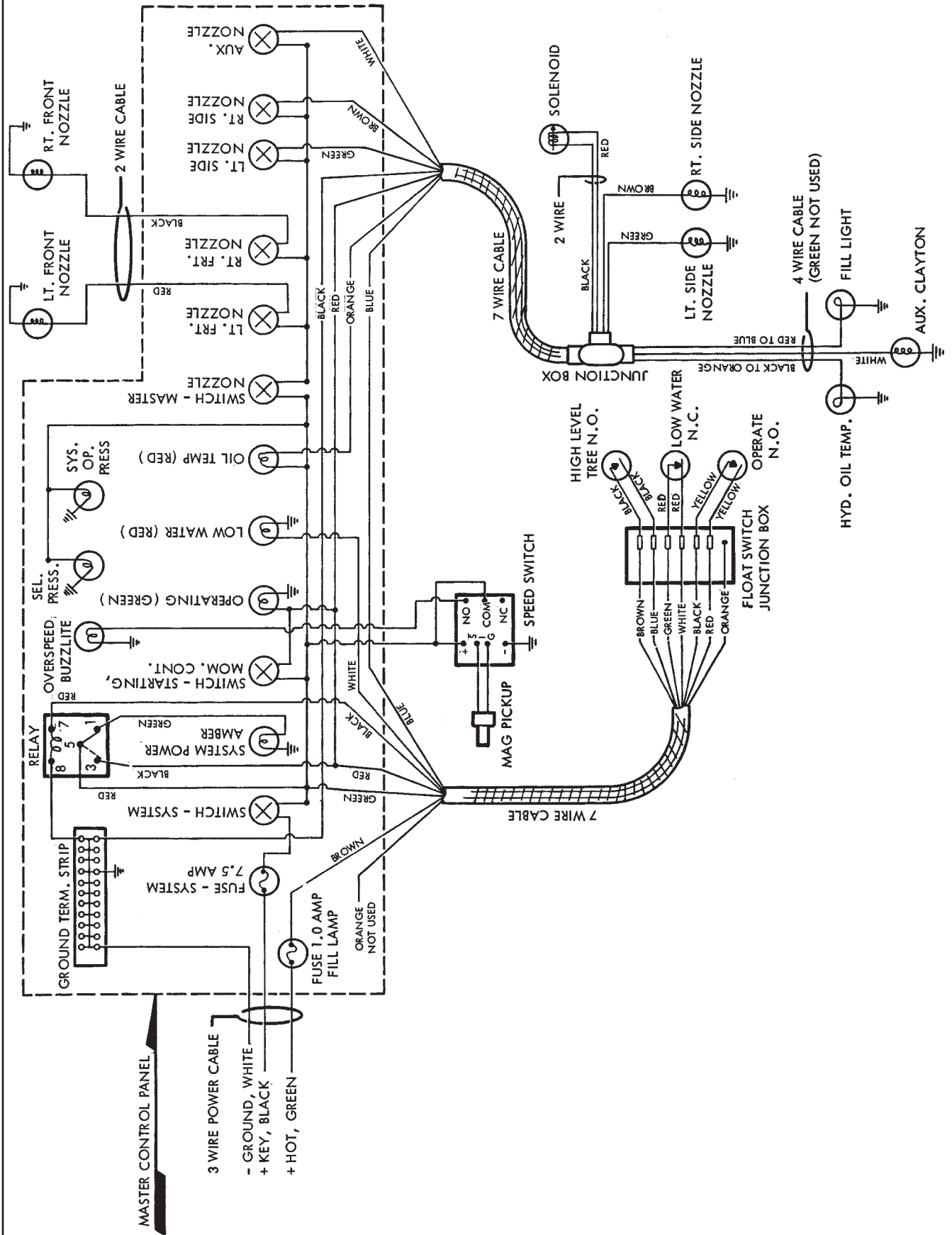
Figure 10. Wiring Diagram - Flusher Lighting

Wiring Diagram - Water Control System With Self Fill Beginning with S/N L-1117

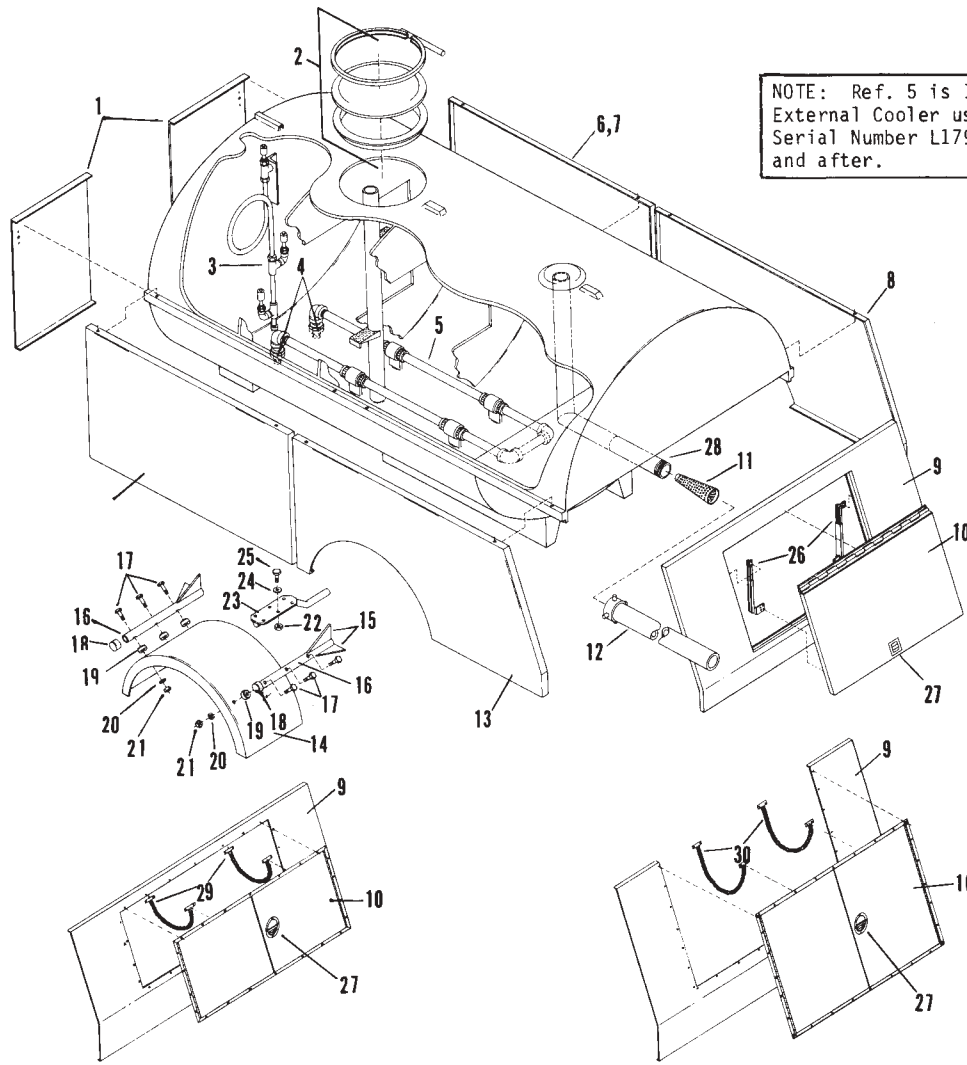


Wiring Diagram - Water Control System Without Self Fill

Beginning with S/N L-1117



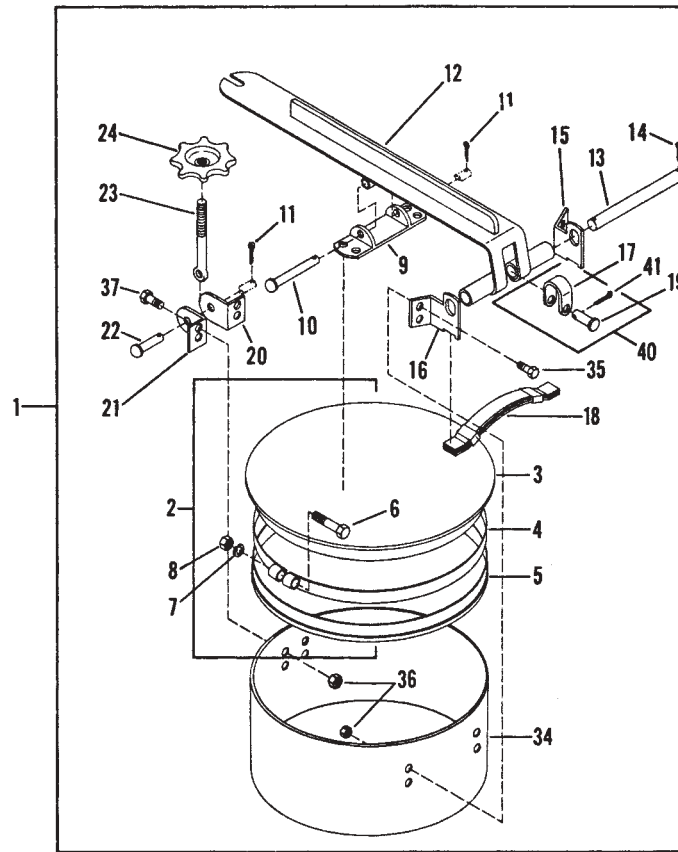
Tank & Skirting



NOTE: Ref. 5 is Internal Cooler.
External Cooler used on Units with
Serial Number L1795, L1822, L1827
and after.

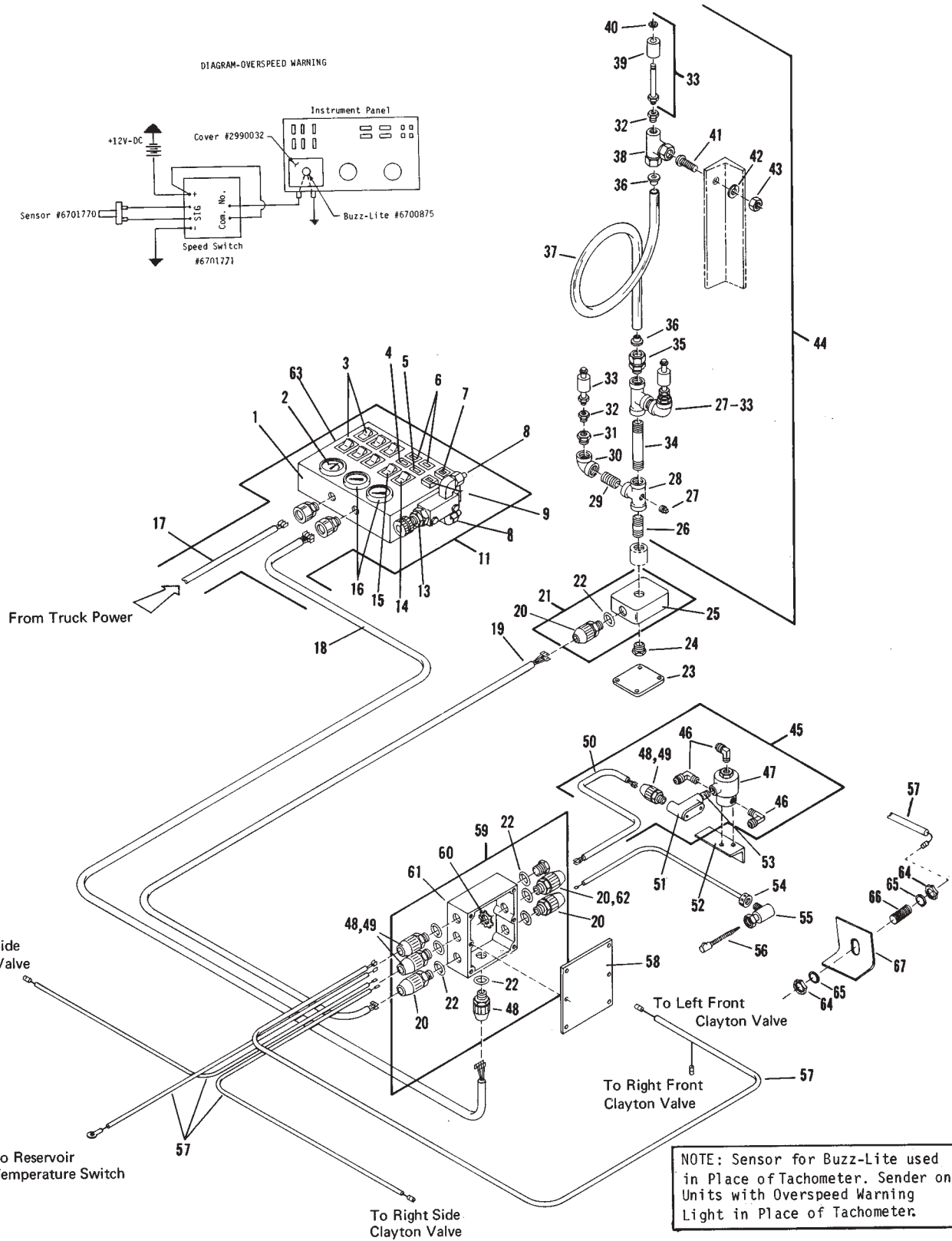
REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2910196	2	Panel-Front		2750608	2	Fender-Alum, Single 25"
2	6000876	1	Manhole Asm-Steel, Inspection		2750669	2	Fender-Alum, Tandem 25"
	7420228	1	Gasket 20" Manhole, Flusher (Included W/Ref. 2 Asm)	15	2910175	8	Gusset-Support, Fender
3	2960182	1	Tree Asm-Level Indicate	16	2910174	4	Hanger-Fender, Flusher, Rear
4	6601257	2	O-Ring-1.475 x 0.21, Nitril Buna	17	0122065	12	Screw-Hex, 0.31NC x 2.00, GR2,PD
5	2900090	1	Cooler Asm-Hydraulic Oil	18	6000689	4	Cap-Vinyl
6	2910216	2	Panel Asm-Side, Front, Univ, S.A.	19	6000455	12	Bushing-Rubber
7	2910217	2	Panel-Side, Frt, Univ, Tandem Axle	20	0120214	12	Washer-Lock, 0.31, Spring, PD
8	2910182	1	Panel-Rear, Right	21	0120376	12	Nut-Hex, 0.31NC,PD
9	2910185	1	Panel Asm-Rear	22	9413946	12	Nut-Hex, Lock, 0.25NC,PD
	2910295	1	Sheet-Skirt RR Panel, Fl	23	2750589	2	Brace-Fender, Center Support (For Tandem Axle Units)
	2910308	1	Skirting RR, Door Frame Long	24	6000716	12	Washer-Flat, 9/32ID x 1.25,PL
10	2910190	1	Door Asm-Flusher Rear	25	0121887	12	Screw-Hex, 0.25NC x 0.75, GR 2,PD
	2910318	1	Door & Frame Asm-Rear Long	26	6100155	2	Prop-Door, Telescoping
	2910306	1	Door & Frame Asm-Rear Skirting	27	6000255	1	Lock Asm Door
11	2940030	1	Strainer		6000281	1	Lock-Door, Hanson #105
12	6601095	1	Hose-Fill, 2.50NPT,FM CPLG O.E.	28	2940372	1	Retainer Asm-Strainer Fill
13	2910183	1	Panel-Rear, Left	29	6000346	2	Chain-PRF Coil, 0.19, P.C. #50101
14	3310149	2	Fender-Steel, Single 23"	30	3311574	2	Chain Asm-Door
	3380381	2	Fender-Steel, Tandem 23"				
	3380581	2	Fender-Steel, Single 25"				
	3380580	2	Fender-Steel, Tandem 25"				

Manhole - 20 Inch



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	3300135	1	MANHOLE ASSEMBLY, COMPLETE				
2	3300301	1	MANHOLE COVER, COMPLETE				
3	3300142	1	COVER ASSEMBLY				
4	3300146	1	RING ASSEMBLY=RETAINER				
5	6600334	1	GASKET				
6	0122083	1	SCREW=HEX, 0.31NCX2.75				
7	0120214	1	WASHER=LOCK, 0.31, SPRING, PD				
8	0120376	1	NUT=HEX, 0.31NC, PD				
9	3300122	1	BEARING ASSEMBLY				
10	3300125	1	PIN=COVER				
11	0103373	3	PIN=COTTER, 0.09X0.75				
12	3300136	1	TONGUE ASM				
13	3300121	1	PIN=HINGE				
14	0103385	2	PIN=COTTER, 0.12X1.00				
15	3300018	1	BRACKET=HINGE, LEFT				
16	3300019	1	BRACKET=HINGE, RIGHT				
17	3300154	1	SLEEVE YOKE				
18	3300151	1	SPRING=RELEASE				
19	3300294	1	PIN=SLEEVE YOKE				
20	3300148	1	LATCH BEARING=LEFT				
21	3300149	1	LATCH BEARING=RIGHT				
22	3300293	1	PIN=LATCH				
23	3300150	1	BOLT=LATCH				
24	3300120	1	HANDWHEEL				
34	3300159	1	COLLAR=MANHOLE, 20 INCH				
35	0120741	4	SCREW=HEX, 0.31NCX0.75				
36	0120368	16	NUT=HEX, 0.31NC				
37	0122017	8	SCREW=HEX, 0.31NCX1.00				
40	3300152	1	SLEEVE YOKE ASSEMBLY				
41	0103386	1	PIN=COTTER, 0.12X1.25				

Control System - Water Distribution - Electrical Hydrostatic Drive

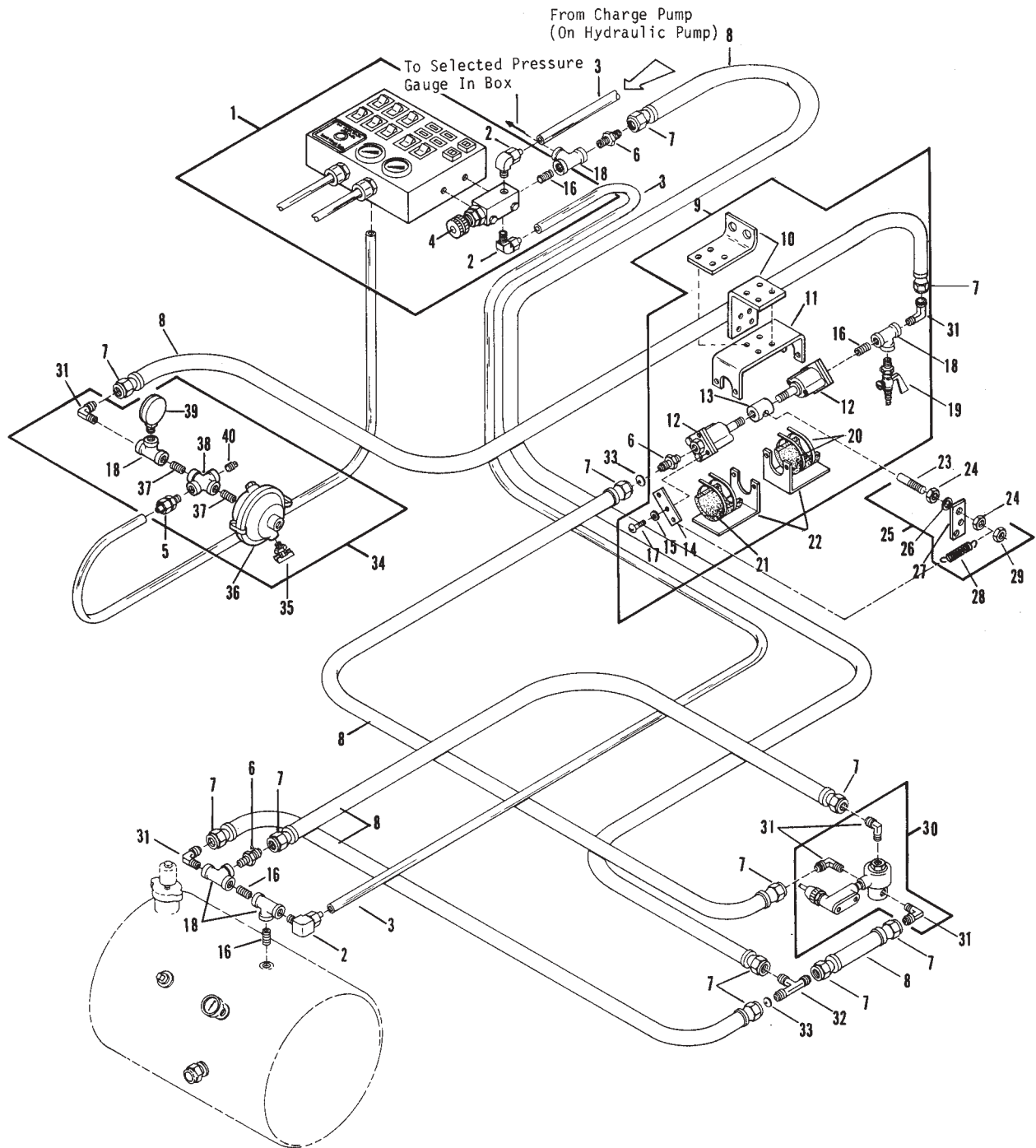


Control System - Water Distribution - Electrical
Hydrostatic Drive

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2960122	1	Box-Panel, Master				
2	6700875	1	Warning Light-Pump Overspeed				
	6400124	1	Meter Tachometer				
3	6700819	6	Switch-Rocker, Flushing Control				
4	6700814	1	Light-Pilot, Amber, Control, Flusher				
5	6700815	1	Light-Pilot, Green, Control, Flusher				
6	6700816	2	Light-Pilot, Red, Control, Flusher				
7	6700820	1	Fuse-Fill Light, Flusher				
	6700822	1	Fuse Holder				
8	6600832	2	Connector-Mal, Elb, 0.38T x 0.25MPT				
9	6700821	1	Fuse-System Power, Flusher				
	6700823	1	Fuse Holder				
11	2960143	1	Panel Asm-Control, Master				
13	6601011	1	Valve-Control, Press Noz, Flusher				
14	6700817	1	Switch-Rocker, System Activate				
15	6700818	1	Switch-Rocker, System Pwr, Flusher				
16	6400127	2	Gauge-Pressure, 200 PSI				
17	2970042	1	Cable Asm-Power Supply, 6 Feet				
18	2970043	1	Cable Asm-Control, Main, 20 Feet				
19	2960139	1	Cable Asm-Jumper, Level to Main				
20	6700894	5	Relief-Strain, Cord, Liq Tight				
21	2960163	1	Box Asm-Float Switch Junction				
22	0274249	8	O Ring-Tube Fitting, 0.75				
23	6700834	1	Cover-Box, Sub Junct. Cont, Flusher				
24	6700829	1	Nipple-Chase, Noninsul, 0.50				
25	7520003	1	Box-Junction, Float Tree				
26	6601017	1	Nipple-PP, Sch 80, 0.50 x 3.00, PVC				
27	0143980	2	Plug-Pipe, Sq Hd, 0.38NPT, PD				
28	2960130	2	Tee-Water Level-Interlock Tree				
29	6601018	2	Nipple-Sch 80, 0.50 x CL,PVC				
30	6601014	2	Elbow-Pipe, 90, 0.50NPT,PVC,SCH 80				
31	6601015	2	Bushing-Pipe, 0.50 x 0.25NPT,PVC				
32	0112877	3	Bushing-PP, Hex, 0.13 x 0.25NPT,BR				
33	6700190	3	Switch-Indicator				
34	6601016	1	Nipple-PP, Sch 80, 0.50 x 6.00, PVC				
35	6601056	1	Connector- 0.37 Tube x 0.50 Pipe,Comp				
36	6601171	2	Insert-Furrule, 06 Tube, 6T23UIB				
37	6309162	AR	Tubing-Nylon, Air Brk, 0.380D/Ft				
	6700827	AR	Wire-18Ga, Str, Black-Per Foot				
38	6601170	1	Tee-Run, 04FPX, 06MNX, 06MN, Brass				
39	7520001	3	Float-Switch, Level, Buna-N				
40	6000921	3	Ring-Snap				
41	6601172	1	Mountie-Fitting, 6T22128				
42	0120380	1	Washer-Lock, 0.25, Spring,PD				
43	0113739	1	Nut-Hex, 0.25NC, Brass				
44	2960183	1	Tree Asm-Level Indicator, Univ				
45	2960128	1	Solenoid Asm-Flusher Press Cont				
46	0118755	3	Elbow-0.38T x 0.25MPT, 90 Deg.				
47	6601020	1	Valve-Sol, Sys Act, 12V DC				
48	6700895	3	Relief-Strain, Cord, Liq Tight				
49	6700899	2	Grommet-2 Hole, Strain Relief				
50	6700897	AR	Cable-4-18, Flusher Control/FT.				
51	6700896	1	Box-Angle, Entrance, Junction				
52	2960185	1	Bracket-Solenoid Mount				
53	0141504	1	Nipple-PP, Sch 40, 0.50 x 1.50, PN				
54	6400125	1	Cable Sender				
55	6400123	1	Sender-Tachometer				
56	6400126	1	Tang-Drive, Tachometer Sender				
57	6700898	AR	Cable-2-18, Flusher Control/FT.				
58	2960162	1	Cover Asm-Main Junction Box				
	2960169	1	Decal-Wiring Diagram, Junct Box				
59	2960161	1	Box Asm-Main Junction				
60	6700904	8	Nut-Lock, 0.50, Elect				
61	7520002	1	Box-Junction, Master				
62	6700922	1	Grommet-1 Hole, 0.25, Str Relief				
63	2960184	1	Relay-Not Shown(In Control Panel)				
			Units L1117 and after				
64	0219758	2	Nut Hex Jam 0.75NF,PD				
65	0131000	2	Washer-Flat 0.75A (0.81 x 2.00) PD				
66	6701770	1	Sensor-Mag, Dixon #SM305-47063				
76	2970056	1	Brkt-Mag. Pickup, Tach, Drive, FL				

AR = AS REQUIRED

Control System - Water Distribution - Hydraulic

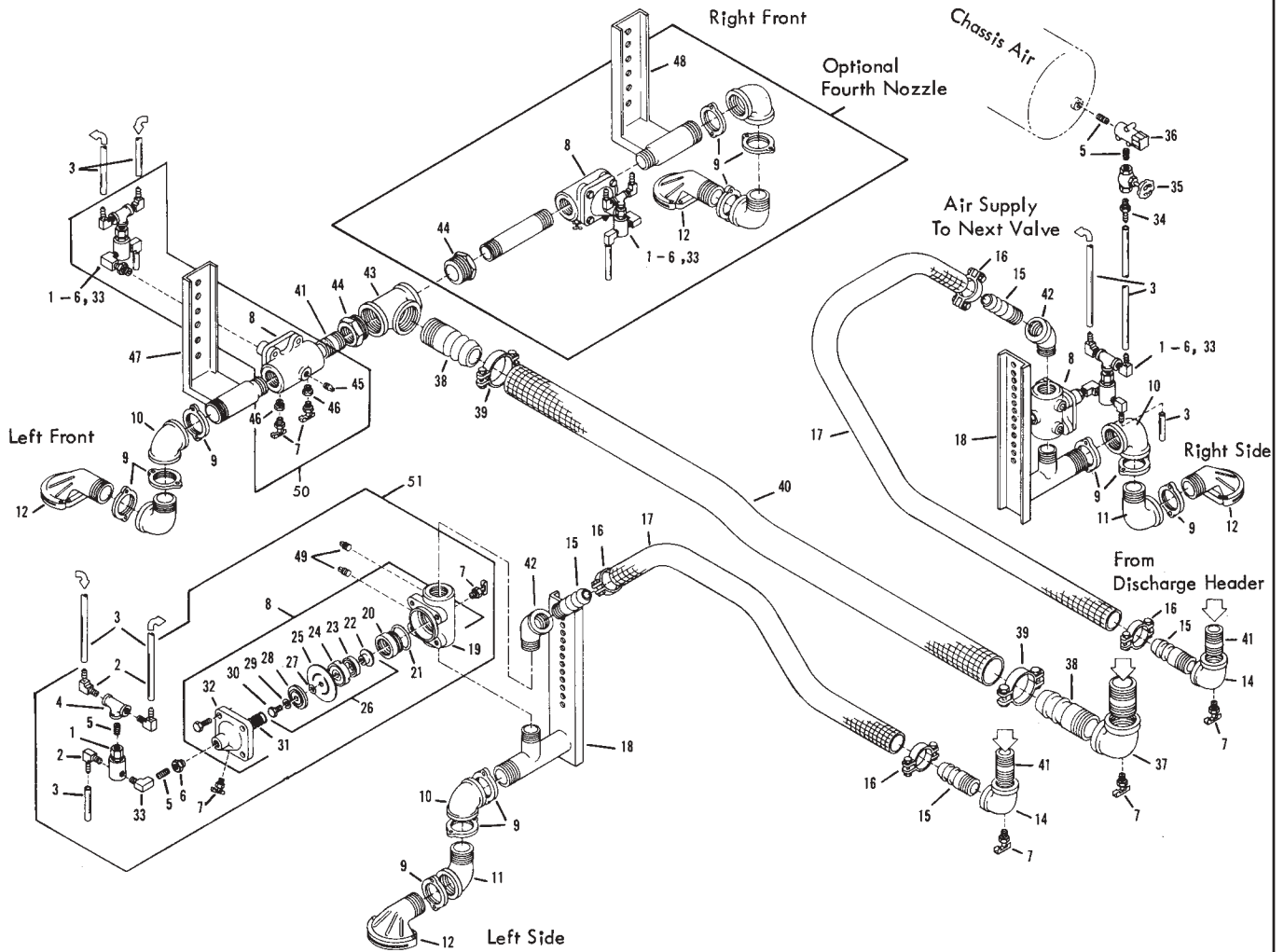


Control System - Water Distribution - Hydraulic

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2960143	1	Panel Asm-Control, Master				
2	6600832	3	Connector-Mal. Elbow 0.38T x 0.25MPT				
3	6309162	AR	Tubing-Nylon, Air Brkt. 0.380D/FT.				
4	6601011	1	Valve-Control, Press Noz., Flusher.				
5	6600831	1	Connector-Mal, Str, 0.38T x 0.25MP				
6	0118750	4	Connector-Flared Tbg. 0.38 x 0.25				
7	6600306	12	Swivel-Female Flare				
8	6600324	AR	Hose-0.38-Per Ft.				
9	2960142	1	Modulator Asm-Hyd Pump, Flusher S/N L-1650,L-1663 Thru L-1940				
	2960201	1	Modulator Asm-Hyd Pump, Flusher S/N L-1941 Thru L-2184				
	3321329	1	Molulator Asm-Hyd Pump, Flusher S/N L-2185 Thru Present				
10	2690150	1	Bracket-Mt, Mod. Dyno Power Pumps				
	3321314	1	Bracket-Mt, Mod. Sunstrand Pumps				
11	2960151	1	Bracket-Mt, Bellows, Press				
12	2960127	2	Bellows-Pressure Sensing				
	7210041	AR	Diaphragm-Flusher Actuator (For Repair of Bellows #2960127)				
13	2960149	1	Coupling-Shaft, Bellows				
14	2960148	1	Support-Spring Return, Bellows				
15	0120217	2	Washer-Lock, No. 10, Spring, PD				
16	0142275	3	Nipple-PP, Sch 40, 0.25 x 1.00, PN				
17	0436754	2	Screw-Mach, PNSL, 10NF x 1.00, PD				
18	0105417	4	Tee-Pipe, 0.25NPT, PN				
19	6601086	1	Valve-Cock				
20	6700167	AR	Tie-Plt-25CP-0, Black				
21	2960152	2	Filter-Bellows, Mod., Flusher				
22	2960147	2	Gusrd-Dust, Bellows, Modulator				
23	2960145	1	Pin-Drive, Mod., Flusher				
24	0124818	2	Nut-Hex, Jam, 0.25NC, PD				
25	2960146	1	Pin-Drive, Asm, Control, Pump				
26	0120380	1	Washer-Lock, 0.25, Spring, PD				
27	2960144	1	Plate-Adapter, Pump, Hyd				
28	9413946	1	Nut-Lock, Hex, 0.25NC, PD				
29	6100261	1	Spring-Extend, Mod, Flusher				
30	2960128	1	Solenoid Asm-Flusher Press Cont.				
31	0118755	6	Elbow-0.38T x 0.25MPT, 90 Deg. Used on Crank Drive Units ONLY				
32	0118807	1	Tee-0.375, 45 Flare				
33	2960157	2	Disk-Orifice, Restrictor (used with Sundstrand Pumps)				
34	2960129	1	Interlock Asm-Flush Press Cont				
35	6600162	1	Cock-Drain, 0.25"				
36	2960126	1	Bellows Asm-Transfer, Pressure				
	6601006	1	Rubber Diaphragm				
37	0105405	2	Nipple-Sch 40, 0.25 x 0.87, CL,PN				
38	0105419	1	Cross-Pipe, 0.25NPT,PN				
39	6600168	1	Gauge-Press, 2.5" x 160 Lbs.				
40	0219189	1	Plug-Pipe, Sq Hd, 0.25NPT,PN				

AR = AS REQUIRED

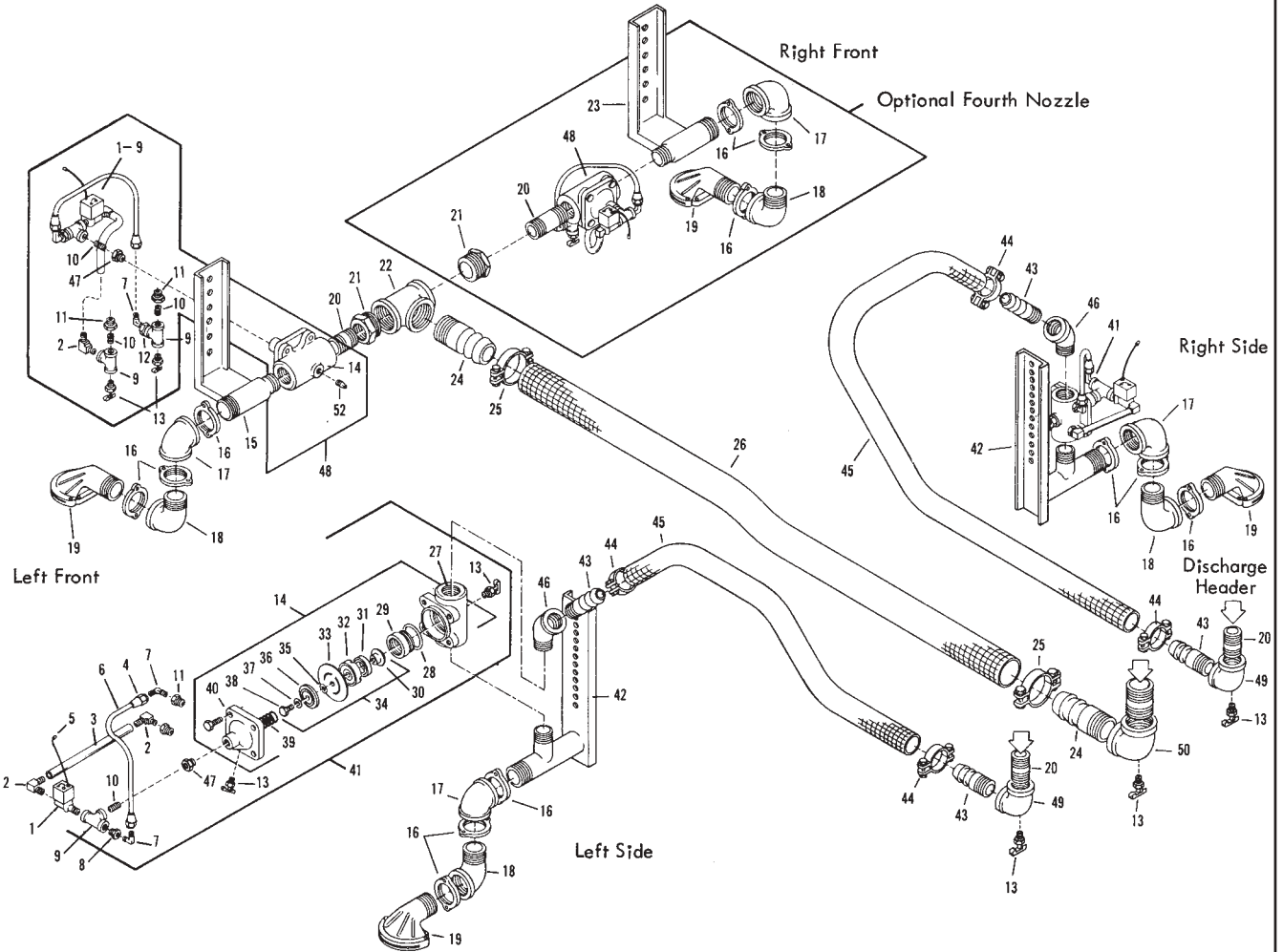
Discharge Piping - Air Control



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6600538	1	Valve-Solenoid, 12 VDC	27	7430229	1	O Ring-Stem
2	6700477	3	Elbow-3/8 Tube X 1/4 MPT	28	7430223	1	Washer-Diaphragm
3	6309162	AR	Tubing-Nylon, Airbrake, 3/8 OD	29	7430225	1	Washer-Belleville
4	0105417	1	Tee-Pipe, 1/4	30	7430072	1	Bolt-Stem
5	0105405	4	Nipple-1/4 X Close	31	7430042	1	Spring-Clayton Valve
6	0144045	1	Bushing-Pipe, 1/2 X 1/4	32	7430078	1	Cover-Valve
7	6600162	2	Drain Cock-1/4	33	0120499	1	Elbow-Street, 1/4", Brass
8	2940055	1	Valve Asm-Clayton, 2"	34	6600831	1	Connector- 3/8 Tube to 1/4 Pipe
9	2940005	3	Ring-Locking	35	6600303	1	Valve-Globe, 1/4"
10	2940013	1	Elbow-Galvanized, Faced, 2 1/2"	36	6600304	1	Valve-Brake, 1/4"
11	2940014	1	Elbow-Street, Galvanized, 2 1/2"	37	6200073	1	Elbow-Pipe, 3.00"
12	2940006	1	Nozzle Asm-Brass	38	6200575	AR	Nipple-Combination, 3"
13	6200040	1	Bushing- 3 X 2	39	6000946	AR	Clamp-Hose, 3"
14	0187154	AR	Elbow-Pipe, 90, St, 2"	40	6309223	AR	Hose-Water, 3", Per Foot
15	6200526	AR	Nipple-Combination, 2"	41	0219501	1	Nipple-Sch 40, 2.00 X 2.50
16	6000870	AR	Clamp-Hose, 2"	42	0218220	3	Elbow-Pipe, 45, St, 2.00NPT, PN
17	6309186	AR	Hose-Water, 2", Per Foot	43	6200163	1	Tee-Pipe, 3.00"
18	2940345	2	Bracket Asm-Side Nozzle Mt.	44	6200040	1	Bushing-Pipe, 2 X 3
19	7430076	1	Valve Body	45	0219190	1	Plug-Pipe, SQHD, 0.25 NPT, PD
20	7430071	1	Seat-Clayton Valve	46	0119931	5	Bushing-Pipe, 0.38X0.25NPT, PN
21	7430233	1	O Ring Seat	47	2940339	1	Bracket Asm-Front Nozzle, Left
22	7430227	1	Guide-Disc, Delrin	48	2940340	AR	Bracket Asm-Front Nozzle, Right
23	7430033	1	Disc-Clayton Valve	49	0219191	2	Plug-Pipe, SQHD, 0.38, PN
24	7430073	1	Retainer-Disc	50	2940386	AR	Valve Asm-Complete, Horizontal
25	7430069	1	Diaphragm-Clamp	51	2940387	AR	Valve Asm-Complete, Vertical
26	7430218	1	Diaphragm & Disc Assembly				

AR = As Required

Discharge Piping - Hydraulic Control

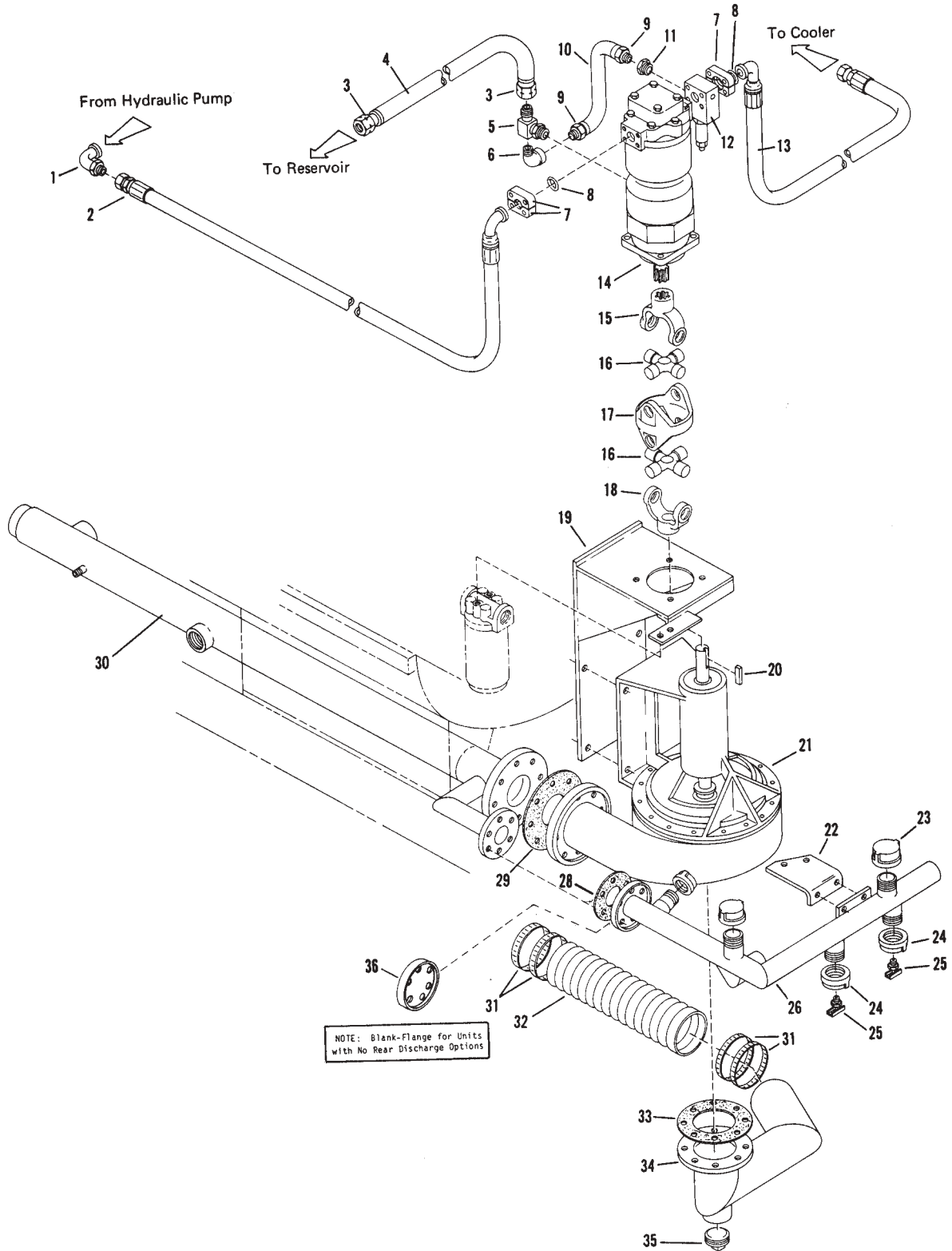


REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6600799	3	Valve-Solenoid, 12 Volt DC	28	7430233	3	O Ring-Seat
2	6700477	6	Elbow-0.38Tube X 0.25MPT	29	7430071	3	Seat-Clayton Valve
3	6700363	AR	Tubing-Polyethelene, .38, Per Foot	30	7430227	3	Guide-Disc, Delrin
4	0120704	6	Nut-Flared, 0.19 X 0.81 Lg	31	7430033	3	Disc-Clayton Valve
5	6700891	AR	Housing-Connector Socket	32	7430073	3	Retainer-Disc, Delrin
	6700893	AR	Contact-Socket Connector	33	7430069	3	Diaphragm-Clamp, Valve
6	6309067	AR	Tube-0.19, Copper, Per Foot	34	7430218	3	Diaphragm/Disc Assembly
7	6200362	6	Elbow-0.19 Tube X 0.12MPT	35	7430229	3	O Ring-Stem
8	0119930	3	Bushing-Pipe, 0.25X0.12NPT, PN	36	7430223	3	Washer-Diaphragm, Delrin
9	0105417	5	Tee-Pipe, 0.25NPT, PN	37	7430225	3	Washer-Belleville
10	0105405	5	Nipple-Sch40, 0.25X0.87CI, PN	38	7430072	3	Bolt-Stem, Clayton Valve
11	0119931	5	Bushing-Pipe, 0.38X0.25NPT, PN	39	7430042	3	Spring-Clayton Valve
12	2940301	3	Strainer Asm-Clayton Valve, Flush	40	7430078	3	Cover-Valve, Clayton Valve
13	6600162	6	Cock-Drain, 0.25"	41	2940302	2	Valve Asm-Vertical, Complete
14	2940055	3	Valve Asm-Clayton, 2.00 In	42	2940345	2	Bracket Asm-Side Nozzle Mount
15	2940339	1	Bracket Asm-Front Nozzle, Left	43	6200526	4	Nipple-Combination, 2", Type SCP
16	2940005	9	Ring-Locking, 2.5"	44	6000870	4	Clamp-Hose, 2.50 OD, Double Bolt
17	2940013	3	Elbow-Galvanized, Faced, 2.5"	45	6309186	AR	Hose-2", Water, Per Foot
18	2940014	3	Elbow-Street, Galvanized, 2.5"	46	0218220	3	Elbow-Pipe, 45, St, 2.00NPT, PN
19	2940006	3	Nozzle Assembly, Brass	47	0144045	4	Bushing-Pipe, 0.50 X 0.25 NPT
20	0219501	1	Nipple-Sch 40, 2.00 X 2.50	48	2940338	2	Valve Asm-Horizontal, Complete
21	6200040	1	Bushing-Pipe, 2 X 3	49	0189777	2	Elbow-Pipe, 2.00"
22	6200163	1	Tee-Pipe, 3.00"	50	6200073	1	Elbow-Pipe, 3.00"
23	2940340	AR	Bracket Asm-Front Nozzle, Right	51	0219191	2	Plug-Pipe, SQHD, 0.38, PN
24	6200575	2	Nipple-Combination, 3.00"	52	0219190	1	Plug-Pipe, SQHD, 0.25 NPT, PD
25	6000946	2	Clamp-Hose				
26	6309223	AR	Hose-3.00", Water, Per Foot				
27	7430076	3	Body-Valve				

AR = As Required

Pumping Unit - Hydraulic

S/N L-1651 thru L-1845, L-1847 & L-1848



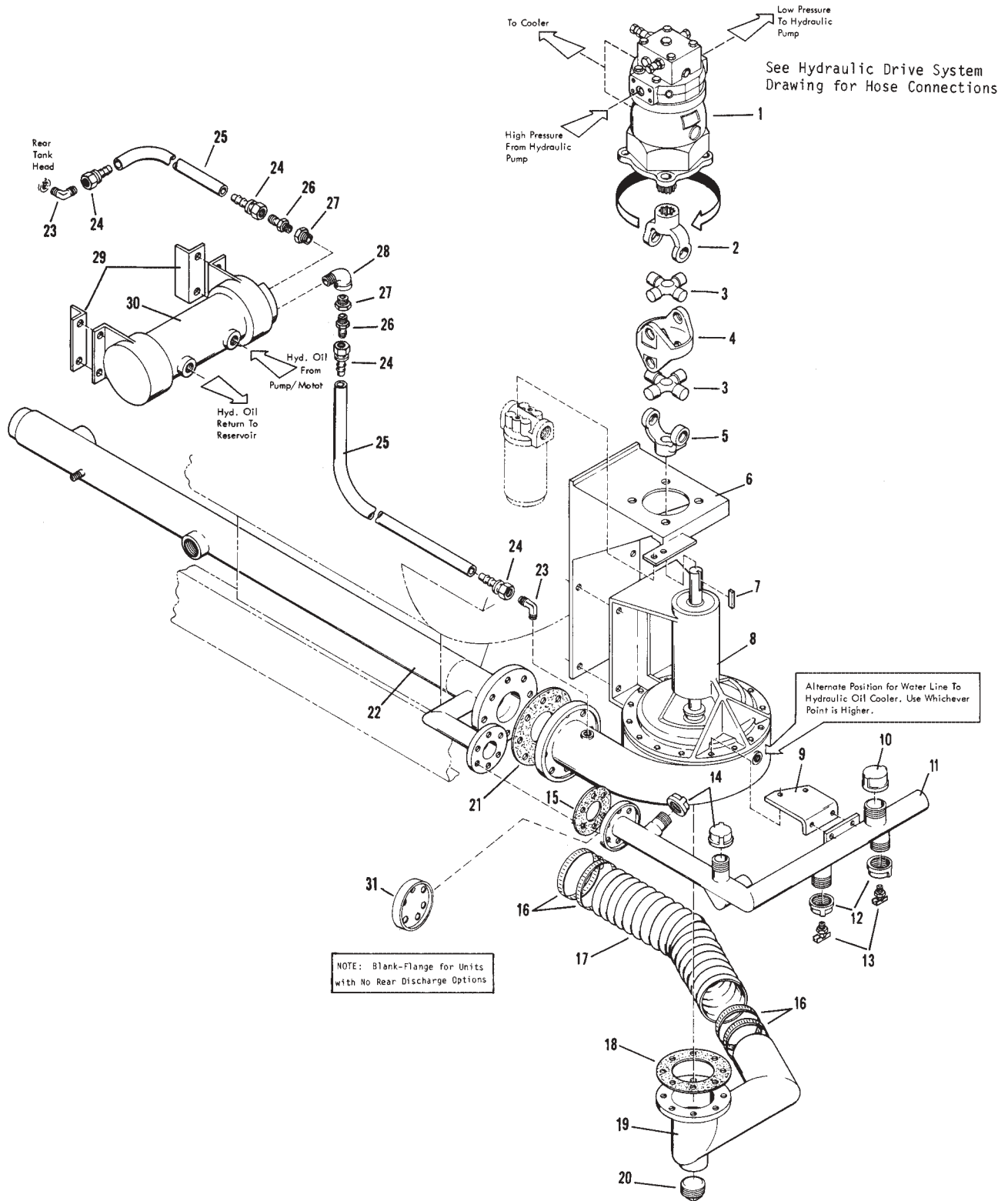
Pumping Unit - Hydraulic
S/N L-1651 thru L-1845, L-1847 & L-1848

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6601045	1	ELBOW=FLANGE ADAPT,JIC X O=RG				
2	6601002	AR	HOSE=HIGH PRESS,LOOP,6 FT				
	6601003	AR	HOSE=HIGH PRESS,LOOP,8 FT				
	6601004	AR	HOSE=HIGH PRESS,LOOP,10 FT				
	6601159	AR	HOSE=HIGH PRESS,LOOP,16 FT				
	6601160	AR	HOSE=HIGH PRESS,LOOP,17 FT				
	6601161	AR	HOSE=HIGH PRESS,LOOP,18 FT				
	6601162	AR	HOSE=HIGH PRESS,LOOP,19 FT				
3	6600648	2	NUT=JIC SWIVEL,37DEG,0.75-12				
4	6600646	AR	HOSE=SELF GRIP =PER FOOT				
5	3320893	1	ELBOW=0.75MALE JICX1.06 O=RING				
6	0108686	1	ELBOW=PIPE,90,ST,0.50NPT,PN				
7	6600236	4	FLANGE=SPLIT				
8	0274253	2	O RING=TUBE FITTING,1.50				
9	6600663	2	FITTING=PUSH LOK				
10	6600662	1	HOSE=PUSH LOK				
11	0144034	1	BUSHING=PIPE,0.75X0.50NPT,PN				
12	6601044	1	VALVE=RELIEF				
13	6601027	AR	HOSE ASM=COOLER TO PUMP,5 FT				
	6601155	AR	HOSE ASM=COOLER TO PUMP,13 FT				
	6601156	AR	HOSE ASM=COOLER TO PUMP,14 FT				
	6601157	AR	HOSE ASM=COOLER TO PUMP,15 FT				
	6601158	AR	HOSE ASM=COOLER TO PUMP,16 FT				
14	6600997	1	MOTOR=HYD DR,FLUSH,WATER PUMP				
15	6440156	1	YUKE=END,1.25-14 TOOTH INVOL				
16	6440155	2	JOURNAL AND BEARING KIT				
17	6440158	1	YUKE=CENTER				
18	6440157	1	YUKE=END,1.38 BORE X.32 KEYWAY				
19	2940264	1	BASE ASM=PUMP + MOTOR MOUNT				
20	6000161	1	KEY=0.31SQ,CR X 1.50 LG				
21	6600998	1	PUMP=WATER,FLUSHER				
22	2940350	1	PLATE=HEADER SUPPORT				
23	6200052	1	CAP=PIPE,2.50NPT,PN				
24	2940314	2	CAP=PIPE,2.00NPT,PN				
25	6600162	2	CUCK=DRAIN,0.25 IN				
26	2940349	1	HEADER ASM=DISCHARGE				
27	0187373	2	CAP=PIPE,1.50NPT,PN				
28	6000948	1	GASKET=HEADER/DISCHARGE PIPE				
29	2940053	1	GASKET=PUMP/DISCHARGE PIPE				
30	2940362	1	PIPE ASM=DISCHARGE PUMP,144 TK				
	2940369	1	PIPE ASM=DISCHARGE PUMP,174 TK				
31	6000872	4	CLAMP=HOSE,WORM GEAR				
32	6000950	1	HOSE=SUC,5.56X25.0,2.50CUFF BE				
33	2940054	1	GASKET=SUCTION LINE TO PUMP				
34	2940330	1	HEADER ASM=SUCTION				
35	6200153	1	PLUG=PIPE,SQ HD,3.00NPT,PN				
36	6600616	1	Flange-Blank 2.50 Steel				

AR - AS REQUIRED

Pumping Unit - Hydraulic

With Dynapower Generation II Hydraulic Motor
S/N L-1846, L-1849 thru L-2120, L-2163, L-2164, L-2170, L2177 and L-2182



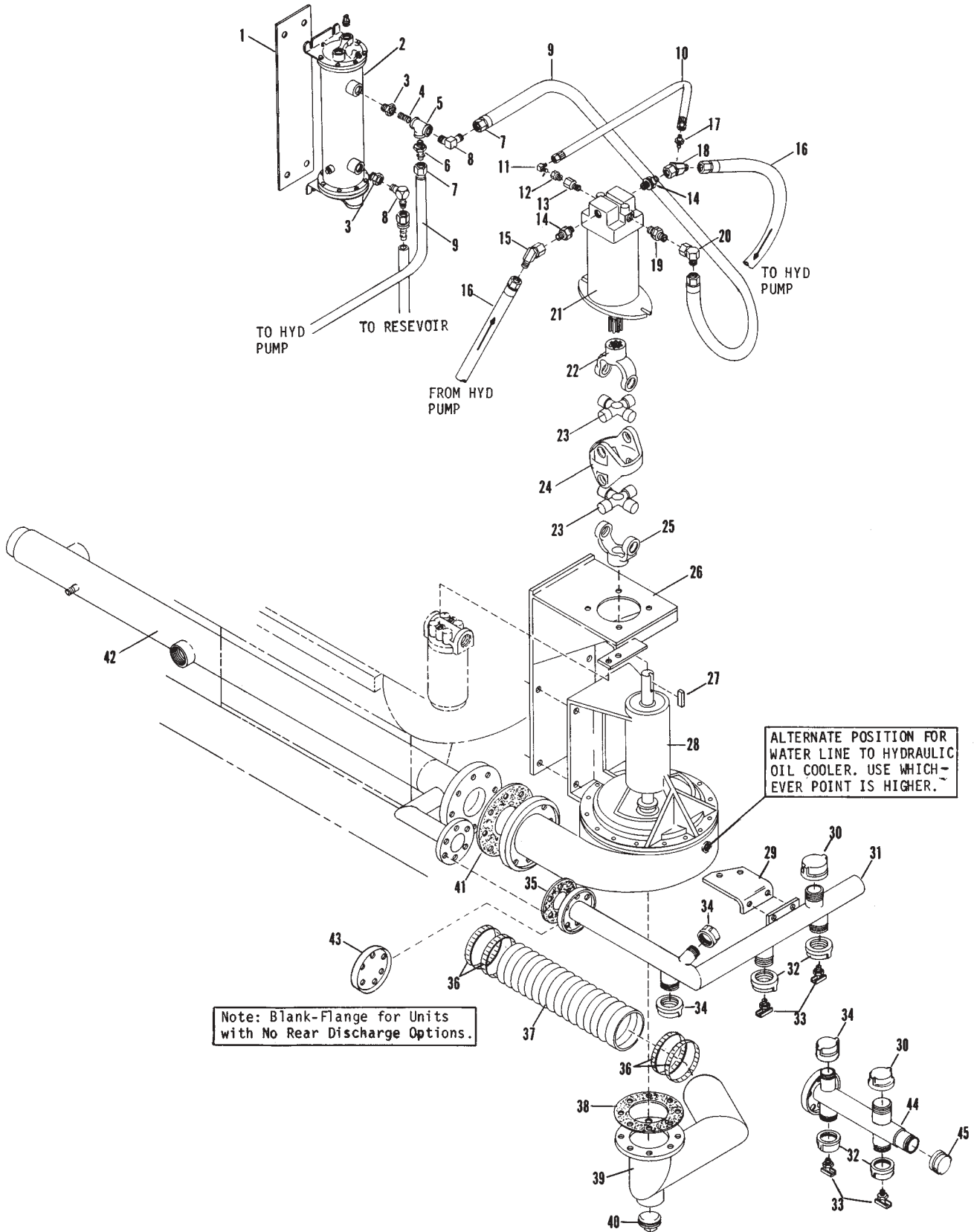
Pumping Unit - Hydraulic
 With Dynapower Generation II Hydraulic Motor
 S/N L-1846, L-1849 thru L-2120, L-2163, L-2164, L-2170, L2177 and L-2182

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6601558	1	Motor-Hyd, 3.5 Splined				
2	6440156	1	Yoke-End, 1.25-14 Tooth, Invol				
3	3170013	2	Journal and Bearing Kit				
4	6440158	1	Yoke-Center				
5	6440157	1	Yoke-End, 1.38 Bore X 0.32 Keyway				
6	2940264	1	Base Asm-Pump and Motor Mount				
7	6000161	1	Key-0.31SQ, CR x 1.50LG				
8	6600998	1	Pump-Water, Flusher				
9	2940350	1	Plate-Header Support				
10	6200052	1	Cap-Pipe, 2.50NPT, PN				
11	2940349	1	Header Asm-Discharge				
12	2940314	2	Cap-Pipe, 2.00NPT, PN				
13	6600162	2	Cock-Drain, 0.25 In				
14	0187373	2	Cap-Pipe, 1.50NPT, PN				
15	6000948	1	Gasket-Header/Discharge Pipe				
16	6000872	4	Clamp-Hose, Worm Gear				
17	6000950	1	Hose-Suc, 5.56x25.0, 2.50 Cuff B.E.				
18	2940054	1	Gasket-Suction Line to Pump				
19	2940330	1	Header Asm-Suction				
20	6200153	1	Plug-Pipe, SQ HD, 3.00NPT, PN				
21	2940053	1	Gasket-Pump/Discharge Pipe				
22	2940362	1	Pipe Asm-Discharge Pump, 144 TK				
	2940369	1	Pipe Asm-Discharge Pump, 174 TK				
23	6200179	2	Elbow-Flared Tube				
24	6600306	4	Hose End-06x06FSX, ST, LPSP				
25	6600324	AR	Hose-0.38, Per Foot				
26	6200174	2	Union-Hlf, 0.38TU x 0.38MPT				
27	0144041	2	Bushing-Pipe, Red., 0.75 x 0.38NPT				
28	0144113	2	Elbow-Pipe, ST, 0.75NPT				
29	2920128	2	Bracket-Cooler Mounting				
30	6601546	1	Cooler-Hydraulic Oil				
31	6600616	1	Flange-Blank 2.50 Steel				

Use Kit No. 7010054 to Install a New Generation II Motor on a Street Flusher.

AR = As Required

Pumping Unit - Hydraulic
 With Sundstrand Pump
 S/N L-2178 thru L-2181, L-2184 thru L-2269



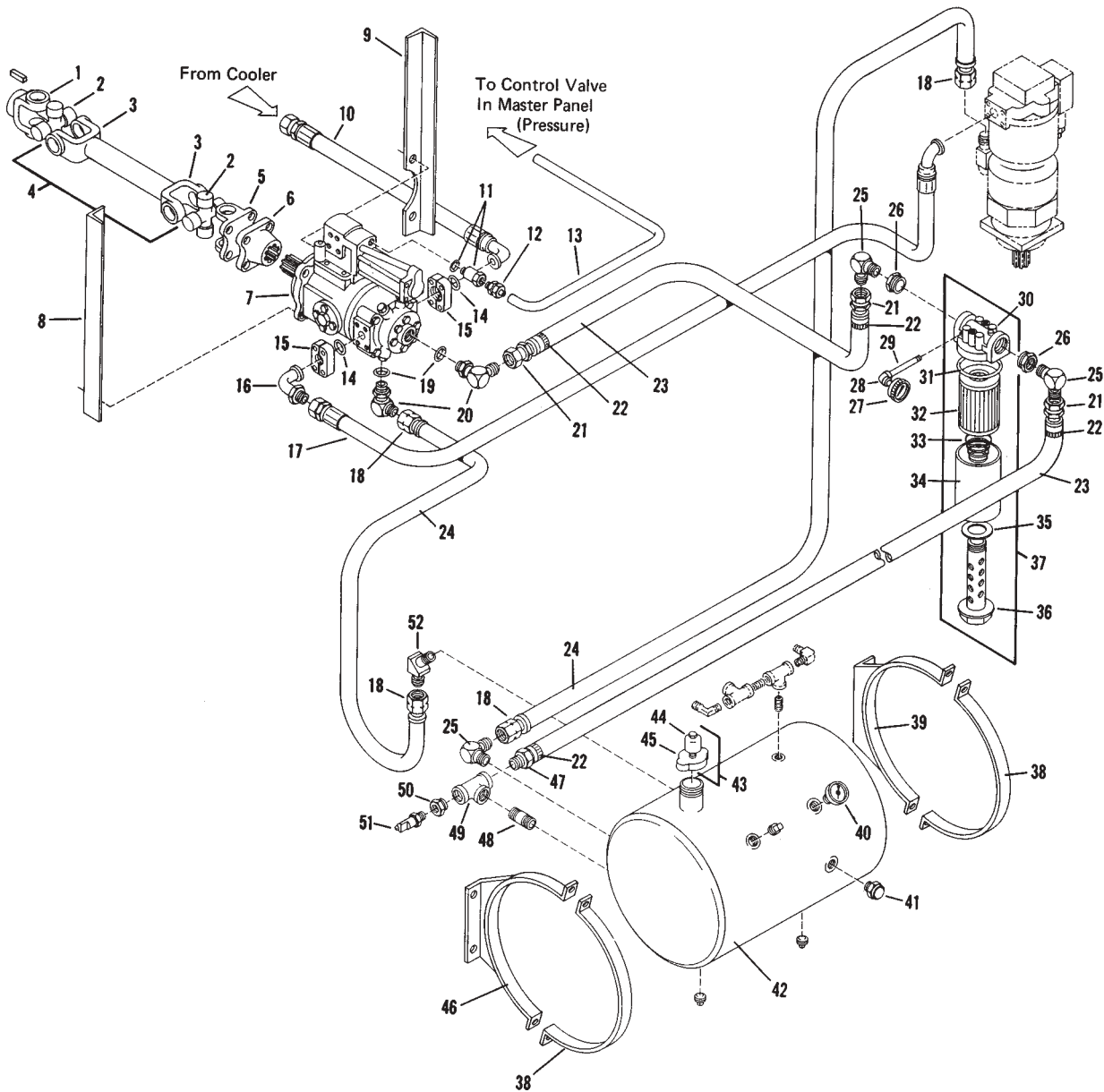
Pumping Unit - Hydraulic
With Sundstrand Pump
S/N L-2178 thru L-2181, L-2184 thru L-2269

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2910354	1	Plate Mtg-Hyd Oil Cooler				
2	6602153	1	Cooler-Hyd Oil, 2 Pass Flusher				
3	0128003	2	Bushing-Pipe 1.00 x 0.75NPT,PN				
4	0144613	1	Nipple-Sch 40, 0.75 x 1.38CL,PN				
5	0125988	1	Tee-Pipe, 0.75NPT,PN				
6	9402711	AR	Adapter-Hyd, St, 12MP-12MJ				
7	6600648	AR	Hose-End 12 x 12FJX, St, Push Lock				
8	9402867	2	Elbow-Hyd, 12MJ-12MP				
9	6600646	AR	Hose-Self Grip-Per Foot				
10	3180906	1	Hose Asm 04 x 18, 04FJX-04FJX				
11	6200494	1	Elbow-Hyd, 90, 04MJ-04MJ				
12	0119931	1	Bushing Pipe, 0.38 x 0.25NPT,PN				
13	9409287	1	Adapter, Hyd, St, 06FP-08MB				
14	9410207	2	Adapter 16MB-16MJ				
15	6602021	1	Fitting-Hyd, 45				
16	9250607	2	Hyd Hose Asm, Sunstrand Motor				
17	2960203	1	Fitting 0.055 Orifice				
18	2960204	2	Fitting-Hyd, 45, Tapped				
19	6600897	1	Adapter-Hyd, St, 08MB-12MJ				
20	9410283	1	Elbow-Hyd, 90, 12FJX -12MJ				
21	6602129	1	Motor-Hyd, 2.8 Cir, Axial, Fixed				
22	6440156	1	Yoke-End, 1.25-14 Tooth, Invol				
23	3170013	2	Journal and Bearing Kit				
24	6440158	1	Yoke-Center				
25	6440157	1	Yoke-End, 1.38 Bor x 0.32 Keyway				
26	2940264	1	Base Asm-Pump and Motor Mount				
27	6000161	1	Key-0.315Q, CR x 1.50LG				
28	6600998	1	Pump-Water, Flusher				
29	2940350	1	Plate-Header Support (Used Prior to L 2237)				
30	6200052	1	Cap-Pipe, 2.50NPT,PN				
31	2940349	1	Header Asm-Discharge (Not Interchangeable W/ 2940417 & 2940418 Pipe Asm)				Before Unit L 2237
32	2940314	2	Cap-Pipe, 2.00NPT,PN				
33	6600162	2	Cock-Drain, 0.25"				
34	0187373	2	Cap-Pipe, 1.50NPT,PN				
35	6000948	1	Gasket-Header/Discharge Pipe				
36	6000872	4	Clamp-Hose, Worm Gear				
37	6000950	1	Hose-Suc, 5.56 x 25, 2.50 Cuff B.E.				
38	2940054	1	Gasket-Suction Line to Pump				
39	2940330	1	Header Asm-Suction				
40	6200153	1	Plug-Pipe, SQHD, 3.00NPT,PN				
41	2940053	1	Gasket-Pump/Discharge Pipe				
42	2940362	1	Pipe Asm-Discharge Pump, 144 TK				Not Interchangeable W/ 2940420
	2940369	1	Pipe Asm-Discharge Pump, 174 TK				Header Asm Before Unit L 2237
	2940417	1	Pipe Asm-Discharge Pump				Not Interchangeable W/ 2940349
	2940418	1	Pipe Asm-Discharge Pump				Header Asm Unit L 2237 and Up
43	6200616	1	Flange-Blank, 2.5", Steel				
44	2940420	1	Header Asm-Discharge (Not Interchangeable W/ 2940362 or 2940369 Pipe Asm)				Unit L 2237 and Up
45	0178438	1	Cap-Pipe, 2.00NPT,PN				

AR = AS REQUIRED

Hydraulic Drive System - P.T.O. Drive

S/N L-1651 thru L1662, L-1664 thru L-1845, L-1847 & L-1848



Hydraulic Drive System - P.T.O. Drive
S/N L-1651 thru L1662, L-1664 thru L-1845, L-1847 & L-1848

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6440170	1	YUKE=1.25 BURE				
2	6440155	2	CROSS+BRG ASM				
3	6440164	2	YUKE=WELD				
4	9250280	1	DRIVE LINE ASM(SPECIFY LENGTH)				
5	6440172	1	YUKE=FLANGE				
6	6440171	1	FLANGE=COMPANION				
7	6600215	AR	PUMP=VARIABLE,RH ROTATION,HYD				
	6600613	AR	PUMP=HYD,LH ROTATION				
8	3320275	1	ANGLE=MT,VERT,LT,PUMP HANGER				
9	3320276	1	ANGLE=MT,VERT,RT,PUMP HANGER				
10	6601027	AR	HOSE ASM=COOLER TO PUMP,5 FT				
	6601155	AR	HOSE ASM=COOLER TO PUMP,13 FT				
	6601156	AR	HOSE ASM=COOLER TO PUMP,14 FT				
	6601157	AR	HOSE ASM=COOLER TO PUMP,15 FT				
	6601158	AR	HOSE ASM=COOLER TO PUMP,16 FT				
11	6601008	1	ADAPTER=O RING TO FNPT				
12	6600891	1	CUNNECTOR=MAL,STR,.38TX.25MPT				
13	6309162	AR	TUBING=NYLON,AIR BRK,.380D /FT				
14	0274253	2	O RING=TUBE FITTING				
15	6600236	4	FLANGE=SPLIT				
16	6601045	1	ELBOW=FLANGE ADAPT JICXO-RING				
17	6601002	AR	HOSE=HIGH PRESS,LOOP,6 FT				
	6601003	AR	HOSE=HIGH PRESS,LOOP,8 FT				
	6601004	AR	HOSE=HIGH PRESS,LOOP,10 FT				
18	6600648	4	NUT=JIC SWIVEL,37DEG,0.75=12				
19	0274247	2	O RING=TUBE FITTING,0.50				
20	9410979	2	ELBOW=90DEG,37FLXO-RG,0.75				
21	6600650	3	NUT=JIC SWIVEL,37DEG,0.75=12				
22	6600651	4	CLAMP=HOSE,0.75,STNLS				
23	6600652	AR	HOSE=SUCTION,0.75 ID =PER FOOT				
24	6600646	AR	HOSE=SELF GRIP =PER FOOT				
25	9402867	3	ADAPTER=ELBOW,UNION,90 DEG				
26	0144059	2	BUSHING=PIPE,1.25X0.75NPT,PD				
27	7420042	1	INDICATOR=FILTER				
28	0105412	1	ELBOW=PIPE,90,0.12NPT,PN				
29	0105404	1	NIPPLE=PIPE,0.25NPT X 0.75				
30	7420136	1	HEAD CASTING W/PLUG REL VLV PT				
31	7420004	1	O-RING=FILTER				
32	7420007	1	FILTER ELEMENT				
33	7420046	1	CUNICAL SPRING=FILTER				
34	7420076	1	HOUSING=FILTER				
35	7420008	1	GASKET=SEAL,FILTER				
36	7420009	1	POST-CENTER,FILTER				
37	6600225	1	FILTER ASSEMBLY=HYD OIL				
38	3320325	2	CLAMP=MTG,HYDRAULIC TANK CLA				
39	3320322	1	CLAMP ASM=MTG,RT,HYD TANK				
40	6500039	1	THERMUNETER=2IN DIAL,9 IN STEM				
41	6600224	1	PLUG=OIL,EYE SITE				
42	3320319	1	TANK ASSEMBLY=HYDRAULIC				
43	2920110	1	CAP ASM=FILL,HYD RESERVOIR				
44	6600223	1	BREATHER=HYD RESERVOIR				
45	2920109	1	CAP=FILL,HYD RESERVOIR				
46	3320323	1	CLAMP ASM=MTG,LT,HYD TANK				
47	6600649	1	FITTING=MALE PIPE,0.75 X 0.75				
48	0190717	1	NIPPLE=PP,SCH 40,0.75X2.00,PN				
49	0125988	1	TEL=PIPE,0.75NPT,PN				
50	0144034	1	BUSHING=PIPE,0.75X0.50NPT,PN				
51	6600237	1	SWITCH=THERMO				
52	9402828	1	UNIUN=ELBOW UNION,45 DEG				

AR - AS REQUIRED

Hydraulic Drive System - P.T.O. Drive

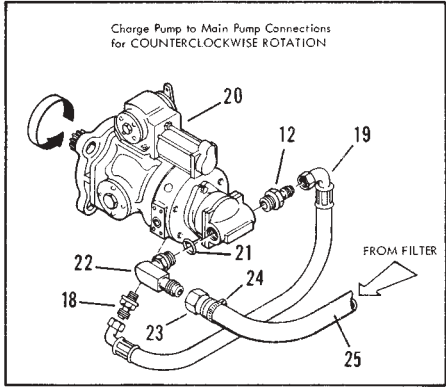
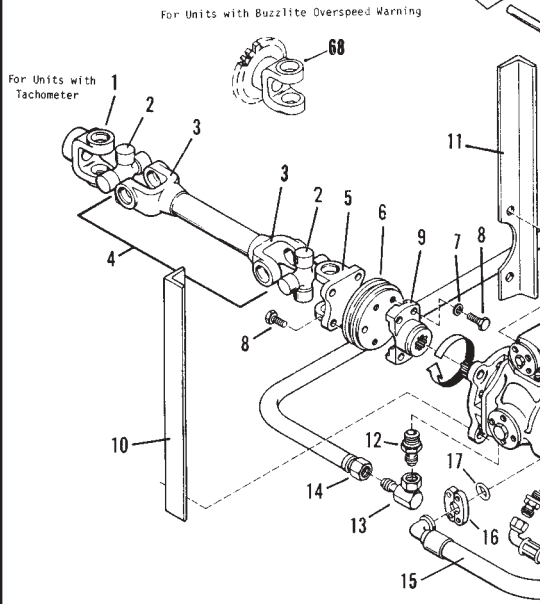
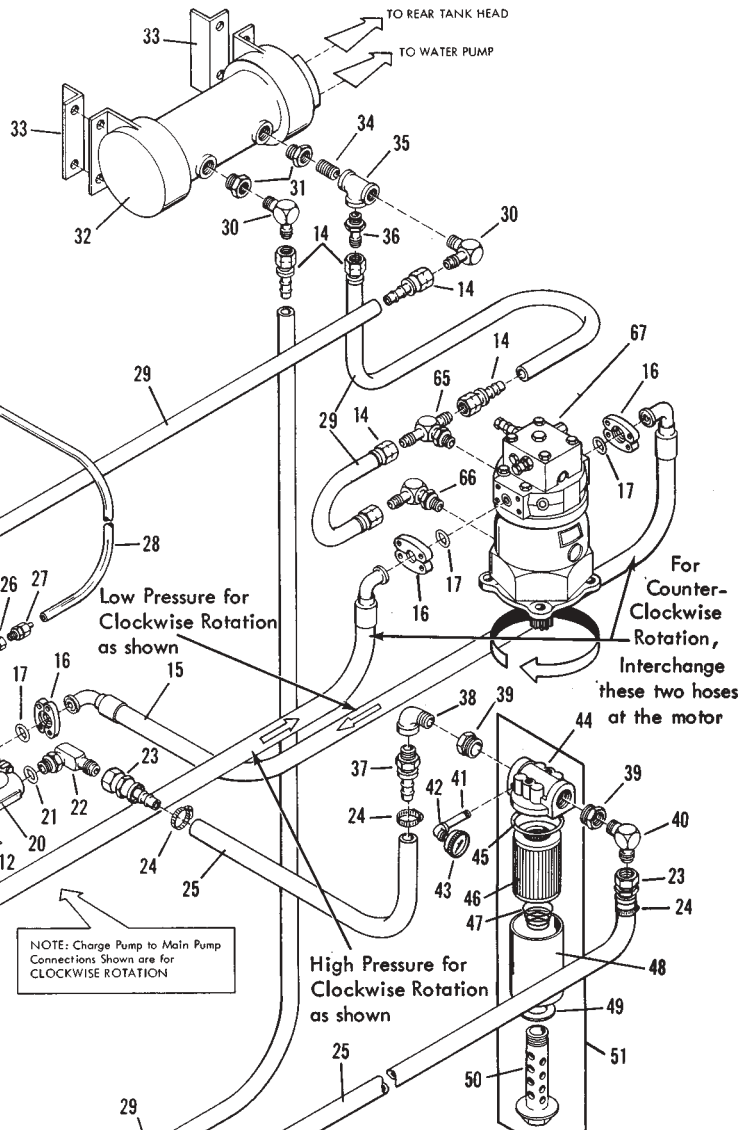
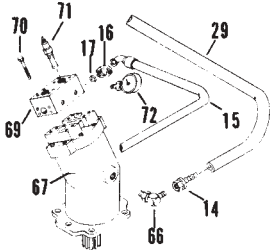
With Dynapower Generation II Pump & Motor

S/N L-1846, L-1849 thru L-2120, L-2163, L-2164, L-2170, L-2177 & L-2182

Bent Axis Motor used on Units S/N: L2121 thru L2162, L2165 thru L2169, L2171 thru L2176

Hook-up for Units W/Crank Drive or W/LH Pump-Install Bent Axis Motor with the Bend Facing Front of Unit-Relief Valve, HP Hose and PSI Gauge (if required) Install on RH Side of Block (AS SHOWN)

Hook-up for Units W/RH Pump, Install Bent Axis Motor with the Bend Facing Rear of Unit-Relief Valve, HP Hose and PSI Gauge (if required) Install on LH Side of Block. (NOT SHOWN)



NOTE: Charge Pump to Main Pump Connections Shown are for CLOCKWISE ROTATION

Fill Reservoir with clean Texaco RANDO Oil HD46, or Sunoco SUNUIS B21WR or equivalent hydraulic oil.

Hydraulic Drive SYstem - P.T.O. Drive
With Dynapower Generation II Pump & Motor
S/N L-1846, L-1849 thru L-2120, L-2163, L-2164, L-2170, L-2177 & L-2182

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6440170	1	Yoke-1.25 Bore	65	9411120	1	Tee-12MJ, 12MJ, 12MB
2	3170013	2	Journal & Bearing Kit	66	9410979	1	Elbow-90, 12MJ-12MB
3	6440164	2	Yoke-Stub, Drive Line, PTO	67	6601557	1	Motor-Hydr, 6.0 Splined
4	9250282	1	Drive Line Assembly (Specify Tube Length)	68	6602080	1	Morot-Hydr, 2.75 CIR, Bent Axis
5	3170021	1	Yoke-Flange	68	2910226	1	Sprocket & Hub Asm 40T For Units W/Buzzlite Overspeed Warning
6	3321014	1	Adapter Plate	69	2940403	1	Relief Valve Block
7	0120382	4	Washer-Lock, 0.38, Spring,PD	70	0272406	8	Screw Hex 7/16NC x 5" Lg.
8	0120233	8	Screw-Hex, 0.38NC x 1.00, GR2,PD	71	6602079	1	Relief Valve
9	6440035	1	Yoke-Fitting				
10	3320275	1	Angle-Mt, Vert, LT, Pump Hanger				
11	3320276	1	Angle-Mt, Vert, RT, Pump Hanger				
12	6601418	1	Adapter-Hydr, ST, 12MJ-16MB				
13	9410283	1	Elbow-Hydr, 90, 12FJX-12MJ				
14	6600648	8	Hose End 12 x 12FJX, ST, Push Lock				
15	9250602	2	Hose Asm-16 x 16FL45, 16FL90 (Specify Length)				
16	6600236	8	Flange-Split Flange Kit Includes: Split Flanges (2) O-Ring (1) Bolts (4) Washers (4)				
17	0274253	4	O Ring-Tube Fitting				
18	6600897	1	Adapter-Hydr, ST, 08MB-12MJ				
19	6601561	1	Hose Asm-12 x 28, 12FJX90-12FJX90				
20	6601555	1	Pump-4.8, Splined, Generation II				
21	0274251	1	O Ring-Tube Fitting, 1.00				
22	6601568	1	Elbow-Hydr, 90, 16MB-16MJ				
23	6601566	2	Hose End 16-16FJX, ST				
24	6000792	4	Clamp-Hose, Worm Drive, 1.06-2.00				
25	6601564	AR	Hose-Suction, 1.00 ID, Per Foot				
26	6601008	1	Adapter-O Ring to FNPT				
27	6600831	1	Connector-Male, ST, 0.38T x 0.25MPT				
28	6309162	AR	Tubing-Nylon, Air Brake, 0.38 OD,P/FT				
29	6600646	AR	Hose-Self Grip-Per Foot				
30	9402867	3	Elbow-Hydr, 12MJ-12MP				
31	0128003	2	Bushing-Pipe, 1.00 x 0.75NPT,PN				
32	6601546	1	Coller-Hydraulic Oil				
33	2920128	2	Bracket-Cooler Mounting				
34	0144613	1	Nipple-Sch 40, 0.75 x 1.38CL,PN				
35	0125988	1	Tee-Pipe, 0.75NPT,PN				
36	9402711	1	Adapter-Hydr, ST, 12MP-12MJ				
37	6601565	2	Hose End, 16-16MP, ST				
38	0108687	1	Elbow-Pipe, 90, ST, 1.00NPT,PN				
39	0125915	2	Bushing-Pipe, 1.25 x 1.00NPT,PN				
40	6601135	1	Elbow,Hydr, 90, 16MJ-16MP				
41	0105404	1	Nipple-Pipe, 0.25NPT x 0.75				
42	0105414	1	Elbow-Pipe, 90, 0.12NPT,PN				
43	7420042	1	Indicator-Gilyrt				
43	7420042	1	Indicator-Filter				
44	7420136	1	Head Casting W/Plug Rel, Vlv. Pt.				
45	7420004	1	O Ring-Filter				
46	7420007	1	Filter Element				
47	7420046	1	Spring-Conical, Filter				
48	7420076	1	Housing-Filter				
49	7420008	1	Gasket-Seal, Filter				
50	7420009	1	Post-Center, Filter				
51	6600225	1	Filter Asm-Hydr Oil				
52	3320322	1	Clamp Asm-Mtg, RT, Hydr Tank				
53	3320325	2	Clamp-Mounting, Hydr Tank				
54	3320323	1	Clamp Asm-Mtg, LT, Hydr Tank				
55	6500039	1	Thermometer-2 In Dial, 9 In Stem				
56	6600224	1	Plug-Oil, Eye Site				
57	3320319	1	Tank Asm-Hydr Oil				
58	2920110	1	Cap Asm-Fill, Hydr Reservoir				
59	6600223	1	Breather-Hydr Reservoir				
60	2920190	1	Cap-Fill, Hydr Reservoir				
61	0191492	1	Nipple-PP, Sch 40, 1.00 x 2.00,PN				
62	0115237	1	Tee-Pipe, 1.00NPT,PN				
63	0128003	1	Bushing-Pipe, 1.00 x 0.75NPT,PN				
64	6600237	1	Switch-Thermo				

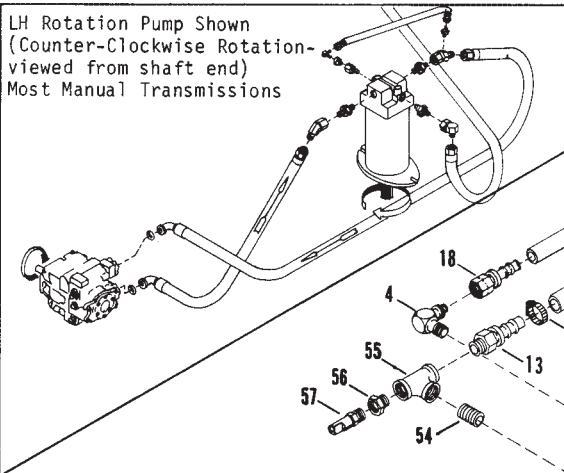
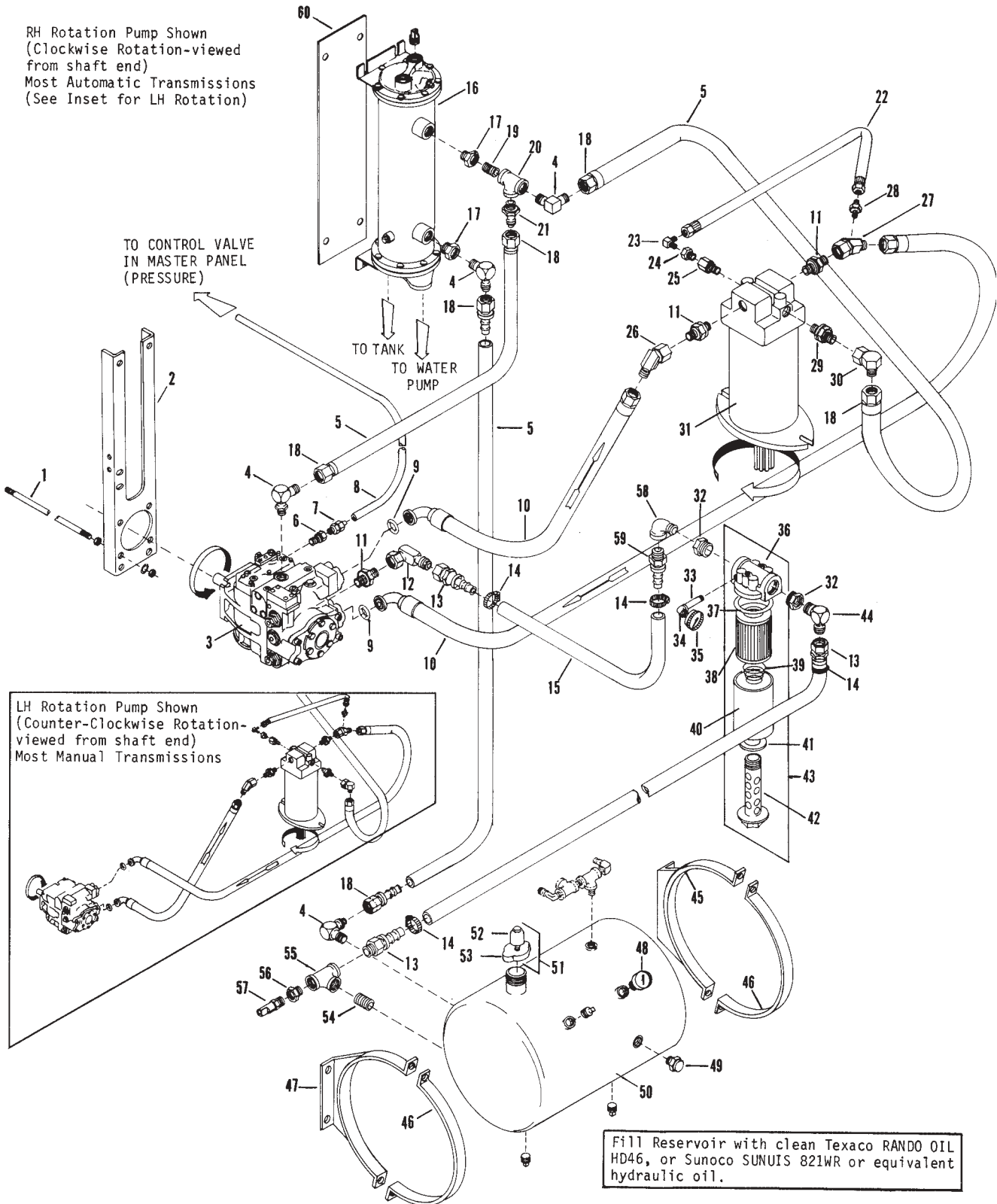
Applies to Units Prior to Serial No. L1941
 Use Kit No. 7010075 to Install a New Generation II Pump
 on a Street Flusher with a PTO Drive

 Use Kit No. 7010054 to Install a New Generation II Motor
 on a Street Flusher

AR = As Required

Hydraulic Drive System - P.T.O. Drive With Sundstrand Pump S/N L-2178 thru L-2181, L-2183 thru L-2269

RH Rotation Pump Shown
(Clockwise Rotation-viewed
from shaft end)
Most Automatic Transmissions
(See Inset for LH Rotation)



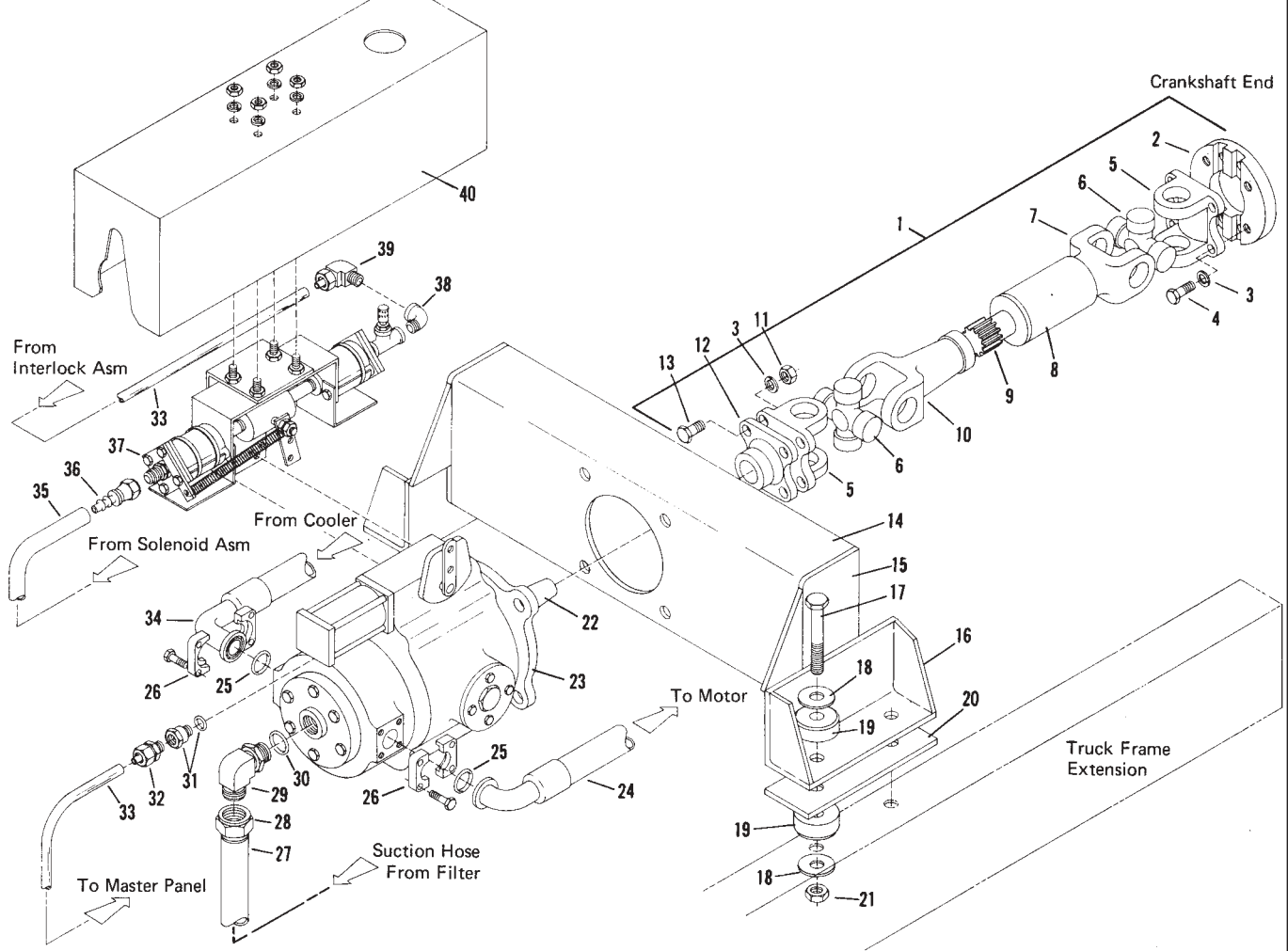
Fill Reservoir with clean Texaco RANDO OIL HD46, or Sunoco SUNUIS 821WR or equivalent hydraulic oil.

Hydraulic Drive System - P.T.O. Drive
With Sundstrand Pump
S/N L-2178 thru L-2181, L-2183 thru L-2269

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6303119	AR	Round 1/2" Ledlay (Specify Length)				
2	3321323	1	Pump Mtg Bracket				
3	6602120	1	Pump-4.57 RT, Man, No Pad				
	6602121	1	Pump-4.57 Lt, Man, No Pad				
4	9402867	4	Elbow-Hyd, 12MJ-12MP				
5	6600646	AR	Hose-Self Grip-Per Foot				
6	9409286	1	Adapter, Hyd, St. 04FP-06MB				
7	6600831	1	Con.-Male, St, 0.38T x 0.25MPT				
8	6309162	AR	Tubing-Nylon, Air Brake, 0.38 OD, Per FT				
9	0274253	4	O Ring-Tube Fitting				
10	9250607	2	Hyd Hose Asm, Sund Mtr				
11	9410207	3	Adapter 16MB-16MJ				
12	9410285	1	Elbow, Hyd 90, 16FJX-16MJ				
13	6601566	2	Hose End-16-16FJX, ST				
14	6000792	AR	Clamp-Hose, Worm Drive, 1.06-2.00				
15	6601564	AR	Hose-Suction, 1.00 ID, Per Foot				
16	6602153	1	Cooler-Hyd Oil, 2 Pass, Flusher				
17	0128003	2	Bushing-Pipe, 1.00 x 0.75NPT, PN				
18	6600648	6	Hose End 12 x 12FJX, St, Push Lock				
19	0144613	1	Nipple-Sch 40, 0.75 x 1.38 CL, PN				
20	0125988	1	Tee -Pipe, 0.75NPT, PN				
21	9402711	1	Adapter-Hyd, St, 12MP-12MJ				
22	3180906	1	Hose Asm, 04 x 18 x 04FJX-04FJX				
23	6200494	1	Elbow-Hyd, 90, 04MJ-04MP				
24	0119931	1	Bushing Pipe, 0.38 x 0.25NPT, PN				
25	9409287	1	Adapter, Hyd, St. 06FP-08MB				
26	6602021	1	Fitting, Hyd, 45				
27	2960204	1	Fitting, Hyd, 45 Tapped				
28	2960203	1	Fitting, 0.055, Orifice				
29	6600897	1	Adapter-Hyd, St, 08MB-12MJ				
30	9410283	1	Elbow, Hyd, 90, 12FJX-12MJ				
31	6602129	1	Motor, Hyd, 2.8 Cir, Axial, Fixed				
32	0125915	2	Bushing-Pipe, 1.25 x 1.00NPT, PN				
33	0105404	1	Nipple-Pipe, 0.25NPT x 0.75				
34	0105414	1	Elbow-Pipe, 90, 0.12NPT, PN				
35	7420042	1	Indicator-Filter				
36	7420136	1	Head Casting w/plug Rel. Viv. Pt.				
37	7420004	1	O Ring-Filter				
38	7420007	1	Filter Element				
39	7420046	1	Spring-Conical, Filter				
40	7420076	1	Housing-Filter				
41	7420008	1	Gasket-Seal, Filter				
42	7420009	1	Past-Center, Filter				
43	6600225	1	Filter Asm-Hyd Oil				
44	6601135	1	Elbow-Hyd, 90, 16MJ-16MP				
45	3320322	1	Clamp Asm-Mtg, Rt, Hyd Tank				
46	3320325	2	Clamp-Mounting, Hyd Tank				
47	3320323	1	Clamp Asm-Mtg, Lt, Hyd Tank				
48	6500039	1	Thermometer-2" Dial, 9" Stem				
49	6600224	1	Plug-Oil, Eye Site				
50	3320319	1	Tank Asm-Hyd Oil				
51	2920110	1	Cap Asm-Fill, Hyd Reservoir				
52	6600223	1	Breather-Hyd Reservoir				
53	2920190	1	Cap-Fill, Hyd Reservoir				
54	0191492	1	Nipple-PP, Sch 40, 1.00 x 2.00, PN				
55	0115237	1	Tee-Pipe, 1.00NPT, PN				
56	0128003	1	Bushing-Pipe, 1.00 x 0.75NPT, PN				
57	6600237	1	Switch-Thermo				AR - AS REQUIRED
58	0108687	1	Elbow-Pipe, 90, St, 1.00NPT, PN				
59	6601565	2	Hose End-16-16MP, St				
60	2910354	1	Plate Mtg.-Hyd. Oil Cooler				

Hydraulic Drive System - Crankshaft Drive

S/N L-1651 thru L-1662, L-1664 thru L-1845, L-1847 & L-1848

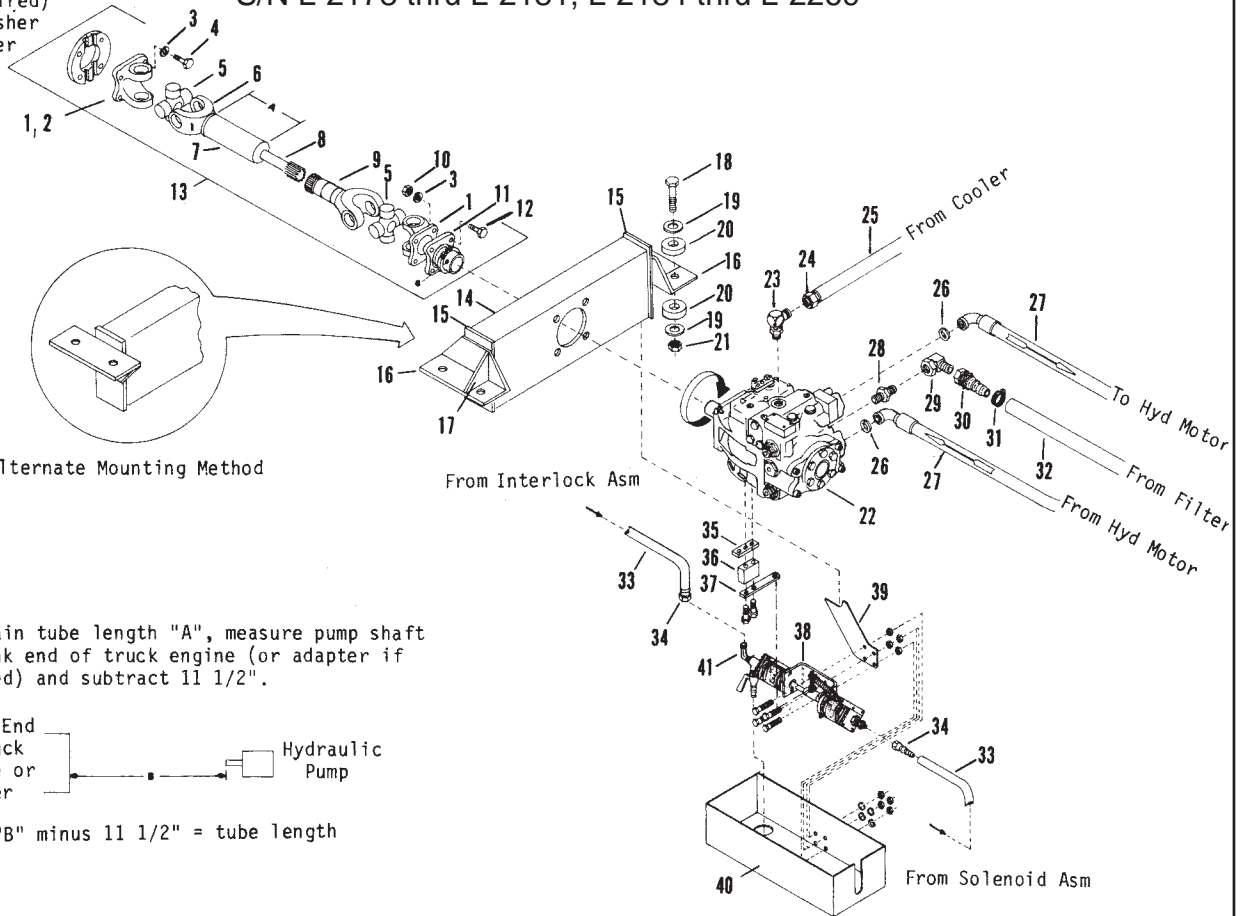


REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	9300558	1	LINE=DRIVE, FRT TAKE-OFF	6601160	AR	HUSE=HI PRESS, LOOP, FLUSH, 17FT	
2		1	CUSTOM ADAPTER =WHERE REQUIRED	6601161	AR	HUSE=HI PRESS, LOOP, FLUSH, 18FT	
3	0120382	4	WASHER=LOCK, 0.38, SPRING, PD	6601162	AR	HUSE=HI PRESS, LOOP, FLUSH, 19FT	
4	0454904	4	SCREW=HEX, 0.38NC X 0.75, GR8, PD	25	0274253	2	O RING=TUBE FITTING
5	3170021	2	YUKE=FLANGE	26	6600236	4	FLANGE=SPLIT
6	3170013	2	JOURNAL + BEARING KIT	27	6600652	AR	HUSE=SUCTION, 0.75ID =PER FOOT
7	6440161	1	YUKE=STUB	28	6600650	2	NUT=JIC SWIVEL, 37DEG, 0.75-12
8	6303295	AR	TUBE=2.50X16GA., LUM =PER FOOT	29	9410979	1	ELBOW=90DEG, 37FL X 0-RG, 0.75
9	3110032	1	SHAFT=SLIP STUB	30	0274247	1	O RING=TUBE FITTING, 0.50
10	3110034	1	YUKE=SLEEVE ASM	31	6601008	1	ADAPTER=O RING TO FNPT, FLUSHER
11	0120377	4	NUT=HEX, 0.38NC, PD	32	6600831	1	CUNNECTOR=MALE, STR, 38TX, 25MPT
12	6440162	1	FLANGE=COMPANION, TAPER HOLE	33	6309162	AR	TUBING=NYLON, 380D =PER FOOT
13	0186679	4	SCREW=HEX, 0.38NC X 1.25, GR8, PD	34	6601027	AR	HUSE ASM=COOLER TO PUMP, 5 FT.
14	3320960	1	CHANNEL=MTG, CRANK DR, HYD PUMP	6601155	AR	HUSE ASM=COOLER TO PUMP, 13 FT.	
15	3321006	2	PLATE=END, CHAN, MTG, PUMP, CRK, DR	6601156	AR	HUSE ASM=COOLER TO PUMP, 14 FT.	
16	3321005	2	ANGLE=MTG, HYD PUMP, CRANK DRIVE	6601157	AR	HUSE ASM=COOLER TO PUMP, 15 FT.	
17	0428715	4	SCREW=HEX, 0.62NCX4.00, GR2, PD	6601158	AR	HUSE ASM=COOLER TO PUMP, 16 FT.	
18	0130959	8	WASHER=FLAT, 0.62A(0.69X1.25)PD	35	6600324	AR	HUSE=0.38 =PER FOOT
19	6000889	4	MOUNT=SHOCK, HYD PUMP, CRK. DRIVE	36	6600306	2	SWIVEL=FEMALE, FLARE
20	3321004	2	FILLER=MTG, HYD PUMP, CRK. DRIVE	37	2960142	1	MODULATOR ASM=HYD PUMP, FLUSHER
21	9413948	4	NUT=HEX, LOCK, 0.62NC, EA, GRA, PD	38	0105423	1	ELBOW=PIPE, 90, ST, 0.25NPT, PN
22	3321008	1	KIT=CONVERSION, SHAFT, HYD PUMP	39	6600832	1	CUNNECTOR=MALE, ELB, 38TX, 25MPT
23	6600215	AR	PUMP=VARIABLE, RH ROTATION	40	2920121	1	COVER=MODULATOR, CRANK DRIVE
	6600613	AR	PUMP=HYD, CH ROTATION				
24	6601002	AR	HUSE=HIGH PRESS, LOOP, FLUSH, 6FT				
	6601003	AR	HUSE=HIGH PRESS, LOOP, FLUSH, 8FT				
	6601004	AR	HUSE=HI PRESS, LOOP, FLUSH, 10FT				
	6601159	AR	HUSE=HI PRESS, LOOP, FLUSH, 16FT				

AR = AS REQUIRED

Hydraulic Pump Drive - Crankshaft Drive With Sundstrand Pump S/N L-2178 thru L-2181, L-2184 thru L-2269

Custom Adapter
(where required)
Specify Flusher
Serial Number



To obtain tube length "A", measure pump shaft to crank end of truck engine (or adapter if required) and subtract 11 1/2".

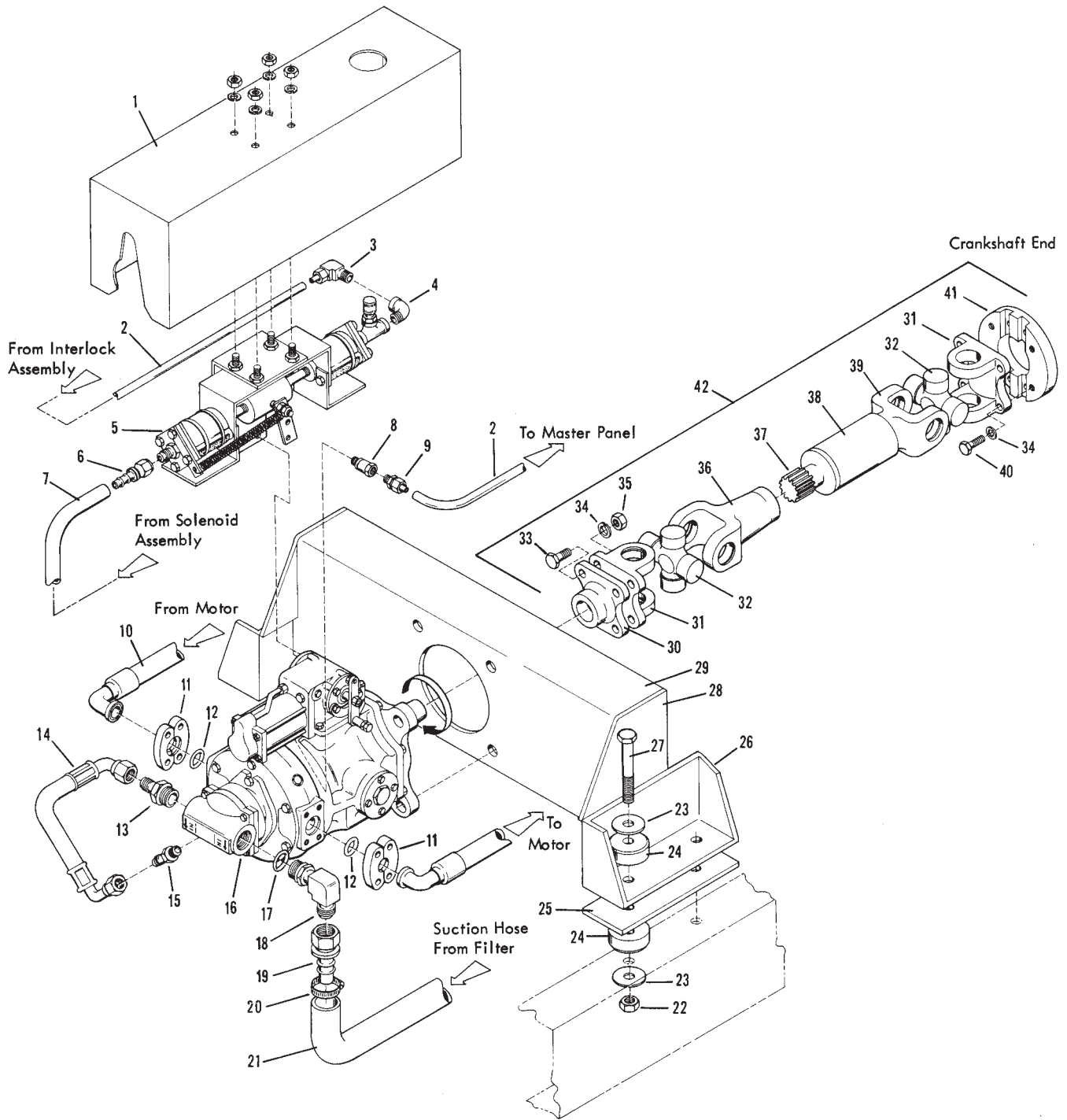


"B" minus 11 1/2" = tube length

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	3170021	1	Yoke-Flange, with 2 3/8" Male Pilot	27	6602100	AR	Hose Asm-8 Ft. Lg.
2	6440172	1	Yoke-Flange, with 2 3/4" Male Pilot	27	6602101	AR	Hose Asm-9 Ft. Lg.
3	0120382	3	Washer-Lock, 0.38, Spring, PD	27	6602102	AR	Hose Asm-10 Ft. Lg.
4	0454904	4	Screw-Sock, 0.38NC x 0.75, GR8, PD	27	6602103	AR	Hose Asm-11 Ft. Lg.
5	3170013	2	Journal & Bearing, Spicer, 5-200X	27	6602104	AR	Hose Asm-12 Ft. Lg.
6	6440164	1	Yoke-Stub, Spicer 2-28-357	27	6602105	AR	Hose Asm-13 Ft. Lg.
7	6303278	AR	Tubing-2" OD x 14 GA, Specify Length	27	6602106	AR	Hose Asm-14 Ft. Lg.
8	6440199	1	Shaft-Slip Stub, Spicer 2-40-1741	27	6602107	AR	Hose Asm-15 Ft. Lg.
9	3110034	1	Yoke-Sleeve, Spicer 2-3-142IKX	27	6602108	AR	Hose Asm-16 Ft. Lg.
10	0120377	4	Nut-Hex, 0.38NC, PD	27	6602109	AR	Hose Asm-17 Ft. Lg.
11	2910228	1	Sprkt, Flange Asm Overspeed Pump	28	9410207	1	Adapter-Hyd, Str, 16MB-16MJ
12	0186679	4	Screw-Hex, 0.38NC x 1.25, GR8, PD	29	9410285	1	Elbow-Hyd, 90, 16FJX-16MJ
13	9301214	1	Drive Line Asm-Sunstrand, Crank Dr.	30	6601566	2	Hose End-16FJX-16, ST, LP100R4
14	3321327	1	Mounting Channel-Pump	31	6000792	6	Clamp-Hose, Worm Dr. 1.06 to 2
15	3321331	2	End Plate-Mounting Channel	32	6601564	AR	Hose-Suction, 1.0 Id, SAE 100R4
16	3321330	2	Mounting Angle-Pump	33	6600324	AR	Hose-0.38 Per Ft.
17	3321332	2	Gusset-Pump	34	6600306	2	Swivel-Female, Flare
18	0428715	4	Screw-Hex, 0.62NC x 4.00, GR2, PD	35	9301218	1	Pump Lever (Tapping)
19	0130999	8	Washer-Flat, 0.62 A (0.69 x 1.25) PD	36	3321316	1	Spacer-Pump Stroker
20	6000889	4	Mt-Shock, Hyd Pump, Crank Dr.	37	3321311	1	Lever-Pump Stroker
21	9413948	4	Nut-Hex, Lock, 0.62 NC, EA, GRA, PD	38	3321329	1	Modulator Asm-Mod Pump
22	6602121	AR	Pump-4.57, LT, Man, No Pad	39	3321321	1	Brkt-Pump Stroker Crank Dr.
	6602123	AR	Pump-4.57, Lt, Man A Pad	40	2920130	1	Cover-Modulator, Crank Dr.
	6602125	AR	Pump-4.57, Lt, Elect, No Pad	41	0118755	1	Elbow-0.38T x 0.25MPT, 90 Deg.
	6602127	AR	Pump-4.57, Lt, Elect, A Pad				Used on Crankshaft Drive Units
23	9402867	1	Elbow Hyd, 12MJ-12MP				
24	6600648	1	Nut-JIC Swivel, 37 Deg. 0.75-12				
25	6600646	AR	Hose-Self Grip-Per Ft.				
26	0274253	2	O Ring-Tube Fitting, 1.50				

AR = As Required

Hydraulic Drive System - Crankshaft
 With Dynapower Generation II Pump & Motor
 S/N L-1846, L-1849 thru L-2121



Hydraulic Drive System - Crankshaft Drive
With Dynapower Generation II Pump & Motor
S/N L-1846, L-1849 thru L-2121

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2920121	1	Cover-Modulator, Crank Drive				
2	6309162	AR	Tubing-Nylon, 0.38 OD, Per FT.				
3	6600832	1	Connector-Male, Elb, 0.38T - 0.25MPT				
4	0105423	1	Elbow-Pipe, 90 St, 0.25NPT,PN				
5	2960142	1	Modulator Asm-Hyd Pump, Flusher For Units Prior to S/N L1941				
	2960201	1	Modulator Asm-Hyd, Pump, Flusher For Units L1941 to L				
6	6600306	2	Swivel-Female, Flare				
7	6600324	AR	Hose-0.38, Per Foot				
8	6601008	1	Adapter-O Ring to FNPT				
9	6600831	1	Connector-Male, Str, 0.38 x 0.25MPT				
10	9250602	2	Hose Asm-16 x 16FL45, 16FL90 (Specify Length)				
11	6600236	4	Flange-Split				
12	0274253	2	O Ring-Tube Fitting				
13	6601418	1	Adapter-Hyd, St, 12MJ-16MB				
14	6601561	1	Hose Asm-12 x 28, 12FJX90-12FJX90				
15	6600897	1	Adapter-Hyd, St, 08MB-12MJ				
16	6601556	1	Pump-4.8, Generation II, Tapered				
17	0274251	1	O Ring-Tube Fitting, 1.00				
18	6601568	1	Elbow-Hyd, 90, 16MB-16MJ				
19	6601566	1	Hose End 16-16FJX, St.				
20	6000792	2	Clamp-Hose, Worm Drive, 1.06-2.00				
21	6601564	AR	Hose-Suction, 1.00 ID, Per Ft.				
22	9413948	4	Nut-Hex, Lock, 0.62NC,EA,GRA,PD				
23	0130999	8	Washer-Flat, 0.62A,PD				
24	6000889	4	Mount-Shock, Hyd Pump, Crank Drive				
25	3321004	2	Filler-Mtg. Hyd Pump, Crank Drive				
26	3321005	2	Angle-Mtg, Hyd Pump, Crank Drive				
27	0428715	4	Screw-Hex, 0.62NC x 4.00, GR2,PD				
28	3321006	2	Plate-End, Chan. Mtg, Pump, Crk. Dr				
29	3320960	1	Channel-Mtg, Crank Dr, Hyd Pump				
30	6440162	1	Flange-Companion, Taper Hole				
31	3170021	2	Yoke-Flange				
32	3170013	2	Journal and Bearing Kit				
33	0186679	4	Screw-Hex, 0.38NC x 1.25, GR8,PD				
34	0120382	8	Washer-Lock, 0.38, Spring,PD				
35	0120377	4	Nut-Hex, 0.38NC,PD				
36	3110034	1	Yoke-Sleeve Asm				
37	3110032	1	Shaft-Slip Stub				
38	6303295	AR	Tube-2.50 x 16GA, Dom., Per FT.				
39	6440161	1	Yoke-Stub				
40	0454904	4	Screw-Hex, 0.38NC x 0.75, GR8,PD				
41	-	1	Custom Adapter (Where Required)				
42	9300558	1	Line-Drive, Front Take-Off				

Applies to Units with Serial No. L1846 thru L1940

Use Kit No. 7010051 to Install a New Generation II Pump on a Street Flusher with Crankshaft Drive.

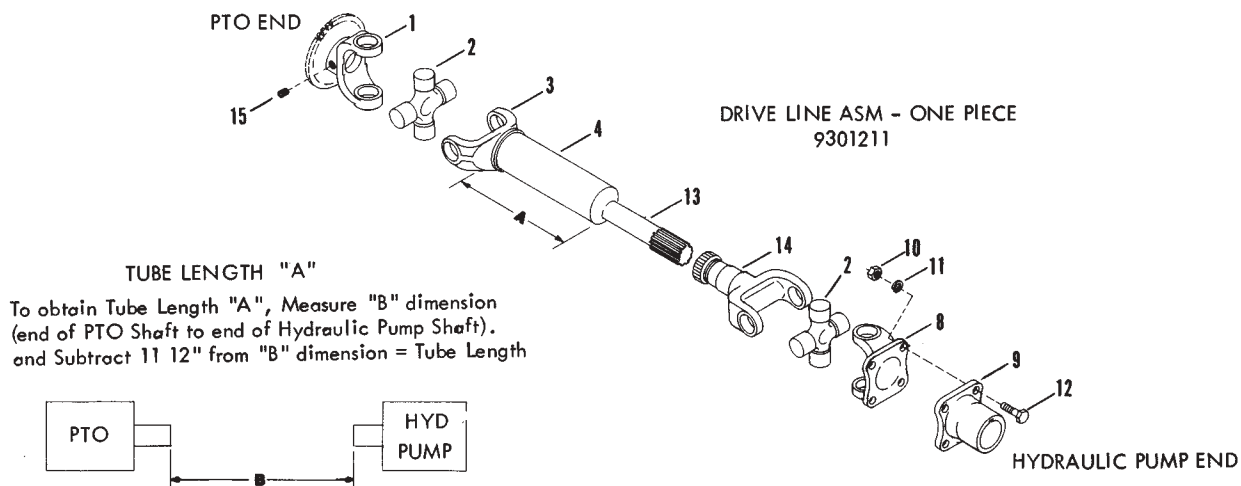
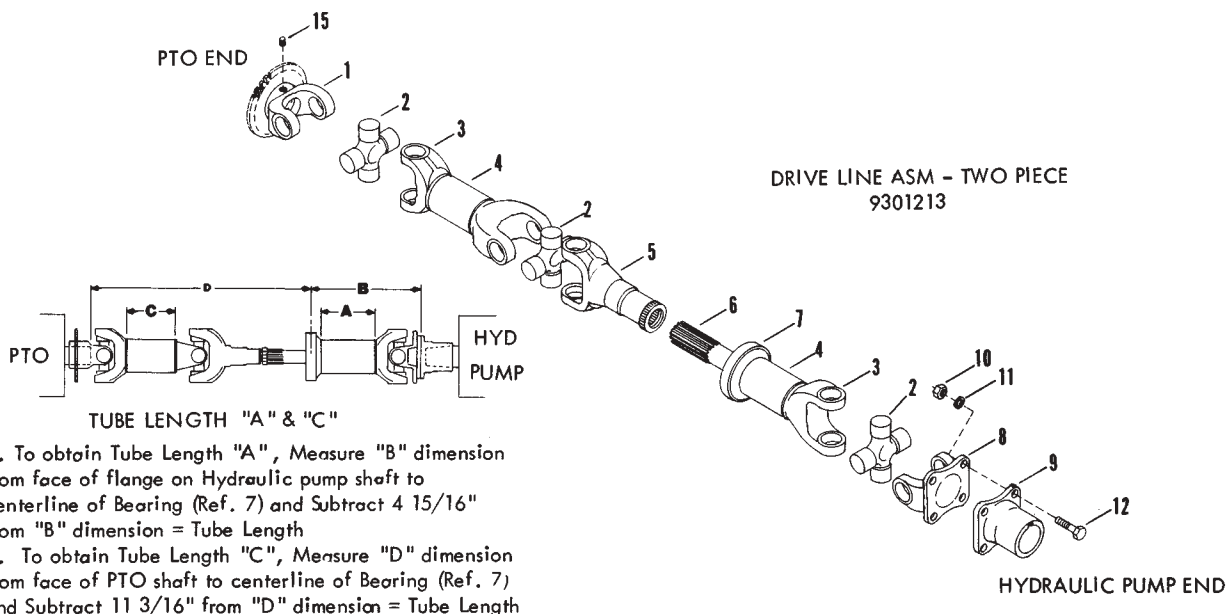
Applies to Units with Serial No. L1941 thru L2121

Use Kit No. 7010076 to Install a New Generation II Pump on a Street Flusher with Crankshaft Drive.

Use Kit No. 7010054 to Install a New Generation II Motor on a Street Flusher with PTO Drive.

AR = As Required

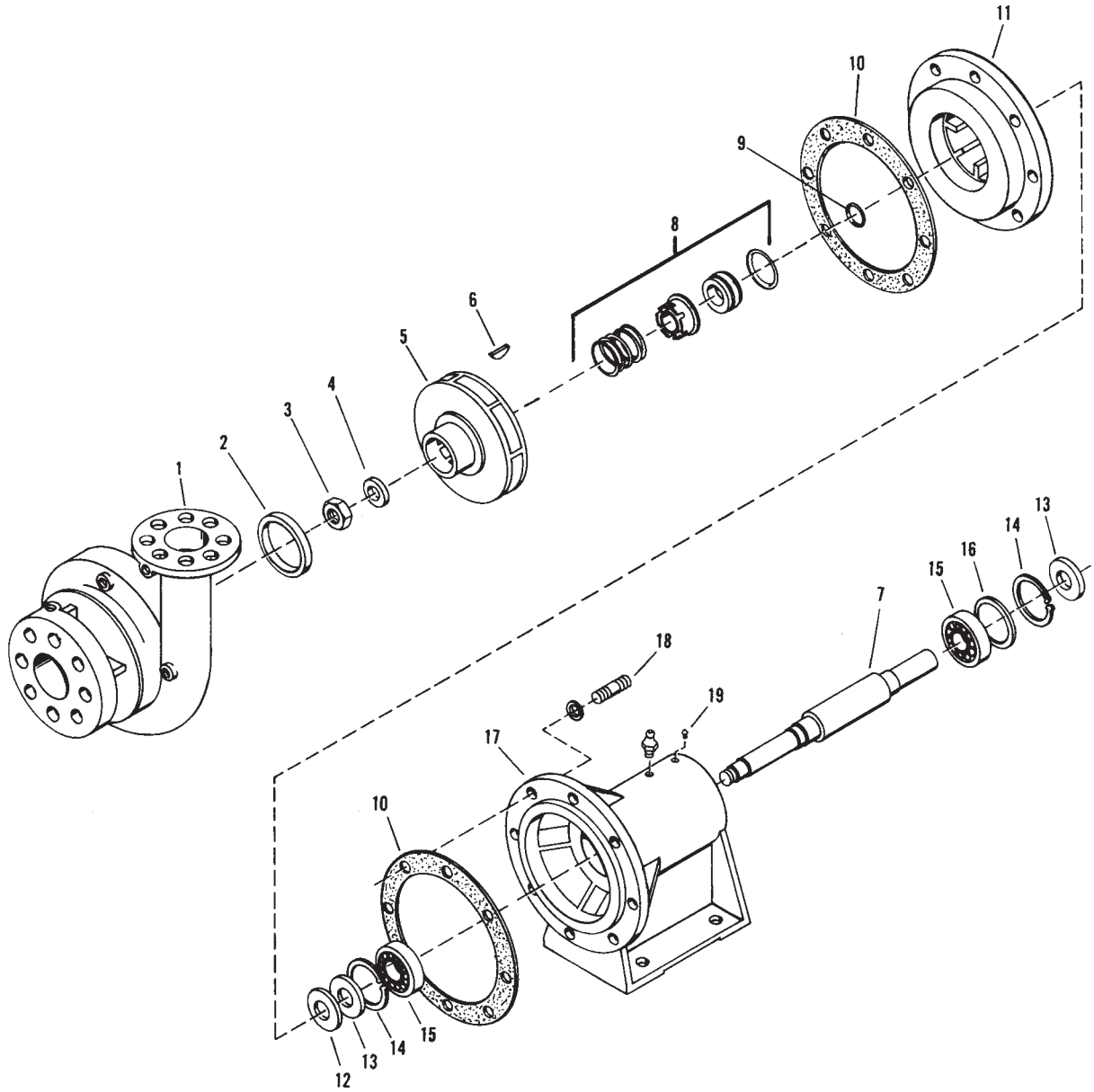
Drive Lines - PTO To Hydraulic Pump With Sundstrand Hydraulic Pump S/N L-2178 thru L-2181, L-2184 thru L-2269



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2910226	1	Sprocket & Hub Asm 40T				
2	3170013	AR	Journal & Bearing, Spicer 5-200X				
3	6440164	AR	Yoke-Stub, Spicer 2-28-357				
4	6303278	AR	Tubing-2" O.D. x 14 Ga. (Specify Length)				
5	6440165	1	Yoke Asm, Spicer 2-3-128KX				
6	6440166	1	Shaft-Stub, Spicer 2-53-121				
7	6440167	1	Cnt. Bearing Asm, Spicer 210088-1X				
8	3170021	1	Yoke-Flange, Spicer 2-2-239				
9	6440162	1	Flange-Companion, Spicer 2-1-684				
10	0120377	4	Nut-Hex, 0.38NC, PD				
11	0120382	4	Washer-Lock, 0.38, Spring, PD				
12	0186679	4	Screw-Hex, 0.38NC x 1.25, GR8, PD				
13	6440199	1	Shaft-Slip Stub, Spicer 2-40-1741				
14	3110034	1	Yoke-Sleeve, Spicer 2-3-1421KX				
15	6100284	1	Screw-Sock, 0.50NC x 0.50 Lg.				

AR = As Required

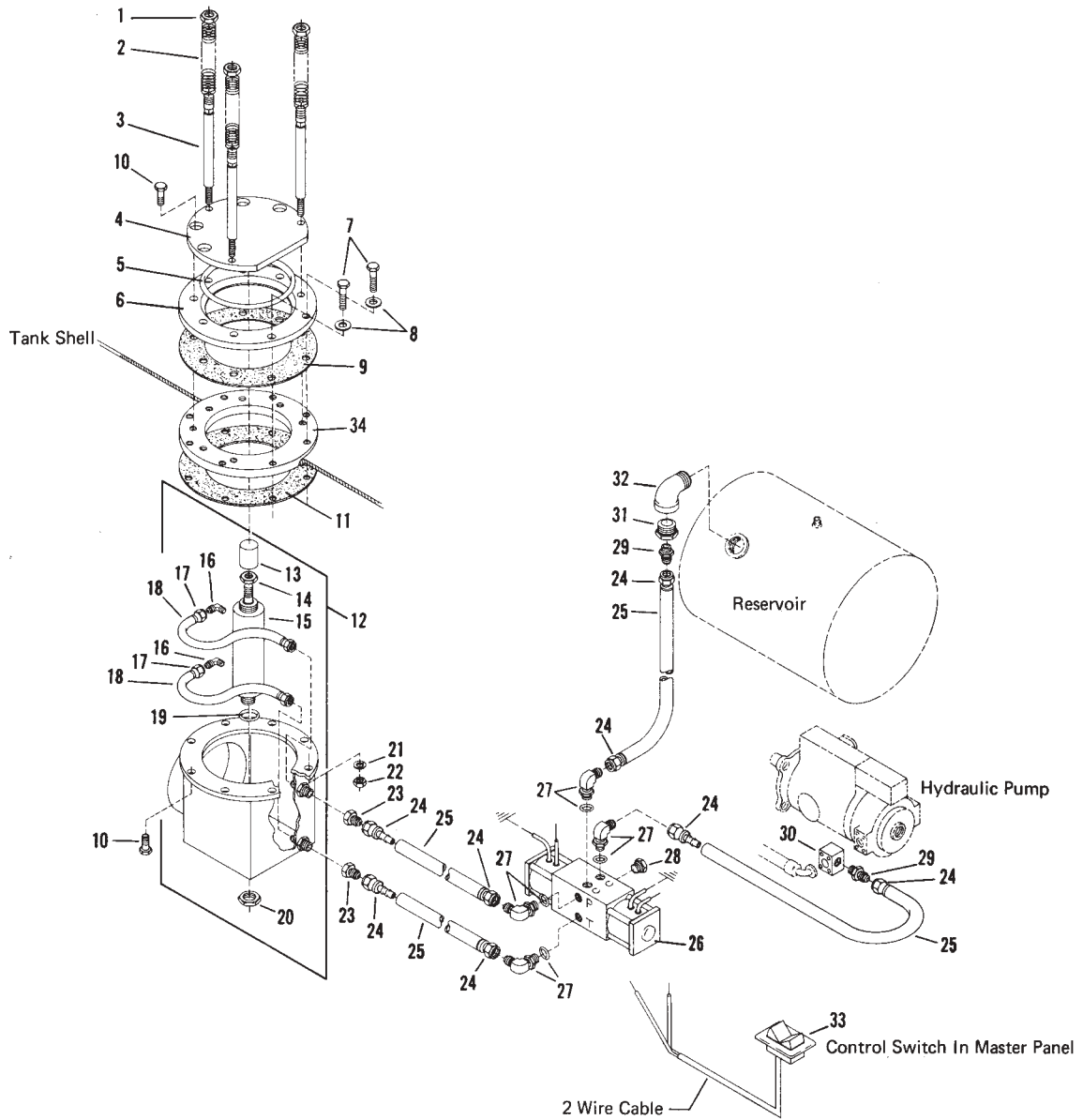
Water Pump - 6600998



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	7020191	1	VOLUTE-5X4 FLANGED				
2	7020121	1	RING=WEAR				
3	7020192	1	NUT=IMPELLER				
4	7020141	1	WASHER				
5	7020144	1	IMPELLER=C/I				
6	7020134	1	KEY				
7	7020200	1	SHAFT=BORE, TAPER IMP				
8	7020193	1	SEAL ASM=1.38				
9	7020194	1	GASKET=U RING				
10	7020195	2	GASKET=VOLUTE TO PLATE				
11	7020196	1	PLATE=SEAL				
12	7020198	1	SLINGER=WATER				
13	7020203	2	CAP=DUST, BEARING				
14	7020205	2	RING=RETAINING				
15	7020199	2	BEARING=BALL, SGL ROW, SGL SHLD				
16	7020202	AR	SHIM=BEARING, .005 THICK				
17	7020201	1	BEARING HOUSING + LANTERN=FR				
18	7020197	16	STUD=0.38, 16XZ				
19	7020204	1	FITTING=0.125, RELIEF				

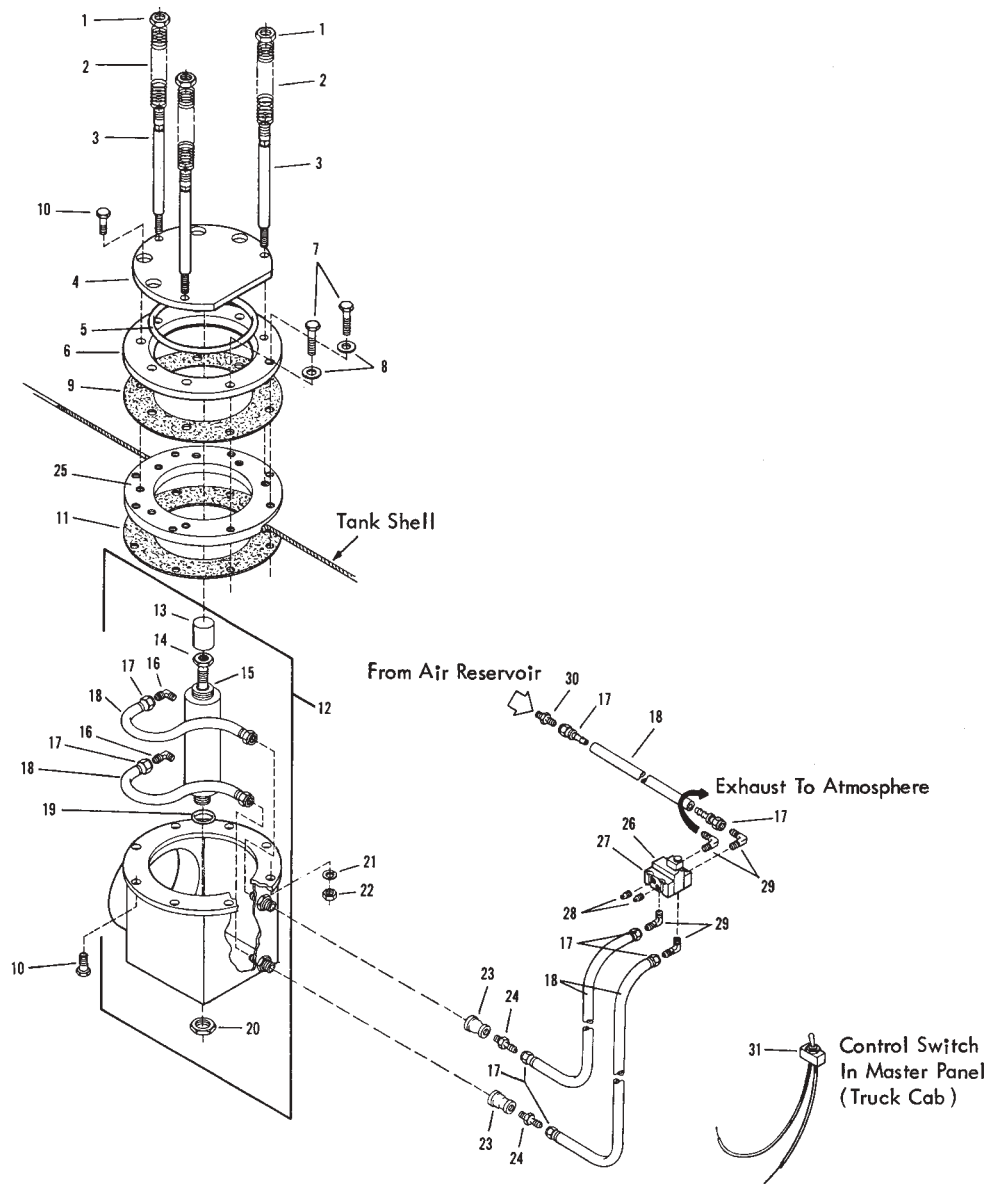
AR= AS REQUIRED

Optional Plenum Type Dump Valve - Hydraulic



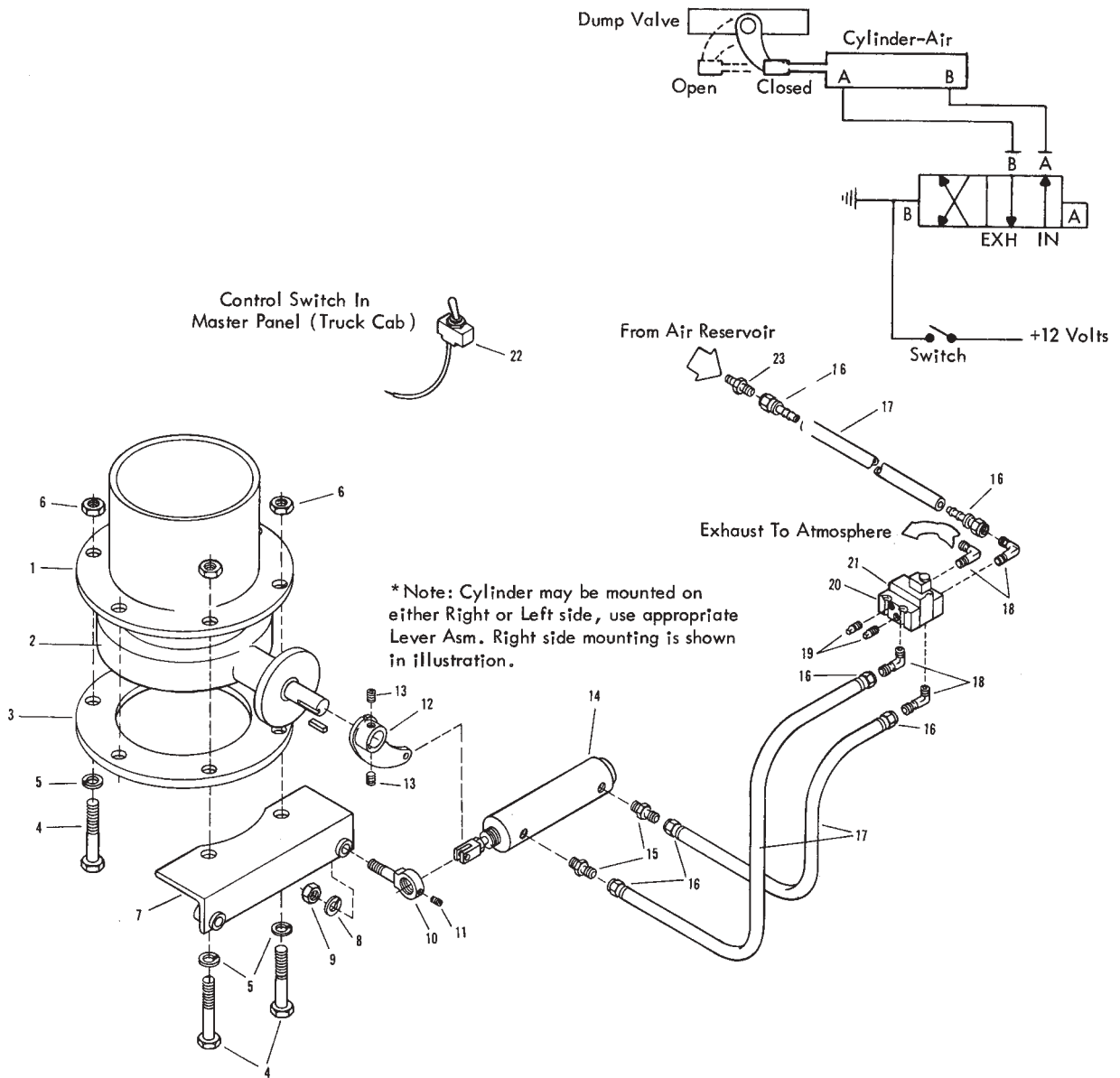
REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	9416894	3	NUT=HEX, LOCK, 0.75NC, EA, PD	19	6601173	1	O RING=1.38 X 1.62
2	6000926	3	SPRING=COMP, DUMP VALVE, FLUSHER	20		1	NUT (INCLUDED WITH CYLINDER)
3	2940318	3	RUD=GUIDE, VALVE PLUG	21	0120384	2	WASHER=LOCK, 0.50, SPRING, PD
4	2940317	1	PLUG=VALVE, 10 INCH DUMP	22	0120378	2	NUT=HEX, 0.50NC, PD
5	6601174	1	O RING=10 INCH, VALVE PLUG	23	9402748	2	ADAPTUR=0.50FNPT X 0.50MJIC
6	2940316	1	SEAT=VALVE, 10 INCH DUMP	24	6600664	8	SWIVEL=FEM FLARE, 0.50JIC
7	0120237	2	SCREW=HEX, 0.50NC X 3.00, GR2, PD	25	6600662	AR	HOSE=0.50 -PER FOOT
8	6600264	2	GASKET=0.50 X 0.75, COPPER	26	6600679	1	VALVE=RACINE, HYD, 0.38 SPOOL
9	2940325	1	GASKET=TANK FLANGE TO VALVE ST	27	9410977	4	ELBUW=90DEG, 0.50JIC X 0.63 ORG
10	0122433	13	SCREW=HEX, 0.50NC X 1.50, GR2, PD	28	9410359	2	PLUG=HYD, 0.63 O=RG
11	2940326	1	GASKET=TANK FLANGE TO PLEN ASM	29	9402709	2	ADAPTUR=0.50MP X 0.50MJIC
12	2940319	1	PLENUM ASM=DISCHARGE, 10IN DUMP	30	3320994	1	ADAPTUR=HYD MTR, TAP, AUX EQPT
13	2940324	1	SLEEVE=THREADED, CYL MOUNT	31	0120062	1	BUSHING=PIPE, 1.00X0.50NPT, PN
14	0426897	1	NUT=HEX, JAM, 0.75NC, PD	32	0108687	1	ELBUW=PIPE, 90, ST, 1.00NPT, PN
15	6600140	1	CYLINDER=AIR, FRT SUC A=3X6	33	6700939	1	SWITCH=ROCKER, 3 POS, CENTER OFF
16	6200179	2	ELBUW=FLARED TUBE	34	2940315	1	FLANGE=TANK VALVE SEAT MT.
17	6600306	4	SWIVEL=FEM, FLARE				AR = AS REQUIRED
18	6600324	AR	HOSE=0.38 -PER FOOT				

Optional Plenum Type Dump Valve - Air Controlled



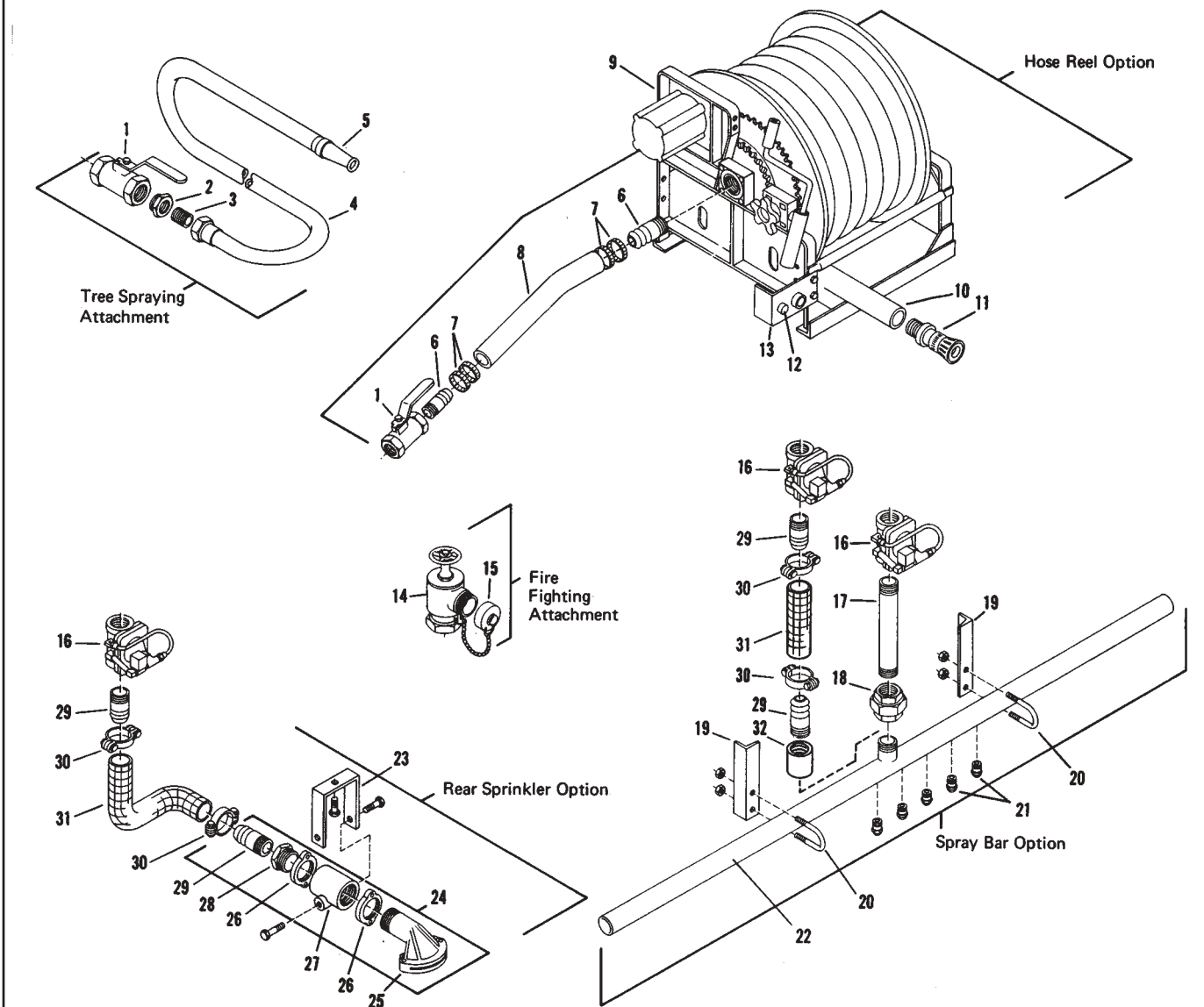
REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	9416894	3	Nut-Hex, Lock, 0.75NC, EA, PD	18	6600324	AR	Hose-0.38, Per Foot
2	6000926	3	Spring-Comp, Dump Valve	19	6601173	1	O Ring-1.38 X 1.62
3	2940318	3	Rad-Guide, Valve Plug	20	-----	1	Nut (Included With Cylinder)
4	2940317	1	Plug-Valve, 10 inch Dump	21	0120384	2	Washer-Lock, 0.50, Spring, PD
5	6601174	1	O Ring-10", Valve Plug	22	0120378	2	Nut-Hex, 0.50NC, PD
6	2940316	1	Seat-Valve, 10" Dump Valve	23	0142834	2	Reducing Coupling-0.50 X 0.38
7	0120237	2	Screw-Hex, 0.50NC X 3.00, GR2	24	6601164	2	Connector-0.38 Pipe X 0.38 Tube
8	6600264	2	Gasket-0.50 X 0.75, Copper	25	2940315	1	Flange-Tank Valve Seat Mt
9	2940325	1	Gasket-Tank Flange To Valve Seat	26	6601455	1	Valve-Air, 2 Pos, 4 Way, 12 VDC
10	0122433	3	Screw-Hex, 0.50NC X 1.50, GR2	27	6601456	2	Plate-End, Control Valve
11	2940326	1	Gasket-Tank Flange To Plen Asm	28	0219189	2	Plug-Pipe, 0.25
12	2940319	1	Plenum Asm-Discharge, 10" Dump	29	0118755	4	Elbow-0.25 Pipe X 0.38 Tube
13	2940324	1	Sleeve-Threaded, Cyl Mount	30	0118750	1	Adapter-0.38 Tube X 0.25 Pipe
14	0426897	1	Nut-Hex, Jam, 0.75NC, PD	31	6700255	1	Switch-Toggle
15	6600140	1	Cylinder-Air, Frt Suc A-3X6	or	6700939	1	Switch-Rocker, 3 Pos, Center OFF
16	6200179	2	Elbow-Flared Tube				AR = As Required
17	6600306	10	Swivel-Fem, Flare				

Optional Butterfly Type Dump Valve - Air Controlled - 10"



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	2940405	1	Flange Asm-10" Dump Valve	16	6600306	6	Swivel-Fem, Flare
2	6602114	1	Valve-Butterfly, 10 inch	17	6600324	AR	Hose-0.38, Per Foot
3	2940388	1	Flange-10" Dump Valve	18	0118755	4	Elbow-0.25Pipe X 0.38 Tube
4	0428889	6	Screw-Hex, 0.88 NC X 5.00	19	0219189	2	Plug-Pipe, 0.25
5	0131047	6	Washer-Lock, 0.88	20	6601456	2	Plate-End, Control Valve
6	0220087	6	Nut-Hex, 0.88 NC	21	6601455	1	Valve-Air, 2 Pos, 4 Way, 12VDC
7	2940407	1	Angle Asm-Cyl Mt, 10" Dump Vlv	22	6700255	1	Switch-Toggle
8	0121574	1	Washer-Lock, 0.62	or	6700939	1	Switch-Rocker, 3 Pos, Center OFF
9	0124589	1	Nut-Hex, 0.62NC	23	0118750	1	Adaptor-0.38 Tube X 0.25 Pipe
10	3380570	1	1.38 Cylinder Mtg Bolt Asm				
11	0102570	1	Screw-Sock, 0.25NC X0.38, Cup, PN				
12	2940411	1	* Lever Asm-10" Dump Valve, RH				
	2940410	AR	* Lever Asm-10" Dump Valve, LH				
13	0102617	2	Screw-Set, 0.50NC X 0.75				
14	6602092	1	Cylinder w/Clevis, Bimba 5080				
15	6601164	2	Connector-0.38Pipe X 0.38 Tube				
							* Note: Cylinder may be mounted on either Right or left side, use appropriate Lever Asm (Ref. 12). Right side mounting is shown in illustration.
							AR = As Required

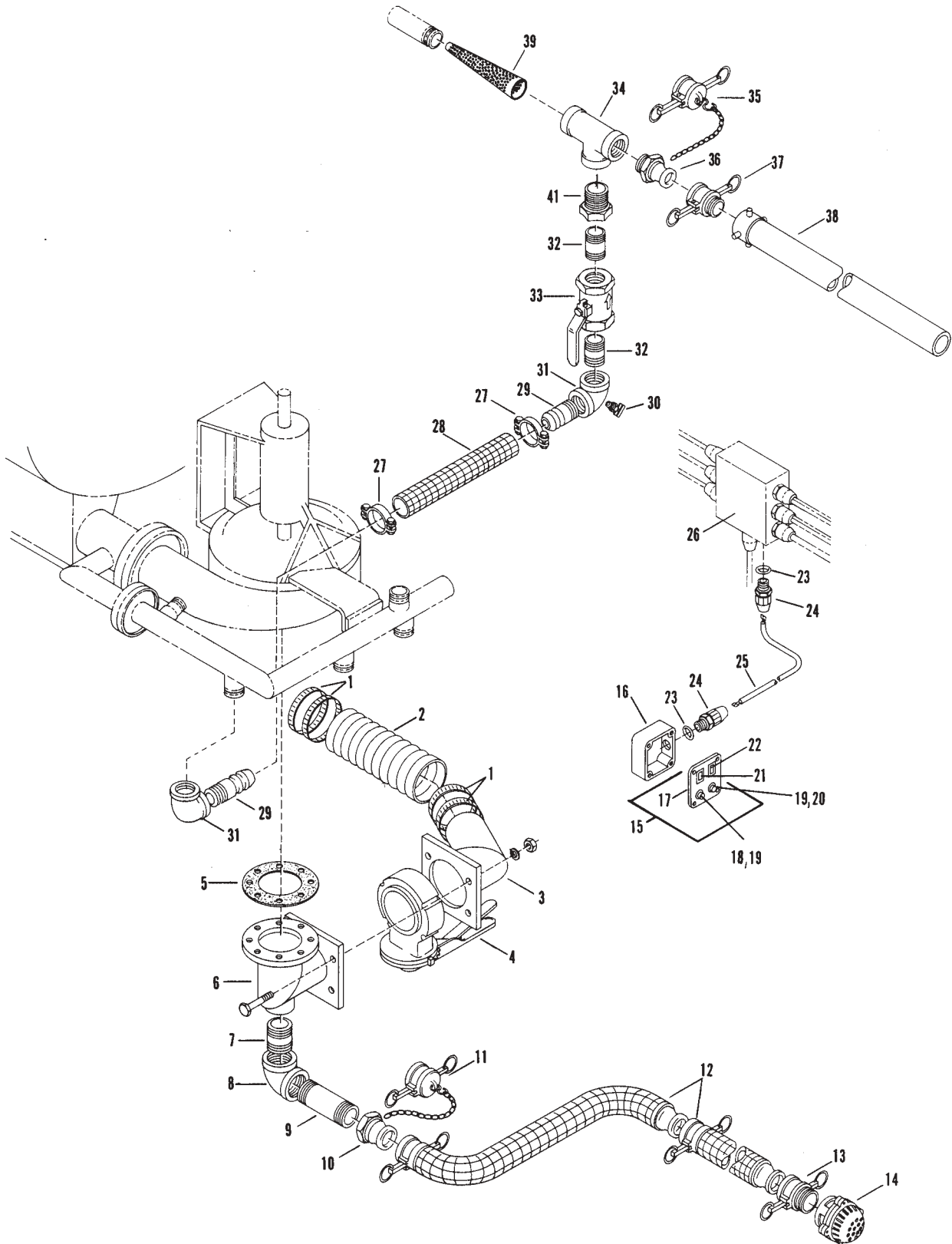
Discharge Piping Options



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6200528	AR	VALVE-BALL	17	—	1	NIPPLE-PIPE,2.00NPT X AR LEGTH
2	0218855	1	BUSHING=PIPE,1.50X1.00NPT,PN	18	6000419	1	UNION=RAILROAD,2 IN
3	0127874	1	NIPPLE=SCH 40,1.00X1.50,CL,PN	19	2940305	2	ANGLE=HANGER, SPRAYBAR
4	6600182	1	HOSE=1.00IN,CPLGS	20	3390085	2	CLIP=2 IN PIPE
5	6600474	1	NOZZLE=1.00IN,BRASS	21	3351011	AR	NOZZLE=1/8, SPRAY BAR
6	6200527	2	NIPPLE=COMB,1.50,TYPE SCP	22	2940077	1	SECTION ASM=CENTER, SPRAY BAR
7	6000871	4	CLAMP=HOSE	23	2980013	1	YUKE=HANGER,SPRINKLER NOZZLE
8	6309187	AR	HOSE=1.50IN,WATER =PER FOOT	24	2980014	1	NOZZLE ASM=COMP,RR SPRINKLER
9	6000875	AR	REEL=HOSE,ELECTRIC (SHOWN)	25	2940006	1	NOZZLE ASM=FLUSHER,BRASS
10	6000874	AR	REEL=HOSE,MANUAL (NOT SHOWN)	26	2940005	2	RING=LOCKING
11	6601037	AR	HOSE ASM=1.5 ID X 100 FT LG	27	2980012	1	BRACKET=NOZZLE MT,RR SPRINKLER
12	6000873	AR	HOSE ASM=1.00X150FT,W/M+F ENDS	28	6200039	1	BUSHING=PIPE,2.50X2.00NPT,PN
13	6000877	AR	NOZZLE=1.00NPT,ADJUSTABLE	29	6200526	2	NIPPLE=COMB,2.00,TYPE SCP
14	6601036	AR	NOZZLE=1.50NPT,ADJUSTABLE	30	6000870	2	CLAMP=HOSE,2.50,DOUBLE BOLT
15	6700821	1	FUSE=SYS POWER,ELEC HOSE REEL	31	6309186	AR	HOSE=2.00IN,WATER =PER FOOT
16	3160040	1	HOLDER=FUSE,BUSS,PANEL MOUNTED	32	0220234	1	COUPLING=PIPE,2.00NPT,PN
17	2970017	1	BRACKET=SWITCH+FUSE,ELEC REEL				
18	6600171	1	VALVE=UNDWR,2.5 IN				
19	6600172	1	CAP=HOSE,2.5 IN				
20	2940387	AR	CLAYTON VALVE ASM=COMPLETE,AIR				

AR = AS REQUIRED

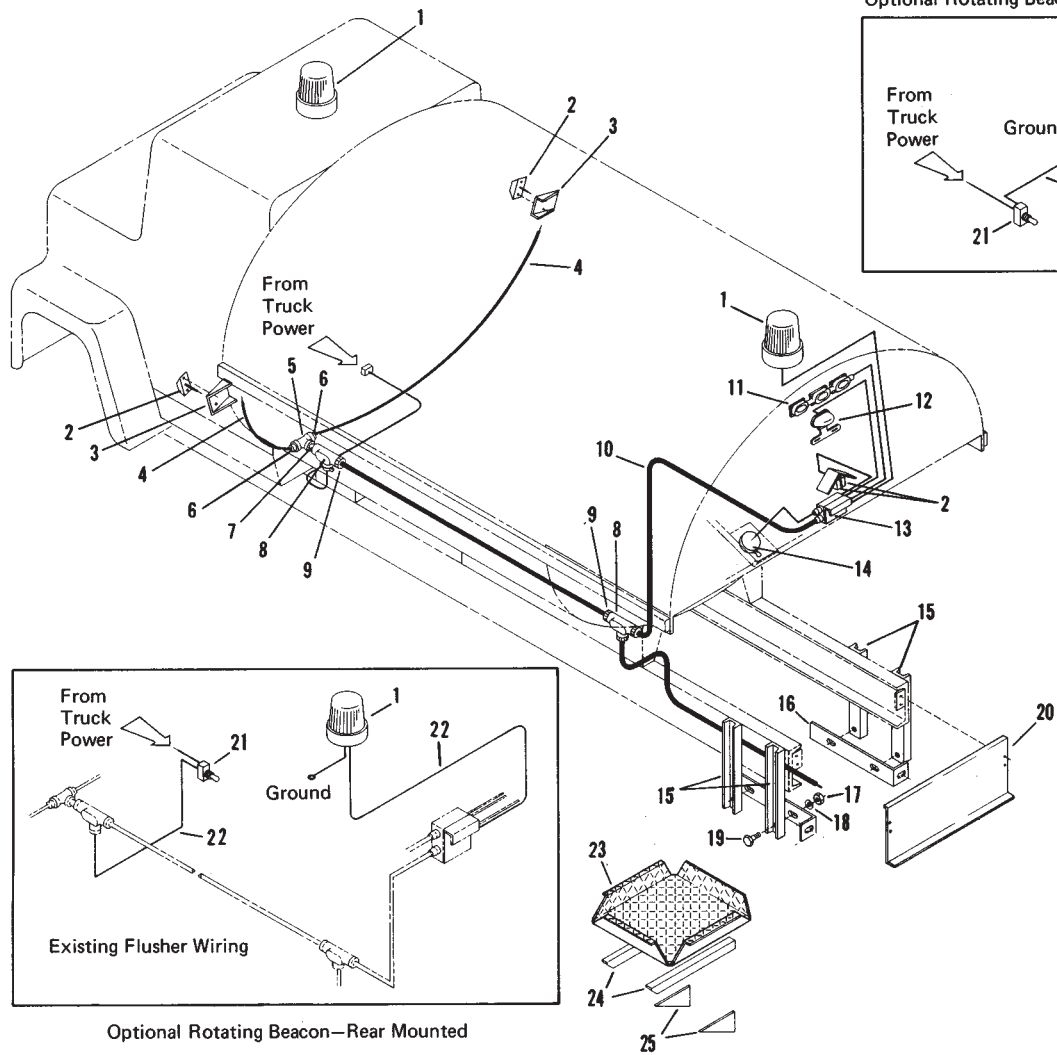
Self-Filling Attachment



Self-Filling Attachment

REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6000872	4	Clamp-Hose, Worm Gear				
2	6000950	1	Hose-Suc, 5.56 x 25, 2.50 Cuff BE				
3	2940335	1	Pipe Asm-Suction, Self Fill				
4	6601097	1	Valve-Butterfly, 5"				
5	2940054	1	Gasket-Suction Line to Pump				
6	2940333	1	Flange Asm-Suction, Self Fill				
7	6200128	1	Mipple-PP, Sch 40, 3.00 x 6.00,PN				
8	6200073	1	Elbow-Pipe, 90, 3.00NPT,PN				
9	6200558	1	Pipe, Sch 40, 3.00 x 15, TBE,PN				
10	6600277	1	Adapter-Fem, Thd, 3.00, Evertite				
11	6601099	1	Cap-Dust, 3.00 Evertite W/Chain				
12	6601098	2	Hose Asm-Suct W/M+F Ends, P11.L				
13	6601102	1	Coupler-3.00 Evertite, Part B				
14	6200561	1	Foot Valve				
15	2970047	1	Cover Asm-Control				
16	2960178	1	Box-Self Filling Control				
17	2960177	1	Cover-Self Fill Control Box				
	2960175	1	Decal-Self Fill Cont Box-NS				
18	6700914	1	Switch-PB, Electric, SPDT, Red				
19	6700916	2	Facenut-Switch, Electric, PB				
20	6700915	1	Switch-PB, Electric, SPDT, Black				
21	6700814	1	Light-Pilot, Amber, Control				
22	6700815	1	Light-Pilot, Green, Control				
23	0274249	2	O-Ring, Tube Fitting, 0.75				
24	6700894	2	Relief-Strain, Cord, Liq Tight				
25	6700825	AR	Cable-7-18, Control-Per Foot				
26	2960172	1	Decal-Wiring Dia, Self Fill-NS				
27	6000870	2	Clamp-Hose, 2.50 ID, Double Bolt				
28	6309186	AR	Hose-2.00, Water, P-1196/Ft.				
29	6200526	2	Nipple-Comb-2.00, Type SCP				
30	6600162	1	Cock-Drain, 0.25 In.				
31	0189777	2	Elbow-Pipe, 90, 2.00NPT,PN				
32	0219501	2	Nipple-PP Sch 40, 2.00 x 2.50,PN				
33	6601839	1	Valve-Ball 2" #71-108-01				
34	6200162	2	Tee-Pipe, 2.50NPT,PN				
35	6601100	1	Cap-Dust, 2.5 Evertite W/Chain				
36	6601154	1	Adapter-Male THD,2.50 Evertite				
37	6601101	1	Coupler-2.50 Evertite, Part B				
38	6601095	1	Hose-Fill, 2.50NPT,FM CPLG				
39	2940030	1	Strainer				
40	2750398	2	Trough-Hose, Exp, Metal, 96"-NS				
41	6200039	1	Bushing-Pipe, 2.50 x 2.00NPT,PN				
AR-AS REQUIRED							

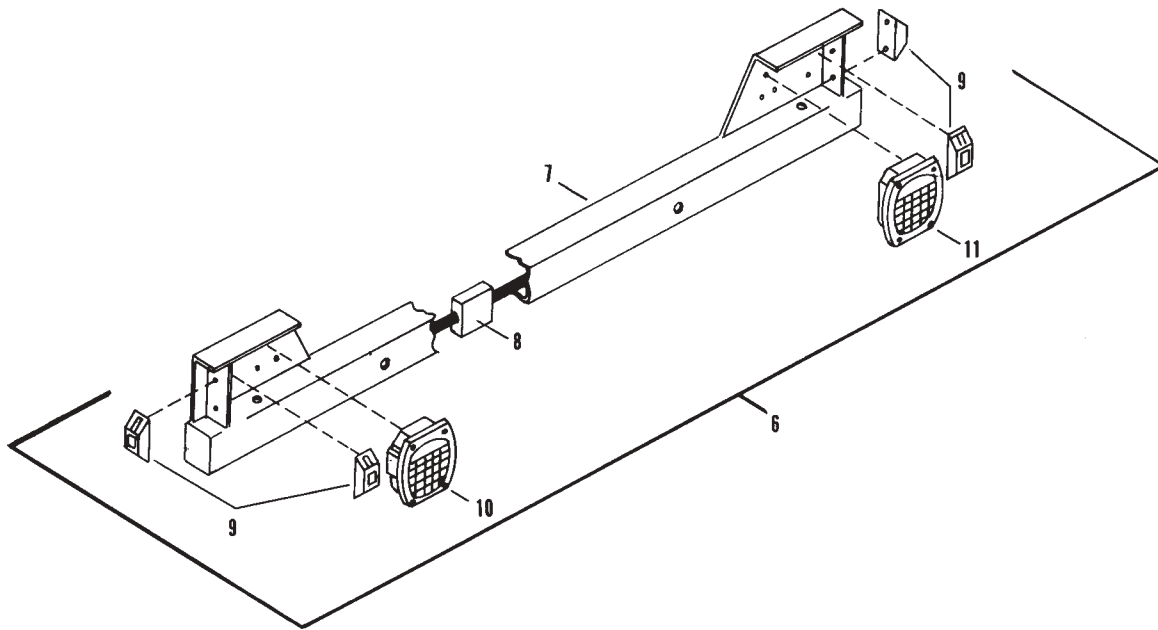
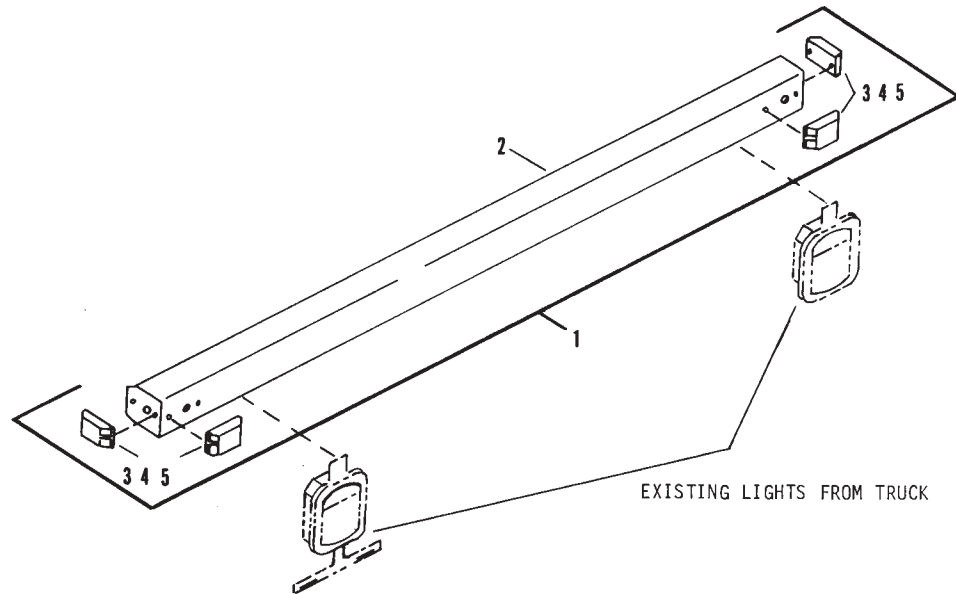
Lights & Wiring



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	6700856	AR	BEACON=ROTATING,2 BEAM	19	0428211	4	SCREW=HEX,0.62NCX1.25,GR2,PD
2	2970022	4	LIGHT ASM=FRT CLEARANCE,AMBER	20	2910201	1	TRIM=REAR BUMPER
3	2970019	2	BRACKET=FRT CLEAR LT MOUNT	21	6700255	AR	SWITCH=TOGGLE
4	6700363	AR	TUBING=POLYETHELENE,0.38	22	6000107	AR	LUOM=FIBRE,0.25 IN
5	0105417	1	TEE=PIPE,0.25NPT,PN	23	2910213	1	BOX=HOSE STORAGE,REAR
6	6700366	2	CONNECTOR=MINI BARB.38TX.25MPT	24	2910215	2	ANGLE=HOSE BOX MOUNT
7	0105405	1	NIPPLE=SCH 40,0.25X0.87,CL,PN	25	2910214	2	GUSSET=HOSE BOX SUPPORT
8	0116524	1	BUSHING=PIPE,0.50X0.25NPT,PN				
8	2970024	2	TEE=UNILET,FLUSHER LIGHTING				
	6700350	2	GASKET=UNILET				
	6700349	2	COVER=UNILET				
9	6700925	4	CURD GRIP=MALE				
10	6700110	AR	CABLE=6/WAY				
11	6700084	1	LAMP=IDENTIFICATION				
12	6700751	1	LIGHT=LICENSE,WITH BRACKET				
13	2970021	1	BOX ASM=REAR COMPARTMENT				
14	2970023	1	LIGHT ASM=DUME				
15	2910148	4	CHANNEL=HANGER,BUMPER				
16	2910147	2	BRACKET=BUMPER HANGER				
17	9413948	4	NUT=HEX,LOCK,0.62NC,EA,GRA,PD				
18	0130999	4	WASHER=FLAT,0.62A(0.69X1.75)				

AR = AS REQUIRED

Rear Bumper Assemblies



REF.	PART NO.	QTY.	DESCRIPTION	REF.	PART NO.	QTY.	DESCRIPTION
1	3311340	1	Bumper Asm-Complete, Econo				
2	3311339	1	Bumper Asm				
3	6700854	4	Light-Clearance W/Reflector Red				
4	6000721	4	Grommet-Rubber				
5	0447835	AR	Screw-Tap, PNSL, 10NF x 0.50, F, PD				
6	2910165	1	Bumper Asm-Complete				
7	2910164	1	Bumper Asm-Flusher, Universal				
8	3370050	1	Cover-Term Blk Box. Loom Bumper				
	2910156	1	Junction Box				
	6700837	1	Strip, Term, 10 Bar				
9	6700854	4	Light-Clear, W/Reflector Red				
10	6700865	1	Light-Stop, Turn + Tail, Lt, Flusher				
11	6700866	1	Light-Stop, Turn + Tail, Rt, Flusher				

AR=AS REQUIRED

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0103385	23	0122065	22	0274251	39	2940014	29	2940420	35
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0120382	46	0219501	53	2940005	28	2940387	51	3170013	42
0120384	48	0219758	25	2940005	29	2940388	50	3170013	44
0120384	49	0220087	50	2940005	51	2940403	39	3170013	45
0120499	28	0220234	51	2940006	28	2940405	50	3170013	46
0120704	29	0272406	39	2940006	29	2940407	50	3170021	39
0120741	23	0274247	37	2940006	51	2940410	50	3170021	42

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3300150	23	6000792	44	6303295	42	6600223	39	6600831	41
3300151	23	6000792	45	6303295	44	6600223	41	6600831	42
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3300301	23	6000872	31	6309162	39	6600225	41	6600897	35
3310149	22	6000872	33	6309162	41	6600236	31	6600897	39
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3321004	44	6100284	46	6440158	33	6600324	44	6601017	25
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6602105	45	7020141	47	7520003	25				
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6602107	45	7020191	47	9250282	39				
6602108	45	7020192	47	9250602	39				

Decimal Equivalent Chart

Decimal	Fraction	Decimal	Fraction	Decimal	Fraction
.06	1/16	.31	5/16	.69	11/16
.09	3/32	.38	3/8	.75	3/4
.12	1/8	.44	7/16	.81	13/16
.16	5/32	.50	1/2	.88	7/8
.19	3/16	.56	9/16	.94	15/16
.25	1/4	.62	5/8	1.00	1

HYDRAULIC FITTING CODE

LETTER DESIGNATION

MP - Male Pipe Thread	FL - "O" Ring Flange
FP - Female Pipe Thread	MS - Male SAE, 45
MB - Male "O" Ring Boss	FS - Female SAE, 45
MJ - Male JIC, 37	C - Compression Fitting (Ferrule Type)
FJ - Female JIC, 37	X - Swivel

SIZE

Size is represented in sixteenths of an inch. One inch equals 16, one half inch equals 08.

02 - 1/8	10 - 5/8	18 - 1 1/8
04 - 1/4	12 - 3/4	20 - 1 1/4
06 - 3/8	14 - 7/8	24 - 1 1/2
08 - 1/2	16 - 1	28 - 1 3/4

EXAMPLE: The description for a "1/2" 90 degree Hydraulic Elbow, Male NPT to Female NPT Swivel, would be as follows:

