



# RL3

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## OPERATOR MANUAL

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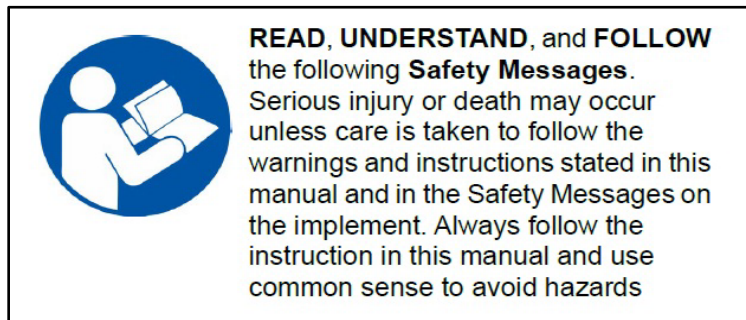
The Petersen Industries RL3 loader truck is intended to load into an attached trailer or load continuously into other vehicles. This loader should never be moved whenever an operator is in the control station. When in transit mode, the bucket needs to be stowed in the trailer body (if pulling a trailer) or stored in the bucket rack if a trailer is not being towed.

When using this loader to load debris into other transport vehicles, be sure to maintain a good line of communication between the loader operator, the transfer-truck driver, and any ground personnel.

## **PART 1: SAFETY PRECAUTIONS**

It is important that all workers understand the safety and operational requirements of the loader as death or serious injury can result from improper use of the loader. It is the operator's responsibility to control the loader with skill, good judgment, and caution. Following all safety procedures helps to avoid accidents, prevent unnecessary damage to equipment, and ensures safety of the crew.

Users of this equipment must be trained by an experienced loader operator who is familiar with all aspects of operation, safety, and maintenance of this loader. Do not allow untrained personnel, even on a temporary basis, to operate this equipment. Always keep children, visitors, and untrained personnel away from the equipment.



### **Training**

It is essential that all operators read and understand this manual. Before using the loader, operators must be trained by an experienced loader operator and be thoroughly familiar with the operation of controls, the correct operating procedures, maximum lifting capacities, and safety precautions of the loader.

The health and safety of each crew member is of primary importance. Consequently, each member has an obligation to all fellow workers to make sure that all safe operating procedures are followed. All operating regulations recommended by the vehicle manufacturer, employer, as well as municipal, state and federal agencies must also be observed. The operating procedures described in this manual are Petersen Industries' recommendations and do not necessarily cover all employer and government regulations. Each operator is responsible for understanding and observing all federal, state, and local regulations pertaining to the operation of this loader.

Each crew member must receive instructions on the proper function of this machine and remain alert to spot any abnormalities or malfunctions. This will help prepare each member to recognize if it is not operating properly.

## Safety Messaging

There are various safety messages throughout this manual which utilize symbols and safety words to call out unsafe practices or conditions. Your loader also has required safety decals that are designed to alert those operating, working around, or performing maintenance on the loader to certain safety hazards. The safety decals are used to show the consequence of human interaction with a hazard in terms of:

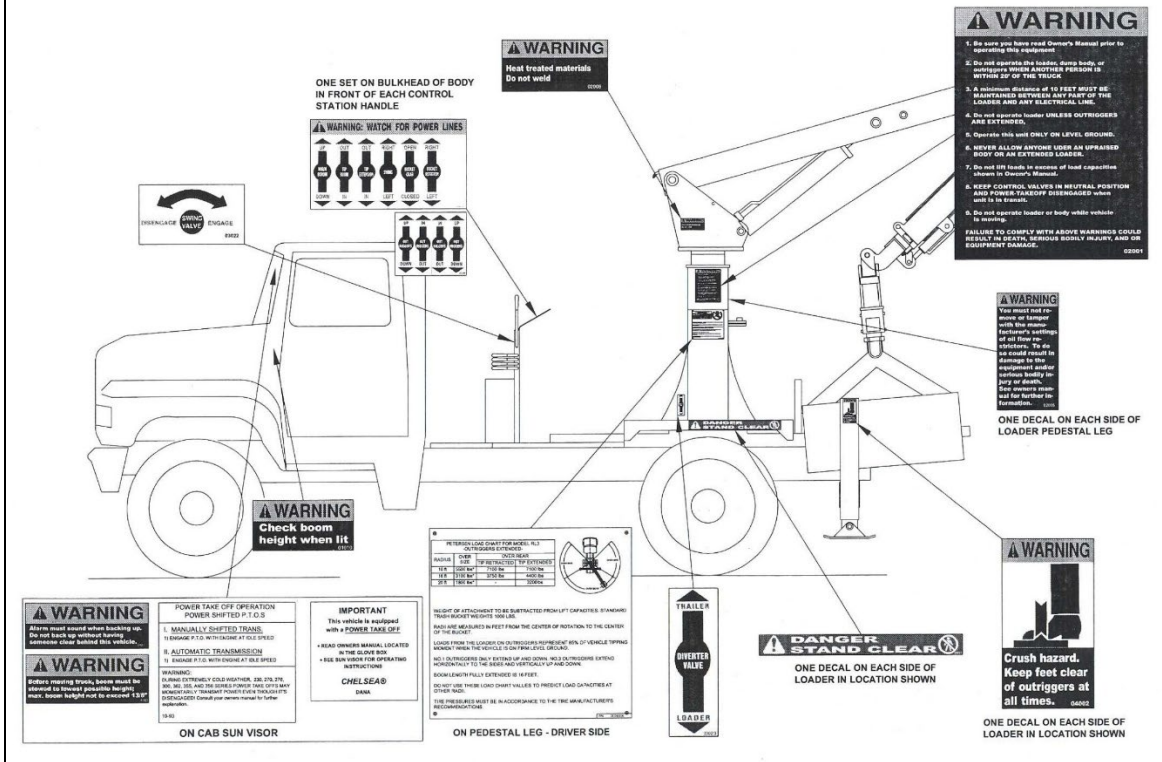
- **The degree of severity**  
MINOR injury, SEVERE injury, or POSSIBLE death
- **The probability of severity**  
WILL result in, COULD result in injury

There are four classifications of safety messages. The severity of each classification is highlighted through signal words, colors, and symbols. Here is each classification of safety message and what they indicate:

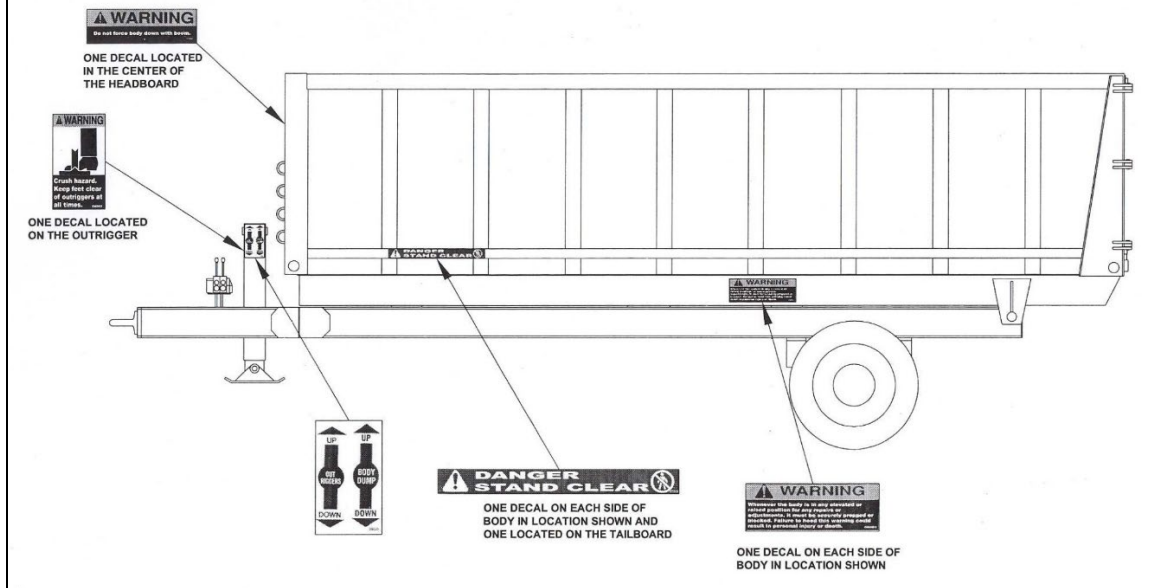
|                                                                                                                                                                                  |
|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
|  <b>DANGER</b>                                                                                  |
| INDICATES AN IMMINENTLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, WILL RESULT IN DEATH OR SERIOUS INJURY.                                                                       |
|  <b>WARNING</b>                                                                               |
| INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, COULD RESULT IN DEATH OR SERIOUS INJURY.                                                                      |
|  <b>CAUTION</b>                                                                               |
| INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN MINOR OR MODERATE INJURY AND PROPERTY DAMAGE. IT MAY ALSO BE USED TO ALERT OF UNSAFE PRACTICES. |
| <b>NOTICE</b>                                                                                                                                                                    |
| INDICATES A POTENTIALLY HAZARDOUS SITUATION WHICH, IF NOT AVOIDED, MAY RESULT IN PROPERTY DAMAGE. ALSO USED TO ALERT AGAINST UNSAFE PRACTICES.                                   |

Watch for any of these placards and use the appropriate steps to ensure your safety, and the safety of those around you during the operation, maintenance, or transport of the loader.

## RL TRASH LOADER - REQUIRED SAFETY DECALS

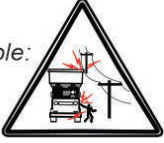
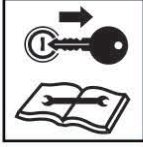


### TRASH TRAILER - REQUIRED SAFETY DECALS

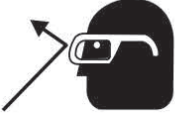


Pictographs are also used throughout this manual to help draw visual attention to safety issues that are to be avoided, or best practices to promote safety while operating the loader. Here are examples of pictographs you will find in this manual.



| SAFETY HAZARD                                                                                                                                                                                                                                             | SAFETY AVOIDANCE                                                                                                                                                                                                                                                                                               | SAFETY PREVENTION                                                                                                                                                                                            |
|-----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| <p>Pictograph surrounded by a triangle indicates a Safety Hazard that must be avoided.</p> <p><i>Example:</i></p>  <p>Equipment contacting overhead electrical lines</p> | <p>Pictograph in a circle or inside a box indicates an avoidance procedure that should be followed to prevent injuries.</p> <p><i>Example:</i></p>  <p>Always shut off engine and remove key before working on equipment.</p> | <p>A circle with a slash through it indicates an action that is prohibited.</p> <p><i>Example:</i></p>  <p>No Smoking</p> |

Always wear protective clothing and personal safety devices issued to you or required by job conditions when operating or working on this loader. Requirements include but are not limited to; wearing a hard hat, safety shoes, goggles, face shield, or safety glasses (with side shields that comply with ANSI Z87 standards), protective gloves, hearing protection, and reflective clothing.

|                                                                                   |                                                                                   |                                                                                   |                                                                                   |                                                                                     |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |  |
| Wear Safety Glasses to Comply with ANSI Z87                                       | Wear Hard Hat                                                                     | Wear Safety Shoes                                                                 | Wear Hearing Protection                                                           | Wear Protective Gloves                                                              | Wear Safety Reflective Vest                                                         |

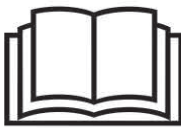
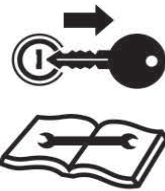
### Key Safety Points:

- Do not operate the loader under any circumstance if there is reason to believe the unit is broken or malfunctioning.
- Never attempt to place the boom of a broken or malfunctioning unit in the body of the loader without assistance from another crane or lifting device.
- Any attempt to use or move the broken or malfunctioning unit could result in serious bodily injury or death.

Crew members should always be prepared for an emergency. Operators should never take another person's word but should always personally check the equipment each day before using the equipment to ensure safe operation.

## Safe Operating Practices

Safe operation of the loader is everyone's responsibility and becomes paramount during the operation of and working around the loader. As the operator, it is your responsibility to ensure your safety, as well as the safety of others. These are some **requirements to ensure safety of the entire crew**:

|                                                                                   |                                                                                   |                                                                                   |                                                                                    |                                                                                     |
|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|  |  |  |  |  |
| Read and Understand Operator's Manual                                             | DO NOT USE DRUGS or ALCOHOL before or while operating equipment                   | Always shut off engine and remove key before working on equipment                 | Always install Debris Body and tail gate props before working under equipment      | Always wear your seatbelt                                                           |

Always maintain three-point contact with the machine during entry and exit of the cab or operator's station. Use provided hand bars and never grab control levers or the steering wheel when mounting or dismounting the machine. Always face the machine when mounting or dismounting and do so only after the truck and all moving parts have stopped moving completely.


**WARNING**

**NEVER WEAR LOOSE CLOTHING OR JEWELRY WHEN WORKING ON OR AROUND THE EQUIPMENT. THESE ITEMS CAN CATCH ON CONTROLS OR BE DRAWN INTO OTHER PARTS OF THE LOADER.**


**DANGER**

**CRUSHING HAZARD AND PINCH POINTS**

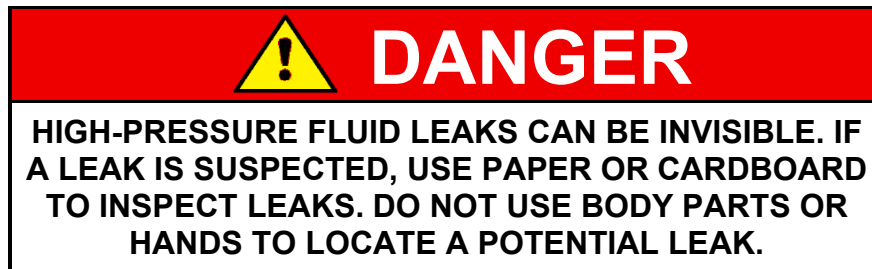


**TO AVOID SERIOUS INJURY OR DEATH:**

- KEEP AWAY from moving machinery parts that can pinch, crush or fall.

## High-Pressure Fluid Safety

Ensure that all hydraulic hoses, lines, and fittings are tight and in good condition and do not operate the loader if there are oil or fuel leaks. Have hydraulic hoses replaced or tested by a qualified service facility if there is a suspected leak.



Keep hands and body away from suspected pin holes in hydraulic lines or any areas ejecting hydraulic fluid. High-pressure hydraulic fluid can be invisible and will impregnate skin. If injured, seek immediate medical attention. The fluid will need to be surgically removed from the body. Failure to seek proper medical attention will result in serious injury or death.

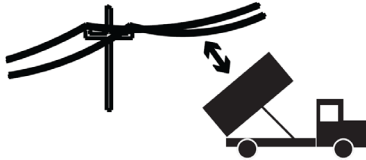
|                                                                                    |                                                                                    |                                                                                     |                                                                                      |
|------------------------------------------------------------------------------------|------------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------|
|  |  |  |  |
| High pressure fluid can erode skin.                                                | High pressure fluid can impregnate skin.                                           | DO NOT use hands to locate hydraulic leaks.                                         | Wear safety glasses & gloves. Use cardboard to locate leaks.                         |

Always disengage the PTO, shut off the engine, and wear appropriate PPE whenever investigating a potential hydraulic leak. Use a piece of cardboard when trying to locate a hydraulic leak. **DO NOT** use your hand, or any other body part.



## Power Lines/Electrical Hazard Safety

Always survey the work site for any potential power lines before performing any function. If power lines are present, follow all requirements for operating mobile equipment around power lines. Extreme care must be used to prevent electrocution. Always ensure that the appropriate power or utility company has de-energized the lines before operating the loader.

|  <b>WARNING</b>                                                                                |                                                                                   |                                                                                     |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------------------------------------|-------------------------------------------------------------------------------------|
|                                                                                                |  |  |
| <p>Contacting power lines will result in death or serious injury. <b>DO NOT</b> allow any part of the machine within 10 feet of power lines or electrical shock can result.</p> |                                                                                   |                                                                                     |

If shutting down nearby power lines is not an option, ask if the utility company can install insulation over the lines for the duration of the time you will be operating in the area. A minimum safe distance of 10 feet must be maintained. Do not allow any team member to approach or carry any conductive object closer than 10 feet to any potentially energized power line.

## **PART 2: DAILY INSPECTIONS**

Daily inspections are a vital step in identifying and limiting potential hazards that might arise from improperly functioning equipment.

### **Prior To Using The Loader Each Day:**

- Perform chassis manufacturer recommended and Class-B, pre-trip inspection of the truck.
- Check the battery terminals for corrosion.
- Check the back-up alarm. The backup alarm **MUST** always sound when the transmission is in reverse (R).
- If the loader is equipped with other alarms or warning lights, check these items for proper operation.
- Visually inspect the PTO support bracket for cracks, damage, or loose fasteners.
- Check the hydraulic system for drops of hydraulic fluid or lubricating oil under the chassis, any outrigger which may have crept down, or any signs of damage or improper maintenance. Hydraulic hoses should be free from cuts and abrasions with no evidence of binding or leakage.
- Ensure that outriggers are retracted and the bucket is resting securely in the bucket rack. If a trailer is attached, make sure the swing (float) valve is disengaged and the bucket is open and resting on the body floor or load.
- Check for proper operation of the LOAD HOLDING VALVES on the main boom cylinder, tip boom cylinder, tip extension cylinder, and each down cylinder on the outriggers.
- Inspect that the LOCK COLLAR is secure and there is no more than 1/4-inch gap between it and the bottom of the spindle bearing housing.

## **NOTICE**

**RL MODEL LOADERS WITHOUT A TOWING PACKAGE WILL NOT BE EQUIPPED WITH A SWING (FLOAT) VALVE OR A TRAILER DIVERter VALVE.**

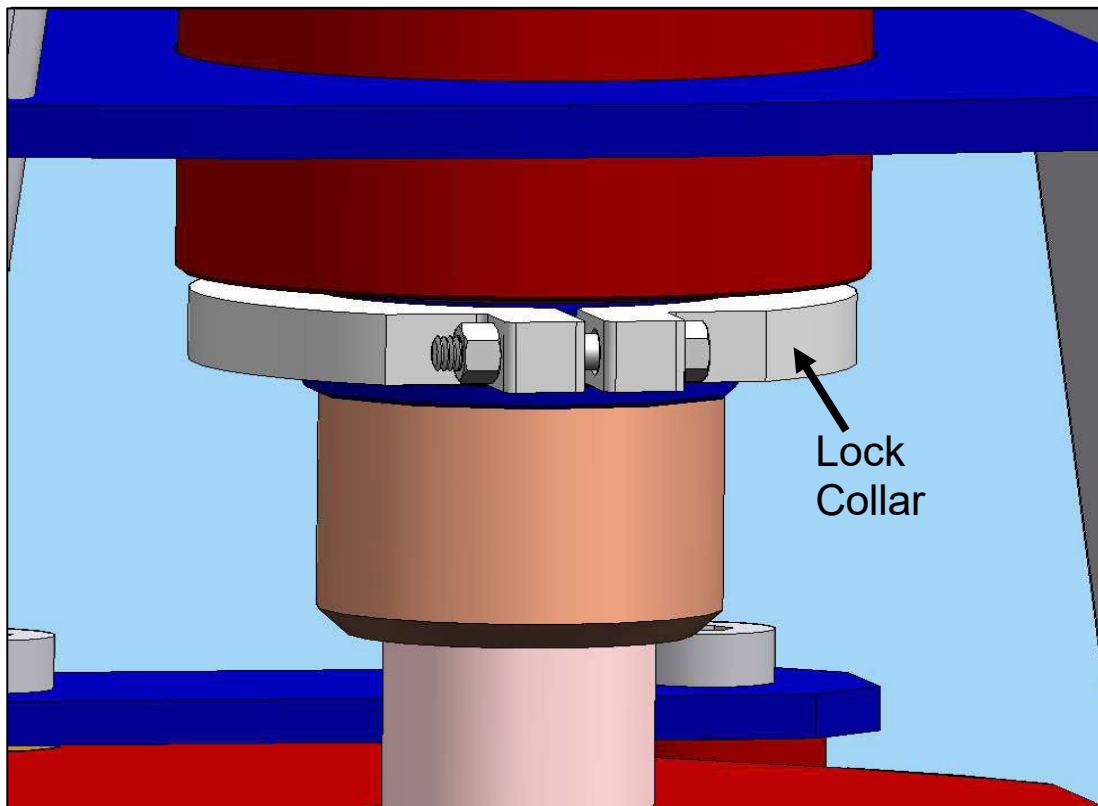
## **PART 3: SAFETY DEVICES**

### **Lock Collar**

The lock collar is an integral component that holds the head and spindle assembly in the pedestal. The lock collar must remain in place and properly torqued during any use of the trash loader. The lock collar must be tight against the bottom of the spindle bearing housing with a maximum gap of one-quarter inch (1/4").

Under normal operating conditions, there is very little load applied to the lock collar. Improper lock collar installation and/or the improper operating practices could result in the head assembly being pulled up, and out of the pedestal assembly. The separation of these two loader components will result in equipment damage and could result in serious personal injury or death.

Maintenance and shop personnel **must continuously check** for signs of abuse and corrective measures taken if there is evidence of abusive and/or unsafe loading practices.



## **WARNING**

**DO NOT OPERATE THE LOADER UNDER ANY CIRCUMSTANCE IF THERE IS REASON TO BELIEVE THE UNIT IS BROKEN OR MALFUNCTIONING. ANY ATTEMPT TO USE OR MOVE THE BROKEN OR MALFUNCTIONING UNIT COULD RESULT IN SERIOUS BODILY INJURY OR DEATH.**

## Load-Holding Valves

The load-holding valves are plumbed directly onto the **main boom lift cylinder**, **tip boom cylinder**, **tip boom extension cylinder**, and the **outrigger down cylinders**. They are designed to hold hydraulic pressure in the cylinder to support the load. They only allow the load to be lowered when sufficient hydraulic pressure is applied to the release port of the valve. These safety features provide hose rupture protection as well as prevent leak-down whenever the control valves are approaching the end of their service life.

To test the function of a specific load-holding valve, raise the component that is moved by a given cylinder (the main boom for example) so that there would be room for gravity to lower the component. Then, with the PTO off, attempt to move that component with its joystick, foot pedal, or lever. If the load moves, the load-holding valve is not working properly. Perform this test daily for each cylinder listed above.



The main boom and tip boom cylinders have load-holding valves for the extend direction only, whereas the tip boom extension cylinder has load-holding valves for both directions of movement. Test each direction of the tip boom extension cylinder with the tip boom angled so gravity would cause the load to move if the valves were not present.

To test each outrigger cylinder's load-holding valve, extend the outrigger foot pads down until the outriggers noticeably raise the loader. This will make it noticeable if the cylinder allows the loader to lower during the PTO-off test.

## Back-Up Alarm

All loaders have a back-up alarm that must sound when the gear selector is in Reverse (R). The back-up alarm is to be checked daily. If the alarm is not working, it must be repaired before putting the vehicle into service. Always honk horn as a warning before moving loader and use a spotter if you do not have a clear view of the area behind the loader.

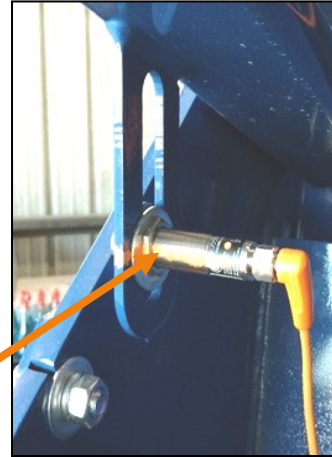
## Boom-Up Alarm

All truck-mounted loaders have a warning system to alert the loader operator when the boom is not stowed properly. The system consists of a sensor installed on the boom and an audible alarm and red light installed in the truck cab. This system is designed to warn the loader operator when the boom is above the safe height for travel. **It is not to replace an operator's good judgment on safe travel height of the boom according to surrounding conditions.**

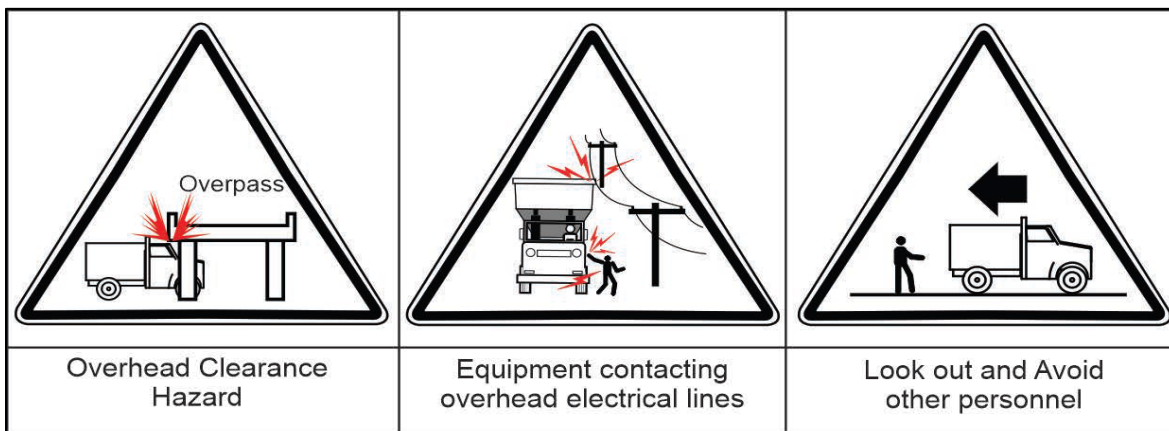


The boom-up alarm may have a round dial attached to the light, which can be turned to adjust the audible alarm.

The boom-up light will illuminate if the sensor passes the head side plate.



Operators should always be aware that some routes may have streets, roads, alleys, etc. that have overhead obstructions below the current set point of the boom sensor and should conduct their operations accordingly. It is the operator's responsibility to be aware of all potential operating hazards and to take every reasonable precaution to ensure their safety, as well as the safety of other people, animals, and property. Look out and avoid other personnel, machinery, and vehicles in the area. **DO NOT** operate the loader if pedestrians or untrained people are within 30 feet of the active job site.



## **PART 4: CONTROLS**

The loader control station is designed to provide the best view of the working area and ensure the highest possible safety for the operator. Do not alter or modify any of the loader's control systems and any malfunctioning components should be repaired immediately.

The optimum and safest method of operating the loader controls is by feathering the input of each function. Do not jerk a control lever to full speed or from one extreme to the other. Activate the controls by moving the joystick or foot pedal smoothly from the neutral position. After a slow, smooth start, then continue to move the joystick control further to increase speed. Just before stopping any movement, reverse the procedure, moving the joystick control smoothly back to the neutral position.

Placards show the specific movements of controls for each function according to the type of controls installed on the loader. The loader control placards indicate the direction to move the control handles for various functions such as boom elevation, boom swing, tip boom elevation, tip boom extension, bucket grab, bucket rotation, and body dump. The outrigger placard gives visual instructions for horizontal outrigger (in/out), and vertical (up/down) functions.

### **Power-Take-Off (PTO) Switch**

The PTO switch is located on the dashboard in the cab of the truck. The recommended procedure for engaging the PTO is to bring the vehicle to a full stop, place the vehicle's transmission into Neutral (N), set the parking brake, and then engage the PTO switch. At the completion of loading operations, turn off the PTO switch, apply the service brakes, disengage the parking brake, and then select the appropriate transmission gear.

## **NOTICE**

**HIGH ENGINE RPM EXPERIENCED DURING ACTIVE, STATIONARY REGEN MAY PREVENT PTO ENGAGEMENT. TO TEMPORARILY LOWER ENGINE RPM DURING REGEN, DEPRESS THE BRAKE PEDAL SLIGHTLY, THEN ATTEMPT TO ENGAGE THE PTO.**

### **Throttle-Up Switch**

There is a push/pull-type throttle-up control switch to permit the operator to easily increase the loader's engine speed for most efficient loading or decrease it whenever the loader is at rest. This allows for better communication with a fellow crew member, for example. Pulling out the switch activates the throttle-up function, raising the engine's speed. Pushing in the switch lowers engine speed to allow better communication with crew members.

Always use the throttle-up function to increase engine speed when using the loader. The throttle-up feature is dependent on the in-cab PTO switch being activated. If the loader does not respond to control input and the engine speed does not increase when the throttle-up switch is activated, check that the in-cab PTO switch has been engaged.



## Horn & Emergency Engine Shut Off

On the same console as the throttle-up control, there are two momentary push buttons. One operates the horn and the other for activating the emergency engine shutoff in the case of an emergency.

## Parking Brake

The parking brake must be set before leaving the cab for any reason. To set the parking brake, use the truck's service brakes to bring the loader to a stop. Then, put the truck's transmission in Neutral (N) and apply the parking brake. Always have the truck's service brakes applied before removing the parking brake to prevent unintentional rolling once the parking brake is released.

## Diverter Valve

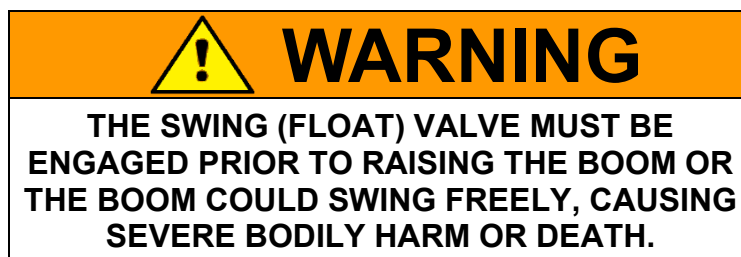


RL loaders with the trailer towing package will have a diverter valve to switch between operation of the loader and operating the dump or jackstand functions of the trailer being towed. Just like the loader, using the trailer's hydraulic system requires the truck's PTO be engaged during the operation.

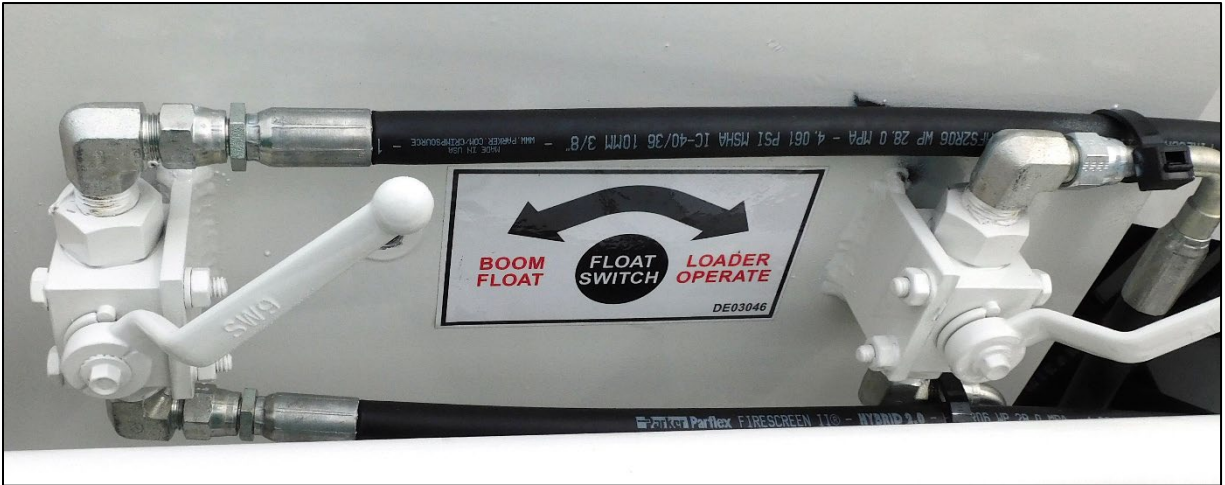
The valve would be set to the "LOADER" (down) position to operate any of the loader functions from the operator's station, such as the boom, bucket, or outriggers. Placing the valve in the "TRAILER" (up) position allows use of the trailer-mounted controls to raise or lower the trailer body or the jackstand.

## Swing (Float) Valve

Loaders equipped with the trailer towing package will also feature a swing (float) valve to allow the boom to be controlled using hydraulic power, or to "float" without hydraulic resistance. Using "float" mode should ONLY be used when the boom is stored and resting inside of the trailer body for transport. It is designed to allow the main boom assembly to move with the tow trailer when stowed inside the trailer. Loaders can either utilize toggle handles or an operator's-cab-mounted electric switch to control the float valve function.



The float valves must always be set to "Loader Operate" whenever the bucket is not stowed in a trailer. Traveling with the bucket stowed in the trailer, the valves, or switch, should always be set to the "Boom Float" position. This allows the main boom assembly to move freely with the trailer during travel.



*Boom Float Valves (Swing & Lift Functions)*

Failure to stow the boom and bucket properly could result in hydraulic actuator damage or could allow the boom to slew (swing) and the bucket to fall outside of the body. Loss of boom control with the bucket outside of the dump body could result in damage to objects in the vicinity of the grapple truck, and/or serious injury or death to people in the vicinity of the grapple truck.

### **Operator Station Controls**

The RL3 can be ordered with one of several different operator control station configurations and control input devices including **mechanical levers**, **Quadstick®**, or **pilot hydraulic** joystick controls. For each configuration, the layout of the loader control station is designed to provide the best view of the working area and ensure the highest possible safety for the operator. Do not alter or modify any of the loader's control systems and it is the operator's responsibility to have any malfunctioning components repaired before continuing to use the loader.


WARNING

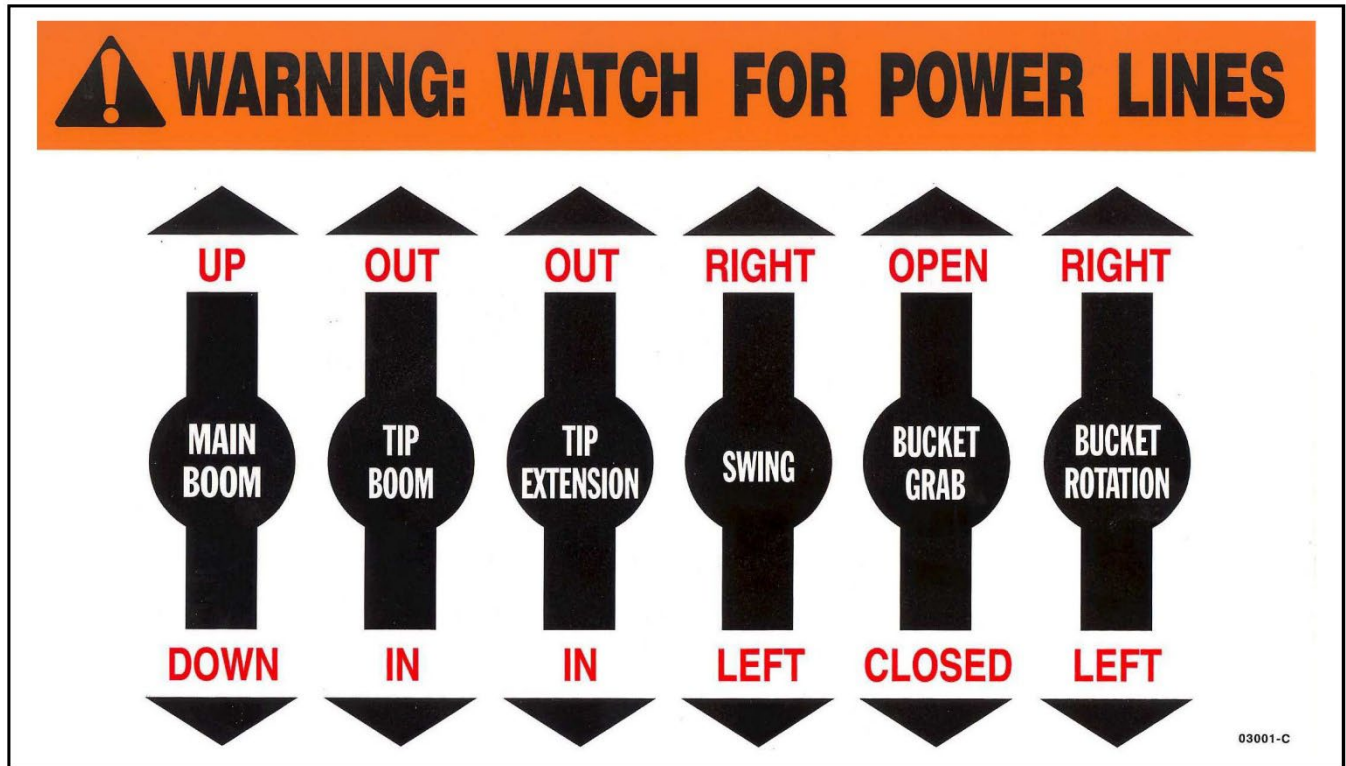
**KEEP ALL PARTS OF THE LOADER AT LEAST 10 FEET AWAY FROM ANY POWER LINES. USE CARE THAT THE LOADER AND DEBRIS DO NOT ENDANGER PERSONNEL, CONTACT THE BODY OF THE LOADER OR NEARBY STRUCTURES.**

The optimum and safest method of operating the controls is by feathering the input of each function. Begin each function by moving the control lever smoothly from the neutral position to start a motion. After a slow, smooth start, move the handle further to increase speed, if needed. Move the handle smoothly back to the neutral position to end any function. Do not jerk a control lever to full speed or from one extreme to the other, which imposes undue shock loads on the equipment. Placards show the specific movements of controls for each function according to the type installed on the loader.

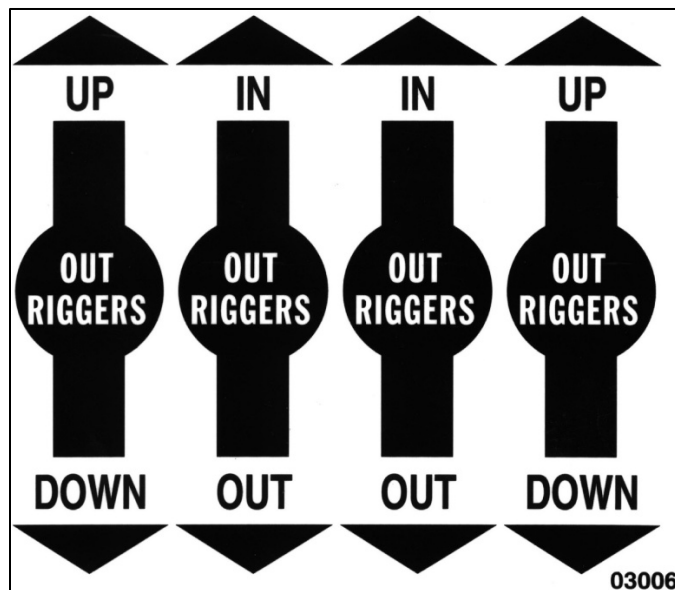
## Mechanical Lever Controls

Both seated, and Dual-Walk-Through (DWT) control stations are available with mechanical levers for controlling loader functions. In both instances, pulling or pushing each lever operates a certain function.

For DWT-equipped loaders, the lever configuration will be the same at both work stations of the platform. There will also be four outrigger handles mounted beneath the other levers. Each lever controls a specific function (In/Out/Up/Down) for a particular outrigger.



*DWT Boom & Bucket Mechanical Lever Control Configuration*



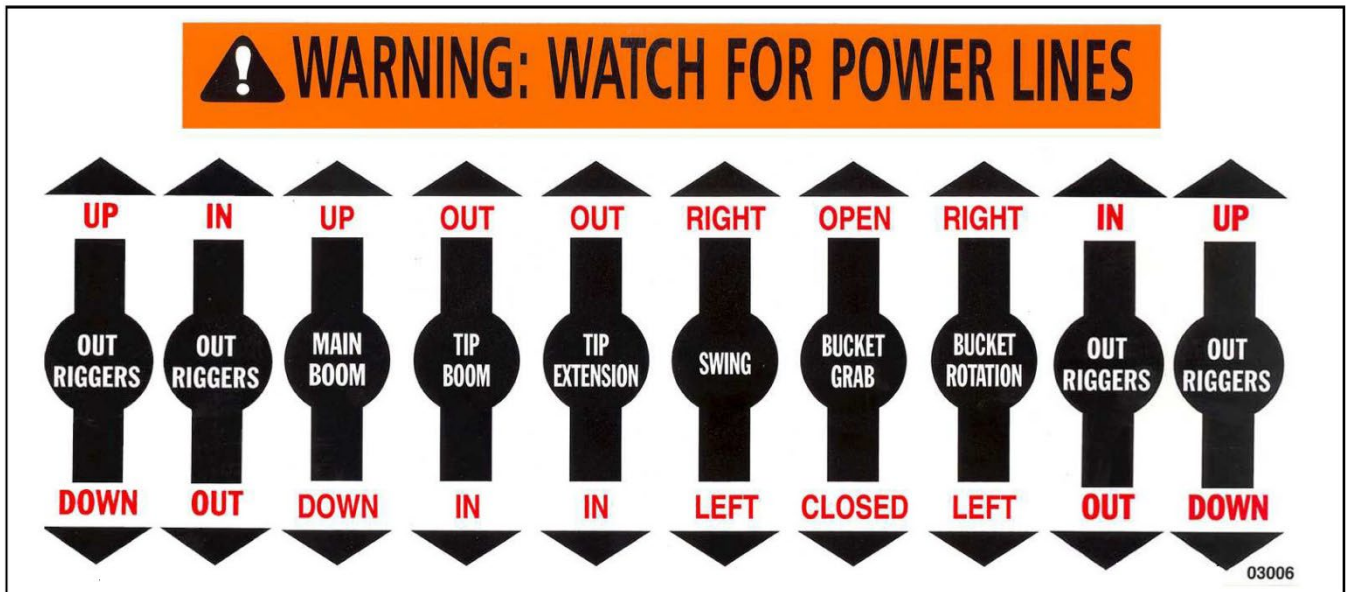
*Outrigger Control Levers*



Seated control stations (side-mounted or stationary-mounted) on loaders equipped with standard controls will have a set of levers directly in front of the seat with which to control loader functions.

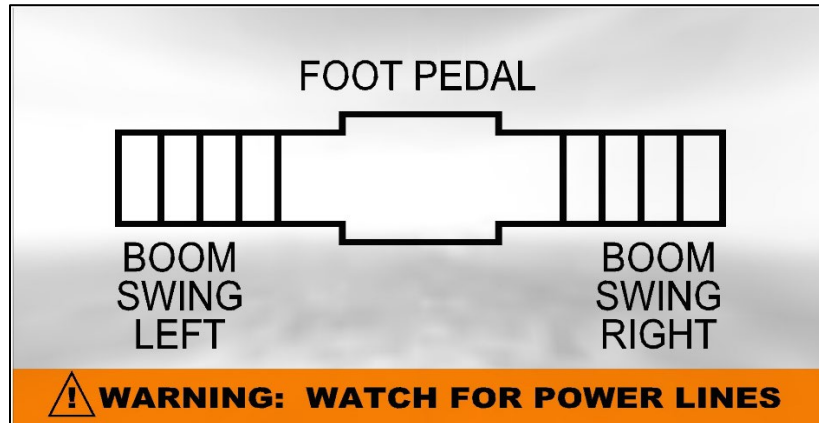


Outrigger functions are controlled by the two levers located on the operator's left or right side. The boom swing function can be controlled by either a lever within the row of control levers, or by a foot pedal, as shown in the above photo. If boom swing is lever-controlled, it will be shown on the control lever decal within the operator station. If swing is pedal-operated, there will be a separate decal to indicate the direction of input for each direction.



*Seated Lever Control Decal W/Boom Swing & Outrigger Controls*

For foot-pedal boom swing loaders, pressing to the left side of the pedal swings the boom to the left. Depressing the right side of the pedal moves the boom assembly to the right. Always use care not to step on the pedal inadvertently to prevent accidental movement of the boom assembly.



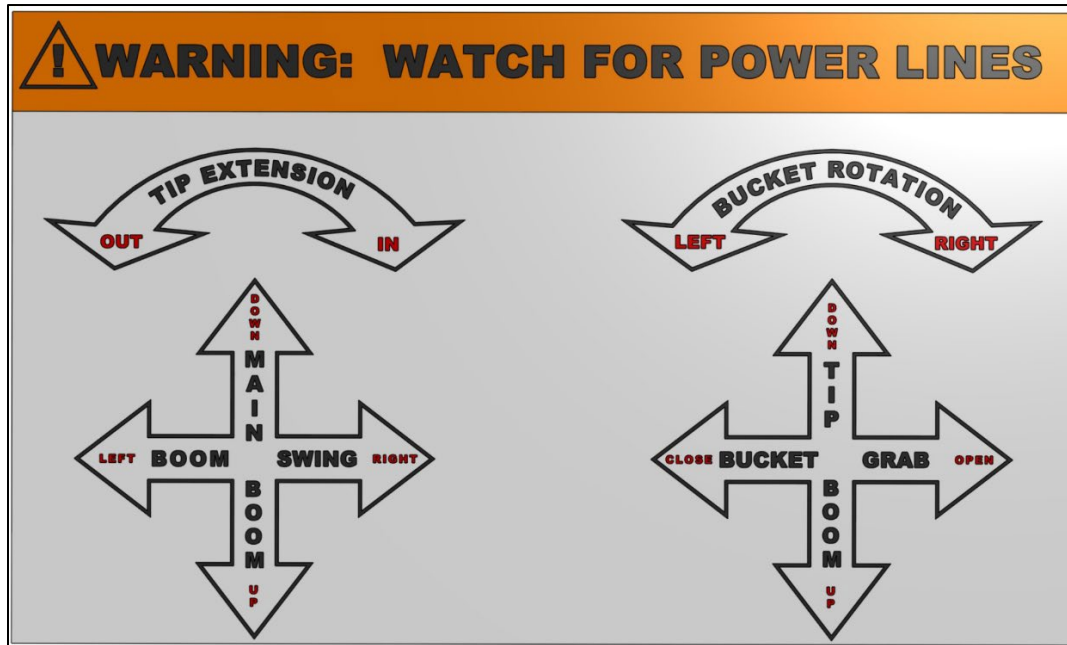
*Boom Swing Foot-Pedal Decal*

## Joystick Controls

If the loader is equipped with Petersen's six-function joystick configuration (available in either top-seat or dual-walk-through "Quadstick"-style loaders), the function of each joystick will be indicated on a decal within the operator station. Inputs remain the same for both operating stations of DWT-equipped loaders and there will be a separate set of controls for the outriggers.



*Top-Seat Joystick Control Functions*



DWT Quadstick Control Functions

**LEFT JOYSTICK**

- Main Boom** Pull the joystick **BACK** to raise the boom.  
Push the joystick **FORWARD** to lower the boom.
- Boom Swing** Move handle **RIGHT** to make boom swing right.  
Move handle **LEFT** to make boom swing left.
- Tip Extend** Rotate handle **COUNTERCLOCKWISE** to extend.  
Rotate handle **CLOCKWISE** to retract.

**RIGHT JOYSTICK**

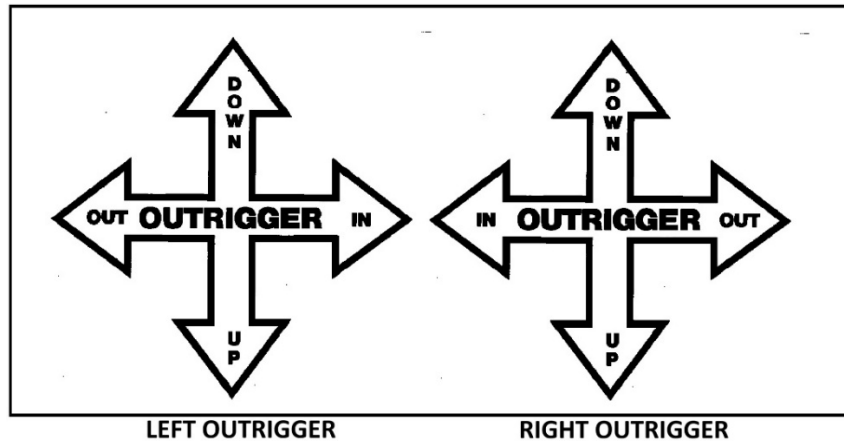
- Tip Boom** Pull handle **BACK** to raise tip boom.  
Push handle **FORWARD** to lower tip boom.
- Bucket Grab** Move handle to **RIGHT** to open bucket.  
Move handle to **LEFT** to close bucket.
- Bucket Rotate** Twist handle **CLOCKWISE** to rotate bucket right.  
Twist handle **COUNTERCLOCKWISE** to rotate bucket left.

Some top-seat RL-model loaders with joystick controls might utilize a foot pedal to control the boom swing. **NOTE:** Do not store any items on the floor of the operator's station, as anything can create a tripping hazard or become lodged in the foot pedal assembly.



## Outriggers

DWT loaders will have two control handles at the center of the work platform. The handle on the left controls the left outrigger's in/out/up/down functions while the right handle controls the same functions for the right outrigger.



### LEFT OUTRIGGER HANDLE

Move the handle to the **LEFT** to extend the left horizontal outrigger.

Move the handle to the **RIGHT** to retract the left horizontal outrigger.

Push the handle **FORWARD** to lower the left vertical outrigger foot.

Pull the handle **BACK** to raise the left vertical outrigger foot.

### RIGHT OUTRIGGER HANDLE

Move the handle to the **RIGHT** to extend the right horizontal outrigger.

Move the handle to the **LEFT** to retract the right horizontal outrigger.

Push the handle **FORWARD** to lower the right vertical outrigger foot.

Pull the handle **BACK** to raise the right vertical outrigger foot.

For top-seat equipped loaders, there is a lever on each side of the seat to control the up/down motion of each outrigger on the corresponding side of the loader. The left lever operates the outrigger on the driver's (street) side, and the right lever operates the passenger (curb) side outrigger.

### **Safety information regarding outriggers:**

- Always keep feet clear of outriggers to avoid serious crushing injury.
- Failure to use the outriggers when loading may create an unstable condition which could result in the loader overturning and cause serious injury or death.
- Provide blocks, if necessary, to level the unit on sloping ground or bearing pads if the outriggers tend to sink into soft terrain.
- Some concrete surfaces are relatively thin and cannot withstand outrigger loading. Thin concrete can break apart and cause instability while loading.

## **PART 5: SETTING UP AT THE JOB SITE**

Safely positioning the vehicle is an important first step at the job site. Plan the lift and seek the best possible work site before positioning the vehicle. A firm and level surface near the debris being loaded is an ideal location. Avoid uneven, rocky or muddy terrain, or steep grades. The location should be selected such that outriggers can be fully extended horizontally with the outrigger pads landing on a firm surface.

If it is necessary to use the loader on an inclined surface, extreme care should be used, as loader slewing torque, stability, lifting capacity, and other functions may be affected adversely. Increased caution must be exercised with the swing function since an inclined surface will increase the downhill slewing speed and, as a result, lengthen the time it takes to stop the motion.

If possible, the truck should be positioned in an area free from overhead obstructions which allows performance of the entire task without repositioning. The operator must be familiar with the swing arc of the loader and position the truck so that the load is well within this arc.

### **Precautions and Procedures for Loading:**

- Before leaving the cab, engage all safety lights, place the transmission in neutral, and set the parking brake.
- Use extreme care and consider using safety cones to mark the outriggers when operating around traffic. Use safety cones to mark the vehicle if the truck interferes with traffic flow or conditions make the vehicle not easily visible.
- Before commencing work, make sure the debris you are going to load does not conceal any fixed objects, such as fire hydrants or guy wires.
- Ensure it is impossible for any portion of the loader to come within 10 feet of any power line. **NOTE:** power lines deflect in wind, and additional clearances may be necessary.
- Do not operate the loader during electrical storms, when high wind conditions exist, or in poorly lit conditions.
- Do not operate the loader if another person, other than the operator, is within 30 feet of any moving part of the loader or debris.
- Do not allow anyone under a raised boom, bucket, or debris at any time.
- When accessing the control station, use the provided handholds and steps; and face the steps when getting on and off. Never use controls as handholds. If handholds or steps are broken or missing, have them repaired before using the loader.
- Do not attempt to lift more than the capacities shown on the [LOAD CHART](#) for a given radius. Refer to the Load Capacity Chart riveted to the pedestal of the loader.

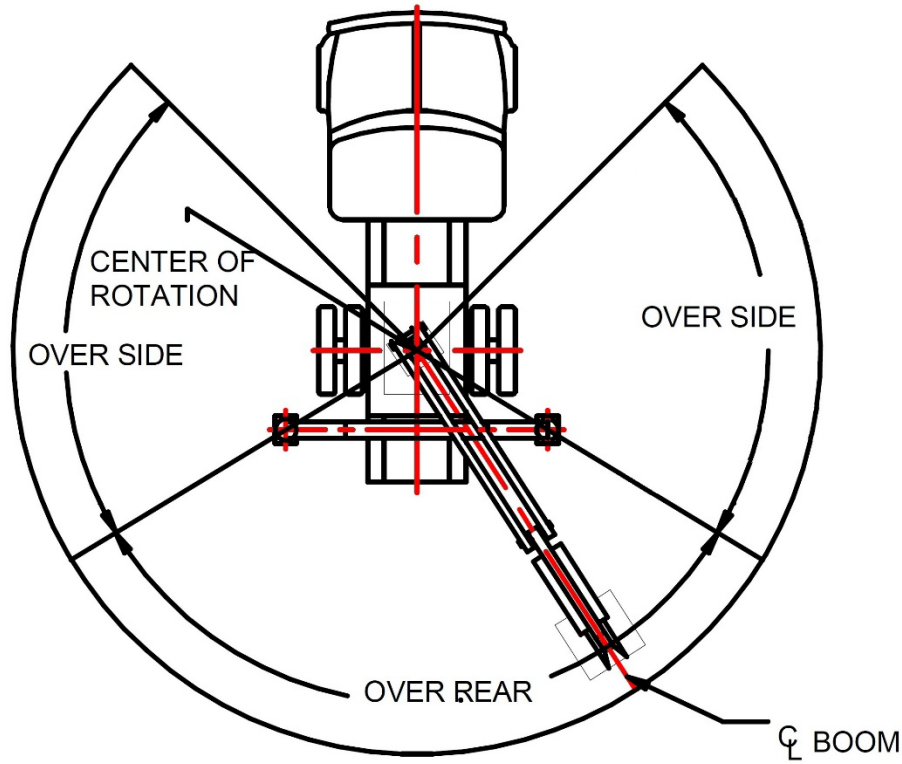
**Failure to heed these instructions can result in serious personal injury or death.**

## **PART 6: LOADING**

1. Engage the PTO. For operations below 40°F, a hydraulic tank heater is recommended. Allow the hydraulic oil to reach 40°F before commencing work.
2. Using the ladder and handholds, climb into the operator's station.
3. If so equipped, make sure the diverter valve is in the "Loader" position and the swing (float) valve is engaged before conducting any boom operations.
4. Fully extend all outriggers to level the loader side to side and ensure that the vehicle is stabilized.
5. Raise boom from its storage rack or from inside of trailer body and swing to trash pile. Use the tip extension, if needed, and rotate bucket so that it is aligned with trash.
6. Open the bucket and lower it over the trash. Close the bucket so that you have a firm grip on the trash. Raise the boom slightly and activate the bucket grab once again to ensure the grapple has a firm grip on the trash.
7. It is recommended the tip extension be retracted prior to swinging the load to minimize stress on the boom and swing gearbox.
8. Lift and swing the load over the body of the trailer or other loader.
  - **Do not** use the bucket to sweep the load to the front of the dump body as you can damage the bucket and other loader components.
  - **Do not** overload or allow limbs or other debris to protrude from the body.
  - **Do not** excessively pack the load. Excess packing could result in floor damage and/or loader damage.
  - **Do not** allow the bucket to swing beyond parallel to the tip boom. If the bucket flips up beyond parallel to the tip boom, the gimbal can damage the end of the tip boom.
  - **Do not** leave a load suspended when the operator is away from the control station. If it is necessary for the operator to manually rake any remaining trash into a smaller pile, the boom must be properly stowed before leaving the operator's control station.
  - **Only** operate the loader from the operator's station.
  - For units with tow trailers, you **must** leave room to stow the bucket within the body sides for travel.
  - **Do not** sit or stand at the operator control station when the truck is in motion.
  - **Do not** attempt to lift loads exceeding the safe working capacity shown on the Load Capacity Chart.
  - **Do not** impose lateral loads on the boom.

## RL2 & RL3 LOAD CAPACITY DIAGRAM

**NOTE:** These lines determine the limiting position of any load for operation within working areas indicated.



Weight of attachment to be subtracted from lift capacities. (Standard Trash bucket weighs 1000 lbs.)

Radii are measured in feet from the center of rotation to the center of the bucket

Loads marked with (\*) are limited by the stability of the loader.

Loads for the loader on outriggers represent 85% of vehicle tipping moment when the vehicle is on firm level ground.

Boom length with tip extension retracted is 16 feet. Boom length with tip extension extended is 20 feet.

Tip Boom Extension function is not to be used for load lifting. This function is only for load reaching or to improve load-lifting capacity.

Do not use these load chart values to predict load capacities at other radii.

Tire pressures must be in accordance to the tire manufacturer's recommendations.

| RL3 WITH OUTRIGGERS EXTENDED |           |                         |                        |
|------------------------------|-----------|-------------------------|------------------------|
| RADIUS                       | OVER SIDE | OVER REAR               |                        |
|                              |           | TIP EXTENSION RETRACTED | TIP EXTENSION EXTENDED |
| 10 ft                        | 5500 lb   | 7100 lb                 | 7100 lb                |
| 16 ft                        | 3100 lb   | 3750 lb                 | 4400 lb                |
| 20 ft                        | 1800 lb   | —                       | 3200 lb                |

**Note:** If the hydraulic system ever fails, call a qualified recovery professional and, if necessary, arrange for an auxiliary service vehicle that can provide a hydraulic power source for stowing the boom and preparing the truck for safe transport to the repair facility.

## Stowing The Bucket For Transport

The method for stowing the boom and bucket of an RL-model loader depends on its mounting configuration, and if there is a trailer being pulled. In all cases, the bucket and boom **MUST** be stowed under the 13' 6" regulated maximum height for transport. If the loader is designed to stow the bucket facing forward between the loader and the truck cab, use extreme caution when positioning the boom and bucket into the provided rack for the bucket.

For loaders which stow the boom and bucket facing the rear, if **NO trailer is pulled** in transit, the boom and bucket must be securely racked to the loader. Make sure the tip extension is retracted and center the main boom and open bucket over the storage rack. Carefully rest the bucket into the bucket's storage rack and then lower the main boom.



*Stowing the bucket for transport when NOT towing a trailer.*

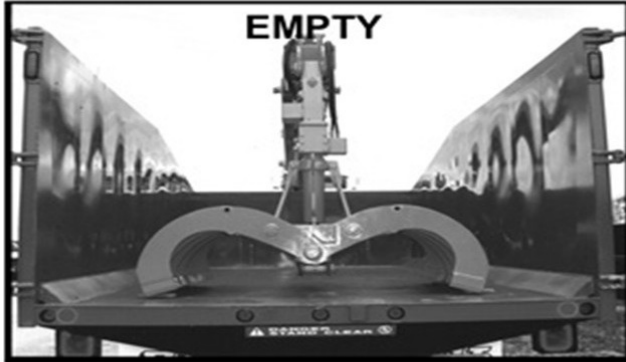
If a **trailer IS pulled**, leave room in the body to stow the boom and bucket. Stow the bucket in the open position with its sides parallel to the sides of the body. The operator should rest the bucket on the body floor or on top of the load. If the trailer is loaded, always ensure that at least half of the bucket and tip of the boom are below the top of the trailer sides before travel. Once the bucket is properly stored **INSIDE** the trailer, you can then



If the bucket and boom cannot be stowed at the proper height with the bucket open, the operator can use the Bucket Roll method to reduce the height of the boom. The trailer body must be at least half full to use the Bucket Roll method.

## **STOWING BOOM & BUCKET WHEN PULLING A TRAILER**

*SWING (FLOAT) VALVE MUST BE DISENGAGED FOR TRANSIT*



- BUCKET OPEN AND AT REST ON DUMP BODY FLOOR.

NOTE: FOR ILLUSTRATION PURPOSES REAR DUMP BODY DOORS ARE SHOWN OPEN. REAR DUMP BODY DOORS MUST BE CLOSED AND LOCKED EXCEPT WHEN DUMPING THE LOAD



- BUCKET ROLLED OVER WITH JAWS TO RIGHT REAR OF DUMP BODY
- BOOM AT SAFE TRAVEL HEIGHT & BOOM TIP BELOW TOP OF BODY SIDES
- MORE THAN 1/2 OF BUCKET MUST BE BELOW TOP OF BODY SIDES
- LOAD COVER DEPLOYED

## **INCORRECT METHODS OF STOWING THE BOOM & BUCKET**



- BUCKET NOT CONFINED INSIDE OF DUMP BODY
- DEBRIS HANGING OUTSIDE OF DUMP BODY
- BOOM OVER LEGAL HEIGHT OF 13 FT. 6 IN.



- BOOM OVER LEGAL HEIGHT OF 13 FT. 6 IN.
- BUCKET NOT CONFINED INSIDE OF DUMP BODY
- DEBRIS HANGING OUTSIDE OF DUMP BODY

**WARNING!** – Failure to stow the boom and bucket properly could result in damage to property or injure people in the vicinity of the grapple truck.

Once the bucket has been properly stowed for travel, retract all outriggers, disengage the PTO, and pick up any safety cones or markers before moving the loader.

## **PART 7: UNLOADING A TRAILER**

If you are pulling a trailer, as you prepare to empty the load, it is important that you choose a level, firm surface. Dumping the load must not be done in a hurried manner. Each of the following steps helps ensure operator safety and prevent damage to equipment or harm to others.

1. Always ensure the truck is in Neutral (N) and set the parking brake before leaving the cab of the loader.
2. Move the swing (float) valve(s) to “Operate” and ensure the diverter valve is in the “LOADER” position.
3. Engage the PTO and the throttle-up switch to increase the engine speed and allow the best performance of the loader.
4. Extend the outriggers on both sides and lower the feet of the outrigger several inches above the ground. This leaves the outriggers free to move along the ground as you drive the truck forward to completely empty the trailer body. The intent is to only use the outriggers to steady the loader if necessary.
5. If your load is covered with a powered tarp, lift the boom and retract the tarp. If the tarp is a self-winding tarp, remember to unhook the tarp from the bucket after uncovering the load.
6. Raise the boom high enough to clear the bed and any debris inside the body. **DO NOT** swing the boom to the side, as the outriggers are not fully lowered.
7. Shift the diverter valve to “TRAILER” mode.
8. Activate the body dump lever on the trailer controls.
9. Slowly raise the body to empty the load. Remain watchful that the dump body and boom do not make contact and keep an eye out for other people or structures during the entire dumping process.
10. If the emptied pile prevents completely dumping of the load, disengage the PTO and SLOWLY move the truck and trailer forward to completely empty debris. Use extreme caution as the outriggers are not fully lowered. If there is debris stuck in the body, lower the dump body and dislodge the debris with the loader, then complete the dump process.
11. After emptying the load and lowering the body, set the diverter valve to “LOADER” to stow the boom and bucket in the trailer with the bucket open and resting on the body floor.
12. **ALWAYS** ensure that the boom assembly is below the recommended maximum height and the **swing valve is disengaged** before moving the loader and trailer.
13. Retract the outriggers and disengage the throttle-up switch and PTO.
14. Apply the service brakes, remove the parking brake, and put the transmission into gear.

## **PART 8: IDENTIFYING POTENTIAL HAZARDS**

The daily inspections are designed to identify any potential hazards or maintenance items that require attention before using the loader. Throughout the course of the day, you, as the loader operator, are also in the best position to identify any items before they can become potential hazards.

It is your responsibility to report any noticeable changes in the operation of the loader or any items that could become larger issues if left unaddressed such as wear, rust, or a lack of lubrication. Report any observations to your supervisor to determine the best course of action to resolve the issue. Careful attention during the operation of the loader not only prolongs the life of the equipment, but also prevents downtime in the field, and helps ensure the safety of the entire crew.