



WITTKE

Xpress

Maintenance Manual

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Reward!

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If you are the first, you will receive a hat by return mail.

- I believe I found an error:
- In the _____ manual | Part No. _____ | Page(s) _____
- It should say: _____
- Name: _____ Address: _____



THANKS FOR YOUR HELP!

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CAPSCREW MARKING AND TORQUE VALUES

Usage	Much Used	Used at Times	Used at Times
Capscrew Diameter & Minimum Tensile Strength PSI	To 3/4 - 120,000 To 1 - 115,000	To 5/8 - 140,000 To 3/4 - 133,000	150,000
Quality of Material	Min. Commercial	Med. Commercial	Best Commercial
SAE Grade Number	5	6 or 7	8
CAPSCREW HEAD MARKINGS Manufacturers marks may vary. These are all SAE Grade 5 (3-line.) 		 	
Capscrew Body Size (Inches) - (Thread)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)	Torque Ft-Lb (kg m)
1/4 - 20	8 (1.11)	10 (1.38)	12 (1.66)
- 28	10 (1.38)		14 (1.94)
5/16 - 18	17 (2.35)	19 (2.63)	24 (3.32)
- 24	19 (2.63)		27 (3.73)
3/8 - 16	31 (4.29)	34 (4.70)	44 (6.09)
- 24	35 (4.84)		49 (6.78)
7/16 - 14	49 (6.78)	55 (7.61)	70 (9.68)
- 20	55 (7.61)		78 (10.79)
1/2 - 13	75 (10.37)	85 (11.76)	105 (14.52)
- 20	85 (11.76)		120 (16.60)
9/16 - 12	110 (15.21)	120 (16.60)	155 (21.44)
- 18	120 (16.60)		170 (23.51)
5/8 - 11	150 (20.75)	167 (23.10)	210 (29.04)
- 18	170 (23.51)		240 (33.19)
3/4 - 10	270 (37.34)	280 (38.72)	375 (51.86)
- 16	295 (40.80)		420 (58.09)
7/8 - 9	395 (54.63)	440 (60.85)	605 (83.67)
- 14	435 (60.16)		675 (93.35)
1 - 8	590 (81.60)	660 (91.28)	910 (125.85)
- 14	660 (91.28)		990 (136.92)

NOTES:

1. Always use the torque values listed above when specific torque values are not available.
2. The above is based on use of clean, dry threads.
3. Reduce torque by 10% when engine oil is used as a lubricant.
4. Reduce torque by 20% if new plated capscrews are used.
5. General Formula for calculating Torques is as follows: Torque in Inch Lbs. = .2 x Nominal Diameter of Screw x Loads in Lbs., where Load = 80% of Yield Strength, expressed in Lbs., not pounds per square inch.



Introduction

About This Manual

This manual contains information regarding the correct maintenance of your WITTKE XPRESS™ garbage truck. Maintenance personnel should read and understand this information before doing repairs and maintenance on the vehicle. For information on how to safely and efficiently operate the WITTKE XPRESS™, please refer to the related *Operator's Manual* that is provided with your unit.

Topics Not Included in this Manual

Maintenance of the chassis

This is dealt with in the chassis manufacturer's service manual.

Cameras and backing-accident prevention systems

For these options, refer to the appropriate manufacturer's service manual.

Operating the WITTKE XPRESS™

For procedures related to the operation of the WITTKE XPRESS™, please refer to the *Operator's Manual*.

Parts and assemblies

For parts and assemblies that make up the WITTKE XPRESS™, and for their respective part number for ordering purposes, please refer to the *WITTKE XPRESS™ Parts Manual*.

About the Illustrations in this Manual

Because Labrie Environmental Group is constantly updating its products, illustrations used in this manual may differ from those of the actual product and accessories, depending on the model or options that come with your vehicle.

Schematics

For schematics related to body parts, refer to the *WITTKE XPRESS™ Parts Manual*.

For electrical schematics, refer to the schematics provided with your WITTKE XPRESS™ unit.

As for pneumatic and hydraulic schematics for your WITTKE XPRESS™ unit, copies are available from LabriePlus Service Department.

NOTE: A number of system schematics are included in this manual.

Warranty Registration Form

Do not forget to complete the owner registration form and to send it to Labrie Environmental Group. Make sure to fill out the in-service date. This date will be used as the start date of the warranty period. If the in-service date is not indicated, the warranty period will start 30 days after the delivery date.

Introducing the WITTKE XPRESS™

WITTKE XPRESS™ units are side-loading refuse collection vehicles used to pick up commercial, industrial and residential containers.

The WITTKE XPRESS™ sets a new benchmark in the commercial side-loader market by integrating industry-leading technology from Labrie's AUTOMIZER™ side loaders with the proven durability of WITTKE™ engineering. Designed for efficiency, strength, and adaptability, the XPRESS™ combines advanced body and arm technology with superior weight distribution, high-performance automation, and enhanced durability.

With capacities ranging from 23 yd³ to 35 yd³, and a state-of-the-art ENVIROLINK™ Multiplex System, the Xpress™ is engineered to streamline operations, improve accessibility, and maximize efficiency for the most demanding collection routes.

Key Features of the WITTKE XPRESS™

Body Side Mounted Hydraulic Valve

WITTKE XPRESS™ units are equipped with a standard streetside main control valve installed behind a hinged protective cover. This valve is controlled by an electric-over-hydraulic control system and plumbed with zinc-coated steel hydraulic lines to prevent corrosion, minimize heat, and reduce maintenance points.

Side mounted hydraulic valves reduce heat soak from engine exhaust when compared to front body installations, prevent damage from debris being packed into the body, and provide easier access for service and maintenance personnel.

Abrasion Resistant Steel

WITTKE XPRESS™ units are made from high-quality materials. Strong and durable yet light, abrasion resistant steel is used in the body, the packer, the hopper and the tailgate. Abrasion resistant steel is light by design and features 5 times more abrasion resistance than mild steel. It is the ideal material to build a body that needs to be extremely rugged without giving up payload.

Such high-quality materials are used to result in savings on maintenance costs over the life of each unit. WITTKE XPRESS™ units are also designed to achieve higher legal payloads. This results in more efficient routes and increased revenue, even in the most extreme collection applications.

Tailgate Auto-Latch

A tailgate that doesn't require any vertical movement to lock and seal will prevent additional stress and damage to the tailgate seal and improve its longevity.

The tailgate on the WITTKE XPRESS™ truck closes straight down and locks without any added friction that may cause premature wear. WITTKE XPRESS™ uses a rock-solid design which optimizes tailgate seal longevity.

Single Piece Body Side Sheet Construction

WITTKE XPRESS™ units feature a single piece of abrasion resistant steel in their body wall construction for increased strength and the fewest number of welded seams possible. Reducing welded seams results in fewer points for corrosion and extends the life of the body. These seamless body sides also provide the perfect surface for branding, graphics, and sign boards.

Packer Cylinders

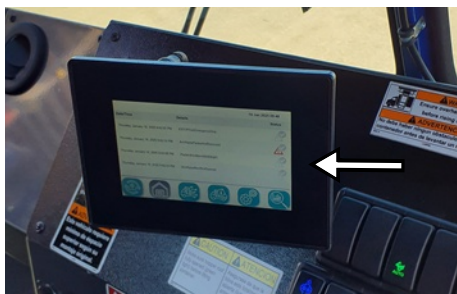
Packer cylinders feature improved sealing, nitrated rods, and integrated shavers to reduce contamination. Bulkhead-mounted grease points offer easier access for fast, efficient maintenance.

ENVIROLINK™ Multiplex System

Labrie has equipped your WITTKE XPRESS™ unit with a CAN bus-based multiplex system, which integrates a monitor, a control panel, a joystick, and 2 electronic controllers. This whole system has been designed to help you operate your unit in an efficient and easy way. The ENVIROLINK™ Multiplex System is reliable and safe and it requires less wiring harnesses to operate. It can also monitor various function status of the body and display warning and caution messages.

Through its monitor (see Figure 1-1), the ENVIROLINK™ Multiplex System informs you of any malfunctions that may occur during the operation of the truck. Various caution and warning messages can be displayed on the monitor, depending on the seriousness of the situation. Yellow-highlighted messages indicate that caution should be used while red-highlighted messages indicate a warning situation that must be dealt with quickly.

Figure 1-1 ENVIROLINK™ Monitor



Service and Maintenance on the WITTKE XPRESS™

Maintenance on the WITTKE XPRESS™ is of paramount importance to ensure long-lasting durability of all its moving parts as well as optimum performance in heavy work. Maintenance has to be done on almost every system involved in the operation of the WITTKE XPRESS™, such as the hydraulic, electrical and mechanical systems. Some parts are subjected to more wear and tear than others. Therefore, these parts need regular maintenance and routine check-up to prevent signs of deterioration as soon as possible.

NOTE: Any time you have a problem with a Labrie unit, you should contact your Labrie authorized dealer first. They should be able to provide you with the proper help that you need, whether it is for parts or technical service.

In this manual you will find the most common maintenance and inspection procedures required for the WITTKE XPRESS™.

Parts

Labrie refuse vehicle parts are offered exclusively through Labrie*Plus* and Labrie*Plus* authorized dealers. The quality and reliability of Labrie parts are second to none in the industry.

Warning

Your WITTKE XPRESS™ unit **MUST BE COMPLETELY LUBRICATED** before its first use. Refer to the lube chart (see Figure 1-2) on the left side of the truck to know where the lubrication points are located on the vehicle and how often the parts should be lubricated.

Figure 1-2 Lube chart



Initial lubrication carried out by Labrie Environmental Group is sufficient for production and transport purposes **ONLY**.

With your safety in mind, we would like to remind you that **ONLY QUALIFIED PERSONNEL** should service the hydraulic, electrical, and pneumatic systems of your WITTKE XPRESS™ unit. In addition, they should also be fully knowledgeable of the operation of this unit. Please read the *Operator's Manual* carefully prior to attempting any maintenance work on your WITTKE XPRESS™ unit.

IMPORTANT: WITTKE XPRESS™ units must be operated by only one operator.

WITTKE XPRESS™ Basic Maintenance

WITTKE XPRESS™ refuse bodies require routine maintenance to ensure product longevity as well as dependability. Various components have specific needs. A detailed portion of these items is listed below:

1) Packer Wear Pads and Guides

One of the most commonly overlooked wear items involves the packing system.

The packer wear pads and floor guides have a life which requires proper maintenance. Improperly maintained packers can result in, but are not limited to: holes worn in the floor liner and/or floor itself, binding of the packing assembly due to uneven wear against the hopper side walls, etc.

For proper packer wear diagnosis and servicing, please go to Chapter 8.

2) Lubrication

Your WITTKE XPRESS™ unit **MUST BE COMPLETELY LUBRICATED** before its first use.

Initial lubrication carried out by Labrie Environmental Group is sufficient for production and transport purposes **ONLY**.

All moving parts require lubrication for continued operation, longevity and dependability.

Maintenance intervals should be adjusted according to the truck's route or duty cycle. Proper greasing ensures the maximum life from the moving parts as it flushes out water and contaminants from the joint.

When greasing it is important to understand that providing the proper amount of grease is a delicate balance between over greasing, which can result in seal damage as well as wasted lubricant. Only pump enough grease until the air purges from the joint. Commonly, a "popping" sound can be heard as the old grease begins to evacuate the seal. Equally important is to remove the excess grease from the component you are maintaining. Leaving the excess grease will attract dirt and contaminants which could work themselves into the joint causing potential future issues.

3) Body

The body contains grease fittings for every operating cylinder as well as all linkages.

Without proper lubrication and maintenance, these parts can become seized, galled, and/or break resulting in equipment damage or injury.

4) Hydraulic Fluid and Filter

Hydraulic fluid is the lifeblood of the WITTKE XPRESS™ refuse body. Regular maintenance of the hydraulics will ensure long, trouble-free life.

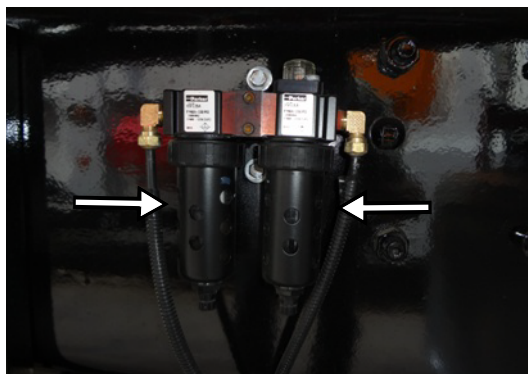
As directed in all service training, the hydraulic filter needs to be replaced **after the initial 50 hours of new truck operation and then again every 6 months**, or when the filter restriction gauge is in the yellow. **The hydraulic fluid needs to be replaced once a year** along with the suction screen being removed, inspected, cleaned and/or replaced.

5) Air Filters

Only Wittke Xpress™ trucks equipped with washout tanks or air wash cameras feature a factory-installed air filter assembly, which includes both water and coalescing filters.

These filters need to be changed every 1000 hours to ensure proper function of the pneumatic system. Failure to service these filters will result in a contaminated and problematic air system.

Figure 1-3 Air filter assembly



6) Hardware

Hardware needs to be verified that it is present and tight. Loose or missing hardware can cause severe damage and/or unsafe operational conditions.

7) Proximity and Limit Switches

Proximity and limit switches are used to limit travel of moving parts and/or to ensure conditions are safe for operation.

If these switches are not adjusted properly, damage to the equipment may occur as well as poor or dangerous functionality.

8) Leaks

Verify that there are not any leaking hydraulic cylinders, hoses, tubes, valves, or pumps. Leaks in the hydraulic system are an indicator of possibly overheating hydraulics, damage to a seal, over-pressurization, or general wear. To avoid costly and premature replacement of parts, ensure all leaks are addressed properly and timely.

9) Cracks

Ensure that there are not any cracks forming along the hopper floor edge, body, tailgate, and mast. This is an indicator that something is worn, not adjusted properly or damaged.

10) Bushings/Bearings

Check for play in any bushing or bearing. This may require the use of a pry bar or a lifting device.

2

Safety

Safety is always of prime importance when servicing any type of equipment. All maintenance personnel working on the WITTKE XPRESS™ side-loader garbage truck must be aware of the safety practices and features detailed in this chapter.

Conventions

Danger!



Indicates a hazardous situation which, if not avoided, **will** result in serious injury or death.

Warning!



Indicates a hazardous situation which, if not avoided, **could** result in serious injury or death.

Caution!



Indicates a hazardous situation which, if not avoided, may result in **minor or moderate injury**.

Basic Safety Notions

The following safety notions are related to the maintenance of the WITTKE XPRESS™. It is important to point out that the safe servicing of the vehicle remains the mechanic's responsibility. He must heed all safety notions explained in this manual as well as warning decals on the truck.

Danger!



Always be aware of your surroundings to ensure that neither people nor vehicles are in any way exposed to any danger caused by the use of the WITTKE XPRESS™.

Danger!

Never get in the hopper area when the engine is running.
Only authorized personnel may do so following a lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).

Responsibilities

Safety is everyone's responsibility. Employers and employees must both play their part to ensure a safe work environment for everyone.

Employer's Responsibilities

It is the responsibility of the employer:

- ◆ To ensure that the WITTKE XPRESS™ is operated according to all applicable safety requirements, codes, and regulations, including the Occupational Safety and Health Act (OSHA) and the American National Standards Institute (ANSI).
- ◆ To ensure that employees are qualified to operate and service the vehicle and its equipment, and that they take safety measures before working on or around them.
- ◆ To properly maintain all mobile equipment to meet all provincial/state and federal safety standards.
- ◆ To provide maintenance personnel with the knowledge and skills necessary to safely operate the vehicle and its equipment.
- ◆ To keep the vehicle maintained and properly adjusted to meet the manufacturer's standards and recommendations. For help or for more information, please contact the manufacturer or any of its authorized representatives.
- ◆ To keep records of all vehicle breakdowns and malfunctions, as well as any inspection and maintenance.
- ◆ To ensure that all failures or malfunctions that may be affecting the safe use of the vehicle are repaired before the vehicle is put back into operation.
- ◆ To make sure that the backup alarm works properly when the vehicle is in reverse.
- ◆ To take necessary measures to correct any damage or malfunction reported by an employee.
- ◆ To establish a "lockout/tagout" procedure and ensure its application any time the vehicle is inspected, repaired, or maintained, whether on the road or in the garage.
- ◆ To monitor employees' operation of equipment (including adherence to safety practices) through periodic and regular inspections.
- ◆ To meet the appropriate lighting requirements for night shift work, if permitted.
- ◆ To make sure that the access door is maintained in place and is equipped with a functioning safety interlock switch while the vehicle is in use.

Employee's Responsibilities

It is the responsibility of the employee to follow these guidelines:

- ◆ Enforce all safety measures to meet the employer's requirements.
- ◆ Carefully read this manual.
- ◆ Obey proper operating procedures, safety guidelines and warning decals.
- ◆ Ensure that you have been provided with safe operating and/or maintenance service training and procedures by your employer prior to operating the vehicle or performing maintenance service.
- ◆ Make sure that nobody is near the vehicle before activating any of the controls and to be prepared to stop at any indication of possible danger.
- ◆ Use the vehicle only as intended.
- ◆ Perform a daily vehicle inspection that includes all operating systems, all vehicle safety equipment and safety decals. Ensure that the inspection is documented and bring any defects to the attention of your supervisor.
- ◆ Ensure the access door is latched with a functioning safety interlock switch.
- ◆ Make sure all safety interlock systems are functioning properly.
- ◆ Prior to operating the vehicle, ensure that all mirrors, windows and lights are clean and properly adjusted. Ensure that all cameras and monitors, if installed, are properly adjusted and function correctly.
- ◆ Do not operate machine in an unsafe manner.
- ◆ Use extreme caution when operating machine in dangerous areas such as: slopes, overhangs, high walls, ridges or ditches.
- ◆ During all phases of the collection process, ensure area is clear of persons.
- ◆ Instruct persons not to cross under open tailgate.
- ◆ Keep hands, floors, and controls free from water, grease, and mud to assure non-slip control.
- ◆ Do not leave machine unattended. All keys from the equipment control panel should be removed.
- ◆ Do not park vehicle with tailgate in the UP position.
- ◆ On your daily route, or during your service duties, stay safe; obey all safety decals and safe operating procedures. Watch for other people, obstructions and overhead hazards (e.g. power lines).
- ◆ Before moving or operating machine, including tailgate, make sure area is clear.
- ◆ Always utilize the vehicle's safety features, such as tailgate props.
- ◆ Before opening tailgate, make sure no one is behind the truck.
- ◆ Do not walk or stand under an open tailgate.
- ◆ Tailgate area must be clear before dumping.
- ◆ Shut down vehicle when cleaning, servicing, adjusting and lubricating equipment (see *Locking Out and Tagging Out the Vehicle* on page 24).
- ◆ Be alert for falling or flying objects.
- ◆ Remember to wear all safety equipment prescribed by your employer (safety glasses, gloves, footwear, etc.).
- ◆ Enforce all safety measures to meet the requirements set by the employer.

- ♦ While machine is running, do not enter any pinch area. Do not enter refuse body.
- ♦ Your unit is equipped with proximity/limit switches to ensure your safety. Periodic inspection and testing of these switches are essential to prevent injury or death. **NEVER DISABLE OR BYPASS THESE SWITCHES.**
- ♦ Listen for strange or above normal sounds when machine is being moved or operated. Shut down machine when safe to do and report problems to your supervisor.
- ♦ Sound horn before moving vehicle.
- ♦ Do not operate vehicle if gauges and indicator lights are not working properly.

IMPORTANT: Under no circumstances should you operate damaged or malfunctioning equipment. Report all malfunctions to your supervisor immediately.

IMPORTANT: Be extremely cautious in areas where small children may be present.

- ♦ When two or more people are testing a hydraulic system, be sure that each person is informed of the procedure to be followed. Avoid contact with rotating couplings between hydraulic motors, pumps, power-take-offs, etc.
- ♦ Hydraulic oil under pressure can be dangerous. Care should be taken when bleeding or opening a high pressure line (release pressure slowly), as a thin stream of oil can inflict injury. Unauthorized pressure settings of relief valves can burst lines, valves, pumps or cylinders.
- ♦ If repairing tailgate, packer panel, cylinders, mast, etc., provide proper supports or safety chains to prevent these heavy component parts from slipping or falling. This could cause damage to the unit and/or severe injury to the person making the repairs.
- ♦ Make sure that the working area is clear of any people or possible obstructions.
- ♦ Check for explosive trash (e.g. television sets, paint cans, fluorescent light tubes, etc.).
- ♦ Use caution when driving with an unevenly distributed load.
- ♦ Always use the body safety prop when servicing under the body (this applies only to units equipped with a service hoist).
- ♦ Always use the tailgate safety prop before entering the area between the main body and the tailgate.
- ♦ Do not operate or service any vehicle while under the influence of alcohol, narcotics or other intoxicants.
- ♦ Do not talk on a cell phone or listen to loud music while driving.
- ♦ Do not wear jewelry or loose clothing.
- ♦ Do not leave the vehicle before it is brought to a complete stop and the work brake or parking brake is applied.
- ♦ Do not enter the hopper or main body unless the engine is shut off, the key is removed and there is an out-of-service tag on the steering wheel (see *Locking Out and Tagging Out the Vehicle* on page 24).
- ♦ Do not hoist the body on uneven ground (this applies only to units equipped with a service hoist).
- ♦ Do not back up the vehicle when the body is raised (this applies only to units equipped with a service hoist).
- ♦ Do not drive with the tailgate fully open unless it is to unload refuse at the landfill.

- ♦ Do not use the body safety prop to prop a *loaded* body (this applies only to units equipped with a service hoist).

Safety Controls

Safety should be your number one priority. Before servicing the WITTKE XPRESS™, the mechanic must be fully familiar with the location, operation, and function of all controls and indicators related to operating the unit.

General Precautions

Warning!



Prior to its first use, your WITTKE XPRESS™ *must be completely lubricated*. Initial lubrication carried out by Labrie Environmental Group is sufficient for production and transport purposes *only*!

Danger!



Do not ride, sit or stand on unit. Riding on unit could result in bodily harm or fatal injury. Use extreme caution when unit is in use or in motion.

Danger!



Operator and maintenance personnel must adhere to the following precautions *at all times*. Failure to do so may result in vehicle and/or property damage, personal injury, or even death.

- ♦ *Only* qualified personnel should service this vehicle, especially for the hydraulic, electrical and pneumatic systems.
- ♦ Before servicing this vehicle, read and fully understand this manual and all safety decals. Maintenance personnel must also read the WITTKE XPRESS™ *Operator's Manual*. If you have any questions, ask a supervisor for clarification.
- ♦ Training is mandatory before servicing the WITTKE XPRESS™.
- ♦ The body and packing system of a WITTKE XPRESS™ unit—including any systems that could endanger public and/or operator safety—should be inspected daily.
- ♦ Check that the truck's accelerator pedal, steering wheel, mirrors, brakes, lights, horns, back-up alarms and turn signals are in proper working order.
- ♦ Never operate the WITTKE XPRESS™ with damaged or missing safety decals. Replace them immediately.
- ♦ Keep both hands on the steering wheel at all times while driving the vehicle.
- ♦ Stop the vehicle completely and set the parking brake before leaving the driving position.
- ♦ When the vehicle is parked, the parking brake *must* be applied.

- ◆ Always wear proper safety equipment when servicing the unit.
- ◆ Before activating the lifting mast, maintenance personnel must ensure that people and obstructions are far away from the vehicle. They must also be able to stop the mast at any time.
- ◆ Do not operate this vehicle if there are any signs of damage or incomplete repairs.
- ◆ Avoid operating the unit if excessive vibration is detected.
- ◆ Report any doubts or safety service requirements regarding this vehicle to a supervisor.
- ◆ Do not run engine in an enclosed area.
- ◆ Do not place hands or feet near moving or rotating parts.
- ◆ For any maintenance, cleaning or inspection work, the vehicle *must* be on solid level ground.
- ◆ If any safety devices such as proximity/limit switches are not in proper working order, the unit must be taken out of service until the device is properly repaired.
- ◆ Always check for damage or leakage. In case of damage/leakage, the unit must be taken out of service for immediate repair.
- ◆ Do not smoke near the vehicle.
- ◆ Do not get into the hopper compartment or try to repair anything behind the packer when it is moving or when the hydraulic pump is still running. Personnel authorized to get into the hopper *must* first lock out and tag out the vehicle, as required by the employer. For more information, see *Locking Out and Tagging Out the Vehicle* on page 24.
- ◆ Do not operate mast until you know it is clear.
- ◆ Do not leave unit unattended while in operation.
- ◆ Do not park unit on a slope.
- ◆ Follow PTO and engine manufacturer's operating and maintenance instructions.
- ◆ Often check fuel lines and fittings for cracks and leaks. Replace if necessary.
- ◆ Mast and tailgate will fall if hydraulic pressure is lost. Do not walk or stand under the mast or tailgate.
- ◆ WITTKE XPRESS™ vehicles are primarily designed to be operated *by only one person*. However, if a Labrie Environmental Group customer chooses to operate the vehicle with more than one person, additional safety features must be installed to protect the additional worker from hazardous situations.

IMPORTANT: Labrie Environmental Group *must be informed of any units that will be operated by more than one person. We will then determine and supply the required safety items at the customer's expense. For more information, please contact LabriePlus at 1-877-452-2743 in Canada or 1-800-231-2771 in the U.S.*

- ◆ When removing nylon lock nuts, *always* replace them by new ones.
- ◆ *Never* drive this vehicle with the tailgate unlocked.
- ◆ For any work (including cleaning and inspecting) that has to be done between the body and the chassis, *always* use the body safety prop (this applies only to units equipped with a service hoist). Also, the vehicle *must* be on level ground.

- ◆ Before opening and closing the tailgate and/or raising the body (in the case of a unit equipped with a service hoist), make sure that there is no one behind the vehicle.

NOTE: Report any problems to your supervisor and **DO NOT OPERATE** this unit if not functioning properly. Contact Labrie Enviroquip Group if new switches or safety decals are needed.

- ◆ If your unit is equipped with a ladder, apply the following safety measures:
 - Do not use the ladder if it is defective or in poor condition.
 - Do not use the ladder if you have a medical condition that prevents you from climbing.
 - Always inspect the ladder before climbing.
 - Make sure the ladder is clear and free of any substance that could make it slippery.
 - Always use the 3-points of contact rule when climbing or descending the ladder.
- ◆ *Never, under any circumstances (maintenance or otherwise), stand underneath a loaded body.*

Warning!



Do not operate the lifting mast until you have been fully trained, and have read and understood both the *Operator's Manual* and the *Maintenance Manual* supplied with this unit.

Warning!



Make sure that all people and obstructions are sufficiently cleared from the lifting mast before moving it. Failure to do so may result in unit and/or property damage, personal injury or death.

Warning!



Ensure there is sufficient clearance between raised containers and overhead power lines. Neither the lifting mast nor the container should come into direct contact with electrical cables, otherwise power will go through the unit. If the unit comes into contact with a power line, remain in the cab and stay away from any metal parts.

Warning!



Always retract the lifting mast before circulating with the vehicle. Failure to do so will result in unit and /or property damage, severe injury or even death.

Caution!



Make sure the top door is fully open before lifting a container.

Warning!

When servicing the truck, all post-repair functional tests must be carried out when no one is in the danger zone of the packer. It is also forbidden to be in the packer's danger zone without the truck being locked out and tagged out. Failure to do so could result in serious injury or death.

Warning!

Never put a truck back into service if one or more interlocks have been deactivated. Failure to do so could result in serious injury or death.

Warning!

A truck should not be put back into service if any part, safety device or hardware is missing as it may compromise workers' safety and violate the labor standards legislation. Failure to do so could result in serious injury or death.

Warning!

Inspect hydraulic hose crimps. Replace hoses if they show signs of rust, cracks, abrasion or wear. Failure to do so could result in spills, burns, or serious injury.

Warning!

Inspect hydraulic lines and bushings. Replace lines if rust, cracks or abrasion are present. Failure to do so could result in spills, burns, or serious injury.

Warning!

The EMERGENCY STOP button must *always* be in working order. Never operate a truck with a defective EMERGENCY STOP button. Failure to do so could result in serious injury or death.

Welding

Danger!



Remove paint before welding or heating. Do not weld near lines that are pressurized or contain flammable fluids.

Caution!



Disconnect all batteries and electronic modules prior to welding on packer body.

If welding hydraulic equipment, care should be exercised so that accumulated dirt and oil do not become ignited. Cleaning the area before welding would be a good practice. Keep fire extinguisher close to working area. Good housekeeping is a must.

Gasoline fuel tanks should be removed and located outside of the welding area. Diesel fuel tanks should be covered with a wet tarp to prevent fumes from causing an explosion or fire. If the battery of the truck is located near the repair area where sparks could fall on the battery, the acid fumes could cause the battery to explode.

If it becomes necessary to weld or braze a hydraulic reservoir, hydraulic oil when sufficiently heated and in the presence of air is a powerful explosive. Any method of brazing, welding, or open flame soldering without proper preparation is hazardous.

Safety equipment should be worn when working under conditions that require its use.

Fire

The employer must inform and train all personnel on the measures that must be taken in case of a vehicle and/or a loaded body catching fire.

Anytime a loaded vehicle is *brought inside a garage*, fire extinguishers shall be close at hand.

Danger!



Do not perform any repair or maintenance on a vehicle that has not been unloaded.

The employer must also inform employees of an appropriate place to unload the body near the maintenance facility (preferably away from traffic, surface drains, and ditches).

WITTKE Xpress™ vehicles are equipped with a 5-lb fire extinguisher, which is located inside the cab. A 20-lb fire extinguisher may also be installed as an option. Each fire extinguisher must be checked regularly by qualified personnel.

Figure 2-1 5-lb fire extinguisher (left) and 20-lb fire extinguisher (right)



Safety Kits

A first aid kit and a flare kit are provided with the truck.

Safety and Informative Decals

Pay careful attention to all safety, warning and informative decals while working in and around the WITTKE XPRESS™. Keep your decals clean and in good condition at all times. For replacement decals, please call LabriePlus. Decals may vary from one unit to another depending on the options and features installed on the unit. For an illustrated list of decals pertaining to most WITTKE XPRESS™ units, refer to the WITTKE XPRESS™ Parts Manual.

Safety Features

Centralized Grease Block

Refer to “Packer Remote Grease Fittings (Optional)” on page 33.

Global Motion Sensors (Optional)

These tailgate-mounted sensors set the parking brake and sound a buzzer when an obstruction is detected behind the unit. Consult the OEM for more information.

Back Up Alarm

The back up alarm sounds when the transmission is put into reverse or when the tailgate opens.

Tailgate Safety Prop

The tailgate safety prop is used to support and keep the tailgate open during inspection or maintenance procedures. It is mandatory to set the safety prop every time the tailgate is open for such purposes.

IMPORTANT: Make sure that the body is empty before installing the safety prop.

Danger!



The tailgate safety prop must be set each time the tailgate is open for inspection or maintenance purposes.

Setting the Tailgate Safety Prop

To set the tailgate safety prop:

1. Make sure that the body is empty.
2. Remove the tailgate-locking safety pins.

Figure 2-2 Safety pin (in storage position, left; in locking position, right)



3. Start the engine.
4. Turn ON the pump.

Danger!



Prior to raising the tailgate, make sure that no one is standing behind the vehicle and that the body is empty.

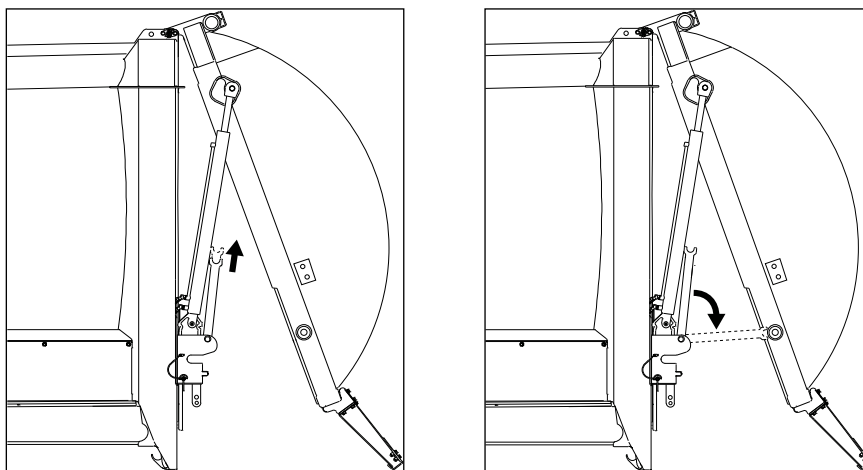
5. With the TAILGATE UP switch on the in-cab control panel, raise the tailgate until the safety prop can swivel into service position (see Figure 2-3).

6. Pull the safety prop upward and set it down (see Figure 2-3).

Danger! Stand clear of the tailgate path while setting the safety prop.



Figure 2-3 Pulling safety prop upward (left) and setting it down (right)



7. Lower the tailgate onto the safety prop using the TAILGATE DOWN switch on the in-cab control panel.

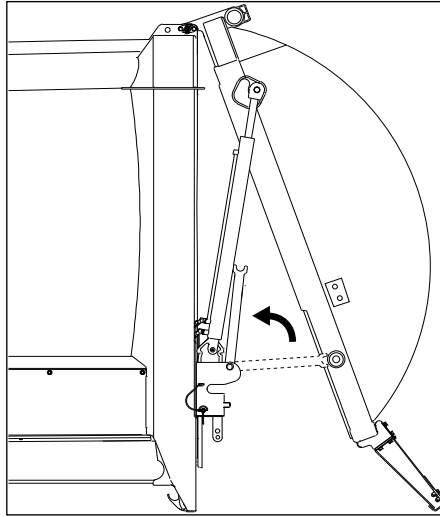
Putting the Tailgate Safety Prop Back in Place

To put the tailgate safety prop back in its home position:

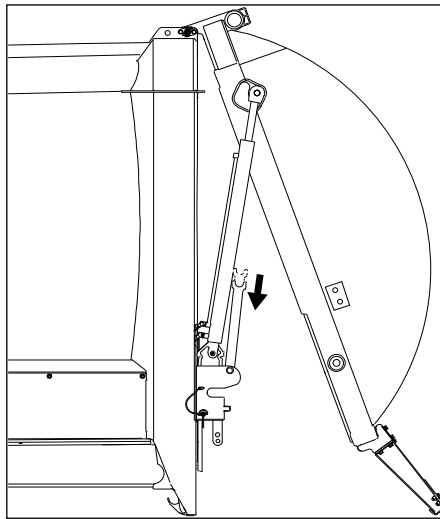
1. Start the engine.
2. Turn ON the pump.
3. Raise the tailgate until the prop can move freely.
4. Raise the tailgate safety prop (see Figure 2-4).

Danger! Stand clear of the tailgate path while putting the safety prop back in its home position.



Figure 2-4 Raising tailgate safety prop

5. Release your grip on the safety prop to set it in its home position.

Figure 2-5 Setting safety prop in its home position

6. With the TAILGATE DOWN switch on the in-cab control panel, close the tailgate completely.
The TAILGATE OPEN light indicator should turn off.
7. Put the safety pins back in place.

Securing Tailgate Safety Pins

The tailgate safety pins ensure that the tailgate can not be open accidentally. These pins must be in place unless you are unloading refuse or servicing the tailgate. Remember these two critical points:

- ♦ Before operating the WITTKE XPRESS™ secure the tailgate with both safety pins (one on each side) [see Figure 2-6].
- ♦ Before opening the tailgate remove both safety pins (see Figure 2-7).

Warning! Any vehicle with a tailgate not properly secured by a manual locking device (e.g. tailgate safety pins) is considered unsafe and should not be operated on the highway.



Figure 2-6 Tailgate safety pin in locking position



Figure 2-7 Tailgate safety pin in storage position



Service Hoist Safety Props (optional)

The service hoist safety props must be set when any work is performed under a lifted body. This feature comes with the service hoist option.

Safety props ensure that heavy body parts will not move inadvertently.

Warning! Always unload the body before setting the hoist safety props.



Setting the Service Hoist Safety Props

The safety props ensure that an *empty* body will not lower while you are working underneath it.

Danger!



Always set the service hoist safety props when performing maintenance underneath a raised body. Failure to do so may result in severe injury, or even death.

Figure 2-8 Service hoist safety props

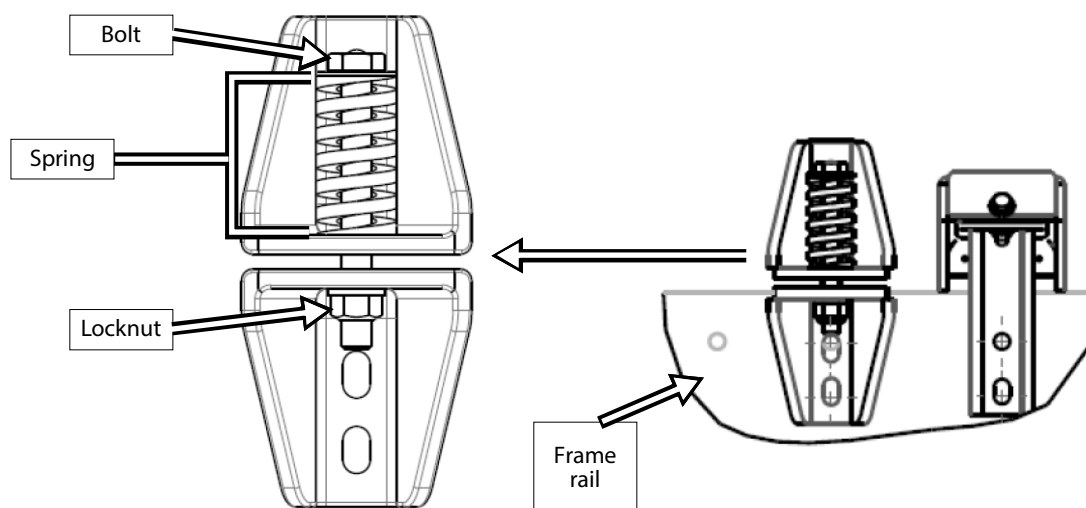


To set the service hoist safety props:

1. Make sure that there is enough clearance above the body to raise it safely and that the truck is on safe level ground.
2. Put the key to the “ON” position without starting the truck.
3. Unlatch the 2 front body latches (see Figure 2-9).

Before unlatching them, measure the length of the spring.

Spring should be between 3.25” and 3.5” long.

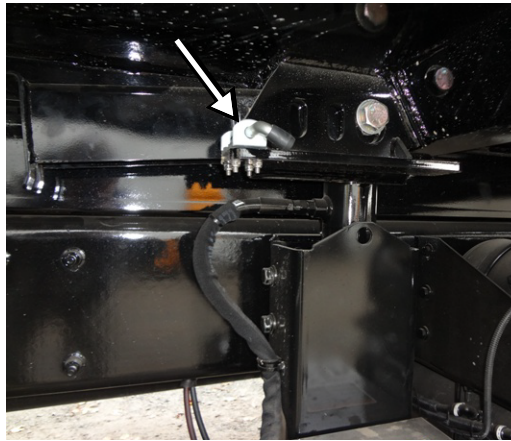
Figure 2-9 Body latch assembly

4. Raise the body until both safety props can be moved into position.
The body can be raised by pushing the hoist joystick forward (see Figure 2-10) and holding it until the body reaches the desired height.

IMPORTANT: Do not raise the body higher than is required for the props.

Figure 2-10 Service hoist joystick

5. Release one of the safety props by pulling its latch towards you (see Figure 2-11), and position the prop adequately (see Figure 2-8).
The safety prop must take place around the cylinder rod.

Figure 2-11 Prop latch

6. Release the other safety prop by pulling its latch towards you (see Figure 2-11), and position it adequately (see Figure 2-8).

The safety prop must take place around the cylinder rod.

7. Lower the body until both safety props rest on the cylinder casings.

The body can be lowered by pulling back the hoist joystick (see Figure 2-10) and holding it until the props come into position on the cylinder casings.

8. Lock out and tag out the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).

You can now work safely underneath the body.

Putting the Service Hoist Safety Props Back in Place

To put the service hoist safety props back in place:

1. Make sure that there is enough clearance above the body to raise it safely and that the truck is on safe level ground.
2. Put the key to the “ON” position without starting the truck.
3. Raise the body until both safety props can move freely.

The body can be raised by pushing the hoist joystick forward (see Figure 2-10) and holding it until the body reaches the desired height.

4. Put one of the safety props back in its place. Use its latch to secure it (see Figure 2-11).
5. Put the other safety prop back in its place. Use its latch to secure it.
6. Lower the body by pulling back the hoist joystick (see Figure 2-10) and holding it until the body rests on the chassis frame.

7. Be sure to latch back the 2 body latches (see Figure 2-9) to securely fix the body to the chassis.

Tighten the locknut until the spring is properly compressed.

Compressed spring should be between 3.25” and 3.5” long.

Locking Out and Tagging Out the Vehicle

For any inspection, repair or general maintenance being done on the vehicle, whether on the road or at the shop, it is the employer's responsibility to establish and see to the application of a proper lockout and tagout procedure.

To lock out and tag out your WITTKE XPRESS™ unit:

1. Park the vehicle on safe level ground and apply the parking brake (see Figure 2-12).

Figure 2-12 Parking brake knob



2. Make sure that the body is completely empty.
3. Switch OFF the hydraulic pump.
4. Turn OFF the engine, remove the key from the ignition, store it in a safe and controlled area (preferably on yourself), and tape over the ignition switch.
5. Turn OFF and lock the master switch.

IMPORTANT: The battery set of the WITTKE XPRESS™ is equipped with a master switch (see Figure 2-13) that must be turned off.

Figure 2-13 Master switch



6. Chock all wheels.
7. Put an "OFF SERVICE" tag on the driver's wheel and on the windshield.
8. Use safety props to block any system that could move by gravity (open tailgate, raised body, etc.).
9. Drain all air tanks.
10. Verify and inspect any security device and/or mechanism to make sure that there is no bypass and that they are all functional.

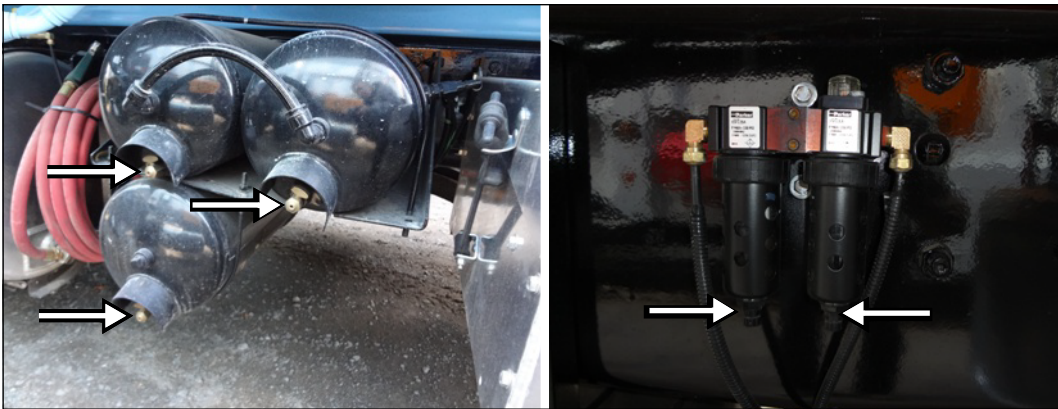
Shutting Down the Vehicle

If the vehicle has to be stored for an extended period of time, follow the chassis manufacturer's shutdown and maintenance requirements.

Also:

1. Park the vehicle on a hard level surface and apply the parking brake (see Figure 2-12).
2. Make sure that all moving parts are in their home position (tailgate, mast, packer, etc.).
3. Turn OFF, in sequence, the hydraulic pump (see Figure 2-17), the electrical system, the engine and the master switch (see Figure 2-13).
4. Drain the air tanks and the air filter assembly.

Figure 2-14 Drain valves on air tanks (left), air filter assembly (right)

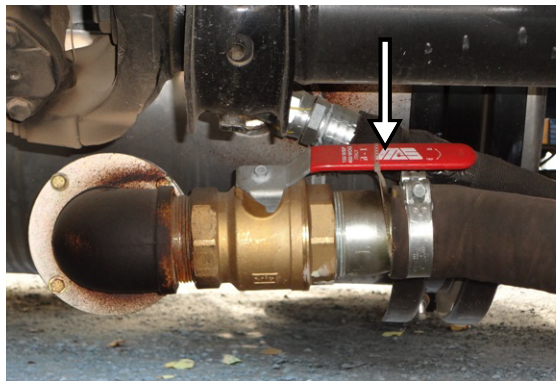


Prior to Start Up

Before starting the vehicle:

1. Make sure no system will engage and/or start to operate as you start the engine.
2. Make sure the shut-off valve on the hydraulic tank is fully open (see Figure 2-15).

Figure 2-15 Shut-off valve



NOTE: The hydraulic tank model may vary according to the options installed on the vehicle.

Warning!



Failure to fully open the shut-off valve before starting the truck will cause immediate damage to the pump, even if the pump is not activated.

3. Start the truck.

Once the engine is started, wait for the air pressure to build up to *at least* 70 psi.

Figure 2-16 Air pressure indicator



IMPORTANT: Do not operate or move the vehicle until the air pressure has reached 70 psi.

4. Engage the hydraulic system by turning ON the PUMP ON/OFF switch on the in-cab control panel (see Figure 2-17).

Figure 2-17 HYDRAULIC PUMP ON/OFF switch



Safety Precautions To Be Taken When Working With Hydraulic Systems

As with all hydraulic systems, it may be necessary to periodically check and adjust the pressure relief settings. It may be that a major hydraulic component has been changed, the unit is not performing in terms of payload, or the unit has recently been put into service and the system requires adjustment following a run-in period.

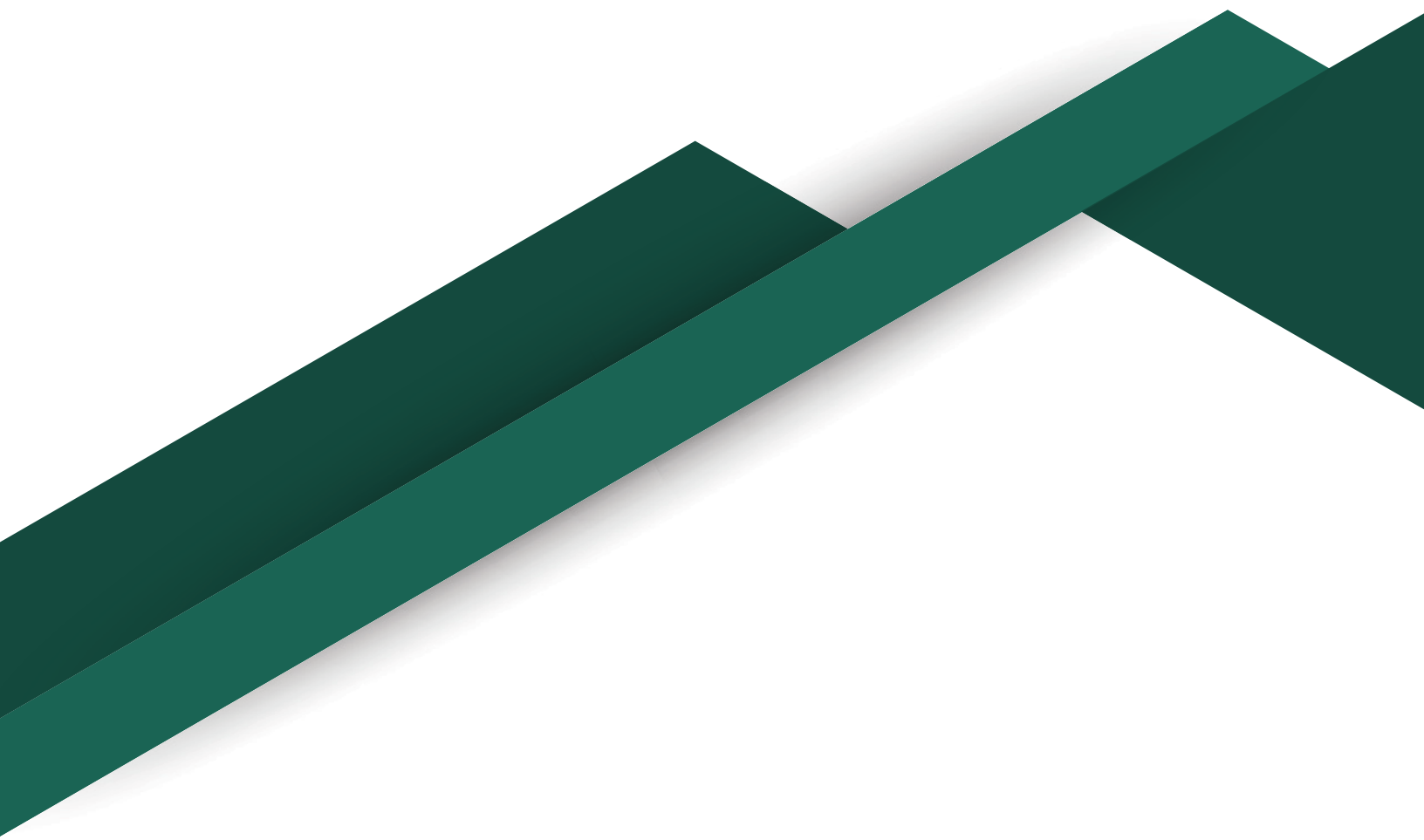
Warning!



If a hydraulic component has to be changed or a repair to the hydraulic system is needed, always apply the lockout/tagout procedure first (see *Locking Out and Tagging Out the Vehicle* on page 24). Failure to do so may result in severe injury or even death. Be sure to fully read and understand this chapter before doing any repair.

Please take note of the following:

- ♦ Mechanics must have previous hydraulic knowledge as serious injury or death can result from following improper procedures.
- ♦ Human skin can be easily penetrated by high pressure oil (2000 psi and above). Failure to take appropriate safety precautions may result in serious injury or death.
- ♦ There are extreme overhead dangers if equipment is not properly supported when servicing sections on the hydraulic system.



3

Lubrication

To help the various systems of your truck run smoothly and extend the life time of the many critical parts that affect performance, there is one thing that you must do and that is:

LUBRICATE, LUBRICATE AND LUBRICATE!

Insufficient lubrication is a major cause of component failure. The WITTKE XPRESS™ side loaders, like most equipment, have numerous points that require regular greasing.

Refer to the lubrication chart for a complete list of lubrication points and how often they should be greased (see Figure 3-1).

Recommended Lubricants

You will find the recommended types of lubricants below.

Grease

Any lithium-based commercial multipurpose grease may be used.

Hydraulic Oil

The most crucial element to the hydraulic system is the hydraulic oil. It provides the system with vitality. The oil transports damaging contaminants to filtering systems, lubricates and provides anti-wear protection against component corrosion.

Regular oil changes are vital to the lifespan of hydraulic system components. Overtime, particles in the oil will deteriorate the hydraulic system. Observation of the oil color change signifies oxidization and the need to be replaced. At that time, the oil will appear cloudy or milky. Keep in mind operational performance, load and environmental conditions are variables that determine the frequency of hydraulic oil renewal.

Following stringent maintenance schedules and performing routine oil analysis are effective methods of obtaining information to determine the cleanliness of the hydraulic oil.

Labrie Environmental Group ***recommends that the hydraulic oil be replaced at least once a year or when contaminated. Failure to maintain hydraulic cleanliness to recommended guidelines may result in failure of hydraulic components and void your warranty.***

Oil Recommendations

All Labrie hydraulic systems are filled at the factory with a high-quality anti-wear hydraulic fluid meeting an ISO 32 specification. On vehicles that are used in high ambient temperatures or that sustain high duty cycles, it may be desirable to change the fluid to an ISO 46 specification which has higher viscosity. For vehicles working in colder climates or performing light duty cycles, an ISO 22 might be more appropriate. The International Standards Organization (ISO) assigns specification numbers in order that a consumer receives the same product from different suppliers.

ISO Grade	22	32	46
Viscosity @ 100 F, SUS	115	163	231
Viscosity @ 210 F, SUS	43	47	53
Viscosity Index (Min.)	160	147	153
Pour Point	-65 F	-60 F	-54 F

Other important points to note:

- ♦ The oil must contain anti-wear and anti-foam additives, rust and oxidation neutralizers and self-protecting agents.
- ♦ It must also meet MIL-H-5606 or SAE IOW “MS” standards.
- ♦ The oil must be absolutely clean and free of contaminants.

Any hydraulic oil that possesses such properties may be used on a WITTKE XPRESS™ unit.

IMPORTANT: It is the customer’s responsibility to use oil that is appropriate to the climate.

Caution!

Do not mix different brands of oil. In doubt, drain and refill with new oil.



Engine Oil

Refer to the engine manufacturer’s maintenance manual for recommended type of engine oil.

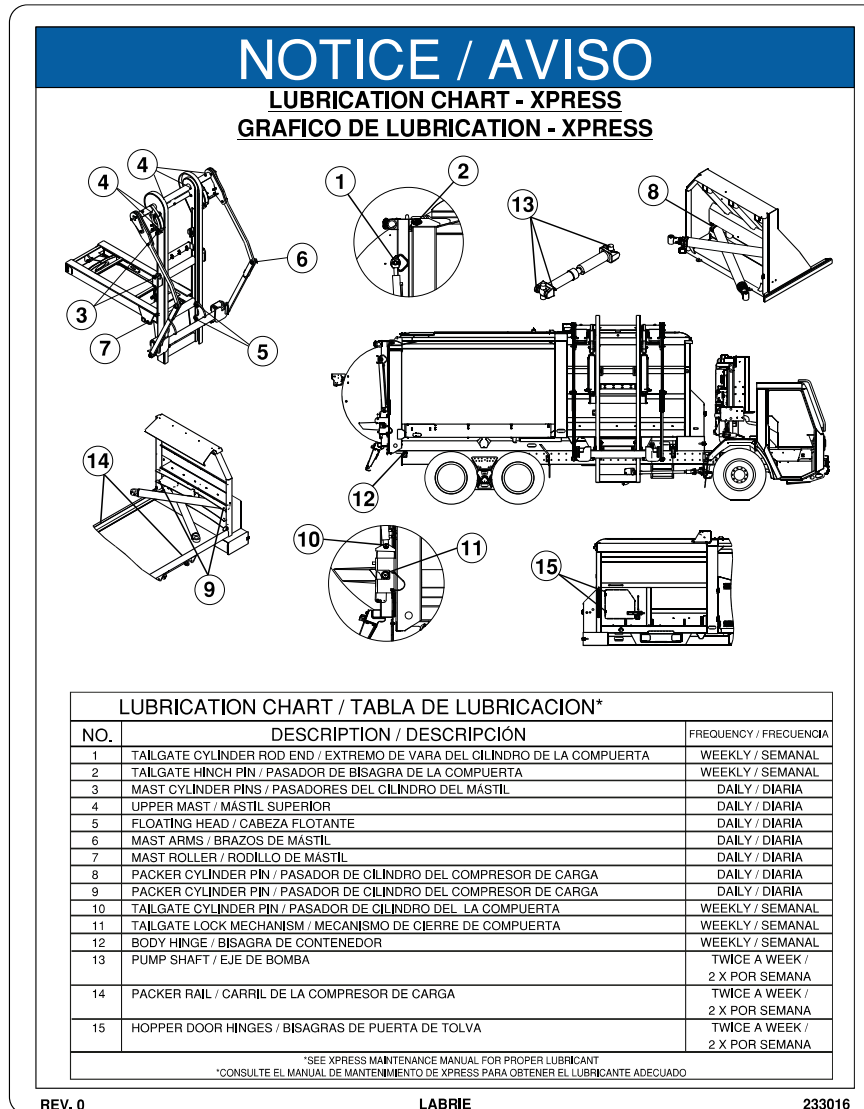
Transmission Oil

Refer to the transmission manufacturer’s maintenance manual for recommended type of transmission oil.

Lube Chart

The lubrication chart may be located on either the left or right side of the body, depending on which side the lifting mast is installed.

Figure 3-1 Lube chart



Lubricating Packer Cylinders

Packer components that need to be lubricated include the cylinder base/head pins. Use multipurpose grease (see *Recommended Lubricants* on page 29) daily to lubricate these components.

Caution!

Because of their intensive use, the packer and its accessories must be lubricated every working day.

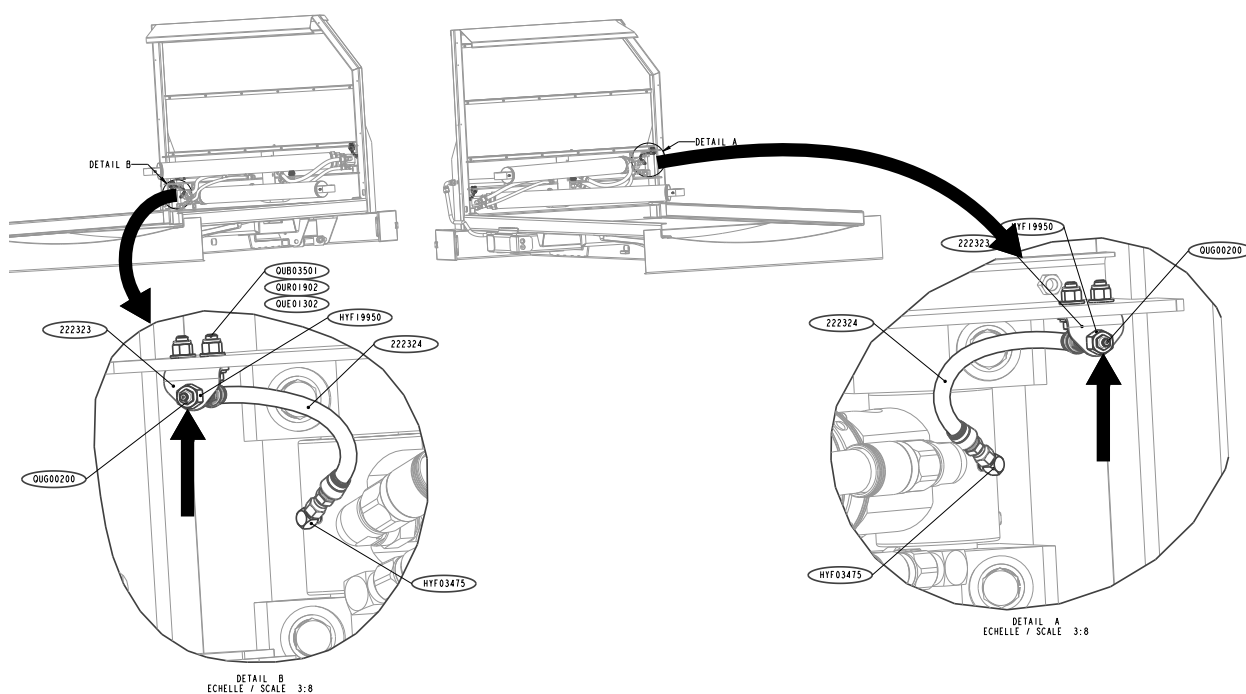


Caution!

Before you proceed with lubrication, make sure all safety measures have been properly taken.



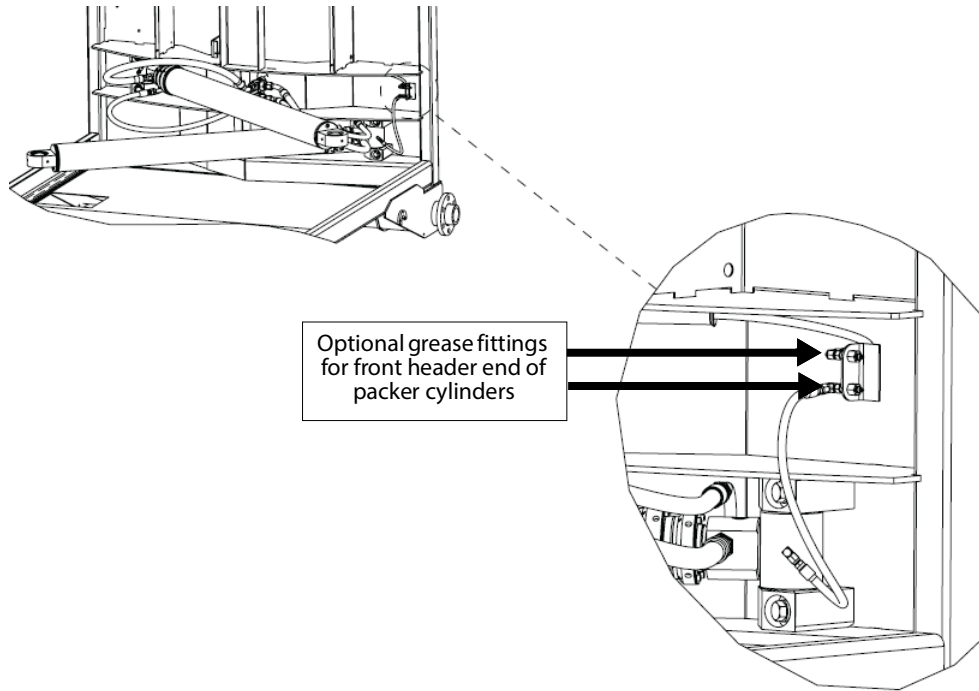
Figure 3-2 Remote grease fittings for head packer cylinder pins



Packer Remote Grease Fittings (Optional)

Packer remote grease fittings are an optional system that extends the lubrication points of the packer cylinders to a more accessible location, often a central manifold, using hoses or tubing. This allows for easier and safer maintenance, as mechanics can lubricate hard-to-reach areas without having to crawl under or around equipment (see Figure 3-3).

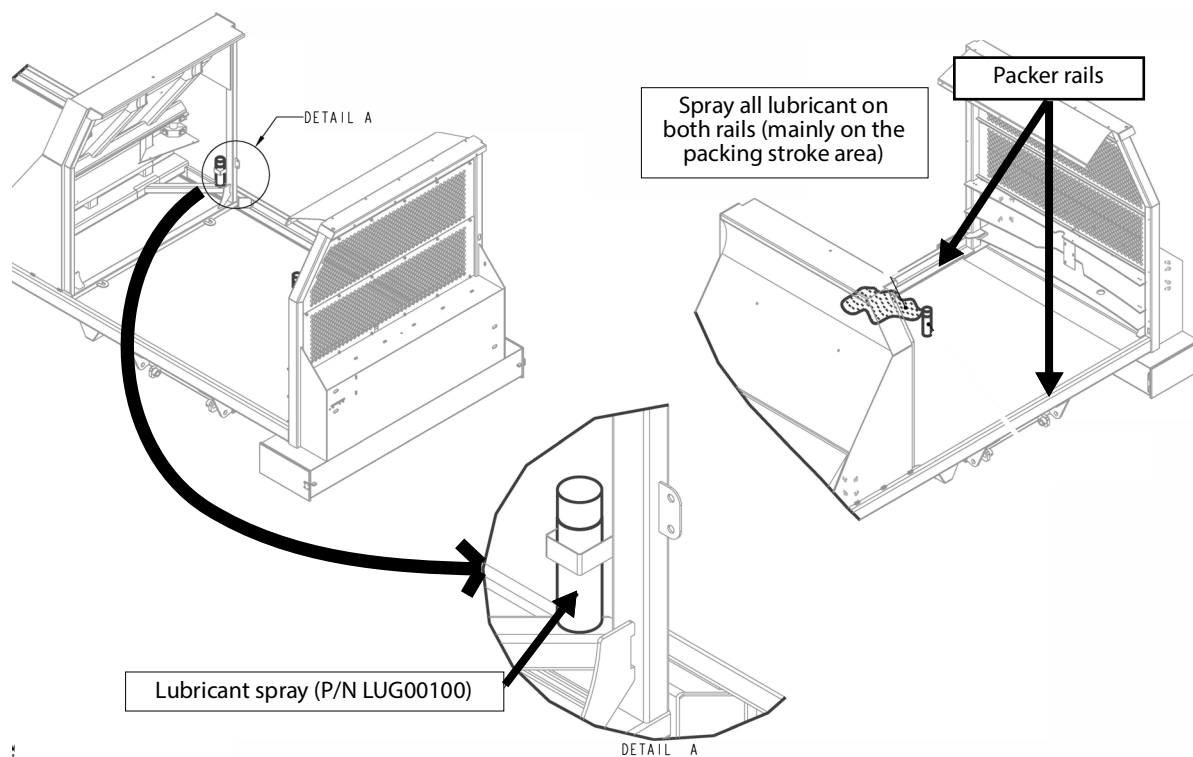
Figure 3-3 Optional remote grease fittings (front-end cylinder pins)



Lubricating Packer Rails

It is very important to lubricate packer rails, mainly on the packing stroke area, in order to ensure optimal service life. A can of LabriePlus part #LUG00100 open gear lube spray is provided with each new unit for that purpose. This can is found behind the packer (see Figure 3-4). Lubrication of packer rails should be done twice a week.

Figure 3-4 Lubricating packer rails



Lubricating Mast Components

The lifting mast has several parts that require lubrication every working day. These parts include the mast cylinder pins (1), the upper mast grease fittings (2), the floating heads (3), the mast arms (4), the mast rollers (5), and the lower mast grease fittings (6).

NOTE: Numbers (1), (2), (3), (4), (5), and (6) refer to Figure 3-5.

Caution!

Because of their intensive use, the mast and lifting attachments must be lubricated every working day.



Caution!

Before you proceed with lubrication, make sure all safety measures have been properly taken.



To lubricate the mast and lifting attachments:

1. Start the engine and engage the hydraulic pump.
2. Extend the mast.

Caution!

Make sure that no one is around the mast area before moving or operating this mast. Failure to do so may result in severe injury or even death.



-
3. Disengage the hydraulic pump.
 4. Turn off the engine.
 5. Proceed with the lockout procedure. See *Locking Out and Tagging Out the Vehicle* on page 24.
 6. Locate the grease fittings on various parts of the mast and mast frame (see Figure 3-5).

Caution!

Be careful when moving around the mast. Failure to do so may result in severe injury.



-
7. Apply lubricant with a grease gun.
 8. Once the lubrication process is completed, fully retract the mast. To do so:
 - 8 a. Start the engine.
 - 8 b. Engage the hydraulic pump.
-

- 8 c. Move the mast backwards until it touches the side of the hopper.

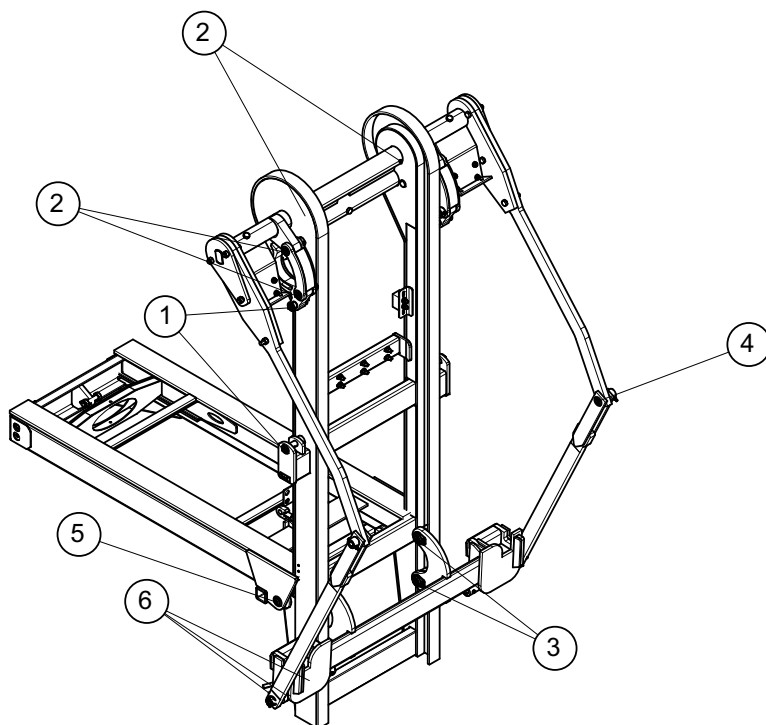
Caution!

Make sure that no one is around the mast area before moving or operating this mast. Failure to do so may result in severe injury or even death.

- 8 d. Disengage the hydraulic pump.

- 8 e. Turn off the engine.

Figure 3-5 Lubrication points on mast



Lubricating Body Hinges

The body hinges should be lubricated weekly. Also, check for cracks or corrosion. Any crack must be reported, and repaired by *qualified* personnel. If necessary, contact LabriePlus for technical support.

Danger!

Do not operate this equipment if there are any signs of damage or incomplete repairs.



Figure 3-6 Body hinge

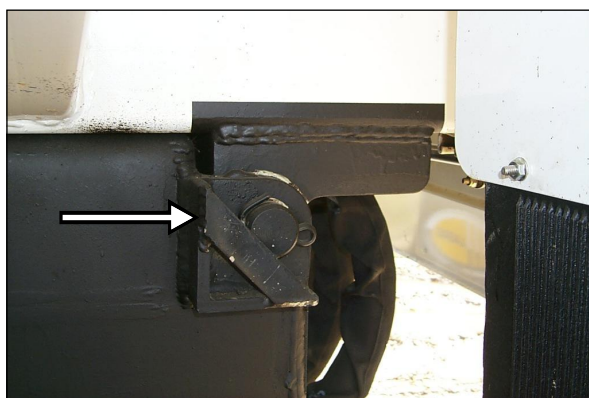
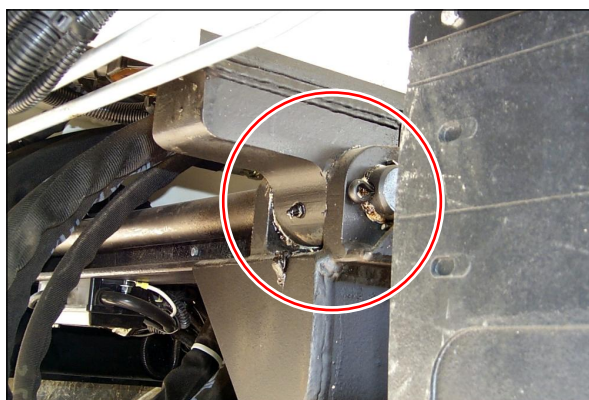


Figure 3-7 Body hinge (view from behind rear mudguard)



Lubricating Tailgate Components

It is important to lubricate the tailgate cylinder rod ends (1), the hinge pins (2), the cylinder pins (3), and the body lock mechanism (4) every week with multipurpose grease (see *Recommended Lubricants* on page 29), as per the lubrication schedule.

NOTE: Numbers (1), (2), (3), and (4) refer to Figure 3-8.

Caution!

Excessive wear might compromise the proper working condition of the tailgate.



Also, inspect the welds around the hinges. The proper working condition of the following components is also to be checked:

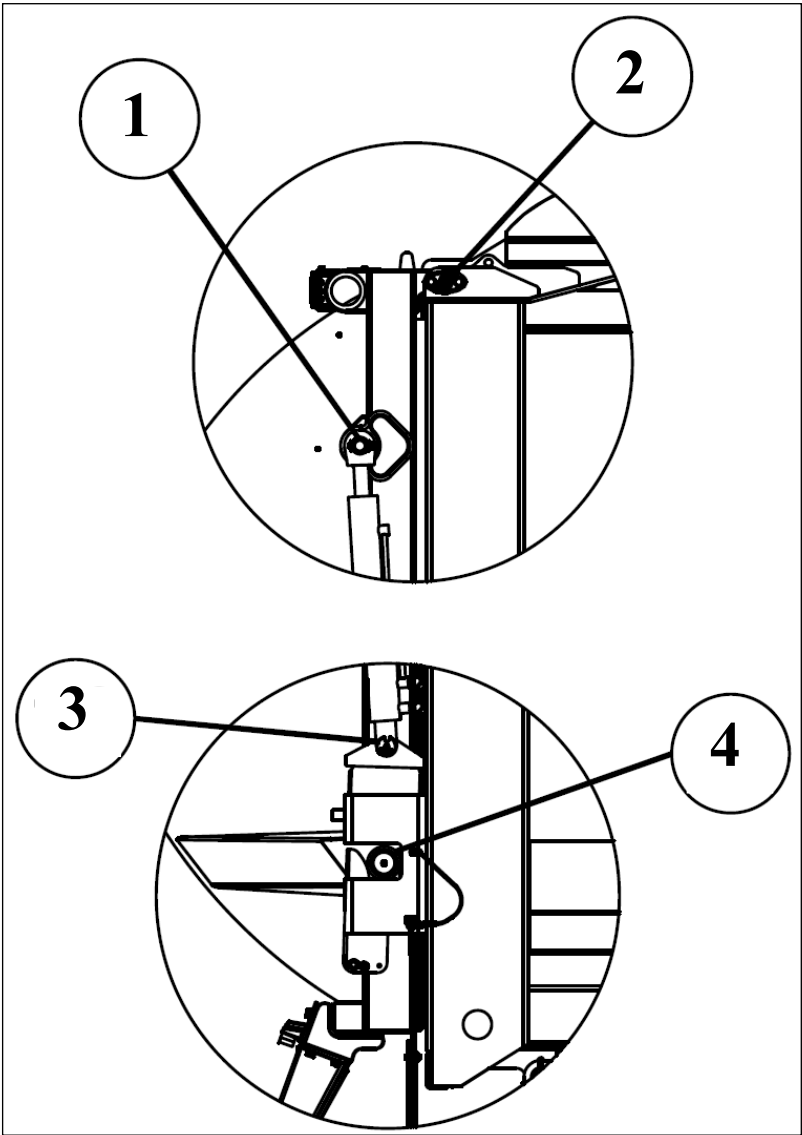
- ◆ Tailgate hydraulic cylinders
- ◆ Cylinder pins and circlips
- ◆ Tailgate hinges and safety pins
- ◆ Wear on the locking mechanism
- ◆ Wear on the tailgate-locking pins
- ◆ Tailgate rubber seal

Danger!

Do not operate this equipment if there are any signs of damage or incomplete repairs.



Figure 3-8 Grease fittings on tailgate



Lubricating Access Door Hinges

To protect and reduce wear on access door hinges, lubricate them twice a week with multipurpose grease.

To lubricate the access door hinges:

1. Disengage the hydraulic pump.
2. Turn off the engine.
3. Proceed with the lockout procedure. See *Locking Out and Tagging Out the Vehicle* on page 24.
4. Fully open the access door.
5. Locate the grease fitting on top of each door hinge (see Figure 3-9).

The access door has 2 hinges.

6. Apply lubricant with a grease gun.
7. Close the access door.

Figure 3-9 Lubrication points on access door



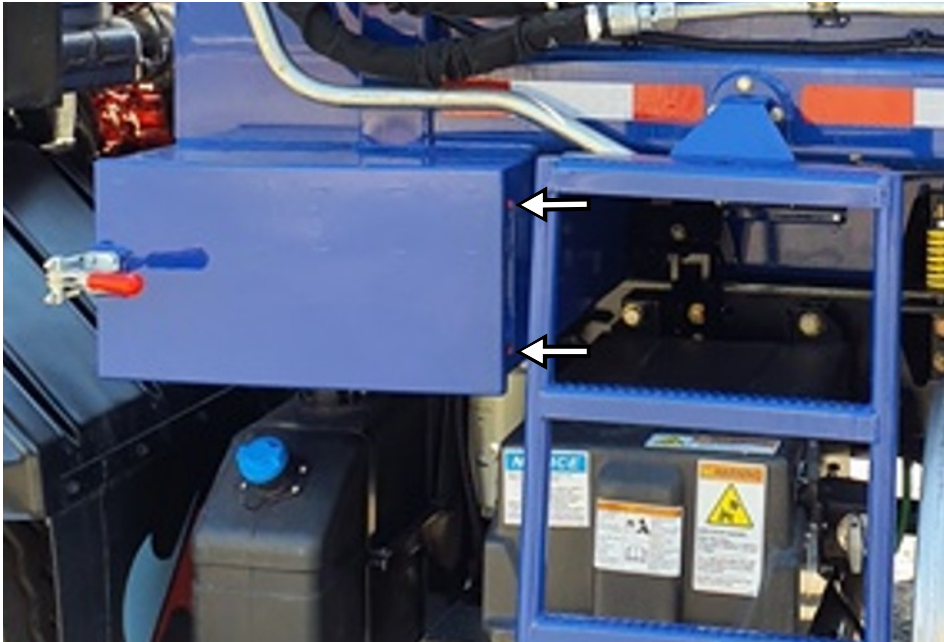
Lubricating Sump Box Hinge

To protect and reduce wear on the sump box hinge, lubricate it twice a week with multipurpose grease.

To lubricate the sump box hinge:

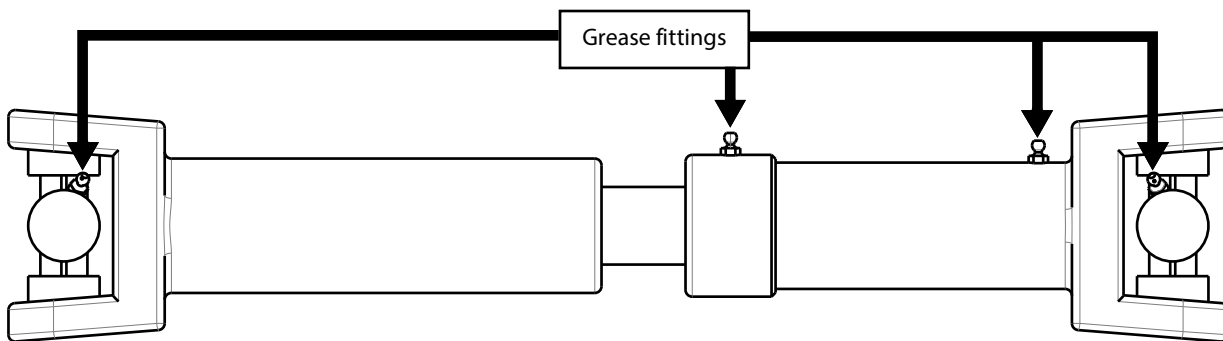
1. Locate the grease fittings at the top and bottom of the hinge (see Figure 3-10).
2. Apply lubricant with a grease gun.

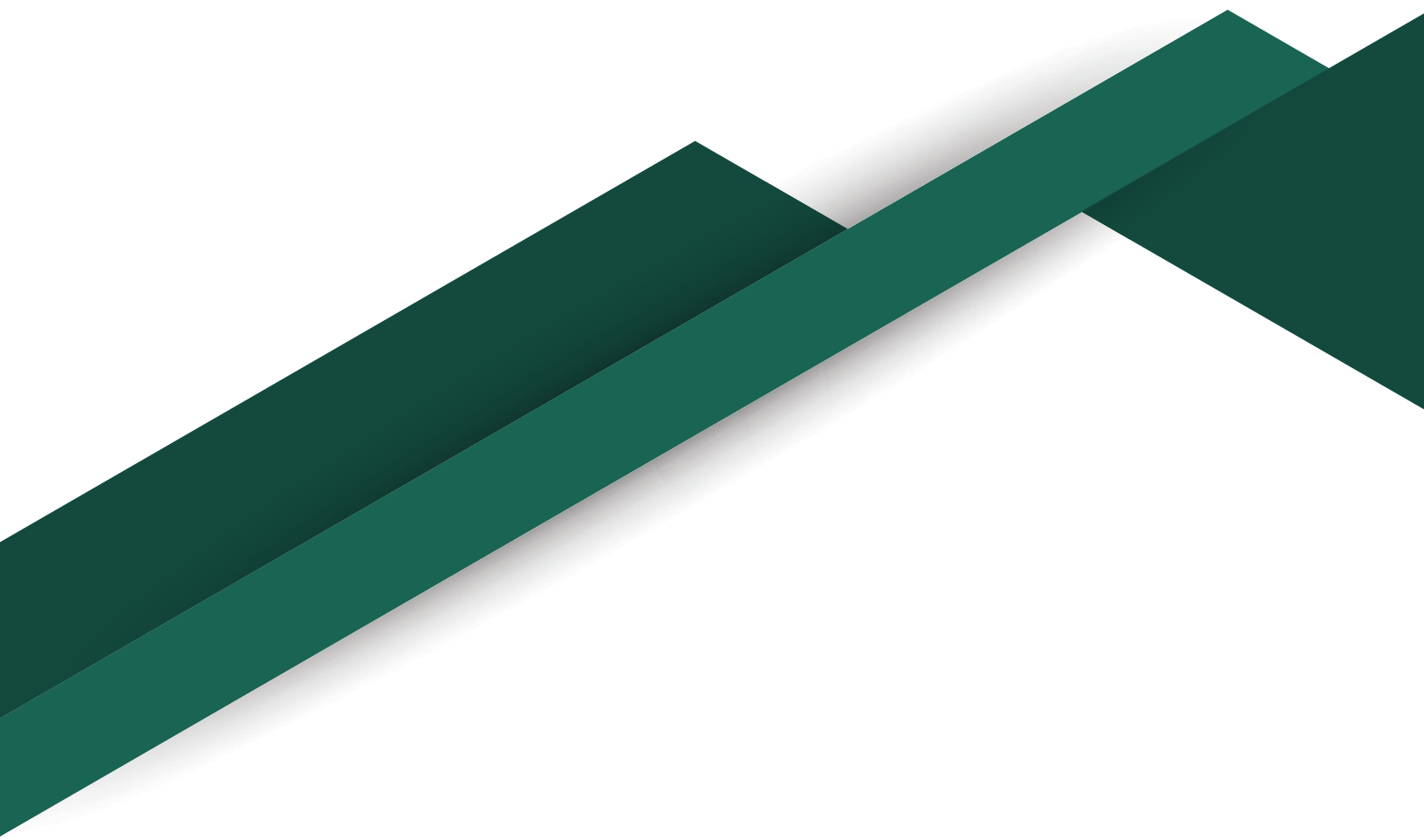
Figure 3-10 Grease fittings on sump box hinge



Lubricating Pump Drive Shaft “U” Joint & Spline

NOTE: To be lubricated twice a week. LOTO procedure must be applied (see page 24).





4

Preventive Maintenance

The WITTKE XPRESS™ has been designed for long periods of efficient uninterrupted operation. Careful attention to proper preventive maintenance, as described in this chapter, will ensure and extend trouble-free operation of the unit. Particular attention to correct lubrication of the unit and maintenance of the return filter, are probably the two most vital areas of preventive maintenance required. The objective of preventive maintenance is to anticipate and prevent operational difficulties before they require extended shutdown for costly repairs.

Operating and Maintenance Records

Prepare and adhere to a maintenance schedule. Keep detailed records of all maintenance performed. Regularly inspect operating and maintenance records for deviations from normal operating conditions. Analyze the records for indications of potential trouble.

NOTE: Occasionally distributors will receive Service Bulletins from Labrie Environmental Group concerning updated maintenance information. Keep those bulletins with this manual and make notes at the appropriate places in the manual referencing the updated information.

NOTE: Also replace the return filter element after the first 50 hours of operation.

Table 1 (Sheet 1 of 4)Wittke Xpress™ Preventive Maintenance Chart

Component/System	Task	Daily	Weekly	Monthly	Yearly
Air system	Check for leaks.		X		
Air tanks	Drain air tanks.	X			
Air intake filter	Check air intake filter.	X			
Battery	Ensure battery cables are not coming in contact with an area that could rub through the insulation.			X	
	Clean and check battery and connections.		X		
Body and chassis	Check for corrosion.			X	
	Keep the contact surfaces clean between the body and the chassis.	X			
	Wash body and chassis.		X		
Debris in front of packer and inside hopper	Remove debris.	X			
Debris on tailgate seal	Remove debris.	X			
Drive shaft	Check all drive shafts, universal joints, and attaching bolts (including PTO).	X			
	Visually inspect drive shafts and report defects immediately.	X			
Electrical wire	Check for bare spots or broken wires.	X			
	Check connections.	X			
Engine	Check engine oil level.	X			
	Check coolant level.	X			
	Check engine as described in the engine owner's manual.	X			

Table 1 (Continued) (Sheet 2 of 4)Wittke Xpress™ Preventive Maintenance Chart

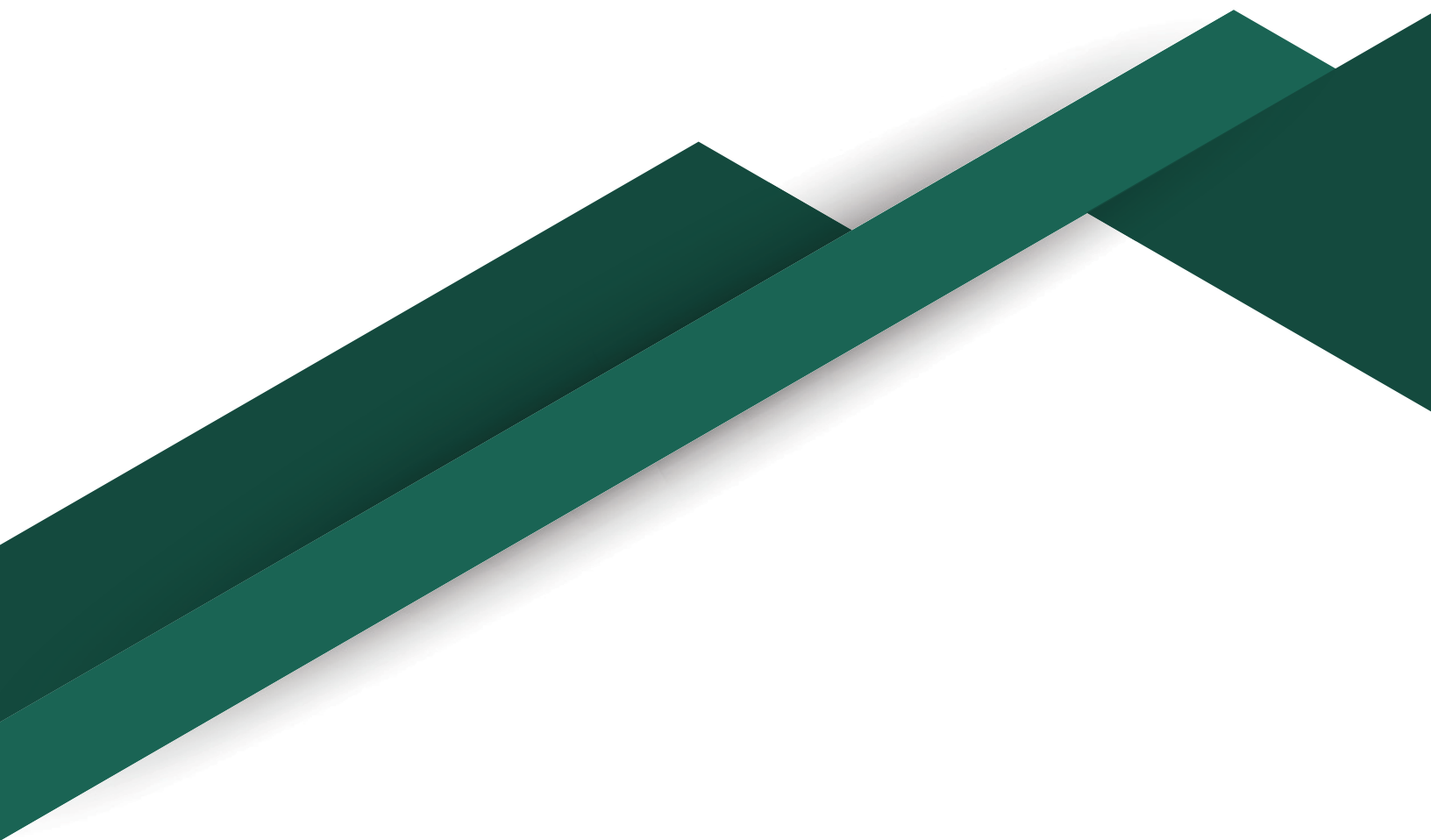
Component/System	Task	Daily	Weekly	Monthly	Yearly
Ejection mechanism	Check cylinder for leaks. Repair or replace if required.		X		
	Check pressure. Adjust if necessary.			X	
Hydraulic system	Check oil level in tank, and refill if necessary.	X			
	Check all hoses for leaks.	X			
	Check if the shut-off valve on hydraulic tank is open.	X			
	Check ground for overnight leaks.	X			
	Check cylinders, pump, control valve and system for leaks. Repair or replace if required.		X		
	Replace return line filter element.				Twice a year
	Clean strainer and refill.				X
	Check pressure.			X	
	Change oil.				X
	Replace hoses.				Every 5 years
	Replace breather cap on tank.				X
Limit/proximity switches	Proper adjustment of all limit/prox switches is imperative.		X		
	Check and clean area around limit/prox switches.	X			
Lubrication	See Lubrication Chart on side of truck.				
Mast and mast frame	Check tightness of cam followers and nuts.	X			
	Check tightness of all mast hanger bolts.	X			
	Check all pivots and hydraulic pressure.	X			

Table 1 (Continued) (Sheet 3 of 4)Wittke Xpress™ Preventive Maintenance Chart

Component/System	Task	Daily	Weekly	Monthly	Yearly
Mirrors, lamps, windows, camera	Check for cleanliness; clean if required.	X			
Mounting bolts, body hinges, springs	Do a visual inspection of these components.	X			
Nuts and bolts	Check all nuts and bolts for tightness.	X			
Operator controls: mast, packer, tailgate, top door	Check for proper operation.	X			
Packer remote grease lines (optional)	Inspect for leaks.		X		
Packing system	Do a visual inspection of the following: packer, cylinders, rails, guides, wear shoes, fittings, retaining hardware.	X			
	Check for proper operation.		X		
	Do a visual inspection of the following: hopper, inside walls.		X		
Wear pads, hydraulic cylinders and cylinder pins, hoses, pipes and connections, wear of floor, hopper sides	Do a visual inspection of these components.	X			
Safety decals	Keep them clean.	X			
Safety systems	Check for proper operation (tailgate alarm and special devices).		X		
	Check proper operation of the following: lamps, indicators, strobes, turn signals, headlights, backup lights.	X			
Service hoist cylinder and retaining hardware (optional)	Do a visual inspection of these components.	X			

Table 1 (Continued) (Sheet 4 of 4)Wittke Xpress™ Preventive Maintenance Chart

Component/System	Task	Daily	Weekly	Monthly	Yearly
Side access door assembly	Do a visual inspection.			X	
Tailgate assembly	Do a visual inspection.			X	
Tailgate latch assembly	Do a visual inspection.		X		
Tailgate safety prop	Do a visual inspection.			X	
Tailgate seal	Do a visual inspection.		X		
Top door (optional)	Check for proper operation.		X		
Top door assembly (optional)	Do a visual inspection.			X	
Wiring System	Check for damaged harnesses and/or bad connections.				X



5

Electrical System

This chapter is divided into two sections. The first section describes how the electrical components work and the second section describes how to adjust and repair some electrical components.

Electrical Schematics

Electrical schematics are provided as part of the WITTKE XPRESS™ documentation package, located inside the cab.

The electrical schematics show how components are wired to each other. These schematics are useful when diagnosing electrical circuits and should be kept for future reference.

How the Electrical System Works

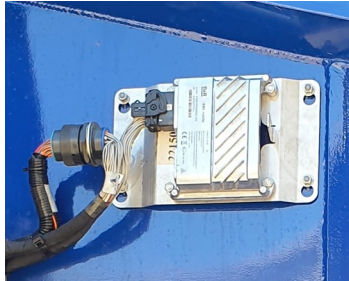
The electrical system includes the following components:

- ♦ Control panel
- ♦ Electronic controllers
- ♦ Harnesses
- ♦ Valve controls
- ♦ Limit/proximity switches
- ♦ Sensors (ex. temperature, pressure sensors)



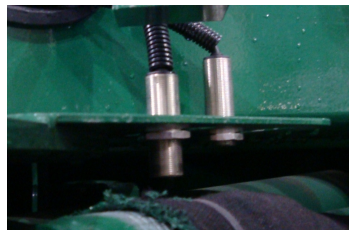
The control panel is centrally mounted in the cab. It includes push-buttons, switches, and warning lamps. The multiplex monitor may be placed directly on the panel or fixed next to it.

Some units also have auxiliary controls located on the curbside or streetside of the truck.

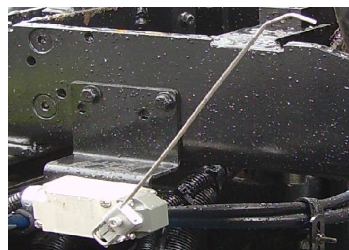


The multiplex electronic controller makes the truck more reliable by reducing the number of wires and components. Electrical maintenance is different from relay logic. The use of this electronic controller enables mechanics to perform troubleshooting, which facilitates the debugging process.

Labrie Environmental Group offers training on this technology. To learn more about multiplex electronic controllers and training schedule, please call LabriePlus.



Proximity switches control packer, tailgate, mast operations, and provide the means for safety lockouts.



Limit switches are used where there is “large” movement between components and the limited range of the proximity switch is not permitted.



Harnesses connect all electrical components. They are generic and therefore may contain wires and connectors that are not used. Make sure unused connectors are always protected by caps in order to avoid electrical failure.

Adjusting and Repairing Electrical Components

The required electrical system adjustments include:

- ♦ Fuses and circuit breakers
- ♦ Limit and proximity switches

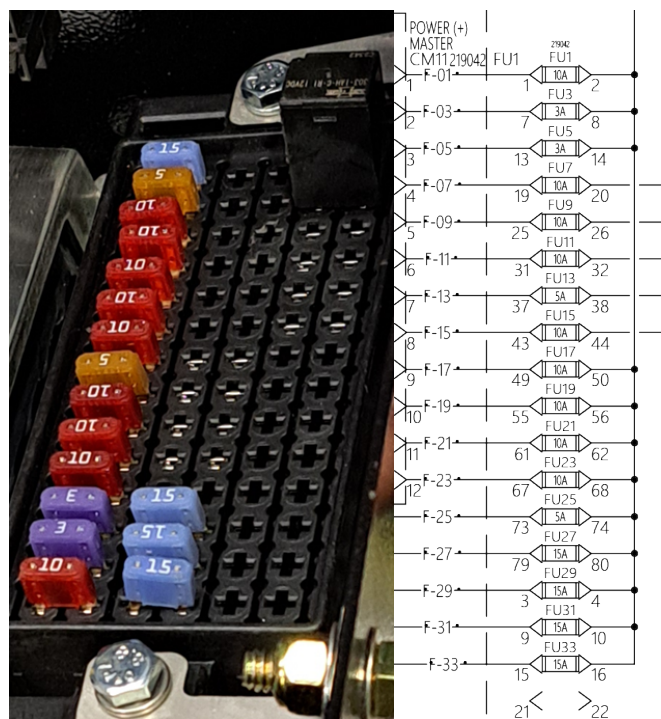
Fuses and Circuit Breakers

Power for the electrical system on board the WITTKE XPRESS™ is protected by a set of fuses and circuit breakers.

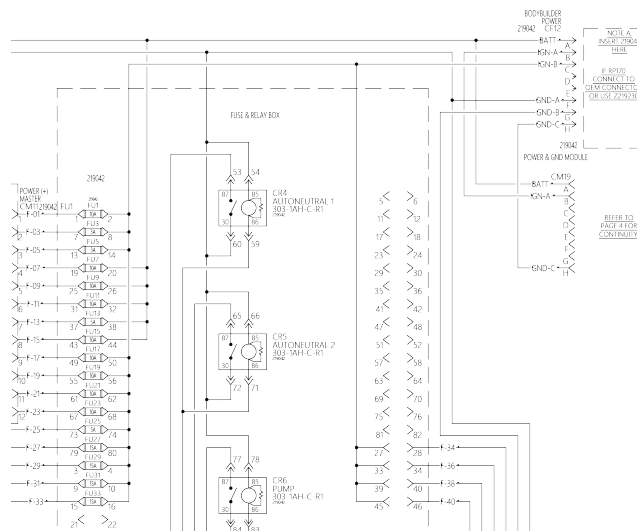
Fuse Box - Inside Cab

The fuse box system has been updated with the B&R platform, replacing the previous ignition relay box setup. The new design includes two fuse boxes: one inside the cab (See Figure 5-1) and another inside the rub rail, with every power circuit protected by a fuse for enhanced safety and reliability. Unlike the old system, the new setup eliminates direct connections to the battery, instead utilizing the Body Builder cable for battery power and ignition signals. The WITTKE XPRESS™ model, designed with B&R as the controller, adopts this updated fuse and circuit breaker logic.

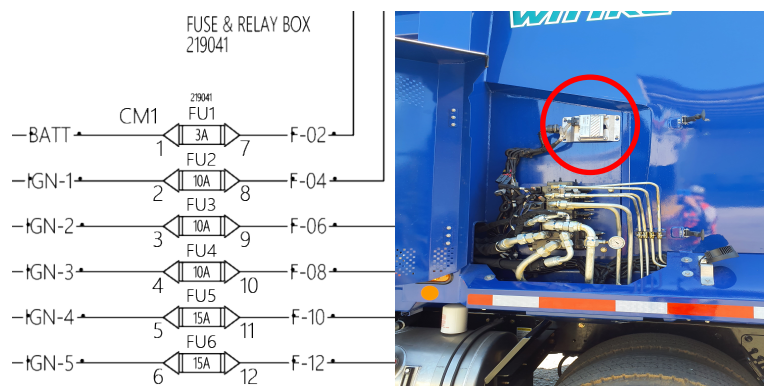
Figure 5-1 Fuse box inside cab



NOTE: The B&R platform connects the fuse box to power using the Body Builder cable for battery power and ignition signals, eliminating direct battery connections for improved efficiency.

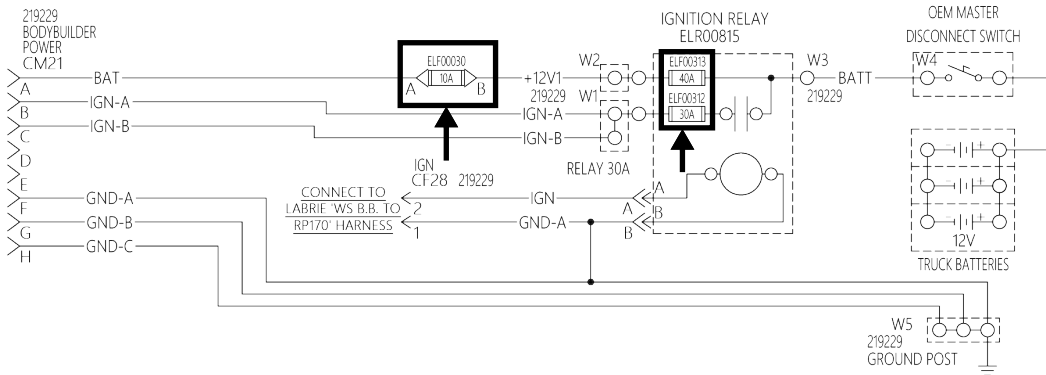
Figure 5-2 Power connection to fuse box inside cab**Fuse Box - Inside Rub Rail**

The remote module, housed within the main hydraulic valve cover, is equipped with a dedicated fuse box located inside the rub rail. This fuse box provides protection for the remote module and may also support additional functions based on the specific options configured for the unit.

Figure 5-3 Fuse box inside rub rail**Chassis without Body Builder Cable**

However, certain chassis, such as the Western Star, do not provide a Body Builder cable, requiring the installation of the ignition relay box as used in the previous IFM platform. This new configuration improves integration and protection for the vehicle's electrical systems.

NOTE: Power comes from the RP-170 Power connector (provided by the chassis, if not present, an Ignition relay is installed)

Figure 5-4 Circuit schematic - Ignition relay box**Figure 5-5 Ignition relay box (with/without cover)**

NOTE: When a fuse blows, always replace it with a fuse of the same kind and same amperage. Fuses 30A and 40A are protected by a plastic cover (See Figure 5-6). Just remove that plastic cover to gain access to these fuses. For fuse 10A found just outside the relay box (See Figure 5-7), it is also protected by a plastic cover that needs to be removed to gain access to the fuse. Always check amperage before attempting to replace a dead fuse.

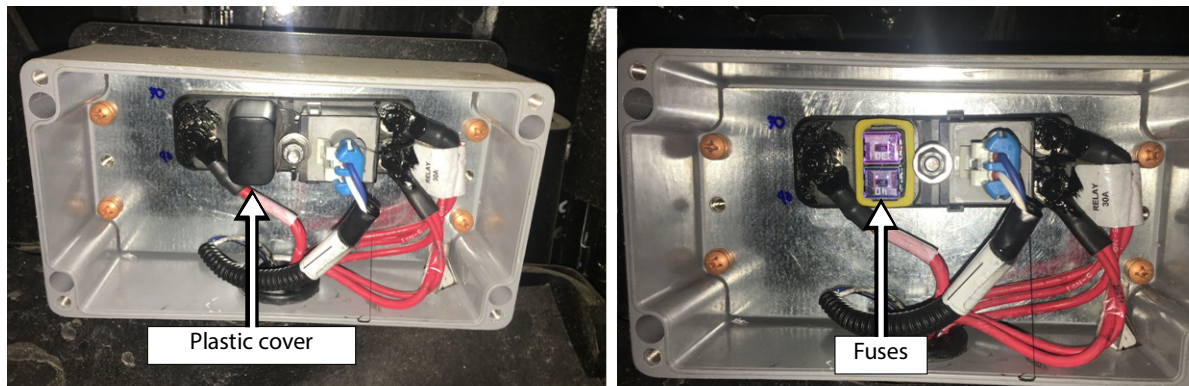
Figure 5-6 Fuses inside relay box

Figure 5-7 Fuse outside relay box**Mini Fuse**

The WITTKE XPRESS™ uses mini fuses located in both the in cab fuse box as well as the outside control box, located in the rub rail.

Figure 5-8 Mini Fuse

NOTE: Consult the OEM manual for information on equipment not manufactured by Labrie Environmental Group.

Table 1 Fuse List - Inside Cab (Sheet 1 of 2)

Fuse	Amps	Function
F-01	10	Electronic Controller
F-03	3	Electronic Controller
F-05	3	Electronic Controller
F-07	10	Electronic Controller
F-09	10	Electronic Controller
F-11	10	Electronic Controller
F-13	5	Electronic Controller
F-15	10	Electronic Controller
F-17	10	Electronic Controller

Table 1 Fuse List - Inside Cab (Continued) (Sheet 2 of 2)

Fuse	Amps	Function
F-19	10	Electronic Controller
F-21	10	Electronic Controller
F-23	10	Electronic Controller
F-25	5	Labrie Console
F-27	15	Cab Fan
F-29	15	Spare
F-31	15	Camera System
F-33	15	Pump
F-34	--	Spare
F-36	--	Spare
F-38	--	Spare
F-40	--	Spare

Limit and Proximity Switches

Limit and proximity switches act as remote electrical ON/OFF switches.

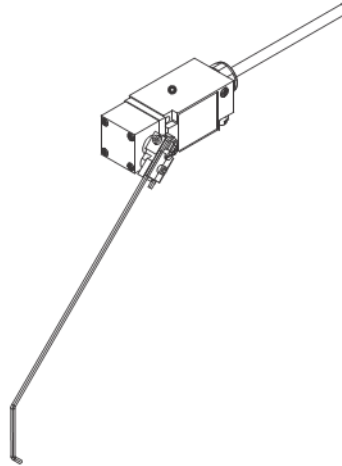
The following is a list of limit and proximity switches that are installed on a WITTKE XPRESS™ unit. Some of them are optional.

- ♦ Packer Retract proximity switch
- ♦ Packer Extend proximity switch
- ♦ Side Access Door proximity switch
- ♦ Top Door Fully Open proximity switch (optional)
- ♦ Tailgate Unlocked proximity switch
- ♦ Tailgate Fully Open proximity switch
- ♦ Arm Stowed limit switch
- ♦ Arm Mid-Height proximity switch
- ♦ Body Raised limit switch (optional)

Warning!

Limit and proximity switches must operate properly. Improperly adjusted limit/proximity switches may cause serious damage or even death.

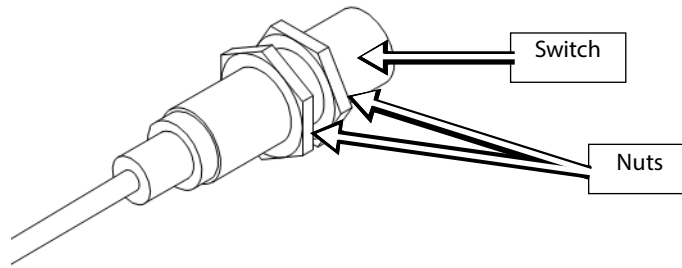
Limit Switch Adjustment



To adjust the limit switch:

1. Loosen the limit switch nut.
2. Move the lever arm to the approximate position where the switch is to be triggered.
3. Tighten up the nut.
4. To fine tune the adjustment, loosen the nut slightly.
5. With a flathead screwdriver, turn the adjusting screw located at the center of the nut until a click is heard.
6. Tighten up the nut.
7. Test the operation.
8. If necessary, repeat steps 1 through 7.

Proximity Switch Adjustment



To adjust the proximity switch:

1. Loosen the proximity switch nuts.
2. Adjust the proximity switch so that there is a gap of approximately 3/16 inch (4.8 mm) between the plate (target) and the switch.
3. Tighten up the nuts.
4. Test the operation.

The proximity switch light should turn on when the target is detected; if not, repeat the adjustment procedure.

Packer Retract Proximity Switch

This proximity switch (See Figure 5-9) locks out the MAST UP function and activates a warning lamp when the packer is not in the “home” position. It also stops the packer when it reaches its fully retracted position. It is very important to adjust this proximity switch properly in order to avoid the packer hitting the hopper at the end of its stroke.

Figure 5-9 Packer Retract proximity switch



Location

This proximity switch is mounted on the front wall of the body, on the curbside.

Function

The Packer Retract proximity switch sends a signal to the controller module that the packer panel has reached its fully retracted position. Once the signal from this proximity switch is received, the module enables the mast to operate if activated, provided the tailgate is closed.

NOTE: For units with optional Top Door: The tailgate must be closed and the top door open.

Over time, misalignment of this proximity switch may occur due to the frequent back and forth motion of the packer. An adjustment of the proximity switch may be necessary to prevent malfunction.

To verify that the switch needs adjusting:

1. Empty all refuse from the body.
2. Start a pack cycle.
3. Observe the home position of the packer when the cycle is complete.

If no signal is sent by the switch, it may be that the packer cannot reach its fully retracted position due to waste pile-up behind the packer or that the proximity switch itself is misaligned.

To clean the area behind the packer:

1. Set the parking brake.
2. Turn on the engine and engage the hydraulic system.
3. Extend the packer sufficiently in order to have access to the area behind the packer.

Danger!

Do not enter the hopper while the packer is moving.



-
4. Proceed with the tagout/lockout procedure. Refer to “Locking Out and Tagging Out the Vehicle” on page 24.
 5. Enter the hopper.
 6. Remove any waste pile-up that is behind the packer.
 7. Thoroughly clean the area with a pressure washer.
 8. Exit the hopper.
 9. Test operation.

If there is still no signal sent by the proximity switch, do the following procedure.

To adjust the Packer Retract proximity switch:

1. Set the parking brake.
2. Turn on the engine and engage the hydraulic system.
3. Move packer to about 1 inch before the fully retracted position.

Danger!

Do not enter the hopper while the packer is moving.



4. Proceed with the tagout/lockout procedure. Refer to “Locking Out and Tagging Out the Vehicle” on page 24.
5. Locate the Packer Retract proximity switch (See Figure 5-9).
6. Loosen the switch mounting nuts.
7. Adjust the proximity switch so that there is a gap of approximately $\frac{1}{4}$ of an inch between the target and the switch.
8. Tighten the nuts.
9. Test operation to make sure the proximity switch light comes on when the target is detected and the proximity switch itself works properly.
10. If necessary, repeat procedure.

Ensure that there is no knocking noise at the end of the packer cylinder stroke.

Packer Extend Proximity Switch

The Packer Extend proximity switch controls the sweep of the packer inside the hopper. This switch is triggered when the packer blade reaches the fully extended position. It is used to prevent the packer blade from knocking on the tailgate during packing operation.

Figure 5-10 Packer Extend proximity switch



Location

The Packer Extend proximity switch is mounted on the front wall of the body, on the curbside.

If the packer stops before or after reaching the fully extended position or if the packer knocks on the tailgate, proceed with the following procedure.

To adjust the Packer Extend proximity switch:

1. Set the parking brake.
2. Turn on the engine and engage the hydraulic system.
3. Extend packer no further than one foot into the body.

Danger!

Do not enter the hopper while the packer is moving.



4. Proceed with the tagout/lockout procedure. Refer to “Locking Out and Tagging Out the Vehicle” on page 24.
5. Locate the Packer Extend proximity switch (See Figure 5-10).
6. Loosen the switch mounting nuts.
7. Adjust the proximity switch so that there is a gap of approximately $\frac{1}{4}$ of an inch between the target and the switch.

NOTE: Proximity switch 1 must be triggered when the packer is fully retracted.

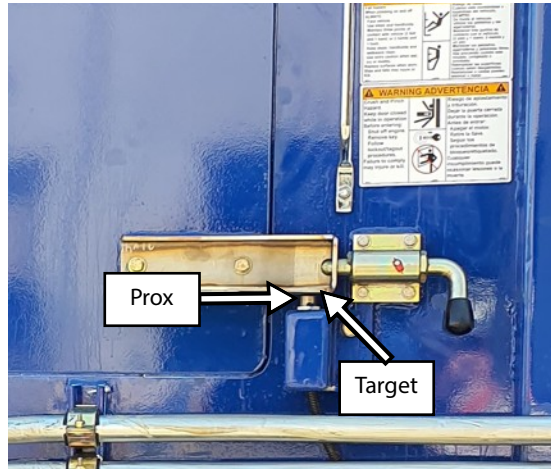
NOTE: Proximity switch 2 must be triggered when the upper beam of the packer is 4” from the breaker bar.

8. Tighten the nuts.
9. Test operation to make sure the proximity switch light comes on when the target is detected and the proximity switch itself works properly.
10. If necessary, repeat procedure.

Side Access Door Proximity Switch

This proximity switch cuts all hydraulic power when the side access door is not closed.

Figure 5-11 Side Access Door proximity switch



Location

The Side Access Door proximity switch is mounted on the side door frame.

Testing procedure:

1. Open the access door by approximately 2 inches (5 cm) and try to operate any hydraulic function. No hydraulic function should be working.

Warning Injury or death may occur if you attempt to enter the body while the packer is in operation.



2. If not all hydraulic functions are disabled, the proximity switch is faulty and must be replaced.

Adjustment procedure:

1. Proceed with the tagout/lockout procedure. Refer to "Locking Out and Tagging Out the Vehicle" on page 24.
2. Locate the Access Door proximity switch (See Figure 5-11).
3. Loosen the mounting nuts of the Access Door proximity switch.
4. Adjust the proximity switch so that there is a gap of approximately $\frac{1}{4}$ of an inch between the target and the switch.
5. Tighten the nuts.
6. Test operation to make sure the proximity switch light comes on when the target is detected and the proximity switch itself works properly.
7. If necessary, repeat procedure.

Top Door Fully Open Proximity Switch (Optional)

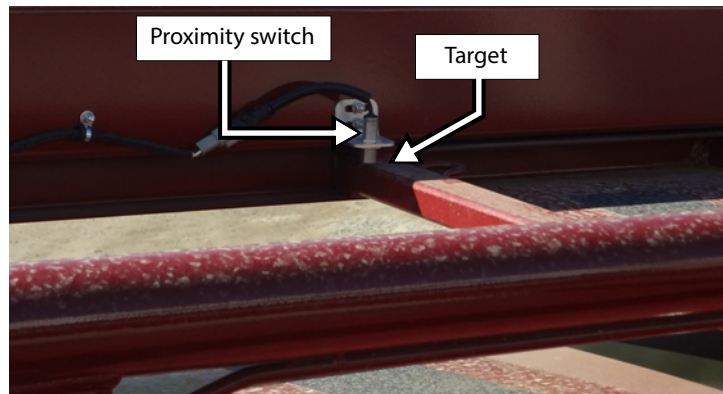
The Top Door Fully Open proximity switch controls the cutout of the MAST UP function if the top door is not fully open.

When the top door is fully open, it triggers the proximity switch which sends a signal to the in-cab control panel to turn the ROOF OPEN switch's light green.

Location

The Top Door Fully Open proximity switch is located on the streetside edge of the body roof, just above the rear end of the top door when fully open (See Figure 5-12).

Figure 5-12 Top Door Fully Open proximity switch



Adjustment procedure:

1. Fully open the hopper top door.
2. Turn OFF the hydraulic pump and the engine.
3. Complete the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
4. Climb on the body roof.

IMPORTANT: Use extreme caution when climbing and working on the roof of the body. Use safety harness to prevent falling.

5. Adjust the proximity switch so that it can detect the target when the top door is fully open.
Proceed this way to adjust the proximity switch:
 - 5 a. Loosen the proximity switch mounting nuts.
 - 5 b. Slide the switch upward or downward in the mount to achieve a gap of approximately $\frac{1}{4}$ of an inch with the target.
 - 5 c. Tighten the nuts.
6. Climb down from the roof.

IMPORTANT: Use extreme caution when climbing and working on the roof of the body. Use safety harness to prevent falling.

7. Start the engine and turn ON the hydraulic pump.

Caution

Make sure the shut-off valve on the suction line is fully open before starting the vehicle.



-
8. Close the top door by about an inch.
The proximity switch should not detect the target and the ROOF OPEN switch on the control panel is now blue.
 9. Repeat steps if necessary.

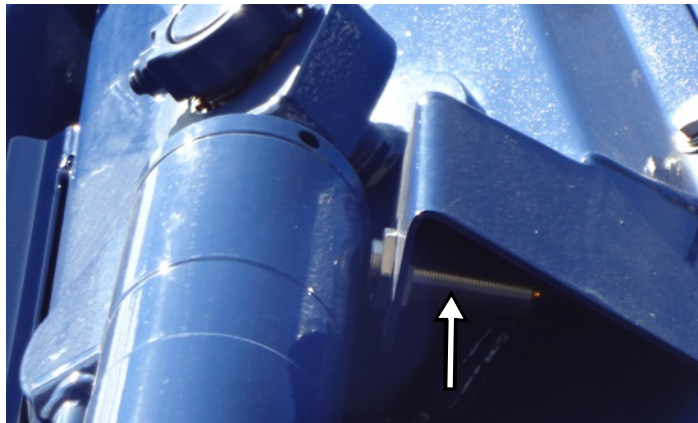
Tailgate Unlocked Proximity Switch

The Tailgate Unlocked proximity switch disables the pack cycle, turns on a blinking warning light in the cab, and sounds the backup alarm and the in-cab buzzer if the tailgate is not completely closed. This proximity switch also disables packing.

Location

The Tailgate Unlocked proximity switch is located on the streetside of the tailgate, near the tailgate cylinder.

Figure 5-13 Tailgate Unlocked proximity switch

**Adjustment procedure:**

1. Make sure that the tailgate is closed and locked.
2. Fix the Tailgate Unlocked proximity switch in such a way that it faces and detects the tailgate cylinder head edge (as shown in Figure 5-13).

The red warning light on the control panel should not blink.

If detection is achieved, the amber light on the proximity switch will turn on.

3. Unlock the tailgate.

The proximity switch should not detect the cylinder anymore.

The red warning light on the control panel should blink, and the backup alarm and the in-cab buzzer should sound.

4. Repeat the adjustment procedure until the proper adjustment is obtained.

The proximity switch should detect the cylinder when the tailgate is locked and should not detect it when the tailgate is unlocked.

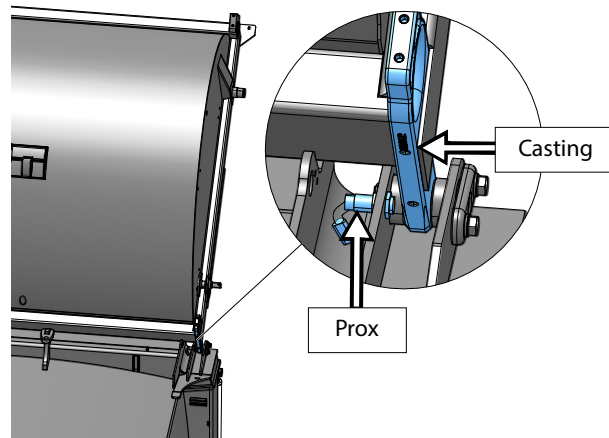
Tailgate Fully Open Proximity Switch

The Tailgate Fully Open proximity switch allows you to enable the ejection cycle when the tailgate is fully open. This is possible because this proximity switch bypasses the Packer Fully Extended proximity switch that limits packer travel to the fully extended position, allowing the packer to complete a full eject sweep.

Location

The Tailgate Fully Open proximity switch is located on the streetside, next to the tailgate hinge.

Figure 5-14 Tailgate Fully Open proximity switch



Adjustment procedure:

1. Fully open the tailgate.
2. Adjust the Tailgate Fully Open proximity switch so that it can detect the casting of the tailgate hinge (See Figure 5-14).

The Tailgate Up switch on the control panel should be lit green.

NOTE: When the tailgate is unlocked both the in-cab buzzer and the backup alarm sound. Also, a red warning light, located at the center of the buzzer, blinks.

3. Slightly close the tailgate (by about an inch).

The proximity switch should not detect the target and the Tailgate Up switch on the control panel should flash red.

4. Repeat the procedure until the proximity switch is properly adjusted.

Arm Stowed Limit Switch

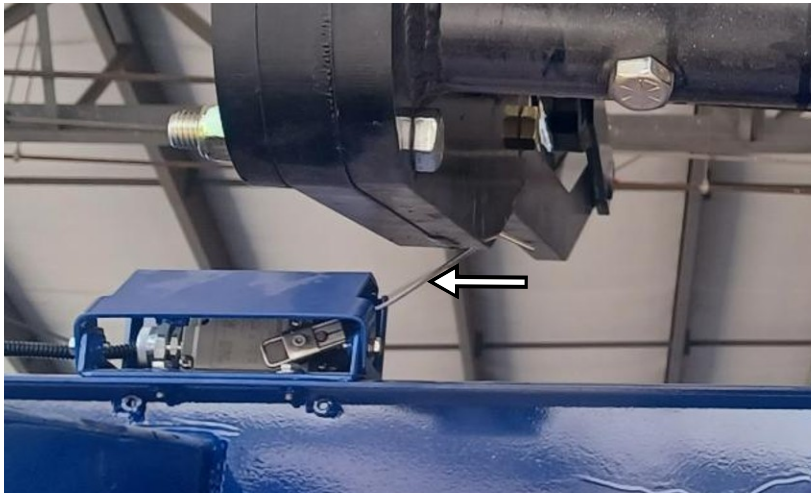
This limit switch sends a signal to the controller module when the arm is in the stowed position above the hopper and turns off the ARM EXTENDED warning light on the dashboard. If this proximity switch is misaligned, the warning light may continue to illuminate even if the arm is fully stowed.

NOTE: The ARM EXTENDED warning light turns on when the arm is not fully stowed and the truck's gear is not in neutral.

Location

The Arm Stowed limit switch is located inside a protective cover on the top left side corner edge of the hopper (See Figure 5-15).

Figure 5-15 Arm Stowed limit switch



To adjust this limit switch, apply the following procedure:

1. Park the vehicle on safe level ground.
2. Set the parking brake.
3. Fully retract and raise the arm until it reaches its fully stowed position above the hopper.
4. Disengage the PUMP switch and turn OFF the engine.
5. Proceed with the lockout/tagout procedure. Refer to “Locking Out and Tagging Out the Vehicle” on page 24.
6. Adjust the limit switch in such a way that the ARM EXTENDED warning light stops illuminating when the arm is fully stowed. To do this:
 - 6 a. Use a stepladder to gain access to the limit switch.
 - 6 b. Unscrew the lever screws of the limit switch.
 - 6 c. Raise or lower the rod so that the arm will trigger the limit switch (click sound) and turn off the warning light.

The lever must touch the arm.
 - 6 d. Tighten up the screws.

IMPORTANT: Use extreme caution when doing so. Ask a helper to firmly hold the base of the stepladder/ladder to ensure stability and use safety harness to prevent falling.

7. Start the engine and engage the hydraulic system (PUMP switch activated).

Caution Make sure the shut-off valve on the suction line is fully open before starting the vehicle.



-
8. Slightly lower the arm by using the joystick.
The ARM EXTENDED warning light should turn on.

Danger! Do not stand directly in the path of the arm while carrying out these tasks.



-
9. Repeat the procedure until the limit switch is properly adjusted.
The ARM EXTENDED warning light should go off when the arm is in the stowed position.

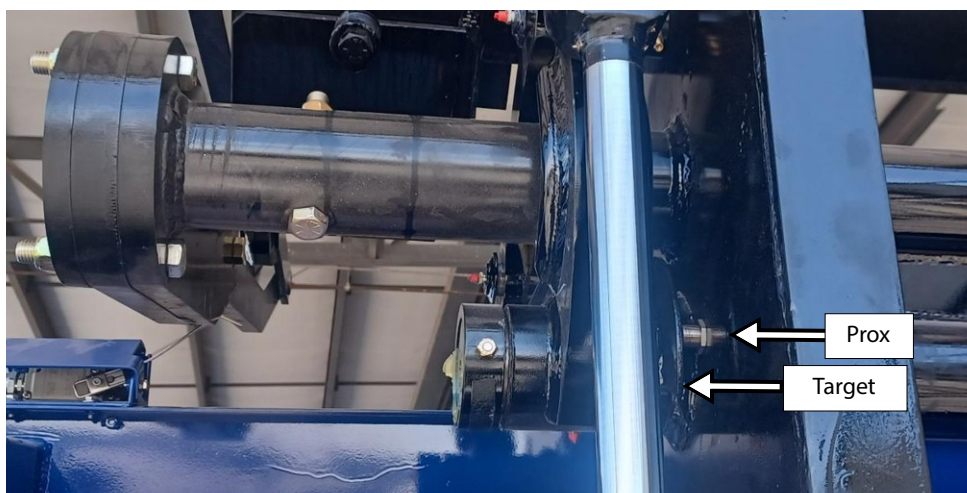
Arm Mid-Height Proximity Switch

This proximity switch stops the arm at mid-height if the packer is not in the “home” position.

Location

The Arm Mid-Height proximity switch (See Figure 5-16) is fitted on the left side of the mast's lower pivot tube.

Figure 5-16 Arm Mid-Height proximity switch



Adjustment procedure:

1. Lower the arm.
2. Complete the Lockout/Tagout Procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
3. Loosen the proximity switch mounting nuts. Slide the switch forward or backward in the mount to achieve a gap of approximately 3/16" (4.8 mm) with the target.
4. Tighten up all nuts.
5. Start the engine and switch on the hydraulic pump.

Caution Make sure the shut-off valve on the suction line is fully open before starting the vehicle.



-
6. Raise and lower the arm to check when the proximity switch is triggered.

Danger! Do not stand directly in the path of the arm while carrying out these tasks.



It should be triggered as soon as the arm is above the hopper frame.

With the arm in this position, the packing function is disabled, the ARM EXTENDED warning light on the in-cab panel should not illuminate, and the buzzer should not sound.

7. Repeat the above steps until the proper setting is achieved.

Body Raised Limit Switch (optional)

NOTE: This section only applies to trucks equipped with the optional service hoist.

This limit switch (See Figure 5-17) is located on the truck chassis and activates the backup alarm and in-cab warning buzzer as soon as the body rises about one foot above the chassis. Adjust the limit switch as needed. Refer to “Limit Switch Adjustment” on page 56.

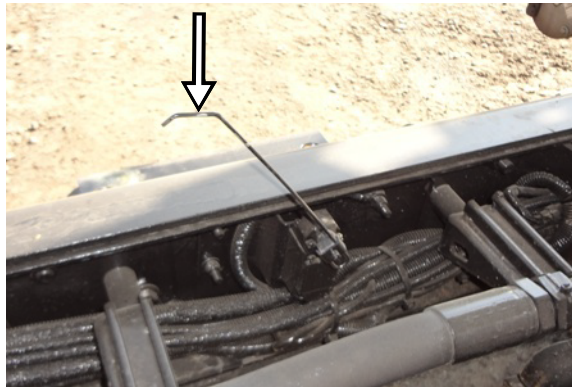
This safety feature reminds the operator or mechanic that the body is still raised.

Caution

Ensure that the body is unloaded before raising it with the optional service hoist.



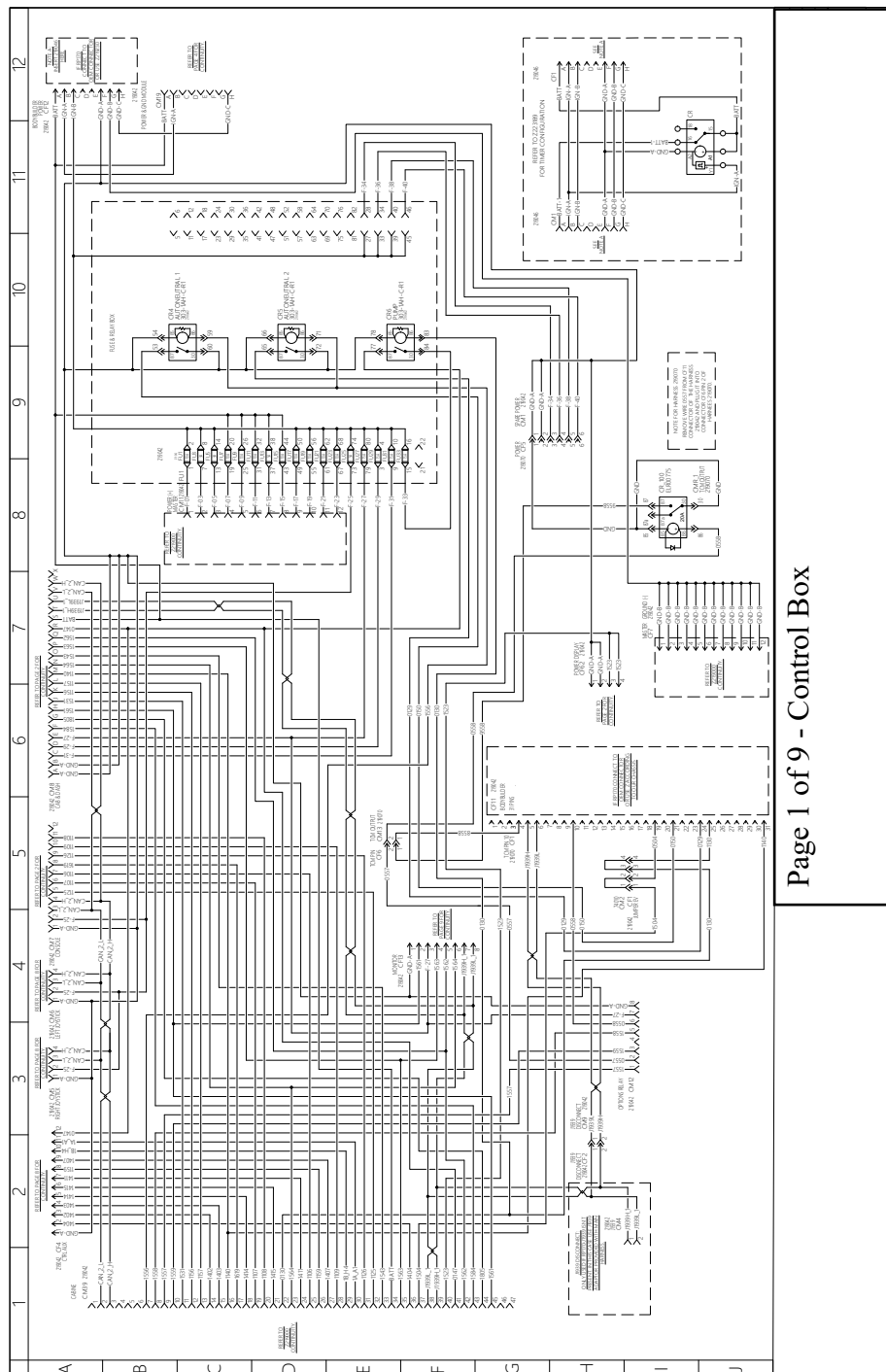
Figure 5-17 Body Raised limit switch



NOTE: The location on the truck of the Body Raised limit switch may vary according to the chassis type or model.

Electrical Schematics

NOTE: The following schematics are provided for reference only. For information about installation and wiring connections specifically related to your WITKE XPRESS™ unit, always refer to the schematics and diagrams provided with your truck.



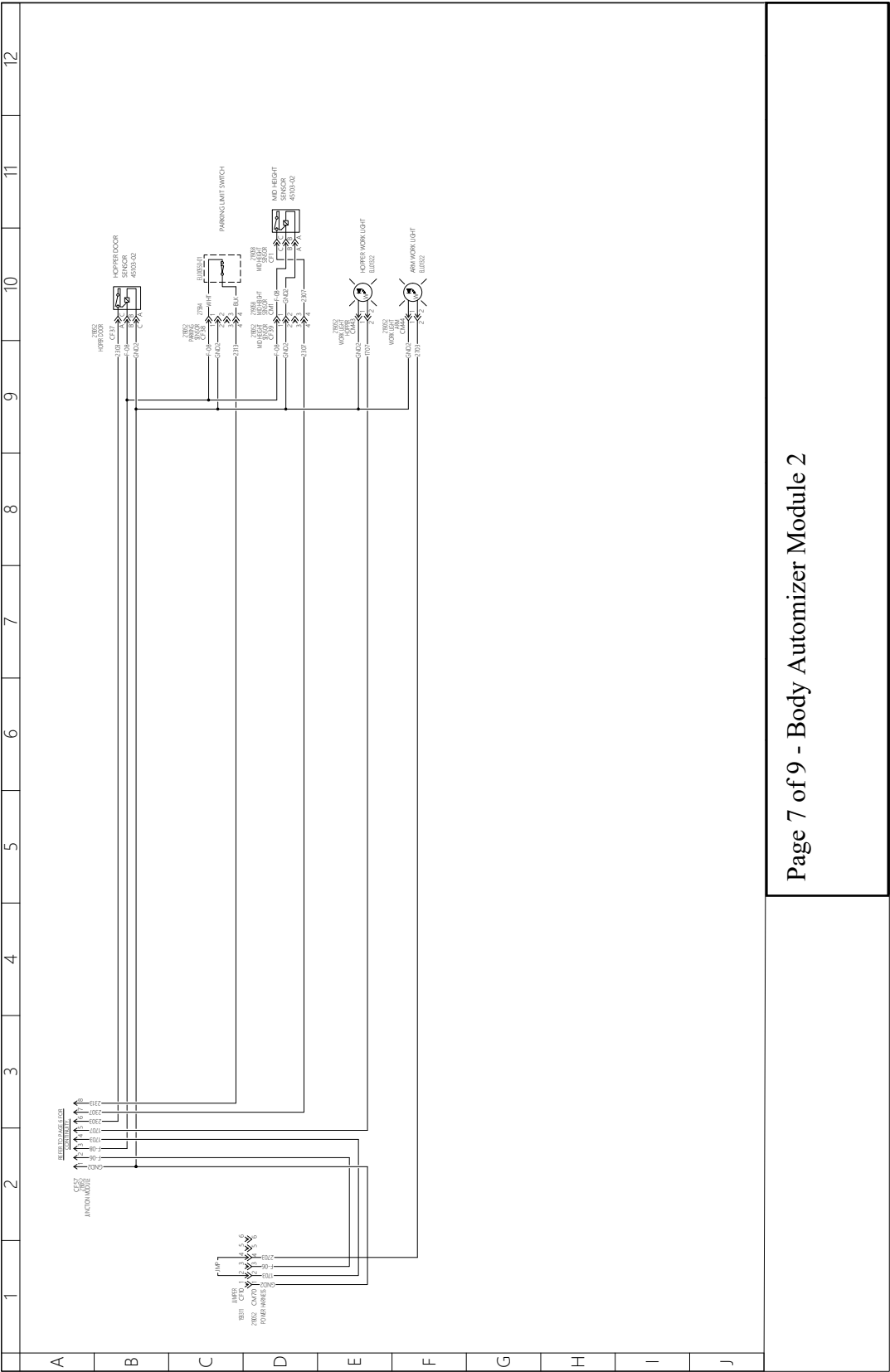
Page 1 of 9 - Control Box







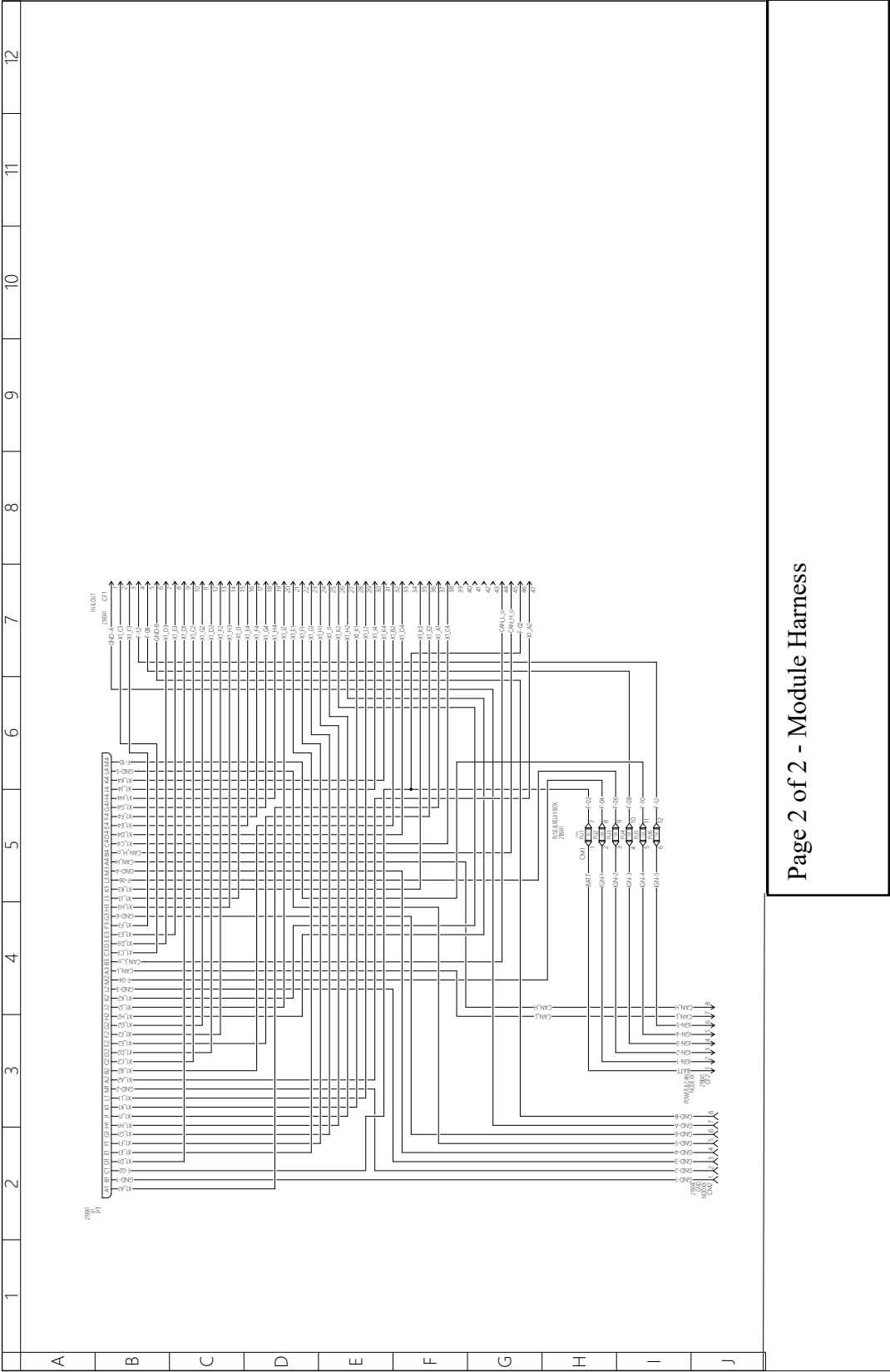




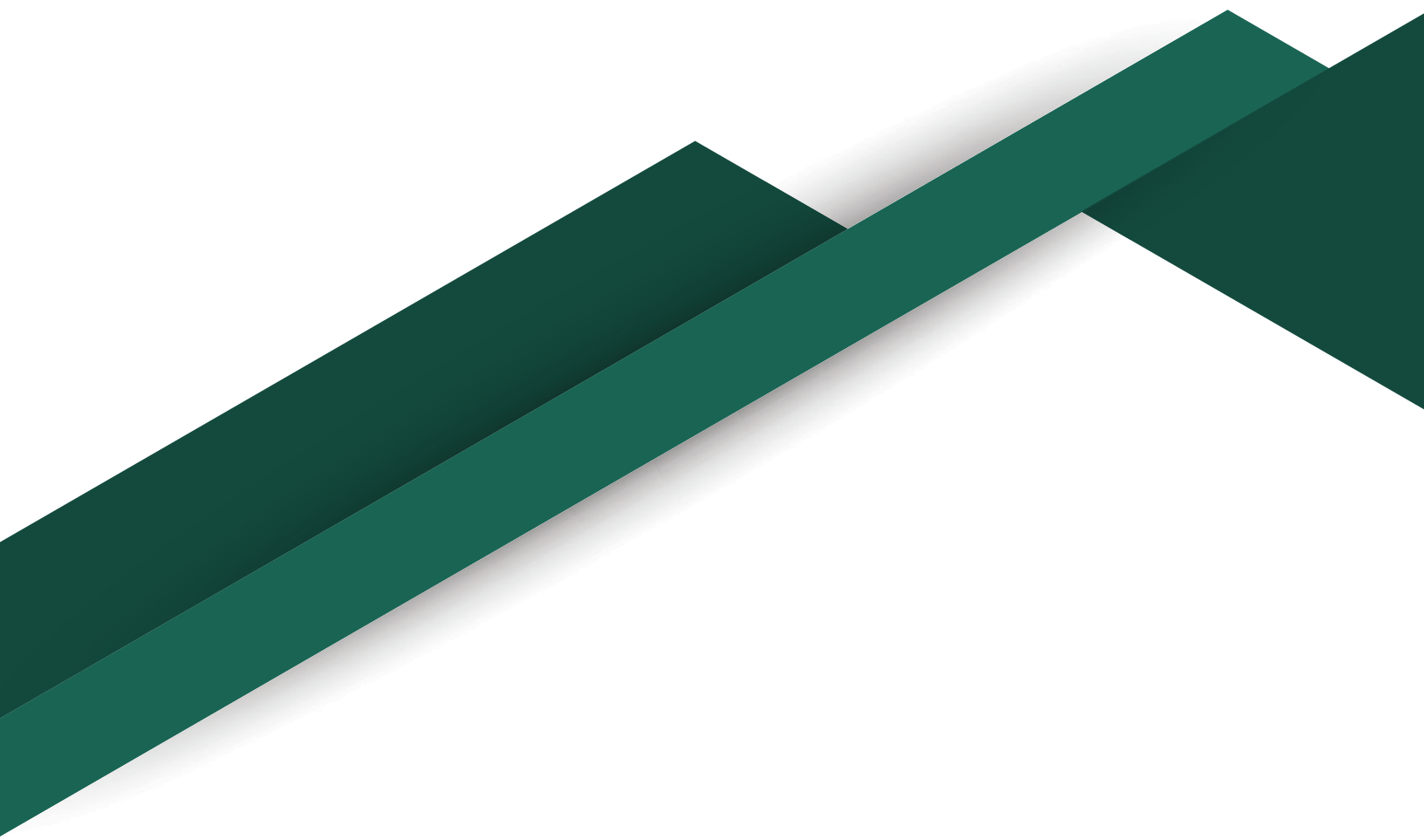
Page 7 of 9 - Body Automizer Module 2

Page 8 of 9 - Arm Control Options





Page 2 of 2 - Module Harness



6

Pneumatic System

The pneumatic system is crucial for efficient brake operation.

To avoid problems with the air system of your vehicle (especially in cold weather conditions), Labrie Environmental Group strongly recommends draining the WITTKE XPRESS™ air tanks at the end of every workday and prior to any maintenance.

Caution

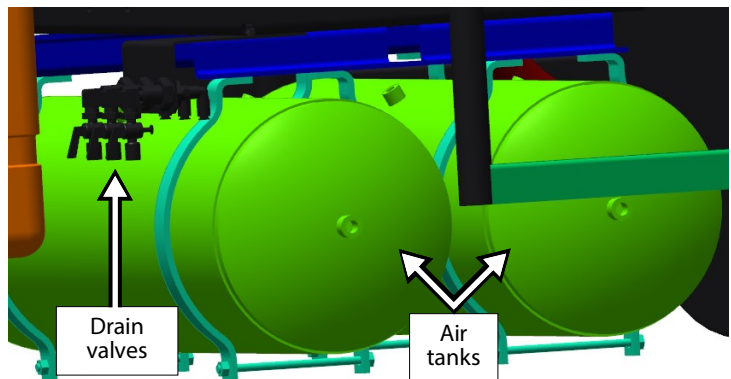


The operator or mechanic **must** wear safety glasses to protect his eyes against dust and suspended matters. The operator or mechanic must also stay away from the stream to avoid potential injuries.

Draining Air Tanks

Air tanks (Figure 6-1) must be drained daily.

Figure 6-1 Air tanks



To drain the air tanks, apply the following procedure:

1. Locate the drain valves on air tanks (see Figure 6-1).

NOTE: Some trucks are equipped with more than one drain valve.

2. Open the valves by turning them one-quarter turn clockwise.

IMPORTANT: Before opening the valves, be sure to stay away from the stream.

3. Leave the valves open until moisture is removed.
4. When all moisture has been drawn out, close the valves by turning them one-quarter turn counter-clockwise.

IMPORTANT: Pay particular attention to the dryer cartridge. On this type of equipment, the compressor works all the time due to the frequent use of the brake system. As a result, a lot of moisture is injected into the air system. For more information, see *Air Dryer* below.

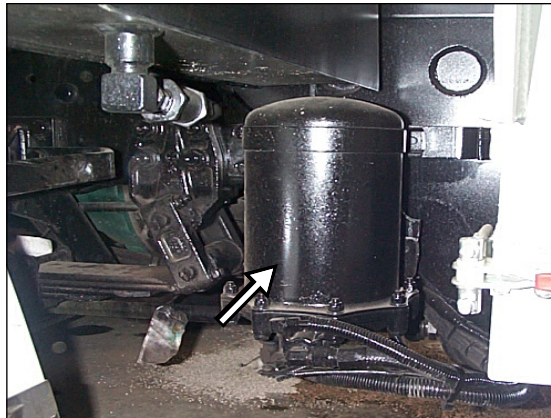
Air Dryer

Some units are equipped with an air dryer and/or alcohol evaporator.

These devices are used to reduce water in the air system, preventing corrosion or freezing of the air components in cold weather.

Maintenance on the air dryer and/or alcohol evaporator is covered by the chassis manufacturer's maintenance manual.

Figure 6-2 Air dryer





Hydraulic System

Maintenance on the hydraulic system must be carefully and regularly done. The hydraulic system supports most of the functions of the WITTKE XPRESS™ body and mast.

As with all hydraulic systems, it may be necessary to periodically check and adjust the pressure relief settings. It may be that a major hydraulic component has been changed, that the vehicle is not performing in terms of payload, or that the vehicle has recently been put into service and the system requires adjustment following a run-in period.

Danger!



Always lock out and tag out the vehicle when inspecting or performing maintenance on the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).

Danger!



Human skin can be easily penetrated by high pressure oil (2000 psi and above). Failure to take appropriate safety precautions may result in serious injury or death.

Danger!



Because of extreme overhead dangers, equipment must be properly supported when servicing sections on the hydraulic system.

General Maintenance

To keep the hydraulic system efficient and reliable, the following care must be taken:

- ♦ Every day, check that hydraulic lines and connections are not leaking. Correct if necessary.
- ♦ Inspect the pump for leaks or unusual noises.
- ♦ When maintenance is carried out, protect all hoses, fittings, pipes, or any other ingress points from dirt that would eventually get into the oil. Plug hoses that are not connected.
- ♦ Inspect the hydraulic system at least once a month, and adjust pressure if necessary (see *A. Main System Pressure Adjustment* on page 110).
- ♦ For new vehicles, change the return filter element after 50 hours of use, and twice a year afterwards (see *Element Replacement Procedure* on page 99).
- ♦ Clean the strainer inside the hydraulic tank after the first 50 hours of use, and once a year afterwards (see *Cleaning the Strainer* on page 96).
- ♦ Hydraulic oil must be replaced at least once a year, or when contaminated (see *Changing Hydraulic Oil* on page 101).

NOTE: The ball valve (or shut-off valve) on the hydraulic tank [see Figure 7-7] must be completely open before engaging the pump or starting the engine.

Labrie Environmental Group requires that the hydraulic fluid and return line filter be changed and that the strainer be cleaned before changing the hydraulic pump.

Manufacturer's warranty on hydraulic pumps provided or sold by Labrie Environmental Group could be declared void if the hydraulic fluid and return line filter are not changed, and if the strainer is not cleaned prior to replacing the hydraulic pump.

It is therefore mandatory to change the return line filter and the hydraulic fluid and to clean the strainer as per the recommended maintenance schedule mentioned above. Hydraulic fluid contamination will severely damage hydraulic components.

It is recommended to have the hydraulic fluid tested and analyzed by a lab to prevent hydraulic system or pump breakdown. This will also optimize the frequency of hydraulic fluid changes.

NOTE: Evidence of maintenance and/or fluid samples could be requested when filing warranty claims concerning the hydraulic system or pump.

Hydraulic Pump

Oil supply from the tank enters the hydraulic pump (see Figure 7-1) through the suction line. Pressurized oil exits the hydraulic pump through the pressure line directly to the dump valve then to the main valve. A return line exits the dump valve and runs excess oil back to the oil tank.

The pump is driven via a power take-off (PTO) mechanism featuring a disengagement capability for selective operation. The electrical signal that activates the PTO is sent by the pump switch on the control panel (see Figure 2-17).

Figure 7-1 Hydraulic pump

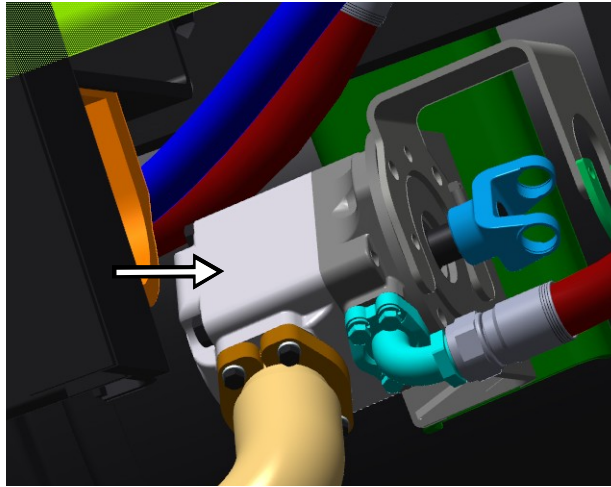
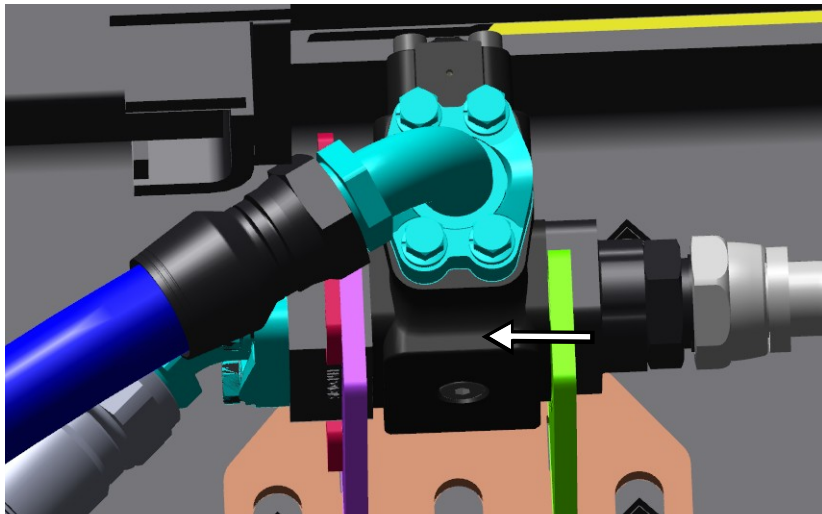


Figure 7-2 Dump valve



When the pump switch is turned on, the transmission electronic control unit (ECU) starts monitoring the vehicle speed and the engine rpm, and allows the pump to engage (or not). If the vehicle is going faster than 15 mph (25 km/h) or if the engine speed exceeds 900 rpm, the pump will not engage. After the pump is engaged, it will stay engaged at any engine speed under 2300 rpm.

Inspecting the Pump

The hydraulic pump is powered by the vehicle engine through a drive shaft. The pump should be visually inspected every working day.

NOTE: On some units, the pump is directly installed on a PTO with no drive shaft between them.

When inspecting the pump:

1. Start the engine and engage the hydraulic pump.
The pump should turn freely without excessive noise or vibrations.
2. Check for oil leaks under the pump and at connection points.
3. Lock out and tag out the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).

Caution!

If the unit has to be driven away for repairs on the hydraulic system, remove the drive shaft between the engine and the pump before restarting the engine.



Replacing the Hydraulic Pump

Occasionally, circumstances such as a broken pump drive shaft, a leaking or noisy pump or a lack of hydraulic pressure or oil flow may necessitate the replacement of the pump.

A. To replace hydraulic pump, perform the following procedure:

1. Disengage the pump and turn OFF the engine.
2. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Locking Out and Tagging Out the Vehicle” on page 24).
3. Close the shut-off valve (see Figure 2-15).
4. Disconnect the electric coil on the dump valve (if equipped).
5. Place a pan under the pump to catch dripping oil and unscrew all hydraulic hoses (2) that are attached to the pump.

Caution!

Before disconnecting the hydraulic hoses from the pump, place a pan under the pump to catch oil that may drip down from the disconnected lines.



NOTE: Always reinstall the dump valve and its components (shims, block assembly) as they were before removal. Make sure you do not invert them.

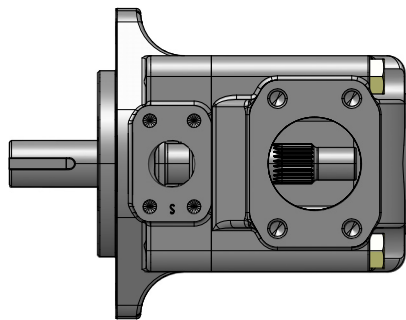
6. Disconnect the drive shaft by removing the 4 bolts that secure the shaft to the engine.
Some mechanics may rather want to disconnect the drive shaft from the pump.
The choice is up to the mechanics and is based on the type of chassis the vehicle is built on.

7. Attach the pump to a lifting device and remove both 5/8" bolts that hold the pump to the pump support.
8. Remove the pump.
If need be, disconnect the drive shaft from the pump and save it for the replacement pump.
9. Install the new pump.
Before attempting to install the new pump, it is very important to check the port configuration on that pump; the ports on the replacement pump must be positioned the same way as on the old pump. If they are not, proceed with the indexing of the new pump.
The replacement pump must be oriented in such a way to facilitate reconnection to the hydraulic system and attachment to the chassis frame.

NOTE: Pumps are indexable.

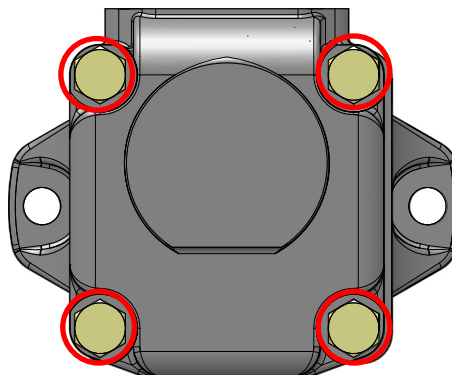
To index the new pump, proceed this way:

- 9 a. Put the pump on a flat surface or in a vise.

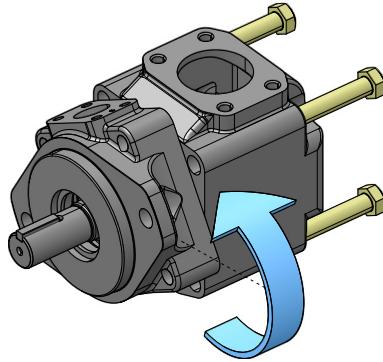


BODY SECTION

- 9 b. Remove all 4 retaining bolts that hold the mounting cap in place.



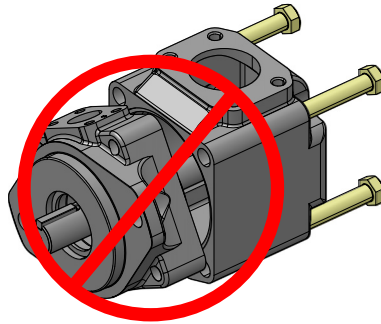
NOTE: You may leave two retaining bolts partially unscrewed to facilitate rotation with a metallic bar.



9 c. Rotate the mounting cap accordingly.

Rotation can be done by turning the mounting cap clockwise or counter-clockwise with your hands.

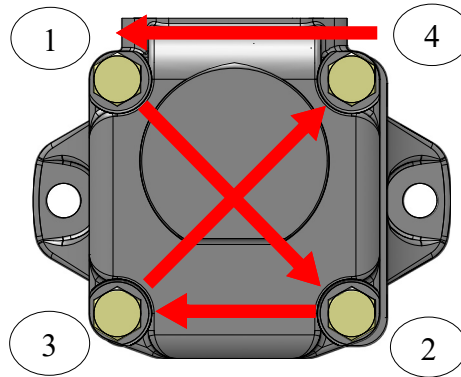
NOTE: Make sure pump sections do not separate.



NOTE: The cartridge will rotate with the housing.

IMPORTANT: Do not pull on the mounting cap as inside components may shift and damage the pump.

9 d. Put all 4 bolts back in place and hand tighten.



NOTE: When tightening bolts, be sure to follow the number sequence to avoid damaging the seals.

9 e. Check if the shaft rotates freely.

9 f. Tighten all bolts to the torque of 138-140 ft-lb.

Now the pump is properly ported and ready for install.

10. Reinstall the drive shaft if it has been removed from the engine.

NOTE: Before proceeding with the installation of the drive shaft, apply the following procedure to ensure a strong mechanical connection between the pump yoke and input shaft.

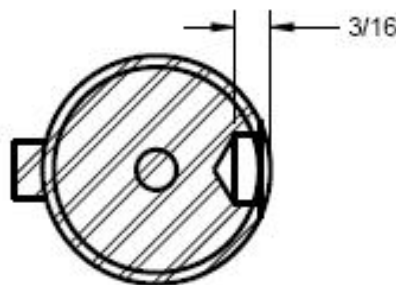
10 a. On the drive shaft mark the location where a hole must be drilled.

Use the yoke as a jig to determine where exactly the hole must be drilled then remove it.

NOTE: The yoke must be fully engaged on the shaft before determining the exact location where the hole must be drilled.

10 b. Drill a detent with a diameter of 3/8" and depth of 3/16" on the pump shaft.

Figure 7-3 Depth of detent to be drilled



10 c. Reinstall the drive shaft, placing the yoke on the shaft as illustrated on page 91.

The yoke must be fully engaged on the shaft with both holes aligned (one hole over the other).

- 10 d. Apply Loctite 243 (medium strength) to bolt threads and insert the bolt firmly into the holes to properly secure the yoke to the shaft.
- 10 e. Install a steel wire on the yoke bolt (the wire must be tight around the bolt head, in a fashion that prevents LH rotation) [see Figure 7-4].
- 11. Using a suitable lifting device, install the new pump on the pump support.
- 12. Put both 5/8" bolts back in to secure the pump to the plate.
- 13. Go through Steps 5 to 9 in reverse order to reinstall the various components of the pump assembly.
- 14. Fill the pump housing with new oil.
- 15. Open the shut-off valve (see Figure 2-15)
- 16. Prime the new pump (see *Priming a New Pump* on page 92).

Caution! Check level of hydraulic oil in the tank. Add oil if needed.



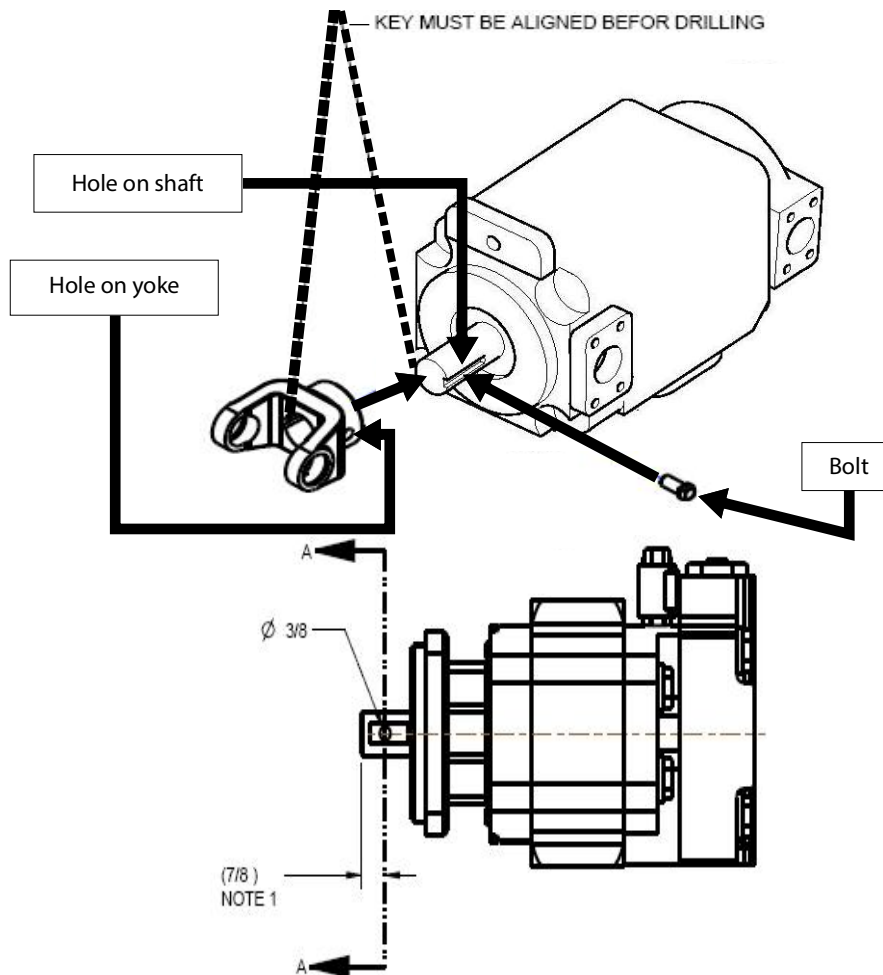
NOTE: Labrie Environmental Group strongly recommends you change the filter element and the hydraulic oil as well as clean the hydraulic tank after the installation of a new pump (see *Element Replacement Procedure* on page 99 and *Changing Hydraulic Oil* on page 101).

Installing a Yoke-Locking Bolt

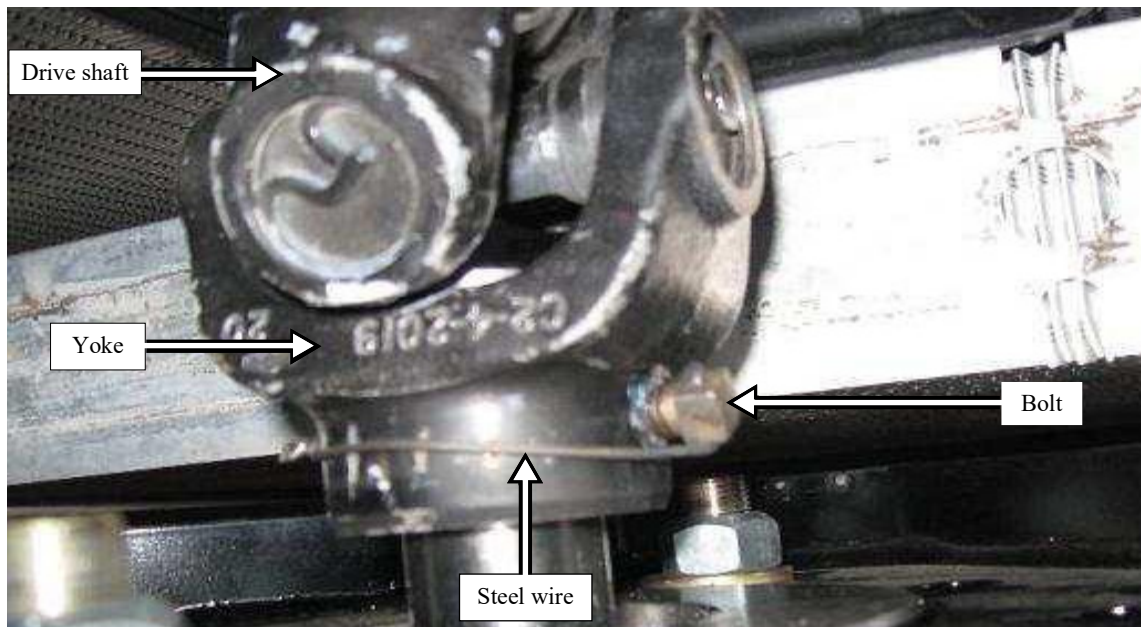
NOTE: It is important to perform this procedure after a pump replacement or a pump drive shaft replacement.

To install a yoke-locking-bolt, do the following:

1. Locate the hole on the yoke and the hole on the drive shaft (see illustration below).



2. Place the yoke on the shaft as illustrated above.
The yoke must be fully engaged on the shaft with both holes aligned (one hole over the other).
3. Apply Loctite 243 (medium strength) to bolt threads and insert the bolt firmly into the holes to properly secure the yoke to the shaft.
4. Install a steel wire on the yoke bolt (the wire must be tight around the bolt head, in a fashion that prevents LH rotation) [see Figure 7-4].

Figure 7-4 Steel wire on yoke

Priming a New Pump

To prevent cavitation or air in the hydraulic system after installing a new pump or even when flushing the hydraulic system, make sure to prime the pump before starting the engine.

Apply the following procedure for any new installed pump:

1. Make sure the parking brake is applied and the vehicle is tagged out for maintenance purposes (refer to “Locking Out and Tagging Out the Vehicle” on page 24).

Danger!



Apply the lockout / tagout procedure at all times when maintenance or inspection is carried out on the vehicle.

2. With the shut-off valve closed (see Figure 7-7), fill the suction line before installing it on the pump.
3. Fill the pump housing with new oil.
4. Reinstall the pressure hose on the pump housing.
5. Open the shut-off valve on the suction line.
6. Crank the engine repeatedly — about five times — without letting it start in order to fill the suction hose and the pump with hydraulic oil and to push the air back into the tank.
7. Start the engine.

You can slowly raise the engine rpm only after 5 minutes. When you raise the rpm, always make sure that the pump does not make excessive noise.

8. Before putting the vehicle back in service, recalibrate the system pressures.

Hydraulic Tank

The hydraulic tank is a 60 US gallon capacity reservoir mounted to the chassis frame. It houses the reservoir return line filter assembly as well as a suction line strainer. Fitted to the tank is a **breather filter** (see Figure 7-6) which allows the tank to breathe as oil is drawn out of the tank. The breather filter should be replaced once a year. A ball valve (or shut-off valve) [see Figure 7-7] is provided in the suction line in order to isolate the tank during maintenance.

Figure 7-5 Hydraulic oil tank



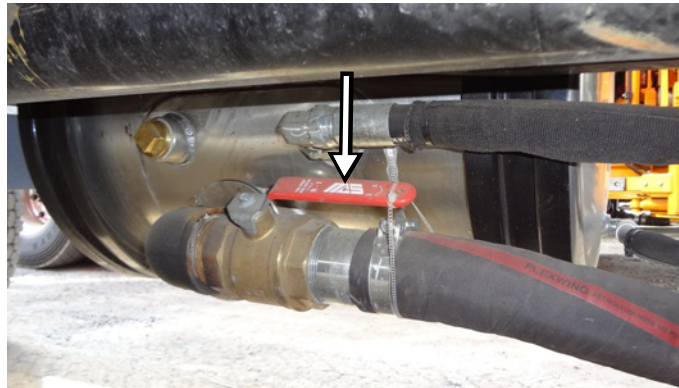
Warning! The ball valve or shut-off valve must be fully open while you operate the hydraulic pump. Severe damage to the pump will occur if it runs with this valve closed.



Figure 7-6 Breather filter



Figure 7-7 Ball valve (or shut-off valve)



Inspecting the Hydraulic Tank

Verify that the oil in the tank is clean (not colored) and always at the appropriate level.

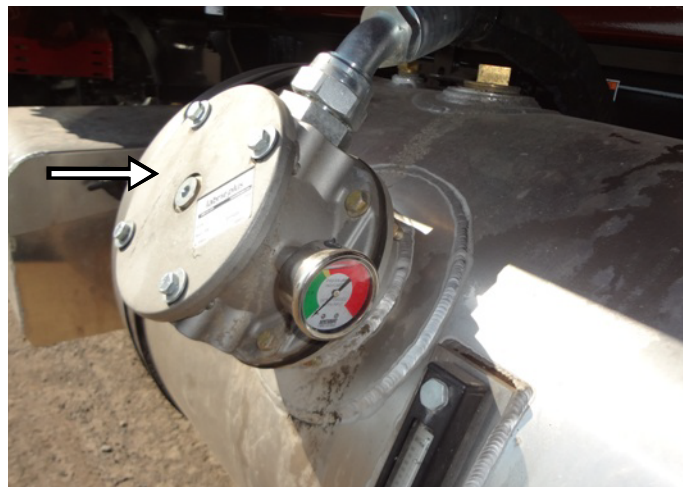
Caution! Maximum temperature for hydraulic oil is 77 °C (180 °F).



To inspect the hydraulic tank:

1. Lock out and tag out the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).
2. Clean the strainer and replace the filter element inside the tank after the first 50 hours of service (see *Cleaning the Strainer* on page 96 and *Element Replacement Procedure* on page 99).

Figure 7-8 Filter housing element



For more information on maintenance schedule, see *Wittke Xpress™ Preventive Maintenance Chart* on page 44.

3. Make sure that the filler cap (see Figure 7-9) is not obstructed and works properly.

4. Make sure that the hydraulic oil is clean (not colored) and at least $\frac{3}{4}$ full on the oil level gauge (with all cylinders retracted).

The complete system requires between 50 and 60 gallons of oil.

Figure 7-9 Filler cap

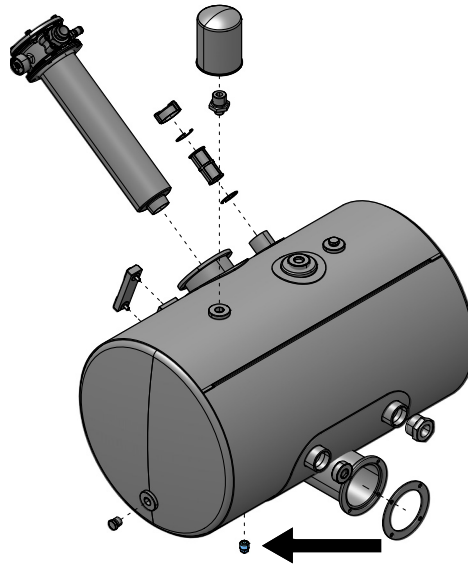


Emptying the Hydraulic Tank

To empty the hydraulic tank:

1. Prepare the vehicle accordingly:
 - 1 a. Apply the parking brake.
 - 1 b. Start the engine.
 - 1 c. Engage the hydraulic pump.
 - 1 d. Retract all cylinders (packer, mast, arms, tailgate, etc.).
 - 1 e. Disengage the hydraulic pump.
 - 1 f. Stop the engine.
2. Lock out and tag out the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).
3. Clean around the filler cap (see Figure 7-9) and remove it.
4. Place a clean container (minimum capacity: 60 gallons) under the drain plug (see Figure 7-10).
5. Remove the drain plug under the tank and let the tank drain completely.
6. Reinstall the drain plug.

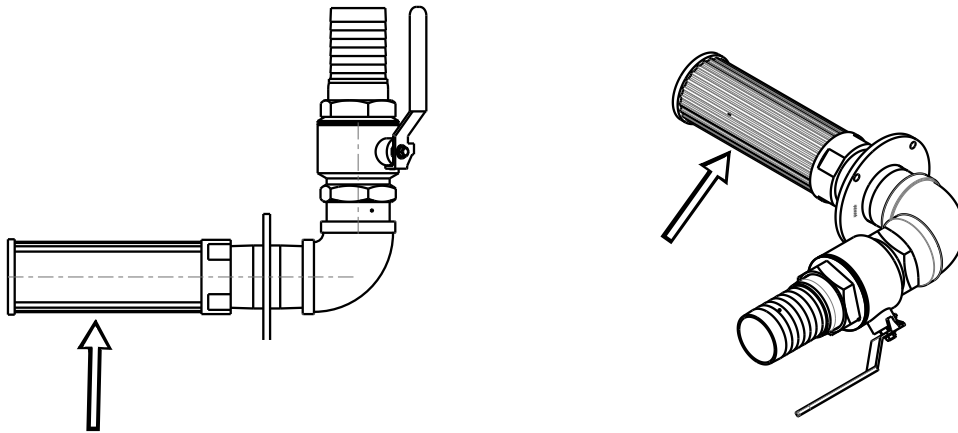
Figure 7-10 Drain plug



Cleaning the Strainer

To clean the strainer:

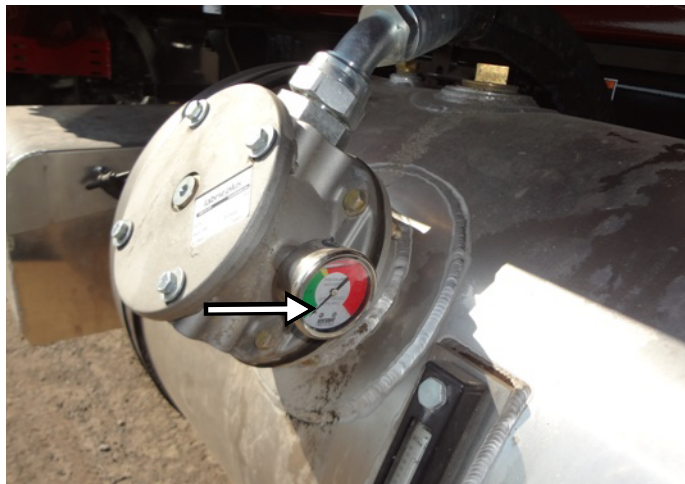
1. Empty the hydraulic tank (see previous section).
2. Remove the hose clamp from the suction hose.
3. Slide the hose over the pipe until it clears the ball valve.
4. Remove the strainer from the tank port (see Figure 7-11).
5. Clean the strainer using solvent, and check for damage; replace if necessary.
6. Replace the seal (if necessary).
7. Reinstall the strainer.

Figure 7-11 Strainer

Return Line Filter

IMPORTANT: To protect new components of the hydraulic system, the return line filter element must be changed after the *first* 50 hours of operation of the vehicle. Change the element twice a year afterwards (see *Wittke Xpress™ Preventive Maintenance Chart* on page 44).

The filter restriction indicator (see Figure 7-12) will indicate, when the engine is running, if the filter needs to be changed. Replace the filter when the indicator is in the yellow zone. This will keep the oil clean, extend component life expectancy and reduce failures.

Figure 7-12 Filter restriction indicator

Return Line Filter Element

Oil returning from the valve bank passes through a 7 micron filter mounted in the tank.

While every effort is made at the Labrie Group factory to ensure clean hydraulic systems, it should be noted that most hydraulic system manufacturers recommend the filter be replaced after a break-in period. Labrie Group's recommendation is to replace this filter element after a break-in period of 50 hour operational use.

The element must also be changed following a major hydraulic component failure.

Figure 7-13 Return line filter element housing



Figure 7-14 Return line filter element



Element Replacement Procedure

Element replacement will ensure that contaminants trapped due to ingestion and component wear are removed from the system.

To replace the return line filter element, proceed this way:

1. Complete the lockout/tagout procedure (refer to “Locking Out and Tagging Out the Vehicle” on page 24).

NOTE: Keep tools, working area and equipment clean. A pan will be required to collect a small amount of oil lost as the element is removed.

NOTE: The filter housing is fitted with a check valve. Therefore, it is not necessary to drain the hydraulic tank before the replacement procedure.

2. Loosen the 4 cover plate bolts using a ½-inch wrench, rotate through 45° and lift off.

Figure 7-15 Loosening plate bolts



3. Use an oil tray to collect lost oil.

Figure 7-16 Oil tray



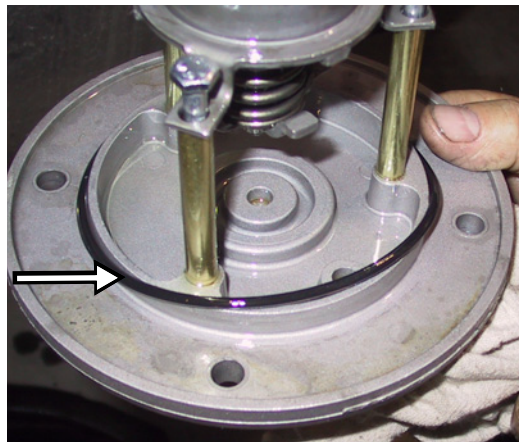
4. Carefully remove the element, rotating it as you do so to release suction.

Figure 7-17 Removing filter element



5. Inspect the O-rings (on filter and on cover plate) and the housing for damage. Replace as necessary.

Figure 7-18 Seal on cover plate



6. Moisten sealing surfaces (with oil) on the filter housing and cover plate.
7. Install the element into the housing, carefully locating the element onto the spigot.
8. Replace the cover plate.
9. Engage the hydraulic system and check for leaks.

Hydraulic Oil

Factory filled oil is tested for cleanliness. Hydraulic oil is the lifeblood of the system. Particles in the oil will devastate any hydraulic system over time. Therefore, regular oil changes will most likely extend the life of components and equipment.

Oil should be changed when it becomes oxidized, when it has a significant change in color and/or becomes milky or cloudy. Laboratory analysis is an effective method of obtaining accurate information on the cleanliness of hydraulic oil.

The changing interval of hydraulic oil may be determined by operational duty cycle, operating conditions and local maintenance schedule.

IMPORTANT: It is recommended to change the hydraulic oil at least once a year or when contaminated.

For proper oil properties and requirements as well as some words of caution, see *Hydraulic Oil* on page 29.

Changing Hydraulic Oil

Caution! Highly contaminated hydraulic fluid must be changed promptly to avoid damaging the hydraulic system.



IMPORTANT: Hydraulic oil must be replaced at least once a year.

To do so:

1. Empty the hydraulic tank (see *Emptying the Hydraulic Tank* on page 95).
2. Clean the strainer (if necessary) (see *Cleaning the Strainer* on page 96).
3. With a clean dry cloth, remove all metal particles and debris accumulated at the bottom of the hydraulic tank.
Insert your hand inside the tank through the opening left by the removal of the strainer and clean the interior.
4. Put back the strainer.
5. Change the return filter element (see *Element Replacement Procedure* on page 99).
6. Using a filtering screen, refill the tank with high-quality oil until it reaches the $\frac{3}{4}$ mark on the oil gauge (see *Recommended Lubricants* on page 29 for specifications).

The entire system will require between 50 and 60 gallons of oil.

Caution! It is not recommended to mix different brands and/or grades of oil in the hydraulic tank.



7. If the suction line has been replaced, fill the line until oil reaches the pump.
8. Reinstall the filler cap and fully open the ball valve (or shut-off valve).

Caution! Failure to open the ball valve (or shut-off valve) may seriously damage the pump and the hydraulic system.



-
9. Prime the pump (see *Priming a New Pump* on page 92).
 10. Start the engine.

Hydraulic Cylinders

Inspecting Hydraulic Cylinders

Danger! Always lock out and tag out the vehicle when inspecting or performing maintenance on it (see *Locking Out and Tagging Out the Vehicle* on page 24).



IMPORTANT: You must inspect all hydraulic cylinders at least once a month.

When you do so:

1. Make sure that the ball valve (or shut-off valve) [see Figure 7-7] on the suction line is completely open before starting the engine.

Warning! Failure to open the ball valve (or shut-off valve) may damage the hydraulic system.



-
2. Make sure that connections between all hoses and pipes are tight, and that no oil is leaking. Leaking or otherwise faulty cylinders must be repaired or replaced immediately.
 3. Make sure that all cylinder caps are firmly set and that there are no leaks.
 4. Using a straight edge, make sure that cylinder rods are straight.
 5. Lubricate and inspect all cylinders' mounting points (pins, retaining bolts, etc.).

Detecting Cylinder Internal Leaks

An internal leak is caused by a damaged seal inside the hydraulic cylinder (see 1 on Figure 7-19). Because the cylinder is leaking oil inside (bypassing), a certain amount of pressure is lost, reducing the efficiency of the cylinder and its capacity to push and/or pull.

If the packer cylinders are bypassing, the seal inside the cylinder may need to be replaced.

To detect internal leaks in packer cylinders:

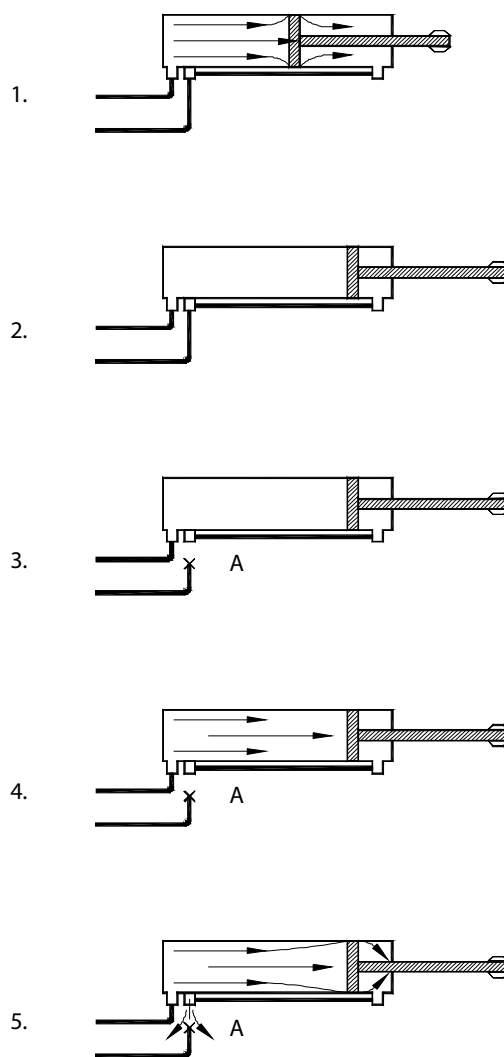
1. Apply all safety measures, and set the parking brake.
2. Pull on the red emergency STOP button.
3. Start the engine and engage the hydraulic pump.
4. Fully extend the packer cylinders, then disengage the hydraulic pump.
5. Disconnect the Packer Extend proximity switch (see Figure 5-10).

This prevents the packer from returning to its initial position.

6. Disconnect and plug hose "A".
7. Engage the hydraulic pump.
8. Push the green button and see if oil is leaking from port "A", then push the emergency STOP button.

If oil leaks out of port "A" when pressure is applied, there might be an internal leak; replace or repair the cylinder.

Figure 7-19 Detecting cylinder internal leaks



Main Valve

Pressurized oil is directed from the hydraulic pump to the main valve mounted on the street side of the WITTKE XPRESS™ body wall, near the mid-section (see Figure 7-20). Rubber gaskets seal each valve section.

NOTE: A protective cover (see Figure 7-21) protects the main valve.

Figure 7-20 Main valve (protective cover removed)



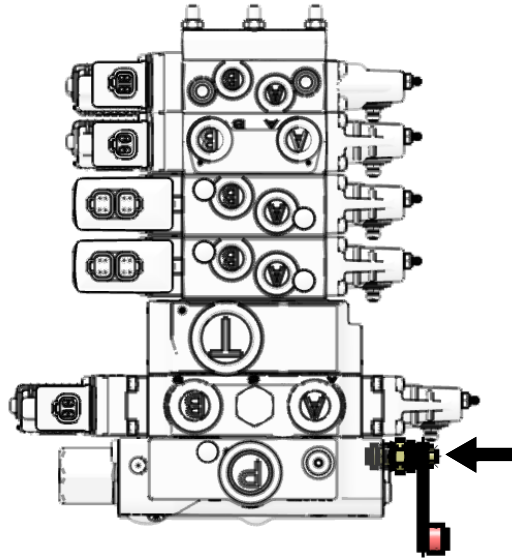
Figure 7-21 Main valve protective cover



The main valve powers all of the truck's hydraulic functions (tailgate, arms, packer, etc.). It consists of the following:

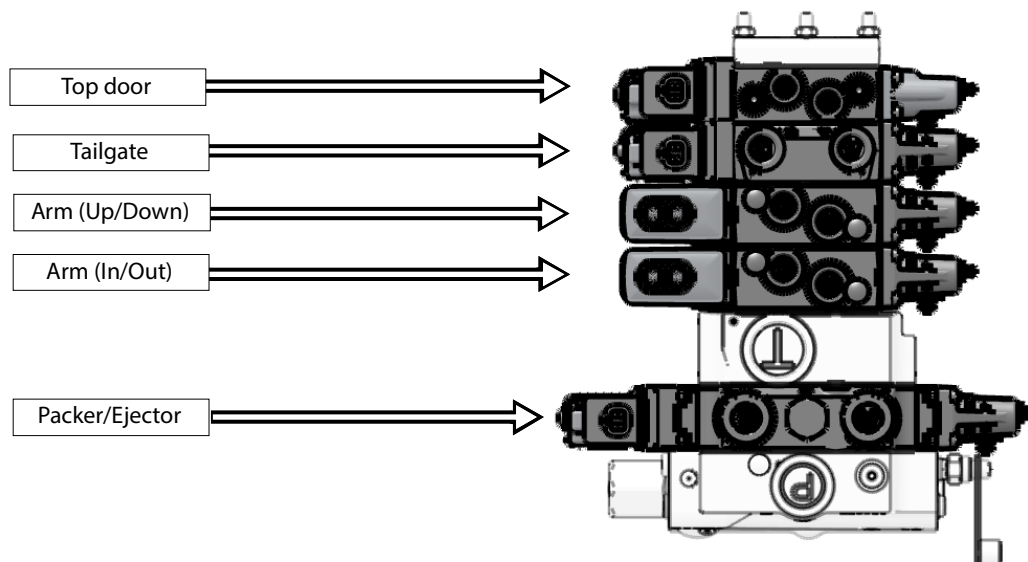
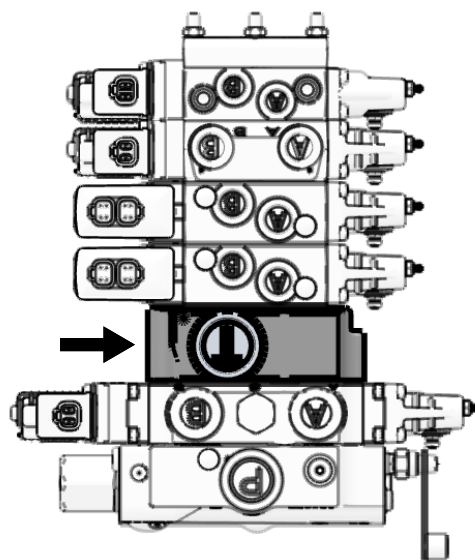
- ♦ **The Inlet Section:** The oil enters the valve bank through the inlet section where it is then directed to the work sections above. The pressure test port is located at the front of the inlet section. Remove the cap on the quick coupler (see Figure 7-22) and install a pressure gauge to read the system operating pressure.

Figure 7-22 Quick coupler on main valve



- ♦ **Work sections:** The hopper top door, tailgate, arms, mast, and pack circuits are each controlled by a dedicated work section (see Figure 7-23). Electro-hydraulic actuators attached to each of the work sections shift the spool in the desired direction to allow pressurized oil to operate the hydraulic cylinders. Returning oil is allowed to escape to tank via the return passage, outlet section and return lines.
- ♦ **Outlet Section:** This section provides a path for returning oil to travel to the return line filter in the tank. It is located above the packer section of the main valve (see Figure 7-24).

NOTE: All work sections are electro-hydraulically actuated.

Figure 7-23 Work sections of the main valve**Figure 7-24 Outlet section**

Pressure Relief Valve

The pressure relief valve is fitted in the inlet section of the valve bank and protects the hydraulic components from damage caused by loads in excess of 2400 psi. When pressure exceeds the setting of the relief valve, the oil overcomes the adjustment spring and opens the relief valve allowing oil to return to the tank.

Work Circuits

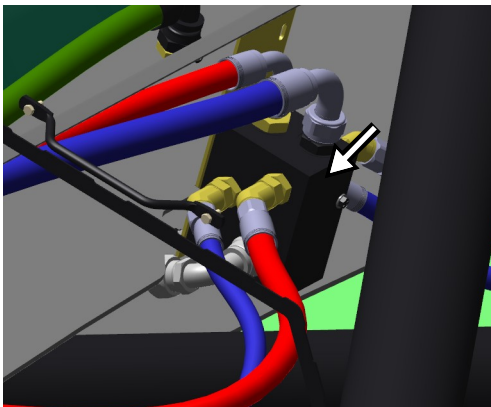
The circuits are listed from top to bottom in the same order as they appear in the valve bank assembly.

- ♦ **Hopper Top Door Circuit:** The hopper top door circuit includes one double-acting hydraulic cylinder.
- ♦ **Tailgate Circuit:** The tailgate circuit consists of two double-acting hydraulic cylinders. The holding function is integrated into the section valve.
- ♦ **Arms Up/Down Circuit:** The arms up/down circuit consists of two double-acting cylinders with integrated counterbalance valves.
- ♦ **Arms In/Out Circuit:** The arms in/out circuit consists of one double-acting hydraulic cylinder.
- ♦ **Pack/Return Circuit:** The pack circuit consists of two double-acting, 3-stage cylinders and a pilot-operated check valve.

Pack Circuit Dump Valve

The pilot-operated check valve (dump valve) is fitted into the pack hydraulic circuit for the purpose of reducing power which is required for the packer to return to its “home” position.

Figure 7-25 Dump valve



Pressure in the pilot line during the return stroke opens the dump valve and allows approximately 50 percent of the oil exiting the cylinders to go directly to the hydraulic tank. The dump valve is non-adjustable.

NOTE: Signs of pack circuit dump valve failure include: poor payloads, slow cycle times and low pressure readings during the pack cycle.

Location

The pack circuit dump valve is installed on the lower section of the front inside wall (see Figure 7-25).

Pressure Settings

As with all hydraulic systems, it may be necessary to periodically check and adjust pressure settings.

Caution!

Excessive pressures will cause damage to components and can cause injury to persons. Read instructions carefully!



Caution!

If equipped with a grabber arm attachment, the grabber arms should remain closed at all times. Personnel should be aware of moving parts at all times.



NOTE: All pressure settings require that:

1. The system is activated (red Emergency Stop button pulled up) and PTO, if employed in the system, is engaged.
2. When making pressure readings, the engine speed should be 700 - 1500 rpm unless otherwise specified.
3. All pressures can be read on the pressure gauges located on the valve body.

NOTE: Although the WITTKÉ XPRESS™ is equipped with an electro-hydraulic main valve (see Figure 7-20), there is no pilot pressure to adjust because the pilot section is inside the valve.

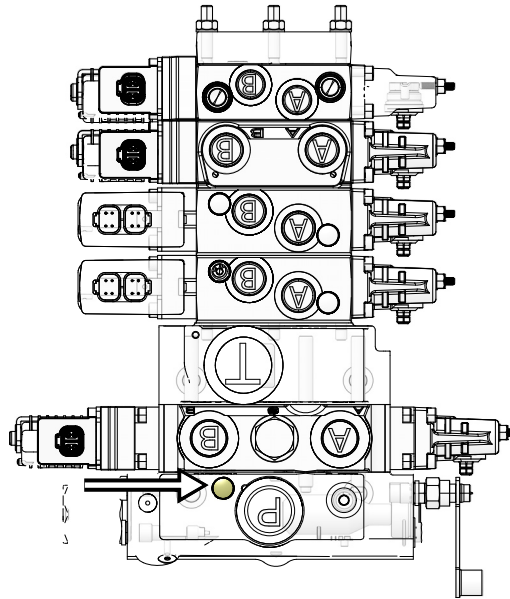
A. Main System Pressure Adjustment

To adjust the main system pressure, do the following:

IMPORTANT: 2 people are required to perform this procedure.

1. Remove the cap on the quick coupler located at the bottom of the main valve bank (see Figure 7-22). Insert a 0-4000 psi pressure gauge.
2. With the engine running and the pump switch ON, increase the engine rpm to 1500 and activate the Tailgate Close function.
Have a helper note the reading on the gauge.
3. If an adjustment is required (system pressure is higher or lower than 2400 psi, locate the pressure relief valve screwed into the inlet section of the main valve bank (see Figure 7-26).

Figure 7-26 Adjusting screw



4. Using an Allen key, turn the screw clockwise to increase the system pressure or counterclockwise to decrease it.
5. Recheck when the hydraulic pressure is properly set to 2400 psi (± 50 psi).
6. If the system pressure is correct, remove the gauge.
7. Put back the cap on the quick coupler.

NOTE: Units are equipped with non-adjustable work port reliefs in the IN, UP and DOWN hydraulic circuits. The pressures for these three functions are factory set.

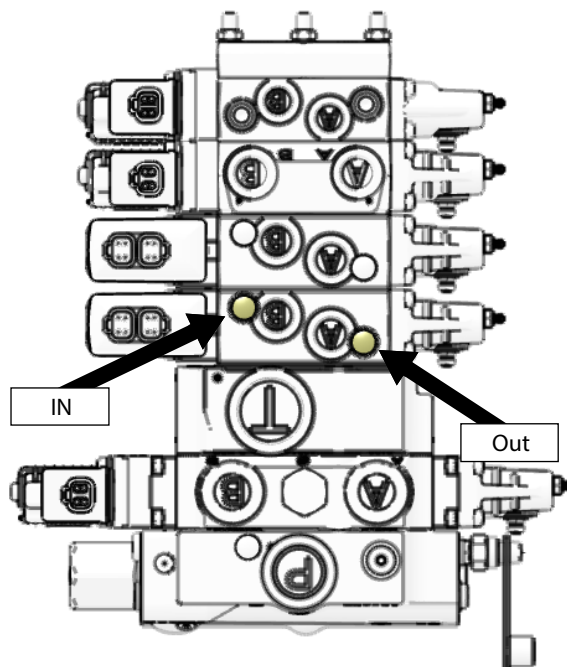
B. “IN” Pressure Relief Adjustment

To adjust the “IN” pressure relief:

IMPORTANT: 2 people are required to perform this procedure.

1. Have an operator activate the IN/OUT control lever to “IN” until the IN/OUT cylinder is fully retracted (mast closest to body).
2. Continue to hold the lever in the “IN” position and allow the engine to run at 700 rpm.
Recommended pressure is 2100 psi (± 50 psi).
3. If an adjustment is required, locate the “IN” pressure adjusting screw on the IN/OUT section of the main valve (Figure 7-27).
4. Using an Allen key, turn the screw clockwise to increase the “IN” pressure relief or counterclockwise to decrease it.

Figure 7-27 Adjusting screws (IN/OUT section)



C. "OUT" Pressure Relief Adjustment

To adjust the "OUT" pressure relief:

IMPORTANT: 2 people are required to perform this procedure.

1. Have an operator activate the IN/OUT control lever to "OUT" until the IN/OUT cylinder is fully extended (mast extended away from body).
2. Continue to hold the lever in the "OUT" position and allow the engine to run at 700 rpm.
Recommended pressure is 2100 psi (± 50 psi).
3. If an adjustment is required, locate the "OUT" pressure adjusting screw on the IN/OUT section of the main valve (Figure 7-27).
4. Using an Allen key, turn the screw clockwise to increase the "OUT" pressure relief or counterclockwise to decrease it.

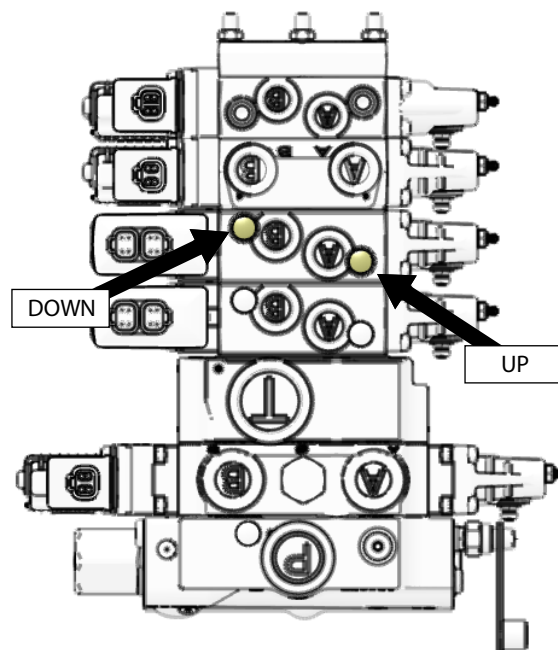
Caution! The lift should be fully extended for adjustment procedures D and E.



D. "UP" Pressure Adjustment

To adjust the "UP" pressure:

1. Have an operator activate the UP/DOWN control lever to the "UP" position.
2. Continue to hold the lever in the "UP" position and allow the engine to run at 700 rpm.
Recommended pressure is 2000 psi (± 50 psi).
3. If an adjustment is required, locate the "UP" pressure adjusting screw on the UP/DOWN section of the main valve (Figure 7-28).
4. Using an Allen key, turn the screw clockwise to increase the "UP" pressure relief or counterclockwise to decrease it.

Figure 7-28 Adjusting screws (UP/DOWN section)

E. “DOWN” Pressure Adjustment

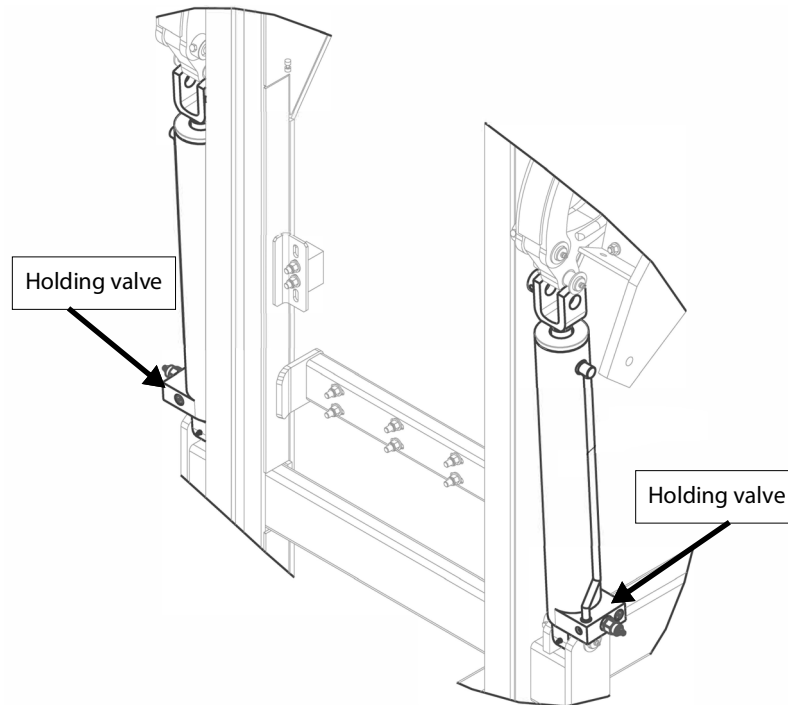
To adjust the “DOWN” pressure:

1. Have an operator activate the UP/DOWN control lever to the “DOWN” position.
2. Continue to hold the lever in the “DOWN” position and allow the engine to run at 700 rpm.
Recommended pressure is 2000 psi (± 50 psi).
3. If an adjustment is required, locate the “DOWN” pressure adjusting screw on the UP/DOWN section of the main valve (Figure 7-28).
4. Using an Allen key, turn the screw clockwise to increase the “DOWN” pressure relief or counterclockwise to decrease it.

Arm Down Holding Valve Adjustment

Your WITTKE XPRESS™ unit has two (2) arm down holding valves, one on each lifting cylinder (see Figure 7-29).

Figure 7-29 Arm down holding valves



Setting the correct pressure for both arm holding valves is crucial to ensure safe, efficient, and leak-free operation of the arm mechanism. Here's how to set the correct pressure safely and accurately:

Warning!



Always follow the manufacturer's instructions for your specific truck and valve model. Working with hydraulics can be dangerous due to high pressure.

NOTE: An arm holding valve is used to maintain hydraulic pressure in the arm lifting cylinder when the pump is off or neutral. It prevents drift or backflow of the cylinder. It is a counterbalance valve with a pressure setting.

NOTE: The precise adjustment of this valve to 1200 psi (± 50 psi) can be done with a test bench.

To adjust the arm holding valve:

1. Ensure the truck is parked on level ground.
2. Start the engine and engage the PTO.
3. Move the arms to the mid-raised position.

4. Disengage the PTO and shut the engine off.
5. With the manual lever in arm lower position, observe whether the arms move downward after a specific period of time.
6. If they do, proceed with the proper adjustment for both valves:
 - 6 a. Insert the cartridge of the holding valve into the test block cavity (HYV08412) or an equivalent that is compatible with the Sun T-2A cavity.
 - 6 b. Connect a hand pump equipped with a 0-3000 psi pressure gauge to Port 1.
 - 6 c. Actuate the pump slowly until oil begins to flow from Port 2.
 - 6 d. Read the gauge.
 - 6 e. Using an Allen wrench, adjust the cartridge to read 1200 psi when the oil begins to flow.

NOTE: As an alternative, you can adjust the pressure without using a test bench. Using a new cartridge (HYV02680 - Sun CBEA-LHN), turn its adjustment screw (see Figure 7-31) fully counterclockwise, then turn it clockwise three and a half turns. This should correspond to a 1200 psi adjustment.

NOTE: Turning the adjustment screw counterclockwise will increase the holding pressure, turning it clockwise will decrease it.

NOTE: If, even after adjusting the holding valve pressure to around 1200 psi, the arms continue to descend, the cartridge may be defective or the cylinder may be bypassing.

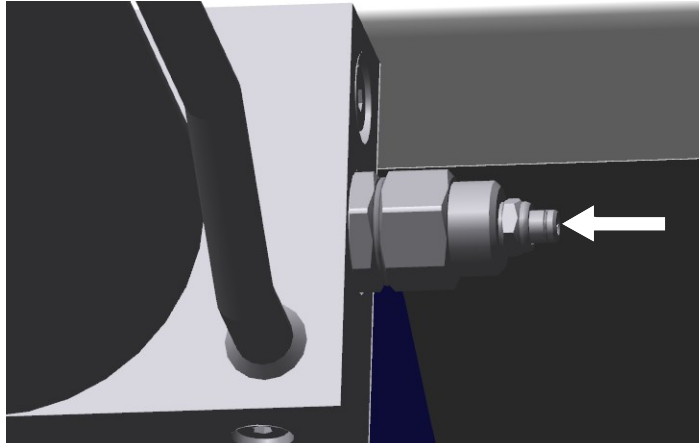
NOTE: If the arms become unstable when moving down after adjusting the holding valve pressure, reduce the pressure by turning the adjustment screw clockwise 1/8 turn at a time.

- 6 f. Using the pressure gauge connected to the quick coupler on the main valve (see Figure 7-22), set the pressure at which the cartridge will unlock when the arm is slowly lowered to 650 psi (± 50 psi).
- 6 g. Tighten the adjustment screw locknut.

Figure 7-30 SUN cartridge inside holding valve



Figure 7-31 Adjusting screw



7. Proceed with the adjustment of the other arm holding valve.
8. Once the adjustments are done, start the truck and engage the PTO.
9. Move the arms up and down for a complete cycle and re-check.
10. Verify that the holding valve is working properly by repeating steps 4 & 5.
In case of drifting,
 - 10 a. Inspect for any hydraulic leaks.
 - 10 b. Increase pressure slightly and test again.
 - 10 c. Check for leak in th hydraulic cylinder.

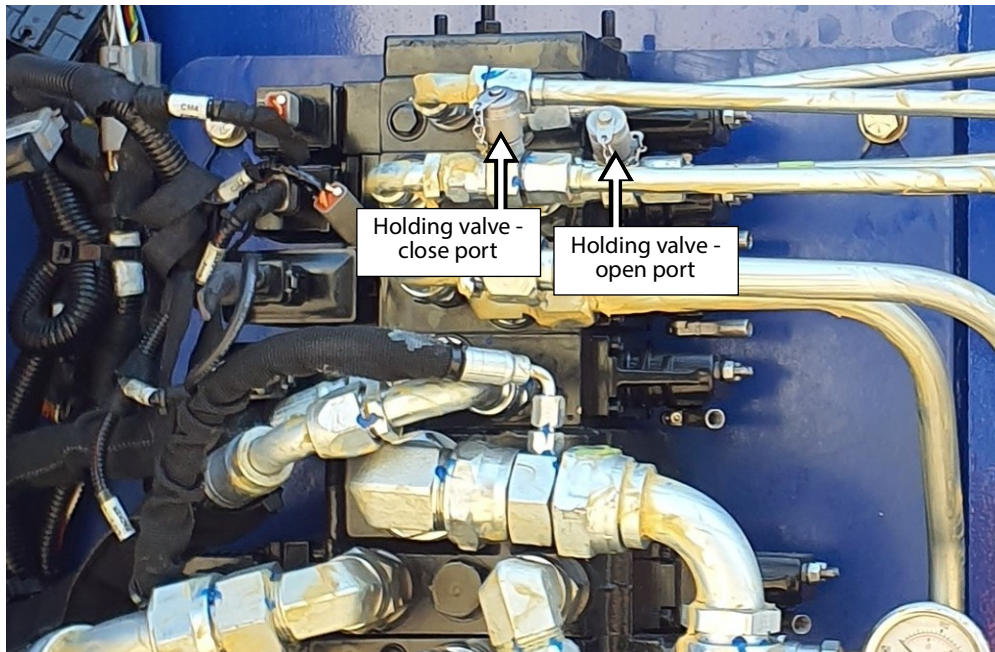
Warning! Do not exceed the rated pressure of the cylinder or valve.



Checking Tailgate Holding Valve Pressure

NOTE: The tailgate holding valves are integrated into the tailgate valve section, hence no adjustment is required.

With this holding valve configuration, pressure can remain trapped between the valve and the tailgate cylinders, even when the levers are actuated with the engine off.

Figure 7-32 Tailgate holding valves - bleeding/test ports

To check the tailgate holding valve pressure:

1. Ensure the truck is parked on level ground.
2. Install a gauge on the close port.
3. Start the engine and engage the PTO.
4. Close the tailgate completely.
5. Shut off the PTO.
6. After five minutes, the pressure on the gauge should be in the range of the system pressure (± 200 psi).
7. Re-engage the PTO.
8. Open the tailgate for three seconds to lower the pressure on the gauge.
9. Remove the gauge.

NOTE: To keep the tailgate open, make sure that it does not close when no controls are activated, regardless of whether the pump is running or not.

Tailgate Holding Valve Purge

Warning



Depressurizing this system requires special attention. The manufacturer provides specific instructions and tools for this process. Failure to comply may result in injury or death.

NOTE: The tailgate holding valves are integrated into the tailgate valve section, hence no adjustment is required.

NOTE: It is recommended that you apply the following line bleeding procedure before removing a component of the tailgate circuit.

NOTE: The following procedure is recommended when using SERV04111.

To purge the tailgate holding valves:

1. Ensure the truck is parked on level ground.
 2. Loosen the cap (1) slightly without removing it completely.
-

NOTE: Numbers in parentheses refer to Figure 7-33.

3. Close the valve (2) by turning the knob fully clockwise.
 4. Install the tip (3) by turning it fully clockwise.
-

NOTE: Even though a higher torque is required when pressure is present in the line, the tip can normally be installed by hand.

5. Place a container between 8 and 34 fl oz (500 and 1000 ml) to collect the oil that will come out of the tip (1).
6. Slowly open the valve (2) by turning the knob completely counterclockwise.
7. Replace or tighten the caps on tips (1) and (3).
8. Repeat this procedure for the other line.

Figure 7-33 Service purge hose kit

Service Hoist (optional)

The service hoist circuit operates independently from the main work circuits and is powered by an electro-hydraulic pump with an adjoining oil tank. Two small-bore cylinders allow the body to be raised for maintenance.

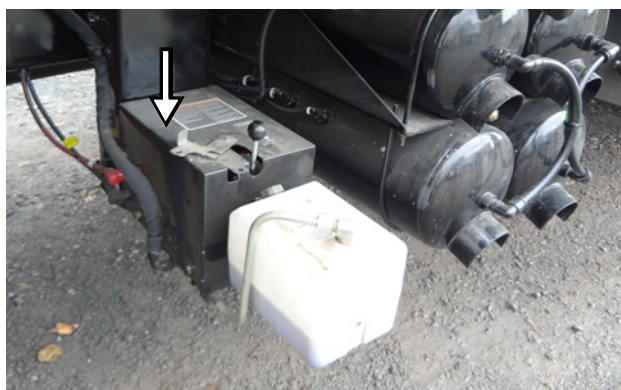
Warning! The service hoist is not intended to lift a loaded body.



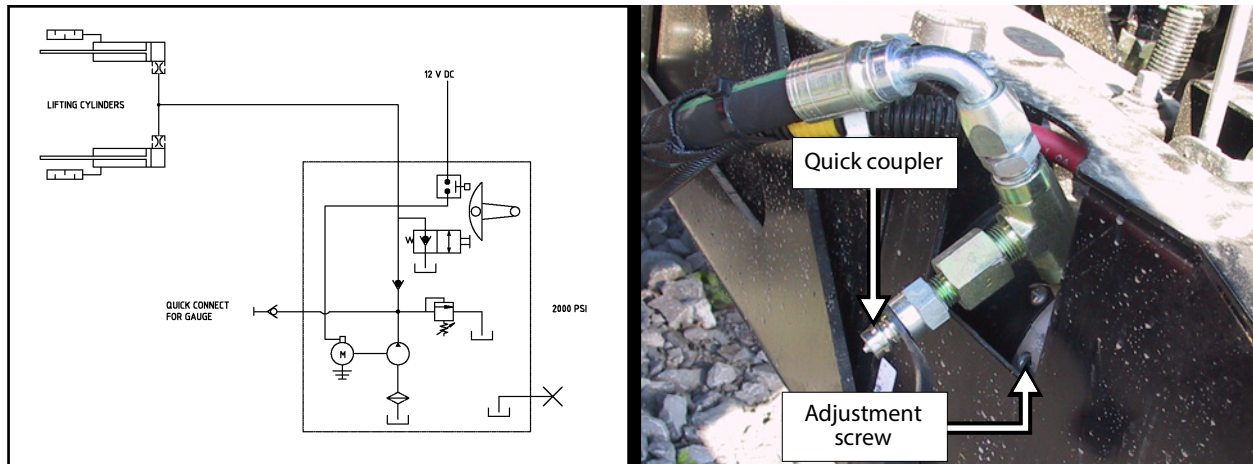
Adjustment procedure:

NOTE: If an adjustment is needed, look for the adjustment screw on the side of the pump body under the protective cover.

1. Remove the protective cover (see Figure 7-34).

Figure 7-34 Pump protective cover

2. Install a 3000-psi gauge on the quick coupler of the pump (see Figure 7-35).

Figure 7-35 Quick coupler

3. By using the pump lever, raise the body until the cylinders reach the end of their stroke.
4. Check pressure while the body is held fully raised.
The pressure reading shall be at 2000 psi.
5. Adjust the relief if necessary.
Turn the adjustment screw clockwise to increase the pressure or counterclockwise to decrease it.

Hydraulic Hose

Labrie Group uses premium quality hydraulic hose designed specifically for use in our hydraulic systems. All pressure hoses have a maximum working pressure of at least 3000 psi, with a x4 burst pressure rating. The hydraulic hose type is identified on the hose covers, in the “lay line”. When replacing any hydraulic hose, it is extremely important that the replacement hose carries the same SAE rating as the original hose.

Hose types are listed by a designation or number established by regulatory authorities such as the International Organization for Standardization (ISO) and the Society of Automotive Engineers (SAE). These regulatory bodies establish standards for the hydraulic hose industry.

IMPORTANT: Inspect all hydraulic hoses and tubing daily for abrasion, cuts, cracks and damage. Replace any hydraulic hose which shows signs of damage.

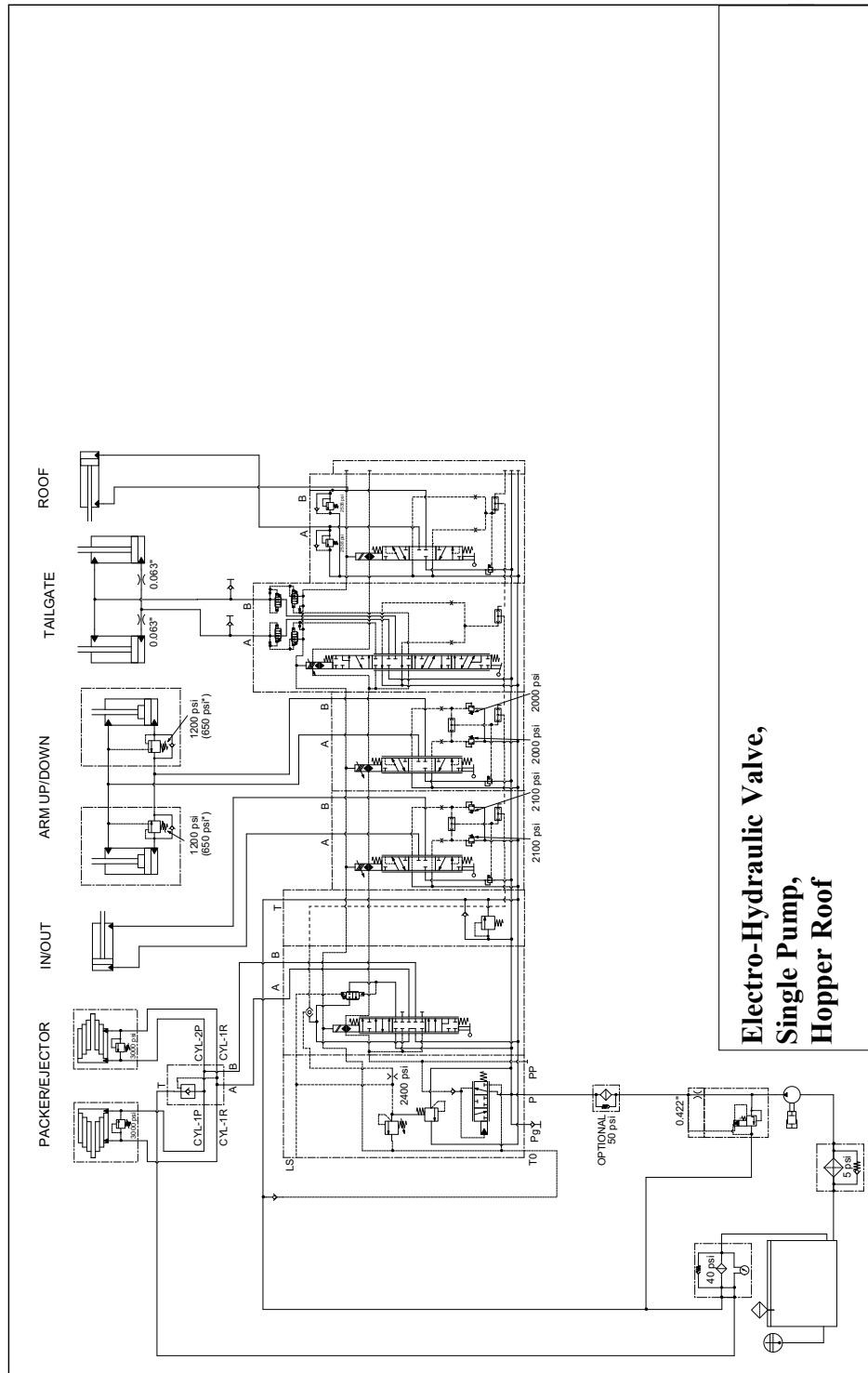
Pressure and Cycle Time Table

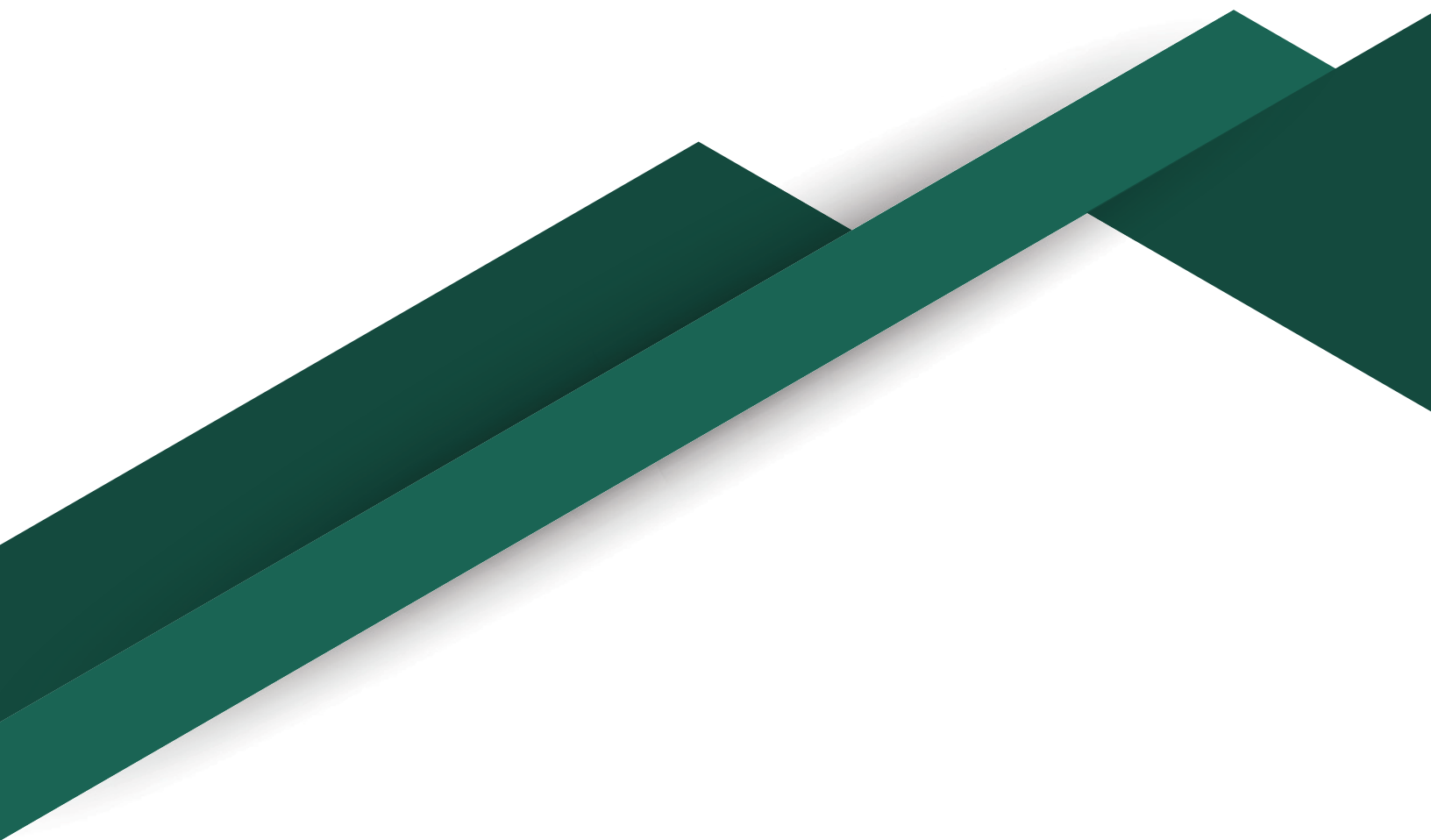
Function	Pressure Setting (PSI)	Engine RPM	Cycle Time (min.)	Cycle Time (max.)
Main valve pressure	2400 ± 50	1500	n/a	n/a
Pressure reducing valve, Pilot pressure setting	160-220 (non-adjustable)	700	n/a	n/a
Packer extend to limit switch (tailgate close)	System pressure	1500	14,0	18,0
Packer return from limit switch (tailgate close)	System pressure	700	5,0	6,0
Packer complete cycle to limit switch (tailgate close)	System pressure	1500	19,0	24,0
Tailgate open	System pressure	700	15,0	21,0
Tailgate close	System pressure	700	15,0	26,0
Top door open	2538 (non-adjustable)	700	5,0	7,0
Top door close	2538 (non-adjustable)	700	5,0	7,0
Top door complete cycle	n/a	700	10,0	14,0
Arms up	2000 ± 50	700	7,0	8,0
Arms down	2000 ± 50	700	6,0	7,0
Arm down holding valve (to keep arm up), set value of cartridge	1200 ± 100	700	3,0	3,5
Arm down holding valve (to keep arm up), pressure to unlock the cartridge when the arm is going up	650 ± 50	700	n/a	n/a
Arm in	2100 ± 50	700	6,0	8,0
Arm out	2100 ± 50	700	6,0	8,0
Grabber close (if equipped)	2538 (non-adjustable)	700	2,0	3,0

Function	Pressure Setting (PSI)	Engine RPM	Cycle Time (min.)	Cycle Time (max.)
Grabber open (if equipped)	2538 (non-adjustable)	700	2,0	3,0
Truxmore attachment lock (if equipped)	2538 (non-adjustable)	700	2,0	3,0
Truxmore attachment unlock (if equipped)	2538 (non-adjustable)	700	2,0	3,0

Hydraulic System Schematic

The following schematic is for reference purposes only. For the specific hydraulic schematic related to your WITTKE XPRESS™ unit, look for the plastic pouch located inside the cab. All schematics pertaining to your truck are found in this pouch.







Packer Maintenance

The WITTKE XPRESS™ packing system has a heavy duty guiding system using special hardened steel wear plates. Because of the frequent use of the packer, Labrie Environmental Group recommends the operator to perform daily inspections and the maintenance personnel to perform weekly inspections.

Greasing all moving parts on a daily basis is very important. The proper adjustment of the proximity switches is also very important (refer to “Packer Retract Proximity Switch” on page 57 and “Packer Extend Proximity Switch” on page 59).

Warning!



The Safety section of this manual and the Operating section of the WITTKE XPRESS™ *Operator's Manual* must be thoroughly read and understood before performing any maintenance procedures.

Danger!



Always wear gloves, safety boots, shirt, full-length pants and safety glasses when cleaning the hopper and dump body.

IMPORTANT: Any problems found on the packing system must be corrected immediately. In case of problem, contact your distributor.

Caution!



Do not grease the rails: Abrasive material sticks to the grease and can cause premature wear of the rails.

Preparing the Packer for Inspection

Warning!

Always lock out and tag out the vehicle when inspecting or performing maintenance on it (see *Locking Out and Tagging Out the Vehicle* on page 24).

To prepare the packer for inspection:

1. Start the engine and engage the hydraulic pump.
2. Open the tailgate and fully extend the packer (see Figure 8-1).

Figure 8-1 Packer



3. Lock out and tag out the vehicle (see *Locking Out and Tagging Out the Vehicle* on page 24).

Caution!

Before opening the tailgate, make sure no one is behind the truck.

Inspecting the Packer

Do the following when inspecting the packer:

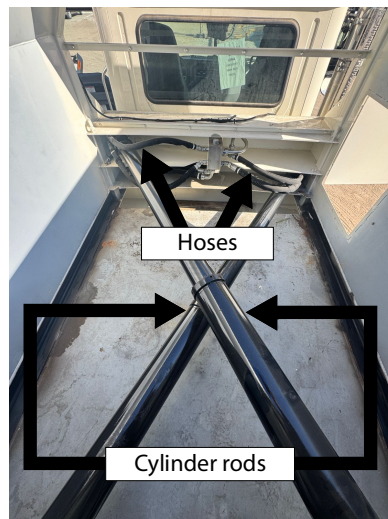
1. Inspect all wear plates (white nylon strip) [see Figure 8-2]. Wear plates need to be replaced when the packer shows vertical or horizontal movements. So take the time to check the packer for vertical and horizontal movements, and replace wear plates when required (see *Replacing Packer Wear Plates* on page 128).

Figure 8-2 Wear plates



2. Check out for leaks on hydraulic hoses and (see Figure 8-3). Tighten leaking connections and/or replace defective hoses.

Figure 8-3 Packer components



3. Verify cylinder rods:
 - 3 a. Make sure that cylinder rod ends are clear of debris.
 - 3 b. Make sure that cylinder rods have no scratches that may cause the cylinder to leak oil. Should you find oil leaks, the faulty cylinder must be replaced immediately.

IMPORTANT: During the warranty period, *do not* attempt to change cylinder seals and packing.

4. Verify packer panel adjustment for knocking noises.
Knocking noises indicate that the limit switch requires adjustment. Proper adjustment is necessary to prevent cylinder from bottoming out under pressure.
5. Make sure that both hydraulic cylinders are not leaking internally (resulting in insufficient packing power). For more information, see *Detecting Cylinder Internal Leaks* on page 103.

Replacing Packer Wear Plates

If the packer has a vertical movement greater than 3/16 inch or a side movement greater than 1/8 inch, verify the packer wear plates and body guides.

Different types of steel are used:

- ♦ Hardox 500 (bottom of the body)
- ♦ Hardox 450 (packer)
- ♦ Chromium overlay wear strips (on packer shoes and channels) – Optional
- ♦ 3/8" Chromium overlay wear strips on hopper bottom rails, 3/8" Hardox 500 on hopper side rails and 3/8" Hardox 450 on packer sides – Optional package

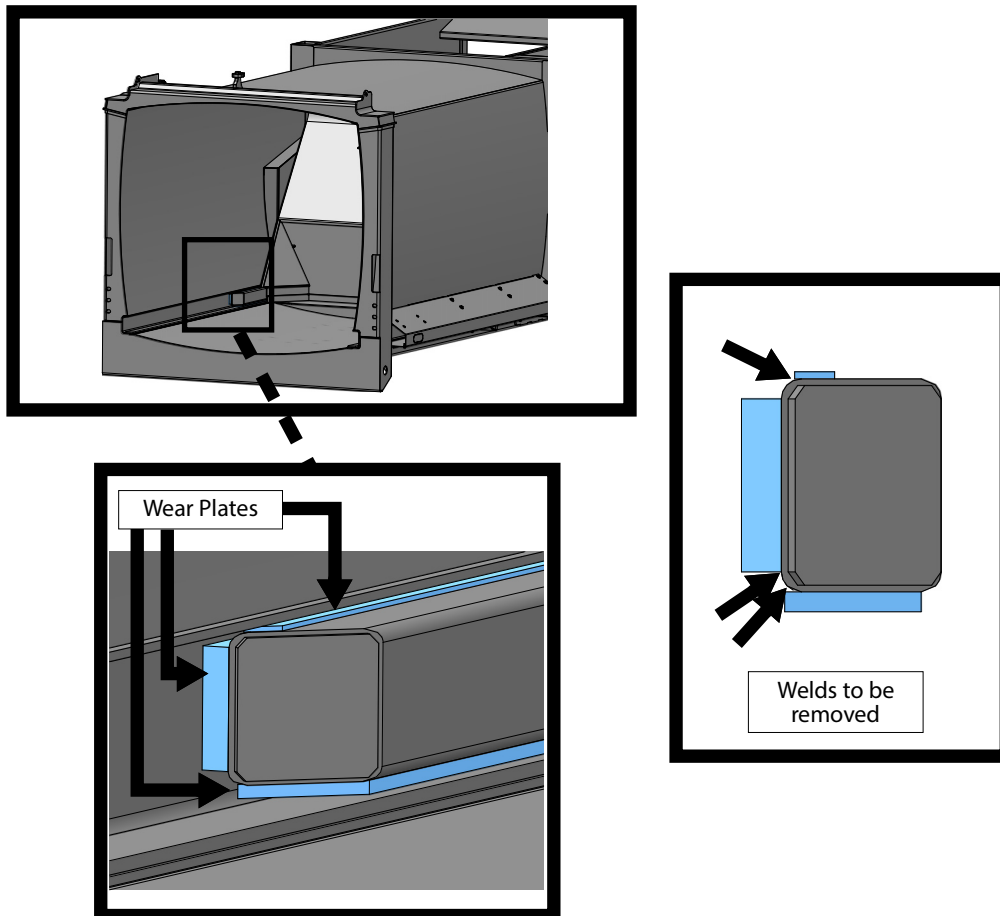
Danger!



Always lock out and tag out the vehicle when inspecting or performing maintenance on it (see *Locking Out and Tagging Out the Vehicle* on page 24).

To replace the packer wear plates:

1. Remove the packer (see *Removing the Packer* on page 130).
2. Remove the wear plates from the packer by cutting the welds (see Figure 8-4).
3. Verify corresponding wear plates under guiding tracks.
4. Install new wear plates on the packer.
5. Reinstall the packer inside the body.

Figure 8-4 Packer wear plates

Replacing Body Guide Wear Plates

Danger!

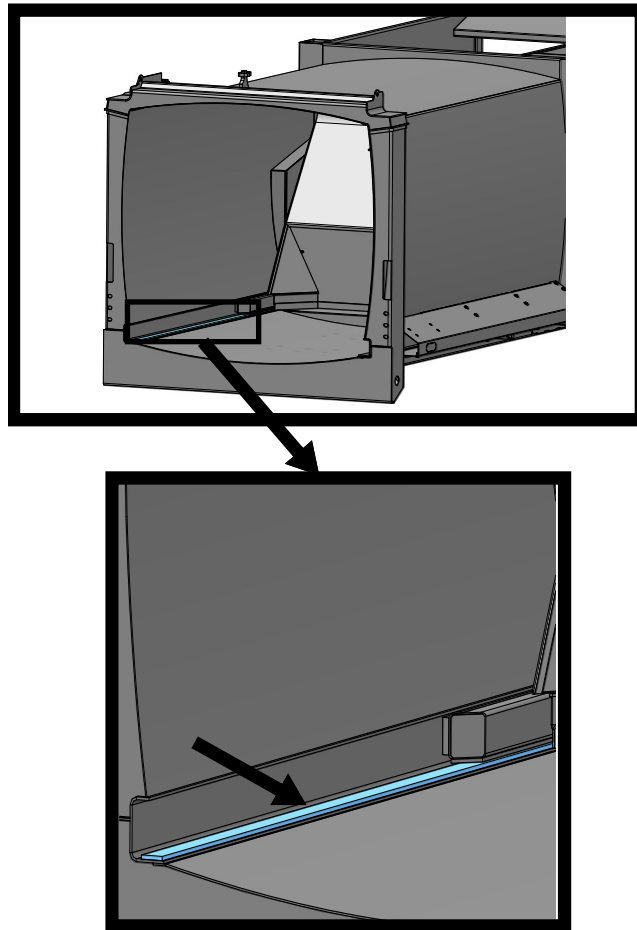


Always lock out and tag out the vehicle when inspecting or performing maintenance on it (see *Locking Out and Tagging Out the Vehicle* on page 24).

To replace the body guide wear plates:

1. Remove the packer (refer to “Removing the Packer” on page 130).
2. Retract the packer cylinders and move them out of the way.
3. Remove the body wear plates (see Figure 8-5) by grinding or cutting the stitch welds joining the plates to the guide.
4. Clean surfaces and install new plates by tacking them in place.
5. Once well positioned, stitch weld the plates in place.
6. Reinstall the packer.

Figure 8-5 Body guide wear plate



Removing the Packer

To remove the packer:

1. Start the engine and engage the hydraulic system.
2. Bring the packer to the rear end of the body (full eject) to easily access the pins (see Figure 8-8).
3. Stop the engine and turn OFF the hydraulic system.
4. Perform the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
5. Secure both cylinders to prevent them from falling on the body floor.

Figure 8-6 The optional grease fitting hoses is may be removed from the packer during this process.



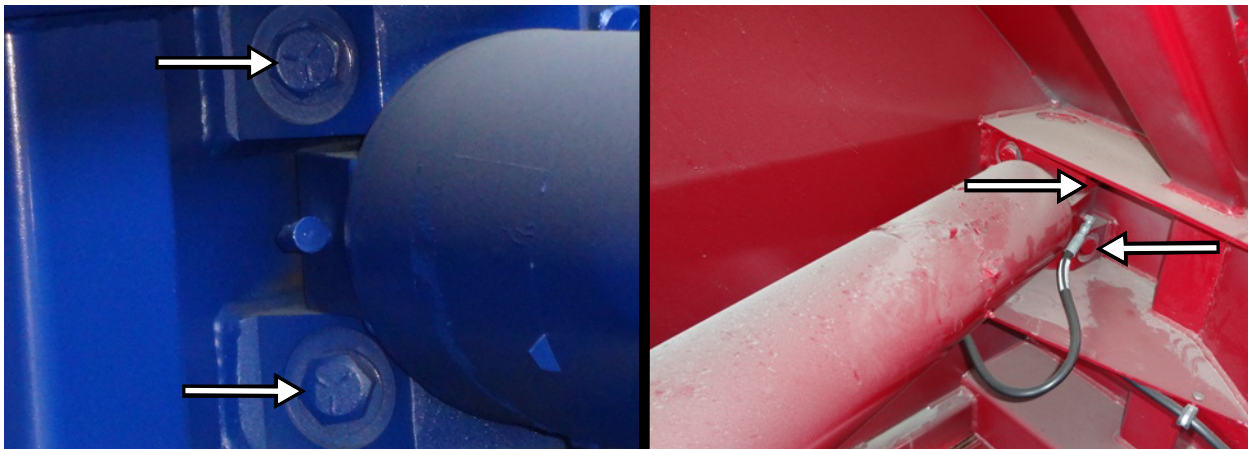
Warning!



Cylinders must be properly secured before removing their retaining pins. Failure to do so may result in damage, severe injury or even death.

6. Remove all packer end cylinder pin bolts (4 on each pin).

Figure 8-7 Pin bolts



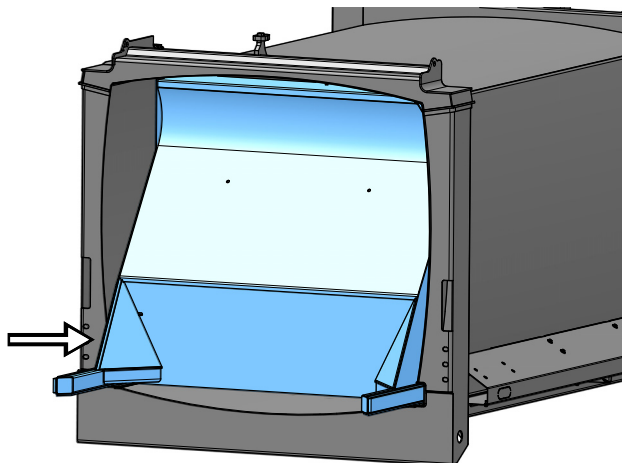
7. Exit the hopper and close the side access door.
8. Start the engine and turn ON the hydraulic pump.
9. Fully retract both packer cylinders.
10. Once both packer cylinders are fully retracted, turn OFF the hydraulic pump and the engine.
11. Perform the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
12. Using an appropriate and safe lifting device, pull the packer out of the body.
Be extra careful when conducting this step.

You may use straps to secure the packer.

Warning!

Make sure that the packer is properly secured before pulling it out of the body and always use an appropriate lifting device. Failure to do so may result in damage, severe injury or even death.
Removal of the packer must be done by two people.

Figure 8-8 Packer at rear end of body



Reinstalling the Packer

To reinstall the packer:

1. Start the engine and engage the hydraulic system.
2. Fully open the tailgate.
3. Proceed with the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
4. Using an appropriate lifting device, lift the packer and place it inside the body.
Be extremely cautious when doing so.

Warning! Make sure the packer is properly secured before lifting it, and always use an appropriate lifting device for this task. Failure to do so may result in damage, severe injury or even death.



Reinstallation of the packer must be done by two people.

5. Start the engine and turn on the hydraulic pump.
6. Extend the cylinders in order to fix them to the packer.
7. Proceed with the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
8. Enter the hopper.
9. Fix both cylinders to the packer panel.

Warning! Cylinders must be properly secured before replacing pins. Failure to do so may result in damage, severe injury or even death.



-
10. Connect grease hoses to the cylinder pins and tighten all pin bolts (see Figure 8-7).
 11. Exit the hopper.
 12. Start the engine and engage the hydraulic system.
 13. Test the packer to check that everything is set up correctly.

Replacing Packer Cylinders

Packer cylinders that become defective through time need to be replaced.

Warning! Use an appropriate lifting device to remove cylinders.



To replace the packer cylinders:

1. Start the engine and engage the hydraulic pump.
2. Extend the packer until it reaches the end of the packing stroke (with tailgate closed).
3. Stop the engine and turn OFF the hydraulic pump.
4. Proceed with the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
5. Enter the hopper and remove the grease fitting hoses (on each cylinder) [see Figure 8-7].
6. Secure both cylinders to prevent them from falling on the body floor.

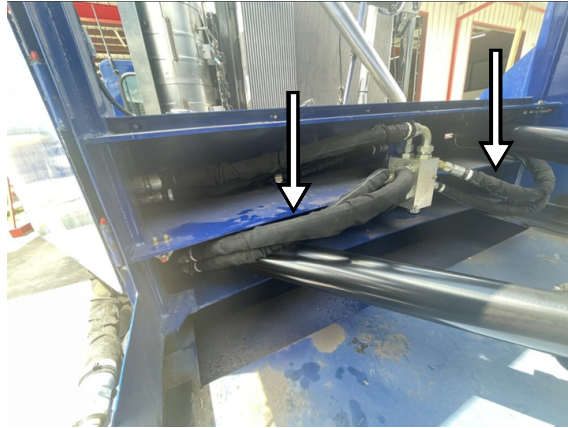
Warning! Cylinders must be properly secured before removing their retaining pins. Failure to do so may result in damage, severe injury or even death.



7. Remove packer end cylinder pins.
Cylinder pins are held in place by 4 bolts (see Figure 8-9).
8. Exit the hopper and close the side access door.
9. Start the engine and turn ON the hydraulic pump.
10. Fully retract both packer cylinders.
11. Turn OFF the hydraulic pump and the engine.
12. Proceed with the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24).
13. Enter the hopper.
14. Remove hydraulic hoses and front-end pins from both cylinders (see Figure 8-9).
Install plugs on hoses and cylinders to avoid cylinder extension, hydraulic system contamination and oil spill.
15. Firmly attach the cylinders to an appropriate and safe lifting device, and lift them out of the hopper (through the roof opening).

IMPORTANT: Use extreme caution when doing this task. Removal or installation of cylinders must be performed by two people.

16. To reinstall cylinders, perform this procedure in reverse.

Figure 8-9 Hydraulic hoses**Warning!**

Make sure that the cylinders are properly secured before lifting them out of the hopper and always use an appropriate lifting device. Failure to do so may result in damage, severe injury or even death.

NOTE: The picture shown above is for illustration purposes only and may not be an exact representation of the product.

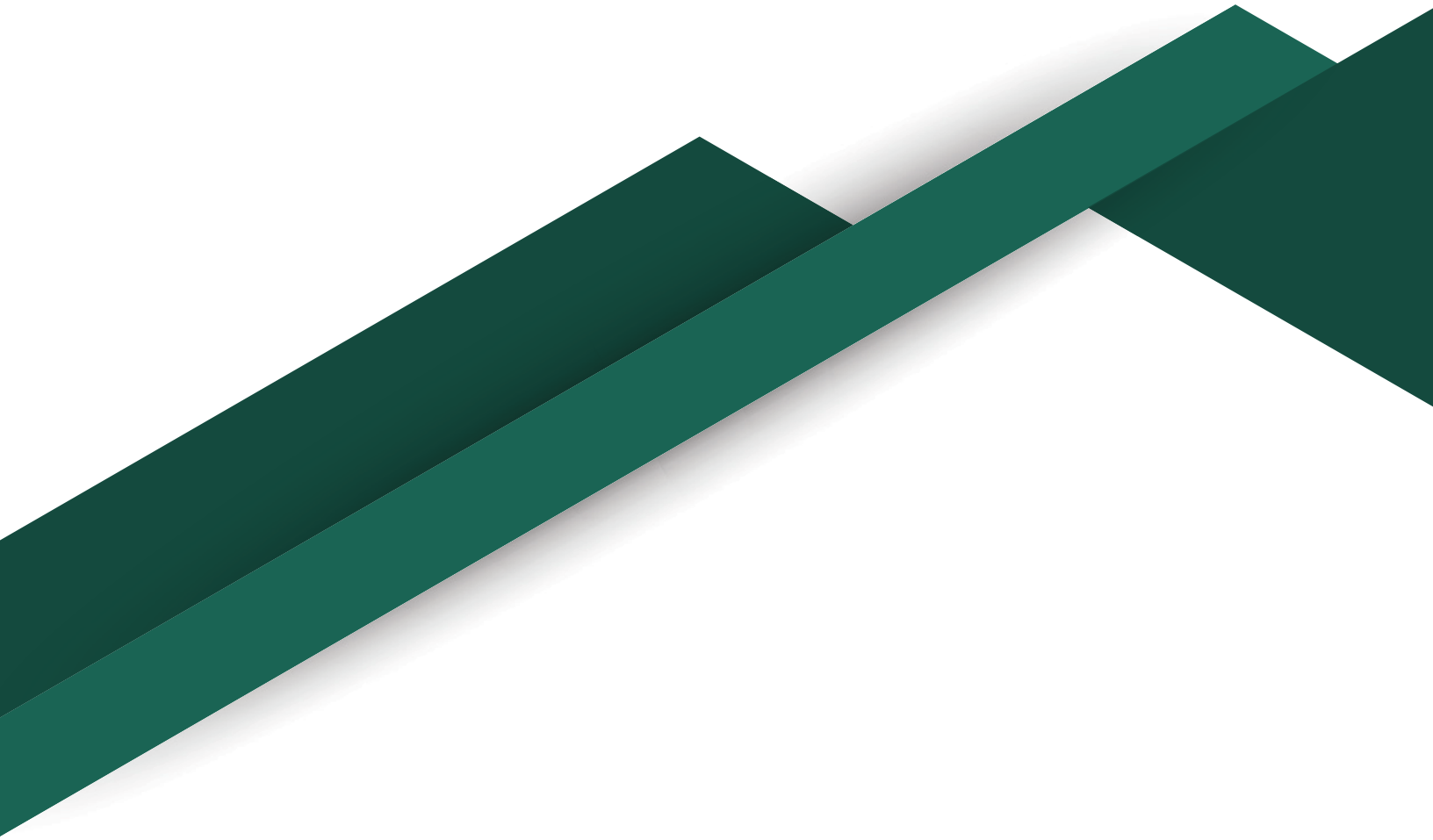
Cleaning Behind the Packer

Warning!

Before entering the hopper to clean the area behind the packer, you must always apply the lockout/tagout procedure (see *Locking Out and Tagging Out the Vehicle* on page 24). Failure to do so may result in serious injury or death.

You can sweep the area behind the packer and use pressurized water to remove any dirt that is stuck there. You can also use the hoe to rake dirt out of the clean-out traps on each side of the vehicle (see Figure 8-10).

Figure 8-10 Clean-out trap





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For technical support and parts ordering, the body serial number of your vehicle is required. LabriePlus recommends keeping record of the information found on the body serial number stickers located in the cab doorjamb and street side front corner of the body.

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