



TRUCK BODIES & EQUIPMENT INTERNATIONAL, Inc.

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03 6028

DIRECT MOUNT PUMP INSTALLATION AND OPERATION MANUAL

(Valve/Reservoir: M-8CR06-9RQT.
Pump: GP916CCW)

To Be Filled In By Installer	
Valve Serial #:	_____
Pump Serial #:	_____
Hoist Installation and Operation Manual #:	_____
In Service Date:	_____
Dealer:	_____
Address:	_____
City, State ZIP:	_____
Dealer Phone Number:	_____

Use this manual *ONLY* if installing or operating the pump listed. This manual should be kept in the glove compartment of the truck for reference when needed.

FEATURES: 03 2353, Recycle Valve/9Qt Reservoir, pump, tower control and cable used with the LR-416, LR-165, LR-25, HR-520, HR-540, P-410, P-512, or P-514.

Original Revision: March 15, 2004
Current Revision: F January 19, 2007

WARNINGS:

- WARNING:** Not installing or operating equipment correctly can cause component damage or an accident which may cause injury or death. "**Always**" install and operate equipment in accordance with manufacturer's instructions. Read and understand this manual fully before proceeding.
- WARNING:** Welding, oxy-fuel cutting, or grinding sparks can cause fuel to ignite which in turn can lead to injury or death. "**Always**" take adequate steps to avoid ignition of fuel from fuel tanks when welding, grinding, or oxy-fuel cutting during equipment installation.
- WARNING:** Heat from the truck's exhaust system can cause hydraulic component failure and may lead to a fire which could cause injury or death. "**Always**" install equipment in locations where heat from the exhaust system will not damage any hydraulic component.
- WARNING:** Being under a raised body can result in serious injury or death should the body in unexpectedly descend. "**Never**" position yourself or allow others to position themselves under a "**loaded**" body. "**Always**" prop the "**unloaded**" body up using the body prop or body props supplied. "**Remember**" body props are to be used only on an "**unloaded**" body.
- WARNING:** Malfunctioning equipment can cause property damage, injury or death. "**Always**" have faulty equipment repaired before continuing its use. If required, consult the manufacturer.
- WARNING:** Overloading of a truck can cause truck component damage or an accident which may cause injury or death. "**Never**" exceed the gross vehicle weight (GVW) or the gross axle weight (GAW) rating of your vehicle.
- WARNING:** The inadvertent shorting of the truck's electrical supply can cause a fire or equipment damage that could lead to injury or death. "**Always**" disconnect the vehicle battery prior to installing, servicing or repairing the pump.
- WARNING:** Damage to brake lines during equipment installation, or installing bolts or equipment in such a way that the line will rub and become damaged can lead to brake failure which can cause an accident and can lead to severe injury or death. "**Always**" take adequate steps to prevent brake line damage during installation and isolate brake lines from installed equipment.

WARNING: Never install a cable on a truck while the body is raised without first blocking, bracing, or propping the body up to prevent the body from inadvertently falling when the control valve lever is moved. A falling body could result in serious injury or death if the control valve lever is moved while someone is under the non-supported body.

WARNING: Connecting the hoist to a hydraulic system with more pressure(psi) or flow(gpm) than is recommended by the hoist manufacturer, can cause the hoist to fail during the dumping of a load. This could lead to damage, serious injury, or death. "**Be sure**" you have the correct pressure and flow. If you do not know the recommended pressure and flow, consult the hoist installer.

WARNING: Adjusting the hydraulic pressure to more than the recommended setting may cause the hoist to fail during the dumping of a load. This could cause damage, serious injury, or death. "**Never**" adjust the pressure on your own. If the hydraulic pressure is in question consult the hoist manufacturer. Have only a qualified person set the hydraulic pressure. "**Never**" adjust the pressure to more than the recommended amount.

INSTALLATION:

NOTE: This manual contains descriptions of hydraulic fittings. In describing these fittings, special designations are used. These designations and their meanings are as follows:

SPECIAL DESIGNATION

MPT
FPT
MORB
FORB
HB
MJIC
FJIC

MEANING

MALE PIPE THREAD
FEMALE PIPE THREAD
MALE O-RING BOSS THREAD
FEMALE O-RING BOSS THREAD
HOSE BARB
37° MALE JIC THREAD
37° FEMALE JIC THREAD

- A. The direct mount pump being supplied is a left hand (counter-clockwise) rotation pump. Pump shaft rotation is determined by viewing pump from the shaft end. To verify pump rotation, refer to Figure A or Figure B on page 7 or 8. To change pump to a right hand (clockwise) rotation pump, see the "Reverse Shaft Rotation for GP900 and GP1500 Series Gear Pumps" sheet supplied with pump. The pump has two 7/8"-14 FORB pressure ports (one side and one rear), and two 1-1/16"-12 FORB suction ports (one side and one rear). Pump is shipped with both rear ports plugged.

- B. This pump has an **SAE A** two bolt flange and an **SAE A** splined 9 teeth shaft. This pump is intended to be directly mounted to the truck PTO, therefore eliminating the sometimes troublesome driveline. This pump will couple directly with a **Chelsea** brand PTO with a **Suffix XE**. This pump will also couple directly with a **Muncie** brand PTO with a **Suffix R**.
- C. Direct mount means that the pump is separate from the reservoir. This is an advantage when installing a PTO driven pump on a truck where space is at a minimum. The reservoir can be located just about anywhere and is not limited to a location where the pump can reach the PTO, as is the case for pumps mounted in the reservoir.
- D. The system relief is set at **3200 psi** on the high pressure valve port and **1500 psi** on the low pressure port. The system is a double acting open center system.
- E. Cable Attaching Instructions: To install the control cable, follow the Cable Installation Instruction Sheet in the Williams Hydraulic Piston Pump Units, Operating, Mounting, and Safety Instructions included with the reservoir.
- F. Control Lever Bracket Installation:
1. Choose a floor location for the control tower that is easy for the driver to reach. Preferably to the right side of the driver beside the manual transmission shifter.
 2. Using the control tower bracket as a template, mark hole locations and drill holes in floor.
 3. Fasten the control tower bracket to the floor (fasteners not supplied with kit). Refer to Figure 1.
 4. Bolt the control tower to the control tower bracket using two 5/16" x 2 1/2" Gr. 5 bolts and two 5/16" oval locknuts from the hardware kit. Torque the 5/16" bolts to 21 ft./lb.
- G. Reservoir and Pump Installation
The following step by step instructions are to be followed as a general guideline when installing the Rugby® direct mount pump.

NOTE: All 1/2" diameter bolts used in the installation must be torqued to 90 ft./lb. unless otherwise noted.
All 3/8" diameter bolts used in the installation must be torqued to 37 ft./lb. unless otherwise noted.
All 7/8"-14 MORB Port Plugs used in the installation must be torqued to 20-25 ft./lb. unless otherwise noted.
All 1-1/16"-12 MORB Port Plugs used in the installation must be torqued to 30-35 ft./lb. unless otherwise noted.

1. To install the reservoir and pump on a LR series hoist, do steps 2 and 3, and 5 thru 12. If the installation is on a HR series hoist, do steps 4 thru 12.
2. First, position and clamp each of the two reservoir brackets to the frame. Drill two 13/32" diameter holes through both the reservoir brackets and the truck frame. Fasten each with two 3/8" x 2" hex cap screws, two 3/8" lock washers and two 3/8" hex nuts.

NOTE: To prevent frame failure, position the two 13/32" dia. holes for each reservoir bracket within the center 1/3 of the truck frame web. **NEVER WELD TO THE CHASSIS FRAME!**

3. Attach the reservoir to the pump brackets installed in Step #2, using four 3/8" x 1 1/4" hex cap screws, eight 3/8" flat washers, four 3/8" lock washers, and four 3/8" hex nuts.
4. Mount the reservoir to the subframe pump bracket, using two 3/8" x 1 1/4" hex cap screws, four 3/8" flat washers, two 3/8" lock washers and two 3/8" hex nuts.
5. Install the PTO onto the truck transmission, using the instructions included with it.
6. Install the fittings supplied into the pump ports. Fittings can be installed into the side ports as illustrated in Fig. #A, in the rear ports as illustrated in Fig. #B or a combination of side and rear ports. Fittings for side port and rear port installation are included. When using a rear port simply remove the rear plug and use this plug to plug the corresponding side port.
7. Position the splined shaft into the PTO, secure the pump to the PTO with two 3/8" x 1 1/4" hex cap screws and lock washers.
8. Finish installing the hydraulics as illustrated in Figure A or B.
9. Install the control cable.
10. Affix the Double Action Hoist Decal to the control tower bracket. Refer to Figure 2.
11. Fill the reservoir with oil. The reservoir will require about nine quarts of oil on the initial fill.

IMPORTANT:

To protect all hydraulic components and for all season use, the recommended type oil is **Dextron II Type A** automatic transmission fluid. For operation over 30° F, a good grade of hydraulic oil, such as **Regal R & O 32 (Texaco Brand)**, can be used. **REMEMBER** to use clean oil.

WARNING: DO NOT ATTEMPT TO RUN THE PUMP WITHOUT OIL AS IT WILL FAIL IN A VERY SHORT TIME! BEFORE OPERATING THE HOIST, READ AND UNDERSTAND THE OPERATION SECTION OF THIS MANUAL. DO NOT PERFORM ANY OPERATION OR MAINTENANCE UNDER A RAISED TRUCK BODY WITHOUT FIRST BLOCKING THE UNLOADED BODY UP WITH A BODY PROP OR PROPS.

12. Raise the hoist and secure up with a body prop or props. Refill reservoir with oil.

TOWER CONTROL CABLE AND PTO PUMP OPERATION

NOTE: To ensure long service and safety from your hoist, it is important that the following procedure is followed every time the hoist is operated.

WARNING: Being under a raised body can result in serious injury or death should the body in unexpectedly descend. "**Never**" position yourself or allow others to position themselves under a "**loaded**" body. "**Always**" prop the "**unloaded**" body up using the body prop or body props supplied. "**Remember**" body props are to be used only on an "**unloaded**" body.

- WARNING:**
1. Stay out from under body when hoist is operation.
 2. During dumping operations no one must be allowed to stand in or move through the area where the body and hoist operate or into an area where an upset load might fall.
 3. Operator must remain at the controls in the truck cab during dumping operations.
 4. **NEVER** leave body raised or partly raised while vehicle is unattended or performing maintenance or service under body, unless body is braced to prevent accidental lowering.
 5. Do not attempt to raise a loaded body when the vehicle is on unlevel ground.
 6. Never shock or jerk a raised body to loosen a stuck load.

1. Engage the PTO from cab.

NOTE: "**NEVER**" operate the pump at more than 3400 RPM (PTO speed). The rate of your PTO speed and engine speed will depend on the gear ratio in the PTO drive installed in your truck transmission.

2. To raise the hoist, push in the knob of the tower control lever and move lever to the "POWER UP" position. Adjust the engine speed to obtain the desired speed of lift.

3. When the hoist reaches its raised limit, the pump will bypass. Care should be taken not to let the pump bypass for long periods, as it puts stress on the whole hydraulic system. To prevent the pump from bypassing, simply return the control lever to the center "LOCK" position. When the control lever is centered, the hoist will stop moving and hold its position.
4. To lower the hoist, push in the knob of the tower control lever and move the shift lever to the "POWER DOWN" position.
5. To lock the hoist against the truck frame when the hoist is in the down position, move the shifter lever to the "POWER DOWN" position. When you hear that the pump is bypassing, simply move the shifter lever to the center or "LOCK" position.
6. Before transporting the truck, disengage the PTO drive shaft.

NOTE: Failure to disengage the PTO drive shaft can cause serious damage to the hydraulic pump.

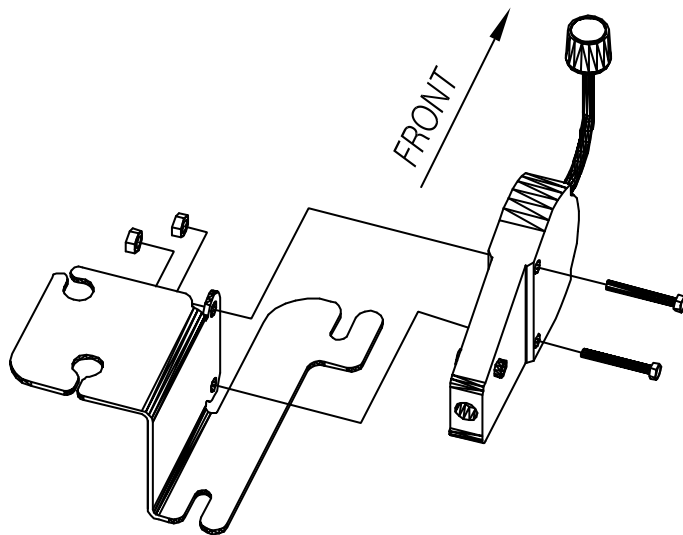


FIGURE 1

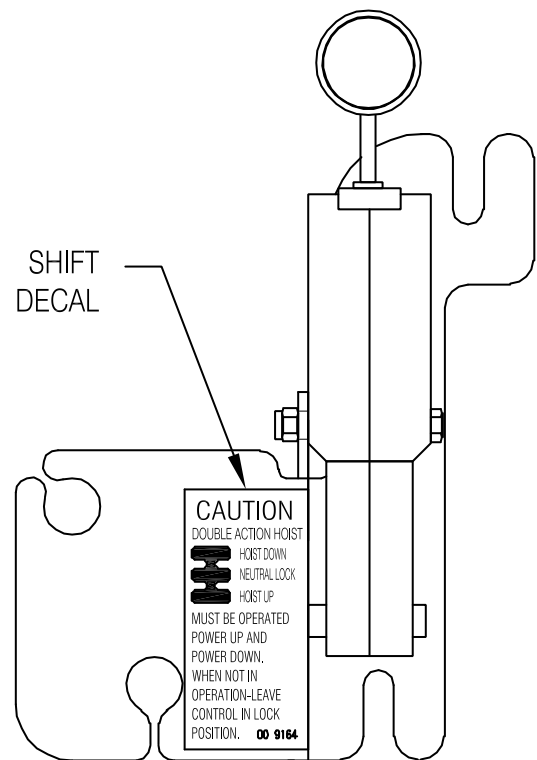
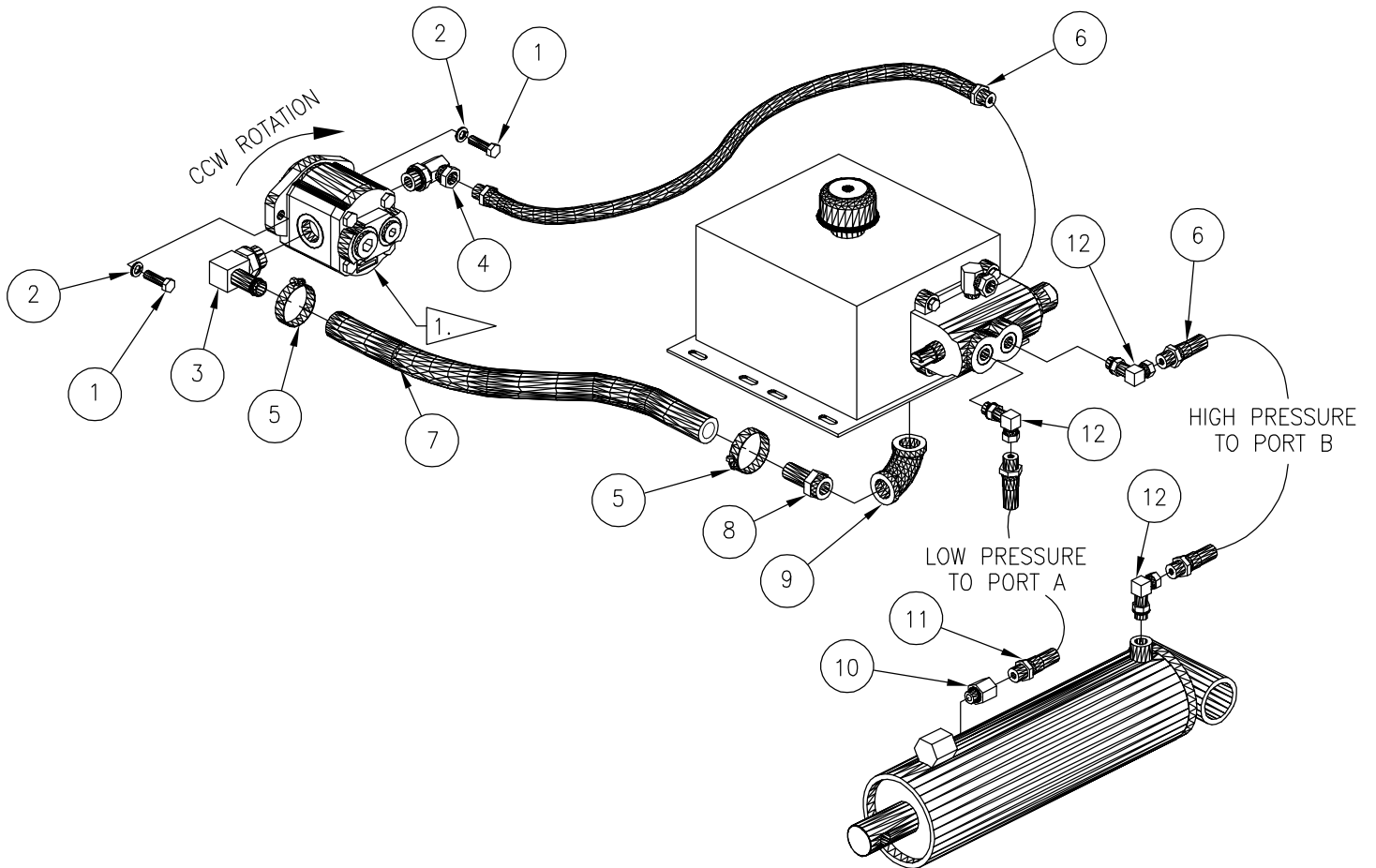


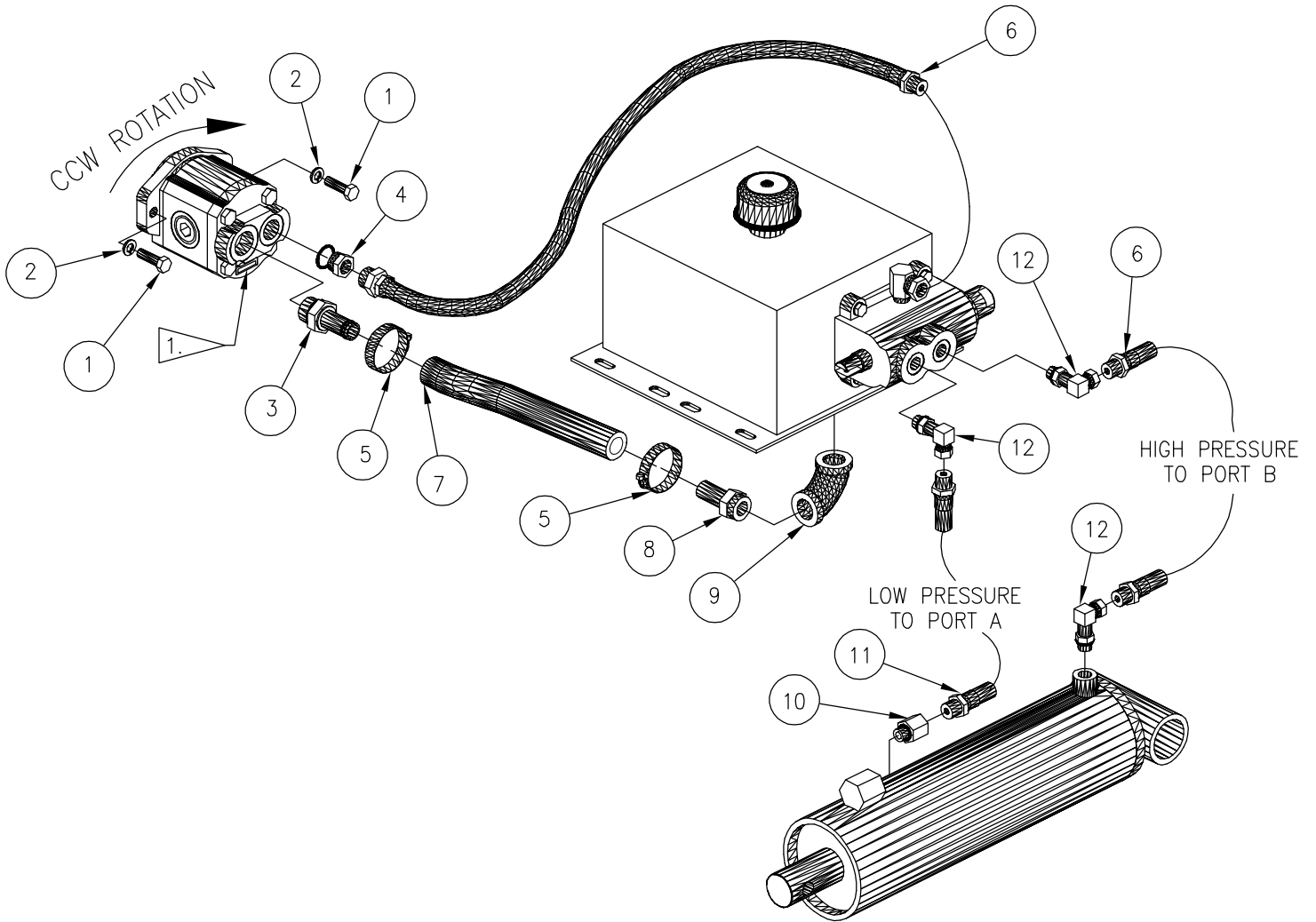
FIGURE 2



1. SERIAL PLATE WILL BE LOCATED IN THIS POSITION FOR ALL COUNTER-CLOCKWISE ROTATION PUMPS.

FIGURE A

12	00 8123	90° ADPT. 9/16" MORB TO 3/8" FPT SWIV.	3
11	00 8147	HOSE 3/8" MPT TO 3/8" MPT x 7'	1
10	00 8132	ADPT. 9/16" MORB TO 3/8" PIPE	1
9	00 8113	RESERVOIR 90° APDT. 3/4" FPT TO 3/4" FPT	1
8	00 8114	RESERVOIR ADPT. 3/4" MPT TO 3/4" HB	1
7	00 8270	SUCTION HOSE 3/4" ID x 6' (NO FITTINGS)	1
6	00 8133	PRESSURE HOSE 3/8" MPT TO 3/8" MPT x 5'	2
5	00 7900	HOSE CLAMP	2
4	00 8112	PRES. PT. 90° ADPT. 7/8" MORB TO 3/8" FPT SWIV.	1
3	00 8116	SUC. PT. 90° ADPT. 1 1/16" MORB TO 3/4" HB	1
2	00 7651	3/8" LOCK WASHER	2
1	00 7274	3/8" x 1 1/4" HEX CAP SCREW	2
ITEM	PART NUMBER	DESCRIPTION	REQ'D



1. SERIAL PLATE WILL BE LOCATED IN THIS POSITION FOR ALL COUNTER-CLOCKWISE ROTATION PUMPS.

FIGURE B

12	00 8123	90° ADPT. 9/16" MORB TO 3/8" FPT SWIV.	3
11	00 8147	HOSE 3/8" MPT TO 3/8" MPT x 7'	1
10	00 8132	ADPT. 9/16" MORB TO 3/8" PIPE	1
9	00 8113	RESERVOIR 90° ADPT. 3/4" FPT TO 3/4" FPT	1
8	00 8114	RESERVOIR ADPT. 3/4" MPT TO 3/4" HB	1
7	00 8270	SUCTION HOSE 3/4" ID x 6' (NO FITTINGS)	1
6	00 8133	PRESSURE HOSE 3/8" MPT TO 3/8" MPT x 5'	2
5	00 7900	HOSE CLAMP	2
4	00 8111	PRES. PT. ADPT. 7/8" MORB TO 3/8" FPT SWIV.	1
3	00 8115	SUC. PT. ADPT. 1 1/16" MORB TO 3/4" HB	1
2	00 7651	3/8" LOCK WASHER	2
1	00 7274	3/8" x 1 1/4" HEX CAP SCREW	2
ITEM	PART NUMBER	DESCRIPTION	REQ'D