Maintenance Manual

Alpha-III™

labrie environmental group

equipment for the solid waste industry

FOREWARD

Leach rear load refuse bodies are the industry standard for both quality and performance. Labrie Environmental Group is justifiably proud of the quality engineering, material and workmanship that goes into each and every packer we produce. This commitment to quality extends to the best parts, service and distributor organization in the industry.

One area of great importance to us at Labrie Environmental Group is your safety. This unit was built in accordance with the American National Standards Institute (ANSI) standard for Mobile Refuse Collection and Compaction Equipment - Safety Requirements, ANSI Z245.1 - 2008. Before operating this unit please read and understand the safety precautions found in Section 1 of the Service and Operators manual. They are important and are provided to assist you in the safe operation of the unit.

This manual was produced with the intention of providing clear, concise instructions for the proper operation of your refuse packer. It was produced with the latest information available at the time of publication. We do, however, reserve the right to redesign and/or discontinue the manufacture of parts, components or assemblies at any time. Labrie Environmental Group has an aggressive manual and product improvement program. In any conversation or correspondence dealing with information provided in any Labrie Environmental Group manual please refer to the part number of that manual.

The manuals provided with the unit are considered a permanent part of the unit and should be included in the event of a re-sale. Additional manuals are available from your local authorized Labrie Environmental Group distributor. These manuals should be kept readily available for easy reference. We ask that if you have comments or suggestions concerning this manual please contact us at (800) 231-2771. We are here to be of service to you, our valued customers.

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SAFETY PRECAUTIONS

GENERAL

The Alpha-III has been designed with the operator in mind. However, as with any industrial machinery, especially those that are large and apply forces through hydraulic pressures, the ultimate responsibility for safety rests with you - the user. An alert, conscientious attitude and observance of all known safe operating practices are the best ways to prevent accidents.

Before operating the unit it is the operator's responsibility to be thoroughly familiar with the instructions contained in the Operator's Manual.

Publication of these precautions does not imply or in any way represent an all inclusive list. It is the operators responsibility to be familiar with and ensure that operation is in accordance with safety requirements and codes including all applicable Occupational Safety & Health Act (OSHA) and American National Standards Institute (ANSI) regulations.

DANGER, WARNING AND CAUTION DECALS

See the accompanying illustration for the location and label content of all safety decals.

1. These decals must be obeyed at all times.
2. These decals must be in place at all times. Report any damaged or missing decals to the proper authority at once.
3. Replacement decals can be ordered free of charge from your local authorized Leach distributor.

DANGER, WARNING AND CAUTION

Throughout this manual "DANGER" "WARNING" and "CAUTION" notations accompanied by the International ⚠ Hazard Symbol are used to alert the operator and mechanics to special instructions concerning a particular operation or service that may be hazardous if performed incorrectly or carelessly.

⚠ DANGER

DANGER - Immediate hazards which WILL result in severe personal injury or death

⚠ WARNING

WARNING - Hazards or unsafe practices which COULD result in severe personal injury or death.

⚠ CAUTION

CAUTION - Hazards or unsafe practices which could result in minor personal injury or damage.

Strict compliance to these "safety alerts" combined with "common sense" operations are important accident prevention measures.

The word **NOTE** is also used throughout the manual. It precedes information that provides special emphasis or clarification on a specific operation or procedure.

SECTION 1

SAFETY PRECAUTIONS

PRIOR TO START UP

1. Never operate machinery while wearing jewelry or loose clothing. These items may become caught by or entangled in the machinery causing serious injury. Wear proper safety equipment as required by your employer.

2. Never operate machinery while under the influence of alcohol, narcotics or other mood altering substances. Workers who operate machinery while under the influence are a hazard to themselves and others.

3. Perform a pre-operation "walk around" inspection of the truck chassis in accordance with the chassis manufacturer's guidelines. Perform a "walk around" inspection of the refuse packer in accordance with the checks listed in Section 3 - Operation of the Operators/Service manual. Never start or operate any equipment found to have malfunctions.

   a. Report any malfunctions immediately to the proper authorities.

   b. Prior to leaving any malfunctioning unit the parking brakes must be set, the PTO system disengeged, the engine turned off, the ignition key removed, and using a non-reusable fastening device, place a sign on the steering wheel indicating the unit is inoperative.

4. Proper servicing requires specialized tools and procedures. Service must be performed by authorized personnel only following procedures in the Alpha-III Service manual.

5. Walk completly around the vehicle to make sure all persons and obstructions are clear before starting the unit.

6. The container handling system is a critical component of the unit. Use only the proper replacement parts.

7. Inspect all hooks, chains and cables daily to ensure serviceable condition. Replace damaged or worn parts. (See Section 5, Preventive Maintenance)

8. Before operating the vehicle the driver must be throughly familiar with the employer's safety program concerning traffic rules, warning devices and hand signals.

9. Be sure to know where to get assistance in the event of an emergency.

   Know your machine. Know the location and function of all controls, gauges, instruments and protective devices.

11. Should the height of a refuse collection vehicle be altered by installing a container handling system, be sure the overall height is rechecked and overall height plus 3 inches is noted on the decals.

GENERAL OPERATION

1. It is the operator's responsibility to ensure that operation of the unit is in accordance with the guidelines contained in the Operator's manual and in accordance with all applicable codes including Occupational Safety and Health Act (OSHA) and American National Standards Institute (ANSI) regulations.

2. Do not attempt to operate this equipment without proper training.
3. Move the vehicle as slowly as possible without stalling when traveling in reverse.

4. Always make sure the area behind the unit is clear before traveling in reverse.

5. Do not travel in reverse for distances greater than those dictated by local ordinances. If reverse travel exceeds 10 feet, use a "spotter" or move the vehicle in 10 foot increments only, and then check to make sure the area behind the unit is clear between increments.

6. Do not attempt to dislodge any material above waist level unless wearing eye protection such as "approved" side shielded safety glasses or a full face shield.

7. Never use the unit to push or tow another vehicle.

8. Never unload uphill or against a pile of refuse or into the bank of a hill.

9. Never place head, body, fingers or any limbs into a scissors point or pinch point on the equipment.

10. Before operating the vehicle the driver must be throughly familiar with the employer's safety program concerning traffic rules, warning devices and hand signals.

11. Know where to get assistance in the event of an emergency.

12. Know your machine. Know the location and function of all controls, gauges, instruments and protective devices.

13. Wear your seat belt.

14. Start the engine following the manufacturer's recommended procedure.
15. Always set the park brake before leaving the cab.
16. Turn on appropriate warning lights, put on a safety vest, protective glasses and protective shoes.

17. All service opening covers and access doors must be maintained and latched in place while operating equipment.

18. Ensure all co-workers are in view before operating or moving any controls or the unit.

19. Ensure that there is sufficient overhead clearance before operating the unit.

20. Ride only in the cab or on riding platforms designed for that purpose. Riding steps shall not be used when speeds are expected to exceed 10 mph or when distance traveled without stopping will exceed 2/10 of one mile. Do not mount or dismount riding step when vehicle is in motion.

21. Never allow anyone to ride on the steps when the vehicle is backing up.

22. Stop the vehicle immediately if warning lights for the TAILGATE AJAR system come on.

23. Never use controls or hoses for hand holds when mounting or dismounting. Controls and hoses are movable. They do not provide proper support and may cause accidental equipment movement.

24. Make sure the backup alarm is working properly.

25. Always ensure that all persons are clear before raising or lowering the tailgate. It is the operator's responsibility to warn all persons not to stand or cross under a raised tailgate.

26. Do not move the vehicle with the tailgate raised exept during unloading and then only as necessary to clear the load before lowering.

27. Stand clear when the tailgate is being raised or lowered and during the unloading cycle. If it is necessary to manally clear the debris from the hopper, use a long metal probe and DO NOT stand under the tailgate.

28. Never Load the hopper above the loading sill.

29. Never allow material to extend outside of the hopper when packing.

30. Allow the packer panel control lever and carrier panel control lever to shift automatically.

SAFETY PRECAUTIONS

31. To avoid possible bodily injury or equipment damage, lower the tailgate slowly.

32. Never enter the body unless the telescopic ejection cylinder pressure is released, PTO disengaged and ignition key removed and placed in your pocket.

33. Do not attempt to load refuse into the hopper after the packing cycle has begun. The packer panel must be in the "home" position and stopped before loading the hopper.

34. The dashboard speed-up switch must be "OFF" between pickups or when parked. This prevents inadvertent engine speed-up if the tailgate carrier panel control lever is shifted.

35. The tailgate clamps must be tightened securely before starting to load.

36. Do not step on the throttle pedal while the speed-up system is engaged.

37. Never use a rear loader to transport a container.

38. Follow all safety directions listed in the refuse body Operator and Service manual under SAFETY PRECAUTIONS.

39. Never use container handling chains or cable for towing or pulling.

40. When not handling containers, keep the container attachment closed or latched.

41. Do not operate the rear loader's packing mechanism with a container off the ground.

42. If it is necessary to manually free debris from the container, use a long metal probe while the container is on the ground, and DO NOT place yourself between the container and the packer body.

43. Attach hook to the tailgate and take up the excess slack when not in use.

44. Never hold the hook on an attachment point while taking up slack.

45. Take up excess cable slack before moving the vehicle.

46. Check overhead clearance before dumping a container.

47. Do not move the vehicle with a container attached.

48. Always set the vehicle parking brake brfore attaching or lift a container.

49. Never lift a container which is non-compatible with the Leach container attachment.

50. Never lift a container without first latching both container latch arms.

51. Raise the container with a smooth even movement. Do not bounce the container.

52. Do not slam the container against the packer tailgate or bump bar.

53. Do not attach the hook to any lift point which will not be completely encircled by the hook with the safety latch closed. Do not remove the hook safety latch.

54. Read and obey all container decals issued by the container manufacturer.

55. Read and follow container manufacturers information on accepted use practices.

56. Do not attempt to lift overloaded containers.

57. Center the container on the attachment.

58. All containers should be inspected for serviceability and repaired if not in safe, usable condition.

59. Do not use non-standard or damaged trunnion bar.

60. Never cross under a raised container.

61. Stand clear when dumping containers.

62. Before attempting to lift a container, below 32 degrees F (0 degrees C) make sure it is not frozen to the ground.

63. When using an eye type container attachment point, the base of the hook must be positioned to lift on the inside of the eye.

64. Place the container on a flat, level surface.

SAFETY PRECAUTIONS

HYDRAULICS

1. Hydraulic fluid operates under high temeratures. Avoid contact with piping, hoses or cylinders to prevent burns.

2. Never use hands to check for leaks. Hydraulic fluid escaping under pressure may cause injury.

3. In case of injury seek proper medical treatment immediately.

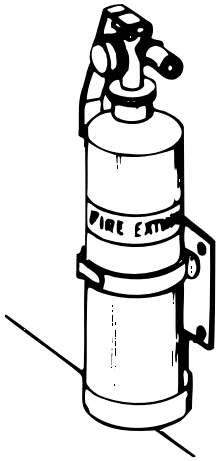
FIRE PROTECTION

1. Keep a fire extinguisher accessible at all times, as recommended by the Bureau of Motor Carrier Safety.

2. Never use lighted smoking materials, open flame or sparks around when working with flammable materials such as fuel tanks or storage batteries.

3. Never have an open flame as a light source.

4. Never load ashes or other materials which might be smoldering. These materials could ignite refuse in the packer body.



HOUSEKEEPING

Good housekeeping habits are a major factor in accident prevention.

1. Keep handrails and steps clean and free of grease or debris.

2. Do not store brooms or other equipment where they could inadvertently activate the packer controls.

3. Rubbish, scrap paper and litter are highly combustible. Such material should be stored in metal containers entirely clear of sparks and

SHUTDOWN

1. Put all controls in neutral.

2. Set parking brake.

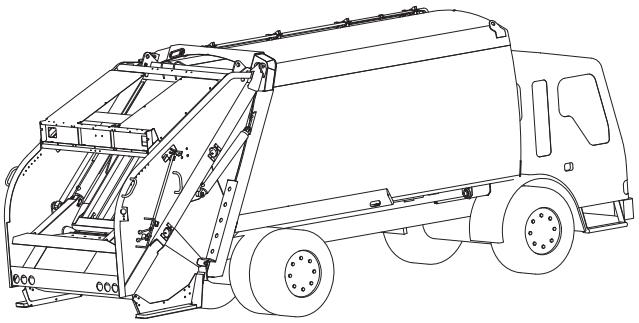
3. Disengage PTO.

4. Shut off engine.

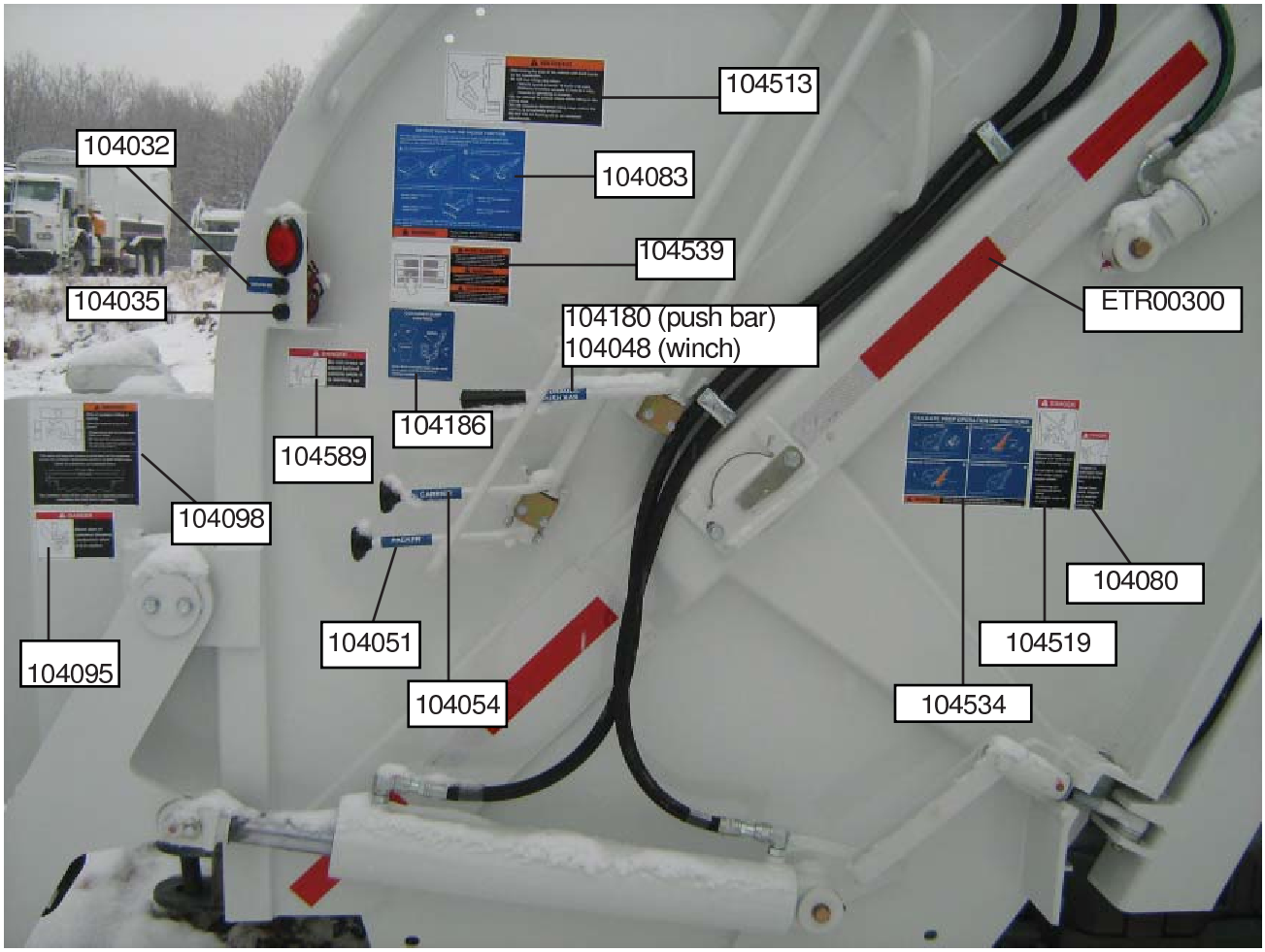
5. Shut off solenoid dashboard switch.

6. Remove key.

7. Lock vehicle.



SAFETY PRECAUTIONS - DECAL PLACEMENT



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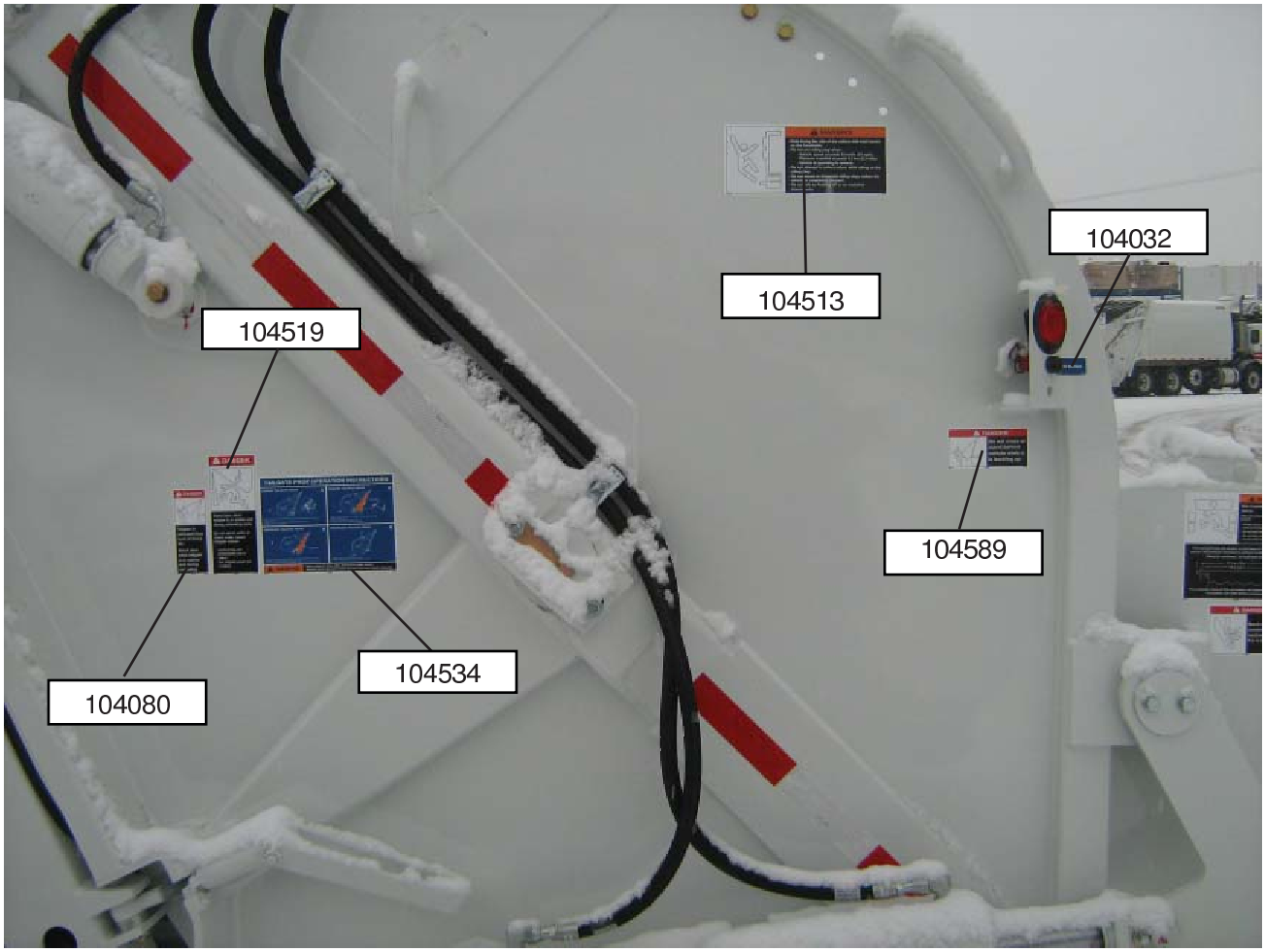

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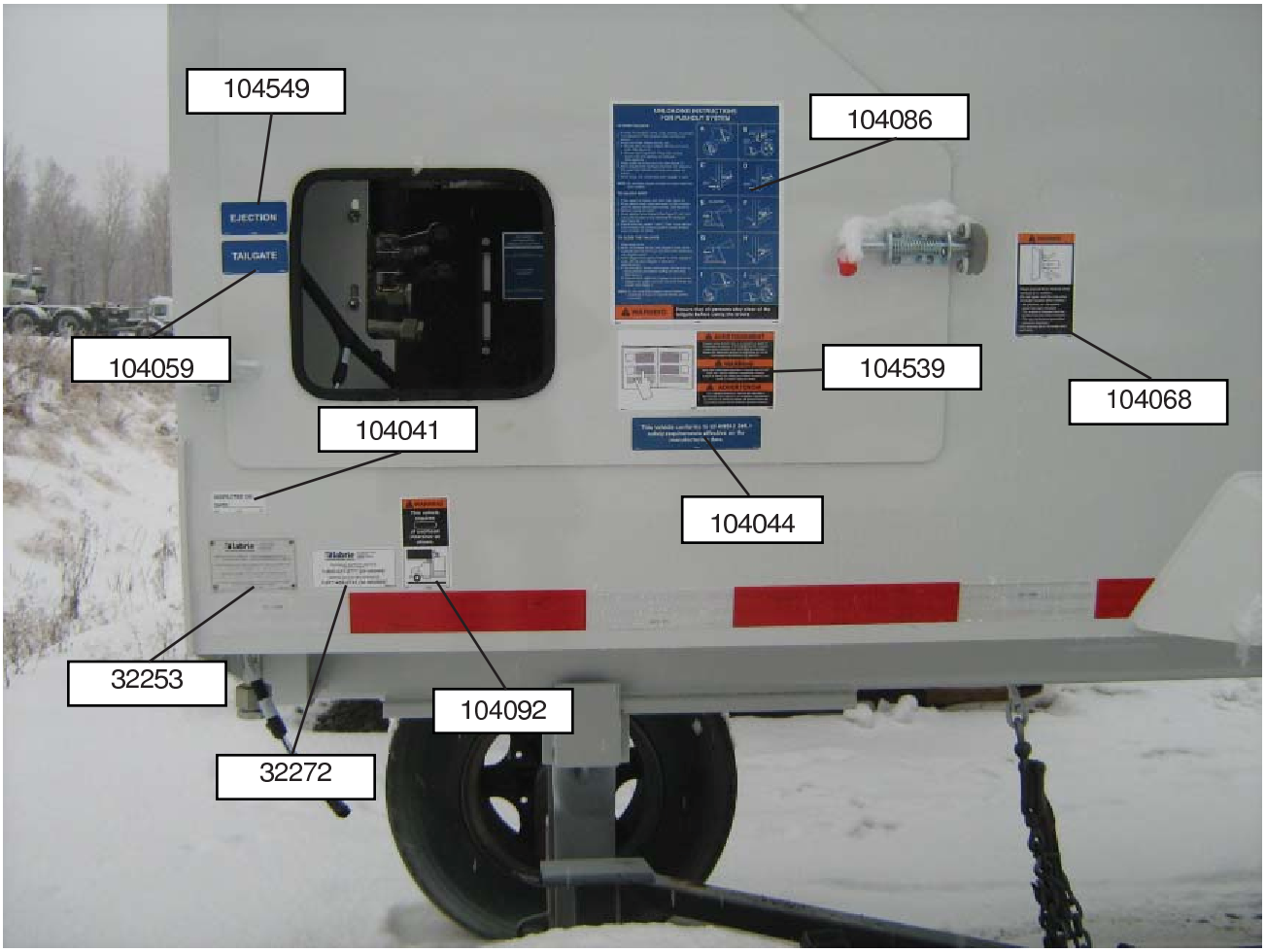

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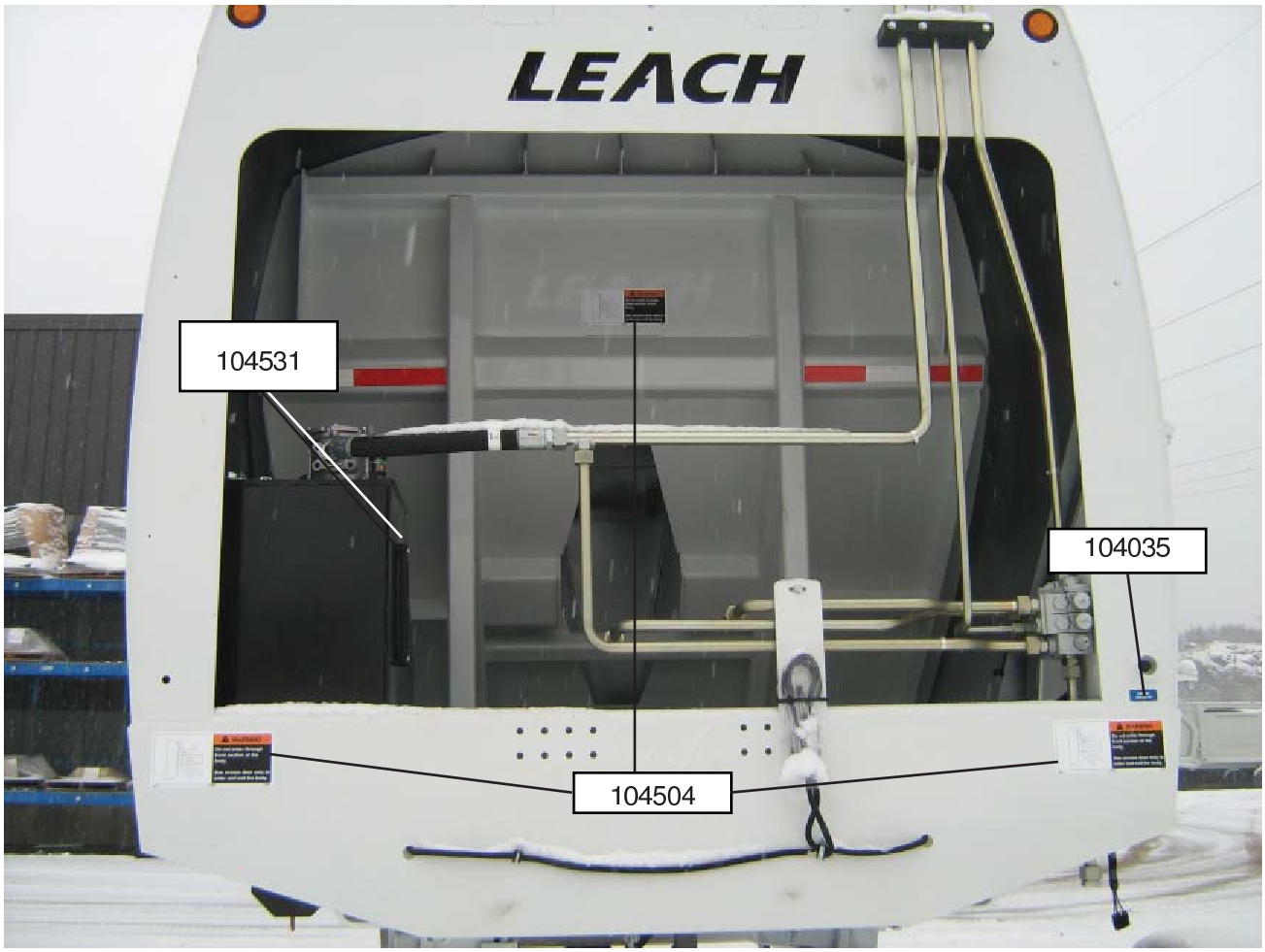

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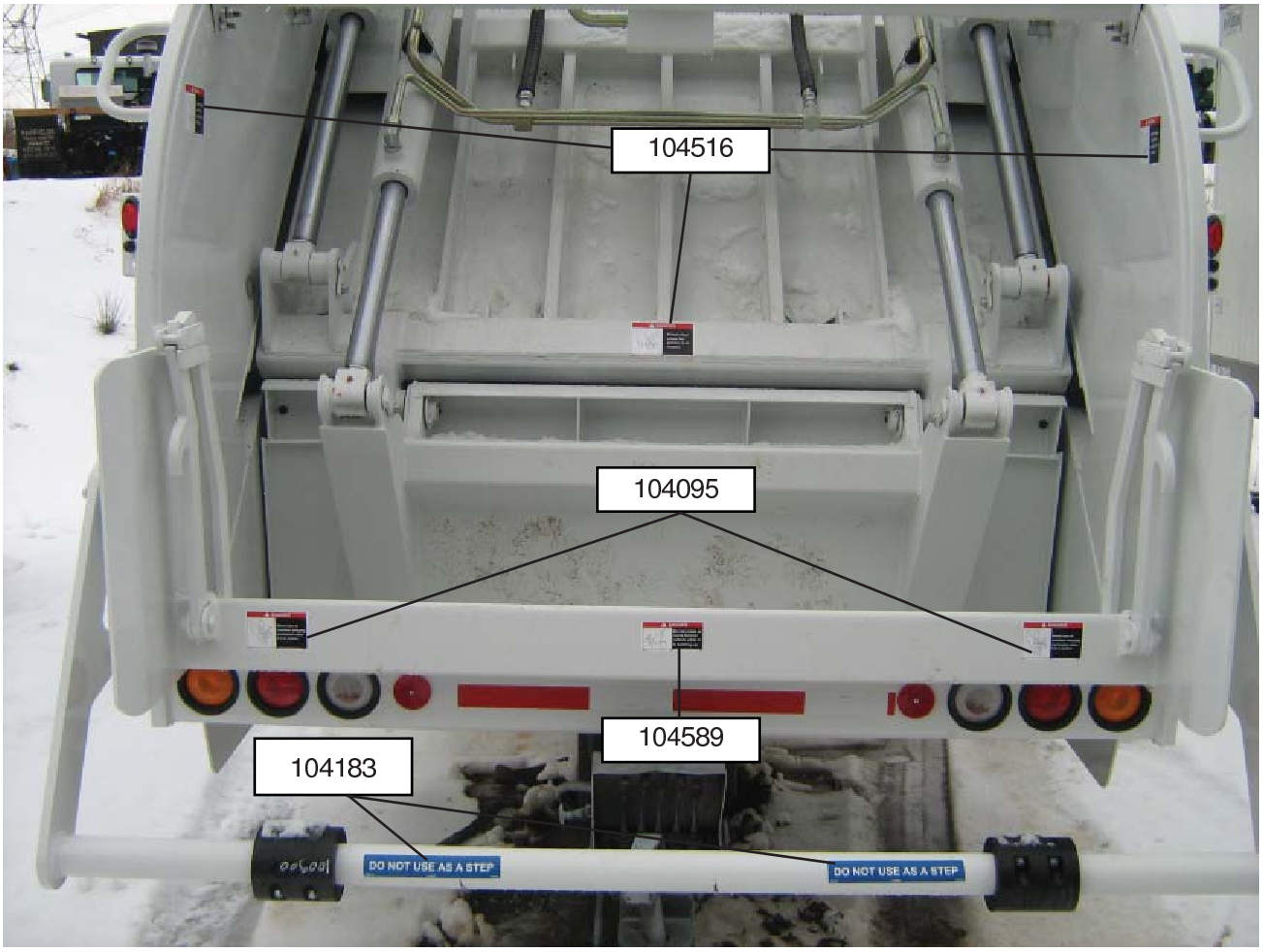

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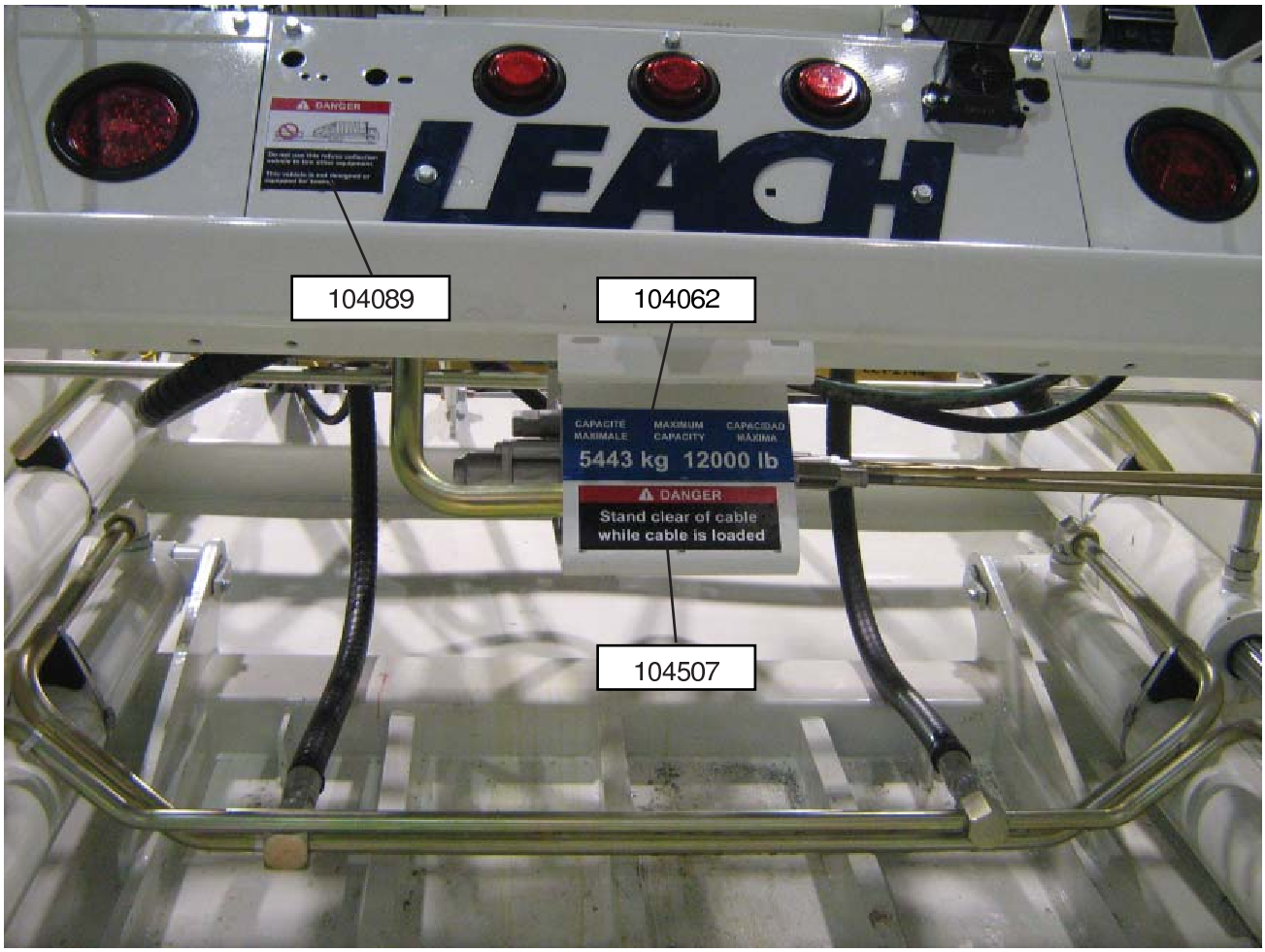

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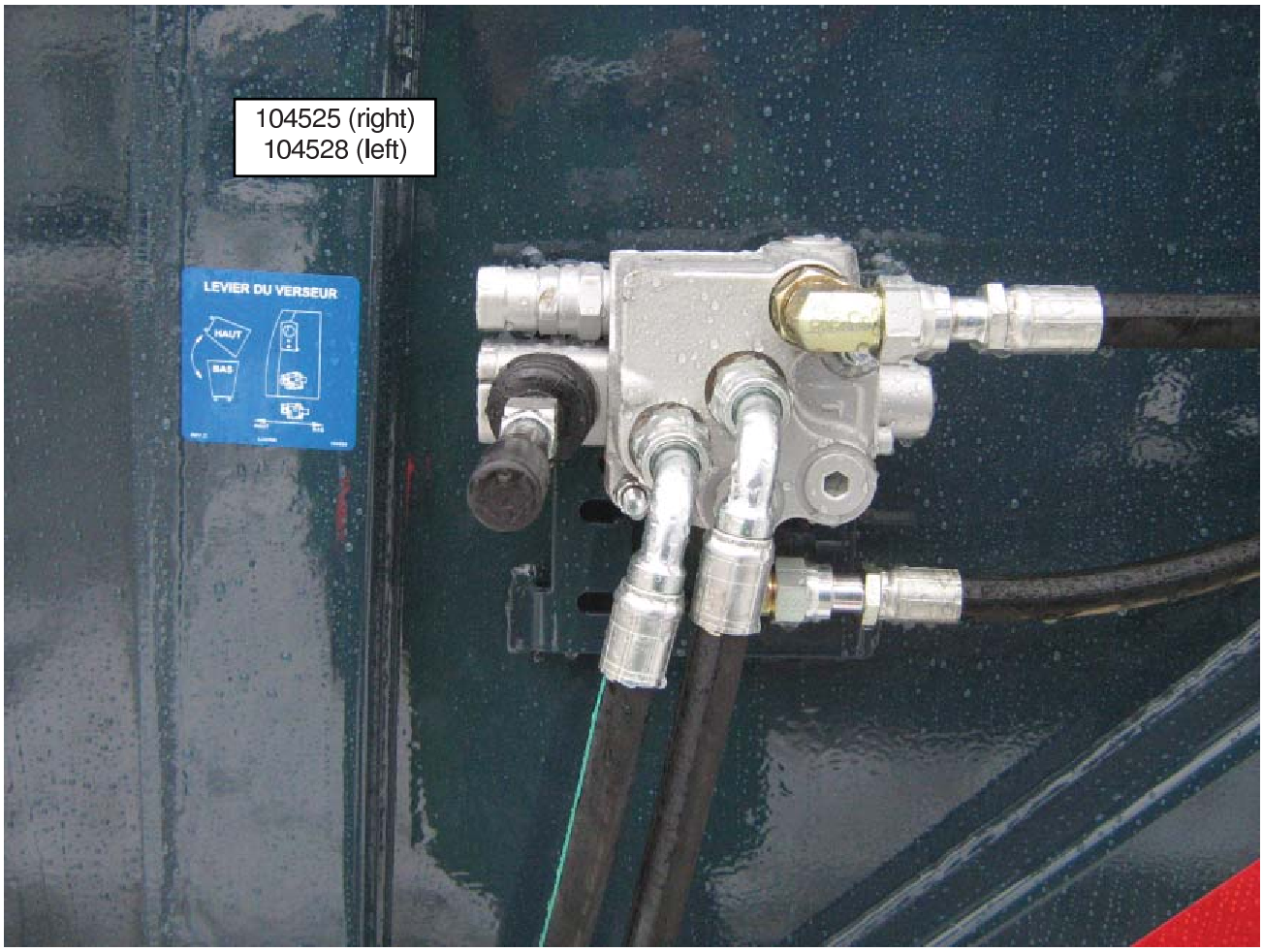
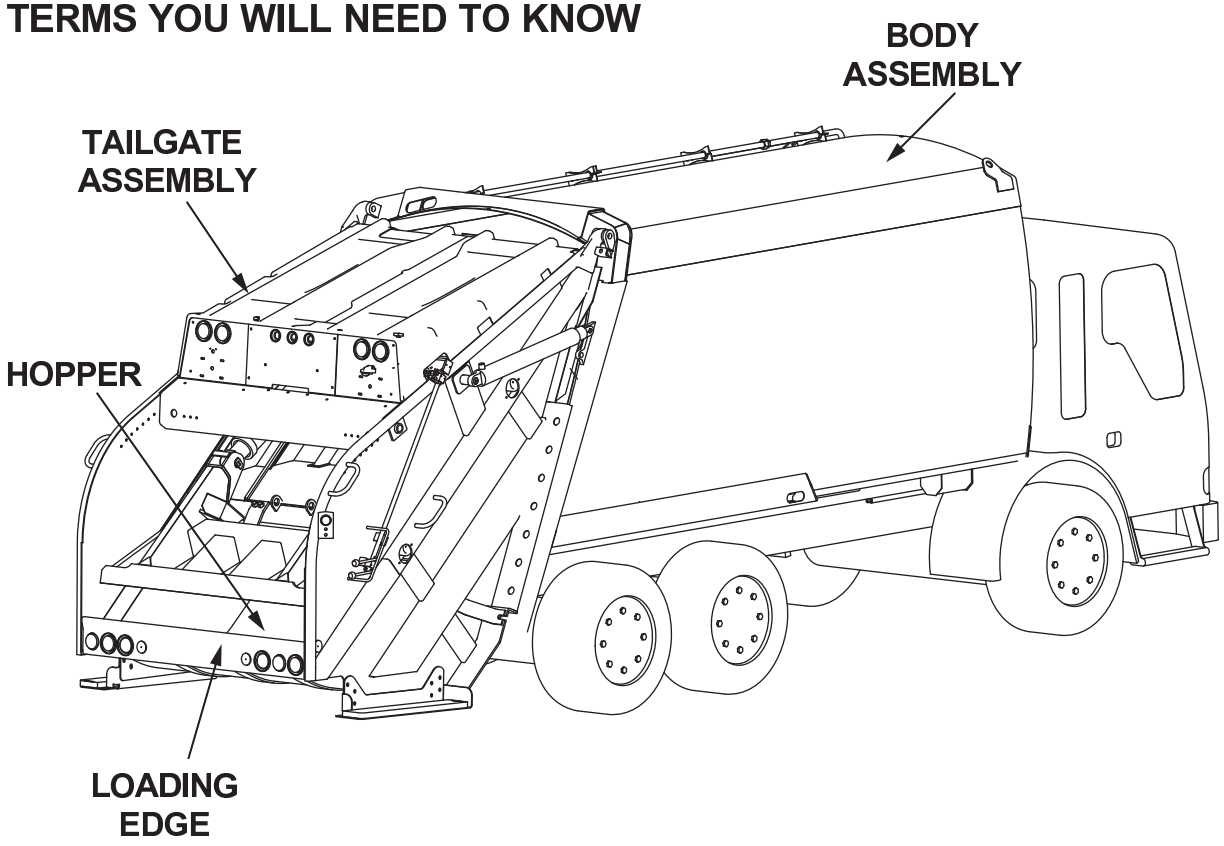
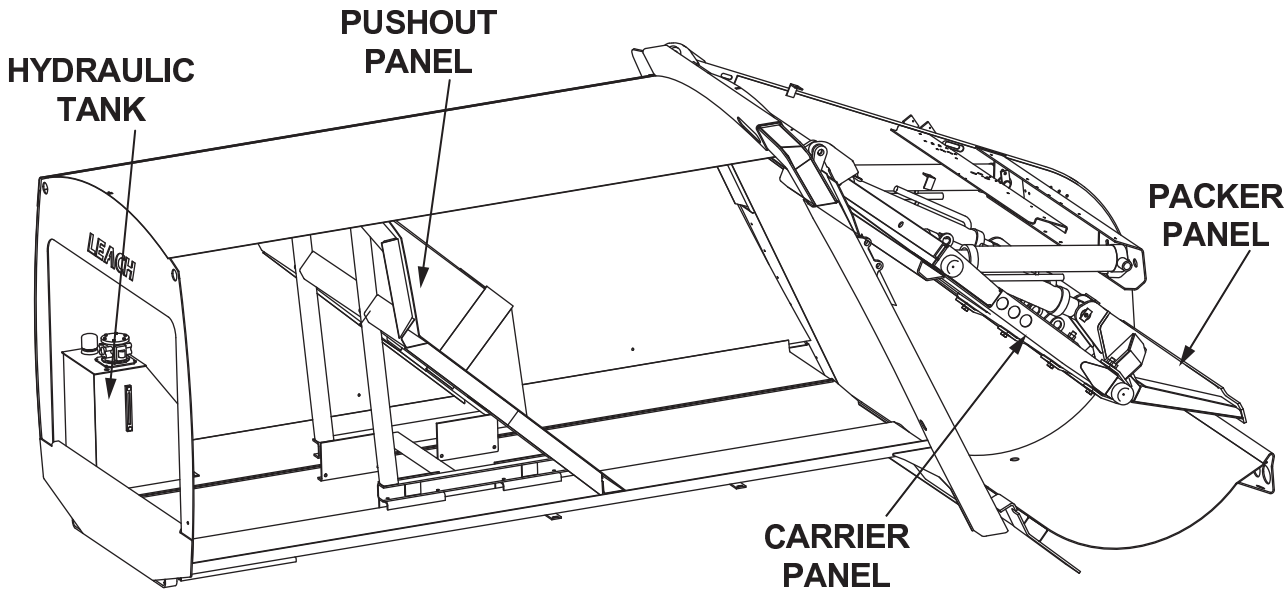


TERMS YOU WILL NEED TO KNOW





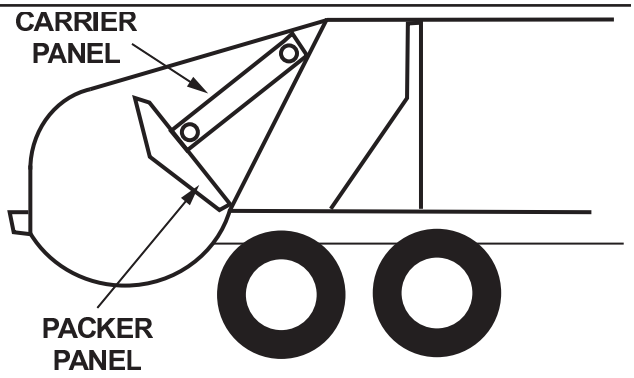
SECTION 2

INTRODUCTION

The main purpose of the Alpha-III is to safely and efficiently: load, compact, transport and unload refuse. The following describes how the unit performs those tasks in the most basic terms. For a more detailed description of the unit and its components, read the complete Alpha-III SERVICE MANUAL. Before going further, look at the accompanying full page illustration of the Alpha-III and become familiar with the terms you will need to know.

LOADING

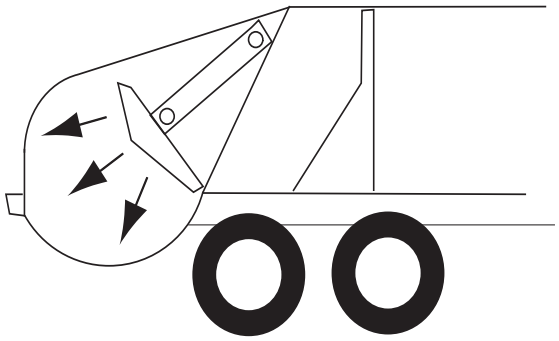
Refuse is first loaded into the hopper of the tailgate assembly. The carrier and packer panels, which sweep up and pack the refuse from the hopper, will be in the "home" position.



"HOME" POSITION

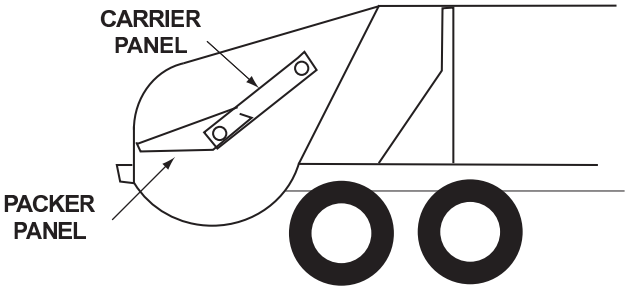
COMPACTION

When the operator starts the packing cycle the carrier and packer panels move rearward, over the load.



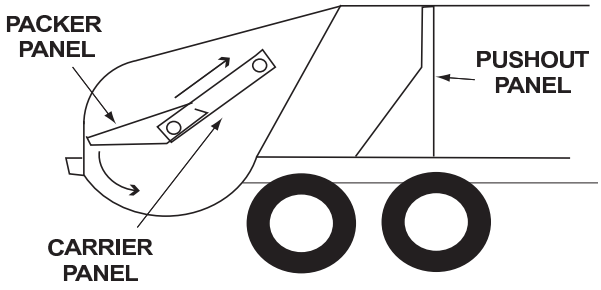
CARRIER AND PACKER PANELS MOVE OVER LOAD

Next, the carrier and packer panel automatically stop at the "interupted cycle" position.



"INTERUPTED CYCLE"

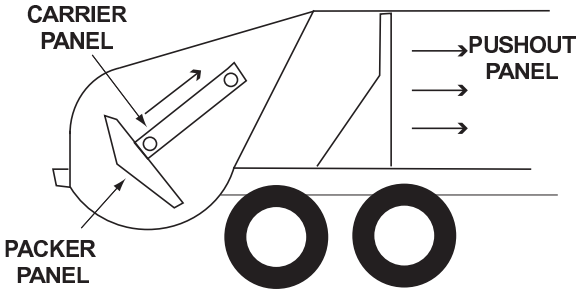
The operator again activates the packing cycle. The carrier and packer panels move forward and sweep the refuse from the hopper up into the body and pack it against the pushout panel. Having completed a cycle, the carrier and packer panels are back into the "home" position and the hopper is cleared for more refuse.



COMPACTION POSITION

Also, during the compaction cycle, considerable hydraulic pressure is applied to the cylinders which control movement of the carrier and packer panels. This causes the refuse to be compacted tightly allowing for a large carrying capacity.

Once the body is full the Alpha-III can be moved to the dumpsite for unloading.



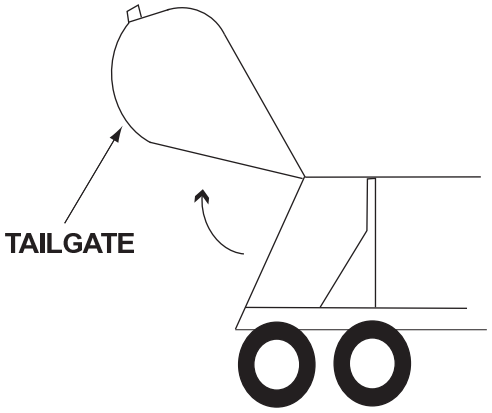
PUSHOUT PANEL MOVES FORWARD

UNLOADING

At the dumpsite the unit is unloaded in two easy steps.

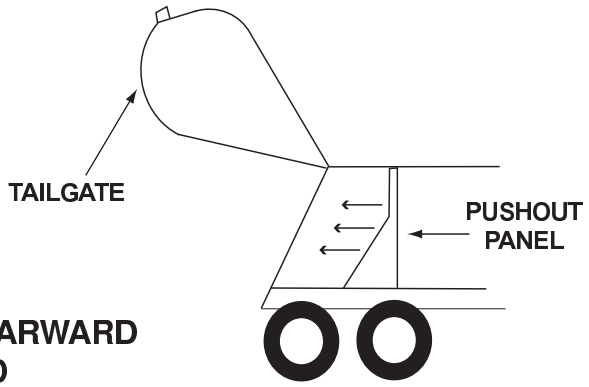
First, the tailgate is raised by the operator.

Second, the pushout panel is moved to the rear of the body, pushing out the load.



TAILGATE RAISED

After unloading, the tailgate is lowered and "latched" to the body.



PUSHOUT PANEL MOVES REARWARD
EJECTING THE LOAD

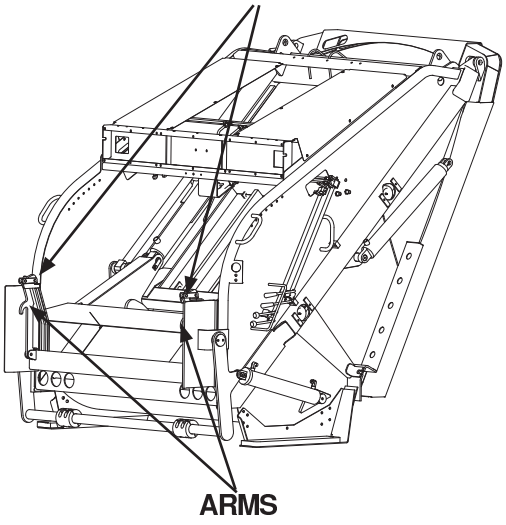
INTRODUCTION

CONTAINER ATTACHMENT

The Alpha-III Container Attachment system consists of a loading edge with a latch assembly and a guide ear on each side of the packer tailgate. The latches and ears are installed to accomodate containers from one (1) to ten (10) cubic yard capacity. The standard container for use with the Leach rear loader must have an ANSI Standard 1 1/4" - 1 3/4" diameter trunnion bar which is between 77 1/2" and 78" end to end. This trunnion bar length will center the container between the "ears" and prevent the container from moving sideways. The latch arms must be manually raised and secured by the arm latch. The container arms, when properly latched together with the guide ears, will secure the container to the packer.

⚠WARNING

Only containers that meet the American National Standards Institute (ANSI) regulations should be used in conjunction with Leach Container Handling Systems.



CONTAINER HANDLING SYSTEMS

To lift or dump a container, several systems are available.

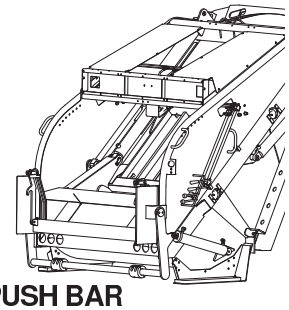
A hydraulically operated container push bar is available to handle containers of a one (1) to three (3) cubic yard capacity.

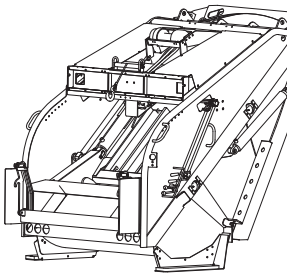
The handling of containers with capacities of four (4) or more cubic yards requires the use of a drum winch or roof mounted container lifting cylinder.

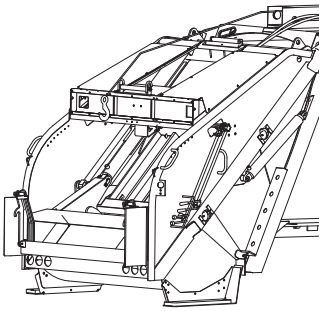
Drum winches are rated at various pounds of pull. Leach Company offers a winch with a 12,000 lbs. rating. The Leach container lift cylinder is rated at 12,000 lbs.

NOTE:

Leach bodies are capable of being equipped with more than one container handling system.


PUSH BAR


DRUM WINCH


LIFTING CYLINDER

INTRODUCTION

GENERAL

The main purpose of a refuse body is to load, compact, transport and unload refuse. To assist in loading of refuse in containers, various container handling systems are available to be mounted on Leach rear loaders.

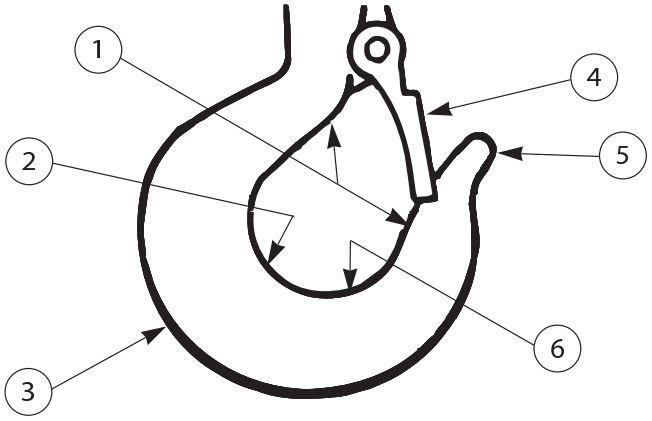
A refuse container may be a mobile residential one (1) cubic yard container with casters or a ten (10) cubic yard stationary commercial container. The equipment required to lift and empty these containers will vary according to the container's type and size.

TERMS YOU NEED TO KNOW

Before going further, become familiar with the container handling terms you will need to know.

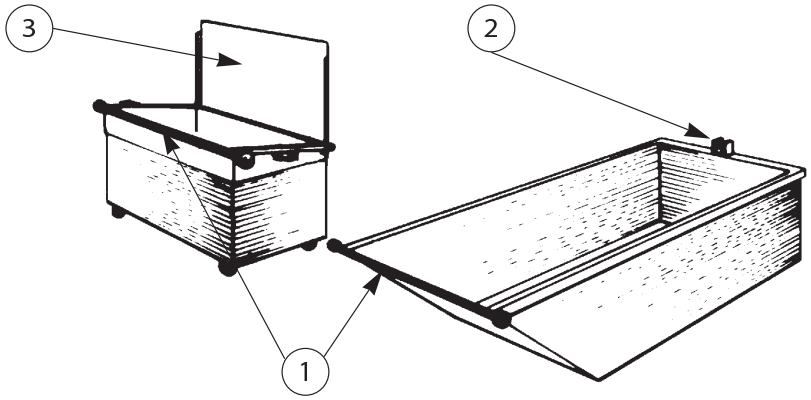
HOOK

1. Throat Opening
2. Back
3. Heel
4. Hook Safety Latch
5. Point
6. Base



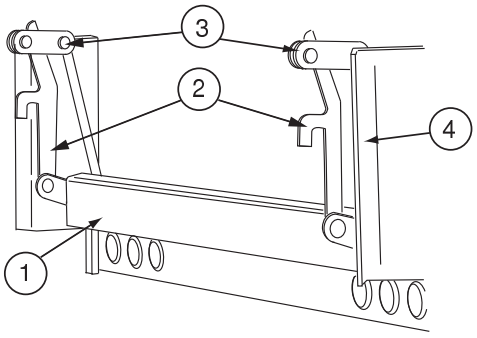
CONTAINER

1. Trunnion bar
2. Hook point
3. Lid



CONTAINER ATTACHMENT

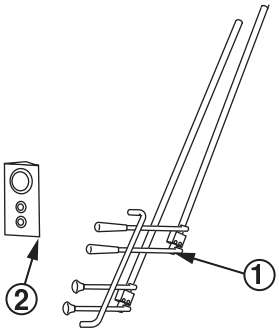
1. Loading sill
2. Arm
3. Latch
4. Guide ear

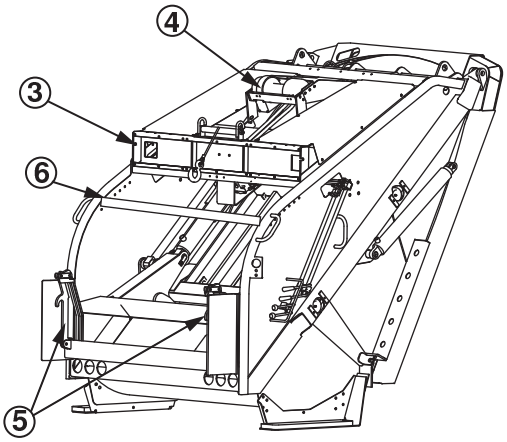


INTRODUCTION

WINCH

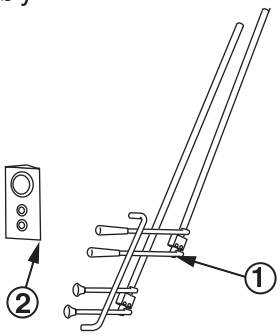
1. Control lever
2. Engine speed up button
3. Cable
4. Winch assembly
5. Container attachment
6. Stop bar/Lid guard

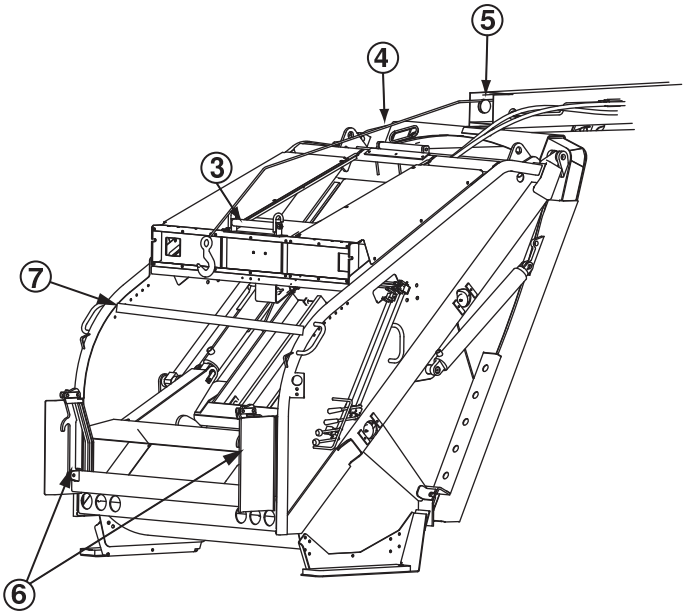




CONTAINER LIFTING CYLINDER (CLC)

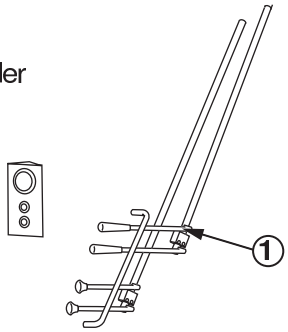
1. Control lever
2. Engine speed up button
3. Roller guide
4. Cable
5. Lifting cylinder assembly

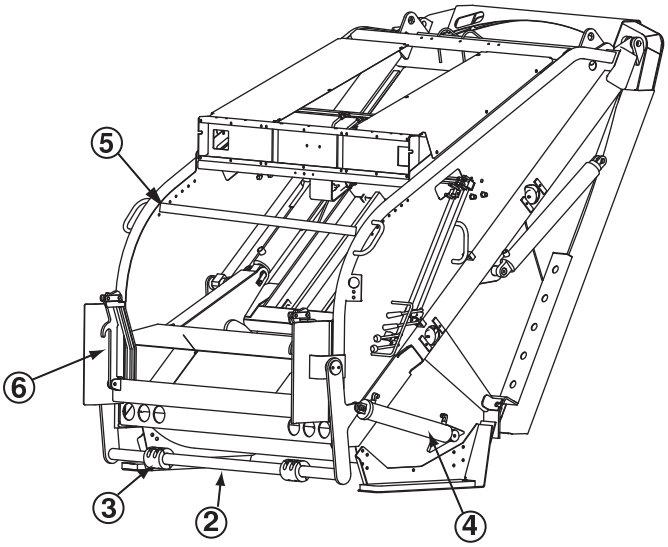




CONTAINER PUSH BAR (CPB)

1. Control lever
2. Push bar
3. Lift roller
4. Container dumping cylinder
5. Stop bar/Lid guard
6. Container attachment



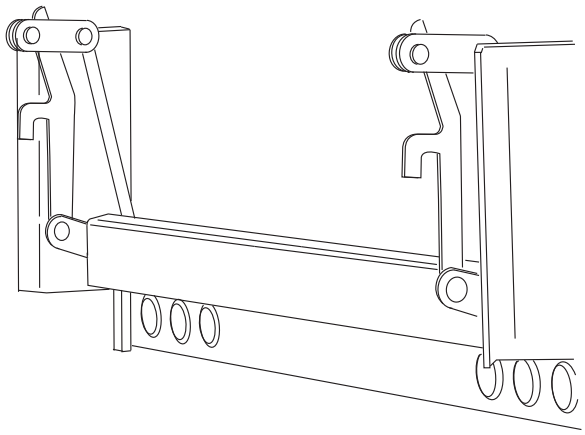


BASIC OPERATION

All Leach container handling systems have three (3) basic steps for operation.

ATTACH

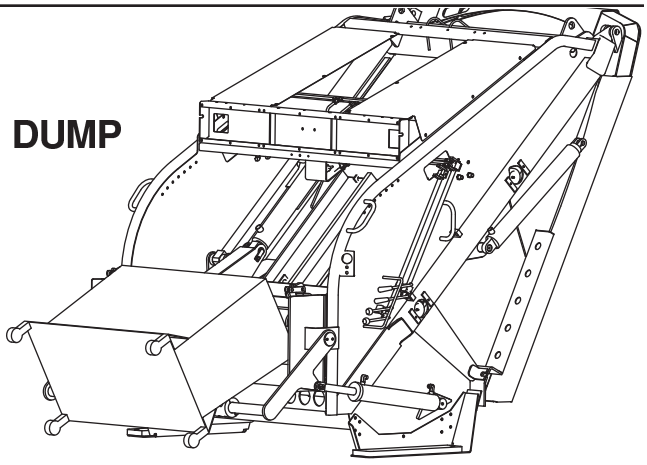
The first step in container handling is to attach the container to the rear loader by securing it with the latch arms of the container attachment.



ATTACH CONTAINER

DUMP

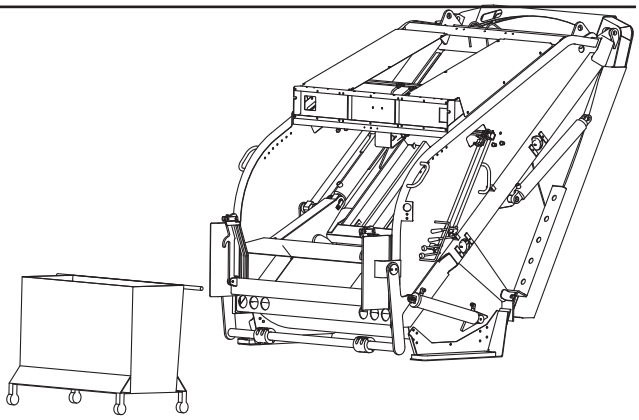
A container handling system is used to raise the container and empty the refuse into the hopper of the rear loader.



DUMP

DISCONNECT

When the container is empty, it is lowered to the ground, the latch arms released and the truck is moved forward.



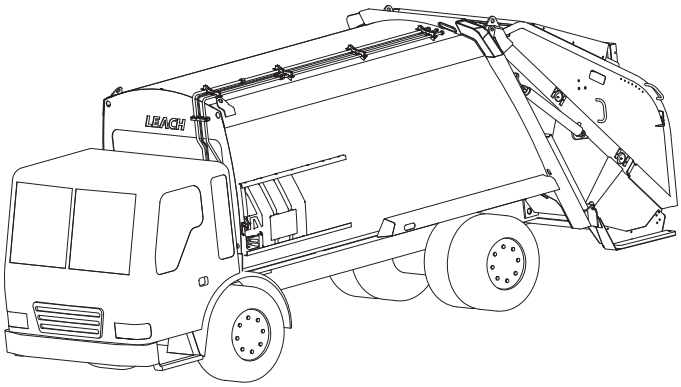
DISCONNECT

SECTION 3

OPERATION

GENERAL

This section will provide all of the instructions necessary to operate the Alpha-III. However, prior to attempting any operation of the unit, make sure you are familiar with all of the safety information contained in SECTION 1, SAFETY PRECAUTIONS.

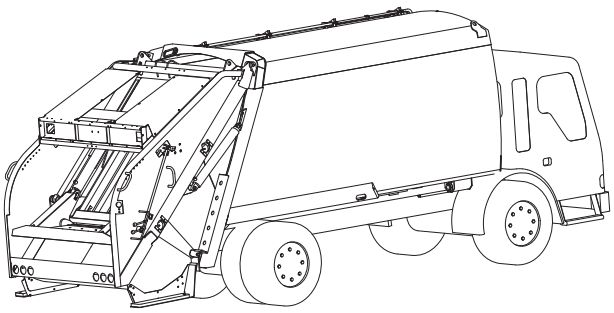


DESCRIPTION OF OPERATING CONTROLS

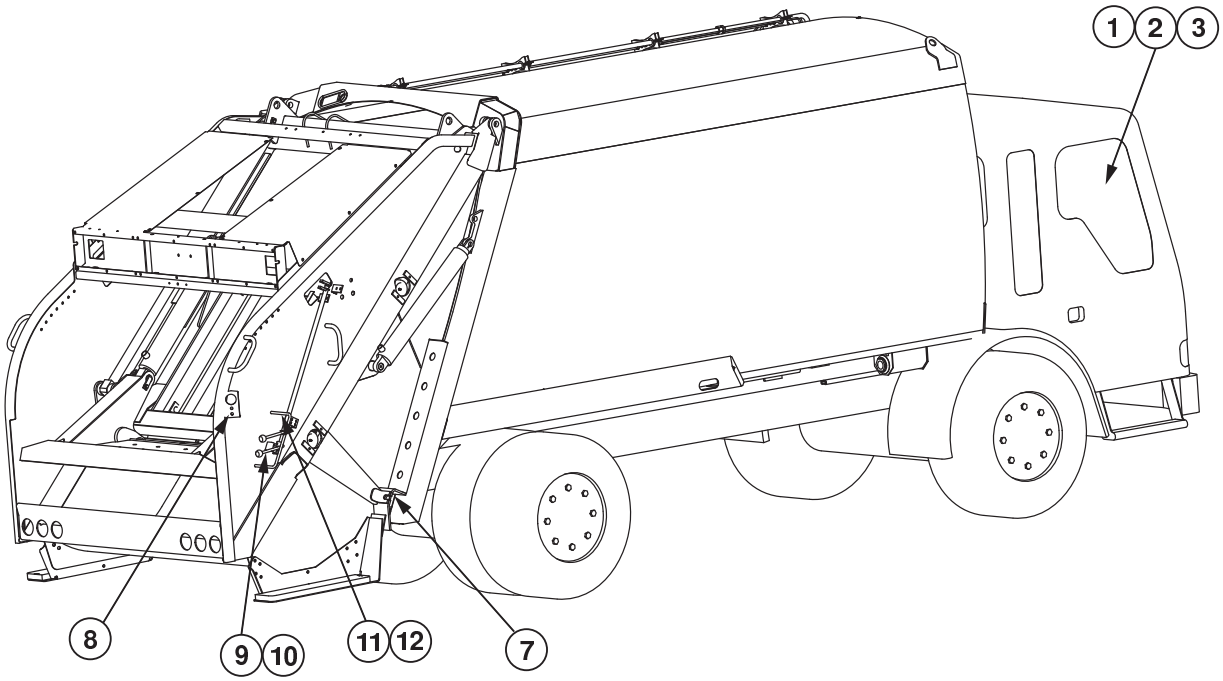
⚠WARNING

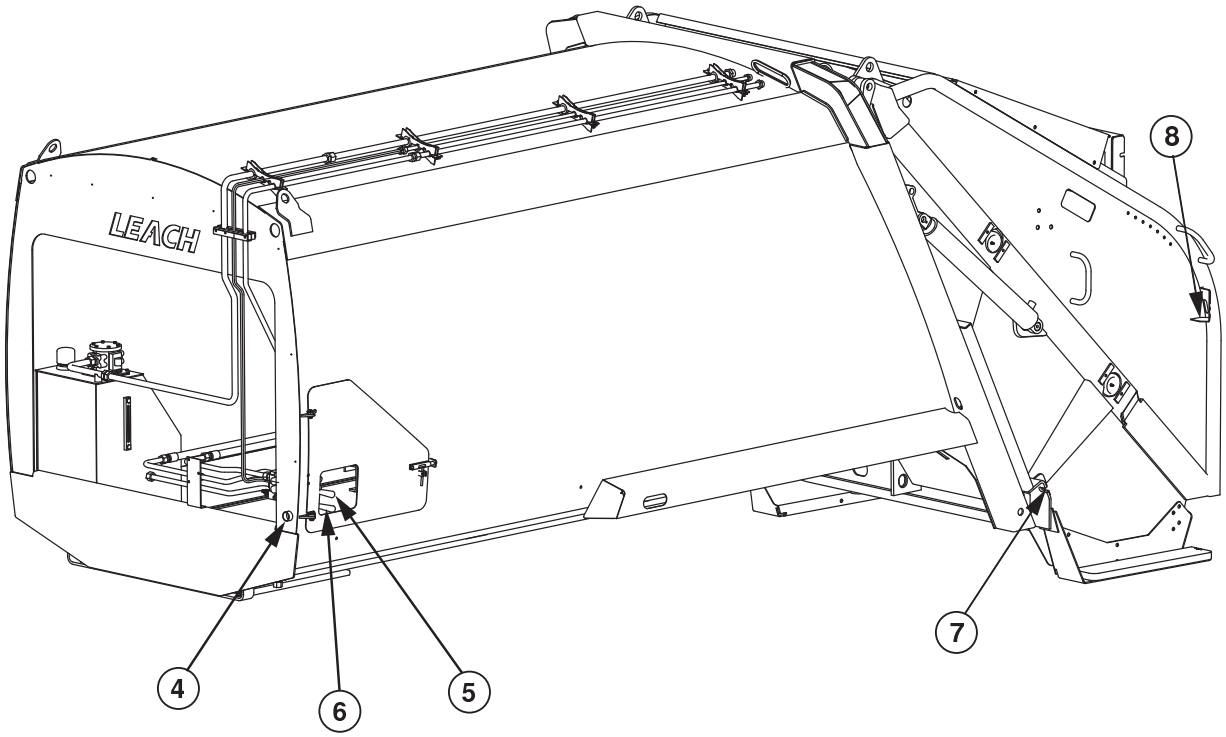
The following information is for descriptive purposes only. It is not to be misconstrued as operating instructions. For operating instructions, refer to OPERATING PROCEDURES later in this section.

There are only a few controls required for the complete and efficient operation of the Alpha-III. It is important that you know the location and function of each control before attempting to operate the unit. Refer to the accompanying illustrations for their location.



LOCATION OF OPERATING CONTROLS





OPERATION

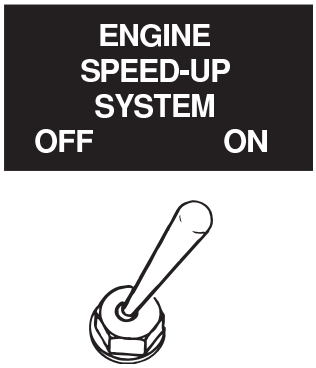
PUMP/PTO CONTROL (1)

The Pump/PTO (Power Take Off) is engaged to put the hydraulics in operation. The exact location of the Pump/PTO control will vary depending on the type, truck chassis style and control panel location. In some units, the warning lights and controls are integrated in a console. The Pump/PTO may be engaged using a rocker or a toggle switch. Make sure to read all safety decals associated with the Pump/PTO before attempting operation.

ENGINE SPEED-UP ON-OFF SWITCH (2)

This switch energizes the engine speed-up system. It is located on the cab control panel (exact location dependent on cab make and style).

NOTE:
The engine speed-up system consists of the ON-OFF switch, a relay (the relay is wired to the engine ECU), a speed-up push button and speed-up switch connected to the operating control linkage on the Main Control Valve (MCV). The function of the speed-up system is to speed -up the engine and provide more power to the hydraulic pump during operation of the various hydraulic cylinders.

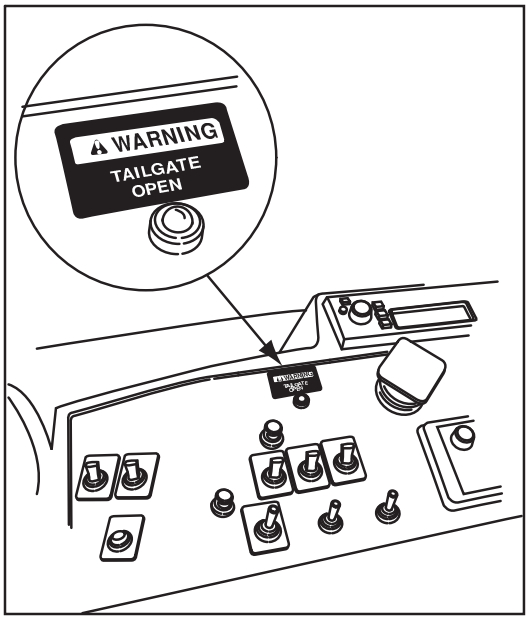


TAILGATE "OPEN" LIGHT (3)

This warning light, located in the cab, will illuminate if the tailgate is ajar. Having the tailgate ajar will also sound the backup alarm and illuminate the backup lights.

⚠WARNING

Operation of the unit with an illuminated or defective warning system can result in personal injury and/ or equipment damage.

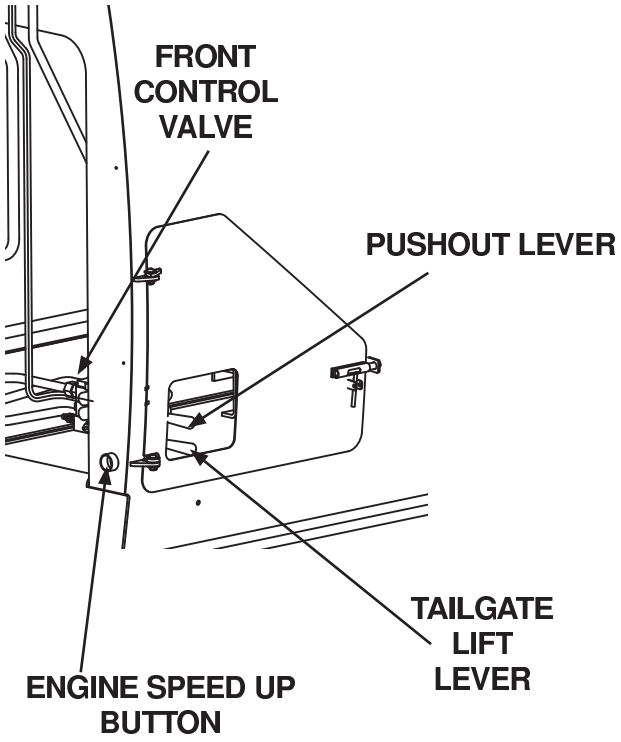


ENGINE SPEED-UP PUSH BUTTON (4)

When depressed, this push button switch will cause the engine to speed-ip and supply more power to the hydraulic system. Located on the lower front left side of the body, it is depressed by yhe operator when operating either the pushout lever or tailgate lift lever.

NOTE

Additional speed-up control buttons may be installed with optional winches and container handling attachments.



FRONT CONTROL VALVE

The front control valve is located behind the access door on the front left side of the body. The control levers for this valve extend out through a cutout in the door. This valve controls the ejection (pushout) panel and the lifting of the tailgate.

PUSHOUT LEVER (5)

The upper lever controls the movement of the pushout panel. Moving the control lever rearward (toward the tailgate) will move the pushout panel to the rear. Moving the control lever forward (toward the cab) will move the pushout panel to the front.

TAILGATE LIFT LEVER (6)

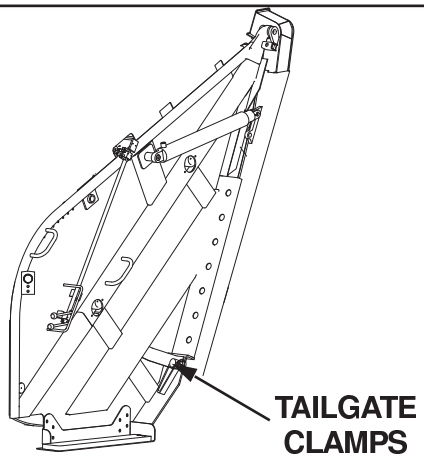
The lower lever controls the tailgate. Moving the lever rearward (toward the tailgate) will raise the tailgate. Moving the lever forward (toward the cab) will lower the tailgate.

TAILGATE CLAMPS (7)

Tailgate clamps are located on each side of the tailgate at the bottom where the tailgate rests against the body. They are used to secure the tailgate to the body during operation. They must be manually loosened and swung away from the body before raising the tailgate.

⚠CAUTION

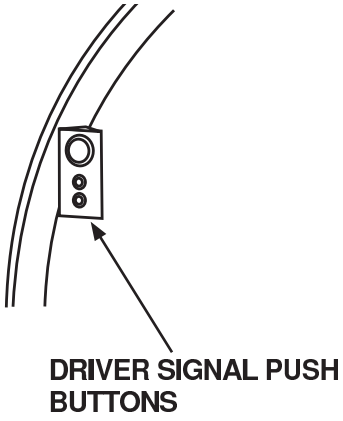
Before attempting to loosen the tailgate clamps, pressure against the tailgate must be relieved by opening the packer panel to the "interrupted cycle" stop position.



OPERATION

DRIVER SIGNAL PUSH BUTTONS (8)

These two push buttons, one located on each side of the tailgate, are connected to a buzzer mounted under the drivers seat or under the dash in the chassis cab. The operator depresses one of these push buttons to signal the driver when the loading operation is completed and the truck is ready to be moved.



PACKER AND CARRIER PANEL OPERATIONAL LEVERS (9) (10)

A. Packer panel lever (9)

The packer panel operational control lever is located on the right (curb) side of the tailgate. It is used by the operator to position the packer panel open or closed during the compaction cycle operation.

NOTE

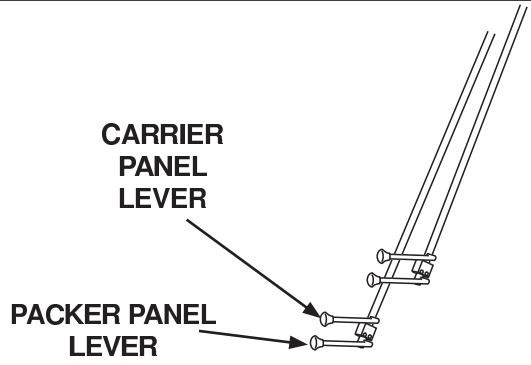
The engine speed up system does not engage if only the packer panel lever is shifted. The carrier panel lever must also be shifted to engage the engine speed up system.

B. Carrier panel lever (10)

The carrier panel operational control lever is located on the right (curb) side of the tailgate. It is used by the operator to position the carrier panel up or down during the compaction cycle.

NOTE

The engine speed up system automatically engages any time the carrier panel lever is shifted.

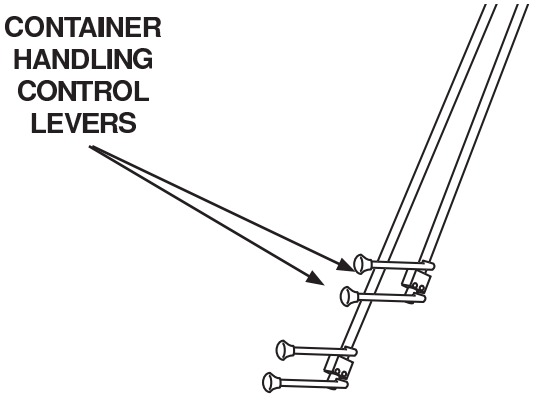


COMPACTION CYCLE OPERATION

Both the packer panel lever and the carrier panel lever are shifted simultaneously inward to open the packer panel and lower the carrier panel to the “interrupted cycle” position. Both levers are shifted outward to sweep the load from the hopper and pack it against the pushout panel. Any time the carrier panel lever is shifted, the engine speed up automatically engages. The packing cycle may be stopped at any point by moving both operating levers to neutral. The packer or carrier panel can be moved independently.

CONTAINER HANDLING CONTROL LEVERS (11) (12)

These control levers are provided when container handling attachments (drum winch, reeving cylinder or container push bar) are added to the unit. They are used to raise and lower the container causing the refuse to be deposited in the hopper for compaction. The levers are located on the right (curb) side of the tailgate directly above the packer and carrier panel control levers. A refuse vehicle may have none, one or two control levers, depending on the configuration of the unit.

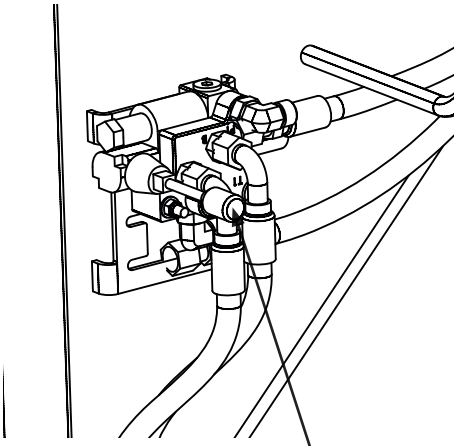


CART TIPPER CONTROL LEVERS (13)

These levers control the cart tipper(s) (if equipped). Tippers are used to empty containers of refuse into the hopper for compaction.

The levers are located on the curbside or the streetside of the tailgate, under the packer and carrier operating control levers.

A refuse vehicle may have none, one or two control levers, depending on the unit configuration.

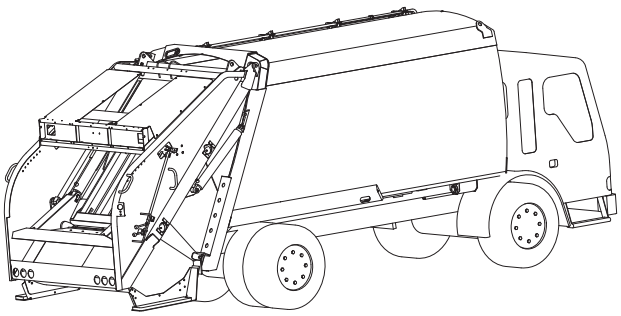


CART TIPPER CONTROL LEVER

SECTION 3

OPERATION

OPERATING PROCEDURES



This section of the manual provides all the instructions necessary to start and operate the Alpha-III, including specific instructions for loading, packing and unloading the unit.

NOTE

It is important that operators and mechanics understand these procedures.

PRE-OPERATING WALK-AROUND INSPECTION

Each day, before starting the unit, perform the following "walk-around" inspection.

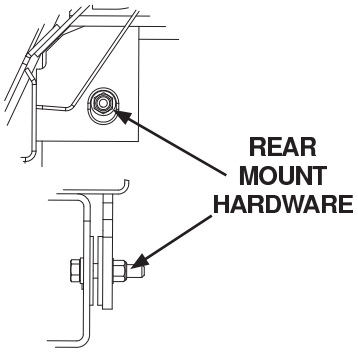
1. Refer to the decal location illustration in SECTION 1, SAFETY, of this manual and make sure all decals are in place and readable. Replace any decals that are not.

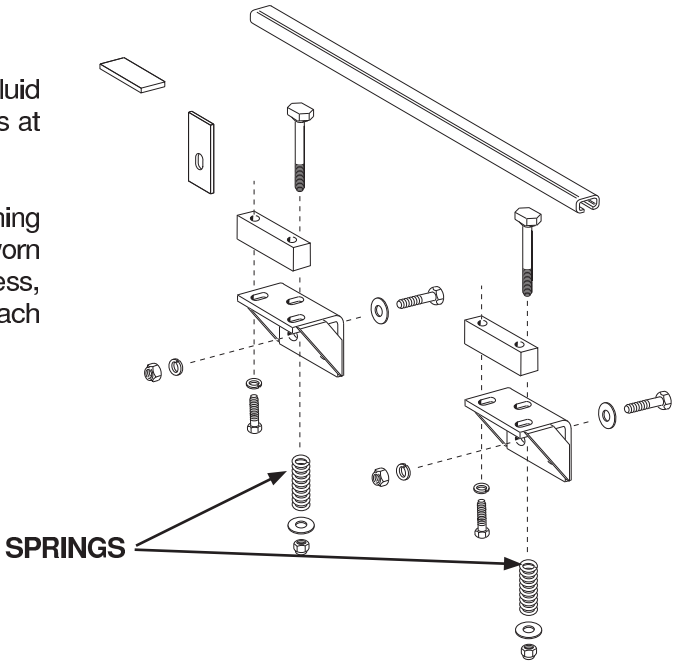
NOTE

A decal kit is available from your local authorized Leach distributor.

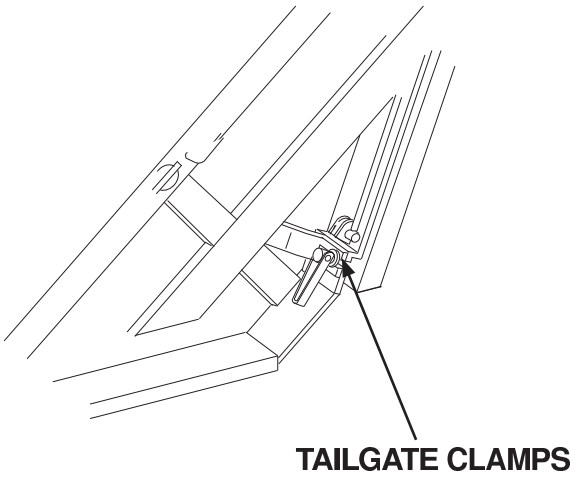
2. As you are checking for decals, also look for fluid leaks on and around the unit. Check for fluid leaks at the hydraulic cylinders, valves and fittings.

3. Inspect the attaching hardware. Make sure everything is tight and that there are no broken or excessively worn parts. Check capscrews and fasteners for looseness, visible welds for cracks and control levers for each movement.

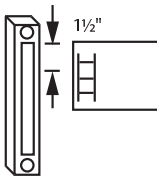




4. Make sure the tailgate clamps are in the closed position and securely tightened.



5. Check the hydraulic tank gauge to make sure the fluid is in the "safe" range. Add fluid, if necessary. (See SECTION 5, SPECIFICATIONS of the Service Manual for the correct type of fluid to use.) The pushout cylinder must be retracted, the tailgate down, the carrier and packer panels in the "interrupted cycle" position to check the hydraulic fluid level.



6. Make sure all operating levers are in the neutral position.

Check:

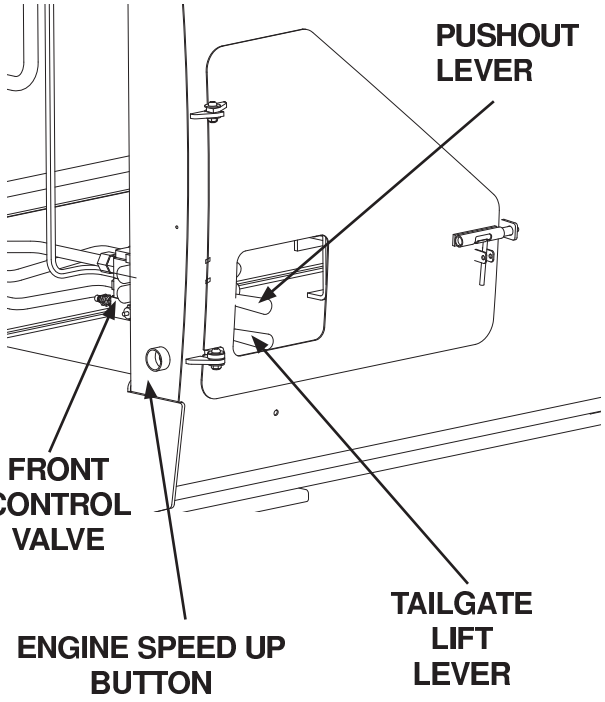
a. packer panel lever;
b. Carrier panel lever;
c. Pushout lever;
d. Tailgate lift lever.

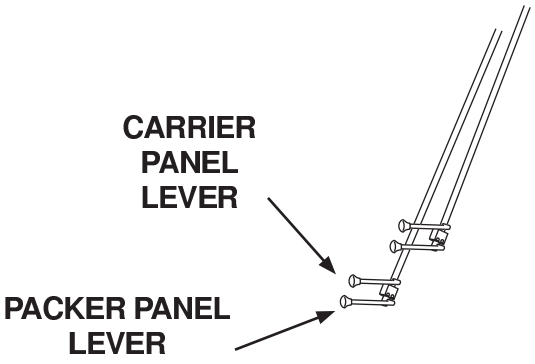
⚠CAUTION

Never operate the Alpha-III with any part of the control system or levers removed or serious damage will result.

⚠WARNING

Never under any circumstances enter the body if the truck is running. Open the packer panel and release the pushout panel cylinder pressure before entering the body. Always make sure the truck engine is off and the keys are in your pocket before entering the body.





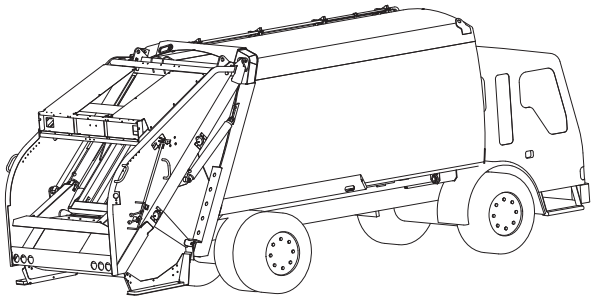
OPERATION

7. Start the truck according to the manufacturers instructions and while it is warming up, continue the walk-around inspection.

8. Check all of the operating and running lights. Make sure none are missing and that there are no burned out bulbs.

⚠WARNING

The "tailgate open" warning light should be off. Do not operate the unit if the light is illuminated.



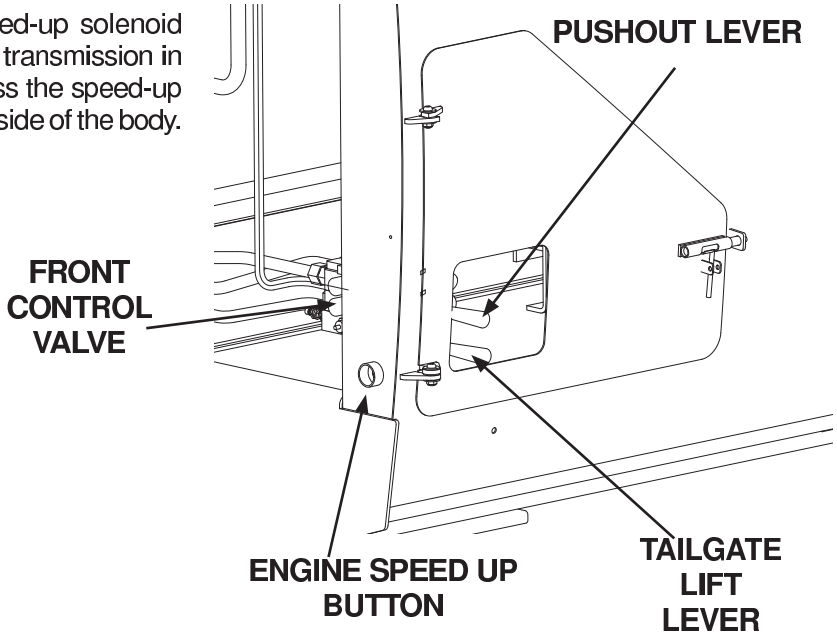
⚠DANGER

Never place hands in or near the packer panel during operation.

⚠CAUTION

Never hold the packer or the carrier panel lever in position by hand. Always engage and let go immediately. The only exception is at the end of a load.

9. With the engine running, the speed-up solenoid switch ON, the PTO engaged and the transmission in neutral and the brakes applied, depress the speed-up push-button on the forward left (street) side of the body. You should hear the engine speed-up.

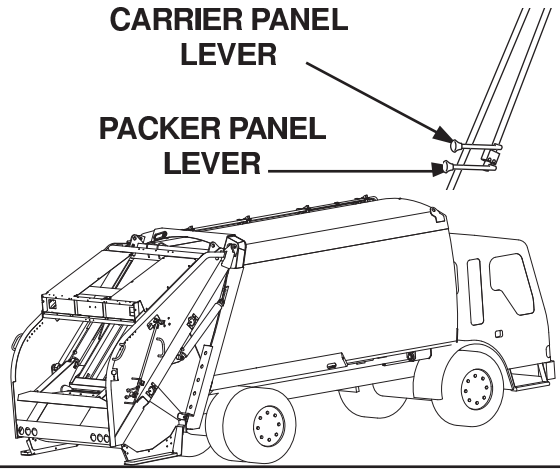


10. Move both the packer panel lever and carrier panel lever inward and let go. Check for the following:

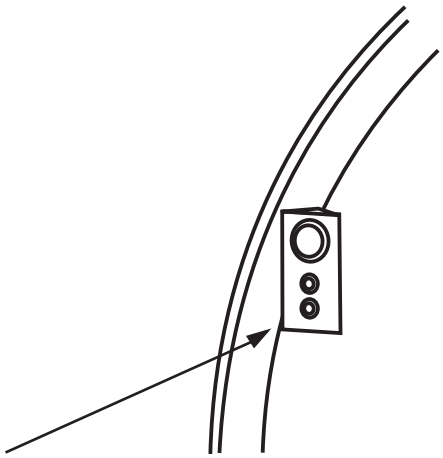
a. Engaging the carrier panel lever will activate an engine speed up switch, you should hear the engine speed up.

b. Observe the carrier and packer panel movement, it should be smooth. The panels should stop automatically at the "interrupted cycle" position.

11. Move both the packer panel lever and carrier panel lever outward and let go. Observe the carrier and packer panel movement, it should be smooth. The panels should stop automatically at the "home" position.

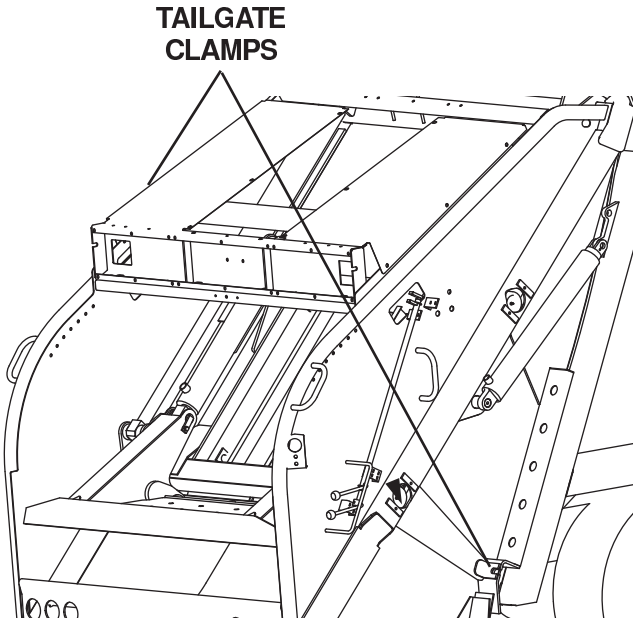


12. Depress the two driver signal push buttons located on both sides of the tialgate to make sure that the audible alarm located in the cab is working.



13. Back the unit up a few feet to ensure that the back-up alarm is working properly.

14. Loosen the tailgate clamps and swing out. Raise the tailgate approximately 6" and check to see if the tailgate ajar light on the dash is on and if the backup alarm is audible. (Do not have the unit in reverse.)

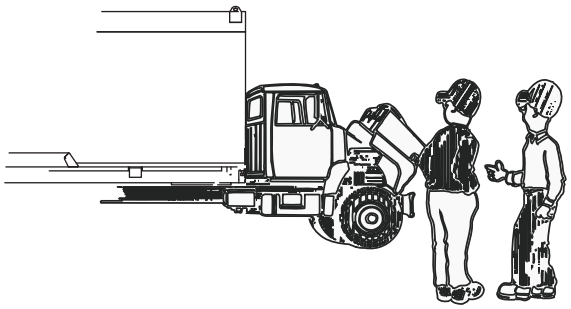


OPERATION

⚠WARNING

Do not operate a unit that is in need of service or repair.

15. Report any problems found during the pre-operation walk-around inspection to the maintenance supervisor for service or repair, place a tag on the steering wheel, using a non-reusable fastener, stating the unit is inoperative and remove the keys.

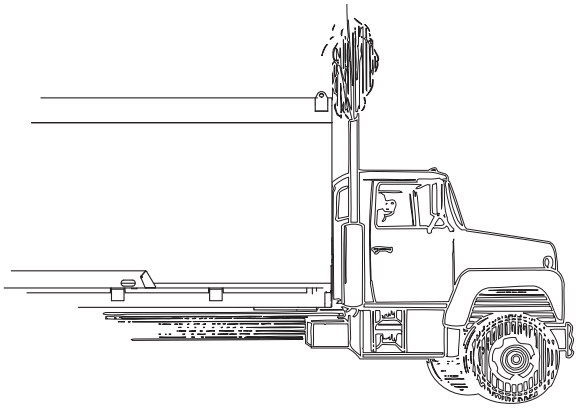


WALK AROUND INSPECTION CHECKLIST

1. Decals in place and readable.
2. Look for any fluid leaks.
3. Mounting hardwarew tight and in place.
4. Tailgate clamps closed and tightened.
5. Hydraulic fluid reservoir at correct level.
6. All operating levers in neutral positions.
7. Pushout panel area clear of debris.
8. Engine warmed up according to manufacturer's instructions.
9. All operating and running lights functioning.
10. Engine speed-up buttons operational.
11. Packing cycle operates properly.
12. Driver signal alarm can be heard.
13. Back-up alarm and tailgate ajar light are operable.
14. Report any problems to proper personnel.

START UP
(OPERATING INSTRUCTIONS)

1. Inspect and start the truck as described in the pre-operational walk-around inspection.



2. Engage the Pump/PTO control (to start the hydraulic pump).

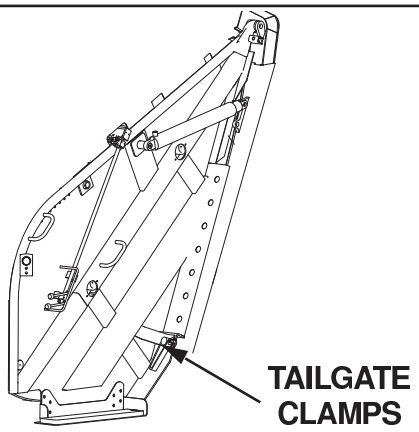
3. Place the engine speed up switch in the ON position.

OPERATION

POSITIONING THE PUSHOUT PANEL

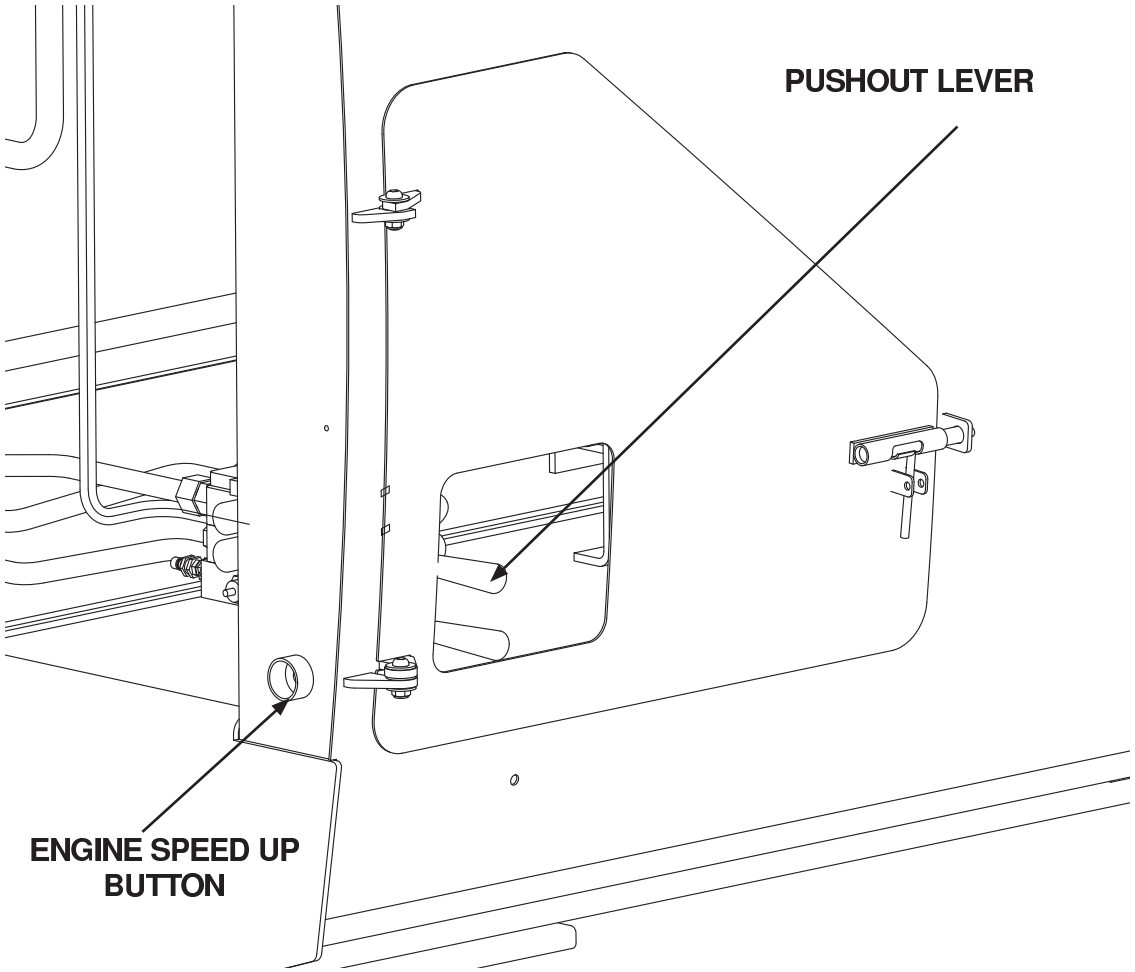
To load the unit, the pushout panel must be positioned toward the rear of the body.

1. Check the tailgate clamps to make sure both are securely tightened.

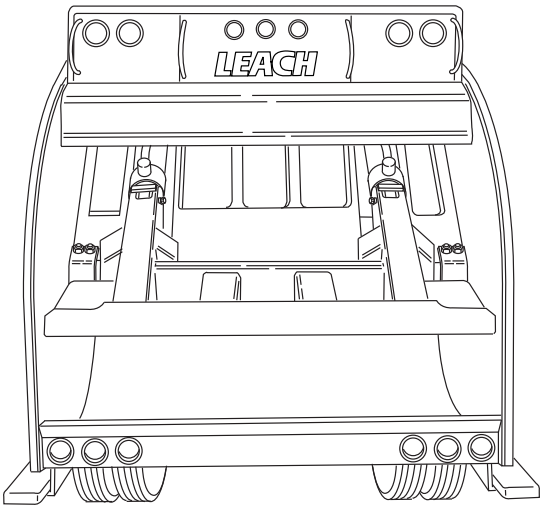


2. Depress and hold the speed-up push button.

3. Push the pushout lever rearward until the pushout cylinder is fully extended.



LOADING THE HOPPER



There are only a few but important points to remember during loading of refuse.

1. Load the hopper evenly on both sides.
2. Load heavy objects in the center of the hopper.
3. Do not load refuse higher than the loading edge.

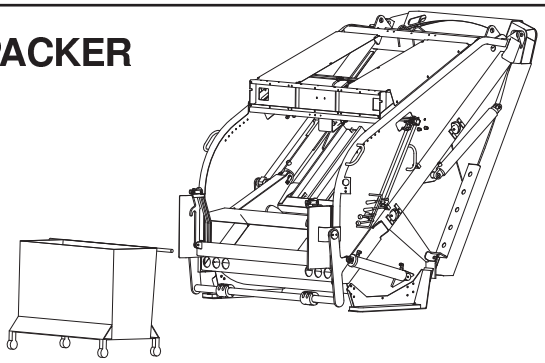
⚠WARNING

Always follow proper loading procedures.

ATTACHING A CONTAINER TO THE PACKER

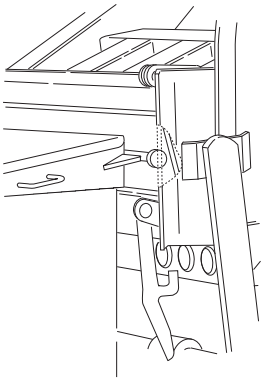
Place the container on a flat, level surface. For large non-moveable containers the driver should back the unit toward the container following all vehicle and refuse body safety restrictions.

The vehicle should be backed with the latch arms open until the container trunnion bar is between the guide ears and within the latch assembly. Center the container on the attachment.



ATTACHING CONTAINER

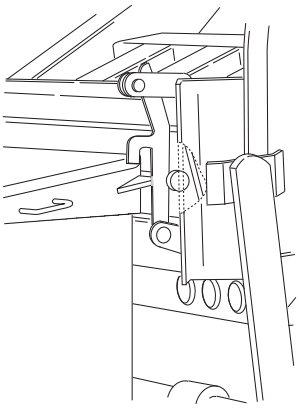
LATCH ARMS DISCONNECTED



After setting the vehicle parking brake, the right and left container latch arms must be engaged.

⚠WARNING

ATTACHED



Lifting a container without both latch arms secured can allow the container to swing away from the unit and cause severe injury or death.

NOTE:

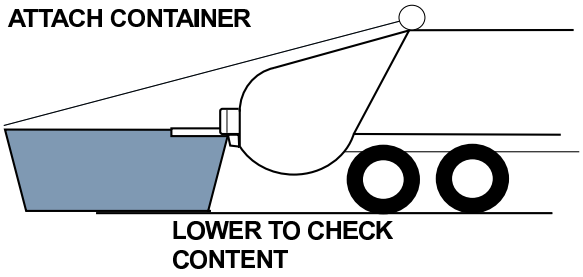
If the container is equipped with wheels, it should be rolled into position only after the vehicle parking brake has been set.

Even small containers must use the latch arms to secure them to the packer.

OPERATION

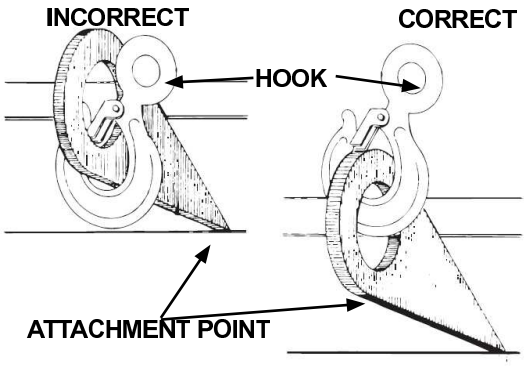
USING A WINCH OR CONTAINER LIFT CYLINDER

Once the container is secured within the latch assembly, the lifting cable should be attached. Place the load in the base of the hook with the safety latch closing the throat opening.



It is important that hooks are used in a proper manner. Proper use of a lifting hook not only includes placing the load in the base of the hook, but also includes ensuring that the hook is lifting on the proper area of the attachment point.

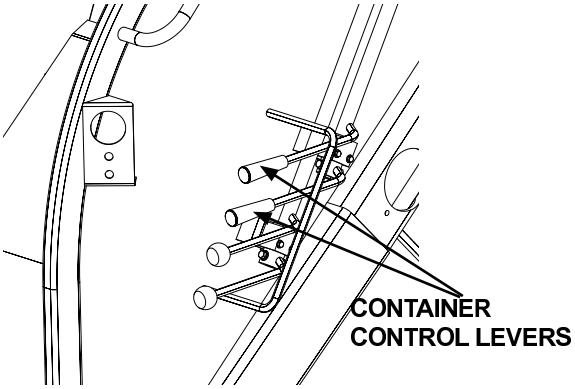
The hook must completely encircle the attachment point. Equally as important, at the time load is applied to the base of the hook, the positioning must be correct to prevent the hook from dislodging. When using an eye type attachment point the base of the hook must be positioned to lift on the inside of the eye. The diagrams show both correct and incorrect positioning of the hook.



For the safety of yourself as well as others always ensure that a hook is positioned properly so that any slack is removed from the cable before lifting.

Slack should be removed from the cable, without the use of the engine speed-up button, by moving the winch control lever in the direction shown on the instruction decal to raise the container. When the cable is tight, the speed-up button should be depressed and held to provide sufficient hydraulic power to lift the container.

The container should be raised until the contents begin to slide into the hopper of the packer or until it is resting against the container bump bar.

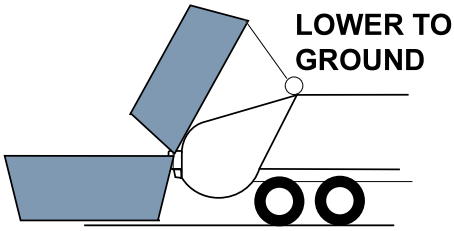


Do not overfill the hopper. After assuring that all persons are standing clear lower the container to check the load condition of the container and the hopper. Lower the container enough to see between the container and the tailgate while standing on the ground without placing yourself between them.

NOTE:

On units with a roof mounted container lifting cylinder, the speed of the device is limited during both the up and down movement. This speed reduction is for safety considerations.

When the hopper is full, lower the container to the ground, assure all persons are standing clear and then engage the packer mechanism. See Sec. 3 Operation - Packing Load.



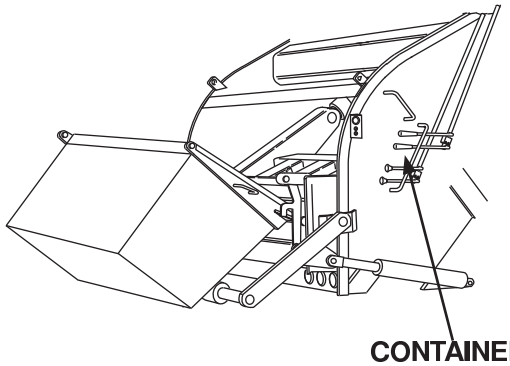
After the packer panel has passed the loading sill, the container may be raised to again fill the hopper.

Repeat this process until the container is empty.

USING A CONTAINER PUSH BAR (CPB)

Once the container is secured within the latch assembly the container is ready to be dumped. After assuring that all persons are standing clear, the operator moves the CPB control lever in the direction shown on the instruction decal to raise the container. When raising a container with the push bar, it is normal for the container to first lift upward within the container latch assembly, then tip toward the hopper and finally lower or drop to the bottom of the latch slots.

Do not overfill the hopper. After assuring that all persons are standing clear lower the container to check the load condition of the container and the hopper. Lower the container enough to see between the container and the tailgate while standing on the ground without placing yourself between them.

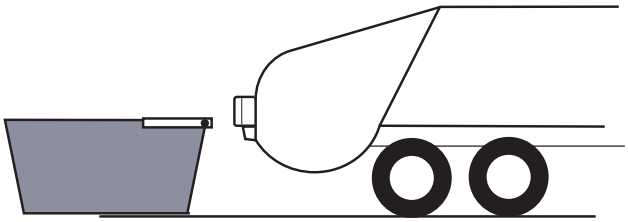


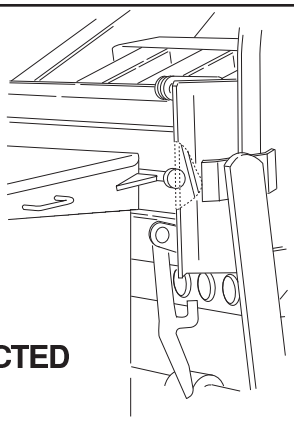
CONTAINER CONTROL LEVER

Releasing the CPB control handle when the container begins to tip will allow the container trunnion bar to lower within the latch slots with ease.

DISCONNECTING THE CONTAINER

Once the container is empty, it should be lowered to the ground, the latch arms released and the cable disconnected.





DISCONNECTED

CART TIPPERS

One or two tippers may be installed on the Alpha-III unit. For operating instructions, please refer to the Tipper Manual.

TIPPER

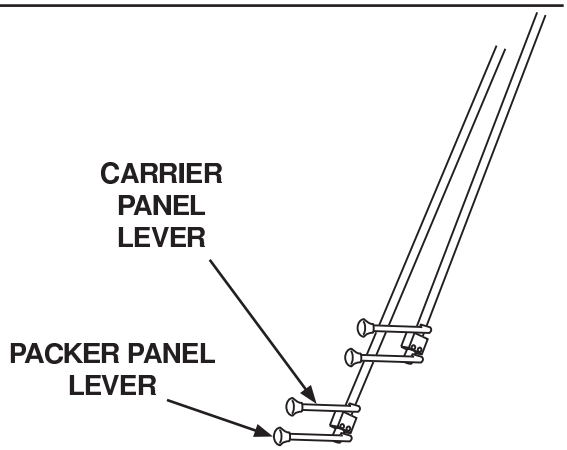
OPERATION

PACKING THE LOAD

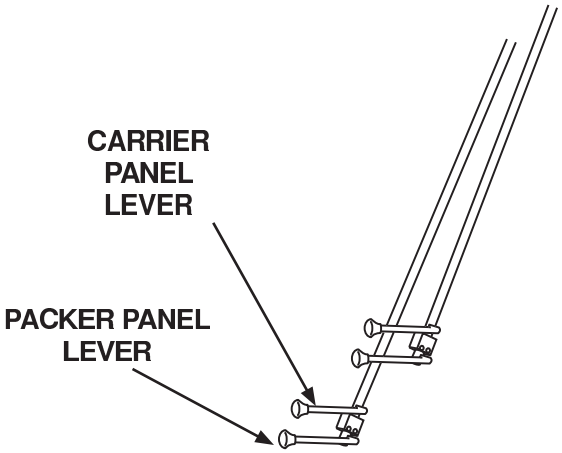
NOTE:

The compaction cycle can be stopped at any time by moving both the packer panel lever and the carrier panel lever to the center (neutral).

1. Cycle the packer panel and the carrier panel by moving both the packer panel lever and the carrier panel lever inward, toward the tailgate, then let go. The packer panel will open and the packer panel lever will automatically shift to neutral. The carrier panel will then move down to above the loding edge, stop in the "interrupted cycle" position and the carrier panel lever will automatically shift to neutral.



2. To finish the cycle, move both the packer panel lever and the carrier panel lever outward, away from the tailgate, then let go. The packer panel will sweep the hopper and the packer panel lever will automatically shift to neutral. The carrier panel will then move up into the body and stop in the home position and the carrier panel lever will automatically shift to neutral.



⚠WARNING

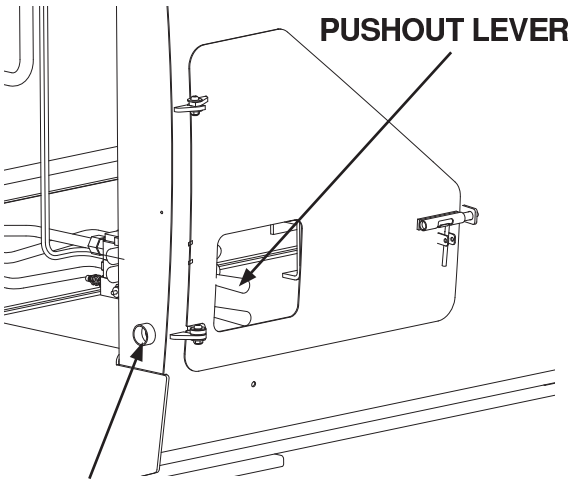
Stand clear of the hopper area during the packing cycle!

3. Repeat steps 1 and 2 each time the hopper is filled to, but not above, the loading edge.

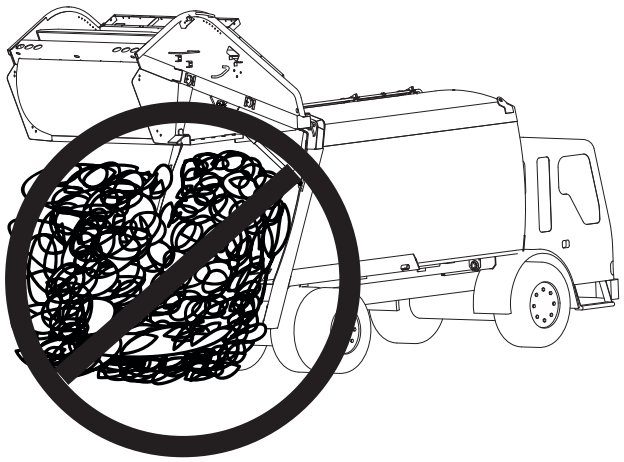
PUSHOUT PANEL OPERATION DURING PACKING

TELESCOPIC PUSH OUT

The Alpha-III telescopic pushout cylinder will normally move toward the front of the body automatically. When the resistance circuit is adjusted to produce maximum load density, it may become necessary to manually retract the telescopic pushout cylinder in order to allow the compacted refuse to move forward in the body. Also, if the packer panel stops short of the "home" position, the carrier panel operating lever may need to be held (overridden) to allow the refuse to move the pushout panel toward the front of the body. When the pushout panel has reached the front of the body, neither the packer panel operating lever nor the carrier panel lever should be overridden except to clear the final hopper load.



UNLOADING AT DUMPSITE



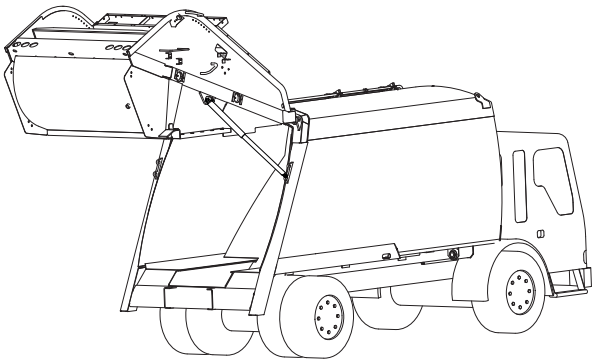
⚠CAUTION

Do not unload uphill or against a pile of refuse.

1. Apply the brakes, engage the PTO and ensure the transmission is in neutral. Relieve the pressure on the tailgate by moving the packer panel to the “interrupted cycle position”.

2. Loosen both tailgate clamps and swing them out and forward as far as they will go.

LIFTING THE TAILGATE

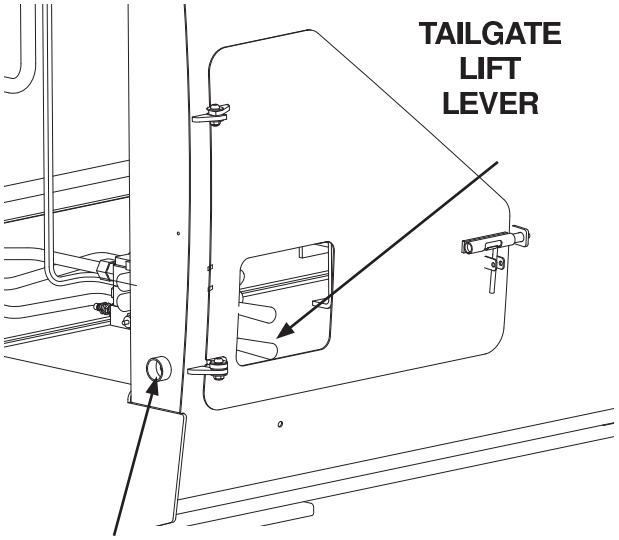


⚠DANGER

Stand clear when the tailgate is raised! If you need to clean debris from the edges, use a pole while standing to the side.

1. Depress and hold engine speed-up button.

2. Push the tailgate lift lever rearward and hold until the tailgate is fully raised.



⚠WARNING

The “tailgate open” light and backup lights should illuminate. The backup alarm should also sound.

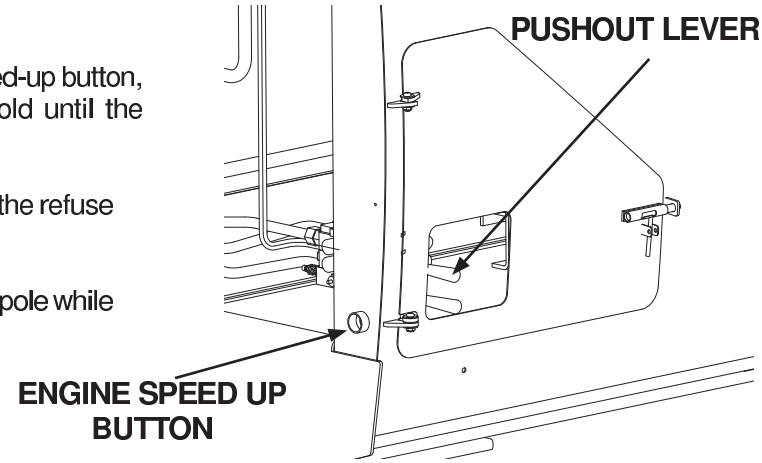
OPERATION

EJECTING THE LOAD

1. Depress and hold the engine speed-up button, push the pushout lever rearward and hold until the pushout panel stops.

2. Slowly pull the unit ahead to clear the refuse pile when the tailgate is lowered.

3. Clear debris from the edges with a pole while standing clear off to one side.

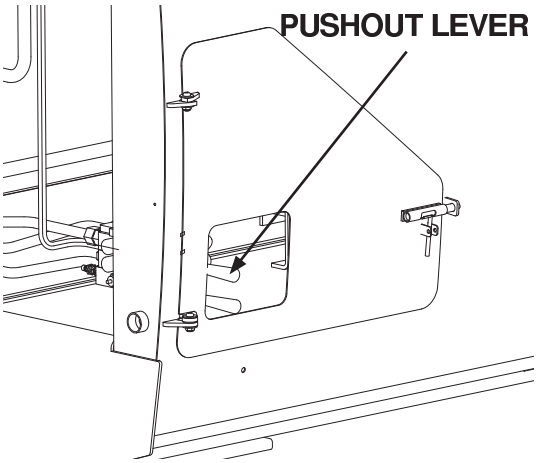


⚠WARNING

Never drive the unit more than 10 feet with the tailgate in the raised position.

⚠CAUTION

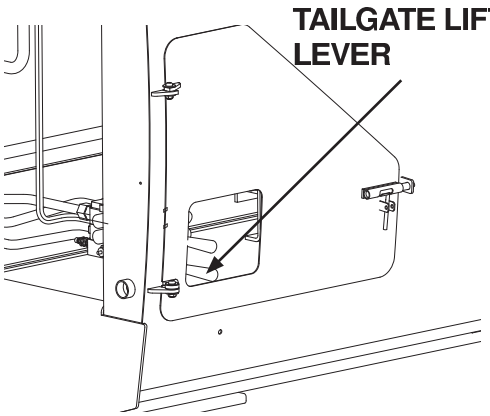
With the telescopic circuit, the pushout cylinder remains fully extended. If the unit is going to travel over one mile empty, completely retract the cylinder. When packing is about to resume, extend the cylinder and start packing.



LOWERING THE TAILGATE

1. Pull forward on the tailgate lift lever slowly and in small increments to lower the tailgate a little at a time.
AVOID SLAMMING SHUT the tailgate.

2. Place the tailgate clamps in the closed position and tighten securely.



NOTE:

The "tailgate open" light, backup lights and backup alarm should be off after closing the tailgate.

SHUT DOWN

1. Move the packer panel lever and carrier panel lever to place the packer panel in the “home” position.

2. Put all controls in neutral.

3. Set parking brake.

4. Disengage PTO.

5. Shut off engine.

6. Shut off solenoid dashboard switch.

7. Remove key.

8. Lock truck.

SECTION 4

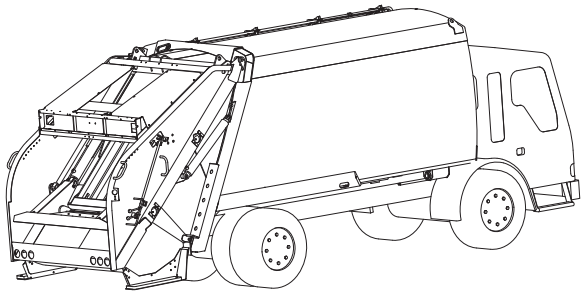
GENERAL REPAIR PRACTICES

⚠WARNING

Proper service and repair is important for the safe, reliable operation of all mechanical products, The service procedures recommended and described in this service manual are effective methods for performing service operations. Some of these service operations require the use of tools specially designed for the purpose. These special tools should be used when and as recommended. Since Labrie Environmental Group could not possibly know, evaluate and advise the service trade of all possible ways in which service might be done or of the possible hazardous consequences of each way, we have not accordingly, anyone who uses a service procedure or tool. which is not recommended by Labrie Environmental Group must first thoroughly satisfy himself that neither his nor the operator's safety will be jeopardized by the service methods selected. Any person who modifies their equipment must do so in accordance with American National Standards Institute Z245.1-2008. It is important to note that deviating from these procedures could cause damage to the unit or render it unsafe. However, please remember that these procedures are not all inclusive.

PREPARATION FOR SERVICE

Proper preparation is very important for efficient safe service work. A clean work area at the start of each job will allow you to perform the repair as easily and quickly as possible and reduce the incidence of misplaced tools and parts. If the portion of the unit to be repaired is excessively dirty, it should be cleaned before work starts. The cleaning process may include the use of high pressure equipment and strong chemicals. Follow the manufacturer's instructions and precautions during this process. Cleaning will occasionally uncover trouble sources. Tools, instruments and parts needed for the job should be gathered before work is started. Interrupting a job to locate tools or parts is a needless delay. Special tools required for a specific job are listed in Section 10.



REPLACEMENT PARTS

Of growing concern to the Labrie Environmental Group is the use of counterfeit, will-fit or substitute parts. Leach replacement parts are designed and manufactured to exacting standards. The use of counterfeit, will-fit or substitute parts may effect the operation and performance of the unit and will void the warranty. Insure maximum reliability and protect your investment- insist on Leach original factory replacement parts.

labrie*plus*

TECHNICAL SERVICE BULLETINS

In addition to the information provided in this Service Manual, Technical Service Bulletins are issued when needed to cover interim changes or to provide supplementary information necessary for maintaining the refuse unit in a proper safe operating condition. (Check with your authorized Leach distributor.)

SAFETY PRECAUTIONS
PRIOR TO PERFORMING ANY SERVICE OR REPAIR

1. Set the parking brake.
2. Put the vehical in park, or if equipped with a manual transmission, put the unit in gear and remove the ignition key.
3. Place an OSHA approved chock block in front and behind the front tire.
4. If steel supports are to be used to support the tailgate, place them as shown in Section 9, SERVICE AND REPAIR, under TAILGATE REPAIR.
5. When working on the unit always use the service tools listed in Section 10, SERVICE TOOLS if so directed by the instructions in Section 9, SERVICE AND REPAIR.
6. Whenever dismantling any hydraulic line, valve, or cylinder be sure to turn off the hydraulic fluid flow, relieve the pressure and slowly crack or loosen the fittings.

SAFETY DURING SERVICE AND REPAIR

1. Always wear safety glasses.
2. Disengage the PTO, turn off the ignition and remove the keys before:
   a. Leaving the truck cab.
   b. Examination or lubrication of the PTO, pump or drive shafts.
   c. Entering the front of the body.
   d. Entering the tailgate.
3. Always check to make sure the body access door is locked shut before entering the cab.
4. Pump removal; due to the weight and location of the pump, it is advisable to place a floor jack beneath the pump and apply a slight pressure, so that when the bolts are removed the pump is supported.
5. When it becomes necessary to raise the tailgate for maintenance or repair, do not enter the area beneath the tailgate unless the proper bracing has first been applied. All bracing and supports must be able to support 8,000 lbs (3629 kg).
6. Never enter the body when the load is under compaction pressure. Bring the packer panel to the “interrupted cycle” stop position and retract the pushout panel slightly.

WELDING PRECAUTIONS
ELECTRIC WELDERS

1. Electric arc welders should have a seperate, fused disconnect circuit.
2. Welders must be used according to the manufacturers specifications.
3. All electric welding should be done in a well-ventilated area.
4. The radiation given off by the arc will destroy the retina of the eye. Wear an approved welder’s helmet.
5. Welding radiation will produce severe burns on unprotected skin, similar to sunburn, so wear heavy clothing. Use natural fiber or leather - avoid synthetic fiber clothing.

SECTION 4

GENERAL REPAIR PRACTICES

OXY-ACETYLENE TORCHES

1. Acetylene is a highly explosive gas which should be treated with the greatest care. At pressures above 15 psi, acetylene will explode by decomposition without the presence of air. No other industrial gas has such a wide explosive range.

2. Oxygen will spontaneously ignite in the presence of oil and grease. The hoses, torch handles and regulators must be kept free of petroleum products.

3. Before using the equipment, inspect it for cleanliness and for leaks.

4. Hoses cannot be safely repaired; when they show signs od deterioration, they should be replaced.

5. Return regulators periodically to the distributor for inspection. Store gas bottles upright and out of the sun. Do not attempt to repair or make internal adjustments on the regulators yourself.

6. If you suspect a leak in the system, perform a leak test using an approved leak detection system. DO NOT USE HOUSEHOLD OR LAUNDRY SOAP BECAUSE OF THE DANGER OF OXYGEN COMBINING WITH IT AND EXPLODING.

7. When preparing to use the torch, make certain that the regulator valves are all the way out to the "off" position before the main tank valves are opened to protect the regulators from sudden inpact of tank pressure.

8. When opening the tank valves, stand alongside of the regulators, out of the way, in case they blow out.

9. Backfiring or "machine gunning" at the torch is very dangerous and can lead to a major explosion.

10. Welding should be done in a location well away from flammable materials.

REMOVAL, DISASSEMBLY AND REPAIR

1. Cleanliness is very important; dirst is the number one cause of wear in bearings, bushings and especially in hydraulic components.

2. Inspect hydraulic components for leaks before cleaning. The dirt buildup on the component can aid in tracing fluid leaks.

3. Clean hydraulic connections before removal to prevent dirt from entering the component.

4. Loosen hydraulic fittings slowly to release pressure.

5. Cap hydraulic fittings immediately after removal to prevent fluid from leaking.

6. Clean the component in non-flammable solvent before disassembly.

7. Inspect the component after cleaning for signs of wear or external damage.

8. When disassembling a component, note the position of each part as it is removed to aid in reassembly.

9. During disassembly note the condition of each part as it is removed to aid in diagnosing problems and to help prevent them in the future.

10. Clean and inspect disassembled parts for wear, cracks, dirt, etc.

11. After cleaning and inspection, reusable hydraulic parts should be immediately coated with clean fresh hydraulic fluid to prevent rust formation. If these parts are not going to be reinstalled immediately, they should be wrapped in a clean lint free cloth or paper to prevent nicks or scratches.

12. When resealing a cylinder or valve, replace all seals and o-rings that are disturbed during repair. The price of a few seals is very little compared to a return repair job.

REASSEMBLY AND INSTALLATION

1. Assemble parts in the same position as removed.
2. Align parts accurately before mating.
3. Inspect o-ring and seal grooves for sharp edges, nicks or burrs before installing new sealing parts.
4. Lubricate all new sealing parts with clean, fresh hydraulic fluid before installation.
5. Use care not to damage new sealing parts on reassembly.
6. Use correct torque values when reassembling and installing components. see TORQUE SPECIFICATION CHARTS.
7. Always check the hydraulic fluid in the hydraulic tank after performing any service or repair of the hydraulic system.
8. Always lubricate components with grease fittings after they have been repaired and reinstalled.
9. Use only Leach replacement parts.

NOTE:
See Section 9, SERVICE AND REPAIR for specific repair instructions.

ELECTRICAL TESTING

The electrical system used on the unit consists of various lights, switches and wiring. Testing the components and wiring can be accomplished by two simple checks; CHECKING FOR VOLTAGE and CHECKING CONTINUITY.

CHECKING FOR VOLTAGE

A test light is used to check for the presence of electricity in a live circuit. Connect the test light clip to a good ground and the probe at the point where the presence of voltage is to be checked. If voltage is present, the light will be on...if no voltage is present, the light will be off.

CHECKING CONTINUITY

A continuity tester is used to check the ability of a conductor to allow current to pass. A continuity tester uses a self contained power source and should never be used on a live circuit. Connect the clip to one side of the component to be tested and touch the probe to the other side. If the component has the potential to pass current, has continuity, the light will be on...if the component is not able to pass current, there is no continuity and the light will be off.

WELDING

1. Completely clean out an old weld before rewelding.
2. When repairing a cracked weld, the old weld should be completely removed before rewelding.
3. When adding a part or attachment be sure the metal is clean before welding, the part is properly located and the weld will not cause damage to adjacent parts.
4. Use E7018 rod for all locations.
5. Use ER-70S-6 wire for all locations.

SECTION 4

GENERAL REPAIR PRACTICES

LIFTING INSTRUCTIONS

Because of the size and weight of the major components found on the unit, it is necessary to use suitable lifting devices for removal. The following components require lifting devices for removal: cylinders, carrier panel, packer panel, pushout panel and tailgate.

CAPACITY OF LIFTING DEVICE REQUIRED FOR REMOVAL

Cylinders.....500 lbs. (227 kg.)
Telescopic Pushout Cylinders.....1000 lbs. (454 kg.)
Carrier Panel.....1600 lbs. (726 kg.)
Packer Panel.....1600 lbs. (726 kg.)
Pushout Panel.....2800 lbs. (1270 kg.)
Tailgate.....8000 lbs. (3629 kg.)

SLING STRAP SPECIFICATIONS

Nylon sling straps should be used for the removal of cylinders. The following specifications should be used to determine the type of sling straps to use for lifting.

Type USS-26-EN1
Rating
Vertical lift.....4800 lbs. (2177 kg.)
Choker lift.....3600 lbs. (1633 kg.)
Basket lift.....9600 lbs. (4354 kg.)
Width.....2 in.
Length.....Depends on type of lifting device used.

CHAIN AND HARDWARE SPECIFICATIONS

Chains should be used to lift and/or support the carrier and packer panel, pushout panel and tailgate. The following specifications should be used to determine the type of chain and hardware to use for lifting.

Chain
Type.....D.O.F. (Double Branch, Oblong Link, Foundry Hook)
Size.....½ in.
Hammer Locks.....½ in.
Oblong Rings.....½ in.

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.*

GENERAL REPAIR PRACTICES

HYDRAULIC FITTING TORQUE VALUES

JIC 37 DEGREE FLARED TUBE FITTINGS			
SAE DASH SIZE	TUBE SIDE THREAD SIZE	TORQUE INCH LBS.	TORQUE FOOT LBS.
2	5/16-24	35	2
3	3/8-24	65	5
4	7/16-20	130	11
5	1/2-20	165	14
6	9/16-18	235	20
8	3/4-16	525	43
10	7/8-14	650	55
12	1 1/16-12	950	80
14	1 3/16-12	1200	100
16	1 5/16-12	1400	115
20	1 5/8-12	1900	160
24	1 7/8-12	2250	185
32	2 1/2-12	3000	250

FLAT FACE O-RING (ORFS) FITTINGS			
SAE DASH SIZE	TUBE SIDE THREAD SIZE	TORQUE INCH LBS.	TORQUE FOOT LBS.
4	9/16-18	220	18
6	11/16-16	360	30
8	13/16-16	480	40
10	1-14		60
12	1 3/16-12		85
14	1 5/16-12		95
16	1 7/16-12		110
20	1 11/16-12		140
24	2-12		180
32	2 1/2-12		360

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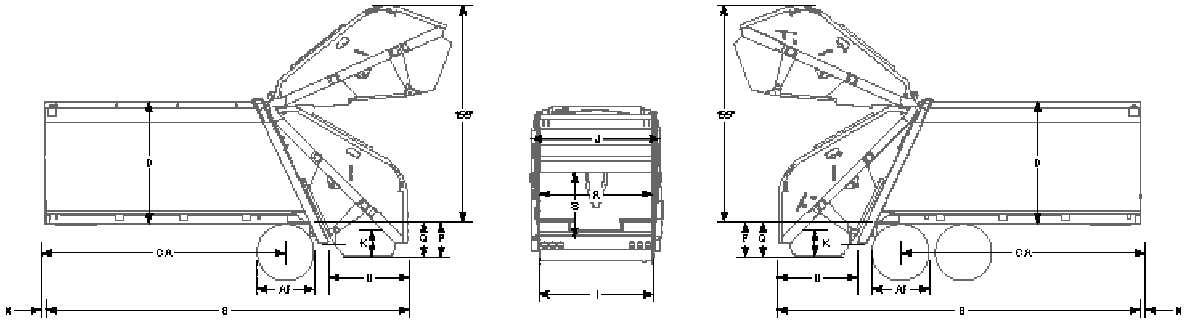
SPECIFICATIONS



BODY DIMENSIONS

	SINGLE AXLE			
	14 Cu. yd.	16 Cu. yd.	18 Cu. yd.	20 Cu. yd.
B Overall Length	192” (4,877 mm)	204” (5,182 mm)	217” (5,512 mm)	230” (5,842 mm)
CA (Note 2)	93” (2,362 mm)	106” (2,692 mm)	118” (2,997 mm)	131” (3,327 mm)
* Min. Truck GVWR Requirement (Note 1)	28,000 lbs. (12,701 kg.)	30,000 lbs. (13,608 kg.)	31,500 lbs. (14,288 kg.)	33,000 lbs. (14,969 kg.)

	TANDEM AXLE
	25 Cu. yd.
B Overall Length	268” (6,807 mm)
CA (Note 2)	156” (3,962 mm)
*Min. Truck GVWR Requirement (Note 1)	50,000 lbs. (22,680 kg.)

BODY DIMENSIONS Continued

	SINGLE AXLE (ALL SIZES)	TANDEM AXLE (ALL SIZES)
AF After Frame (Note 3)	38” (965 mm)	51” (1,295 mm)
D Height Above Chassis Frame	93” (2,362 mm)	93” (2,362 mm)
I Body - Outside Width	96” (2,438 mm)	96” (2,438 mm)
J Body - Inside Width (Max)	90” (2,286 mm)	90” (2,286 mm)
K Hopper Depth	16” (406 mm)	16” (406 mm)
N Start of Clear CA to Body Front	2” (51 mm)	2” (51 mm)
P Top of Step Below Chassis Frame	23” (584 mm)	23” (584 mm)
Q Hopper Bottom Below Chassis Frame	25” (635 mm)	25” (635 mm)
R Hopper Opening Width	84” (2,134 mm)	84” (2,134 mm)
S Hopper Opening Height	59” (1,499 mm)	59” (1,499 mm)
U Rear of Body to Rear of Tailgate, Closed	57” (1,448 mm)	57” (1,448 mm)
* Height Above Chassis Frame (Tailgate Raised)	155” (3,937 mm)	155” (3,937 mm)
* Load Sill Below Chassis Frame	5” (127 mm)	5” (127 mm)
* Hopper Capacity	3.0 cu. yd. (2.3 m^3)	3.0 cu. yd. (2.3 m^3)

Notes: 1. Truck selected must be capable of carrying net weight of body plus weight of refuse to be collected.
2. CA must be usable with no obstructions protruding above frame.
3. 32 yd. body requires additional 6” AF

SPECIFICATIONS

LUBRICANTS

Oil.....Shell Tellus 32 Grease.....Multiservice (quality grade)

HYDRAULIC SYSTEM

CAPACITY (approximately):

Fluid tank.....50 gallons

Total system

System pressure settings.....2150 to 2200 PSI (148 to 152 BAR)
Type of fittings.....Steel tubing with brazed ORFS fittings: reinforced rubber hose with crimped full-flow ORFS fittings, o-ring fittings

Filtration.....Suction: Reusable wire mesh type
Return line: Disposable filter element located on return line to the tank

PUMP

Type.....Positive displacement; gear type driven by the PTO from the truck transmission, or by the engine
Capacity.....42 GPM @ 1200 RPM

LEACH HYDRAULIC FLUID RECOMMENDATION

All Leach hydraulic systems are factory filled with a high quality anti-wear htdraulic fluid meeting an ISO 32 specification. On units put into service where there are high ambient temperatures or sustained high duty cycles, it may be desirable to change the fluid to an ISO 46 specification (higher viscosity). In colder climates or light duty, an ISO 22 might be more appropriate. The International Standards Organization assigns specification numbers so that a consumer receives the same product from various suppliers.

GRADE ISO/VISCOSITY.....	22	32	46
AGMA NO.....	–	–	1
Gravity API.....	33	31	31
Flash, Degree F.....	375	380	390
Pour Point.....	-20	-20	-20
Viscosity:			
SSU @ 100 Degrees F.....	112	158	228
SSU @ 210 Degrees F.....	40	44	48
cSt @ 40 Degrees C.....	21	30.5	44
cSt @ 100 Degrees C.....	4.1	5.2	6.5
Viscosity Index.....	98	99	99
ASTM Oxidation Test (Hours to 2.0 Neut. No.)	2500	2500	2500
ASTM Rust Test, A & B.....	Pass	Pass	Pass
Foam Test.....	Pass	Pass	Pass
Vickers Vane Pump Test.....	Pass	Pass	Pass
Dielectric Strength (ASTM 877) EC # @ 180 Degrees F.	25Kv	25Kv	25Kv
	40-37-3 (10)	40-37-3 (15)	40-37-3 (15)

⚠CAUTION

Do not use engine oil, automatic transmission fluid (ATF) or add diesel fuel or kerosene to the hydraulic fluid. Service life of all hydraulic system components may be adversely affected.

HYDRAULIC FLUID

To serve its purpose and give long and satisfactory service, hydraulic fluid must possess desirable physical and chemical characteristics. Stability over a wide range of trmperatures and under agitation is very important.

Premium hydraulic fluids should be used in Leach hydraulic systems. In addition to the above characteristics selected additives should be incorporated to provide additional resistance to wear, corrosion, oxidation, decomposition and foaming. All additive blending should be done by the lubricant supplier so that they are compatible with each other.

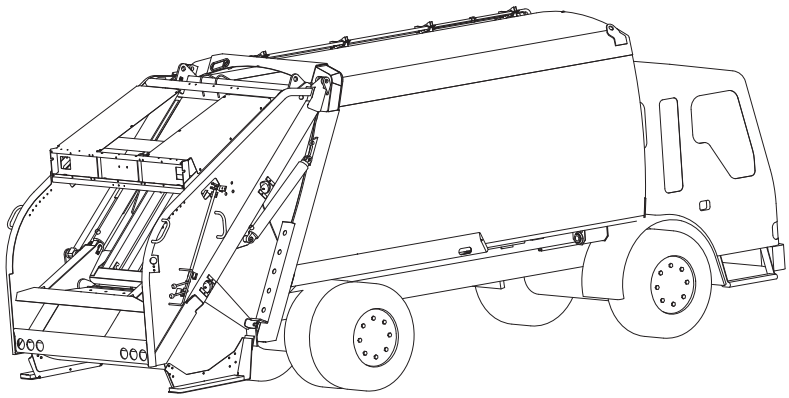
A reputable lubricant supplier backed by a reputable oil company is great assurance of obtaining high quality products and generally speaking, higher quality is worth the higher initial cost.

SECTION 6

PREVENTIVE MAINTENANCE

GENERAL

The Alpha-III has been designed for long periods of efficient uninterrupted operation. Careful attention to proper preventive maintenance, as described in this section, 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 shut down for costly repairs.



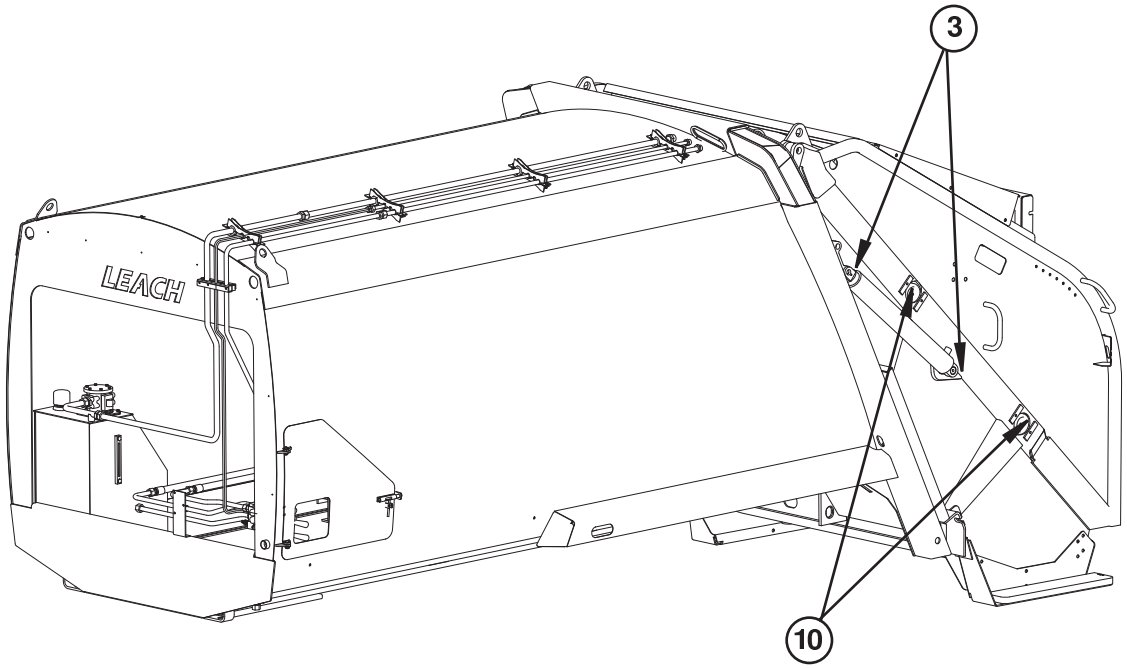
OPERATING AND MAINTENANCE RECORDS

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 Plus concerning updated maintenance information. Keep those bulletins with this manual and make notes at the appropriate places in the manual referencing the updated information.

LUBRICATION CHART



INSTRUCTIONS

●Grease weekly (every 40 hrs. of operation) with MOBILUX EPI-SERVICE grease or equivalent.

■Oil weekly (every 40 hrs. of operation) with SAE # 10 or equivalent.

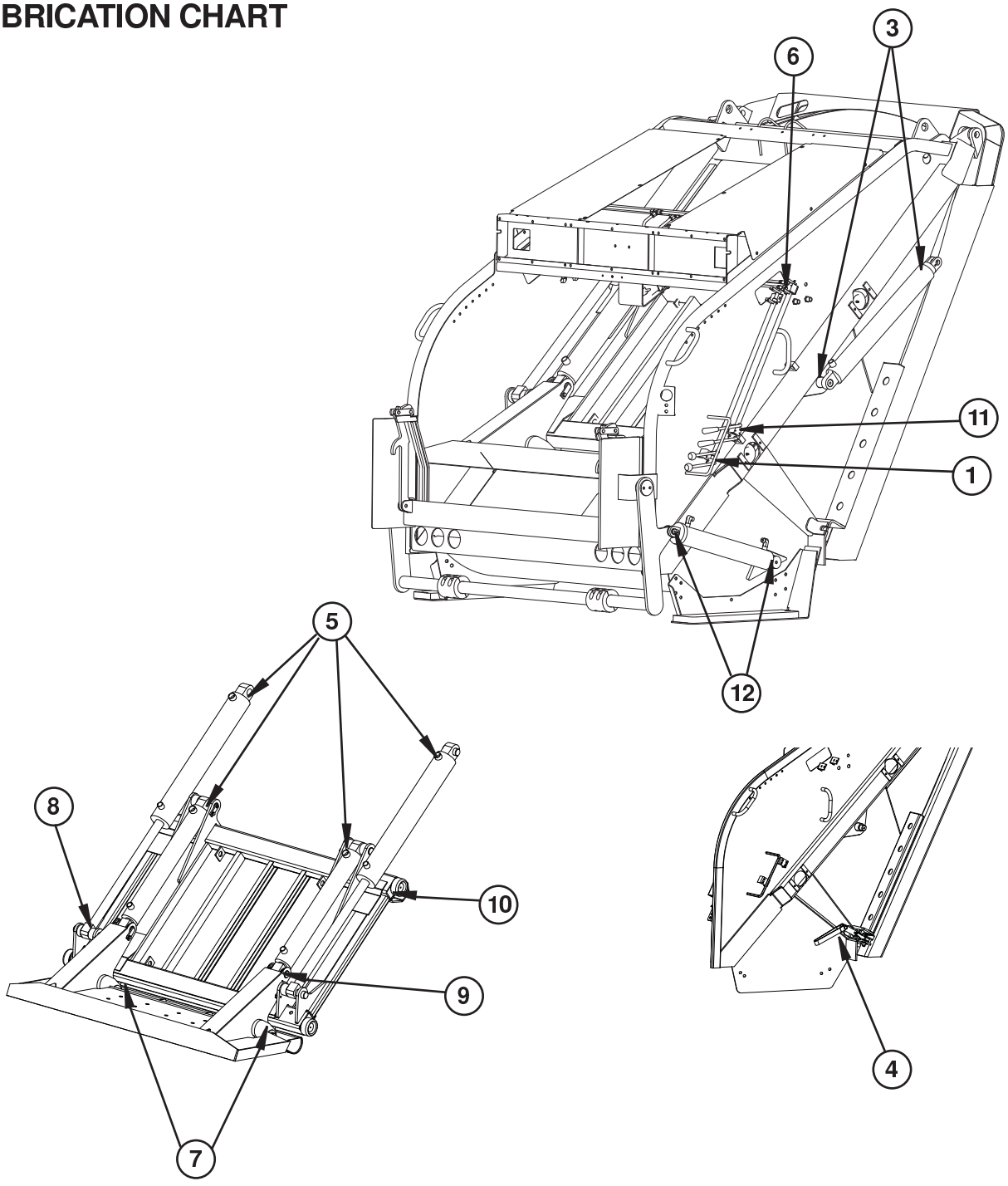
⚠CAUTION

In below freezing climates all grease and fluids should have a cold test rating of at least -20 ºF.

ILLUS. #	LUBE POINT	QTY	NOTE
■1	Control levers	2	1
●2	PTO shaft	2	
●3	Tailgate lift cylinder (top and bottom)	4	
●4	Tailgate clamps	2	
●5	Operating cylinders top pivots	4	2
●6	Operating valve control lever	4	1
●Not Shown	Telescopic cylinder pivot pins	2	

ILLUS #	LUBE POINT	QTY	NOTE
	NOTE The packer panel must be in the home position to lubricate the following lube points.		
●7	Inside & outside bearing housing	3	
●8	Carrier panel cylinder end	1	
●9	Packer panel cylinder rod ends	2	
●10	Rollers	4	3 & 4
■11	Optional control lever(s)	2	
●12	HCA cylinders	4	

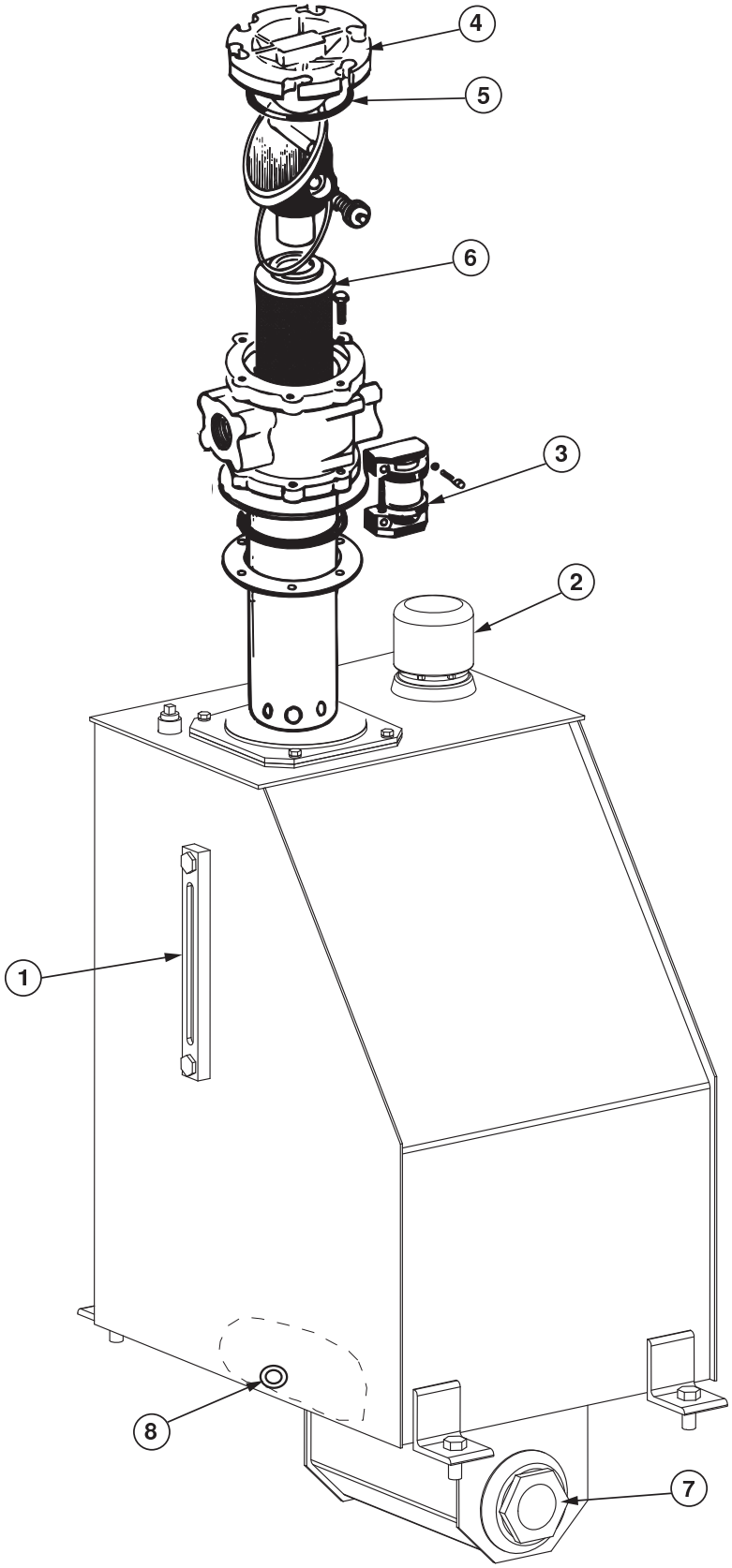
LUBRICATION CHART



NOTES:

1. These parts require frequent inspection and lubrication as necessary to be in prime working condition.
2. Remove the top cover for access to lube points.
3. Move roller track access covers to grease roller.
4. Rollers need lubrication-roller tracks do not! Grease on the tracks will cause the rollers to slide, keep tracks clean and dry.

PREVENTIVE MAINTENANCE



PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM SERVICE

(See accompanying Hydraulic System Illustration)

Proper maintenance of the hydraulic components is of vital importance to the service life of the system and the operation of the unit as a whole.

CHECKING FLUID LEVEL (DAILY)

Position and fully retract the pushout, packer and carrier cylinders to check the fluid level. (1) When checking the fluid level in the hydraulic tank, also note any frequent or sudden loss of fluid. This may indicate leakage, which must be traced and corrected to avert equipment failure and possible damage to other components.

If low, fill the hydraulic tank to the "NORMAL FILL LEVEL" with hydraulic fluid as specified in Sec. 4 SPECIFICATIONS according to operating and weather conditions.

CLEAN TANK BREATHER (WEEKLY)

Clean the air breather (2) every week. Replace a breather that cannot be cleaned adequately.

CHECK / REPLACE RETURN LINE FILTER ELEMENT

The return line filter is a vital component of the hydraulic system. Without proper filtration problems are bound to occur among the hydraulic system components. Stick to the strict maintenance schedule for this item.

Time Lapse Recommendations for Element Replacement

1. After the first five days of unit operation.
2. After the first calender month of unit operation.
3. Thereafter, every twelve calender months or sooner, if so indicated by the filter replacement indicator (3).

The condition of the filter element must be checked weekly by looking at the visual indicator on the filter. Refer to item 3 on the tank illustration.

NOTE

Under severe operating conditions the filter life may be reduced. Replace the filter element regardless of elapsed time if the suction indicator is in the red zone.

REPLACEMENT OF FILTER ELEMENT

(See Hydraulic System Illustration)

1. Remove filter cover (4).
2. Remove o-ring (5).
3. Remove element (6) and discard.
4. Install a new element (6).
5. Coat a new o-ring (5) with fresh hydraulic fluid and install in filter cover (4).
6. Install the cover and secure to the bowl with the attaching hardware.
7. Check the fluid level and replenish with fresh fluid as described earlier in this section under CHECKING FLUID LEVEL.

⚠CAUTION

Extended operation of the unit without proper filtration will result in reduced service life of hydraulic system components.

FLUSHING HYDRAULIC SYSTEM / CLEANING HYDRAULIC STRAINER (YEARLY)

1. Drain all fluid from the hydraulic tank into a suitable container. Dispose of it properly.
2. Unscrew and remove strainer (7).
3. Clean strainer thoroughly in a suitable cleaning solvent.
4. Wipe off the magnetic ring (8) and wipe out the bottom of the tank.
5. Reinstall the strainer (7).
6. Fill the hydraulic tank with fresh fluid as specified in sec. 5, SPECIFICATIONS, according to operating and weather conditions.
7. Start the unit and operate all hydraulic levers as described in Sec. 3, OPERATION. Leave all hydraulic cylinders in the retracted position and shut down unit.
8. Recheck the fluid level and add fluid as necessary to bring level to the "NORMAL FILL LEVEL" on the sight gauge.

HYDRAULIC SYSTEM SERVICE

CONTAMINATION

It is estimated that as much as 90% of all hydraulic problems may be traced directly to the fluid. It is of utmost importance that all foreign matter be kept from the hydraulic fluid. Invisible quantities of abrasive type contamination may cause serious pump wear, malfunctioning of pumps and valves and sludge accumulations within the system in relatively short periods of time. It is also essential that moisture and water be kept from the hydraulic fluids and system.

COMMERCIAL HYDRAULIC FLUID TESTING

Hydraulic fluid samples should be taken periodically for laboratory analysis. The actual sampling method is critical. It should be done according to ANSI Standard B93.19M (R1980). This standard is available from the National Fluid Power Association, 3333 N. Mayfair Rd., Milwaukee, WI 53222.

Samples should be taken from the center of the reservoir when the fluid is at operating temperature and placed in a clean, dry glass bottle with a nonshedding screw-on cap. The bottle should be labeled with the date, type of fluid, model and serial number of the machine.

Two identical samples should be taken. One for laboratory analysis and one for your own preliminary analysis while you are waiting for the lab report.

We recommend the use of commercial laboratory services for analysis of routine fluid samples taken on a regularly scheduled basis. The most important analysis are particle count, Spectro-chemical analysis, water content and viscosity.

IN HOUSE HYDRAULIC FLUID TESTING

After your sample has been allowed to stand for 20 to 30 minutes to eliminate air bubbles, hold the bottle up to the light to check whether the fluid is clear or cloudy.

Any visible debris is an indication of a severe solid contamination problem, the source of which must be located and corrected immediately. Common sources of this kind of contamination may be component wear, undersealed reservoir covers or dirty air breather filters.

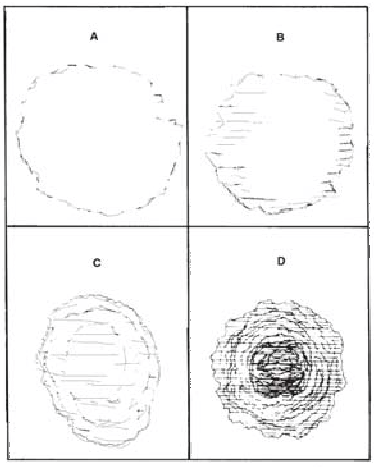
If the sample is the least bit “cloudy” it is an indication of water contamination, the source of which must be found and eliminated immediately. Common sources are inadequate outdoor storage, unsealed reservoir covers or condensation.

A “BLOTTER SPOT TEST” may also be performed to test for OXIDATION. Place a DROP of fluid on a piece of white blotter paper.

NOTE:

The Blotter Test will provide an indication that a more complete test may be necessary.

A. If the blotter remains colorless or develops only a light yellow ring, oxidation is under control.
B. If color develops but is uniform throughout, the fluid is still serviceable but should be checked for correct additive content.
C. If the sample shows distinct rings the fluid should be changed.
D. If a distinct dark spot remains in the middle, but a lighter colored fluid migrates outward in the blotter paper the fluid is about to dump (or already has) sludge or other by-products into the system. The time for replacement of this fluid has already passed.



Kits are available from your fluid supplier to test for acid content in much the same way you would test the condition of swimming pool water. A shift in acid content may indicate a breakdown in the fluid.

KEEP ACCURATE, DATED RECORDS OF ALL PERTINENT INFORMATION GAINED FROM THESE TESTS.

PREVENTIVE MAINTENANCE

PREVENTIVE MAINTENANCE REQUIREMENTS

DAILY PREVENTIVE MAINTENANCE

Each day perform the following maintenance:

1. INSPECTION

Perform the PRE-OPERATIONAL INSPECTION described in Sec. 3, OPERATION.

⚠ DANGER

Never go under the vehicle with the engine running. Death or serious injury could result.

a. When checking for hydraulic leaks pay particular attention to hose fittings and connections at the cylinders and valves. A build up of hydraulic fluid and dirt indicates a small leak that can probably be corrected by tightening the fitting or connection.

b. Check the visual indicator to determine the condition of the return line element.

c. Inspect the mounting hardware. The springs should be compressed to 3 1/2 inches +/- 1/8 inch. The mounting bolts should be torqued to 700 ft./lbs. and inspected daily.

2. CLEANING

Hose the entire unit inside and out with clean water. Make sure no refuse is lodged in the body trough or behind the pushout panel especially near the telescopic pushout cylinder area or rear of the tank.

3. LUBRICATION

Frequent inspection of grease points will indicate when lubrication is needed.

4. CONTAINER HANDLING EQUIPMENT

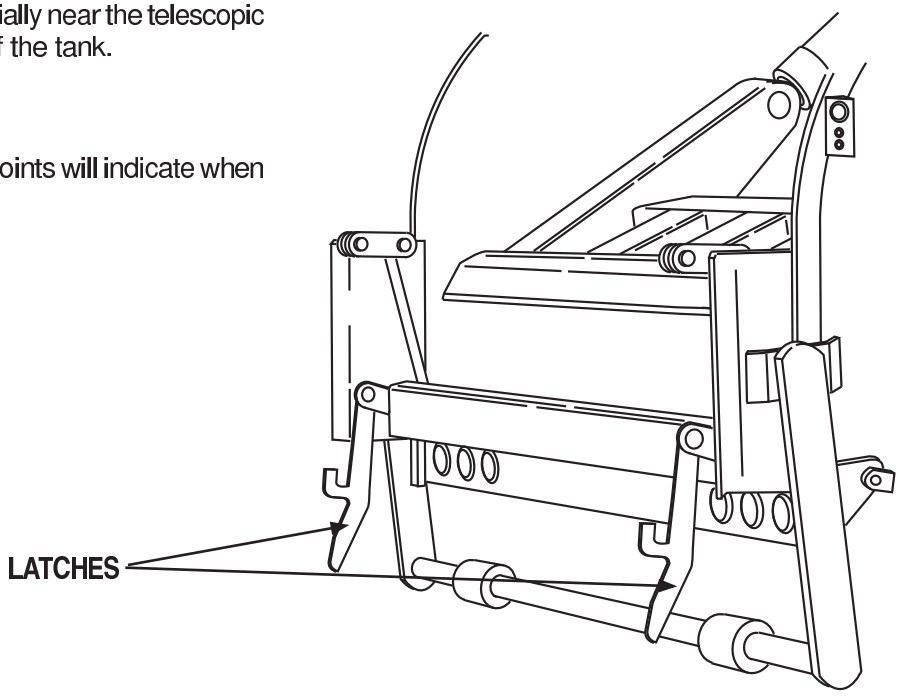
In addition to performing the daily vehicle and packer body pre-operation inspection, also check the container handling system. Each day perform the following inspection.

a. Check the condition and operation of the container latch assemblies. If the latch arms will not latch securely in the assembly do not use the unit.

b. A visual inspection of the wire rope (cable) should identify any broken wires or obvious damage. A visual inspection of the chains should identify any damage or elongated links.

c. Make a visual inspection of the hook for obvious damage. Make sure that the hook latch is working properly.

d. Check the operation of the container handling system. The lifting mechanism should move smoothly with no jerkiness or binding.



WEEKLY PREVENTIVE MAINTENANCE

1. CLEANING
Clean and paint exposed metal surfaces to remove and prevent the formation of rust.

2. INSPECTION
a. In addition to the body mounting hardware which is checked daily, inspect all other accessible mounting hardware and fittings for tightness. Refer to the CAPSCREW MARKING AND TORQUE VALUE CHART provided in Sec., 4 GENERAL REPAIR PRACTICES.

b. Check electrical wiring and insulation for fray's, breaks and loose connections.

3. LUBRICATION
Refer to the LUBRICATION CHART in this section and service those items which require weekly lubrication.

4. HYDRAULIC SYSTEM
a. The return line filter element is vital to the service life of the hydraulic system. Check the replacement indicator on the filter assembly weekly. Refer to HYDRAULIC SYSTEM SERVICE for more detailed information about this important item.

b. Check the breather cap on the hydraulic tank. Clean it weekly and replace it if it cannot be cleaned thoroughly or is missing.

5. CHECK-OUT PROCEDURES
Each week perform the CHECK-OUT PROCE- DURES listed in Sec. 7 of this manual.

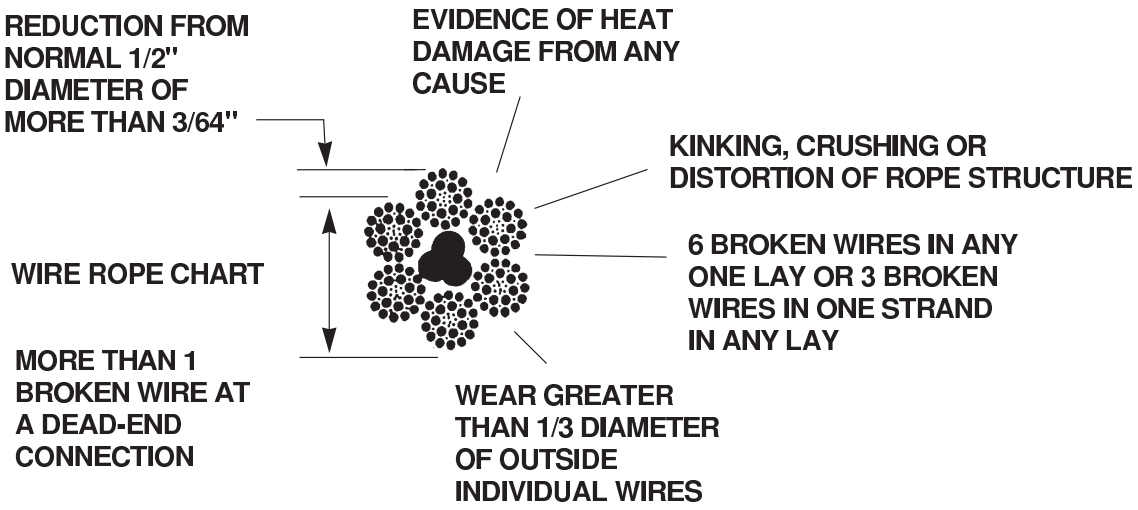
6. CONTAINER HANDLING SYSTEM HARDWARE
Check akk container handling system hardware to make sure that no damage exists and that all fasteners are secure.

7. PIVOT POINTS
Check all pivot points for wear and smooth operation.

8. WIRE ROPE (CABLE)
A detailed inspection of all wire rope (cable) should be made weekly or every 40 hours of use - which includes checking the wire rope for damage, deterioration and secure end connections. Damage or deterioration requir ing replacement of wire rope is indicated by broken wires, excessive wear, heat damage, corrosion, stretching or distortion as shown in the wire rope illustration below.

NOTE

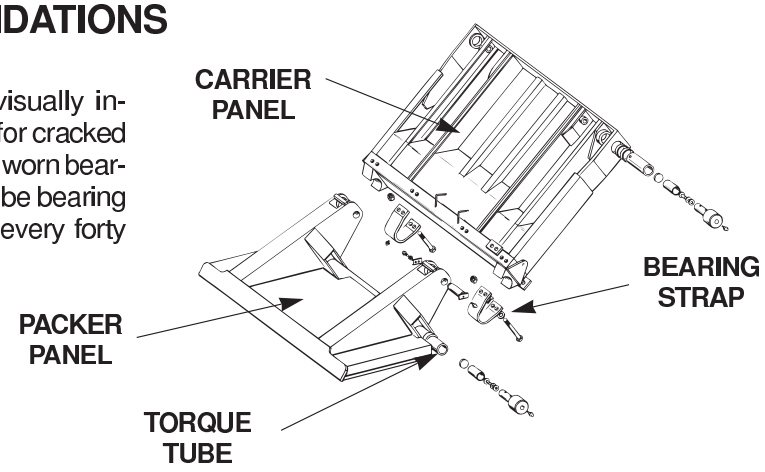
A lay of rope is that length of rope in which one strand of wire makes a complete revolution about the core.



PREVENTIVE MAINTENANCE

MAINTENANCE RECOMMENDATIONS

The packer/carrier assembly should be visually inspected every forty (40) hours of operation for cracked or fatigued welds, loose or broken fasteners, worn bearings, pin hubs or pins. The four (4) torque tube bearing straps should be lubricated a minimum of every forty (40) hours of operation.

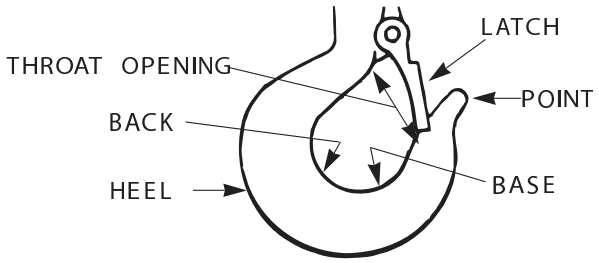


MONTHLY PREVENTIVE MAINTENANCE

LIFTING HOOK

A thorough inspection of any container lifting hook should be completed once a month consisting of checking for distortion, cracks, nicks, wear, latch engagement and secure end connections. Maximum distortion allowable is an 8 percent increase in the throat dimension or a 10 degree twist in the hook. Cracks, nicks and wear must not exceed 10 percent of any dimension.

Visually inspect before each use for obvious damage.



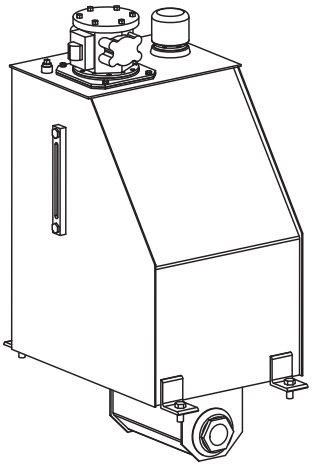
YEARLY PREVENTIVE MAINTENANCE

HYDRAULIC SYSTEM

a. Once a year drain, flush and refill the hydraulic tank as described under HYDRAULIC SYSTEM SERVICE in this section.

b. Once a year remove, clean and inspect the suction strainer as described under HYDRAULIC SYSTEM SERVICE in this section.

c. Once a year replace the hydraulic tank air breather.

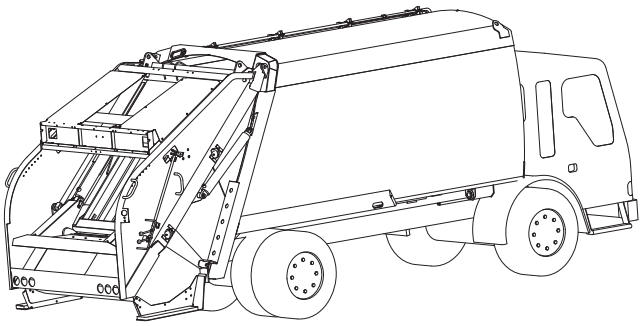


GENERAL

The Alpha-III has been designed to provide long periods of trouble-free operation. Performing the check-out procedures below, at regular weekly intervals, will help to prevent unscheduled downtime.

⚠WARNING

Make sure you know and observe all safety precautions listed in Sec. 2 before performing any of the following check-out procedures. Use extreme caution to avoid coming near any moving parts. Never enter the body of the unit when the truck is running. Make sure the unit is in the correct operational mode as indicated by the OPERATIONAL STATUS block presented at the beginning of each check.



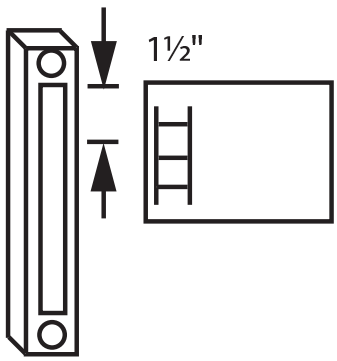
NOTE

Because of the location of various controls, some checks will require two people.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

CHECK HYDRAULIC TANK FLUID LEVEL

1. Make sure the tailgate is down and clamped securely.
2. Move the carrier and packer panel levers to position the carrier and packer cylinders in the retract position.
3. Pull the pushout lever to position the pushout cylinder in the retract position.
4. The fluid level should be between the safe range marks on the sight gauge.



IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. Add hydraulic fluid for normal operating and weather conditions. See Sec. 6, PREVENTIVE MAINTENANCE for additional information about servicing the hydraulic tank.

CHECK-OUT

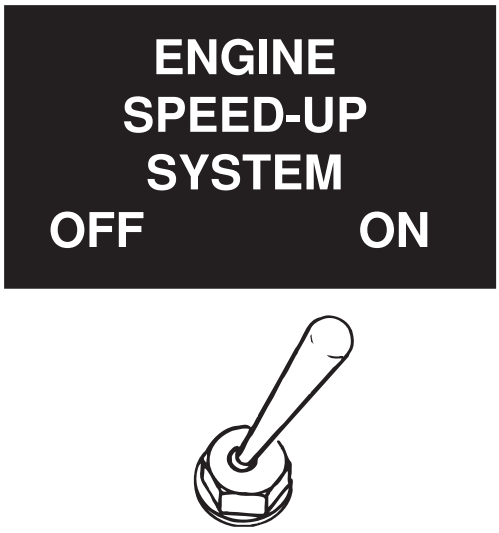
CHECK ENGINE SPEED UP SWITCH

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

IF ENGINE SPEEDS UP:

OPERATIONAL STATUS	
Truck Running	PTO Disengaged

The system is grounded. Locate the short and repair as described under ELECTRICAL SYSTEM in Sec. 9, SERVICE AND REPAIR



CHECK ENGINE SPEED UP SWITCHES (BODY)

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Depress the engine speed-up pushbutton. The engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

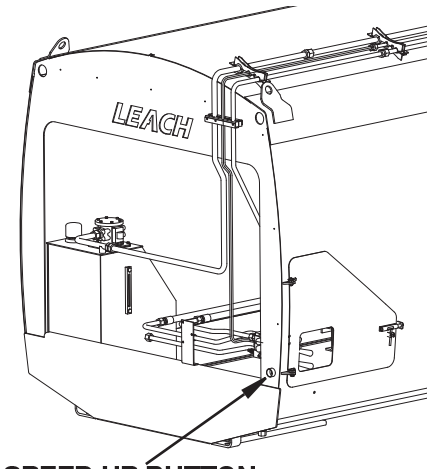
Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR-ELECTRICAL SYSTEM.

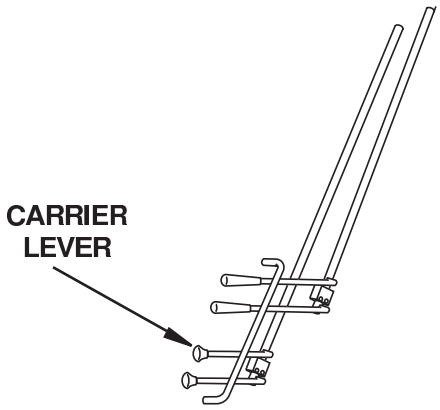
2. Activate carrier panel lever. Engine should speed up.

IF NOT:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Locate the fault in the wiring or switch and repair. See Sec. 9, SERVICE AND REPAIR-ELECTRICAL SYSTEM.



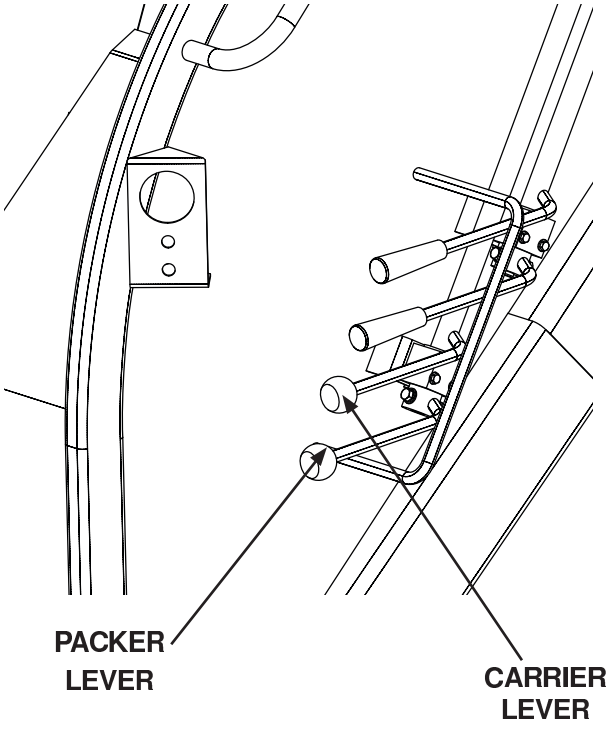


CHECK PACK CYCLE TIME

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Activate both the packer panel lever and carrier panel lever. Using a stopwatch, time a complete cycle. A complete cycle should take:

   Alpha-III with standard hydraulics - 26 to 28 seconds
   Alpha-III with Regen - 23 to 25 seconds



IF NOT:

2. The engine ECU (Electronic Control Unit) may have to be programmed by an authorized chassis dealer.

NOTE:

It is important the cycle time is correct before performing the following pressure checks.

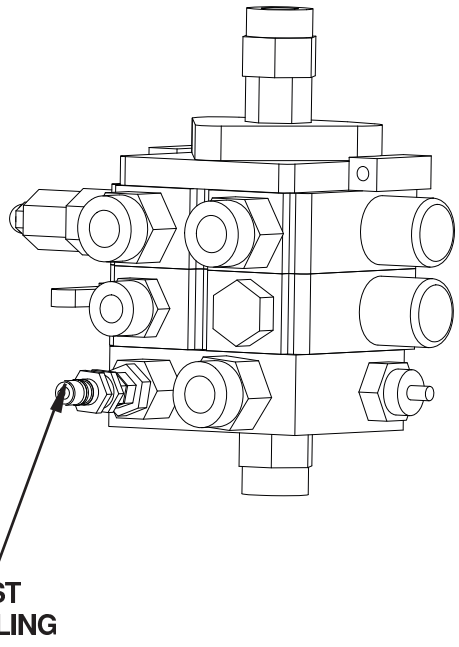
CHECK PRESSURES

The pressure checks provided below will indicate the operating condition of the hydraulic system. Detailed adjustment procedures are provided later in this section and are referenced at the appropriate check-out procedure. Prior to performing pressure checks:

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install a gauge capable of reading at least 3000 PSI (207 BAR) on the test coupling.

2. Start the unit, engage PTO/PUMP and turn speed up switch on.



CHECK-OUT

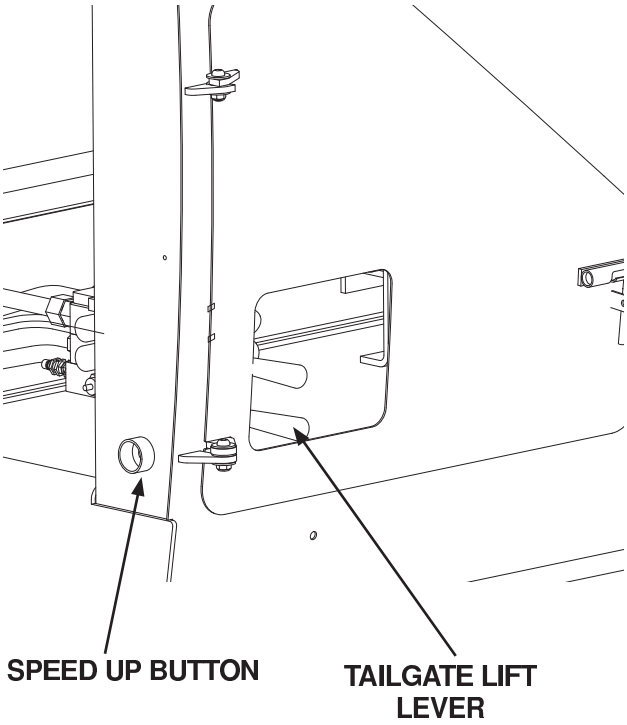
CHECK MAIN LINE PRESSURE

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

⚠WARNING

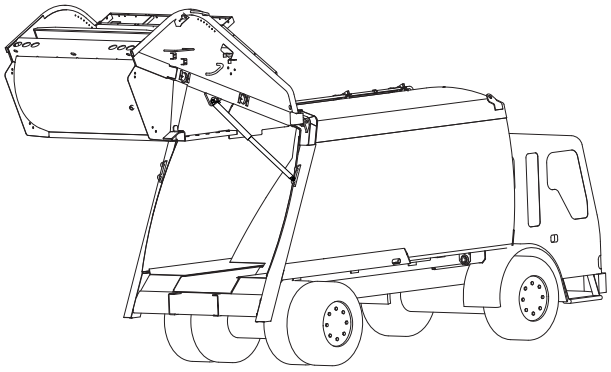
Make sure the area above the tailgate is clear before raising the tailgate.

1. Release the tailgate clamps.
2. Depress speed-up button.
3. Move tailgate control lever to fully raise the tailgate.
4. Hold lever and read gauge. Pressure should be: 2150 - 2200 PSI (148 - 152 BAR)

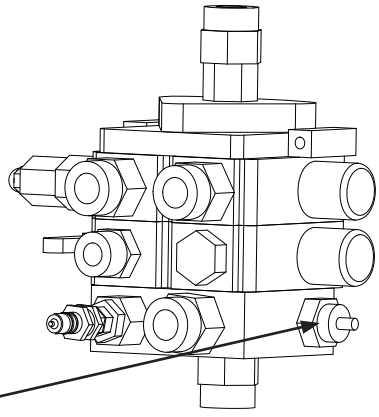


IF NOT:

5. If the pressure is below the appropriate setting, loosen the lock nut on the relief cartridge and turn the adjusting screw in (rotate clockwise) to reach the correct pressure. If the pressure is above the appropriate setting, loosen the lock nut on the relief cartridge and turn the adjusting screw out (rotate counter-clockwise) to reach the correct pressure. After readjusting, retighten the lock nut. Repeat steps 1 through 4.



TAILGATE RAISED



CHECK PACKER AND CARRIER PANEL SHIFT (KNOCKOUT) PRESSURES

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Install a 0-3000 PSI (0-207 BAR) pressure gauge at the quick disconnect coupler on the front control valve. Check the main relief pressure as described in Section 7, “Check-Out” of this manual.

2. Reduce main relief setting to below 1000 PSI (69 BAR).

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Using a screwdriver remove the button plugs from the end of the Main Control Valve packer and carrier sections. Shift the packer and carrier linkage to the detented position and release, leaving the valve spools in the detented position.

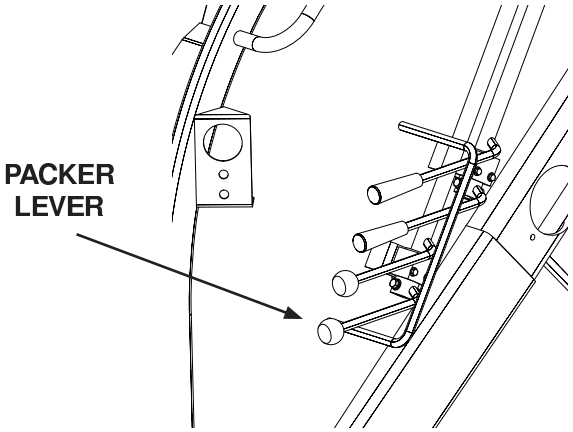
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

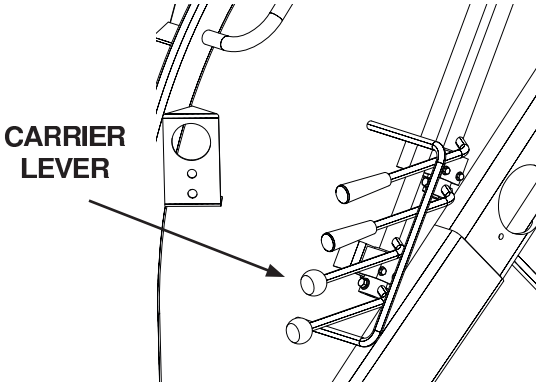
4. While observing the pressure gauge, slowly increase the main relief valve setting. The pressure indicator will increase until the knockout pressure setting is reached and the Main Control Valve spool returns to neutral.

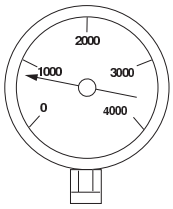
5. The knockout pressures should be set at:
   1800 PSI (124 BAR) Packer
   2000 PSI (138 BAR) Carrier

   If the knockout pressure setting requires adjustment, it may be changed by turning the knockout pressure adjusting screw, located inside the bonnet, clockwise to increase the knockout pressure setting or counter-clockwise to decrease the pressure setting. Once the proper knockout setting has been attained, reinstall the button plug to seal the Main Control Valve bonnets.

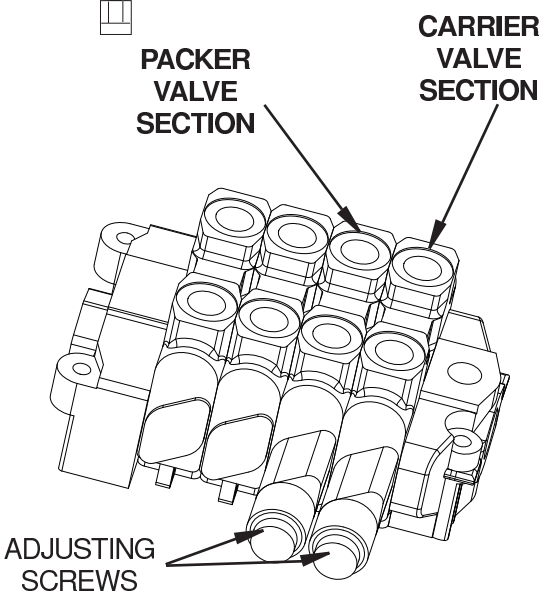
6. Return the main relief valve pressure setting to its specified value as described previously.







REDUCE MAIN RELIEF PRESSURE TO BELOW 1000 PSI (69 BAR)



CHECK-OUT

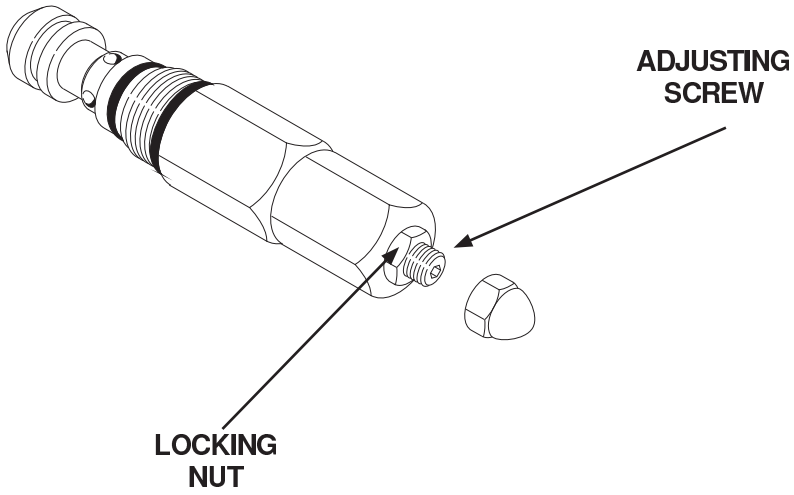
CHECK RESISTANCE CARTRIDGE PRESSURE

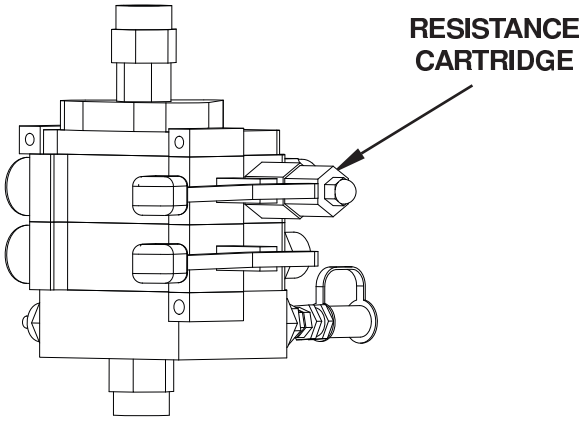
OPERATIONAL STATUS	
Truck On	PTO Engaged

1. Install a 0-3000 PSI pressure gauge on front valve test port.

2. Move the ejector to its fully extended position (tailgate side).

3. Maintain the pressure on the ejector cylinder and read the pressure on gauge (should be 1800 PSI, adjust cartridge if necessary).

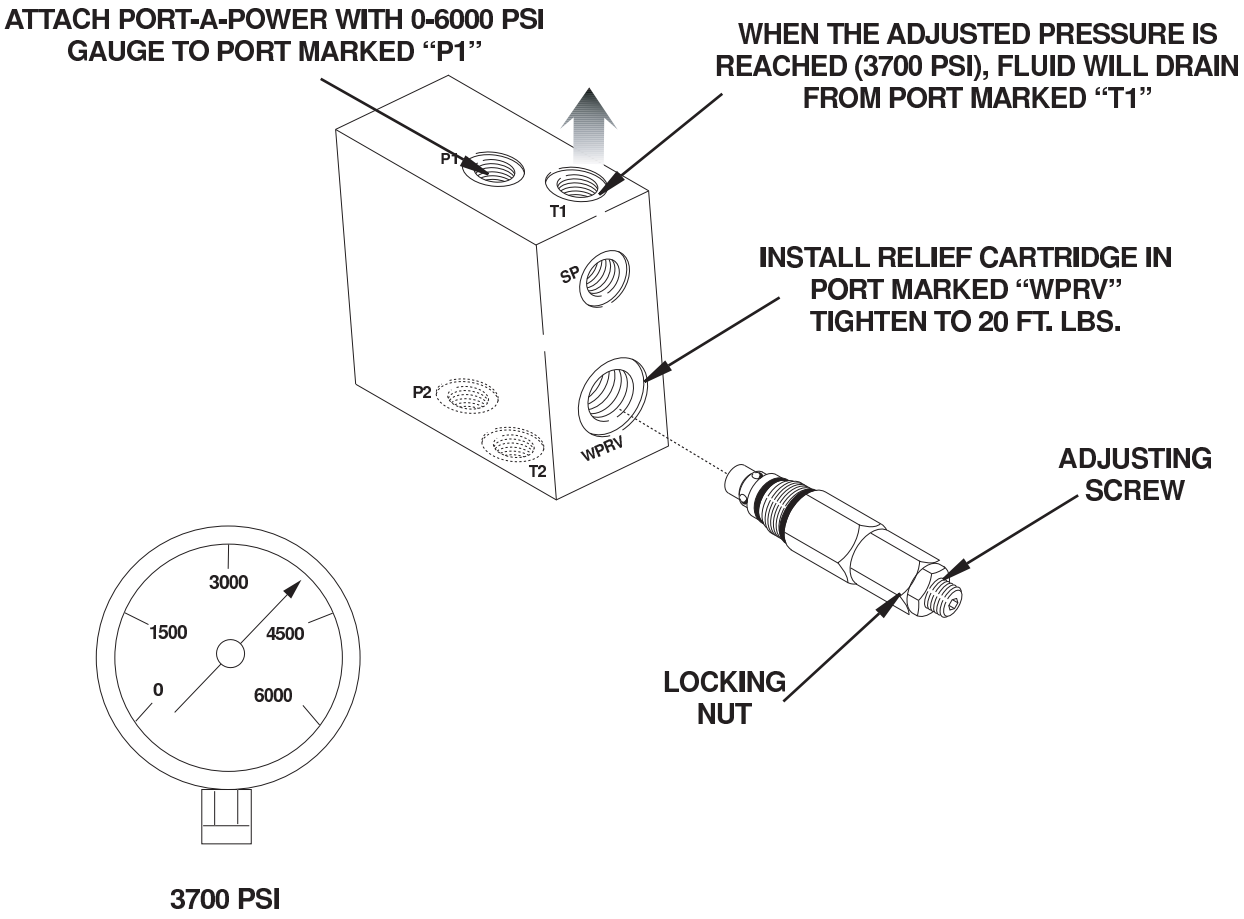




CHECK PACKER HIGH PRESSURE (CIRCUIT) RELIEF CARTRIDGE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Use the test fixture and test as shown on illustration.

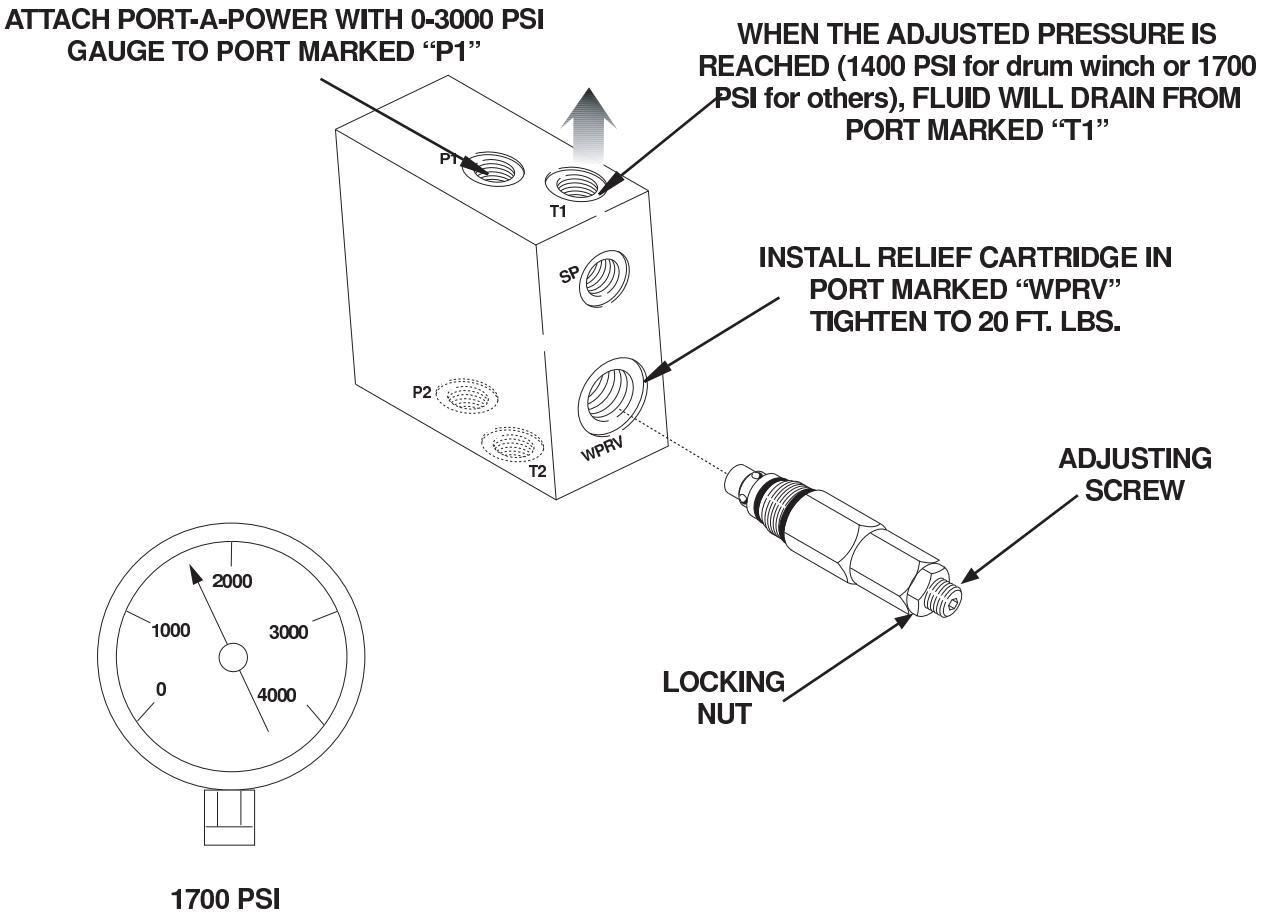


CHECK-OUT

CHECK ACCESSORY (CIRCUIT) RELIEF CARTRIDGE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Use the test fixture (HYV50000) and test as shown on illustration.

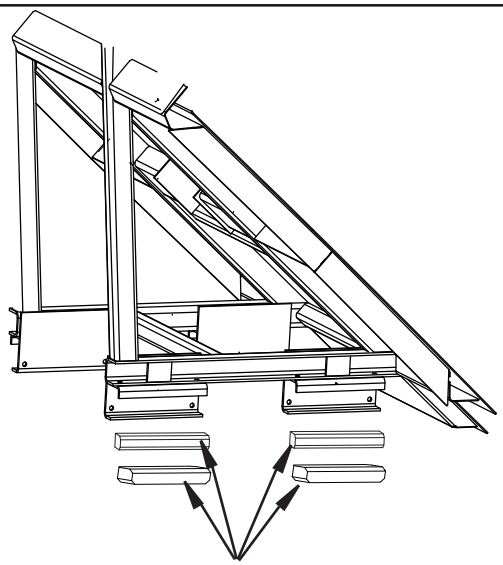


CHECK PUSH OUT PANEL SHOES

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Visually inspect all pushout shoes for excessive wear. These items must be replaced before there is metal to metal contact.

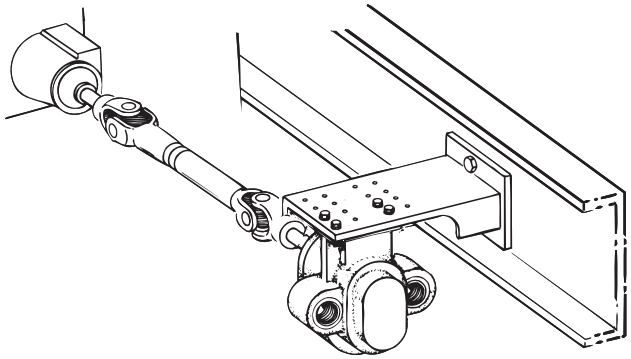
2. Shim or replace worn parts as described in Sec. 9, SERVICE AND REPAIR under PUSHOUT PANEL.



POWER TAKE OFF (P.T.O.)

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Periodically re-torque the mounting bolts or studs as outlined in the P.T.O. manufacturers service manual.



SECTION 8

TROUBLESHOOTING

GENERAL

Troubleshooting is a matter of quickly and logically isolating the cause of a problem and taking corrective action. Factory trained mechanics, experienced operators, a thorough understanding of the information in this manual and accurate maintenance records are the best troubleshooting tools available. Occasionally it may be best for a service person, who is trying to isolate a problem, to go “on the route” or consult with operators to determine how the unit is acting under actual working conditions.

For the most part, problems with the unit will be limited to hydraulic and electrical system component malfunction or control linkage adjustment.

Hydraulic flow diagrams are provided in this section. These diagrams can be helpful in determining which parts are associated with a particular function.

Problems in the hydraulic system may be found by performing the PRESSURE CHECKS found in Sec. 7, CHECK-OUT PROCEDURES.

COMPACTION

Before troubleshooting a unit, it is important to remember that the compaction may vary with the following conditions:

1. Type of refuse. Tree branches, dry leaves, furniture and any other items loaded into the body that take up relatively large amounts of space will reduce the compaction ratio.

2. Moisture content of refuse. Wet refuse will pack tighter than dry and consequently a wet load will weigh more than a dry load. Wet refuse loaded into the body will increase the compaction ratio.

3. Operation of equipment. As with the operation of any type of heavy equipment, one machine can yield different results with different operators. Operating a rear loader is a skill. Placement of items in the hopper, not over loading the hopper are learned skills that will affect the compaction ratio of a unit.

4. Preventive maintenance. A properly maintained unit will achieve higher compaction rates than one that is poorly maintained. The condition of the hydraulic system, pump, main relief setting and the condition of the operating cylinder seals will all have an effect on unit performance and compaction. Some chassis components will also affect compaction. The engine speed during packing, fluid level in an automatic transmission and the condition of the clutch assembly in a standard transmission may also affect compaction.

Compaction rates of a unit will depend on the season, the type of trash, the weather and the operation and maintenance of a unit. If the unit packs relatively consistent loads and has been properly maintained according to the Service Manual, then it is safe to assume that it is getting maximum compaction for your particular conditions.

DIESELING IN HYDRAULIC SYSTEMS

Any hydraulic system should be a sealed environment free of foreign material including air. Unlike solid contamination, air is compressible and contains oxygen. It is these two (2) properties of air contamination that provide the elements needed to support the phenomenon known as dieseling. Dieseling can only occur when the elements of fuel, oxygen and heat are all present at the same time. In the hydraulic system the hydraulic fluid is the fuel. The presence of air provides not only the oxygen to support combustion, but also the means for generating sufficient heat to ignite the fuel/air mixture. When air is rapidly compressed, heat is generated. A rapid pressure change of only 600 PSI may be enough to generate the heat required to ignite the fluid and mixture. The oxygen in the heated compressed air and the hydraulic fluid ignite resulting in dieseling. The ignitions that result from dieseling in the hydraulic system are small in size and many may be needed to eventually damage a piston seal to the extent that bypass will occur.

"Where does the air come from?" The answer is that the air comes out of the fluid itself. Hydraulic fluid can contain 10% air by volume. As the pressure on the fluid increases, the amount of air that can be absorbed also increases.

Now we know that the air is most likely present in the fluid, but the next question is, "How does the air get out of the fluid?" The air, while it is in suspension, will pose no problem to the operation of the hydraulic system. But once it is seperated into bubbles then all the factors are present to support combustion. The air in suspension can be separated when the fluid is subjected to a negative pressure (vacuum) of as little as 3.5 PSI. This can occur when the fluid is squeezed through a restriction or an orifice. The resulting pressure decreases can be sufficient to allow trapped air to separate from the fluid.

A good example may be a front mounted pump dry valve system. In the dry mode of operation, system hydraulic fluid is drawn through a small orifice. This provides lubrication and cooling for the pump, but also provides a perfect situation for air separation. In addition, the flow regulator bypass at the pump output is returned back to the pump input. This recirculates the fluid/air and allows for the separation od even more air.

In cases where the seals in cylinders appear to be burnt or melted, consider the possibility of air ingestion. The following suggestions may help in eliminating this problem:

1. Ensure that the pump suction connections are tight. It is possible for a suction hose connection to allow air in without leaking any fluid out.

2. The pump shaft seal cann allow air into the system. Replace if the seal is suspect.

3. Check for air ingestion around the packings on the ball valve stem. Replace the ball valve if suspect.

4. Excessive system flow rate (cycle time too fast) can agitate the hydraulic fluid. Set the cycle time according to specifications.

5. Do not thin hydraulic fluid with diesel fuel (lowers the flash point). Weather permitting, use a higher flash point fluid.

After making any repairs on the hydraulic system, bleed the system at reduced engine speed and pressure to remove any trapped air. Depending on the size of the component, e. g. cylinder, hose, it may be necessary to cycle the unit several times. Of course the larger the air pocket, the more cycles are needed. To avoid potential problems, thoroughly bleed all hydraulic systems and ensure that all inlet connections are tight and not ingesting air.

TROUBLESHOOTING

OPERATION IS ERRATIC

POSSIBLE CAUSE	REMEDY
1. Speed up system operating erratically.	1. Check electrical system. See Sec. 9, Service and Repair.
2. Hydraulic fluid too hot.	2. Check for proper grade of fluid. See Sec. 5, Specifications.
3. Hydraulic fluid level too low.	3. Check fluid level. Add fluid if necessary.
4. Bypass in cylinders.	4. Test for leaking cylinders. See Sec. 9, Service and Repair.
5. Hydraulic fluid too cold.	5a. Bring fluid to operating temperature. 5b. Check for proper grade of hydraulic fluid. See Sec. 5, Specifications.
6. Operating linkage bent or binding.	6. Repair, replace or realign damaged linkage.

PUMP NOISE IS EXCESSIVE

NOTE: ALL PUMPS MAKE A CERTAIN AMOUNT OF NOISE.

POSSIBLE CAUSE	REMEDY
1. Pump starving for fluid.	1a. Open ball valve. 1b. Check fluid level. 1c. Check hydraulic fluid filter and tank. 1d. Check for obstruction in suction lines, hoses kinked or collapsed.
2. Hydraulic fluid too cold.	2a. Bring fluid to normal operating temperature. 2b. Change hydraulic fluid to proper grade for operating conditions. See Sec. 5, Specifications.
3. PTO driveshaft and/or u-joints badly worn or out of balance.	3. Repair, replace and/or balance all parts.
4. Pump gears, end plates, bearings, etc. badly worn.	4. Replace pump.
5. Improper grade of hydraulic fluid (fluid foaming).	5. Replace with proper grade of hydraulic fluid. See Sec. 5, Specifications.
6. Air entering the system.	6a. Tighten the suction hose. 6b. Replace the pump shaft seal. 6c. Replace the suction hose. 6d. Replace the o-rings on the pump. 6e. Tighten or repair any leaks in the hydraulic system.

ENGINE WILL NOT SPEED UP WHEN CARRIER PANEL LEVER OR SPEED-UP BUTTON IS ENGAGED

POSSIBLE CAUSE	REMEDY
1. Short in electrical wiring.	1. Repair broken wire. See Sec. 9, Electrical System, Service and Repair.
2. Blown fuse on speed-up relay.	2. Replace fuse and check electrical system for shorts. See Sec. 9, Electrical System, Service and Repair.
3. Relay or switch is defective.	3. Check for and replace defective parts as described in Sec. 9, Electrical System, Service and Repair.
4. Electrical system not grounded properly.	4. Check all ground connections for corrosion or breaks. Clean or repair as described in Sec. 9, Electrical System, Service and Repair.
5. Carrier panel lever speed-up switch or linkage defective.	5. Repair, replace or adjust as required.

ENGINE SPEED WILL NOT RETURN TO NORMAL WHEN PACKING CYCLE IS COMPLETE OR SPEED-UP BUTTON IS RELEASED.

POSSIBLE CAUSE	REMEDY
1. Short circuit in electrical system.	1. Check for and repair short in system as described in Sec. 9, Electrical System, Service and Repair.
2. Carrier panel lever speed-up switch is defective.	2. Repair, replace or adjust as required.

PACKER PANEL VALVE SECTION SHIFTS TOO SLOW

POSSIBLE CAUSE	REMEDY
1. Object in hopper that the packer panel cannot move.	1. Recycle unit. Rearrange or remove refuse if necessary.
2. Cycle time too fast.	2. Have chassis ECU reprogrammed by an authorized chassis dealer.
3. Packer panel valve section pressure too low.	3. Perform pressure checks as described in Sec. 7, Check-Out.

TROUBLESHOOTING

CARRIER PANEL VALVE SECTION SHIFTS TO NEUTRAL TOO SOON

POSSIBLE CAUSE	REMEDY
1. Carrier panel valve section pressure too low.	1. Perform pressure check as described in Sec. 7, Check-Out.

PACKER PANEL VALVE SECTION WILL NOT SHIFT

POSSIBLE CAUSE	REMEDY
1. Packer panel cylinder leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Packer panel valve section pressure too high.	2. Perform pressure check as described in Sec. 7, Check-Out.
3. Linkage binding or restrictive.	3. Inspect and free linkage as necessary.

CARRIER PANEL VALVE SECTION WILL NOT SHIFT TO NEUTRAL

POSSIBLE CAUSE	REMEDY
1. Carrier panel cylinder leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Carrier panel valve section pressure too high.	2. Perform pressure check as described in Sec. 7, Check-Out.
3. Linkage binding or restrictive.	3. Inspect and free linkage as necessary.

PACKER/CARRIER PANELS DO NOT DELIVER FULL FORCE TO PACK LOAD INTO BODY

POSSIBLE CAUSE	REMEDY
1. Hydraulic pressure incorrect.	1. Perform pressure check as described in Sec. 7, Check-Out.
2. Hydraulic fluid in tank is low.	2. Add fluid to correct level. See Sec. 6, Preventive Maintenance.
3. Tank strainer screen is dirty (this condition will starve pump and cause noise in the system).	3. Service system as described in Sec. 6, Preventive Maintenance.
4. Wrong type of hydraulic fluid in system.	4. Drain and refill with correct type of hydraulic fluid. See Sec. 5, Specifications.
5. Main relief section of Front Control Valve opens too soon.	5. Adjust main relief setting on Front Control Valve. See Sec. 7, Check-Out.
6. Hydraulic pump is defective and will not deliver full pressure.	6. Replace pump. See Sec. 9, Service and Repair.
7. Operating cylinder piston seal is leaking.	7. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
8. Operating valve pressures are too low.	8. Perform pressure check as described in Sec. 7, Check-Out.
9. Air in hydraulic lines.	9. Cycle packer 6 or 7 times to bleed air out of system.

TROUBLESHOOTING - TELESCOPIC PUSHOUT SYSTEM

LOUD SQUEALING NOISE WHEN MANUALLY RETRACTING TELESCOPIC CYLINDER

POSSIBLE CAUSE	REMEDY
1. Excessive fluid flow being forced through the main relief in the Front Control Valve.	1a. Release speed-up button. 1b. Only partially pull (feather) the Front Control Valve control handle.

LOAD WILL NOT PUSH OUT

POSSIBLE CAUSE	REMEDY
1. Less than full pressure in telescopic cylinder.	1a. Perform test for leaking cylinder and repair. 1b. Adjust main relief pressure. See Sec. 7, Check-Out.
2. The operator is trying to push the load out against a pile of refuse, dirt or bank of a hill.	2. Move the unit forward to finish unloading.

PUSHOUT PANEL SLIDES FORWARD TOO FAST WHILE PACKING REFUSE

POSSIBLE CAUSE	REMEDY
1. Cylinder bypassing.	1. Perform test for leaking cylinder and repair.
2. Resistance setting too low.	2. Adjust resistance cartridge. See Sec. 7, Check-Out.

PUSHOUT PANEL WILL NOT SLIDE FORWARD AUTOMATICALLY

POSSIBLE CAUSE	REMEDY
1. Resistance setting too high.	1. Reduce resistance setting.
2. Packer/carrier panels not applying full force to move pushout panel forward.	2a. Check pressures. 2b. Check pump.

CARRIER AND PACKER PANELS STOP SHORT OF HOME POSITION AFTER EACH CYCLE

POSSIBLE CAUSE	REMEDY
1. Unit full.	1. Empty unit.
2. Resistance setting too high.	2. Reduce resistance setting.
3. Packer/carrier panels do not deliver full force.	3. See Sec. 8, Troubleshooting.

TROUBLESHOOTING

PACKER PANEL DRIFTS OPEN WHILE PACKING LOAD INTO BODY

POSSIBLE CAUSE	REMEDY
1. Packer panel cylinder seal leaking.	1. Perform test for leaking cylinder. See Sec. 9, Service and Repair.
2. Packer panel valve section pressure too low.	2. Perform pressure test as described in Sec. 7, Check-Out.

CYCLE TIME TOO SLOW

POSSIBLE CAUSE	REMEDY
1. Engine RPM too low.	1. Set engine RPM to achieve 23 to 26 second cycle time. **Must be done by authorized dealer.**
2. Hydraulic fluid level too low.	2. Fill to proper level. See Sec. 6, Preventive Maintenance.
3. Hydraulic fluid filter needs servicing.	3. Service filter. See Section 6, Preventive Maintenance.
4. Hydraulic tank breather dirty.	4. Service breather. See Sec. 6, Preventive Maintenance.
5. Hydraulic pump worn or defective.	5. Replace pump. See Sec. 9, Service and Repair.
6. Operating cylinder piston seals leaking.	6. Perform test for leaking operating cylinder seals and repair as required.
7. Incorrect grade of hydraulic fluid for current operating conditions.	7. Refill with proper grade of hydraulic fluid. See Sec. 5, Specifications.
8. Wiring defective.	8. Repair or replace as required. See Sec. 9, Service and Repair.

TAILGATE WILL NOT RAISE

POSSIBLE CAUSE	REMEDY
1. Tailgate clamps still engaged.	1. Disconnect clamps and swing free of tailgate.
2. Insufficient hydraulic pressure.	2. Check main relief pressure. See Sec. 7, Check-Out.
3. Hydraulic pump is defective.	3. Replace pump. See Sec. 9, Service and Repair.
4. Main relief cartridge out of adjustment or broken.	4. Adjust or replace main relief cartridge as necessary. See Sec. 9, Service and Repair.
5. Tailgate lift cylinders leaking or defective.	5. Repair or replace as required.
6. Restriction in tailgate cylinder hose.	6. Remove and clean hose.

TROUBLESHOOTING

CONTAINER WON'T LIFT

POSSIBLE CAUSE	REMEDY
1. Insufficient hydraulic pressure.	1. Check pressures as described in Sec. 7, Check-Out.
2. Cable broken.	2. Replace cable.
3. Cable loose from the lifting device (drum/cylinder).	3. Secure cable to lifting device.
4. Container overload.	4. Reduce weight of material in container.
5. Container frozen to the ground.	5. Do not use lifting device to break container loose from the ground.
6. Linkage binding or restrictive.	6. Repair or replace linkage as required.
7. Lifting motor or cylinder(s) by-passing hydraulic fluid.	7. Repair or replace the defective component.
8. Shear pin or key broken between winch shaft and drum.	8. Replace the key or pin.

WINCH MOTOR LEAKING

POSSIBLE CAUSE	REMEDY
1. Shaft seal damaged.	1. Replace shaft seal.
2. Motor worn internally.	2. Replace motor.

CONTAINER RAISES VERY SLOWLY

POSSIBLE CAUSE	REMEDY
1. Winch motor by-passing.	1. Repair or replace motor.
2. Rear loader hydraulic system not providing sufficient flow rate or pressure for container handling systems.	2. Check and repair rear loader hydraulic system following procedures in Service manual.

SECTION 8

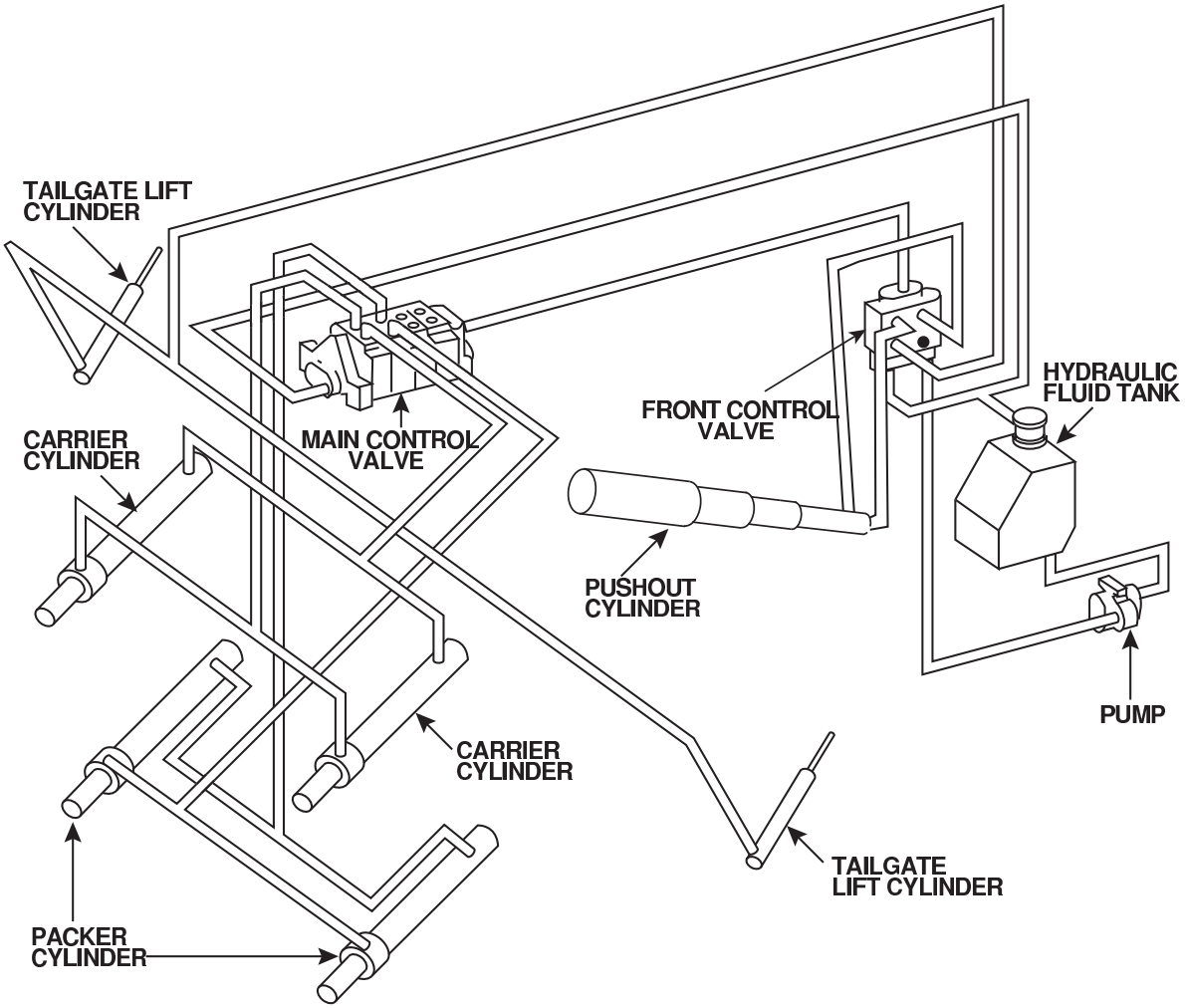
TROUBLESHOOTING - TELESCOPIC SYSTEM

DESCRIPTION OF HYDRAULIC SYSTEM

The following is a description with flow diagrams of what happens in the hydraulic system of the telescopic system during the loading, packing and unloading operations of the unit.

Operator action is presented and then a description of the hydraulic flow and the interaction of system components (i.e., valves and cylinders) follows. Before proceeding to the flow diagram, refer to the illustration and become familiar with the system component nomenclature.

SYSTEM COMPONENT NOMENCLATURE

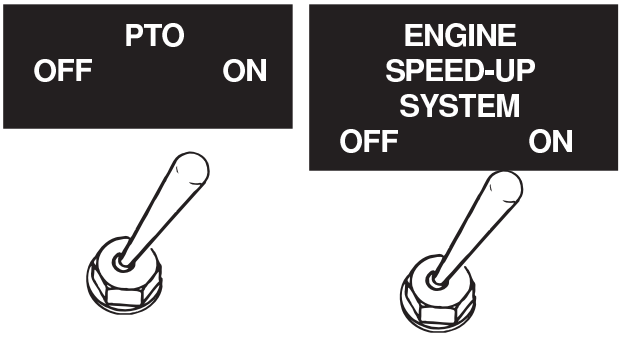


TROUBLESHOOTING - TELESCOPIC SYSTEM

NEUTRAL (with packer and carrier panels in the “home” position.)

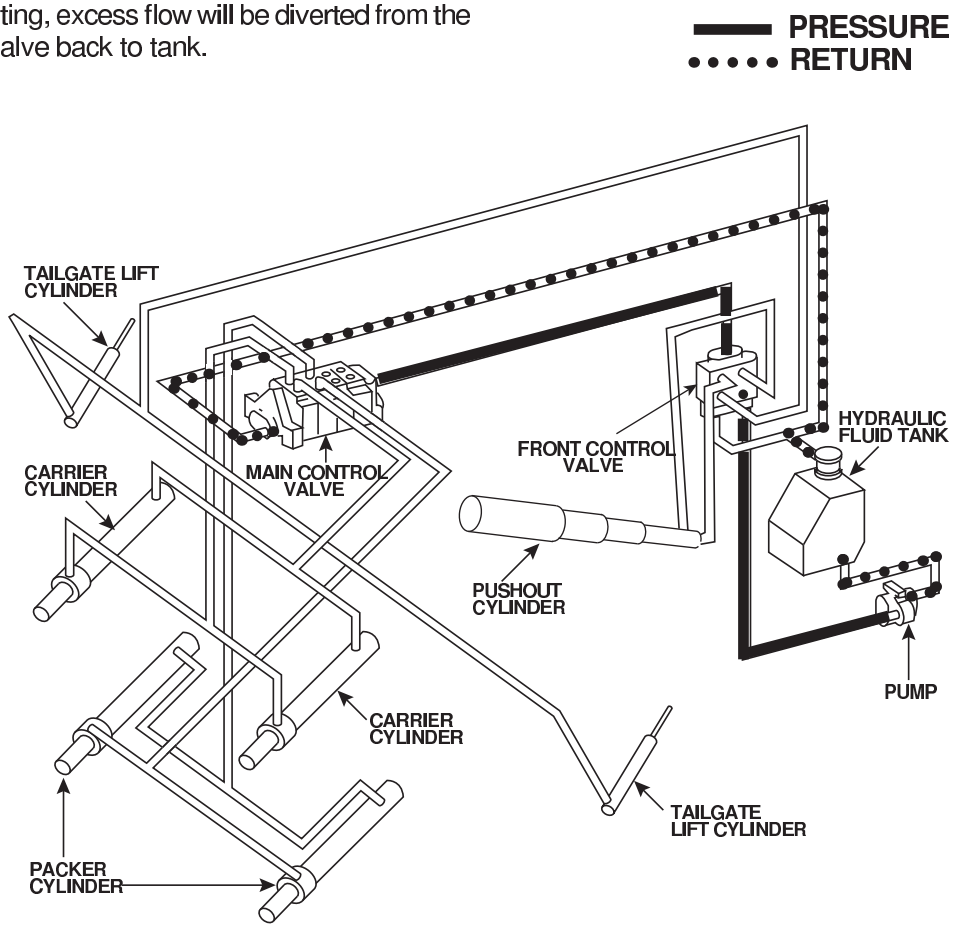
OPERATOR ACTION

Operator starts the truck and engages the PTO/Pump and speed up system.



HYDRAULIC SEQUENCE

Hydraulic fluid flows from the tank, by gravity, to the pump; from there, it is pumped to the FCV (Front Control Valve). Flow continues through the valve to and through the MCV (Main Control Valve) and then back to the tank. During packer operation, if pressure increases to the main relief setting, excess flow will be diverted from the front control valve back to tank.

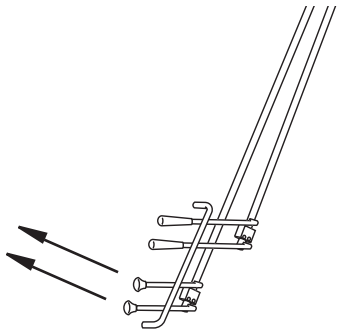


TROUBLESHOOTING-TELESCOPIC SYSTEM

PACKER PANEL SWEEPS BACK OVER LOAD

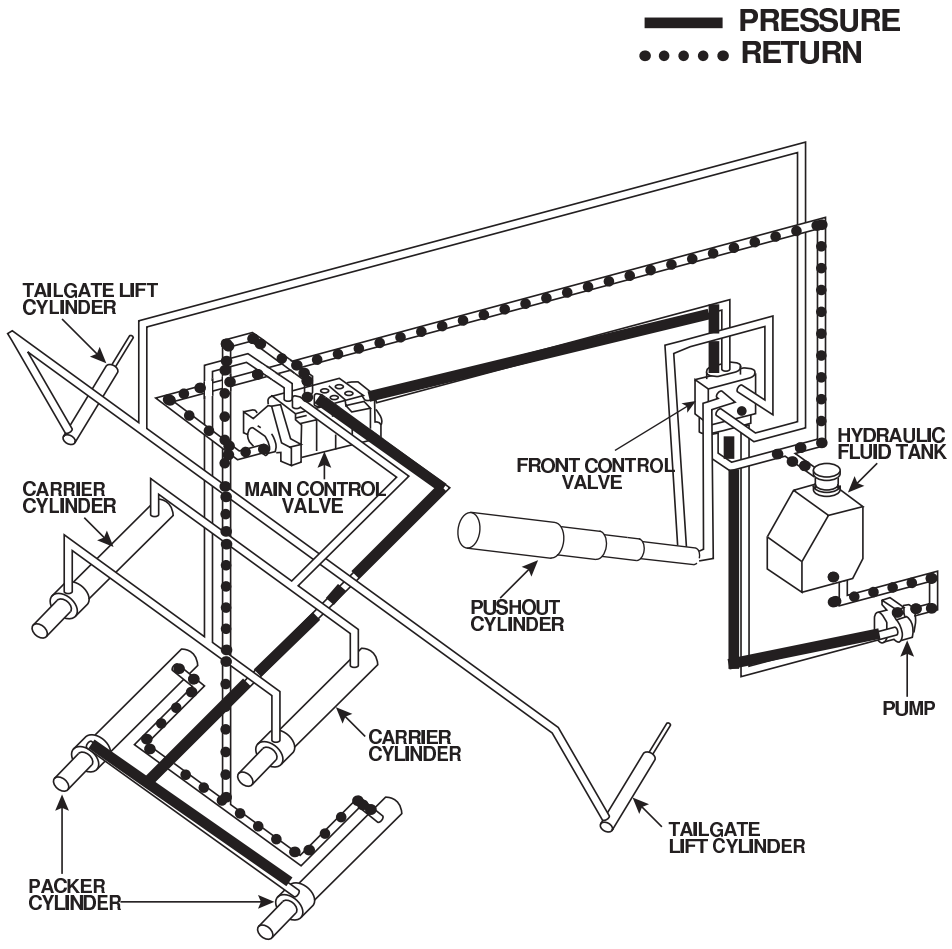
OPERATOR ACTION

The operator moves the control levers inward to start the compaction cycle.



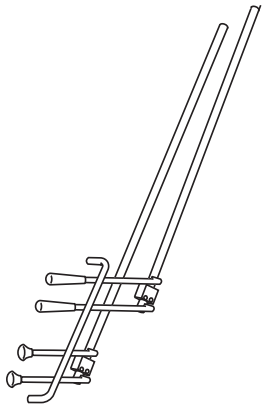
HYDRAULIC SEQUENCE

Operator action causes the MCV (Main Control Valve) to shift, diverting flow to the rod end of the packer panel cylinders. The packer panel cylinders retract causing the packer panel to sweep rearward over the load. Return fluid flow from the cylinder is back to tank.



TROUBLESHOOTING-TELESCOPIC SYSTEM

CARRIER & PACKER PANELS MOVE DOWN TO "INTERRUPTED CYCLE" POSITION

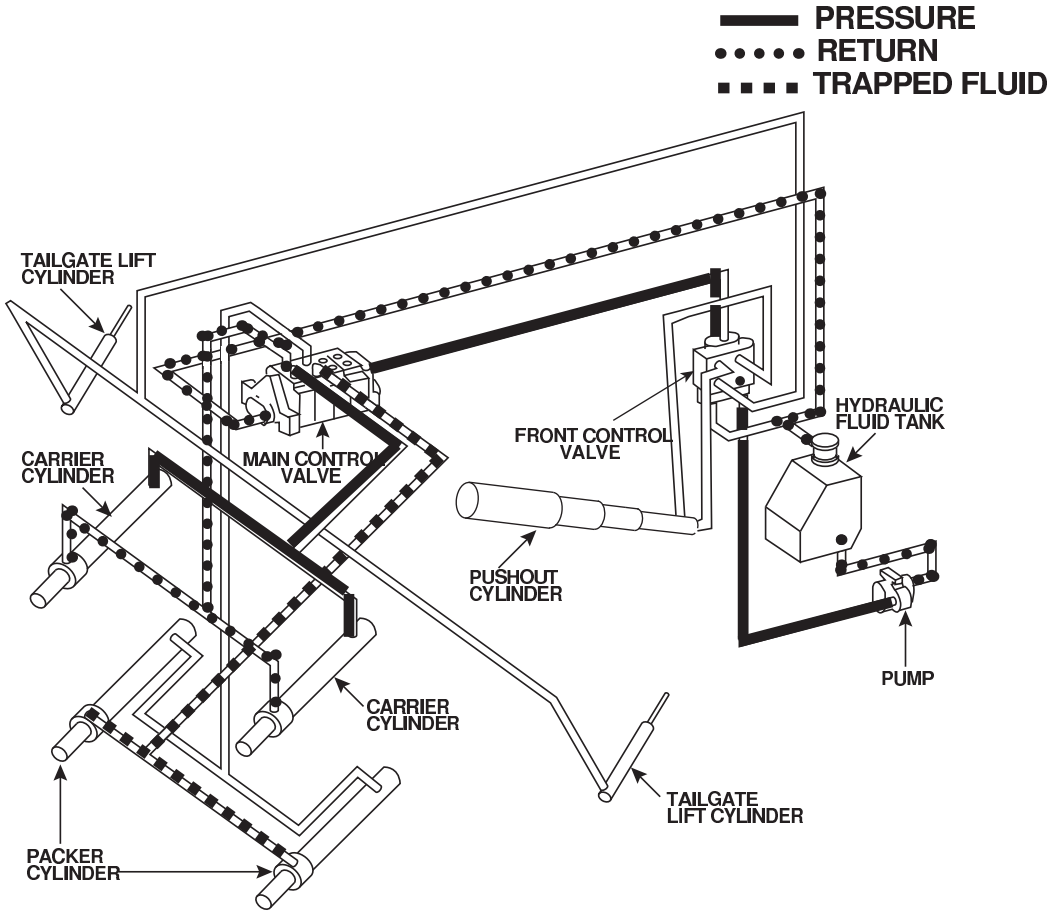


OPERATOR ACTION

None-MCV(Main Control Valve) shifts automatically.

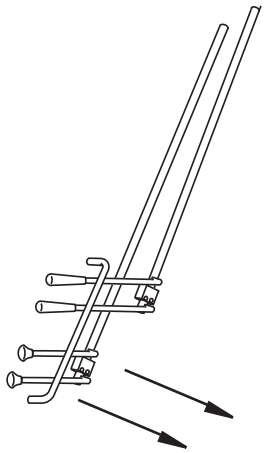
HYDRAULIC SEQUENCE

At the end of the packer cylinder stroke pressure builds to 1800 PSI (124 BAR) causing the MCV (Main Control Valve) to shift, diverting flow to the case end of the carrier cylinders. The cylinders extend, moving the carrier and packer panels down to the "interrupted cycle" position (Trapped fluid keeps the packer panel cylinders retracted). At the end of the carrier cylinder retraction stroke, pressure builds to 2000 PSI (138 BAR), causing the MCV (Main Control Valve) to shift to neutral.



TROUBLESHOOTING-TELESCOPIC SYSTEM

PACKER PANEL SWEEPS HOPPER

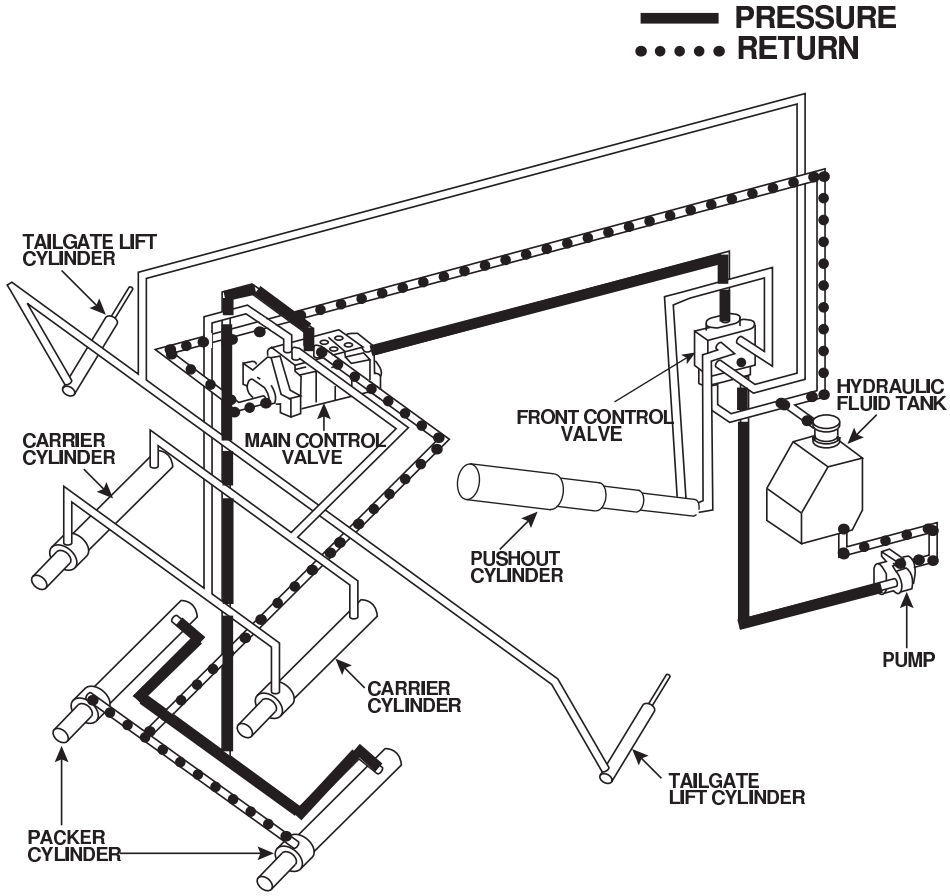


OPERATOR ACTION

Operator shifts the control levers outward to start compaction.

HYDRAULIC SEQUENCE

Fluid flow is through the MCV (Main Control Valve) packer section to the case end of the packer panel cylinders. As the cylinders extend, the packer panel sweeps the load forward in the hopper. As the packer cylinders extension stroke continues, pressure builds to 1800 PSI (124 BAR) causing the MCV (Main Control Valve) to shift.

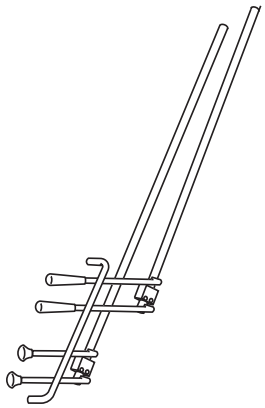


TROUBLESHOOTING-TELESCOPIC SYSTEM

PACKING REFUSE

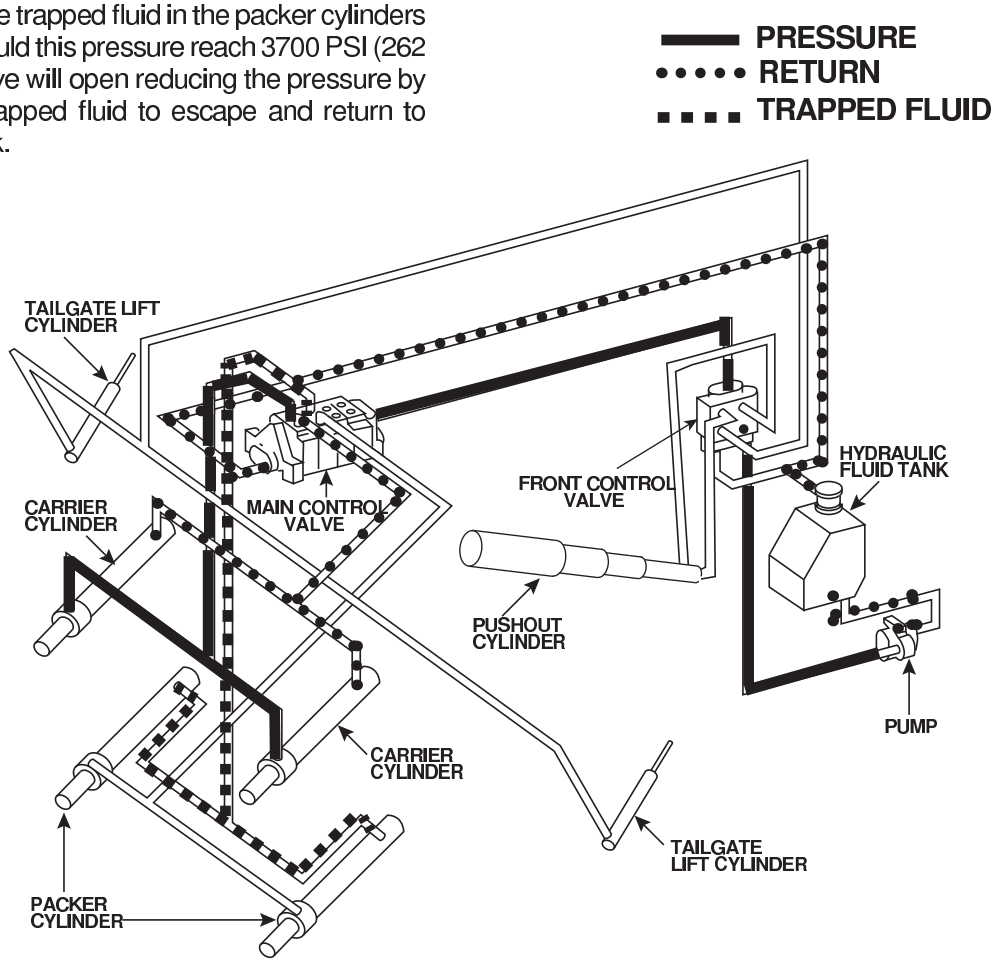
OPERATOR ACTION

None-MCV (Main Control Valve) shifts automatically.



HYDRAULIC SEQUENCE

Fluid flows from the MCV (Main Control Valve) to the rod end of the carrier panel cylinders. The cylinders retract, moving the carrier and packer panels up, packing refuse against the pushout panel. When the pressure reaches: 2000 PSI (138 BAR) the MCV (Main Control Valve) shifts into neutral and the packing cycle is completed. As the carrier cylinders apply force to compact refuse, the pressure of the trapped fluid in the packer cylinders will increase. Should this pressure reach 3700 PSI (262 BAR), a relief valve will open reducing the pressure by allowing some trapped fluid to escape and return to the hydraulic tank.

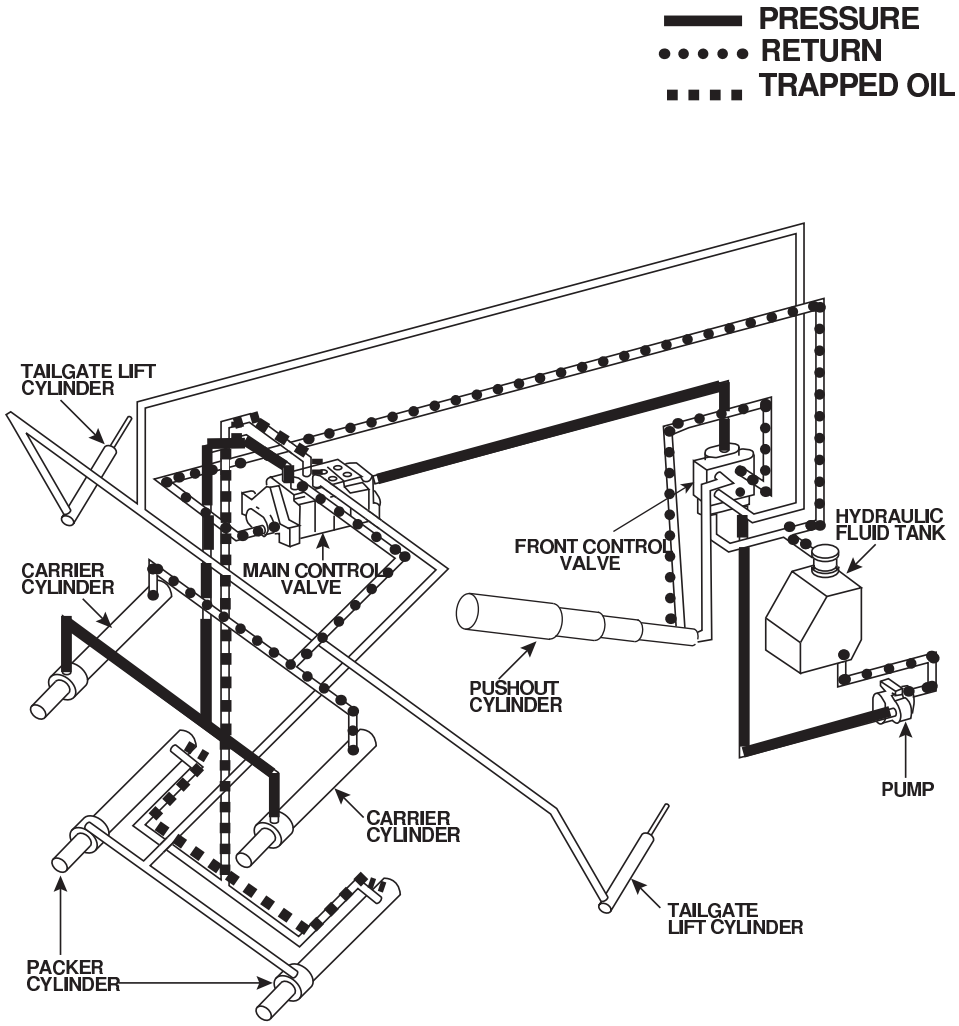


TROUBLESHOOTING-TELESCOPIC SYSTEM

PACKING REFUSE-CONTINUED

HYDRAULIC SEQUENCE

While the carrier and packer panels are moving up, compacting refuse against the pushout panel, pressure is building in the case end of the telescopic push out cylinder. When this pressure reaches 3500 PSI ± 75 PSI (241 BAR) a relief (resistance) cartridge opens in the FCV (Front Control Valve) pushout section, allowing some case end pressure from the telescopic pushout cylinder to return to tank. This allows the pushout panel to come forward slightly.

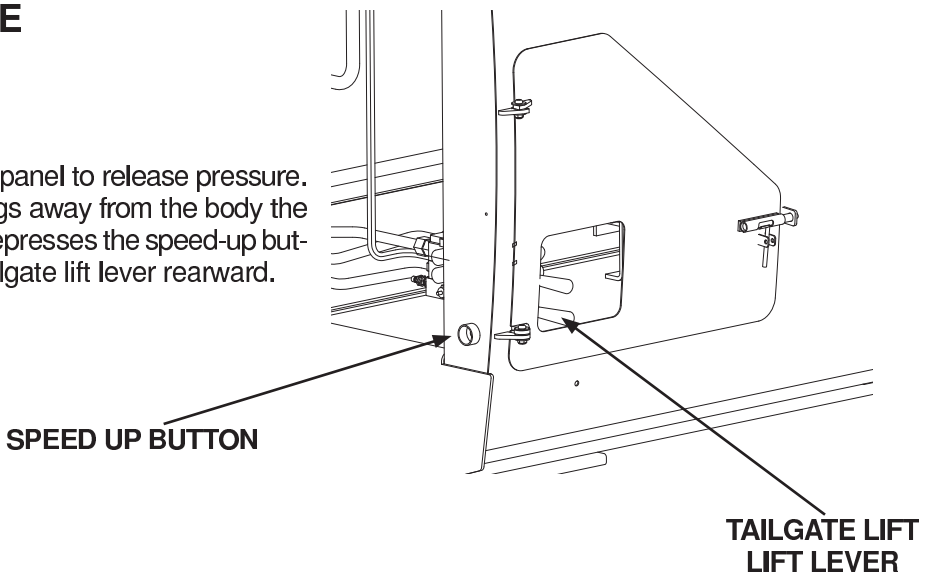


TROUBLESHOOTING-TELESCOPIC SYSTEM

RAISING TAILGATE

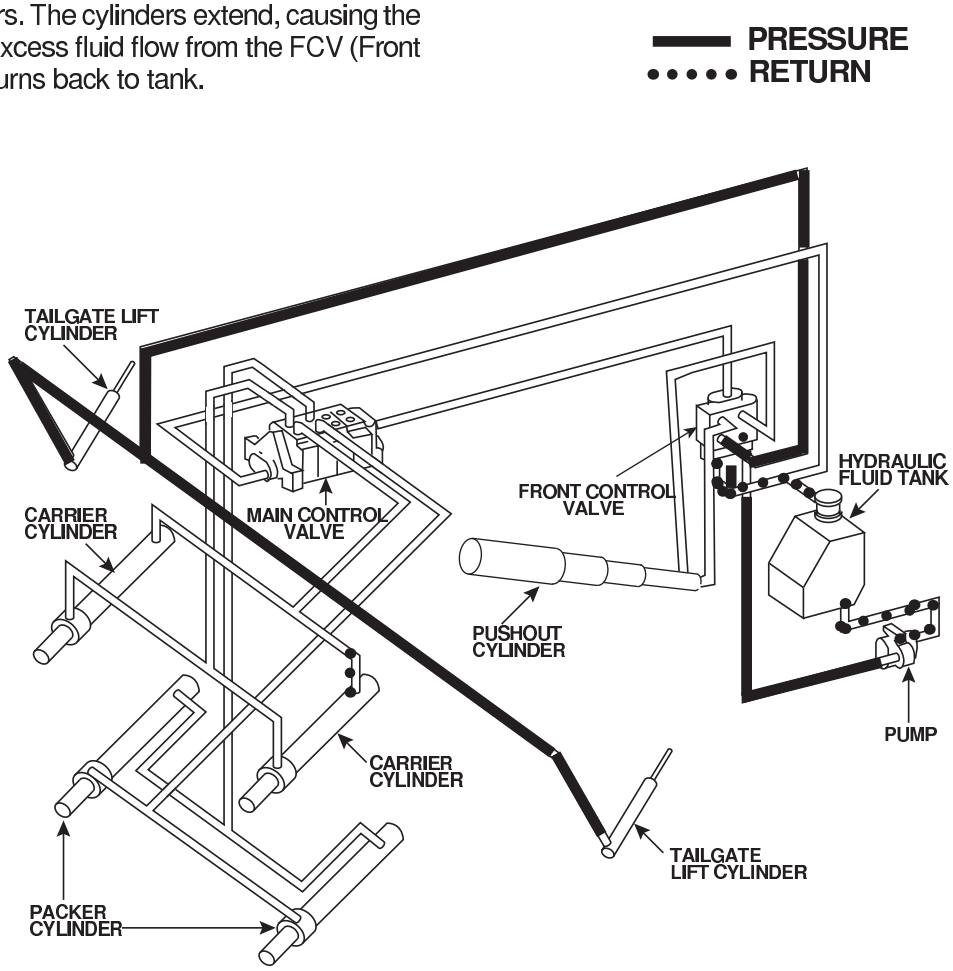
OPERATOR ACTION

Operator opens the packer panel to release pressure. Operator loosens and swings away from the body the tailgate clamps. Operator depresses the speed-up button. Operator moves the tailgate lift lever rearward.



HYDRAULIC SEQUENCE

Moving the tailgate lift lever rearward shifts a spool in the FCV (Front Control Valve) causing flow to the tailgate lift cylinders. The cylinders extend, causing the tailgate to raise. Excess fluid flow from the FCV (Front Control Valve) returns back to tank.

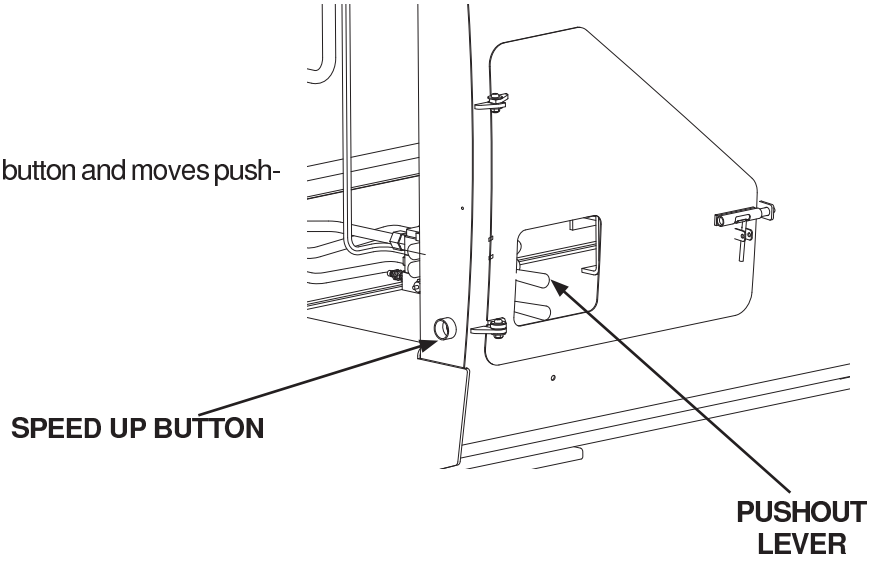


TROUBLESHOOTING-TELESCOPIC SYSTEM

EJECTING LOAD

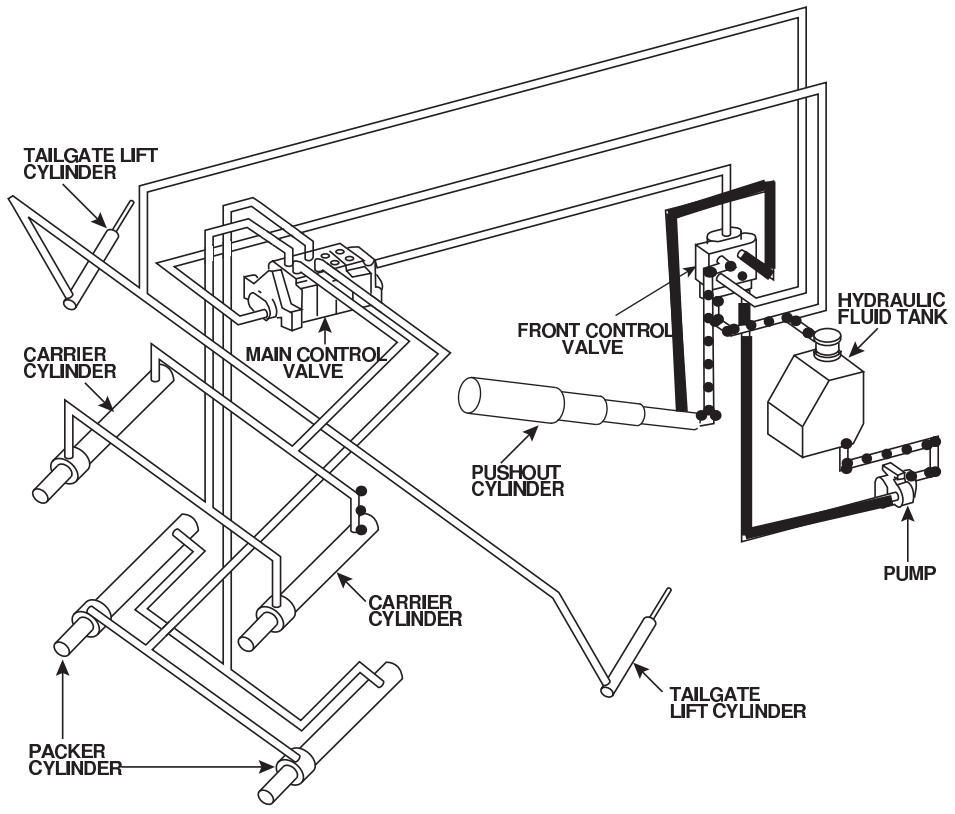
OPERATOR ACTION

Operator depresses speed-up button and moves push-out lever rearward.



HYDRAULIC SEQUENCE

Moving the pushout lever rearward shifts a spool in the FCV (Front Control Valve) causing flow to the telescopic cylinder. As the cylinder extends, the load is ejected from the body.

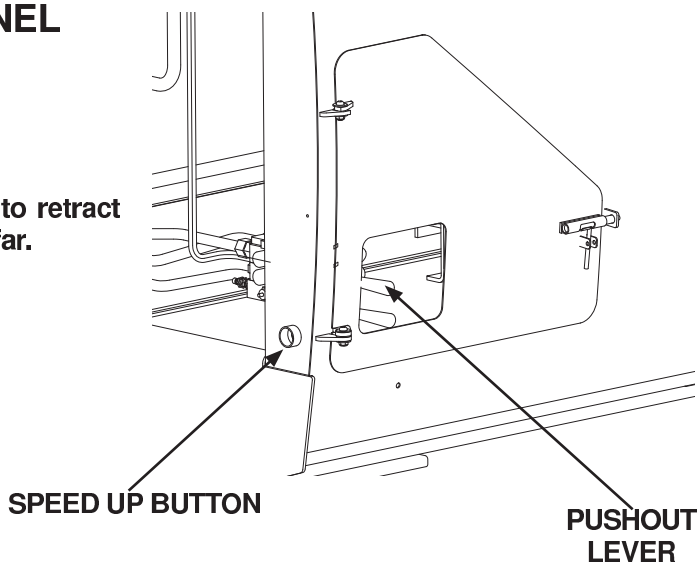


TROUBLESHOOTING-TELESCOPIC SYSTEM

RETRACTING PUSHOUT PANEL

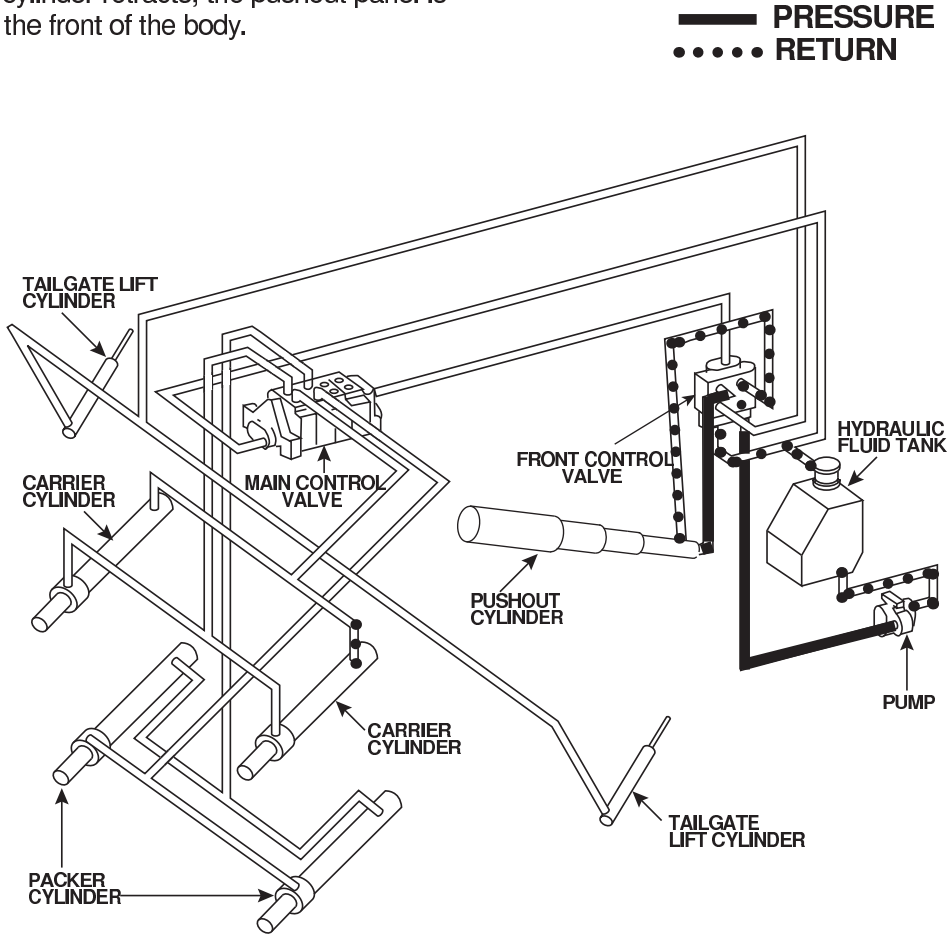
OPERATOR ACTION

Operator releases speed-up button.
NOTE: Speed-up may have to be used to retract pushout panel if engine RPM drops too far.
Operator moves the pushout lever forward.



HYDRAULIC SEQUENCE

Moving the pushout lever forward shifts a spool in the FCV (Front Control Valve) causing flow to the telescopic cylinder. As the cylinder retracts, the pushout panel is positioned near the front of the body.

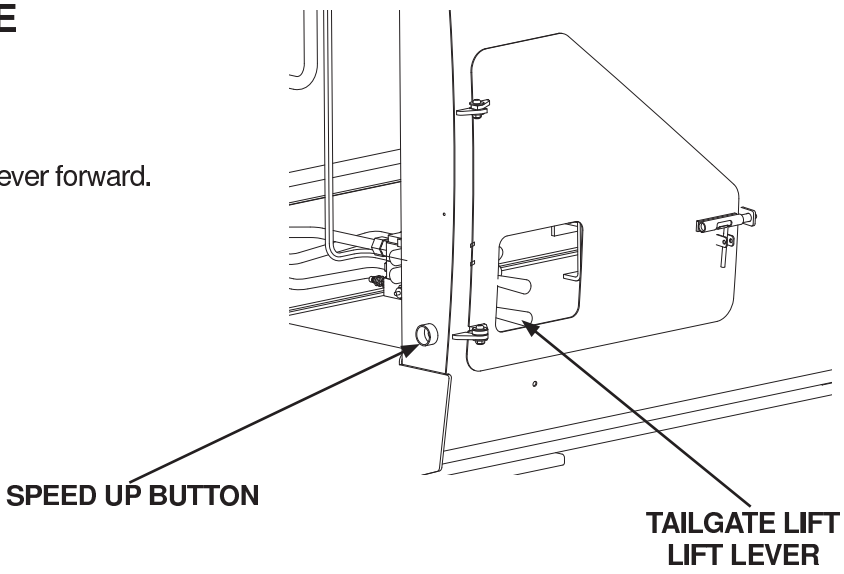


TROUBLESHOOTING-TELESCOPIC SYSTEM

LOWERING TAILGATE

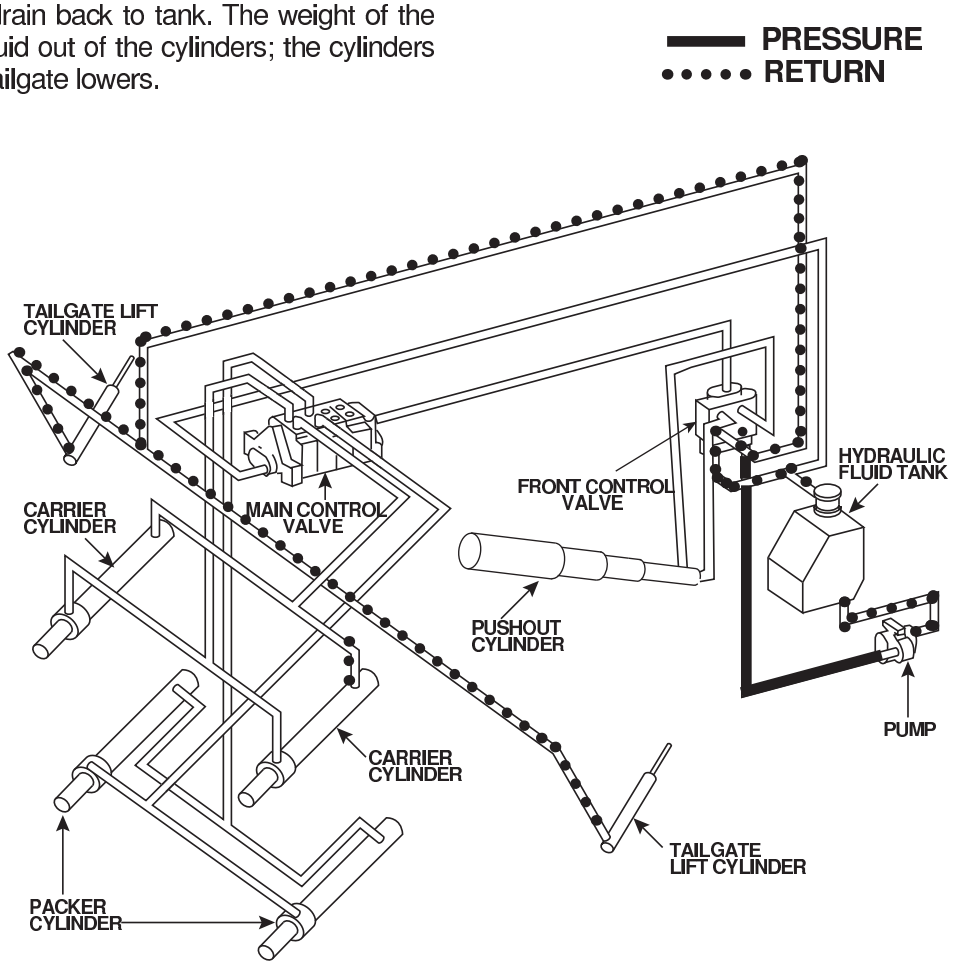
OPERATOR ACTION

Operator moves the tailgate lift lever forward.



HYDRAULIC SEQUENCE

Moving the tailgate lift lever forward shifts a spool in the FCV (Front Control Valve) allowing fluid in the tailgate lift cylinders to drain back to tank. The weight of the tailgate forces fluid out of the cylinders; the cylinders retract and the tailgate lowers.



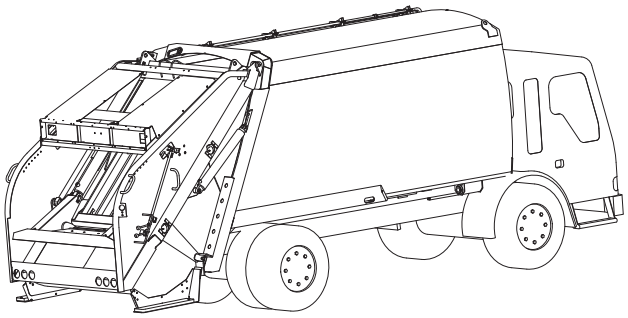
SECTION 9

SERVICE AND REPAIR

GENERAL

This section contains the instructions necessary for the repair and replacement of the main components of the unit.

Before attempting any repair of the unit, become thoroughly familiar with the OPERATION instructions (Sec. 3) and GENERAL REPAIR PRACTICES (Sec. 4). Also, before performing any work on the unit, know and OBSERVE all SAFETY PRECAUTIONS listed in Section 1.



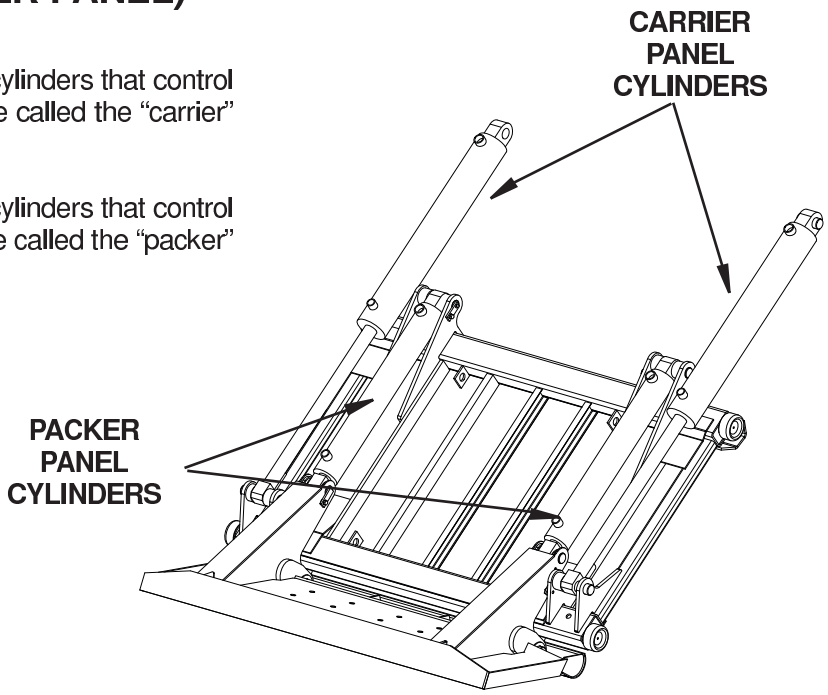
⚠WARNING

There are some procedures in this section that will require that the truck is running. In these instances the operational status will be indicated. Otherwise, make sure that the truck is shut off and the keys are removed. The pressure of the hydraulic system and resulting movement of the units' parts can cause serious injury or death.

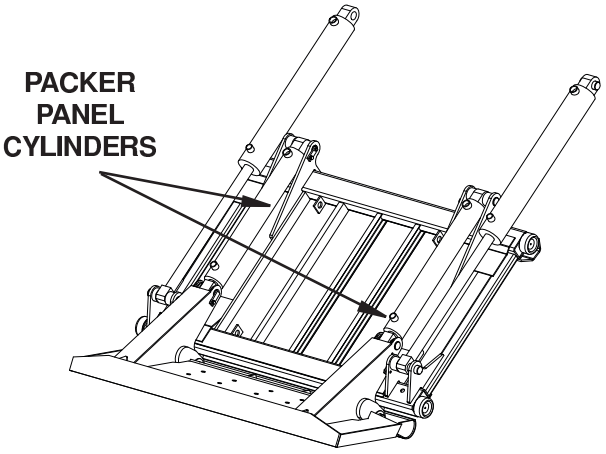
DESCRIPTION OF OPERATING CYLINDERS (CARRIER AND PACKER PANEL)

The two double-acting hydraulic cylinders that control movement of the carrier panel are called the "carrier" cylinders.

The two double-acting hydraulic cylinders that control movement of the packer panel are called the "packer" cylinders.



TEST FOR LEAKING PACKER PANEL CYLINDERS



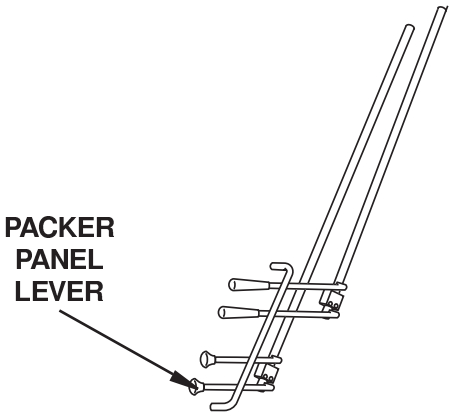
NOTE:
Before testing any cylinder, make sure the main system pressure is correct as described under MAIN LINE PRESSURE CHECK, Sec. 7, CHECK-OUT PROCEDURES.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top covers over the operating cylinders for better accessibility during testing.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

2. Shift the packer panel lever outward to fully extend the packer panel cylinders.



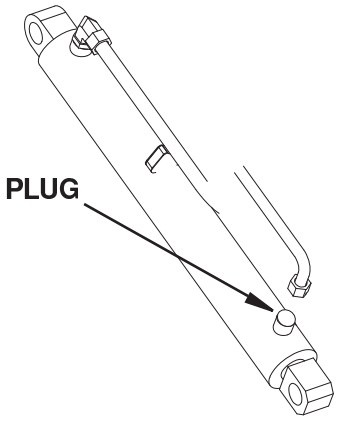
NOTE:
Engine speed-up only activates when carrier panel lever is activated.

⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

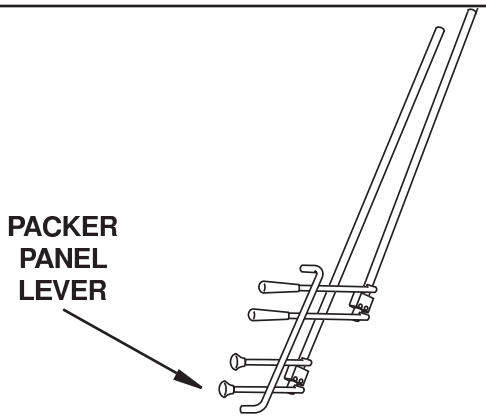
3. Disconnect and plug the lines to the rod end of one cylinder at a time.



SERVICE AND REPAIR

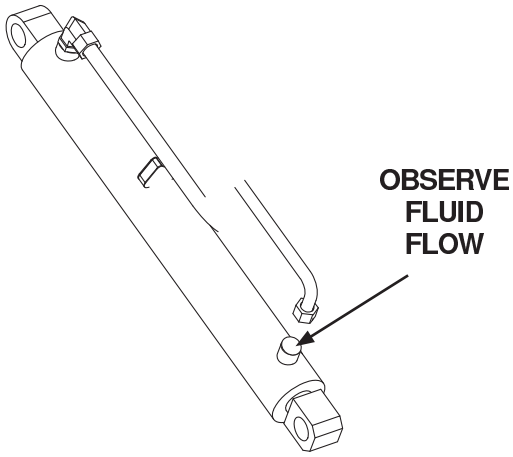
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

4. Shift the packer panel lever outward to apply hydraulic pressure to the case end of the packer panel cylinders. Hold the lever and observe the fluid flow from the open port on the rod end of the cylinder. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue test.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. Reconnect the hydraulic lines to the end of cylinder, and tighten to 110 Ft. Lbs. Repeat steps 3-5 for the other cylinder.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

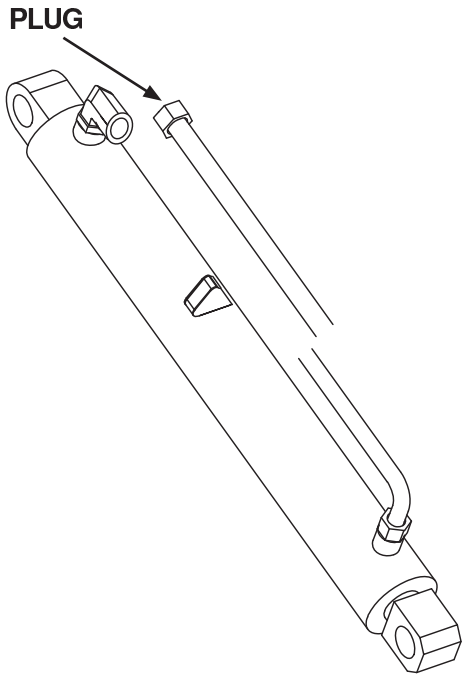
6. Shift the packer panel lever inward to retract the packer panel cylinder (to the “interrupted-cycle” position).

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

7. Disconnect and plug the hydraulic lines which connect to the case end of a packer panel cylinder.

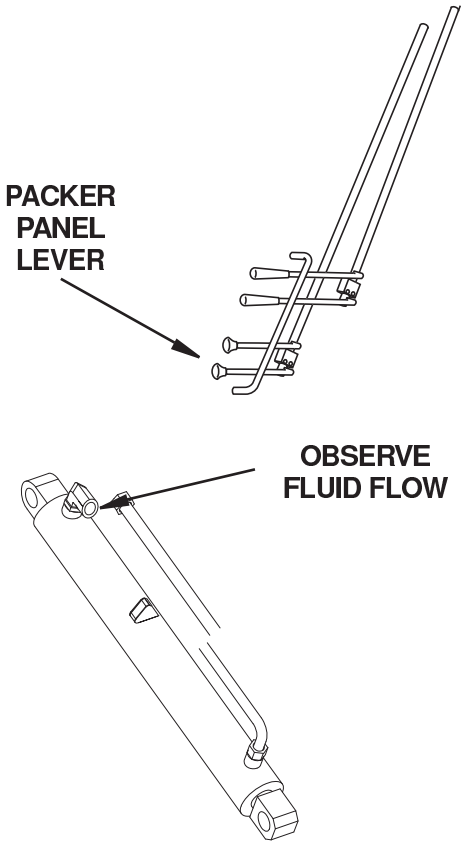
⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

8. Shift the packer panel lever inward to apply hydraulic pressure to the rod end of the packer panel cylinder. Hold the lever and observe the fluid flow from the port on the case end of the cylinder. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal as described later in this section.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

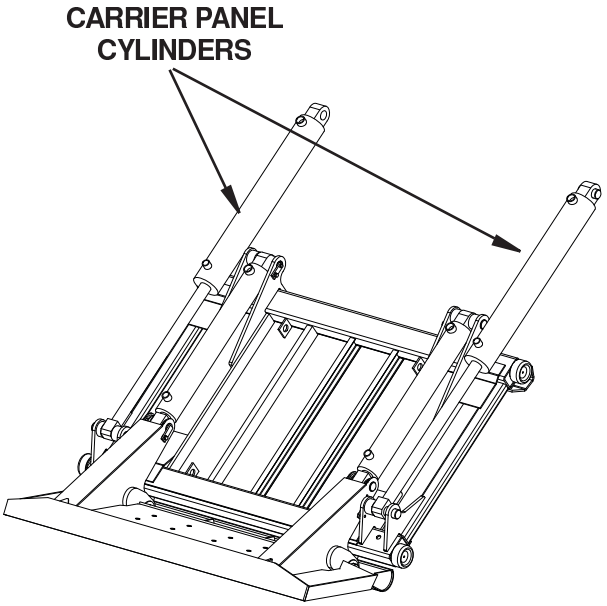
9. If the cylinder does not leak, reconnect the hydraulic lines to the cylinder and tighten to 110 Ft. Lbs. Repeat steps 7-9 for the other cylinder.

TEST FOR LEAKING CARRIER PANEL CYLINDERS

NOTE:
Before testing any cylinder, make sure the main line pressure is correct as described under MAIN LINE PRESSURE CHECK, Sec. 7, CHECK-OUT PROCEDURES.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top covers over the operating cylinders for better accessibility during testing.



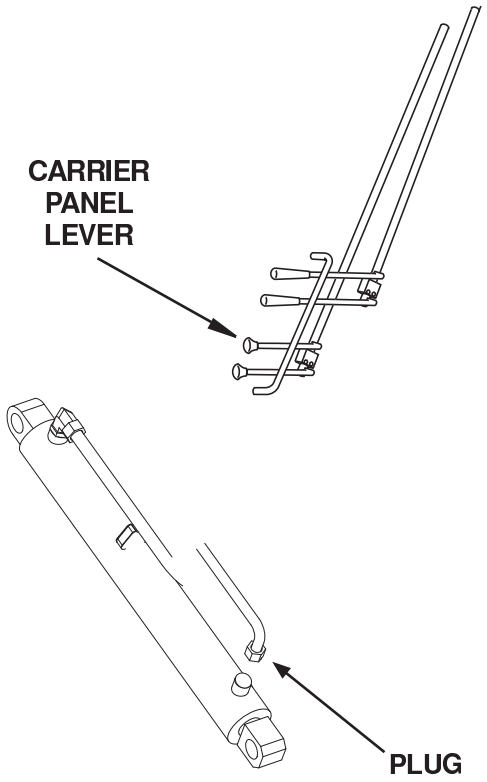
SERVICE AND REPAIR

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

2. Shift the carrier panel lever outward to fully extend the carrier panel cylinders (“home position”).

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Disconnect and plug the lines that connect to the rod end of one cylinder.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

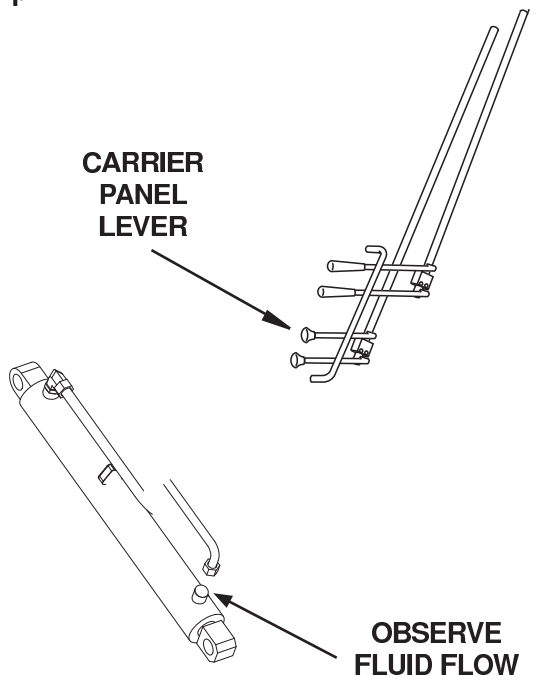
4. Shift the carrier panel lever outward to apply hydraulic pressure to the case end of the carrier cylinders. Hold the lever and observe the fluid flow from the open port on the rod end.
   The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. If the cylinder does not leak excessively, continue test.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

5. If the cylinder does not leak, reconnect hydraulic lines to the rod end of cylinder and tighten to 110 Ft. Lbs. Repeat steps 3-5 for other cylinder.

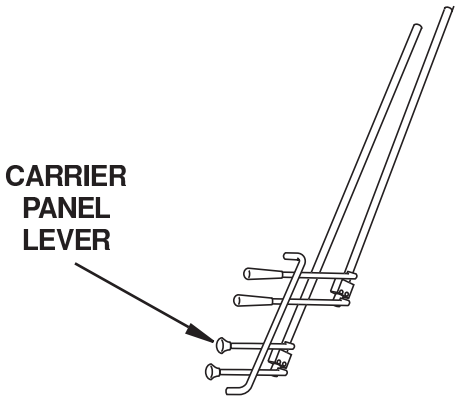
⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

6. Shift the carrier panel lever inward to retract the carrier panel cylinder.

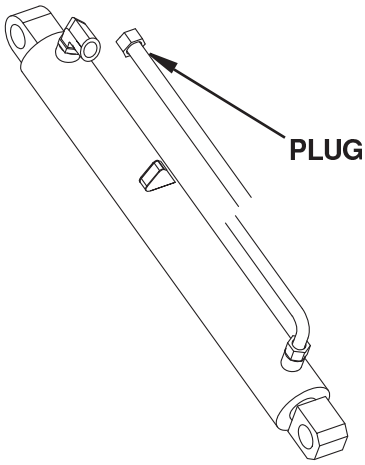


⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

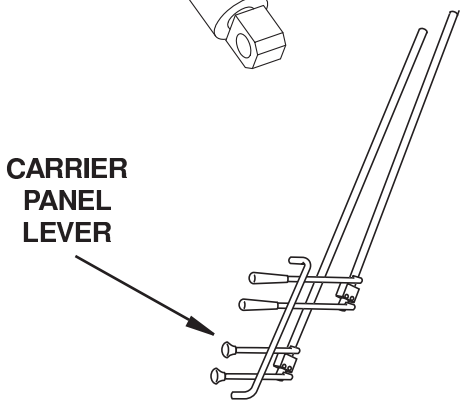
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

7. Disconnect and plug the hydraulic lines which connect to the case end of the carrier panel cylinder.



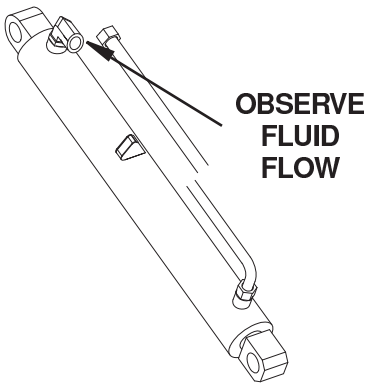
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

8. Shift the carrier panel lever inward to apply hydraulic pressure to the rod end of the carrier panel cylinders. Hold the lever and observe the fluid flow from the open port on the case end of the cylinder. The flow of hydraulic fluid should be no more than 2 fluid ounces per minute. A flow greater than 2 ounces indicates an excessive piston seal leak. Disassemble the cylinder and replace the piston seal.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

9. If the cylinder does not leak, reconnect the hydraulic lines to the case end of the carrier panel and tighten to 110 Ft. Lbs.

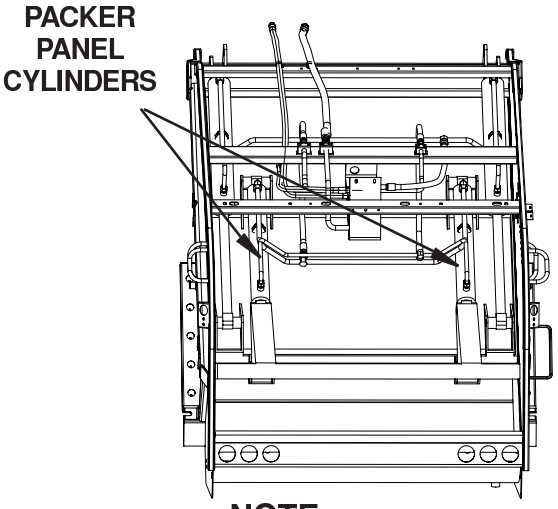


SERVICE AND REPAIR

REMOVAL OF PACKER PANEL CYLINDERS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top sheet to provide better accessibility to the packer panel.

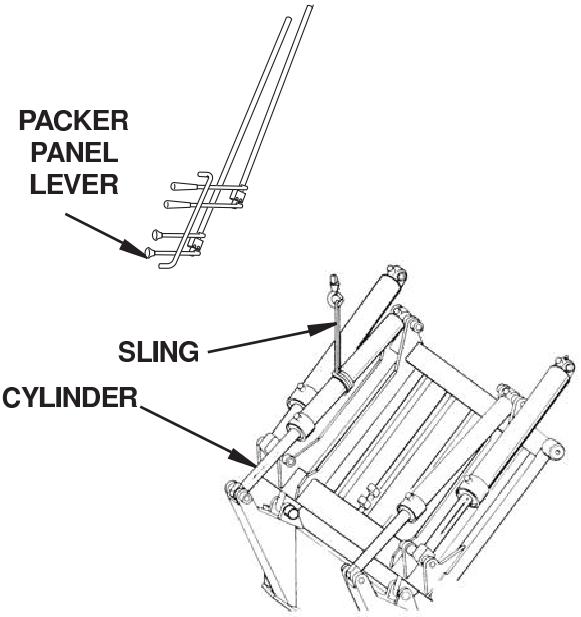


NOTE:
See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Secure a nylon sling around the cylinder as shown and attach to a suitable lifting device with a capacity of 500 lbs. (227 kg.). Operate the hoist to make the lifting cable snug without applying strain on the cylinder.

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

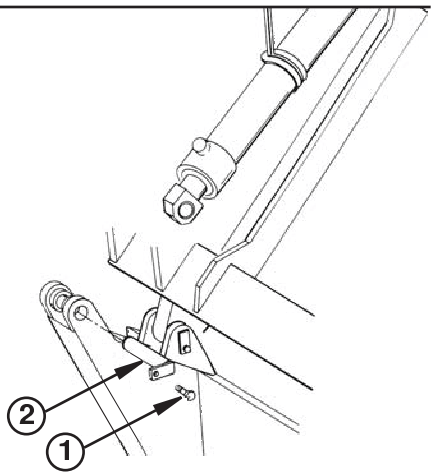
3. Shift the packer panel lever inward to partially retract the packer panel cylinders. Disengage the lever when the panel is vertical. This relieves the weight of the panel from the cylinder rod end.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

4. Remove the capscrews (1), from the pivot pin.

5. Make sure cylinder weight is securely supported by the hoist and carefully remove the pivot pin (2).

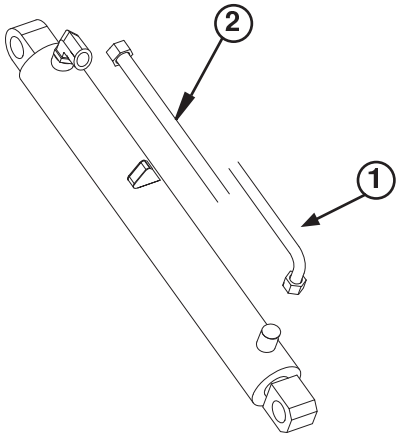


OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

6. Shift the packer panel lever inward to completely retract the cylinder.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

7. Disconnect both the case end (1) and rod end (2) pressure tubes. Immediately cap or plug the pressure tubes and cylinder ports to keep fluid in and dirt out.



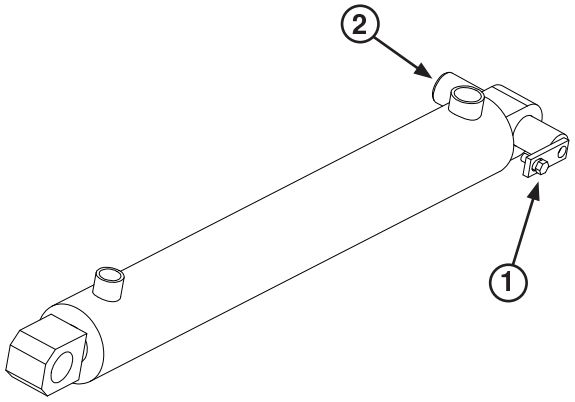
⚠CAUTION

Loosen the hydraulic fittings slowly to release any trapped pressure. Watch for inadvertent movement of components.

8. Remove capscrew (1) securing the pivot pin (2).

9. Remove the pivot pin by using special packer pin puller (See Sec. 10, SERVICE TOOLS).

10. Check for bent pivot pins and inspect pin hubs for broken welds and elongated holes.



SERVICE AND REPAIR

REMOVAL OF CARRIER PANEL CYLINDERS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Remove the top sheets to provide better accessibility.

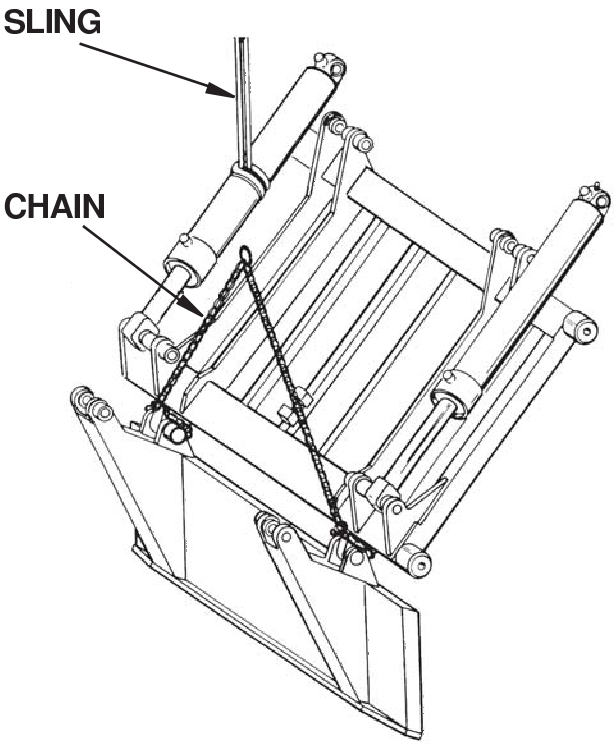
NOTE:

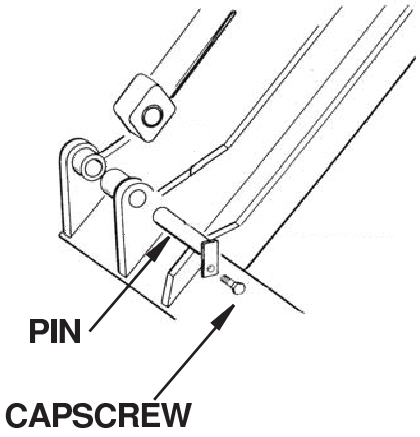
See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Secure a chain to the lower end of the carrier panel. Attach the other end to suitable lifting device with a minimum lifting capacity of 1,600 lbs. (726 kg.). Adjust the hoist so that it will support the panel once the carrier cylinders are removed.

3. Once the carrier panel has been securely supported, secure a nylon sling around the carrier cylinder and attach to a lifting device with a minimum lifting capacity of 500 lbs. (227 kg.). Operate the hoist to snug the lifting sling without applying strain to the cylinder.

4. Remove the capscrew from the rod and case ends. Carefully remove the pivot pins. Use special pin puller (See Section 10, SERVICE TOOLS).





DISASSEMBLY OF PACKER PANEL CYLINDERS (ALPHA AND DELTA)

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Sec. 4, GENERAL REPAIR PRACTICES, before proceeding to disto disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs. (227 kg.)

4. Remove the setscrew from the gland retainer.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

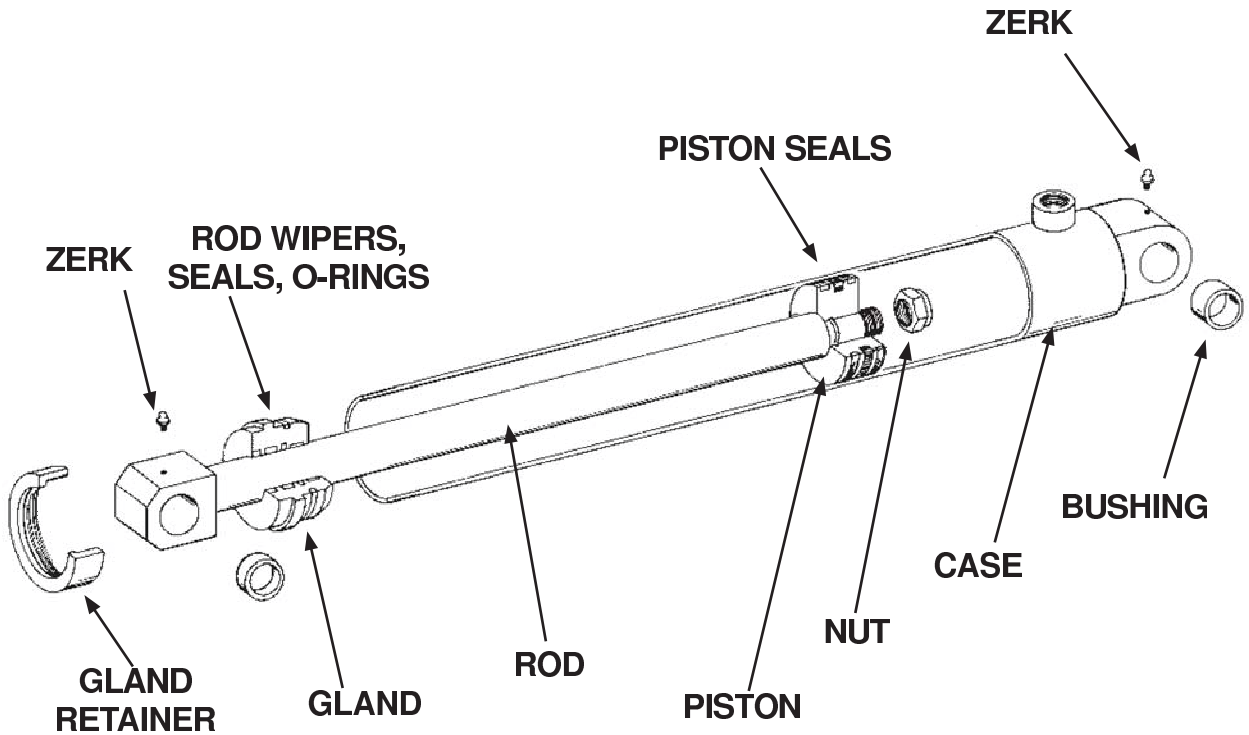
2. A new wiper, rod seal, o-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

Reassemble and install the cylinder in the approximate reverse order od disassembly.

NOTE:

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.



SERVICE AND REPAIR

DISASSEMBLY OF PACKER PANEL CYLINDERS (BETA)

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Sec. 4, GENERAL REPAIR PRACTICES, before proceeding to disto disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs. (227 kg.)

4. Remove the six nylock screws and three lock segments securing the head gland to the cylinder.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

NOTE:
Use an electric drill with an internal grinding wheel to remove any burrs from the internal groove on the cylinder case. Otherwise the cylinder may be difficult to take apart.

INSPECTION AND REPLACEMENT

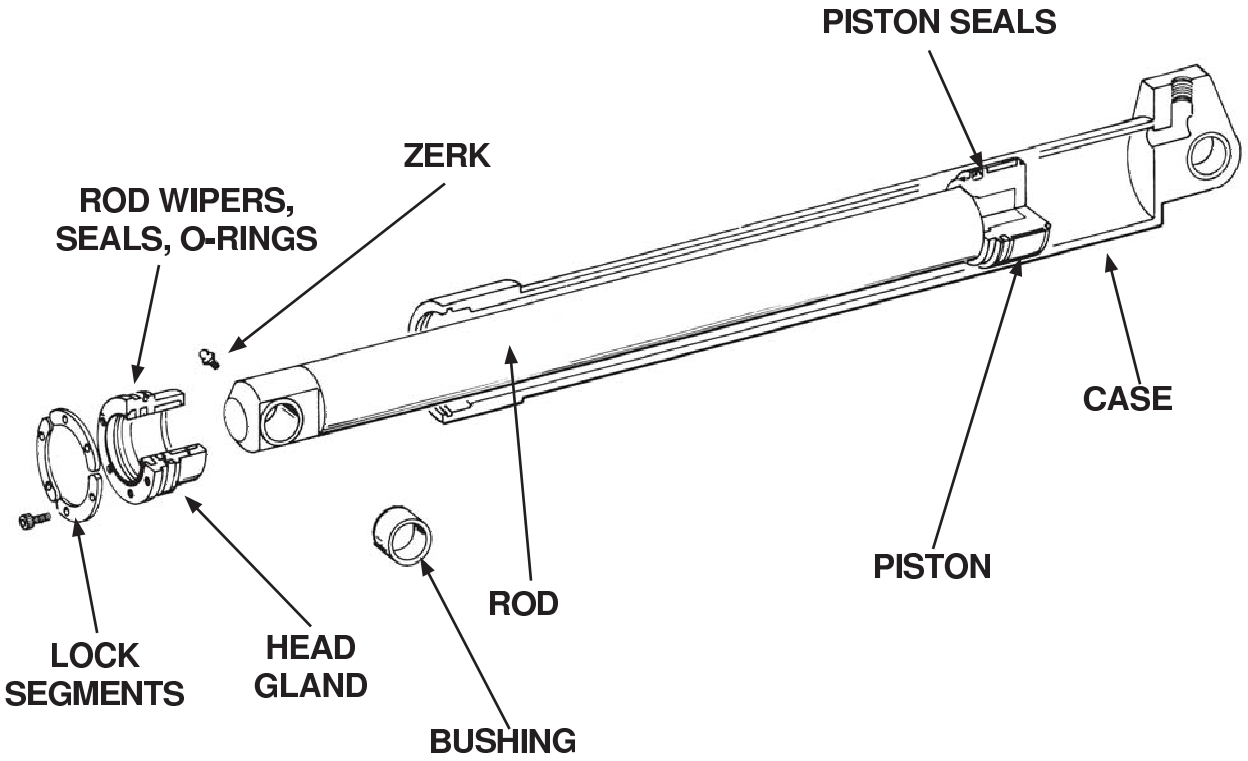
1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

2. A new wiper, rod seal, o-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

Reassemble and install the cylinder in the approximate reverse order od disassembly.

NOTE:
If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.



DISASSEMBLY OF CARRIER PANEL CYLINDERS (ALPHA AND BETA)

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Sec. 4, GENERAL REPAIR PRACTICES, before proceeding to disto disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs. (227 kg.)

4. Remove the setscrew from the gland retainer.

5. Remove the gland retainer.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

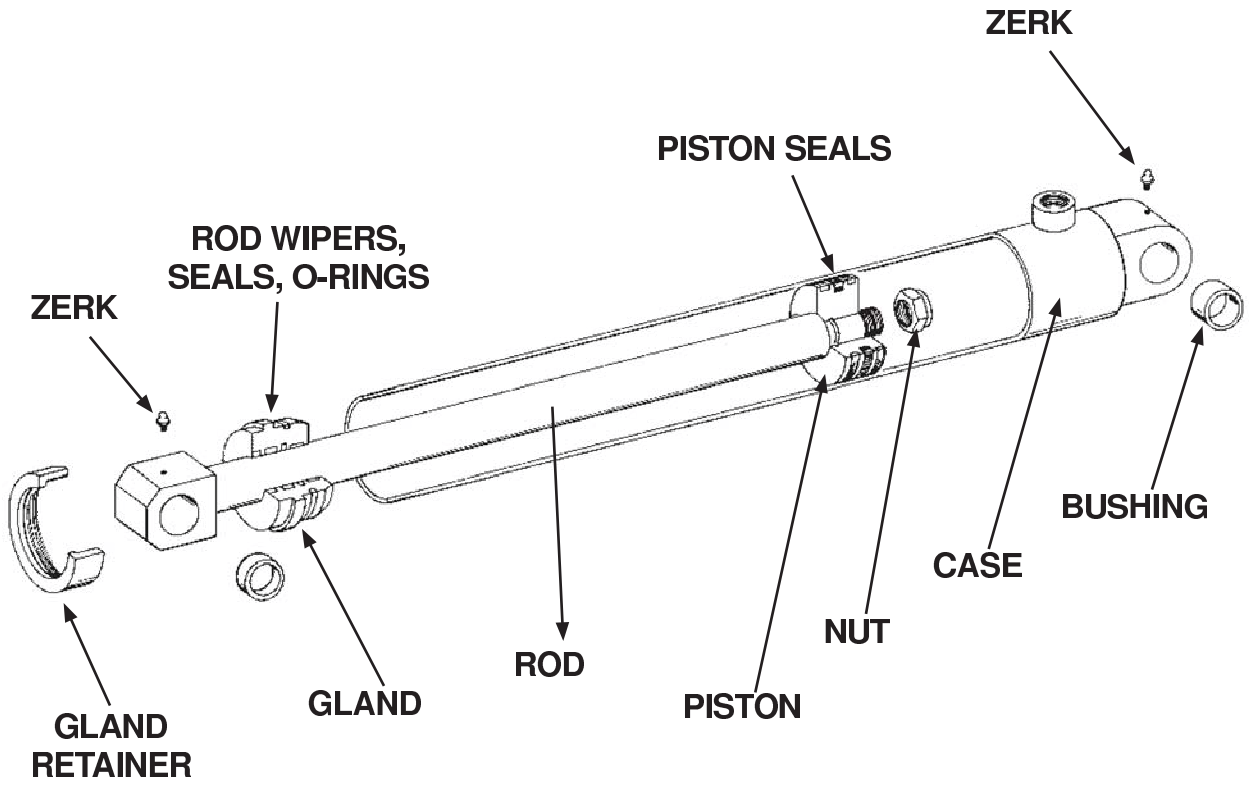
2. A new wiper, rod seal, o-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

Reassemble and install the cylinder in the approximate reverse order od disassembly.

NOTE:

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.



SERVICE AND REPAIR

DISASSEMBLY OF CARRIER PANEL CYLINDERS (DELTA)

1. Remove grease fitting, clean parts, drain fluid and follow all other applicable guidelines for disassembly provided in Sec. 4, GENERAL REPAIR PRACTICES, before proceeding to disto disassemble the cylinder.

2. Secure the case end of the cylinder to the floor or workbench.

3. Secure the rod end of the cylinder to an overhead hoist device with a minimum lifting capacity of 500 lbs. (227 kg.)

4. Remove the set screw that retains the gland.

5. Remove the gland.

6. Slowly operate the lifting device to carefully pull the piston rod assembly out of the cylinder.

INSPECTION AND REPLACEMENT

1. Carefully and thoroughly inspect the bore of the cylinder case for cracks, rust, scoring, or excessive wear. Replace if found not to be serviceable. Check all other parts for damage.

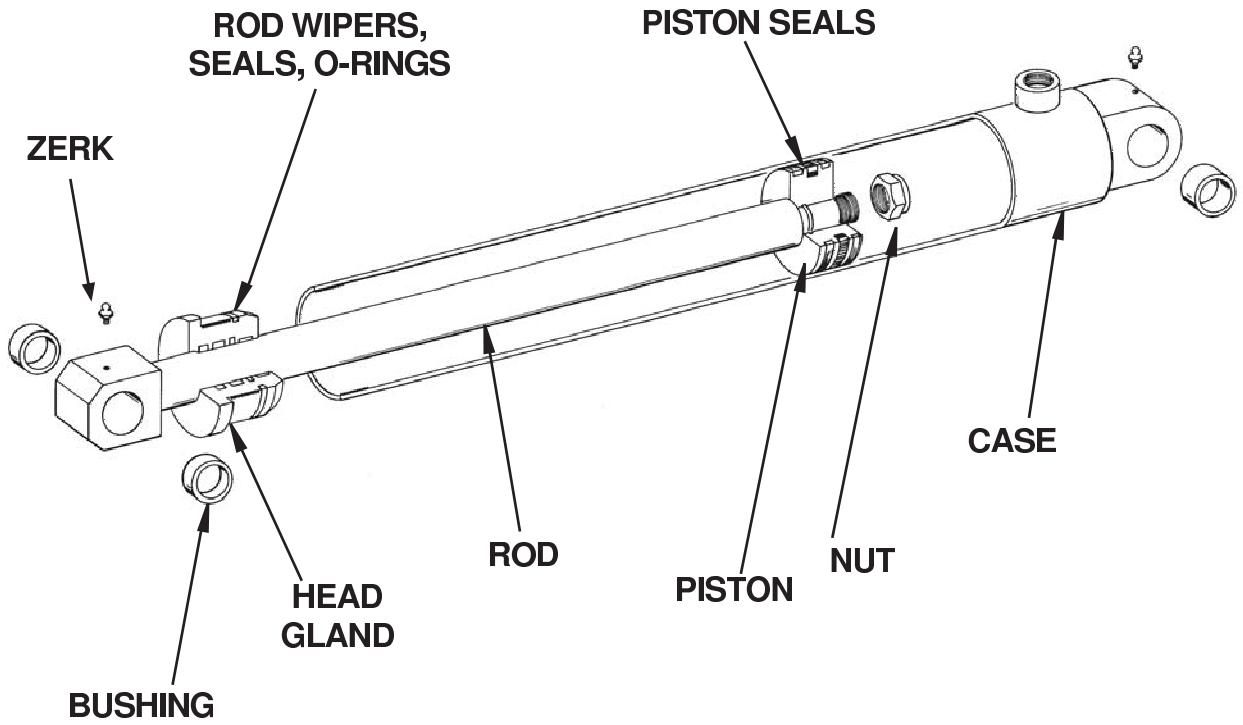
2. A new wiper, rod seal, o-rings, and piston seals must be installed anytime the cylinder is disassembled. Pay particular attention to the way the parts are positioned before disassembly.

REASSEMBLY AND INSTALLATION

Reassemble and install the cylinder in the approximate reverse order od disassembly.

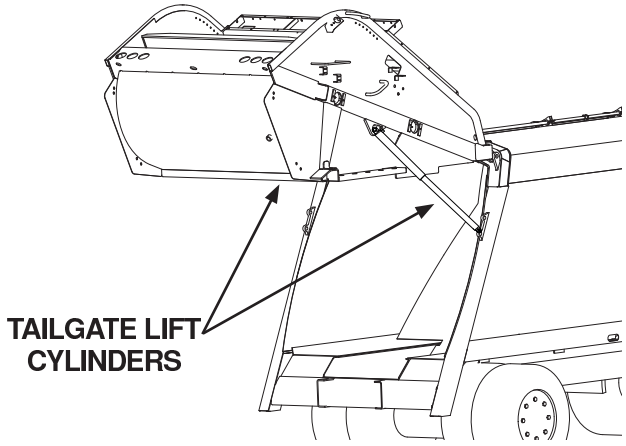
NOTE:

If the cylinder is not to be installed immediately, keep the ports sealed to prevent contamination from entering the cylinder.



DESCRIPTION OF TAILGATE LIFT CYLINDERS

These two hydraulically operated cylinders, mounted on each side of the tailgate, lift and lower the tailgate assembly. The rod end is pinned to a pivot ear on the body frame near the discharge opening, while the cylinder weldment pivot ear is bolted to a mounting hub on the tailgate.

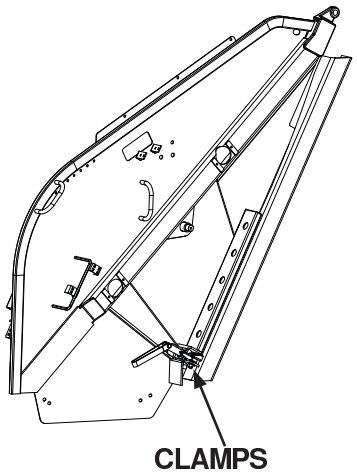


TEST FOR LEAKING TAILGATE CYLINDER

NOTE:
This check will require two people.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

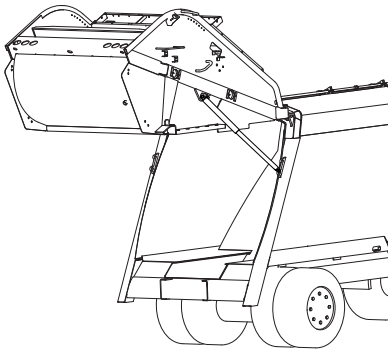
1. Loosen and release (swing away) the tailgate clamps.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

2. Depress the speed-up button and move the tailgate lift lever to raise the tailgate and hold.

3. Visual inspection of the tailgate cylinders is the only leakage test necessary.



SERVICE AND REPAIR

REMOVAL OF TAILGATE LIFT CYLINDERS

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

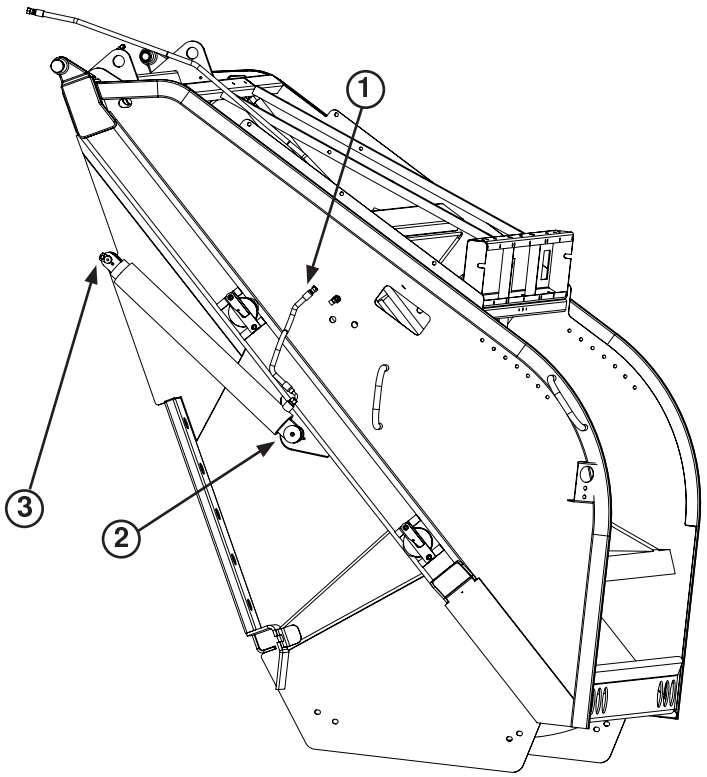
1. With the tailgate closed, attach a sling connected to a suitable lifting device with a capacity of 500 lbs. (227 kg.) to the tailgate lift cylinder.

NOTE:
See Sec. 4, GENERAL REPAIR PRACTICES, for more detailed information about the correct use of slings and lifting chains.

2. Disconnect the hydraulic line (1) at the cylinder port in the case end and cap the line.

3. Remove the capscrew (2), washer, and cover from the cylinder case end.

4. Remove capscrew (3), lockwasher, retainer and pin from the rod end.

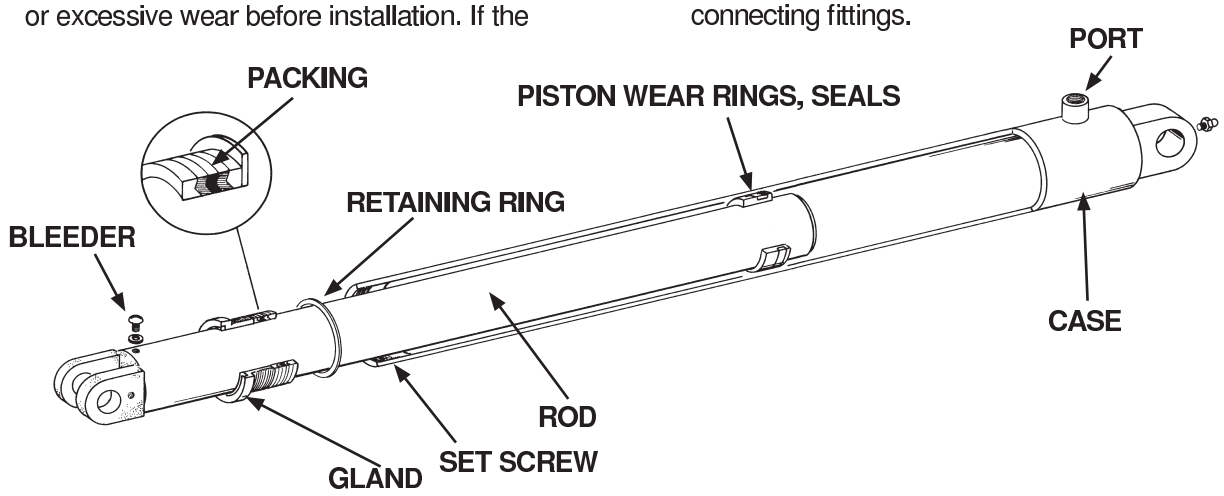


DISASSEMBLY OF TAILGATE LIFT CYLINDER

1. Wash the outside of the cylinder assembly completely to prevent contamination and/or damage to the cylinder components.
2. Secure the case end of the cylinder to a workbench or floor mount and the rod end to an overhead lifting device with a minimum lifting capacity of 500 lbs. (227 kg.).
3. Remove the plug from the port and drain all fluid.
4. Remove the 1/4" socket head setscrew from the side of the cylinder case, and discard.
5. Remove the bleeder screw and gasket from the end of the cylinder rod. Save these for reassembly.
6. Unscrew the head gland from the cylinder case completely. Slide the head gland off of the rod.
7. Using the overhead lifting device, carefully extend the cylinder rod approximately 1/2 way out of the case.
8. Apply a 6" piece of 1" masking tape to the chrome of the cylinder rod, about 1/2 way up the cylinder rod. The tape should be applied in a diagonal fashion on the rod.
9. Push the rod back into the case, then again using the overhead lifting device, extend the rod 1/2 way out. The cylinder packing should slide out with the taped section of the rod. If not, repeat until the packing slides out. Slide the packing off of the rod and discard.
10. Using a long screwdriver or pick, remove the retaining ring from the inside of the cylinder, between the case and the rod. Use care to avoid damage to the case or rod surfaces. Slide the retaining ring off of the rod and discard.
11. Slide the rod assembly out of the case.
12. Remove the wear ring from the bottom of the cylinder rod and discard.
13. Remove the wiper from the head gland.

INSPECTION, REASSEMBLY AND INSTALLATION

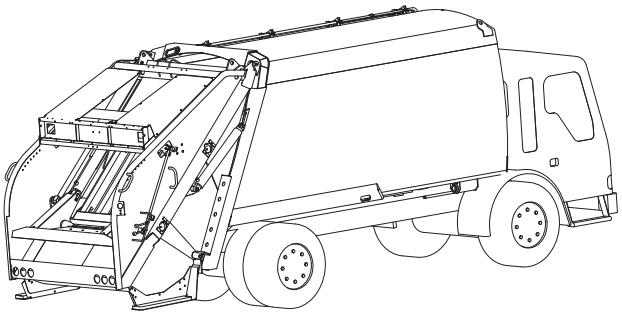
1. Thoroughly check all components of the cylinder for crackes, scoring or uneven wear. Parts that must be replaced together, such as seals and wear rings, are available as a repair kit from your authorized Leach dealer.
2. Liberally coat all seals and wear rings with clean, fresh hydraulic fluid before installation.
3. Assembly of the tailgate lift cylinder is in approximate reverse order of disassembly.
4. Install the packing into the cylinder, using a flat punch to push it in place. Tighten the head gland only enough to prevent leakage from the cylinder.
5. Check all cylinder mounting components for cracks or excessive wear before installation. If the cylinder is not to be installed immediately, keep the port sealed to prevent contamination.
6. After installation of the cylinder is complete, clamp the tailgate in the down position and remove the bleeder screw from the cylinder rod. Operate the control lever until oil flows from the bleedr port. Install the bleeder screw.
7. Fully extend and retract the cylinder twice, clamp the tailgate in the down position, and once again remove the bleeder screw. Operate the control lever. After all air has exited the cylinder, install the bleeder screw.
8. Check for any external leaks on the cylinder and connecting fittings.



SERVICE AND REPAIR

DESCRIPTION OF THE TAILGATE ASSEMBLY

The tailgate assembly consists of the operating cylinders, carrier and packer panels and the "hopper" where refuse is first loaded into the unit. The tailgate is lifted (for unloading) and lowered by the tailgate lift cylinders which are actuated by the tailgate lift lever, located at the front of the body.



The need to remove the tailgate is rare and limited to repair of the hopper area, removal of the carrier panel and removal of the pushout panel. Procedures for carrier panel and pushout panel removal are different and are covered under REMOVAL OF CARRIER PANEL or REMOVAL OF PUSHOUT PANEL.

REMOVAL OF THE TAILGATE ASSEMBLY

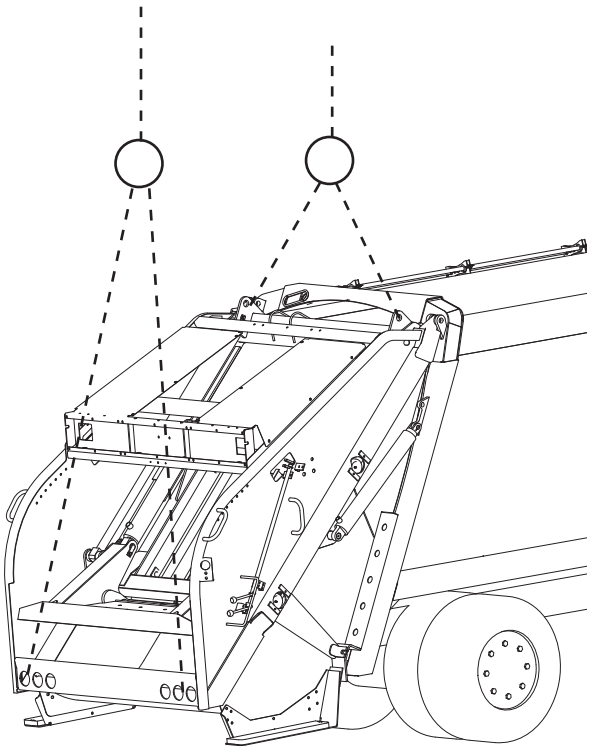
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Release the tailgate clamps and swing away.
2. Disconnect and remove the tailgate lift cylinders as described earlier in this section.
3. Disconnect and cap the hydraulic lines.

NOTE:

See Sec. 4, GENERAL REPAIR PRACTICES, for detailed information about the correct use of slings and lifting chains.

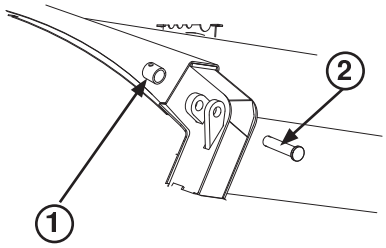
4. Attach chains, connected to a suitable lifting device with a minimum lifting capacity of 7,500 lbs. (3402 kg.) to the tailgate as shown. Operate the lifting device no more than necessary to support the weight of the tailgate.

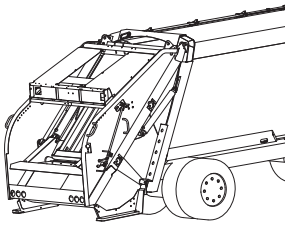


5. Remove capscrew and locknut (not shown) to remove retainer (1) and hinge pin (2).

6. Operate the lifting device and/or move the truck forward to free the tailgate from the body.

7. Position the tailgate on supports as needed to facilitate repairs. The supports must be capable of supporting 7,500 lbs. (3402 kg.).



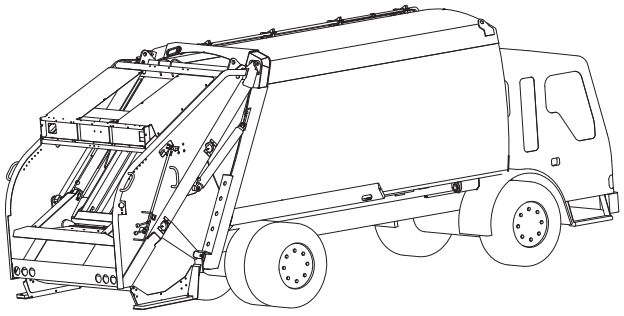


INSPECTION OF TAILGATE

1. Inspect all the sheet metal for bends, dents or tears. Check the hardware holes for enlargement or breaks in the metal. Check threaded holes for stripped or otherwise damaged threads. Check the tailgate seal for any sign of deterioration. Check handles for looseness.

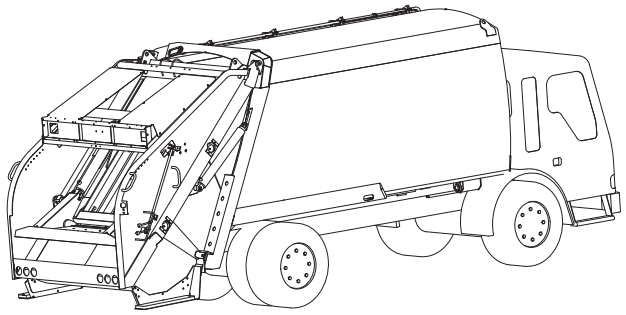
2. Replace any defective or worn part. Follow all safety precautions pertaining to welding described in Sec. 1, SAFETY.

3. See Sec. 4, GENERAL REPAIR PRACTICES for information pertaining to welding repairs.



REASSEMBLY AND INSTALLATION OF TAILGATE

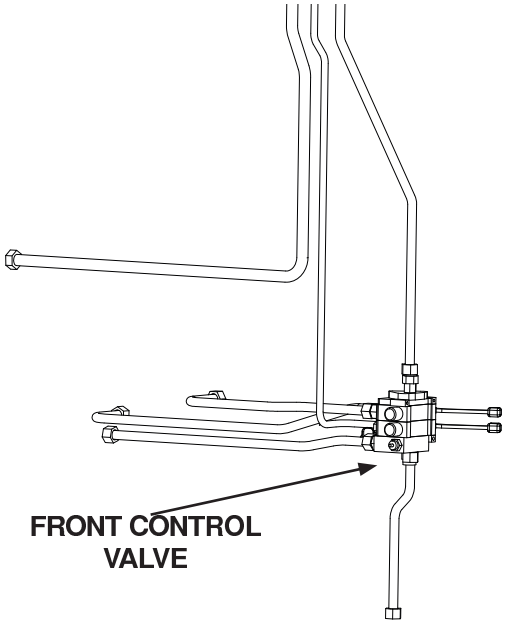
Reassemble and install the tailgate in the approximate reverse order of disassembly and removal.



SERVICE AND REPAIR

FRONT CONTROL VALVE

The Front Control Valve (FVC) is located behind the access door in the front left hand side of the body. It is manually activated and controls the raising and lowering of the tailgate and the operation of the pushout panel. This valve also contains the main pressure relief for the hydraulic system.



REMOVAL OF THE FRONT CONTROL VALVE

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Disconnect the hydraulic lines to the valve. Cap the lines and plug the valve ports to prevent dirt from entering the valve and the hydraulic system.

2. Remove the capscrews, lockwashers, nuts and remove the valve.

DISASSEMBLY AND INSPECTION OF FRONT CONTROL VALVE

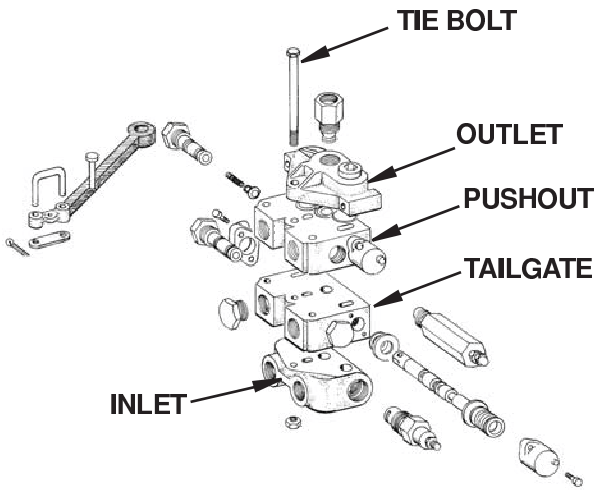
1. Wash the valve body with solvent to prevent contamination.

NOTE:
Service should be limited to seal replacement, cartridges and individual valve sections. Field repairs of the spool assemblies are not recommended.

2. To separate valve sections from the inlet or outlet covers, remove the four (4) tie bolts which secure the valve sections and covers. Separate carefully, noting the location of o-ring seals.

NOTE:
Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

3. Thoroughly clean the o-ring counter bores and ground surfaces of each section.



NOTE:
Do not remove the spool from the valve bady as the seals can be replaced externally.

4. Remove boot, retainer plate, retainer plate washer, o-ring seal and back-up washer.

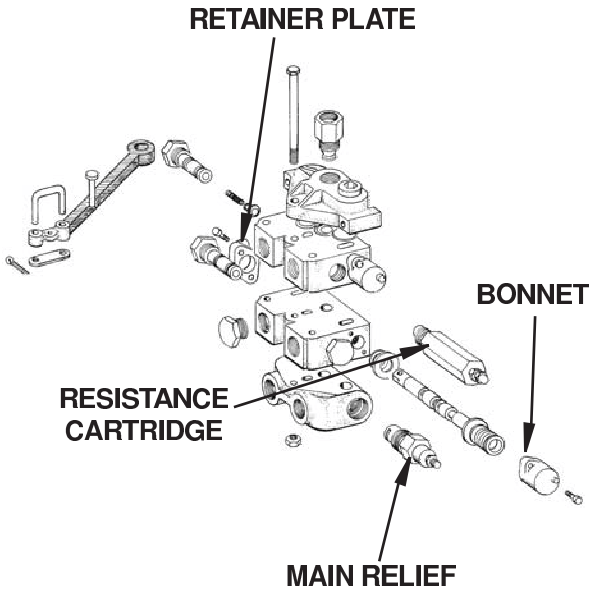
5. Thoroughly clean counterbore.

6. To remove the bonnet, remove two (2) capscrews securing the bonnet to the work section.

7. The spool positioner is now exposed for inspection and repair. Remove the capscrew securing the spring collar to the valve spool.

8. Remove the spring collar and spring to expose the retainer plate, retainer plate washer, o-ring seal and back-up washer.

9. Thoroughly clean counterbore.



REASSEMBLY OF FRONT CONTROL VALVE

1. With all o-ring seals removed and counterbores thoroughly clean, lightly oil the new seals. Slide over spools and cartridges and insert the seals in the counterbores.

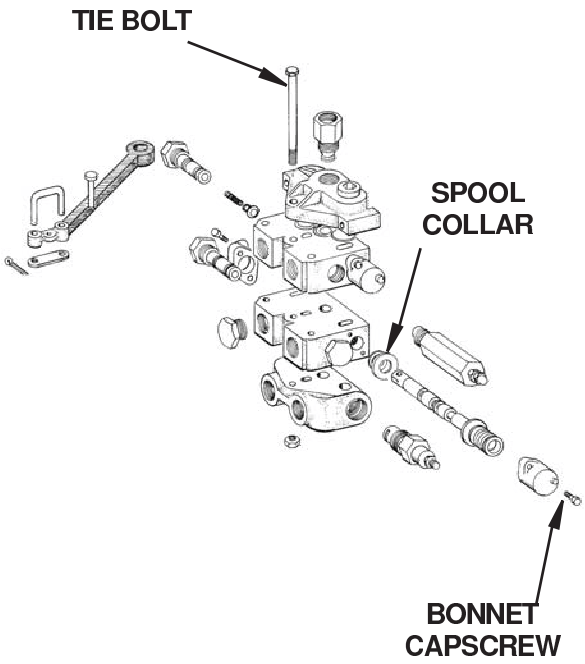
2. Reassemble parts in reverse order of disassembly.

3. Torque the spool collar to 10 ft. lbs. (13.6 Nm.).

4. Torque the bonnet and handle bracket capscrews to 10 ft. lbs. (13.6 Nm.).

5. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE:
Use care in replacing the work section to avoid dislodging o-rings from the counterbores.



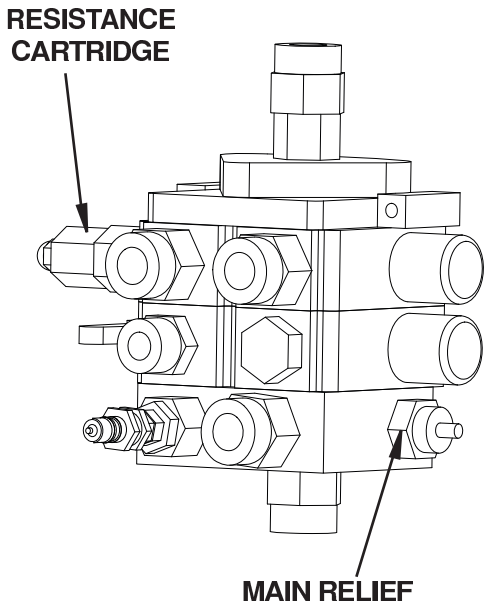
SERVICE AND REPAIR

6. Torque tie bolts to 32 ft. lbs. (43 Nm.).

⚠CAUTION

If tie bolts are not tightened to the proper torque, valve spools may bind or stick, or cause section seals to extrude.

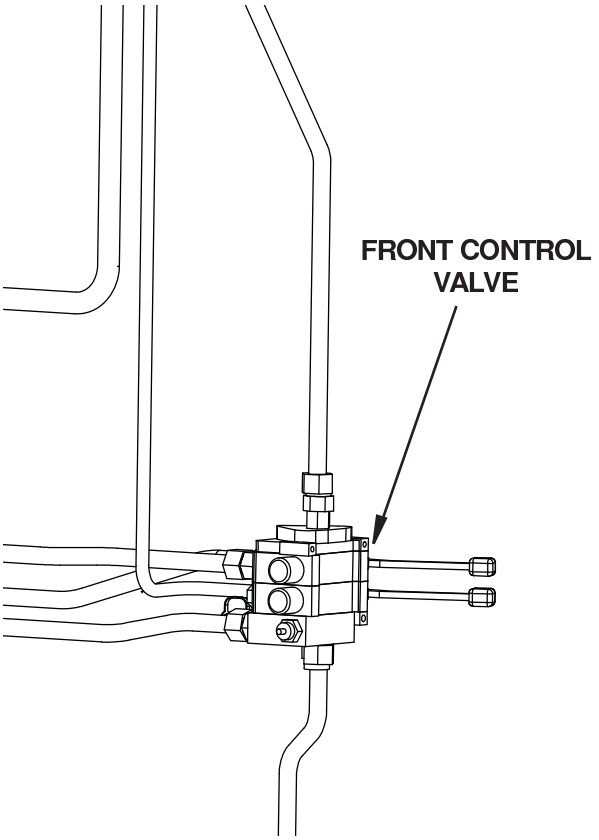
7. Torque value of the resistance, main relief cartridge will be 20 ft. lbs. (27.2 Nm.).



REINSTALLATION OF FRONT CONTROL VALVE

1. Secure the valve to the mounting bracket with the appropriate hardware.

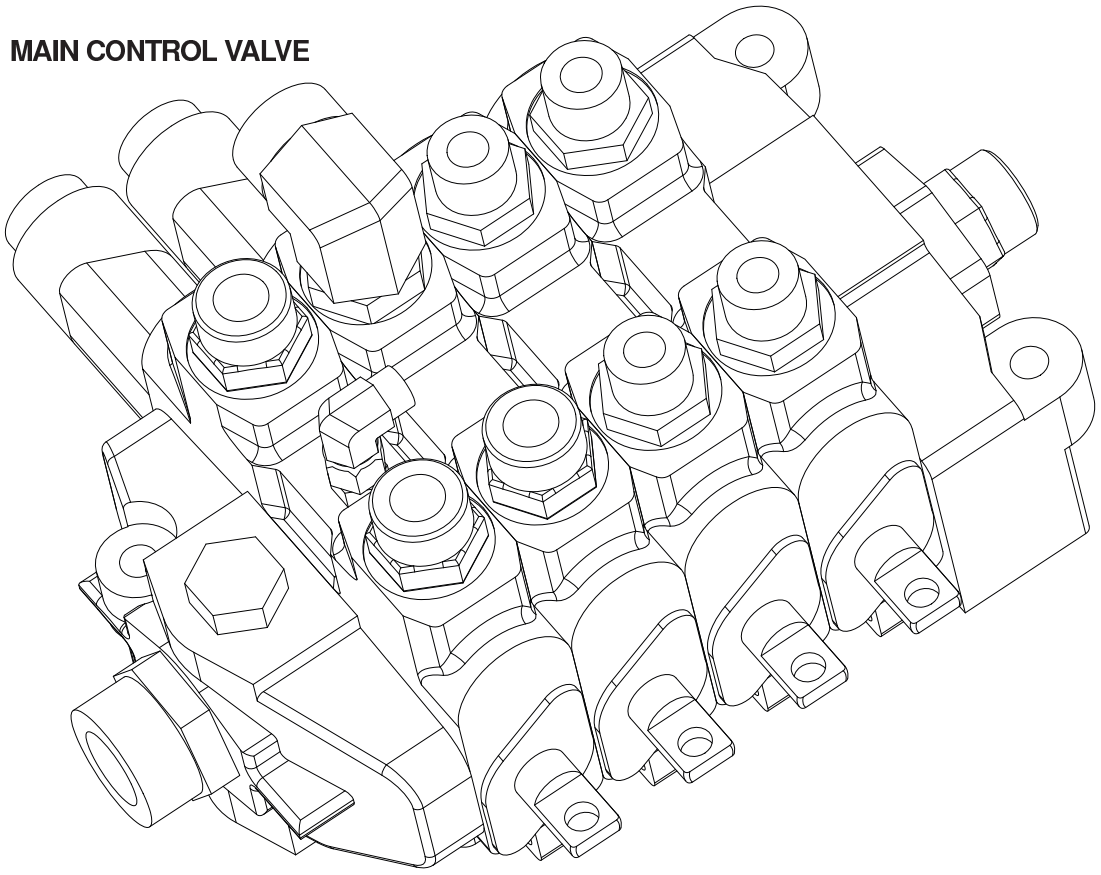
2. Remove plugs and caps, then attach hydraulic lines with new ORFS o-rings. Torque all hydraulic lines per torque chart as described in Sec. 4, GENERAL REPAIR PRACTICES.



MAIN CONTROL VALVE (MCV)

The Main Control Valve (MCV) is located on the tailgate above the packer and carrier panels. It controls the operation of the packer and carrier panels through the entire packing cycle. It may have either 2, 3 or 4 individual valve sections, depending on the installation of options. The standard valve will have 2 sections.

MAIN CONTROL VALVE



SERVICE AND REPAIR

REMOVAL OF THE MAIN CONTROL VALVE

1. Place the packer and carrier panels in the “interrupted cycle” position.

2. Move the packer panel control lever outward to sweep the packer panel through the hopper toward the home position. Stop the movement of the panel (move the control lever to the neutral position) when the panel becomes vertical (straight up and down).

3. Turn off the engine, remove the keys.

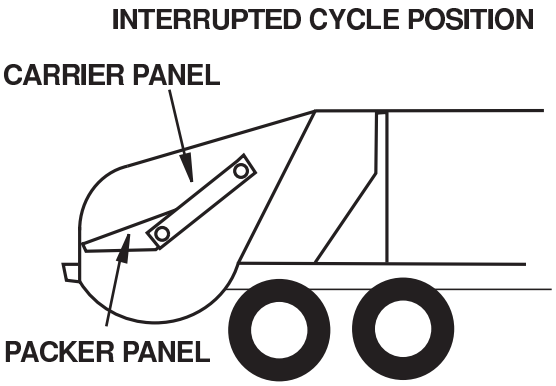
4. Disconnect the shift linkage.

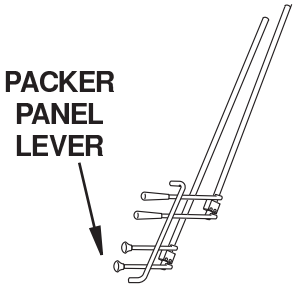
5. Disconnect and cap all hydraulic lines and hoses.

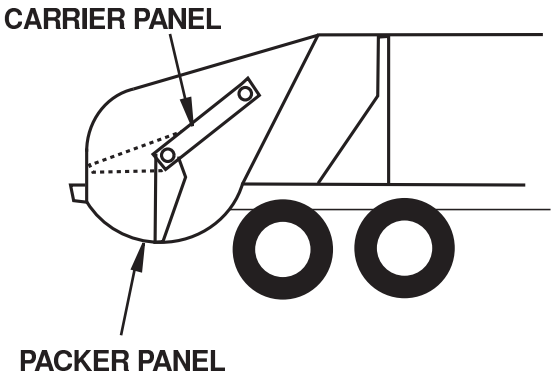
6. Plug all open ports on the valve to prevent contamination.

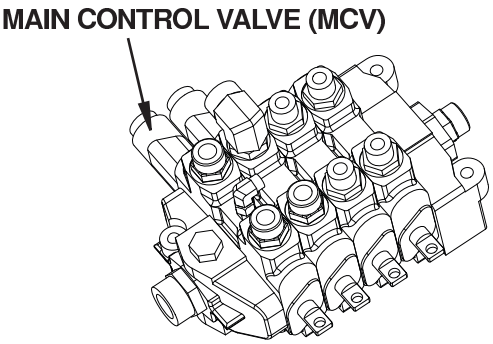
NOTE:
The Main Control Valve (MCV) assembly weighs approximately 100 lbs (45.3 Kg.). Use appropriate lifting procedures and techniques when handling this assembly.

7. Remove the capscrews, washers and nuts securing the valve to the mounting plate.









DISASSEMBLY AND INSPECTION OF MAIN CONTROL VALVE

1. Wash the valve body with solvent to prevent contamination.

NOTE:

Before disassembly, it is suggested that each work section be marked numerically to avoid incorrect assembly.

2. To separate valve sections from the inlet or outlet covers, remove the four (4) tie bolts which secure the valve sections and covers. Separate carefully, noting the location of o-ring seals.

3. Thoroughly clean the o-ring counterbores and ground surfaces of each section.

REASSEMBLY OF MAIN CONTROL VALVE

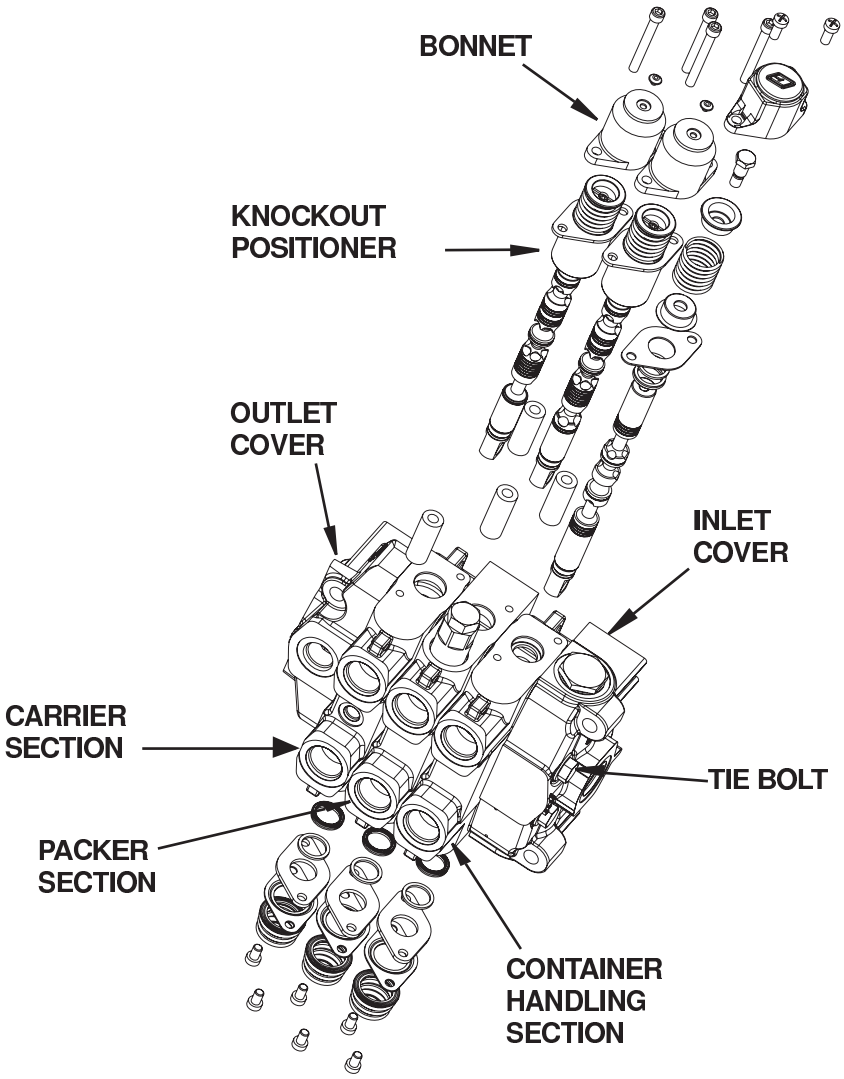
1. Replace work sections and covers with the tie bolts in the same order in which they were removed.

NOTE:

Use care in replacing the work sections to avoid dislodging o-rings from the counterbores.

2. Secure tie bolts and tighten evenly to 25 ft. lbs. (33.8 Nm.).

3. Torque 3800 PSI relief cartridge to 20 ft. lbs. (27 Nm.).



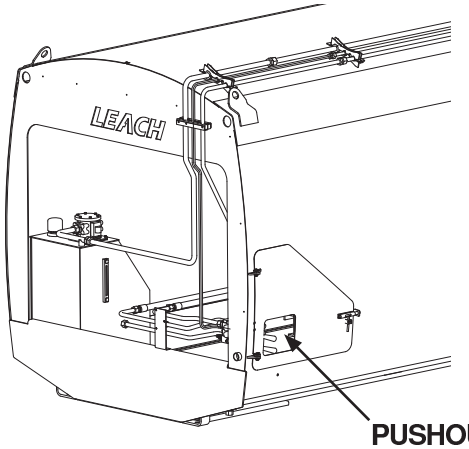
SERVICE AND REPAIR

REMOVAL OF TELESCOPIC CYLINDER

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Move the pushout lever to position the pushout panel approximately midway in the body.

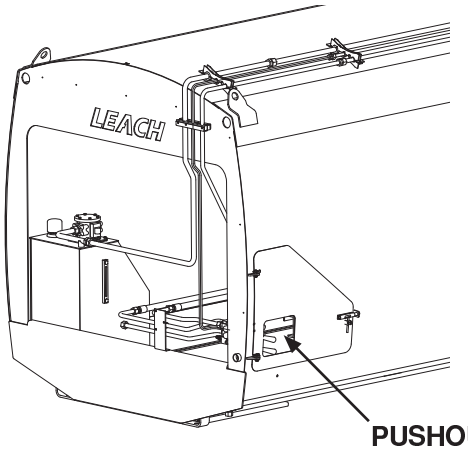
2. Weld a lifting eye to the roof of the body.



OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Attach a sling connected to a lifting device capable of lifting 750 lbs. (341 kg.) to the telescopic cylinder.

4. Remove the nuts and bearing block halves connecting the pushout panel to the cylinder.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

5. Move the pushout lever to slowly retract the telescopic cylinder until it is completely retracted.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

6. Using a lifting device, lower the telescopic cylinder until it is resting on the floor of the body.

7. Disconnect the hydraulic lines to the cylinder ports. Cap the hydraulic lines and the cylinder ports to prevent contamination of the hydraulic system.

8. Remove the cylinder case end pin.

NOTE:
For more information about lifting devices and slings, refer to Sec. 4, GENERAL REPAIR PRACTICES.

9. Attach a sling connected to a suitable lifting device with a minimum lifting capacity of 750 lbs. (341 kg.).

10. Operate the lifting device slowly and guide the cylinder out of the body through the side access door. Take care during removal to avoid damaging the surrounding components or hydraulic lines.

SERVICE AND REPAIR

TELESCOPIC CYLINDER PACKING REPLACEMENT

1. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

2. Remove the setscrew (1) and plastic plug (2) from the head nut.

3. Remove the smallest head nut (3) using a strap or chain wrench. If the tube turns with the head nut, tighten the next head nut slightly.

4. Repeat steps 2 and 3 to remove each head nut.

5. Using a suitable lifting device attached to the rod eye (5), pull up on the tube. The packing (4) should come out as the tube is raised. If it does not, clean off a section of the tube and wrap masking tape around it. Lower the wrapped section of tube down into the packing and then lift the tube once again.

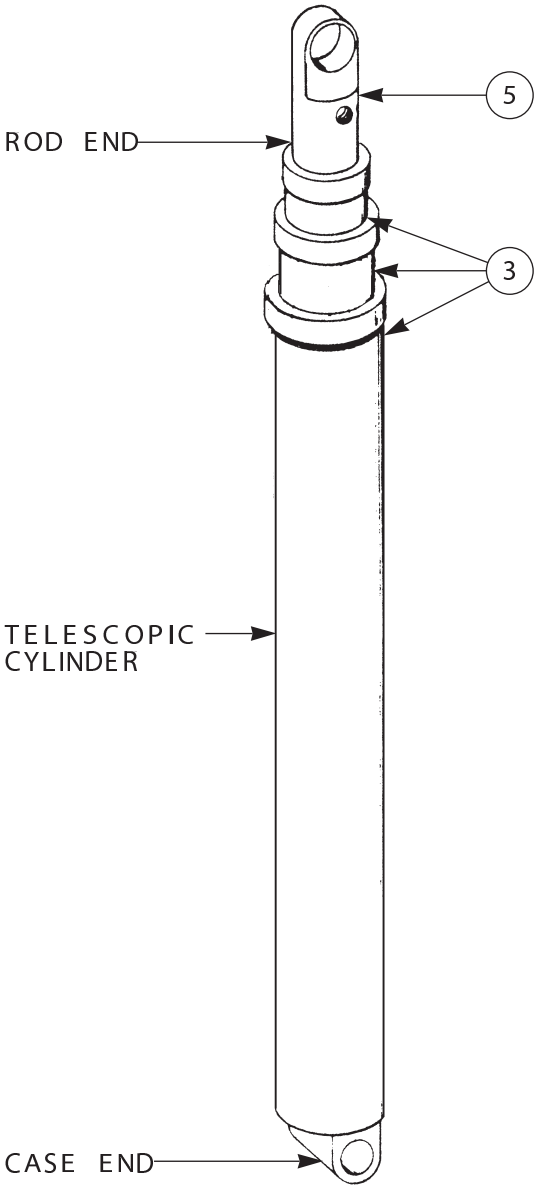
6. When removing the packing from succeeding larger stages, replace the head nut (3) on the stage directly above the section you need access to. Wrap a strap under the head nut and use it to lift the tube.

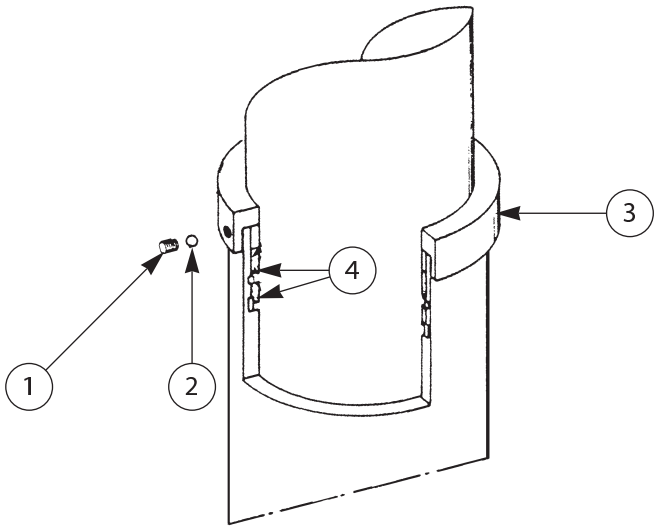
7. Prior to installing new packing (4), clean the area thoroughly and lubricate the new packing set inside and out with an all-purpose grease.

8. If the proper size packing driver is not available, the packing may be installed by turning the head nut over, placing it on the packing and using a rubber or plastic mallet, tap the packing into place.

9. Replace all of the head nuts (3) being careful not to overtighten.

10. Replace the plastic plug (2) and setscrew (3).





TELESCOPIC CYLINDER DISASSEMBLY

1. Prior to disassembling the cylinder, first make four clips from thin steel. These clips should be approximately .020" thick, 1/2" wide and 4" long. Bend each clip, at a right angle, about 1" from the end so it can hang over the edge of the tube.

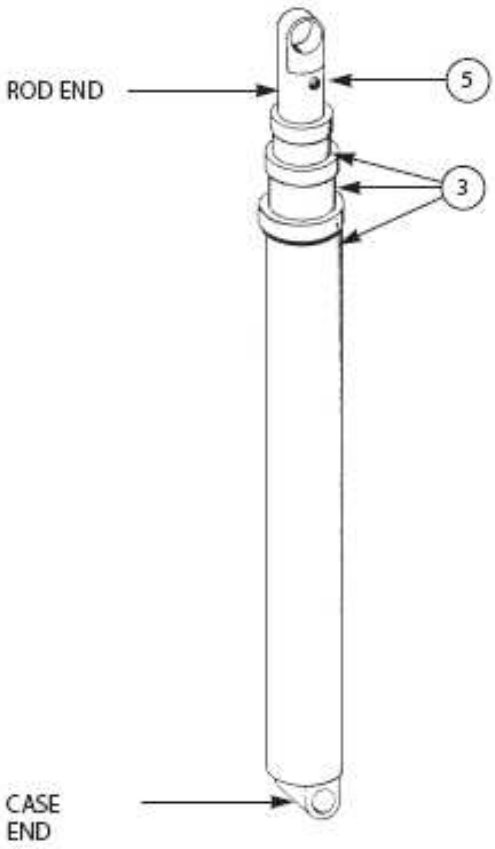
2. Drain the hydraulic fluid from the cylinder. Clean the outside of the cylinder prior to working on it to prevent contamination from entering the cylinder. Secure the cylinder to the floor or a workbench in a vertical position (rod end up).

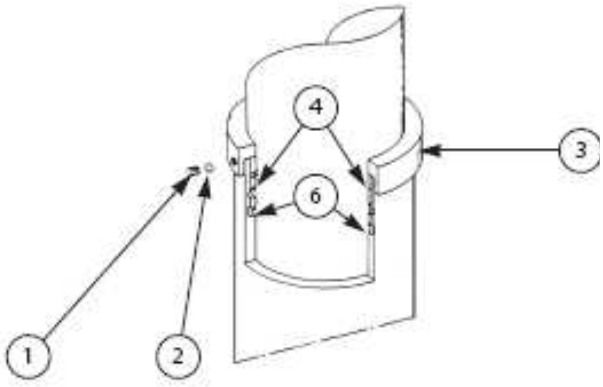
3. Remove the setscrew (1), plastic plug (2) and head nut (3). Insert a long thin screwdriver under the end of the retaining ring (6), prying it out of the groove. Using another screwdriver - place it behind the retaining ring and work your way around the cylinder - prying the ring out of the groove as you go. When you are opposite the starting point, hang one of the clips on the edge of the tube so that the long end of the clip is between the ring and the groove in the cylinder. Continue to use the screwdrivers as "pry bars" and hang the remaining clips. The clips should be equally spaced around the retaining ring.

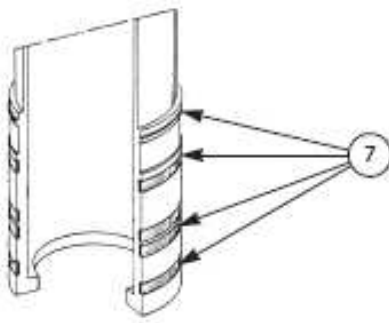
4. Using an appropriate lifting device, raise the tube completely out of the cylinder. The retaining ring (6) will come out with the tube.

5. Clean, inspect and replace the guide and piston rings (7) as necessary. When installing new rings, the ends should be positioned on opposite sides of the tube to prevent leakage.

6. After the tubes have been installed back into the case, the retaining rings (6) should be installed, packings (4) replaced and the head nuts (3) reinstalled.



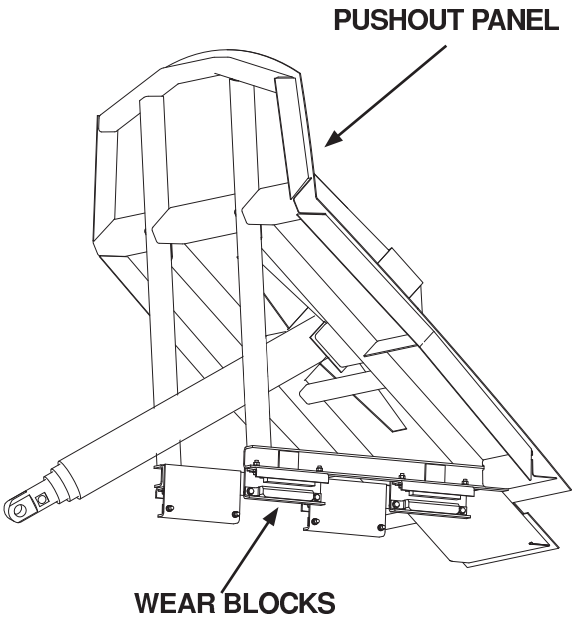




DESCRIPTION OF PUSHOUT PANEL

Refuse is compacted against and ejected from the body by the Pushout Panel. The telescopic system uses one multi-stage cylinder that is attached to the pushout panel approximately half-way up the pushout panel.

During its movement through the body, the pushout panel rides in a trough. The panel rides on replaceable plastic wear blocks that control its movement in the trough and reduce friction.

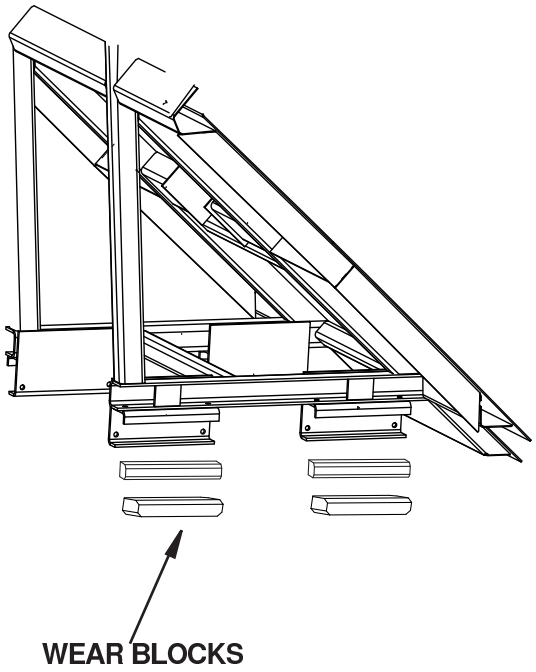


WEAR BLOCK REPLACEMENT

The wear blocks should be replaced before there is metal to metal contact between the pushout panel and trough floor.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Raise the side of the pushout panel (one side at a time) enough to take the weight off the wear blocks. Use a hydraulic jack or pry bar. Support the pushout panel and remove the capscrews, nuts and lock-washers securing the wear block retainers.
2. Slide the upper and lower wear blocks out and replace.
3. Reinstall the wear block retainers and tighten the capscrews.
4. Lower the pushout panel.
5. Repeat this procedure for the ther side.



SERVICE AND REPAIR

REMOVAL OF PUSHOUT PANEL

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Move the pushout lever rearward and position the pushout panel at the extreme rear of the body.

2. Remove the tailgate lift cylinders as described earlier in this section.

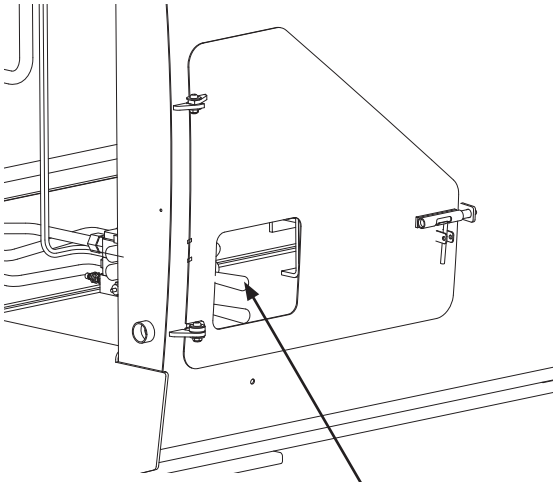
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

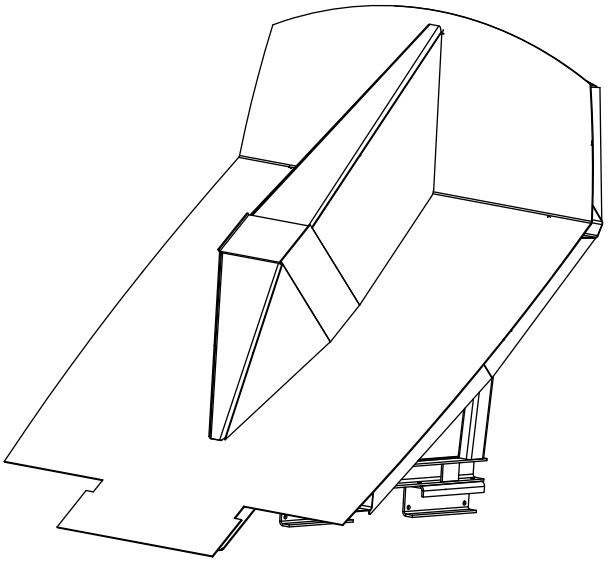
3. Remove the tailgate as described earlier in this section.

4. Disconnect the telescopic pushout cylinder from the pushout panel.

5. Weld an eye to the center of the panel and attach a chain to prevent the panel from tipping over upon removal.

6. The pushout panel can now be removed from the body. The method of removal will depend on the equipment available. Whatever method is used, the equipment must be capable of lifting a minimum of 2800 lbs. (1270 kg.) and the panel should be secured safely to the removal device.





INSTALLATION OF PUSHOUT PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install the pushout panel into the body of the unit.

2. Install the tailgate and tailgate lift cylinders.

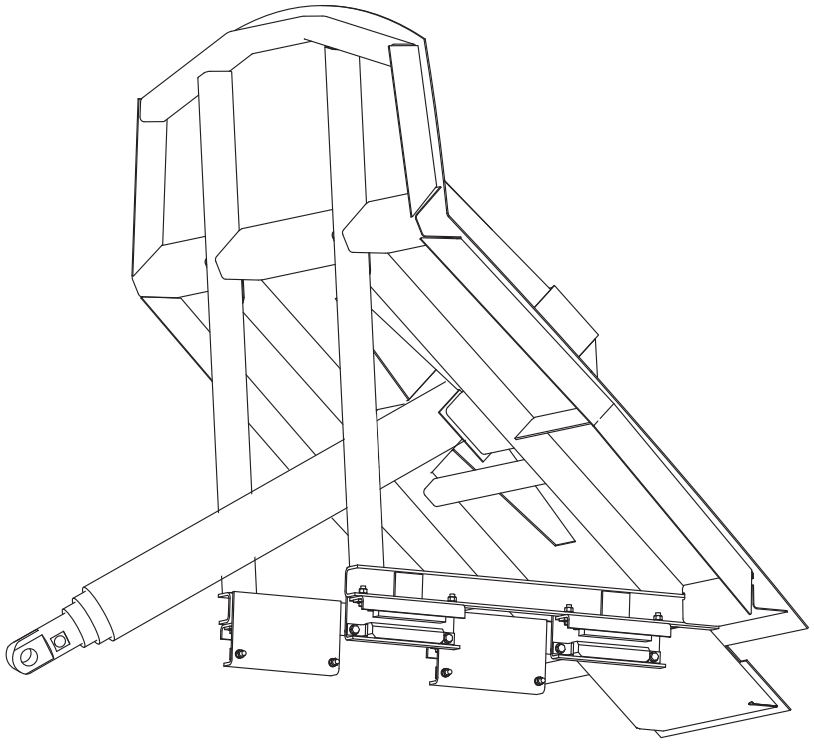
3. Slowly extend the telescopic cylinder until the case end is beneath the crossmember of the pushout panel where the lifting eye is welded.

NOTE:

Do not allow the cylinder to become stuck or wedged while it is being extended.

4. Attach a lifting device capable of supporting 750 lbs. (341 kg.) to the cylinder and the lifting eye welded to the crossmember.

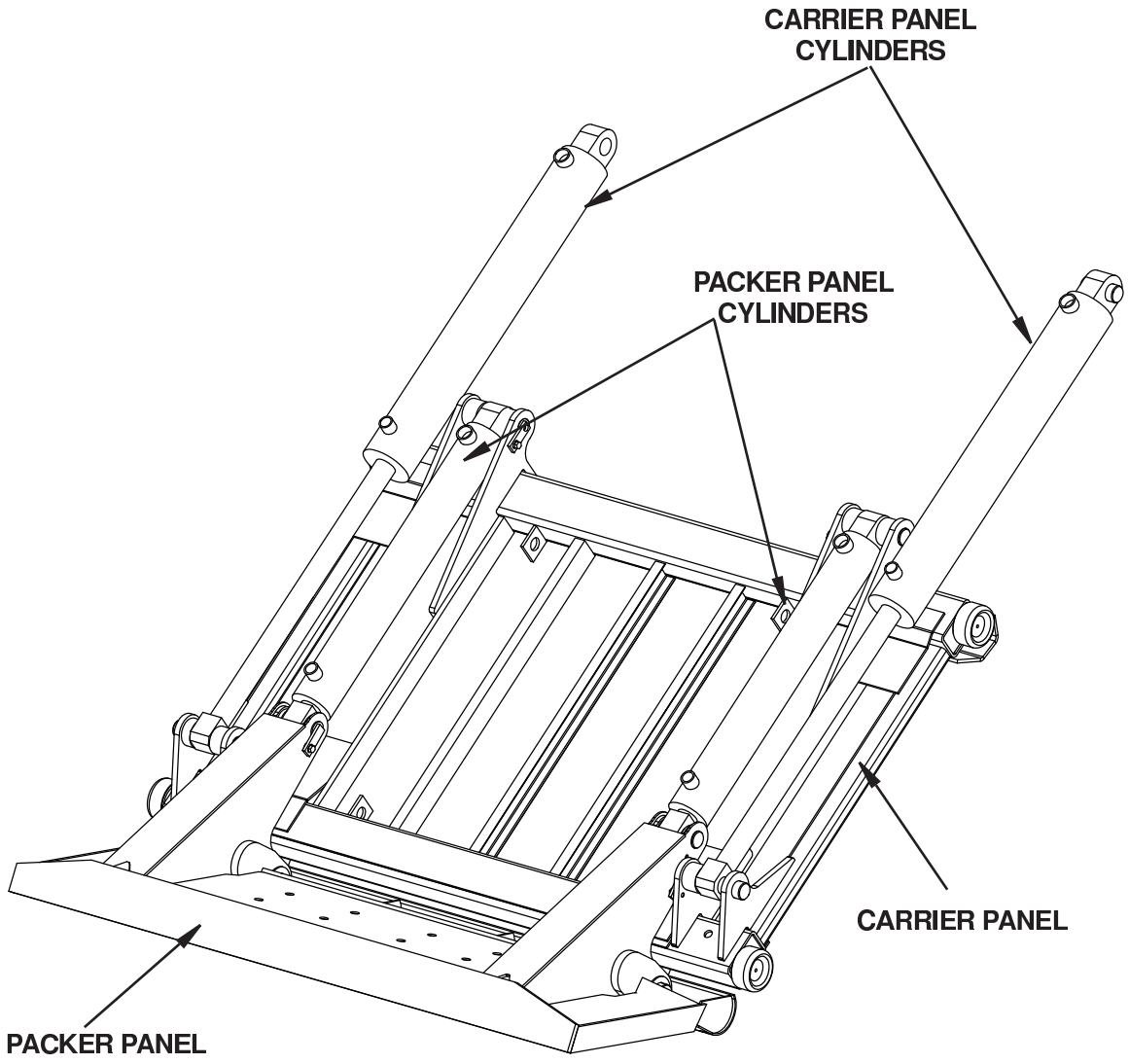
5. Raise the cylinder and slowly extend it until it can be attached to the pushout panel with the bearing clamp halves and nuts.



DESCRIPTION OF CARRIER AND PACKER PANELS

The carrier and packer panels operate as a single unit to sweep the refuse from the hopper and to pack it against the pushout panel. Their movement through the different cycles is controlled by the operating cylinders. The two panels are connected together by pins. Movement of the panels within the body is kept in alignment by the roller assemblies, located at the upper and lower corners of the carrier panel. The rollers ride inside a roller track on each side of the hopper.

This section focuses on some factors that need to be taken into consideration when performing packer/carrier repairs. The packer/carrier assemblies and interrelated components are designed for relatively trouble free use, however they are subject to reduced service life due to the lack of, or ineffective maintenance. Methods of operation other than for which the unit was designed can also affect the longevity of these components.



REMOVAL OF PACKER PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. IF THE CARRIER PANEL IS ALSO TO BE REMOVED; remove all four operating cylinders as described earlier in this section and proceed to step 5.

OR

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

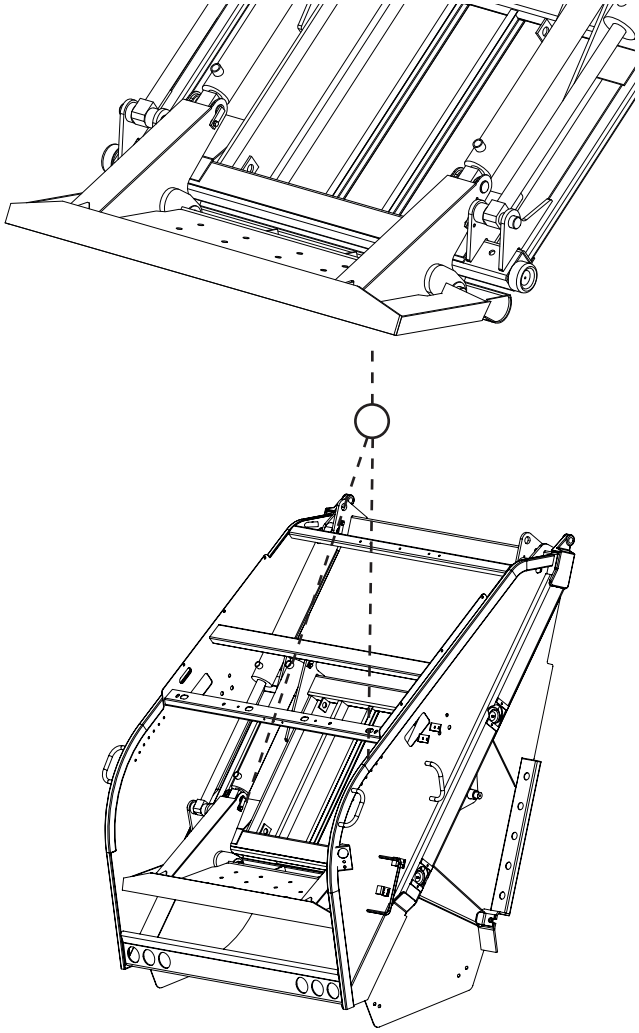
2. IF THE CARRIER PANEL IS NOT TO BE REMOVED; Move the packer panel operating lever inward to bring the packer panel up. When the panel reaches a vertical position, bring the packer panel control lever back to neutral. This will take the pressure off the rod eye when the pin is removed.

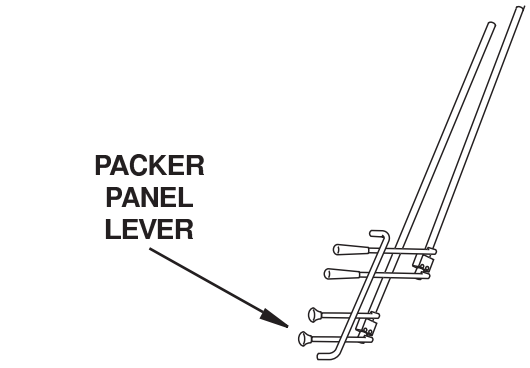
NOTE:
For more information about lifting devices and slings, refer to Sec. 4, GENERAL REPAIR PRACTICES.

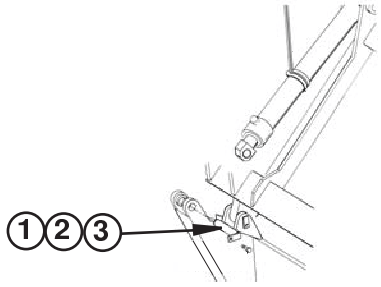
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

3. Remove the capscrews (1), lockwashers (2) and pivot pin (3) from the rod end.

4. Make sure the cylinder weight is securely supported bt the hoist and carefully remove the pivot pin.

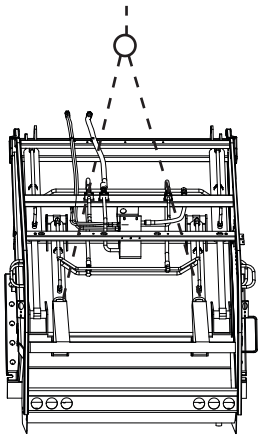






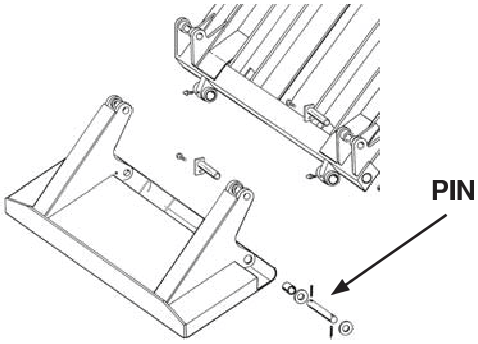
SERVICE AND REPAIR

5. Attach a chain connected to a suitable lifting device, capable of lifting 1600 lbs. (726 kg.) to the packer panel as shown. Operate the lifting device to support the weight of the packer panel without causing strain on the bearing and roller assemblies.



6. Remove the pins that attach the packer panel to the carrier panel.

7. With the pins removed, carefully operate the hoist and lift the packer panel out of the hopper. Use care to avoid damaging the hopper.



INSPECTION AND REPLACEMENT OF PACKER PANEL

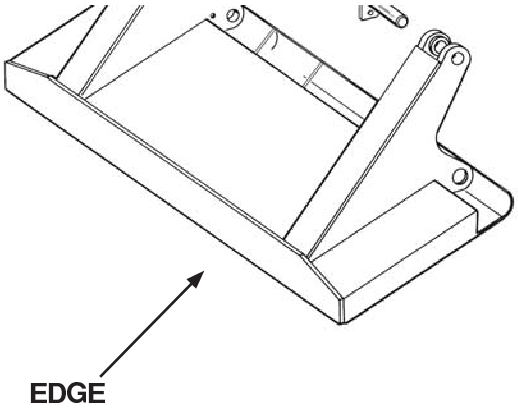
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Carefully inspect all pivot surfaces for excessive or uneven wear, scoring or other damage.

2. Check the panel for broken welds, bent edges or warpage.

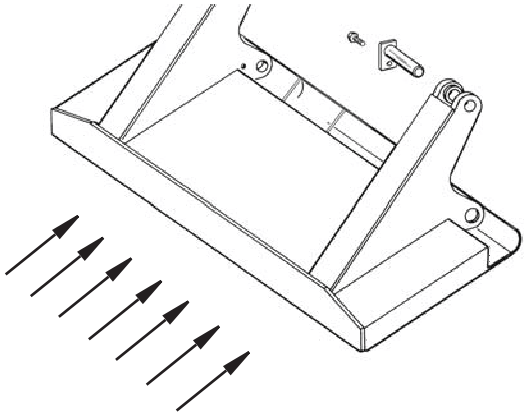
3. Inspect the packer panel edge for damage. Replace a badly worn edge as described below.

4. Replace parts as necessary. (See Sec. 4, GENERAL REPAIR PRACTICES).



REPLACEMENT OF PACKER EDGE

1. Remove the old edge with an air arc gouging tool to obtain a clean cut.
2. Grind smooth the packer panel where the new edge will be attached.
3. Weld a new edge in place.



INSTALLATION OF PACKER PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Install the packer panel in the approximate reverse order of disassembly.

SERVICE AND REPAIR

CARRIER PANEL

The correct method of operation is thoroughly described in the Alpha-III Operator's Manual. Our policy is not to describe the many different ways in which a unit might be incorrectly operated; however in an attempt to provide maintenance personnel with clues that may assist in the diagnosing of a reoccurring carrier/packer panel concern that might be operator induced, we offer the following:

Skimming is a result of the operator interrupting the movement of the packer panel and stopping the packer panel before it rotates perpendicular (90 degrees) to the carrier panel. When the packer panel is not allowed to fully rotate and the carrier is then moved toward the "home" position, a shear load is induced to the lower channel of the carrier panel. The carrier panel lower channel is designed for compression or tension, not shear loads. If the lower channel on the carrier panel cracks , suspect that the unit is being skimmed.

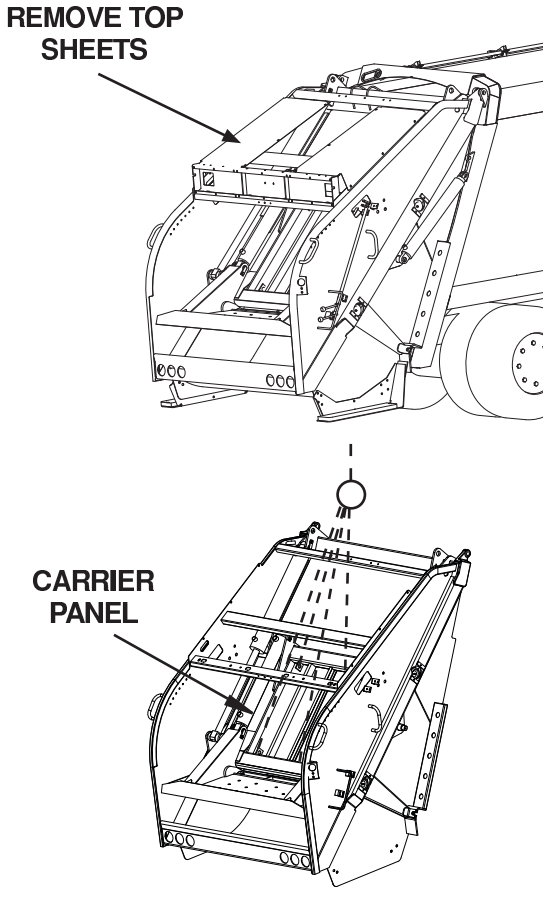
Short cycling is when the carrier panel is stopped before it completely lowers. The operator then attempts to penetrate down through the refuse that is in the hopper with the packer panel. This incorrect method of operation results in much the same kind of failures as skimming because the lower carrier channel is put into a shear situation. This incorrect method of operation will also adversely affect the hopper bottom because the force of the packer panel cylinders is being dissipated down through the refuse and into the hopper structure.

Anytime a repaired area has a repeat failure, suspect that the core problem, whether it is mechanical or operator, has not been adequately addressed.

REMOVAL OF CARRIER PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

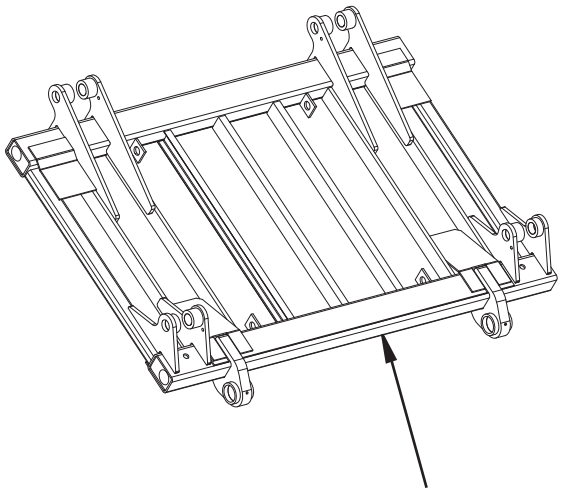
1. Remove top sheet supports for better accessibility.
2. Remove the packer panel as previously described.
3. Remove the operating cylinders as previously described.
4. Remove the tubing to the Main Control Valve (MCV). Cap the lines and plug the ports in the valve to prevent contamination.
5. Remove the carrier panel.



INSPECTION AND REPLACEMENT OF CARRIER PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Carefully inspect all pivot, bearing and roller surfaces for excessive or uneven wear, scoring or damage.
2. Check the panel for broken welds, bent edges or warpage.
3. Inspect the track bar for excessive wear or damage.
4. Replace parts as necessary.



INSTALLATION OF CARRIER PANEL

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

Install the carrier panel in the approximate reverse order of disassembly. Pay particular attention to the installation of roller and bearing assemblies as described earlier in this section.

TRACK BAR REPLACEMENT

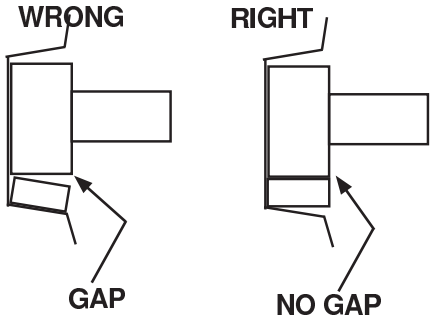
OPERATIONAL STATUS	
Truck Off	PTO Disengaged

NOTE:
Refer to Sec. 4, GENERAL REPAIR PRACTICES for welding instructions.

1. Remove the old track bar and make sure the track channel is smooth and clean.
2. Weld a new track bar in place. The surface of the track bar must be at 90 degrees from the side of the tailgate so the roller will run true.

CAUTION

The Leach track bar is made out of special alloy bar steel. Do not substitute a different steel. It may cause damage to the tailgate.



SERVICE AND REPAIR

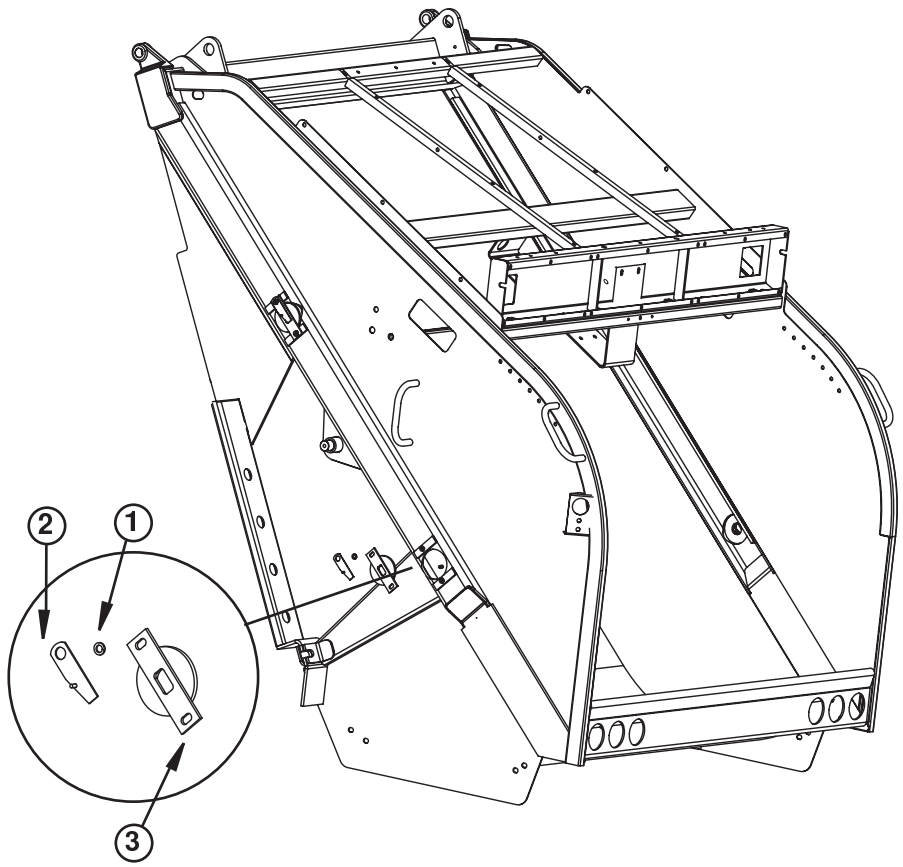
ROLLER REPLACEMENT/SHIMMING

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

1. Shift the control levers and cycle the unit several times while observing the rollers and action of the packer and carrier panels. Watch for sideways movement or twisting to determine where shimming and/or new rollers may be needed.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

2. Remove capscrews, lockwashers, spacers (1) and cover weldments (2 &3) for both upper and lower track holes on each side of the tailgate.



OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

3. Shift the control levers and cycle the panels as necessary to align the upper and lower rollers with the track holes.

NOTE:

If the top roller is removed, first place a wedge between the carrier panel and the partition sheet to take the weight off the roller assemblies. If the bottom roller is removed, support the carrier and packer panel assembly before removing the roller.

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

4. Remove one roller at a time.

5. Replace any roller that is excessively worn, cracked or out of round. Inspect the condition of the track bar.

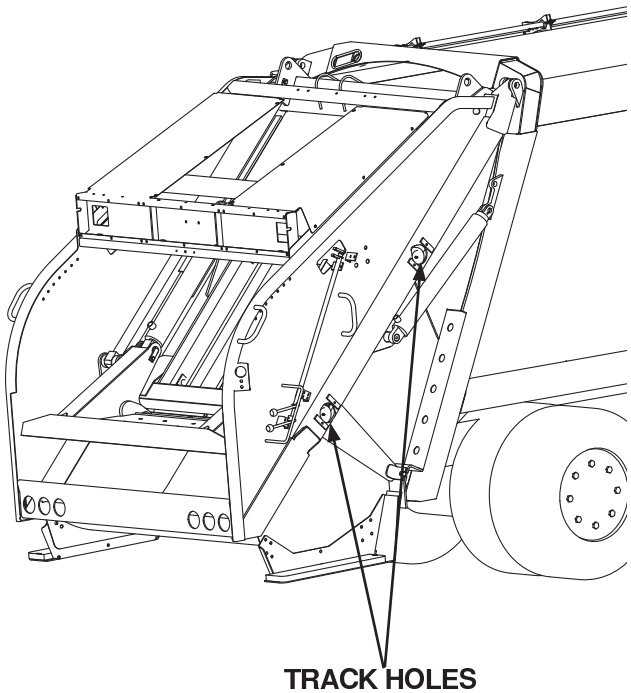
6. Replacement rollers should be installed with the original shims or the same amount of new shims. A grease fitting should be installed in the replacement roller.

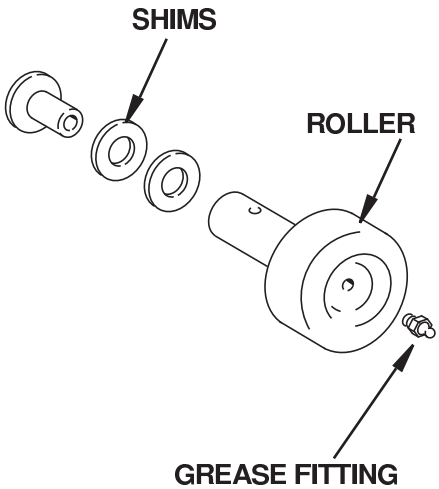
OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

7. Repeat step 1 to determine if additional shims are required.

⚠CAUTION

Do not over shim rollers. Excessive shimming may damage the tailgate walls or wear the track channels.

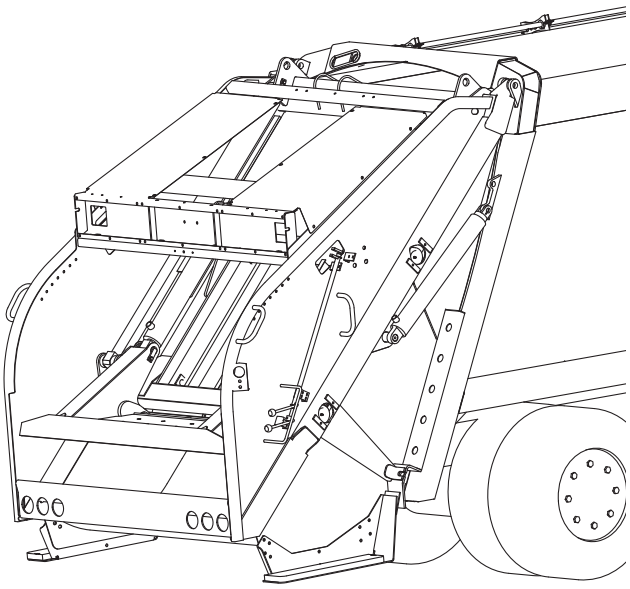


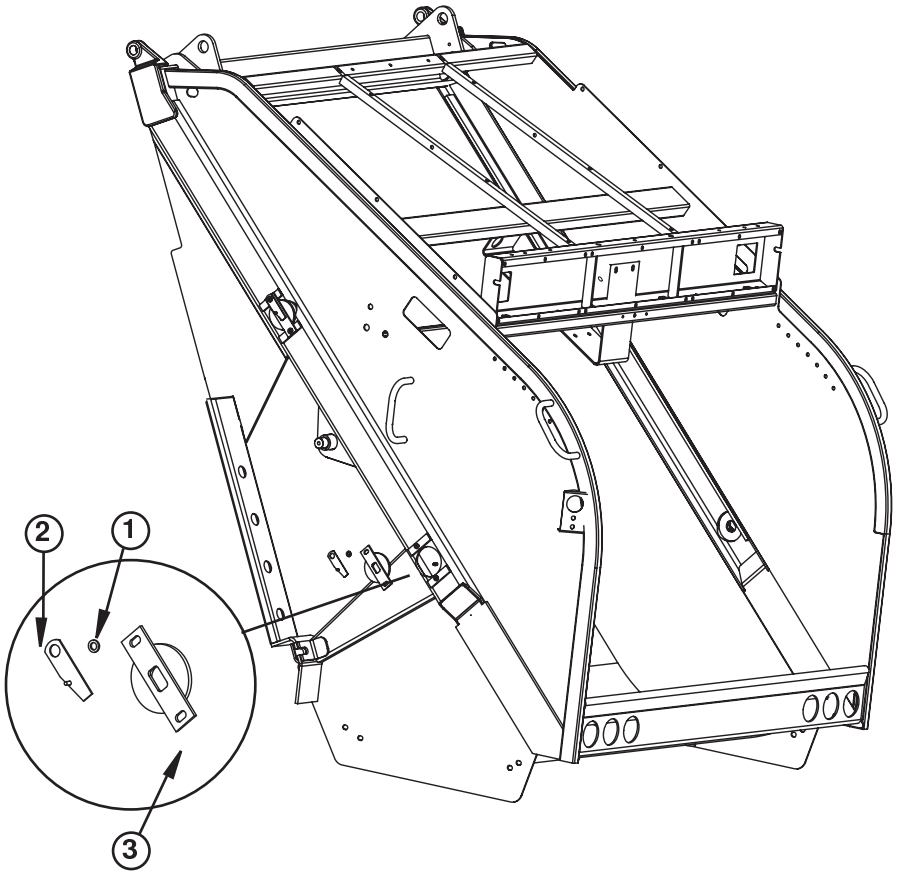


SERVICE AND REPAIR

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

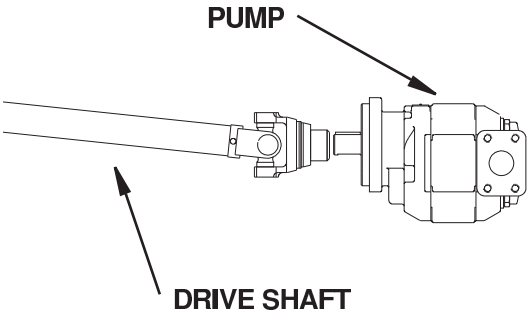
8. Remove the appropriate rollers and add shims as required to obtain smooth operation of the packer and carrier panel. (This may require adding or removing shims and operating the packing lever several times until the correct alignment is achieved).
9. Once alignment is correct, lubricate each roller as described in the LUBRICATION CHART, Sec. 6, PREVENTIVE MAINTENANCE.
10. Using the capscrews, lockwashers and spacers (1) secure the cover weldment (2 & 3) over the four track holes.





DESCRIPTION OF HYDRAULIC PUMP

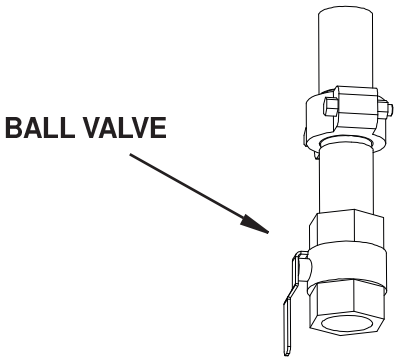
The pump which serves the complete hydraulic system is a gear type, coupled either to the PTO or chassis engine through a yoke arrangement. PTO driven hydraulic pumps will be mounted near the chassis transmission. Front mount pumps will be mounted forward of the chassis cab, behind the bumper.



REMOVAL OF HYDRAULIC PUMP

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

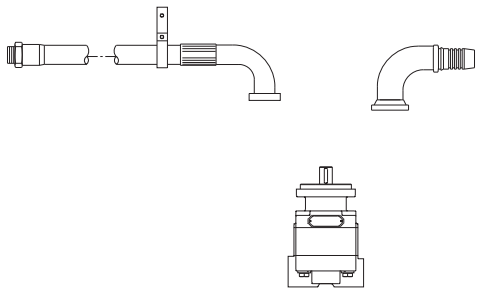
1. Shut the ball valve at the underside of the hydraulic fluid tank.



2. Remove the hose clamp.

3. Remove the pump suction line and allow the fluid to drain.

NOTE:
The pump suction line (tube and hose) will also be filled with hydraulic fluid. The pump and line may be drained into an absolutely clean container and the fluid poured back into the tank.

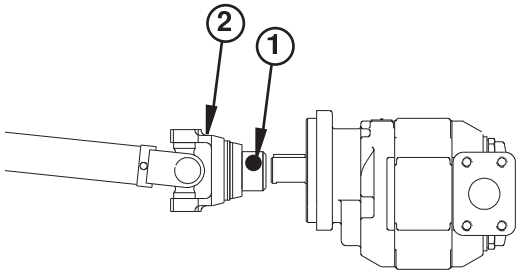


4. Disconnect the pressure hose at the pump and cap the end.

5. Loosen the setscrew (1) and free the yoke (2) from the pump shaft by telescoping the drive shaft toward the PTO or engine.

6. Remove the key from the pump shaft keyway.

7. Remove the attaching hardware. The pump assembly may now be removed from the mounting bracket.



SERVICE AND REPAIR

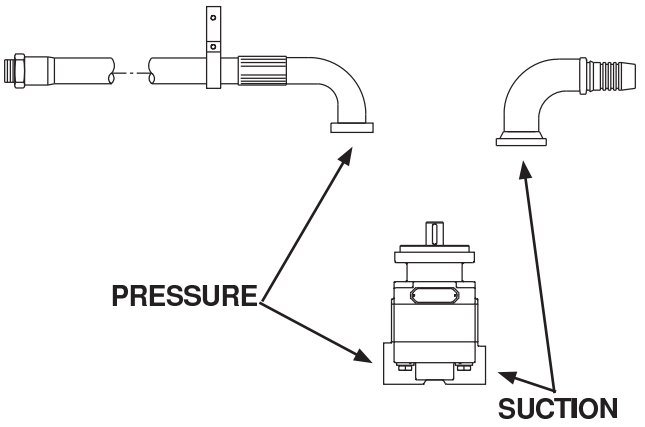
INSTALLATION OF HYDRAULIC PUMP

OPERATIONAL STATUS	
Truck Off	PTO Disengaged

1. Install pump in the reverse order of removal.

NOTE:
The pump suction line (tube and hose) will also be filled with hydraulic fluid. The pump and line may be drained into an absolutely clean container and the fluid poured back into the tank.

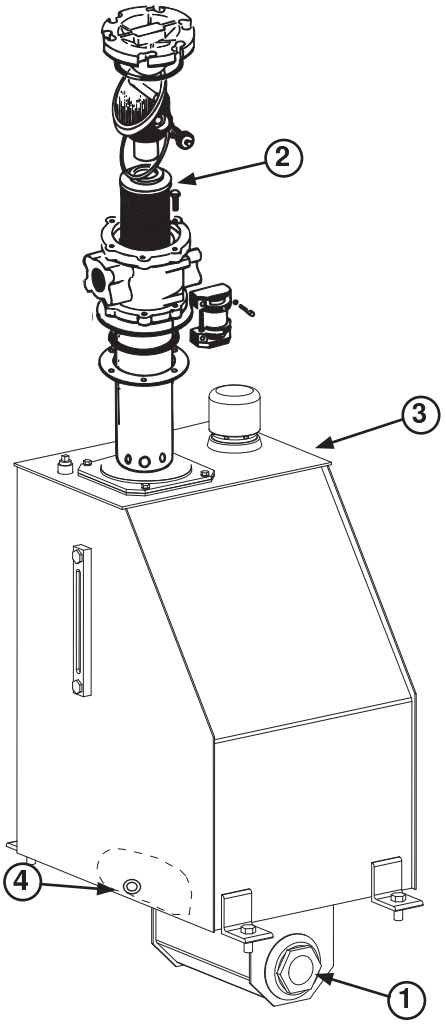
2. Be sure to install any shaft guards that may have been removed.



NEW PUMP PREPARATION

Before installing a new pump, refer to Sec. 6, PREVENTIVE MAINTENANCE and the following. This will prevent contamination of the new pump.

1. Remove and clean the hydraulic strainer (1).
2. Change the filter element (2).
3. Drain and flush the hydraulic tank as described in Sec. 6, PREVENTIVE MAINTENANCE (3).
4. Clean the magnetic ring (4).



TESTING A NEW PUMP

OPERATIONAL STATUS		
Truck Running	PTO Engaged	Speed Up On

After installing a new pump, check for correct cycle time and main line pressure as described in Sec. 7, CHECK-OUT.

DESCRIPTION OF ELECTRICAL SYSTEM

The packer electrical system includes all of the body running and marker lights, operational speed up switches, the operator ready and back-up warning alarms, and all interconnected wiring.

TESTING

To locate a defective component or break in the wiring, perform a continuity check across the between suspected components as described in Sec. 4, GENERAL REPAIR PRACTICES.

SCHEMATICS

Call Labrie Plus to get the electrical and hydraulic schematics .

REPAIR

Repair of the electrical system is limited to the replacement of burned out bulbs and other defective parts or wiring.

INSPECTION

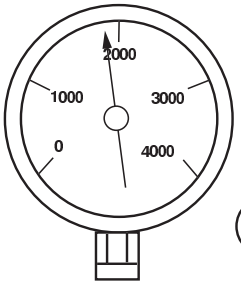
1. Operate all light switches and push button controls to insure that they are operating normally.

2. Check all wiring for breaks, frayed or worn insulation and loose terminal connections.

GENERAL

The Service Tools shown in this section will be required for some service and repair procedures. These tools are available from your local authorized Labrie Environmental Group Distributor.

The actual use of each tool is described in Section 9, Service and Repair, of the appropriate service manual.



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4

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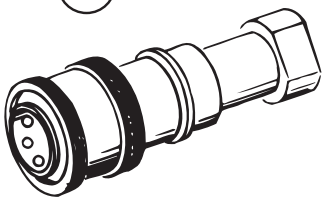

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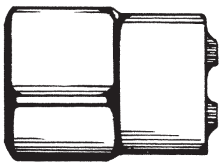

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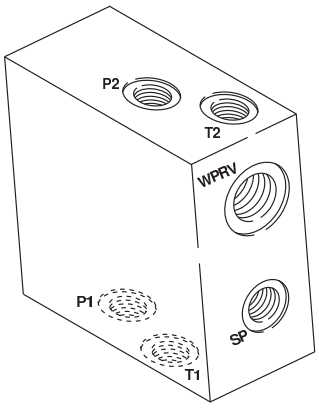

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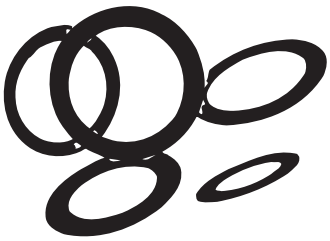

SERVICE TOOLS

NO.	PART NO.	DESCRIPTION	EXPLANATION	UNIT
1	HYJ00900	Pressure Gauge	To measure system pressure	All
2	HYF10219	Snap Connector	Quick coupling for pressure gauges	All
3	HYJ05250	O-Ring Kit	# 4 to # 24 Straight Thread o-rings	All
4	HYJ05190	ORFS O-Ring Kit	# 4 to # 24 ORFS o-rings	All Series III
5	HYO10000	Plunger Tool	Remove/install spring loaded plungers on rear loader container attachments	All
6	HYV50000	Test Block	Test resistance cartridge and circuit relief cartridges	All Series III

labrie*plus*

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Oshkosh, WI 54903-2785

Parts, Service and Warranty
(during business hours
7:00 AM to 7:00 PM Central Standard Time)

Technical Support Service
(24 hours)

ISO 9001 CERTIFIED (2000)

Part # 90350-01