FOREWORD

Here is the new Labrie parts and maintenance manual for the OPTIMIZER™ front loading unit. We sincerely hope that you will find it easy to use.

We have designed it in a way that will allow you to easily make it available to drivers, mechanics, and to parts department personnel.

Any time that you have a problem with a Labrie unit, you should contact your vendor first. He should be able to provide you with the proper help required (parts or technical advice).

FIRST THINGS FIRST:

DO NOT FORGET TO COMPLETE THE OWNER REGISTRATION FORM AND TO SEND IT TO LABRIE EQUIPMENT, MAKING SURE TO INDICATE “IN SERVICE DATE”. THIS DATE WILL BE USED TO START THE WARRANTY PERIOD. OTHERWISE, THE DATE OF DELIVERY FROM THE FACTORY WILL BE USED.
**OPTIMIZER™**

**MAINTENANCE MANUAL**

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# OPTIMIZER™

## CHAPTER 1.0

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## 1.0 MAINTENANCE MANUAL

### 1.1 GENERAL SAFETY PRECAUTIONS

#### 1.1.1 GENERAL PRECAUTION

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<tbody>
<tr>
<td><strong>PERSONNEL IN CHARGE OF MAINTENANCE SHALL NOT PERFORM ANY MAINTENANCE ON THE EQUIPMENT WITHOUT KNOWING THE PROPER OPERATIONS OF THE EQUIPMENT AS WELL AS ALL SAFETY PRECAUTIONS OF SUCH OPERATIONS. REFER TO THE OPERATION MANUAL PRIOR TO PERFORM ANY TYPE OF WORK ON THE UNIT.</strong></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>CAUTION</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>MAINTENANCE AND REPAIRS CARRIED OUT ON THIS VEHICLE, MUST BE ONLY DONE BY QUALIFIED PERSONNEL WHO ARE FAMILIAR WITH THIS EQUIPMENT. LABRIE ENVIRONMENTAL GROUP IS NOT RESPONSIBLE FOR ANY FAILURES RESULTING OF REPAIRS PERFORM BY THE USER.</strong></td>
</tr>
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</table>

### WARNING

<table>
<thead>
<tr>
<th>WARNING</th>
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<tbody>
<tr>
<td><strong>BEFORE DOING ANY MAINTENANCE WORK ON THE VEHICLE, ALL SAFETY REGULATIONS MENTIONED IN THE OPERATOR MANUAL, MUST BE RESPECTED, ESPECIALLY THE ”LOCKOUT/TAGOUT” PROCEDURE (ANSI Z 245.1 1984).</strong></td>
</tr>
</tbody>
</table>

For maintenance of the truck itself, please refer to the chassis maintenance manual. Only the body section and its components will be addressed in this manual.

Establish and apply a periodic inspection program to keep the moving parts in good working order, properly adjusted and safe. It is recommended that a brief inspection is done by the operator **EVERY DAY** and that any problems or detected malfunctions is reported for correction **before** reusing the equipment.

Once a month, inspect the chassis and the body for any breaks, cracks or possible malfunctions. Any defects found must be repaired without delay. To assure good working order of the equipment, particular attention should be paid to the deterioration of structural components due to corrosion. Touch-ups or complete paint jobs should be done when necessary.
1.1.2 SURFACE FINISHING AND PAINT

Type of surface finishing recommended:

<table>
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<th>PAINTING PROCEDURE</th>
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<tbody>
<tr>
<td>Surface preparation: Grit blasting.</td>
</tr>
<tr>
<td>Primary coat: Anticorrosive epoxy primer.</td>
</tr>
<tr>
<td>Finishing coat: Two (2) coats industrial type Imeron paint (or equivalent).</td>
</tr>
</tbody>
</table>

1.1.3 FIRE PROTECTION

If for any reason the maintenance personnel has to work on an equipment that has not been unloaded, for any type of work, a fire extinguisher should be made readily available close to this vehicle. Anytime a loaded vehicle is inside a garage there should be a fire extinguisher very close nearby.

Inform your personnel of measures to be taken in case of a truck fire and/or a loaded body fire. In the case of a load catching on fire, inform them of an appropriate place to drop the load in the vicinity of your maintenance facility (Preferably away from traffic, surface drains and ditches).

1.1.4 LOCKOUT / TAGOUT PROCEDURE

It is the employer’s responsibility to follow and apply the “lockout/tagout procedure” for any inspection, repairs or maintenance being done on the vehicle, whether it is on the road or in the employer’s garage.

<table>
<thead>
<tr>
<th>LOCKOUT / TAGOUT PROCEDURE</th>
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<tbody>
<tr>
<td>Apply the parking brake.</td>
</tr>
<tr>
<td>Turn the engine off.</td>
</tr>
<tr>
<td>Remove the key from the ignition switch.</td>
</tr>
<tr>
<td>Put the key in a safe controlled area.</td>
</tr>
<tr>
<td>Tape ignition switch key hole.</td>
</tr>
<tr>
<td>Turn off the master switch (If installed).</td>
</tr>
<tr>
<td>Put an “OFF SERVICE” tag on the driver’s wheel.</td>
</tr>
<tr>
<td>Put an “OFF SERVICE” sign in the front windows.</td>
</tr>
<tr>
<td>Block any system that could move by gravity with a proper easy to see safety prop (opened tailgate, etc.).</td>
</tr>
<tr>
<td>Move back and forth all control handles to release any residual pressure in the system.</td>
</tr>
<tr>
<td>Install blocks on both sides of wheels to prevent movement of the vehicle.</td>
</tr>
<tr>
<td>Disconnect the following items if any type of welding is required:</td>
</tr>
</tbody>
</table>
  - Electronic transmission (ECU) |
  - Electronic ABS module |
  - Electronic engine (2 plugs on engine) |
  - Wiper module |
  - Battery |
1.1.5 SHUTDOWN PROCEDURE

When you park the vehicle for an extended period of time, follow the truck manufacturer requirements as well as your maintenance requirements and ensure of the following:

- Park on a hard level surface.
- Apply parking brake.
- Make sure that all moving parts are in the storage position (tailgate, arms and forks, packer, etc).
- Turn hydraulics, electricals and engine off.
- Turn the master switch off (if equipped).
- Empty air tanks.

1.1.6 PRIOR TO START UP

Before starting the vehicle ensure that no system will engage and start to operate as you are starting the engine. Every switch shall be off and the hydraulic pump disengaged.

The suction valve on the hydraulic reservoir should be open (Figure #1.1).

Once the engine is started, wait for the air pressure to raise. Once the air is above 70 psi, you can then operate the equipment.

WARNING

MAKE SURE THAT THE MAIN VALVE ON THE HYDRAULIC TANK IS FULLY OPENED BEFORE STARTING THE ENGINE. IF FORGOTTEN, IMMEDIATE DAMAGE WILL BE DONE TO THE PUMP EVEN IF THE P.T.O. SWITCH IS TURNED “OFF”.

MAINTENANCE
WARNING

BEFORE STARTING THE ENGINE, MAKE SURE THAT THE SUCTION VALVE ON THE RESERVOIR IS COMPLETELY OPEN (FIGURE #1.1). IF THE VALVE IS CLOSED, IMMEDIATE DAMAGE WILL OCCUR TO THE PUMP EVEN IF THE P.T.O. SWITCH IS TURNED “OFF”.

1.1.7 HYDRAULIC FILTER FIRST REPLACEMENT

CAUTION

TO PROTECT THE NEW COMPONENTS, THE RETURN FILTER MUST BE CHANGED AFTER THE FIRST 50 HOURS OF USE. SEE HYDRAULIC FILTER REPLACEMENT PROCEDURE IN SECTION 1.4.8.

1.1.8 GENERAL CLEANLINESS

Cleanliness is part of safety. Make sure that the equipment is kept in proper working order by removing any stacked garbage in the packer area. Keep clean all the truck lights, warning lights and safety stickers so the driver, the surrounding pedestrians and vehicles will be safe around the truck at all times.

1.1.9 CLEANING THE HOPPER AREA

The area behind the packer should be cleaned every day. The packer will not work properly if the waste accumulates in this area, it could even cause severe damage to the packer and other adjacent systems.

DANGER

PROPERLY APPLY THE LOCKOUT/TAGOUT PROCEDURE TO PREVENT ANY ACCIDENTAL RESTARTING OF THE ENGINE. (REFER TO THE LOCKOUT / TAGOUT PROCEDURE SECTION 1.1.4)

HOPPER CLEANING PROCEDURE

• Turn on the engine and the hydraulic system.
• Open the hopper roof gate.
• Remove the tailgate safety pins.
• Fully open the tailgate. A green light on the console turns on to prompt you about it.
• Press and hold the green button on the console to move the packer all the way to the end of its stroke.
• Apply the Lockout/Tagout procedure (see section 1.1.4).
• Open the hopper door on the right side of the body.
• Get in the hopper area and remove any residual material. Use a high pressure water jet to complete the cleaning. Never close the hopper door behind you while you are inside the hopper area.
• Get off the vehicle and close the hopper door.
• Back in the cab, turn on the engine and the hydraulic system.
HOPPER CLEANING PROCEDURE
(cont’d)

• Press and hold the yellow button on the console to retract the packer to its home position.

• Close the tailgate, turn off the engine, and put the safety pins back into place.

• Close the hopper roof gate.

DANGER
NEVER CLOSE THE HOPPER DOOR BEHIND YOU WHILE YOU ARE INSIDE THE HOPPER AREA.

1.1.9A BODY HOISTING

Some units are equipped with a body hoisting system to facilitate the maintenance under the body. If your unit is equipped with this system, perform the following steps to lift the body:

BODY HOISTING PROCEDURE

A. Unscrew the nuts of the 4 bolts (2 on each side) that retain the body in place.

B. Make sure to remove all hoses from their supports and clamps before lifting the body in order to avoid any damages to the hoses. The clamps and supports are located under the body, near the center.

C. Use the pump lever to lift the body.

D. Unlock the body safety props by pulling the props locking pin.

E. Put body safety props in place.

DANGER
ALWAYS USE THE SAFETY PROPS WHEN RAISING THE BODY. FAILURE TO DO SO WILL RESULT IN SERIOUS INJURIES OR EVEN DEATH.

BOLTS THAT RETAIN THE BODY
HOSE CLAMPS
**DANGER**

NEVER GO UNDER THE BODY WHEN THE SAFETY PROPS ARE NOT INSTALLED. FAILURE TO DO SO WILL RESULT IN SERIOUS INJURIES OR EVEN DEATH.

USE THE PUMP LEVER TO LIFT THE BODY

PUT THE BODY SAFETY PROPS IN PLACE

SAFETY PROPS LOCKING PIN

CLAMPS LOCATED UNDER THE BODY, NEAR THE CENTER
1.1.10 PROPPING PROCEDURES

DANGER

NEVER WORK UNDER, OR CLOSE TO EQUIPMENT OR ANY PART THAT IS NOT SAFELY PROPPED OR SECURED.

ALWAYS USE THE PROVIDED STEP LADDERS (OR ANY OTHER SAFE LADDER TO WORK TOWARDS THE FRONT) TO GET ON THE ROOF OR TO WORK ON HIGHER PARTS OF THE EQUIPMENT. REMEMBER THAT THE ROOF IS NOT MEANT TO BE WALKED UPON. BE VERY CAUTIOUS IF YOU HAVE TO WORK ON THE ROOF AREA.

ALWAYS FOLLOW PROPER LOCKOUT/TAGOUT PROCEDURE (SECTION 1.1.4).

The tailgate has its own safety prop system. The prop is installed when the tailgate is slightly open. The tailgate, when open, should always rest against the safety prop.

DANGER

ALWAYS USE THE TAILGATE SAFETY PROP WHEN WORKING UNDER A RAISED TAILGATE. PROP CAN BE INSTALLED EVEN IF THE TAILGATE HAS TO BE IN IT’S FULLY RAISED POSITION.
1.2 PACKING SYSTEM MAINTENANCE

1.2.1 PACKING SYSTEM GENERAL MAINTENANCE

The OPTIMIZER™ packing system has an heavy duty guiding system using special hardened steel wear plates. However, because of the frequent use of the ram, we recommend that daily visual inspections be performed by the operator and weekly inspections by the maintenance personnel.

Greasing all moving parts on a daily basis is very important. The proper adjustment of the proximity switches is also very important.

Any problem must be corrected immediately. The factory service department is available for any support you may require.

1.2.2 PROXIMITY SWITCHES ADJUSTMENT

The proximity switches were properly adjusted at the factory. However, if the cleaning behind the packer is not performed daily, it is possible that the proximity switches will no longer stop the packer automatically. An accumulation of dirt behind the packer prevent it to retract far enough to activate the proximity switch.

Also, after a certain period of time, it might be necessary to adjust the proximity switches, to prevent the cylinders from completely retracting (or extending) to the end of their stroke.

You must check and clean the area behind the packer every day!

CAUTION
ADJUSTING THE PROXIMITY SWITCHES

- Move the packer blade about 1 inch back from the fully extended position.
- Adjust the proximity switch #1 so it is "active" (the amber light on the proximity switch should be ON) when the packer blade reaches this position.
- Apply the same procedure for the retracted position (proximity switch #2).
- Test the packer for a full cycle. Ensure that there is no knocking noise at the end of the packer cylinder strokes.

PROXIMITY SWITCHES LOCATION

[Diagram showing the location of proximity switches]

FIGURE #1.5
1.2.3 PACKER BLADE WEAR PLATES REPLACEMENT

If the packer blade has a vertical movement greater than 3/16 or a side movement greater than 1/8; verify the wear plates and the body guide.

We use two different types of steel for wear plates: The “AR 425” and the “AR 500”.

DANGER

USE THE APPROPRIATE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES (SECTION 1.1.4).

REPLACING PACKER BLADE WEAR PLATES

• Remove packer blade (refer to packer blade removal procedure, Sec. 1.2.5)

• Remove the packer blade wear plates from packer blade (Figure #1.6).

• Verify corresponding wear plates under guiding tracks (Figure #1.7).

• Install new packer blade wear plates on packer blade

• Reinstall packer blade on unit (refer to packer blade removal procedure, Sec. 1.2.5).
1.2.4 BODY GUIDE WEAR PLATES REPLACEMENT

**DANGER**

USE THE APPROPRIATE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES (SECTION 1.1.4).

**BODY GUIDE WEAR PLATES REPLACEMENT PROCEDURE**

- Remove the packer blade (refer to packer blade removal procedure, Sec. 1.2.5).

- Retract the packing cylinders and move them out of the way.

- Remove body wear plates by grinding or cutting the stitch welds attaching plates to guide.

- Clean surfaces and position new plates by tacking them in place.

- Once in proper position stitch weld plates in place.

- Reinstall packer blade.

**FIGURE #1.7**

Body guide wear plates
1.2.5 PACKER BLADE REMOVAL PROCEDURE

PACKER BLADE REMOVAL PROCEDURE

• Start engine and hydraulic system. Bring the packer to the rear end of the body to easily access the pins (Figure #1.8).

• Remove rear cylinder pins (Figure #1.8).

• Retract cylinders.

• Pull packer out of the body with lifting device (Figure #1.9).

DANGER

USE THE APPROPRIATE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES (SECTION 1.1.4).
1.2.6 PACKER CYLINDERS REPLACEMENT

PACKER CYLINDER REPLACEMENT PROCEDURE

- Extend the packer blade completely.
- Remove cylinder rear pins (Figure #1.8).
- Retract the cylinders.
- Remove hoses from cylinders and front pins.
- Reverse procedure for installation.

1.2.7 LUBRICATION OF PACKING SYSTEM

CAUTION

BECAUSE OF IT’S FREQUENT USE, THE PACKER AND IT’S ACCESSORIES MUST BE LUBRICATED EVERY WORKING DAY.

Refer to the chapter 5 on lubrication for:

- Cylinder pins (Figure #1.10)
- Doorhinges.

GREASE FITTINGS

DANGER

USE THE APPROPRIATE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES (SECTION 1.1.4).

FIGURE #1.10

Support the cylinder to be removed with proper lifting device.
1.3 TAILGATE SYSTEM AND BODY HINGES MAINTENANCE

It is important to lubricate the hinges and the slides for the rear door locks with multi-purpose grease. Also, inspect the welds and the proper working order of the following components (Figure #1.11 to #1.14).

- Tailgate hydraulic cylinders;
- Cylinder pins and circlips;
- Tailgate hinges and pins;
- Wear on the bearing surface of the locking mechanisms
- Wear on the tailgate lock pins.

1.3.1 TAILGATE LOCKING MECHANISM

DANGER

FREQUENTLY VERIFY THAT THE RETAINING RINGS (FIGURE #1.12) ARE IN PLACE TO AVOID ACCIDENTAL DROPPING OF THE TAILGATE.

> FIGURE #1.11

TAILGATE LOCKING MECHANISM

EXCESSIVE WEAR MIGHT BE DANGEROUS AND HARMFUL TO THE PROPER WORKING ORDER OF THE TAILGATE.

> FIGURE #1.12
1.3.2 TAILGATE SEAL AND HINGES INSPECTION

The hinge pins must not have any signs of excessive wear or metal fatigue. The retaining bolts must be kept tight (Figure #1.15). Perform a visual inspection of the rubber seal along the rim of the tailgate. Replace any broken components necessary.

1.3.3 REAR BODY HINGE INSPECTION

Monthly lubrication of the body and chassis hinges should be done (Figure #1.13). Also, inspect for cracks or corrosion. Any eventual cracks must be reported, recorded and repaired by qualified personnel.

1.3.4 PROXIMITY SWITCHES ON TAILGATE

The unit has a proximity switch that activates the back-up alarm and a warning buzzer (inside the cab) to tell the operator that the tailgate is unlocked (Figure #1.15). A proximity switch (Figure #1.14), mounted on top of the body will engage a light on the console to warn the operator that the tailgate is fully opened. Verify the proper working order and adjustment of those two limit switches.

PROXIMITY SWITCH FOR FULLY RAISED TAILGATE

PROXIMITY SWITCH FOR UNLOCKED TAILGATE
1.3.5 HOPPER DOOR SENSOR

The hopper door is equipped with a limit switch that detects if the side door is open. On some units, this task is performed by a proximity switch instead (optional).

When the hopper door is open, the pump can not be engaged. That way, it is impossible to use the packer or any hydraulic system.

Verify the proper working order and adjustment of this limit /proximity switch.

1.3.6 ROOF PROXIMITY SWITCH

There’s a proximity switch that detects if the roof is open or closed. If the roof is closed, it is impossible to start the packer. That way, you will avoid damages to the body. Also, the roof MUST be open to raise the arms. If the roof is closed, it won’t be possible to raise the arms in order to avoid debris falling on the roof.

1.3.7 FORKS AND ARMS PROXIMITY SWITCHES

Some units are equipped with proximity switches that indicate if the arms and forks are fully parked and fold. One is located on the arms axle and the other one is located on the forks axle (on right-hand side). If the forks are not fold when the arms are raising and reaching a certain point, the Forks Overhead warning light comes ON on the dashboard.

The forks MUST be completely fold to avoid any collision and to respect the size limitations applicable in your area.
1.3.8 ARMS PARTLY RAISED PROXIMITY SWITCH

Some units are equipped with a proximity switch that allows the operator to raise the arms when the packer is retracting. If the packer is not completely retracted when the arms pass in front of the proximity switch, the arms stop to avoid debris falling on the packer or behind it. The operator will have to wait until the packer is completely retracted before raising the arms further.

If the truck is equipped with this proximity switch, it is located on the left-hand side of the arm torque tube.

CAUTION

MAKE SURE THAT ALL THE PROXIMITY SWITCHES ARE WELL ADJUSTED AND THAT THEY ARE WORKING PROPERLY.

1.3.9 PROXIMITY SWITCH ADJUSTMENT

Here is a general procedure to adjust the proximity switches:

GENERAL PROXIMITY SWITCH ADJUSTMENT PROCEDURE

- Park the truck on a safe and level ground.
- Apply the parking brake and make sure that the truck is tagged out for maintenance (see “Lockout/Tagout” section of the Operator Manual).
- Start the engine and engage the hydraulic pump.
- Shut off the engine and turn off the hydraulic pump.
- Unscrew the nuts located on each side of the proximity switch.
- Move the proximity switch laterally until there’s a gap of 1/8 inch between the proximity switch and its target.
- Screw the nuts of the proximity switch.
- Start the engine and engage the hydraulic pump.
- Perform tests to make sure that the proximity switch works properly.
1.4 HYDRAULIC SYSTEM MAINTENANCE

1.4.1 HYDRAULIC SYSTEM GENERAL INSPECTION

HYDRAULIC SYSTEM GENERAL INSPECTION PROCEDURE

- For new equipment, change the return element filter after 50 hours of use, and every 500 hours thereafter. See hydraulic filter replacement procedure section 1.4.9;

- Clean the strainer inside the reservoir after the first 50 hours of use and yearly thereafter (Figure #1.16). See hydraulic strainer cleaning procedure, sec.1.4.10;

- When maintenance is carried out, protect the hoses from any dirt that would eventually get into the oil;

- Periodically inspect and adjust the oil pressure in the hydraulic system as follows: 2500 PSI +/- 25 PSI @ 1500 RPM (2300 PSI @ 700 RPM; idle speed);

- Frequently inspect the hydraulic lines and connections for leaks, correct if necessary;

- The suction valve on the reservoir must be fully open (Figure #1.1) before starting the engine;

1.4.2 MAIN RELIEF VALVE PRESSURE ADJUSTMENT

A hydraulic oil pressure verification must be performed every month. The relief valve is preset to 2500 PSI +/- 50 PSI at 1500 RPM by the manufacturer. If the pressure is not within this preset adjustment, the pressure relief valve must be readjusted.

CAUTION

ADJUSTING THE MAIN RELIEF VALVE AT HIGHER PRESSURE THAN 2500 PSI WILL CREATE EXTENSIVE DAMAGE AND VOID THE MANUFACTURER’S WARRANTY.
1.4.3 HYDRAULIC DIRECTIONAL CONTROL VALVE

The OPTIMIZER is equipped with a Parker directional control valve, model VG-35. The hydraulic valve controlling all the functions of the front loader refuse body is assembled as follows: (from bottom to top as positioned on the truck).

**Sliding roof:** 4 ways, 3 positions, operated with an air actuator.

**Forks:** 4 ways, 3 positions, operated with an air actuator.

**Arm:** 4 ways, 3 positions, operated with an air actuator.

**Packer:** 4 ways, 3 positions, operated with an air actuator.

**Tailgate:** 4 ways, 3 positions, operated with an air actuator.

For further details, refer to the hydraulic system parts and diagram, or see the simplified diagram for the packing system in the troubleshooting section.

![Diagram of the main hydraulic valve](image)
1.4.4 PRESSURE ADJUSTMENT PROCEDURE

PRESSURE ADJUSTMENT PROCEDURE

- Install a 3000 PSI pressure gauge on the quick coupling found on the main valve (Figure #1.17).

- Start the engine and engage the hydraulic system. Maintain the engine speed at 1500 RPM.

- Open the tailgate until the mechanism reaches the end of its stroke.

- Check the pressure while the tailgate is held fully open.

- The pressure reading shall be within 2450 and 2550 PSI. Adjust the main relief if necessary (Figure #1.17).

- Loosen the lock-nut and turn the adjustment knob clockwise to increase the pressure and counter-clockwise to reduce the pressure.

DANGER

USE THE APPROPRIATE LOCKOUT/TAGOUT PROCEDURE AT ALL TIMES (SECTION 1.1.4).

1.4.5 PUMP MAINTENANCE

The hydraulic pump on the OPTIMIZER™ is a gear pump type equipped with a Muncie live pack pump (Figure #1.18).

If the pump is properly maintained, it will provide a satisfactory output. If the pump is noisy, carry out the following inspections:
1.4.6 HYDRAULIC CYLINDERS INSPECTION PROCEDURES

To maintain proper working order and prolonged cylinder performance, it is essential to inspect them at least once a week as recommended.

Verify that all the connections of the flexible hoses and pipes are tight, and that there are no external leaks.

Check that all the cylinder head cap screws are firmly tightened and that there are no leaks. All leaks must be corrected immediately by replacing damaged or worn seals with new ones. Lubricate and inspect all the cylinder mounting points (pins, retaining bolts, etc.).

1.4.7 HYDRAULIC RESERVOIR INSPECTION PROCEDURE

Verify that the oil in the reservoir is clean and always at the proper level.

**HYDRAULIC RESERVOIR MAINTENANCE PROCEDURE**

- For increased longevity, clean the strainer inside the reservoir after the first 50 hours of service and annually thereafter (Figure #1.16).
- Verify the cleanliness of the filler cap (NOT BLOCKED, Figure #1.16).
- Verify the cleanliness, the color and the level of the hydraulic oil. (level at 3/4 of the oil level gauge, with all cylinders retracted).

**CAUTION**

**MAXIMUM TEMPERATURE FOR HYDRAULIC FLUID IS 180°F, +/- 10°F**

The maximum temperature for the system should not exceed 180°F +/- 10°F. Refer to the hydraulic parts section (Chapter 8) for parts numbers.
1.4.8 HYDRAULIC FLUID REPLACEMENT PROCEDURE

CAUTION
HIGHLY CONTAMINATED HYDRAULIC FLUID MUST BE CHANGED TO AVOID ANY DAMAGE ON THE SYSTEM.

CAUTION
IT IS NOT RECOMMENDED TO MIX DIFFERENT TYPES OF OIL IN THE SAME RESERVOIR.

CAUTION
VERIFY THAT THE BALL VALVE ON THE SUCTION IS COMPLETELY OPEN BEFORE ENGAGING THE HYDRAULIC SYSTEM (FIGURE #1.1).

CAUTION
AFTER THE FIRST 50 HOURS, CHANGE THE RETURN FILTER ONCE AGAIN.

HYDRAULIC OIL REPLACEMENT PROCEDURE

1. Ensure that the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to the section 1.1.4 “Lockout/Tagout procedure”).

2. Start the engine, engage the hydraulic pump and disable the speed-up system.

3. Retract all cylinders (Packer, crusher panel, tailgate etc.).

4. Disengage the hydraulic pump and stop the engine.

5. Use a clean container of at least 60 gallons to drop the old oil into.

6. To drop the oil, close the ball valve and remove the drain plug under the tank. Use a container with a minimum capacity of 60 US gallons to collect the oil.

7. Completely drain the tank.

8. Once emptied, reinstall the drain plug.

9. Remove the strainer (Figure #1.19) by removing the bolts and clean it (once a year).

FIGURE # 1.19
10. Clean inside the hydraulic tank with a clean and dry cloth in order to remove any metal particles or debris accumulated at the bottom.

- To clean the interior of the aluminum tank (cylindrical), insert the hand in the hole where the strainer was fixed. This allows to clean one half of the tank. To clean the other half, remove the entire filter at the rear side of the tank, insert the hand inside, and clean with the cloth.

- To clean the steel tank (Figure #1.16), remove the access panel by removing the retaining screw. Insert the hand inside and clean the interior with the dry and clean cloth.

11. Change the return filter element (twice a year).

12. Refill the tank until oil reaches the 3/4 of the oil gauge (Figure #1.20). Use a high quality oil, that has good performance in cold weather (if applicable), such as SHELL TELLUS T32 or equivalent (See “Lubrication” section for specifications). The whole system will require between 50 and 60 gallons.

13. The oil must be clean and free of any dirt, metallic particles or sand etc.) The use of a filtering screen is strongly recommended while filling the tank with new oil.

14. If the suction line has been replaced, fill the line until the oil reaches the pump to avoid cavitation (see section 3.1 of Troubleshooting).

15. Start the engine and check again.
1.4.9 HYDRAULIC FILTER REPLACEMENT PROCEDURE

To protect the components, the return filter must be changed after the first 50 hours of use. Then the return filter must be changed once a year. For part numbers refer to the hydraulic parts table. For replacement proceed as follow:

- Shut off the hydraulic system and truck engine;
- Shut off the ball valve on the suction line (Figure #1.1).
- Remove the filter head's four retaining bolts (Shroeder type) or front cap (Pall type) (Figure #1.16).
- Replace the filter element with a new one, compatible with the manufacturer's recommendations. Refer to hydraulic parts section.
- When replacing an in-tank filter be ready to recuperate 2 gallons of oil approximately. An in-tank return filter system has a self-closing valve preventing the whole tank to empty itself through the return filter core.

1.4.10 HYDRAULIC STRAINER CLEANING PROCEDURE

- Shut the engine off and let the hydraulic oil to cool down.
- Clean around the filler cap and remove it.
- Use a clean container of at least 60 gallons to drop the old oil into.
- Once the tank is empty, replug the drain valve. Shut the drain valve off and remove suction hose from ball valve.
- Remove the strainer from tank port.
- Clean the strainer and perform a visual inspection for any damage. Replace at once if necessary. **A DAMMAGED STRAINER COULD RESULT OF EXTENSIVE DAMAGE TO THE PUMP.**
- Refer to hydraulic fluid replacement procedure for filling the tank back up.
1.4.11 TAILGATE HYDRAULIC SYSTEM MAINTENANCE

The OPTIMIZER™ units are equipped with a special hydraulic system that controls the locking mechanism of the tailgate.

If the continuous re-locking system is not working properly: tailgate unlocks by itself or if the tailgate is dropping from the fully open position by itself refer to section 6.4 for troubleshooting.

1.4.12 CYCLE TIME TABLE FOR ALL HYDRAULIC FUNCTIONS

ENGINE RPM : 1500

<table>
<thead>
<tr>
<th>FUNCTIONS</th>
<th>CYCLE TIME</th>
</tr>
</thead>
<tbody>
<tr>
<td>Packer blade:</td>
<td>22 sec</td>
</tr>
<tr>
<td>Tailgate:</td>
<td>45 sec</td>
</tr>
<tr>
<td>Sliding roof:</td>
<td>15 sec</td>
</tr>
<tr>
<td>Lifting arm:</td>
<td>15 sec</td>
</tr>
<tr>
<td>Forks:</td>
<td>5 sec</td>
</tr>
<tr>
<td>Packer ejection mode:</td>
<td></td>
</tr>
<tr>
<td>Extend</td>
<td>24 sec</td>
</tr>
<tr>
<td>Retract</td>
<td>10 sec</td>
</tr>
</tbody>
</table>

1.4.12 BODY HOISTING SYSTEM MAINTENANCE

The OPTIMIZER™ is equipped with a hoisting system used to raised the body. This system is fed by its own hydraulic pump (see Figure #1.21).

Since this pump is energized by electrical cables, it is protected by a cover.

CAUTION

ALWAYS BE EXTREMELY CAREFUL WHEN WORKING NEAR THE PUMP ELECTRICAL TERMINALS. FAILURE TO DO SO MAY RESULT IN SERIOUS INJURIES, ELECTROCUTION OR EVEN DEATH.

The pump of the body hoisting system must be adjusted to 2000 PSI.

To do so, proceed with the following steps:

BODY HOISTING SYSTEM PUMP ADJUSTMENT

- Install a 3000PSI pressure gauge on the quick coupling found on the pump (see Figure #1.21).

- By using the pump manual lever (see Figure #1.22), raise the body until the mechanism reaches the end of its stroke.

- Check the pressure while the body is held fully raised.
1.4.12 BODY HOISTING SYSTEM
MAINTENANCE (cont’d)

BODY HOISTING SYSTEM PUMP
ADJUSTMENT (CONT’D)

• The pressure reading shall be at
  2000 PSI. Adjust the relief if necessary.

• Turn the adjustment clockwise to
  increase the pressure and counterclockwise to
  reduce the pressure (see Figure #1.21).

The hoisting system is also equipped two
body safety props, which **MUST** be used
each time the body is raised.

These safety props **MUST** be lubricated
properly to ensure their efficiency. To use
the safety props, do the following steps:

**HOW TO USE BODY SAFETY PROPS**

• Raise the body by using the manual lever on the body lifting system
  pump (see Figure #1.22).

• Unlock the safety props by pulling on the safety props locking pin
  (located on the right-hand side; see Figure #1.23).

• Pull down the safety prop (the other one will lower automatically) and
  place it on its support (see Figure #1.24).

**DANGER**

ALWAYS USE THE SAFETY PROPS WHEN WORKING UNDER THE BODY. FAILURE TO DO SO MAY CAUSE SERIOUS INJURIES OR EVEN DEATH.
To lubricate the body safety props, apply the recommended grease through the greasing points, which are located near the safety props shaft, inside the rails (see Figure #1.25). There are a greasing point on each side.

The hoisting system also needs to be lubricated properly. The greasing points are located on each hoisting system cylinder. One is located at the bottom of the cylinders and the other one is located at the top of the cylinders (see Figures #1.26 and 1.27).
1.4.13 ARMS UP DECELERATION VALVE

The arms up deceleration valve automatically decelerates the arms as they are raised to the dump position. A cam bolted to the arm pivot tube rotates as the arms are raised and gradually depresses the valve spool, reducing the flow of oil exiting the tube end of the arm cylinders.

**NOTE:** The deceleration valve greatly reduces impact on the arm assembly, body structure, and hydraulic components.

Location: Fitted to the underside of the body, behind the arm pivot tube on the curbside.

**Adjustment procedure**

1. Remove the cap on the cushioning adjustment screw located on the armscylinder and unscrew completely (see Figures 1.27 and 1.28).
2. Raise the arms up until they rest on the arm stops.
3. Position the cam so there is 4 inches between its boss and the body (see Figure #1.29).
4. Tighten the retaining bolts of the cam.
5. Lower and raise the arms while running the engine at idle speed and again while running the engine at 1500 RPM.

**NOTE:** The arms should slow when they are approximately 18 in. (45.72 cm) away from the arm stops and gently come to rest against the arm stops.

6. If the arms reach the stops with jarring impact or the arms stop before reaching the arm stops:
   a. Loosen one retaining bolt and tap the cam in the required direction.
   b. Tighten the retaining bolt of the cam and repeat step 5.
7. Attach a container to the forks and repeat steps 5 and 6.
8. Remove the container from the forks and repeat steps 6 and 7 until the arms decelerate with an without a container on the forks.
9. Tighten the locking setscrew.
FIGURE #1.29

4" BETWEEN CAM BOSS AND BODY

FIGURE #1.30

DECELERATION VALVE PLUNGER

FIGURE #1.31

DECELERATION VALVE

CAM BOSS

MAINTENANCE
1.4.14 ARMS DOWN DECELERATION VALVE

Some units are equipped with an arms down deceleration valve. This deceleration valve automatically decelerates the arms as they are lowered. A cam bolted to the arm pivot tube rotates as the arms are lowered and gradually depresses the valve spool, reducing the flow of oil exiting the shaft end of the arm cylinders.

**NOTE:** The deceleration valve greatly reduces impact on the arm assembly, body structure, and hydraulic components.

Location: Fitted to the underside of the body, behind the arm pivot tube on the streetside.

**Adjustment Procedure**

1. Lower the arms down as far as possible.
2. Position the cam so there is 8 inches between its boss and the body (see Figure #1.32).
3. Tighten the retaining bolts of the cam (see Figure #1.33).
4. Raise and lower the arms while running the engine at idle speed and again while running the engine at 1500 RPM.

**NOTE:** The arms should slow when they are at approximately 18 in. (45.72 cm) away from being fully lowered and gently come to rest at the bottom of their travel.

5. If the arms reach the bottom of their travel with jarring impact of the arms stop before being fully lowered:
   a. Loosen the retaining bolt.
   b. Tap the cam in the required direction.
   c. Tighten the retaining bolt of the cam and repeat step 4.

6. Attach a container or carry can to the forks and repeat steps 4 and 5 without a container on the forks.
7. Remove the container from the forks and repeat steps 5 and 6 until the arms decelerate with and without a container on the forks.
8. Tighten the locking setscrew.
1.5 AIR SYSTEM MAINTENANCE

1.5.1 AIR SYSTEM MAINTENANCE PROCEDURE

Air system is crucial for the brakes to operate with maximum efficiency. All air tanks on the chassis must be drained after each working day.

Some units are equipped with an air dryer and/or alcohol evaporator. These devices are used to reduce water in the air system, preventing air components to corrode or to freeze in cold weather.

To perform maintenance on the air dryer and alcohol evaporator, refer to the chassis manufacturer maintenance manual.

To avoid loss of air control on packer blade (especially under cold/wet weather conditions), we strongly recommend to check the following items:

- Ensure that the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to the section 1.1.4 “Lockout/Tagout procedure”).
- Drain all the air tanks daily.
- Change absorbant material in the air dryer twice a year: On this type of equipment the compressor works all the time (Frequent use of break system). As a consequence, a lot of moisture is injected into the air system. See chassis manufacturer recommendations.
- Twice a year, lubricate the air actuator and solenoid valve found on the main valve with light (low temperature) oil.
<table>
<thead>
<tr>
<th>COMPONENT/SYSTEM</th>
<th>DAILY</th>
<th>WEEKLY</th>
<th>EVERY 2 MONTHS</th>
<th>YEARLY</th>
<th>SERVICE/CHECK</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.0 Hydraulic system</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Check oil level in tank and refill if necessary</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Check if ball valve is open on tank</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Check on ground for overnight leaks</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Check cylinders, pump control valve and system for leaks. Repair/replace if required.</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Replace hydraulic filter *</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Drain oil, clean strainer and refill</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Check pressure</td>
</tr>
<tr>
<td>2.0 Cleaning of hopper area</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Open hopper trap on right hand side</td>
</tr>
<tr>
<td></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Clean under and behind the packer blade</td>
</tr>
<tr>
<td>3.0 Perform a visual inspection of the following components:</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Hydraulic cylinders and cylinder pins, hoses, pipes and hydraulic connections, wear of floor and side of hopper.</td>
</tr>
<tr>
<td>4.0 Body and chassis</td>
<td></td>
<td></td>
<td></td>
<td>X</td>
<td>Check for corrosion</td>
</tr>
</tbody>
</table>

* Replace return filter after the first 50 hours of operation
### OPTIMIZER

**PREVENTIVE MAINTENANCE CHART**

<table>
<thead>
<tr>
<th>COMPONENT/SYSTEM</th>
<th>DAILY</th>
<th>WEEKLY</th>
<th>EVERY 2 MONTHS</th>
<th>YEARLY</th>
<th>SERVICE/CHECK</th>
<th>MAINTENANCE MANUAL SECTION</th>
</tr>
</thead>
<tbody>
<tr>
<td>5.0 Proximity switches</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Proper adjustment of proximity switches</td>
<td>1.2.2</td>
</tr>
<tr>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Check and clean area around proximity switches</td>
<td>1.2.2</td>
</tr>
<tr>
<td>6.0 Greasing and lubrication</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Packer and its accessories</td>
<td>2.2</td>
</tr>
<tr>
<td>Grease fittings</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>(See lubrication chart on side of the truck)</td>
<td></td>
</tr>
<tr>
<td>7.0 Light and wiring</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Check for proper operation</td>
<td></td>
</tr>
<tr>
<td>8.0 Controls inside the cab/on the side of the unit</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Check for proper operation</td>
<td></td>
</tr>
<tr>
<td>9.0 Air tanks</td>
<td>X</td>
<td></td>
<td></td>
<td></td>
<td>Drain</td>
<td></td>
</tr>
<tr>
<td>10.0 Pneumatic system</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Check for leaks</td>
<td></td>
</tr>
<tr>
<td>11.0 Safety systems</td>
<td></td>
<td>X</td>
<td></td>
<td></td>
<td>Check for proper operation (tailgate alarm, safety prop warning light ect...)</td>
<td></td>
</tr>
</tbody>
</table>
LABRIE OPTIMIZER

CHAPTER 2.0

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2.0 LUBRICATION

2.1 RECOMMENDED LUBRICANT

2.1.1 HYDRAULIC FLUIDS

Minimum requirement for hydraulic oil:

Viscosity of 320 cSt at 104°F (40°C) and 6.4 cSt at 212°F (100°C).

Must contain anti-wear, and anti-foam additives, rust and oxidation neutralizers and self protecting agents.

Must meet MIL-H-5606 or SAE IOW “MS” standards. The following oils may be used in the Optimizer.

Shell Tellus 32 or T-32

2.1.2 MOTOR OIL FOR VEHICLE

Refer to chassis manufacturer’s maintenance manual.

2.1.3 GREASE

Any lithium-base commercial multi-purpose grease may be used.

*For Nordic regions Shell Tellus T32 is strongly recommended.

CAUTION

DO NOT MIX DIFFERENT BRAND OF OILS IN DOUBT DRAIN AND REFILL WITH NEW OIL.

The hydraulic tank has a maximum capacity of 81 US gallons or 300 litres. FILL THE HYDRAULIC TANK TO 80% OF ITS FULL CAPACITY (Around 65 US Gallons or 240 liters) IN ORDER TO PREVENT OIL SPILL. Refer to section 4.
<table>
<thead>
<tr>
<th>No</th>
<th>Description</th>
<th>Qty</th>
<th>Weekly</th>
<th>Daily</th>
</tr>
</thead>
<tbody>
<tr>
<td>1</td>
<td>Tailgate cylinder rod end</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>2</td>
<td>Tailgate hinge pin</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>3</td>
<td>Fork bushing</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>4</td>
<td>Canopy locks</td>
<td>3</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>5</td>
<td>Fork cylinder pin</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>6</td>
<td>Tailgate lock bushing</td>
<td>6</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>7</td>
<td>Arm cylinder pin</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>8</td>
<td>Arm cylinder pin</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>9</td>
<td>Arm pivot</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>10</td>
<td>Fork cylinder pin</td>
<td>2</td>
<td>✔</td>
<td></td>
</tr>
<tr>
<td>11</td>
<td>Packer cylinder pin</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>12</td>
<td>Packer cylinder pin</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>13</td>
<td>Tailgate cylinder pin</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>14</td>
<td>Tailgate lock mechanism</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>15</td>
<td>Body hinge</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
<tr>
<td>16</td>
<td>Pump shaft</td>
<td>2</td>
<td>✔</td>
<td>✔</td>
</tr>
</tbody>
</table>
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## 3.0 TROUBLESHOOTING SECTION

### 3.1 TROUBLESHOOTING TABLE

Important: at all times when troubleshooting refer to the corresponding sections.

<table>
<thead>
<tr>
<th>PROBLEMS</th>
<th>POSSIBLE CAUSES</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Insufficient packing ratio</td>
<td>1. Low oil pressure</td>
<td>1. Check if oil pressure at relief valve is 2500 PSI or Faulty hydraulic pump (cavitation or wear).</td>
</tr>
<tr>
<td></td>
<td>2. The packer hydraulic cylinders are internally by-passing</td>
<td>2. See section 3.2</td>
</tr>
<tr>
<td>Hydraulic oil is overheating (more than 77°C, + or - 4°C, 180°F for more, + or - 10°F.)</td>
<td>1. Faulty pump or faulty relief valve</td>
<td>1. When the hydraulic oil is cooled off, turn on hydraulic system and work the packer for 2 or 3 minutes. Then touch the pump and relief valve. If they are faulty, they will be much hotter than the other components on the hydraulic system.</td>
</tr>
<tr>
<td></td>
<td>2. Not the proper grade of oil, i.e.: Too thin in hot temperatures or too thick in cold temperatures.</td>
<td>2. See section 2.0 for proper oil to use.</td>
</tr>
<tr>
<td></td>
<td>3. Hydraulic pressure is too high</td>
<td>3. Set the pressure at the relief valve to 2500 PSI</td>
</tr>
<tr>
<td></td>
<td>4. Oil level in reservoir too low</td>
<td>4. Add oil to required level</td>
</tr>
<tr>
<td></td>
<td>5. Contaminated oil</td>
<td>5. Clean the suction strainer, replace the return filter and change oil.</td>
</tr>
<tr>
<td>Oil foaming</td>
<td>1. Air getting into the system</td>
<td>1. Tighten the connections through the hose between the pump and the reservoir</td>
</tr>
<tr>
<td></td>
<td>2. Not the proper grade of oil</td>
<td>2. Empty oil and refill with anti-foam</td>
</tr>
<tr>
<td></td>
<td>hydraulic oil</td>
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</tr>
<tr>
<td></td>
<td>3. Low oil level</td>
<td>3. Refill the reservoir</td>
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### 3.1 TROUBLESHOOTING TABLE (continued)

<table>
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<tr>
<th>PROBLEMS</th>
<th>POSSIBLE CAUSES</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Cavitation, excessive noise from the pump</td>
<td>1. Low oil level</td>
<td>1. Refill the reservoir</td>
</tr>
<tr>
<td></td>
<td>2. Oil too thick</td>
<td>2. Change oil for an appropriate grade of oil according to the ambient temperature.</td>
</tr>
<tr>
<td></td>
<td>3. Dirty strainer</td>
<td>3. Clean and/or change the strainer.</td>
</tr>
<tr>
<td></td>
<td>5. Ball valve partly closed</td>
<td>5. Open the valve completely</td>
</tr>
<tr>
<td>The diaphragm (wear endplate) and/or pump casing and/or gear teeth have grooves on them (Do not take apart a pump that is still covered by warranty).</td>
<td>1. Abrasive wear caused by small particles.</td>
<td>1. Have the strainer, return filter canister been changed as required?</td>
</tr>
<tr>
<td></td>
<td>2. Invisible miniature particles.</td>
<td>2. Is the hydraulic oil clean?</td>
</tr>
<tr>
<td></td>
<td>3. After any repairs was the hydraulics properly cleaned?</td>
<td></td>
</tr>
<tr>
<td>Blue or black valve diaphragm.</td>
<td>1. Oil overheating more than 77 C (180°F).</td>
<td>1. Check to see if the suction on the reservoir is opened.</td>
</tr>
<tr>
<td>Pump casing is cracked.</td>
<td>2. Overpressure.</td>
<td>2. Check if the relief valve is working properly.</td>
</tr>
</tbody>
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### 3.1 TROUBLESHOOTING TABLE (continued)

<table>
<thead>
<tr>
<th>PROBLEMS</th>
<th>POSSIBLE CAUSES</th>
<th>REMEDY</th>
</tr>
</thead>
<tbody>
<tr>
<td>Excessive vertical or as sideway of the packer blade.</td>
<td>1. The packer wear plates have too much wear.</td>
<td>1. Inspect the wear plates as movement (sec 1.0) and replaced if necessary.</td>
</tr>
<tr>
<td>Pump will not engage, the packer will not work.</td>
<td>1. The red (stop) push button was voluntary or accidentally depressed.</td>
<td>1. Fix problem if any prior to lift the red (stop) push button.</td>
</tr>
<tr>
<td>Packer blade will not push the loadout.</td>
<td>1. The tailgate is not fully opened.</td>
<td>1. Open the tailgate completely.</td>
</tr>
<tr>
<td></td>
<td>2. Tailgate “fully opened” limit switch faulty or out of adjustment.</td>
<td>2. Adjust or replace the limit switch.</td>
</tr>
<tr>
<td>Packer blade is not working when pressing the green button</td>
<td>1. No electrical power reaches the solenoid valve</td>
<td>1. Check for power source on the solenoid valve (located in the console).</td>
</tr>
<tr>
<td></td>
<td>2. Solenoid valve is faulty.</td>
<td>2. Check for melted fuses.</td>
</tr>
<tr>
<td></td>
<td>1. Open the tailgate completely.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Adjust or replace the limit switch.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>1. Check for power source on the solenoid valve (located in the console).</td>
<td></td>
</tr>
<tr>
<td></td>
<td>2. Check for melted fuses.</td>
<td></td>
</tr>
</tbody>
</table>
3.2 INTERNAL LEAK DETECTION FOR CYLINDERS

An internal leak is caused by a damaged seal inside the hydraulic cylinder. Because the cylinder is leaking oil inside (bypassing), a certain amount of pressure is lost reducing the cylinder efficiency and its capacity to push or pull.

If the packer cylinders are bypassing, the seal inside the cylinder may require to be replaced. If an internal leak is suspected, apply the following procedure to verify it:

**INTERNAL LEAK DETECTION FOR CYLINDERS**

1. Apply all safety measures to ensure safety around the vehicle at all times.
2. Ensure that the parking brake is applied.
3. Pull out the Emergency Stop Button (red).
4. Start the engine and engage the hydraulic pump.
5. Fully extend the packer cylinders.
6. Disengage the hydraulic pump.
7. Disconnect the hose at end A.
8. Plug the end of the disconnected hose.
10. If oil leaks out of end A, there is an internal leak. Replace damaged parts.

**FIGURE #3.1**
3.3 TAILGATE LOCKING MECHANISM TROUBLESHOOTING

The tailgate locking mechanism is equipped with hydraulic safety systems that prevent accidental unlocking of the tailgate during operation. One of the systems is the velocity fuse with the "power bleed" and the other is the holding valve. The spool inside the tailgate section of the valve is designed in such a way, that it will allow pressure to pass through it each time the pressure is building up in the hydraulic system (i.e.: when the packer is working). The pressure "burst" goes to the holding valve into port "D1" and then out to the cylinder by port "U1". This will keep the tailgate cylinders pressurized and the tailgate closed when packing material.

The velocity fuse, located on the valve (Figure #3.3), will make sure to drain any slow moving oil coming from the piston side of the tailgate cylinders. Since the rod side is being pressurized with the "Power bleed" system, the other side has to drain to avoid any pressure build-up. The velocity fuse makes the piston side open to tank when the oil is moving under 3 gallons per minute and will shut when a flow signal is sent.

NOTE: Refer to the main hydraulic schematic.
### 3.3 TAILGATE LOCKING MECHANISM TROUBLESHOOTING (cont’d)

**Problem #1:** Tailgate is UNLOCKING by itself

If the tailgate seems to unlock by itself when using the packer, the “power bleed” inside the valve might not work on the right side of the hydraulic cylinder. Apply the following procedure:

1. Apply all safety measures to ensure safety around the vehicle at all times.

2. Ensure that the parking brake is applied.

3. Pull out the Emergency Stop Button.

4. Install a pressure gauge on each port of the tailgate section on the valve, as shown on figures # 3.3, 3.4 and 3.5.

5. Start the engine and engage the hydraulic pump.

6. Lift the forks completely to pressurize the system.

7. Gauge #1 should always indicate 0 PSI and gauge #2 should indicate a sudden pressure burst between 0 PSI to 3000 PSI each time the packer reaches the end of a stroke.

8. If gauge #1 indicates pressure, this may be caused by a faulty holding valve, faulty velocity fuse or hydraulic hoses not properly connected. Refer to the main hydraulic schematic for proper connection.

---

**FIGURE #3.4**

**FIGURE #3.5**

NOTE: The figures above show only the places where to install the gauges. To install these gauges, use appropriate fittings.
Problem #2: Tailgate is LOWERING by itself

One other problem that may be found on the tailgate hydraulic system is that it would lower by itself. A faulty velocity fuse might be involved. Apply the procedure below in order to verify and/or replace the velocity fuse.

TAILGATE HYDRAULIC TROUBLESHOOTING

1. Apply all safety measures to ensure safety around the vehicle at all times;

2. Ensure that the parking brake is applied;

3. Remove the velocity fuse (Figure #3.3) and verify that it is clean and that the plunger is moving freely. A new velocity fuse may be necessary.
3.4 MAIN HYDRAULIC SCHEMATIC
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Table of contents

CHAPTER 4.0

LABRÉE OPTIMIZER
4.1 HYDRAULIC HOSES AND PIPES ON CHASSISS

4.1.1 HOW TO ORDER

When ordering hydraulic components, always specify the following:

1. Type of transmission, e.g., Allison M3560
2. Type of chassis with wheel configuration, e.g., Peterbilt A320 6x4
3. Type of body
   - 40 cubic yards
   - Other
4. Body serial number: e.g., FL98HHA

OPTIMIZER
4.1.2 HYDRAULIC PIPING TANK TO PUMP
(PETERBILT A320 4*2)
### 4.1.2 HYDRAULIC PIPING TANK TO PUMP (PETERBILT A320 4*2)

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<td>36079</td>
<td>DRAIN VALVE HOSE</td>
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4.2 PUMPS, VALVES AND HYDRAULIC TANK
4.2.1 HYDRAULIC TANK
### 4.2.1 HYDRAULIC TANK

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NOTE: FITTINGS VARY ACCORDING TO TRUCK CONFIGURATION.
## 4.2.2 MUNCIE HYDRAULIC PUMP

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4.2.3 MAIN VALVE
### 4.2.3 MAIN VALVE

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</table>
CHAPTER 5.0

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5.0 BODY AIR SYSTEMS, PARTS AND DIAGRAMS

5.1 INTRODUCTION

This section contains a diagram presenting the pneumatic system of an Optimizer™ body.
CHAPTER 6.0

ELECTRIAL OPTIMIZER
6.0 ELECTRICAL SYSTEMS

6.1 ELECTRICAL SCHEMATICS

All the electrical schematics needed to troubleshoot and repair your Optimizer™ unit are provided with the truck. They are located inside the cab console. For further assistance, call Labrie Environmental Group Customer Support Center at 1-800-231-2771.

6.2 DELASTEK MODULE

All the electrical systems are controlled by a module located inside the cab console. This module is also used to send troubleshooting data to Labrie Environmental Group.

FIGURE #6.1

(Figure #6.1)