



EQUIPTER®



# RB4000 OPERATORS MANUAL

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855.378.4783

[www.equipter.com](http://www.equipter.com)



## **DISCLAIMER**

The information in this manual is provided to promote the safe use of, and assist the operator in achieving the best performance from Equipter products described herein, for their intended applications.

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**Additional manuals can be ordered for a fee from New Heights, LLC. 717.768.0070**

**Covered by Patent Number 6817677**

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# TABLE OF CONTENTS

<b>INTRODUCTION</b> .....	1
<b>REPORTING SAFETY DEFECTS</b> .....	1
<b>WARRANTY</b> .....	2
<b>GENERAL INFORMATION</b> .....	4
<b>SAFETY PRECAUTION DEFINITIONS</b> .....	4
<b>PRECAUTIONS</b> .....	4
Safety Requirements.....	5
Before You Start.....	6
Operating Precautions.....	6
Load Handling Precautions.....	6
Transport Precautions.....	7
Maintenance Precautions.....	7
<b>OVERVIEW</b> .....	8
<b>TRANSPORTING</b> .....	9
Steps for Determining Correct Load Limit.....	9
Tow Vehicle.....	9
Trailer Connection.....	10
Disconnecting the Trailer .....	11
<b>OPERATION</b> .....	12
Maintenance.....	12
Engine Operation .....	14
<b>DRIVING THE EQUIPTEER</b> .....	15
Loading and Unloading.....	16
Outrigger Operation .....	16
<b>DUMP BOX</b> .....	18
Emptying the Dump Box.....	19
<b>EXTENSION RAILS</b> .....	20
<b>OPTIONAL MATS</b> .....	21
<b>CHUTES</b> .....	21
<b>SPOUTING GUARD</b> .....	22
<b>CHUTE AND SPOUTING GUARD STORAGE</b> .....	22
<b>CONTROL PANEL COVER</b> .....	22
<b>SPARE TIRE MOUNT AND OUTRIGGER PAD STORAGE</b> .....	22
<b>TIRE SAFETY INFORMATION</b> .....	23
Steps for Determining Correct Load Limit – Trailer.....	24
Steps For Determining Correct Load Limit – Tow Vehicle.....	25
Glossary of Tire Terminology .....	26
Tire Safety - Everything Rides On It.....	29
Tire Safety Tips .....	34
<b>SPECIFICATIONS</b> .....	36
<b>OPERATIONS CHECKLIST</b> .....	37

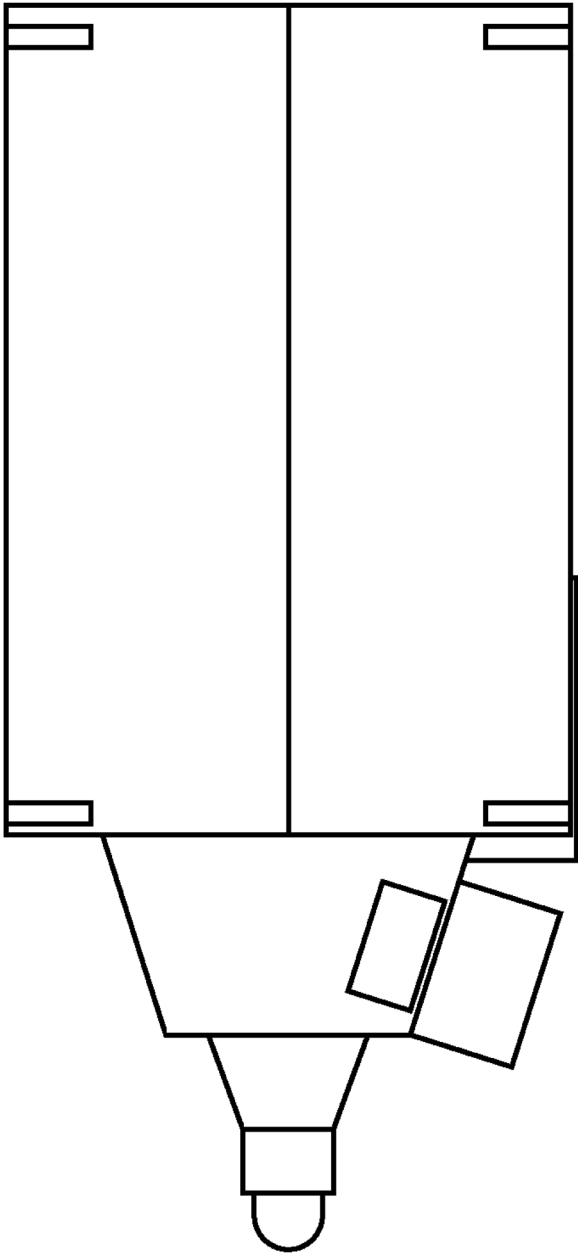
## ILLUSTRATIONS

Figure 1. Operating and Maintenance Positions .....	2
Figure 2. Decals .....	3
Figure 3. Danger Decal, Electrocution Hazard .....	5
Figure 4. Equipter Positioned Under Roof.....	8
Figure 5. Equipter dumping into truck.....	8
Figure 6. VIN Label, Tire and Loading Information Placard.....	9
Figure 7. Connection to Tow Vehicle.....	10
Figure 8. Wheel Lift Lever.....	10
Figure 9. Chains, Latch, Break-Away Cable.....	11
Figure 10. Platform Latch and Wheel Lift Safety Lock.....	11
Figure 11. Parking Brake Lever.....	12
Figure 12. Fluid Levels.....	13
Figure 13. Grease Fittings Locations.....	13
Figure 14. Ignition Switch, Choke, Fuel Shutoff and Pull Start.....	15
Figure 15. Throttle at Operator Station.....	15
Figure 16. Forward/Reverse and Steering Levers.....	16
Figure 18. Outrigger Levers.....	16
Figure 17. Bubble Level Indicator.....	17
Figure 19. Decal-Raise or Lower Steering Wheels.....	17
Figure 20. Front Outriggers with blocking.....	17
Figure 21. Rear Outriggers with blocking.....	17
Figure 22. Decal-Operator Contact Possible.....	18
Figure 23. Flaps Open Under Roof.....	18
Figure 24. Roll Back, Lift, Dump and Tailgate Levers.....	19
Figure 25. Dumping debris from Dump Box.....	19
Figure 28. Rear Extension Rails Stored.....	20
Figure 29. Rear Extension Rails Installed.....	20
Figure 26. Preparing to Store the Mats.....	21
Figure 27. Mat Storage.....	21
Figure 30. Chutes in Use.....	21
Figure 31. Chute and Spouting Guard Storage.....	22
Figure 32. VIN Label, Tire and Loading Information Placard.....	25

**REAR  
(Tail Gate)**

**RIGHT  
(Hydraulic Tank Side)**

**LEFT  
(Operator Side)**



**FRONT  
(Hitch)**

## INTRODUCTION

This manual is furnished to you, the owner/operator, as a guide to get the greatest benefit from your Equipter. New Heights, LLC wants you to be able to get the most use out of your machine through safe and efficient operation.

Before attempting to operate this machine, carefully read all sections of this manual. Be sure that you thoroughly understand all of the safety information and operating procedures.

Pay special attention to the Safety Precautions and Requirements, particularly all **DANGER, WARNING,** and **CAUTION** notices included in this manual. These items combined, form the guidelines for promoting a safe and efficient operating environment, along with continuous, reliable service and minimum down time.

**NOTE: Directional reference is as follows: the front is toward the hitch, back is the tailgate, the operator platform is on the left, hydraulic tank on the right.**

**Throughout this manual reference is made to the Transport Position, Dump Position, Rollback Position and Lift Position (See Illustration).**

**NOTE: Some equipment depicted in illustrations may not reflect exact production model configurations.**

**NOTE: All safety, operating, and servicing information reflects current production models at the time of publication of this manual.**

**NOTE: New Heights, LLC, reserves the right to discontinue models at any time, change specifications, and improve design without notice and without incurring obligation on goods previously purchased and to discontinue supplying any part listed, when the demand does not warrant production.**

## REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect which could cause a crash or could cause injury or death, you should immediately inform the National Highway Traffic Safety Administration (NHTSA) in addition to notifying New Heights, LLC.

If NHTSA receives similar complaints, it may open an investigation, and if it finds that a safety defect exists in a group of vehicles, it may order a recall and remedy campaign. However, NHTSA cannot become involved in individual problems between you, your dealer, or New Heights, LLC.

To contact NHTSA, you may either call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153), go to <http://www.safercar.gov> or write to:

Administrator

NHTSA

1200 New Jersey Avenue S.E.

Washington, DC 20590

You can also obtain other information about motor vehicle safety from <http://www.safercar.gov>.

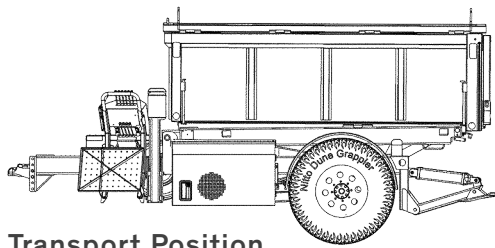
## WARRANTY

This Equipter is designed and manufactured to high quality standards. New Heights, LLC, therefore, guarantees this machine to be free from defects in workmanship and materials for two years from purchase date. Warranty provides for replacement parts but does not include the labor to replace defective parts.

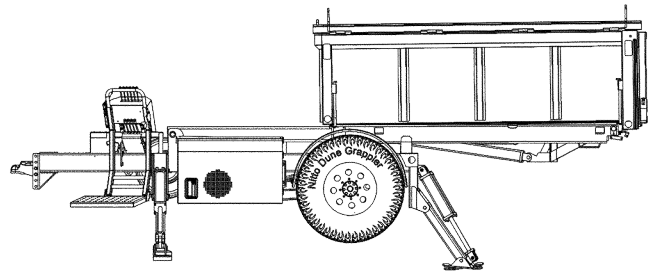
Vendor components are warranted separately by their specific manufacturer.

Warranty does not cover normal wear or failure due to hydraulic oil contamination.

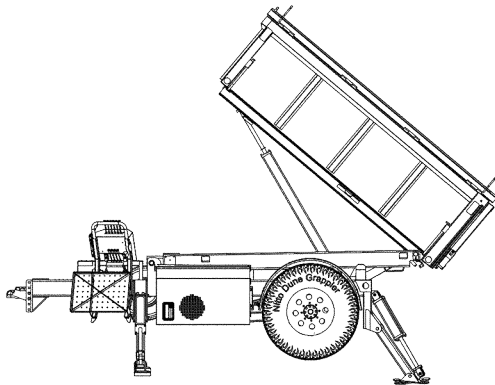
Misuse, abuse, misapplication, and unauthorized alterations will void this warranty.



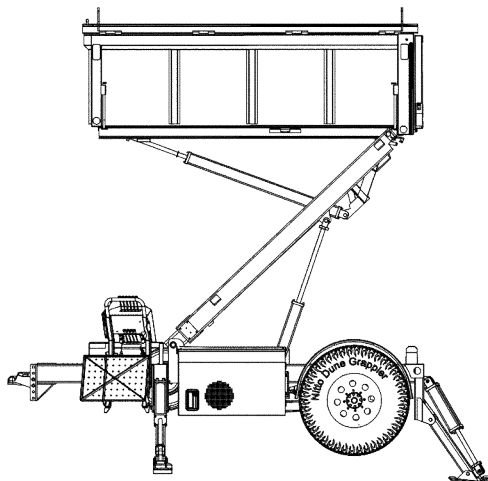
**Transport Position**



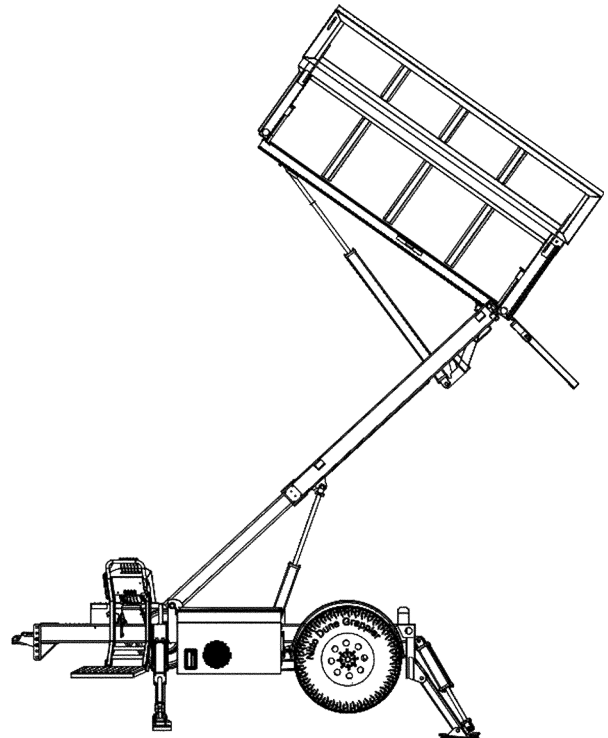
**Rollback Position**



**Dump Position**



**Lift Position**



**Lift & Rollback Position**

*Figure 1. Operating and Maintenance Positions*



# HYDRAULIC OIL ONLY

## Chevron Rando HD Premium Oil MV

**MUST READ & UNDERSTAND**  
the Operator's Manual completely before operating this machine.  
Contact New Heights, LLC at 855.378.4783 to obtain additional manuals.  
Covered by:  
U.S. Patent #6817977

**⚠ DANGER**

Never allow riders or passengers while moving the machine, operating controls for outriggers or dump box. Dump box must be in transport position before moving, driving or towing the RB4000® trailer. Machine must be level and all outriggers stationed securely on solid ground at all times, when lift or rollback features are not in transport position. Never move or adjust outriggers unless dump box is in complete transport position. Before raising or lowering front wheels; you must apply parking brake and connect safety chains to tow vehicle.



(Box in transport position)

**⚠ DANGER**

 Dumping the box forward on the RB4000® trailer could result in operator injury.

Never raise the steering wheels to lower the front of the RB4000® trailer. This disconnects the drive motor from the drive axle, causing it to free the wheel.



**⚠ DANGER**

**⚡ ELECTROCUTION HAZARD ⚡**

This machine is not insulated. Death or serious injury will result from contact with or inadequate clearance from energized conductors. Maintain a safe clearance from electrical power lines and apparatus. You must allow for sway, rock, or sag.

**⚠ WARNING**

This product can expose you to chemicals including soots, tars, and mineral oils, which are known to the State of California to cause cancer, and carbon monoxide, which is known to the State of California to cause birth defects or other reproductive harm. For more information go to [www.P65Warnings.ca.gov](http://www.P65Warnings.ca.gov)



**⚠ WARNING**

- ATTENTION DRIVER -  
CHECK WHEEL LUGS  
BEFORE MOVING THIS  
VEHICLE

**⚠ WARNING**

 Step must be latched in up position before transporting

**⚠ WARNING**

**SAFETY LOCK  
MUST BE  
ENGAGED TO  
SECURE THE WHEELS**

**⚠ WARNING**

BEFORE RAISING OR  
LOWERING FRONT  
WHEELS; MUST APPLY  
PARKING BRAKE AND  
CONNECT SAFETY  
CHAINS TO TOW  
VEHICLE

<b>⚠ WARNING</b> Unlatching will cause trailer to come loose from tow vehicle. You must: 1. CHECK you have latched the LOCKS on the trailer. 2. CHECK you have latched the DUMP COLLAPSE LATCH in complete transport position. 3. LOCK trailer down with pin or padlock.	<b>⚠ WARNING</b> ALWAYS use safety chains. Chains must be attached to the correct tie-downs. 1. CHECK chains and anchor points. 2. ALWAYS check to make sure chains are attached to the correct tie-downs. 3. CHECK chains have slack to tow vehicle.	<b>⚠ WARNING</b> Trailer can roll if it comes loose. Electric safety brake applies when cables pull pin out of trailer lock. 1. PULL pin for part of pin out of trailer lock. 2. CHECK safety brake. PULL pin out of trailer lock. 3. SAFETY BRAKE TO tow vehicle on ground for safety. 2. Check operation. 4. Repeat REPLACE pin in trailer lock.	<b>⚠ WARNING</b> Lights can prevent trailer beam being lit by other vehicles. You must: 1. CONNECT trailer and tow vehicle properly. 2. CHECK all lights, turn signals, STOP LIGHTS. 3. CHECK TOW bar, safety or tow wiring.	<b>⚠ WARNING</b> Tire, wheel or lug nut failure can cause loss of control. Before towing you must CHECK: 1. Tire pressure and tread. 2. Lug nut torque. 3. All make for tightness. For more information go to <a href="http://www.P65Warnings.ca.gov">www.P65Warnings.ca.gov</a>
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**Disengage Parking Brake Before Towing**



**⚠ WARNING**

A MOVING OUTRIGGER CAN CAUSE SERIOUS CRUSHING INJURY. Do not operate any outrigger unless you or a single person can see that all personnel are clear of the outrigger and it's ground contact point.

**⚠ WARNING**


MUST APPLY PARKING BRAKE BEFORE RAISING OR LOWERING FRONT WHEELS

**⚠ WARNING**

**PINCH POINT HAZARD**

**WHEEL LIFT SAFETY LOCK**

Pull and hold to disengage front wheel safety lock. Must apply parking brakes and have safety chains connected to tow vehicle.



**⚠ WARNING**

TO PREVENT SERIOUS INJURY OR DEATH STAY BACK 10 FEET FROM TAIL GATE.

**⚠ DANGER**

To prevent serious injury or death, securely latch support arm when working under equipment. Place dump box in it's dump position but keep lift completely down.



**FRONT**      **RIGHT**      **LEFT**      **RIGHT**      **LEFT**      **BACK**

UP      DOWN      UP      DOWN      UP      DOWN      UP      DOWN

**⚠**

Do not move outriggers when dump box is not in transport position.

**EQUIPTER**

Parking brake must be engaged unless equipment is being towed or driven.

Push button in center of knob to adjust throttle.

STEERING: RIGHT, LEFT

WHEEL LIFT: UP, DOWN

DUMP: UP, DOWN

ROLL BACK: OUT, IN

LIFT: UP, DOWN

TAILGATE: OPEN, CLOSE

WHEEL LIFT: ON, OFF

IGNITION: ON, OFF

EMERGENCY BRAKE: P

All outriggers must be securely on ground and machine leveled at all times when lift or rollback are not in transport position.

**TIRE AND LOADING INFORMATION**

The weight of cargo should never exceed 1587 kg or 3,500 lbs.

Tire	Size	Cold Tire Pressure
Front	20.5 x 8-10	70 psi
Rear	LT315/75R16	50 psi
Spare	.....	.....

Figure 2. Decals

## GENERAL INFORMATION

The purpose of this manual is to provide safe operating and maintenance procedures for the intended use of this machine. It is important that all information in this manual is READ and UNDERSTOOD before operating the Equipter.

Since the manufacturer has no direct control over machine application and operation, it is the responsibility of the operator to conform to good safety practices in the implementation of this machine.

This section is composed of various warnings and safety tips which must be followed.

## SAFETY PRECAUTION DEFINITIONS

Dangers, Warnings, Cautions, and Notes are strategically placed throughout this manual to further emphasize the importance of 750 kv to 1000 kv50 kv to 750 kv350 kv to 500 kv200 kv to 350 kv50 kv to 200 kv300 volts to 50 kv0 volts to 300 voltsThese precautions supplement and/or complement the safety information decals affixed to the unit and include headings that are defined as follows:

### **DANGER**

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

### **WARNING**

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

### **CAUTION**

Indicates potentially hazardous situation or practice which, if not avoided, will result in damage to equipment and/or minor injury.

Notes are also found in this manual.

**NOTE:** Provides information which may be of special interest.

## PRECAUTIONS

The primary responsibility for safety with the equipment falls to the operator. It is the skill, care, common sense, and good judgement of the operator that determines how efficiently and safely the job is performed. Know the equipment before you start. Know the capabilities, dimensions, and how to operate all the controls. Visually inspect the equipment before starting and never operate equipment that is not in proper working order with all safety devices in place and operating.

### **WARNING**

Modification of the equipment, including removal or modification of safety and identification decals, without the written consent of the manufacturer is a safety violation and is strictly prohibited.

### **DANGER**

This machine is not insulated and does not provide protection from contact with or proximity to an electrically charged conductor.

Working in the vicinity of power lines is a very serious hazard and special precautions must be taken.

Any overhead wire shall be considered to be an energized line until the owner of the line or the electrical utility authorities indicate that it is not an energized line and it has been visibly grounded.

Contact with power lines is not required for electrical power to arc between the line and equipment.

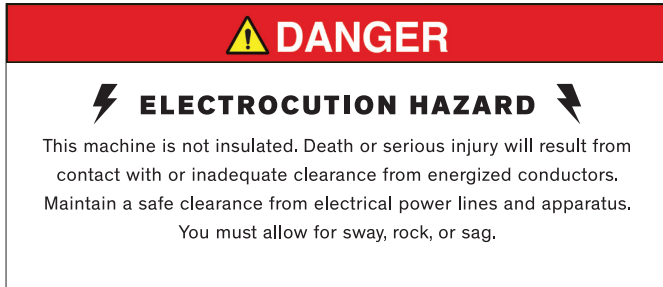


Figure 3. Danger Decal, Electrocution Hazard

0 volts to 300 volts	Avoid Contact
300 volts to 50 kv	10 ft. (3.05 m)
50 kv to 200 kv	15 ft. (4.6 m)
200 kv to 350 kv	20 ft. (6.1 m)
350 kv to 500 kv	25 ft. (7.6 m)
500 kv to 750 kv	30 ft. (9.2 m)
750 kv to 1000 kv	45 ft. (13.7 m)

Always be aware of the power carried by the power lines. Allow sufficient time and distance to react to swaying or sagging power lines. The following table provides the minimum distances which should be maintained.

## SAFETY REQUIREMENTS

All operators must be 18 years of age or older and must have the ability to securely engage the parking brakes.

The parking brakes must always be securely engaged unless the equipment is attached to a tow vehicle or it is being driven by its own drive system. The equipment freewheels unless the hydraulic motor is engaged to the rear axle or the parking brake is engaged.

Always connect and disconnect the Equipter to the tow vehicle in a level area. Never lower or raise the front wheels unless the parking brake is applied and the safety chains are attached to the tow vehicle. Never disengage the front wheel safety lock unless the parking brake is securely applied and the safety chains are attached to the tow vehicle.

Raising the front wheels for road transportation also disengages the hydraulic motor from the rear axle causing it to freewheel for highway towing. When equipment is secured to tow vehicle hitch, slightly engage the reverse drive lever to ensure the hydraulic motor has disengaged from the rear axle.

Lowering the front wheels allows the hydraulic motor to engage to the rear axle. Before releasing the parking brake and disconnecting the safety chains, slightly engage the reverse drive lever to ensure the rear axle has engaged for jobsite use.

Before lifting or extending the dump box out of transport position always lower all outriggers and ensure that the Equipter is completely level with all outriggers firmly stationed on secure footing. Never lift, lower or adjust outriggers while dump box is not in the transport position. If any adjustments need to be made to level the Equipter, always have the dump box in transport position before moving the outriggers.

Never lift or extend the dump box without the outriggers supporting the Equipter.

Always use the bubble level to help confirm that the Equipter is completely level any time the dump box is not in the transport position.

The dump box must be in the transport position (fully forward and down on the frame) before driving or towing the Equipter.

Always wear a hard hat when operating machine.

## **BEFORE YOU START**

Know your equipment. Know how to operate all controls and know emergency shut down procedures. Make sure all safety devices are in place.

Do not wear loose clothing or items such as rings and watches around the equipment. They could get caught in moving parts and lead to serious injury or death.

Inspect the equipment. Check for missing shields, loose bolts, twisted or damaged hydraulic hoses. Be sure all operational decals are in place and legible. Never operate a damaged or unsafe machine.

Keep all step plates, grab bars, pedals and controls free of dirt, grease, oil, and water. Keep area clear of tools, rags, and extra parts. Keep equipment clean to help avoid injury from a fall when getting on or off equipment.

## **OPERATING PRECAUTIONS**

Know the work area before you begin. Observe any potential hazard areas such as soft ground, drop-offs, rocks, and other obstacles.

Do not drive on hills above a 5% grade. Be aware of wet conditions which may allow the machine to lose traction and slide on a hill.

Always lower outriggers before raising or extending the dump box.

Observe overhead electrical and phone lines. Be sure equipment will safely clear them.

Be aware of others in the work area. Be sure others know when and where you will be working. Make sure no one is underneath or behind equipment.

Never try to board equipment while its moving.

Never allow riders or passengers while driving machine or operating the outrigger controls or dump box.

This machine is NOT to be used for personnel lift.

Be aware of what is going on around you. Watch for others who may not be watching out for themselves.

## **LOAD HANDLING PRECAUTIONS**

Ensure machine is level and stabilized and that the brakes are properly set prior to operating the dump box.

Check clearance on both sides before outriggers are lowered. Make sure personnel are clear of outriggers.

Use blocking or cribbing underneath the outriggers to assist in securely leveling the machine.

Never allow riders or passengers in the dump box when raising or lowering.

## TRANSPORT PRECAUTIONS

Always use a tow vehicle with a GVWR capacity greater than that of the combined Equipter and tow vehicle weight. The hitch must also be of a rating greater than that of the Equipter.

Always connect the break-away brake cable to the tow vehicle. Do not connect to the safety chains or slide-in.

Always disconnect and park Equipter on level ground. If disconnecting or parking on level ground is not possible, use blocking in front and behind rear wheels to prevent the machine from rolling.

Always use a snap pin or lock to secure the latch in the locked position over the ball.

Ensure that the dump box is down against the frame and fully retracted in “transport position” before transporting.

Ensure that the outriggers are fully raised before transporting.

Ensure that the front steering assembly is raised and securely latched before transporting.

Do not transport the unit with the dump bed “lids” open. This would cause the unit to be over-width.

Do not overload the unit. Be aware of the maximum load capacity of the Equipter.

Check all lights before transporting the equipment on public roads. Have an assistant verify brake light operation.

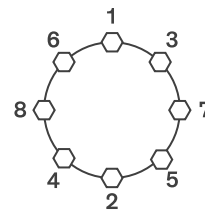
Confirm trailer brakes work.

Being sure wheel mounting nuts (lug nuts) on trailer rear wheels are tight and properly torqued.

Lug nuts are prone to loosen right after a wheel is mounted to a hub. When driving on a new or remounted wheel, check the lug nut tightness often during the first few hundred miles of the trailer’s use, especially after the first 10, 25 and 50 miles of driving, before each tow, and at least twice per year thereafter.

### WHEEL TORQUE REQUIREMENTS & BOLT TIGHTENING SEQUENCE

WHEEL SIZE 16”  
Torque ft.-lbs. 130-150



## MAINTENANCE PRECAUTIONS

Replace all safety shields and guards when finished performing maintenance. Do not operate the equipment with protective equipment removed.

Never perform maintenance or adjustments while the equipment is operating. Turn off the engine when performing maintenance to prevent accidental movement.

Never perform maintenance on this machine unless the lift is completely in the down position. The dump box can be tilted in the dump position secured with the support arm but never with the dump box lifted.

Make sure all operating and residual pressures are relieved before working on a hydraulic system.

Shut engine off and operate all the controls to relieve any pressure.

Use only manufacturer recommended replacement parts. Other parts may be substandard in fit and quality.

## OVERVIEW

The Equipter is designed for contractors to simplify a difficult job - cleanup. It takes this labor intensive, time-consuming job to a level of automation not found previously. This ingenious machine will not only simplify your work, it reduces traffic through carefully manicured flower beds, around fences, and over shrubbery. Your customers will quickly see the benefits of less wear and tear through their yard.

The Equipter is a simple and durable time saver. It can be towed to the jobsite by most pickup trucks. At the jobsite, it is disconnected from the tow vehicle and becomes a self-propelled vehicle. It can be driven into place across yards and the dump bed extended and/or raised over fences, shrubbery, and flower beds.

At about 6 feet wide the Equipter fits places where trucks and trailers do not. Once in position, lids on the dump bed open to provide nearly 11 feet of "collection" coverage. The dump bed can be positioned just under a roof's overhang to prevent debris from falling on the ground or driveway.

When the job is done, the Equipter is driven to the desired location and the debris dumped into a waiting container or truck. The Equipter can clear 11 feet allowing most standard dump trucks to be used to haul away debris.

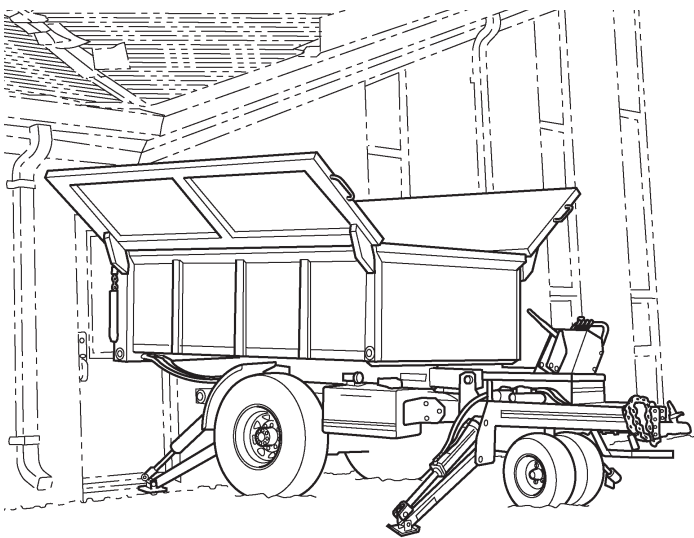


Figure 4. Equipter Positioned Under Roof.

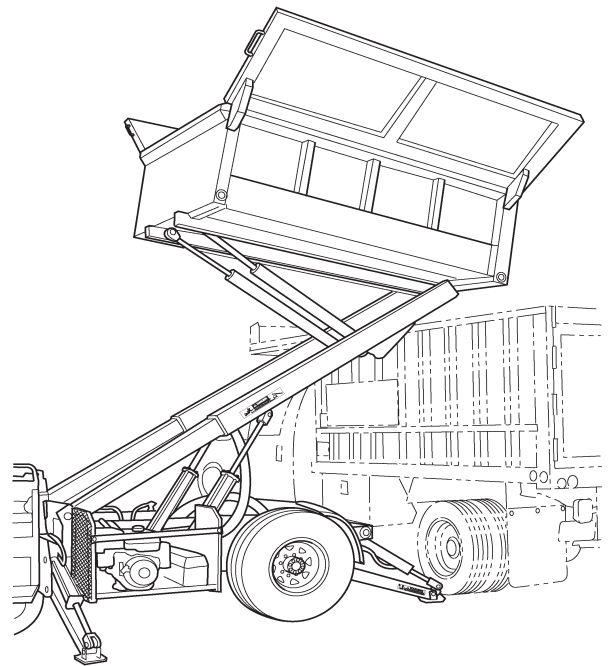


Figure 5. Equipter Dumping into Truck.

## TRANSPORTING

### Steps for Determining Correct Load Limit

1. Locate the statement “The weight of cargo should never exceed 1587 kg or 3500 pounds” on your vehicle’s placard.
2. The figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available
4. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult this manual to determine how this reduces the available cargo and luggage load capacity of your vehicle.

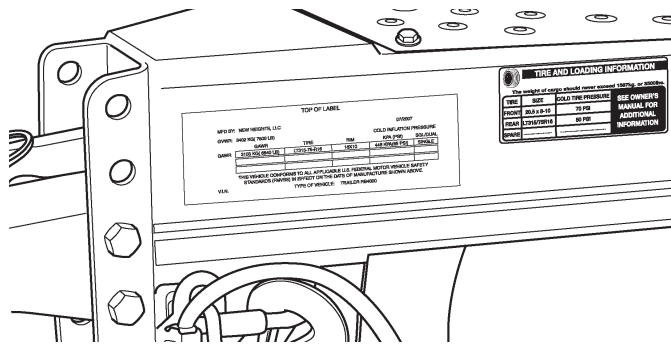


Figure 6. VIN Label, Tire and Loading Information Placard

## TOW VEHICLE

The tow vehicle must have a tow rating greater than the GVWR of the Equipter (see specifications). In addition, the vehicle must be equipped with a trailer hitch. A Class IV hitch is the minimum recommendation.

**NOTE: Some Class III hitches are rated for greater than 5,000 lbs. with a 500 lb. tongue weight. Most Class IV hitches are rated for 10,000 lbs. and a 1,000 lb. tongue weight.**

The standard hitch on the trailer utilizes a 2-5/16 inch hitch ball and 7 RV trailer plug.

**NOTE: An electronic brake controller is needed.**

### **WARNING**

Hitch balls have ratings similar to hitches. Typically, a 2-5/16 inch hitch ball with a 1-1/4 inch shaft is required for towing the Equipter.



## TRAILER CONNECTION

To connect the Equipter to the tow vehicle it is easiest to drive it into position although the tow vehicle can also be backed under the hitch similar to a standard trailer hook-up.

The outriggers must be fully raised before driving or towing the Equipter.

1. Using all applicable safety procedures, start the engine. Refer to the section on Engine Operation.
2. Drive the Equipter into a position with the hitch coupler over the hitch ball. Refer to the section on Driving the Equipter.
3. Engage Parking Brake.
4. Place steering wheels in straight forward position.
5. Attach the safety chains to the tow vehicle.
6. Lower the hitch by disengaging the “wheel lift safety lock” and moving the “Wheel Lift” control lever in the “Up” direction. This lowers the trailer hitch by raising the steering wheels.
7. Secure the trailer to the ball using the latch mechanism.
8. After the weight of the trailer is securely on the tow vehicle, raise the steering wheels completely. Ensure the wheels are latched by trying to lower the wheels without releasing the safety lock lever.
9. To ensure that the drive system has disengaged, slightly engage the drive lever in reverse.
10. Turn off the engine.
11. Raise the operator’s platform and secure using the latch provided.

**NOTE: If the platform does not latch, check that the front wheels are fully raised and safety lock is locked in position.**

### DANGER

Always connect Equipter on level ground. If connecting on level ground is not possible, use blocking in front of and behind rear wheels to prevent the machine from rolling.

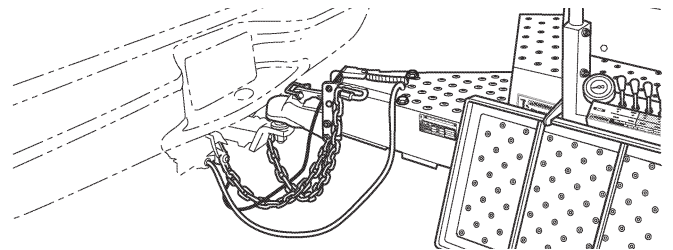


Figure 7. Connection to Tow Vehicle

### CAUTION

The steering wheels, when completely raised, fit inside the frame. They must be in a straight forward direction for the wheels to properly fit within the frame. Failure to do so will result in failure to securely lock the steering wheels for transport.

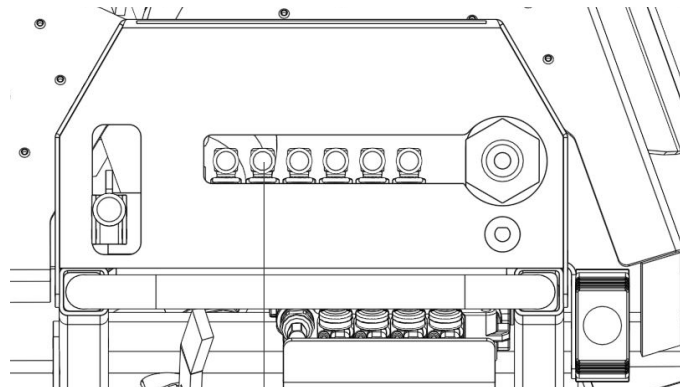


Figure 8. Wheel Lift Lever

### WARNING

The parking brake on the Equipter must be engaged. After the steering wheels are completely raised, the drive system is disengaged and the axle will freewheel.



12. Attach the break-away brake cable and electrical plug to the tow vehicle. Place a padlock or hairpin clip through the latch. Verify that the safety chains are securely attached to the tow vehicle.

13. Disengage Parking Brake.

14. Test trailer brakes with brake controller in the tow vehicle.

15. Test the brake, signal, tail, and clearance lights on the trailer.

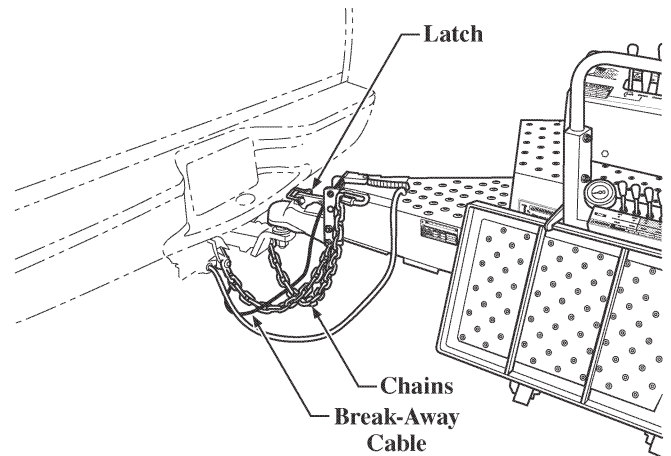


Figure 9. Chains, Latch, Break-Away Cable

### **⚠ CAUTION**

**Never transport the Equipter with the engine running.**

## **DISCONNECTING THE TRAILER**

After being towed to the job site, the Equipter can be disconnected from the tow vehicle.

1. Engage Parking Brake.
2. Lower the operator's platform by releasing the latch.
3. Start the engine using all applicable safety procedures. Refer to the section on Engine Operation.
4. Lower the steering wheels until they contact the ground.

**NOTE: Pull and hold to engage front wheel safety lock. Must apply parking brakes and have safety chains connected to tow vehicle.**

5. Release the latch that secures the trailer to the hitch ball.
6. Continue lowering the steering wheels until the trailer is clear of the hitch ball and the front wheel safety lock is securely engaged.
7. Slightly engage the drive lever in reverse to ensure that the drive system is engaged.

### **⚠ DANGER**

**Always disconnect Equipter on level ground. If disconnecting on level ground is not possible, use blocking in front of and behind rear wheels to prevent the machine from rolling.**

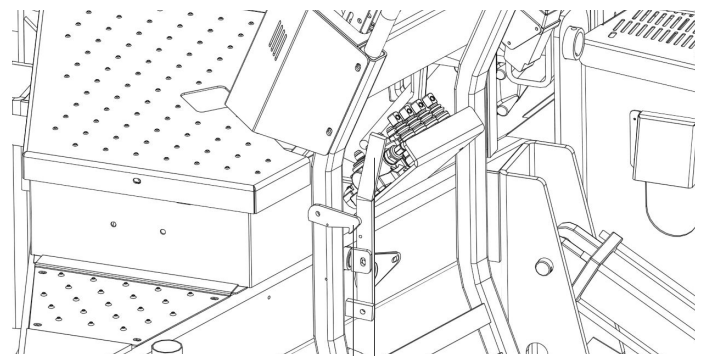


Figure 10. Platform Latch — Wheel Lift Safety Lock.

### **⚠ WARNING**

**Never disengage the Parking Brake or safety chains unless the drive system is engaged.**

8. Disconnect the electrical plug and break-away brake cable from the tow vehicle. Secure them to the trailer to prevent dragging or interference with operation of the Equipter.
9. Disconnect the safety chains from the tow vehicle.
10. Disengage Parking Brake.
11. Drive the Equipter away from the tow vehicle.

**⚠ DANGER**

**Always engage the parking brake when parking the Equipter. Do not park the Equipter on hills or steep inclines unless blocking is placed in front of and behind the rear wheels.**

## OPERATION

### Maintenance

While every effort has been made to build a high quality product, it is important that the Equipter be maintained and serviced on a regular basis. This contributes to ensuring reliable equipment that can be depended on when its needed. Replace all worn or damaged parts with original manufactured parts.

Never perform maintenance on this machine unless the lift is in complete transport position. For maintenance under the dump box it can be tilted in the dump position and must be secured with the support arm in place but never have the dump box in the lifted position.

All personnel must stay off and all body parts out from under the dump box at all times the lift is not in the transport position.

### Every 8 hours of operation or daily the following should be checked:

- Check Engine Oil Level - Refer to Engine Operation Manual.
- Check and adjust parking brake (1). (See illustration). Ensure that the Parking Brake is working properly. Rotate top of lever clockwise to tighten parking brake. Note: to adjust, lever must be disengaged. Pull lever to upright position to engage parking brake. Lever shown disengaged.

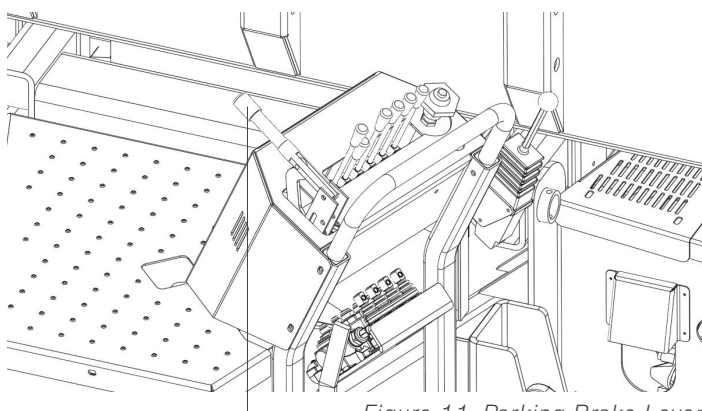


Figure 11. Parking Brake Lever

**⚠ CAUTION**

**If tires are replaced, be sure they are sized for the rim and meet or exceed the load capacity of the original tires supplied by the factory.**

- Check Tire Inflation Pressure with tires cold (not been driven for at least 3 hours). Recommended inflation pressure is on the "Tire and Loading Information" placard located on the hitch.

- Check Hydraulic Fluid Level - With the Equipter on level ground, the dump bed down and retracted, the outriggers raised, and the steering wheels down. The hydraulic oil level should be visible in the sight gauge in between the top and bottom of the temperature gauge (normal reading should be between 1/4 and 1/2 on the gauge). If necessary to refill, use only approved hydraulic oil.

New Heights, LLC recommends changing the hydraulic oil filter every 6 months and the hydraulic oil every 3 years.

The following are approved oil sources:

<b>Chevron</b>	<b>Rando HD Prem MV Hyd Oil</b>
<b>Mobil</b>	<b>Mobil DTE 12 or 12M</b>
<b>Castrol</b>	<b>Aerial Lift</b>

**NOTE: Maximum recommended hydraulic oil operating temperature is 160° F (71° C).**

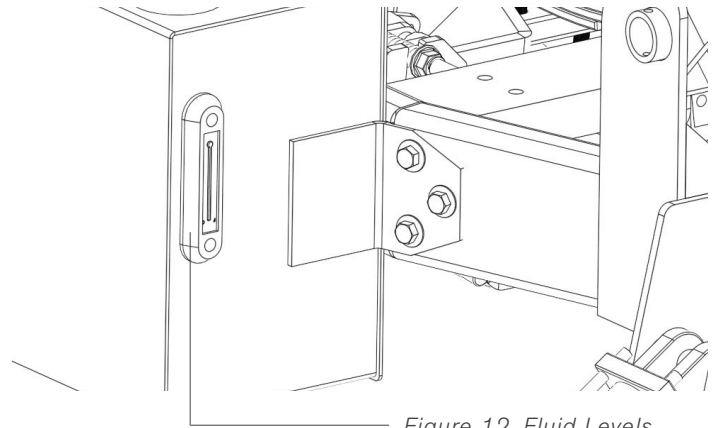


Figure 12. Fluid Levels

**Every 40 hours of operation or weekly the following should be checked:**

- Check Tire Inflation Pressure - Refer to “Tire and Loading Information” placard located on the hitch.
- Check that all wheel lugs nuts are tight. If not, they must be torqued to the proper specification.
- Lubricate rollback slide rails - Apply grease to frame rails where dump box slides. Use multi-purpose grease (NLGI #2).
- Check rear axle oil level.
- Lubricate all Grease Fittings - Grease fittings are located at most pivot areas.

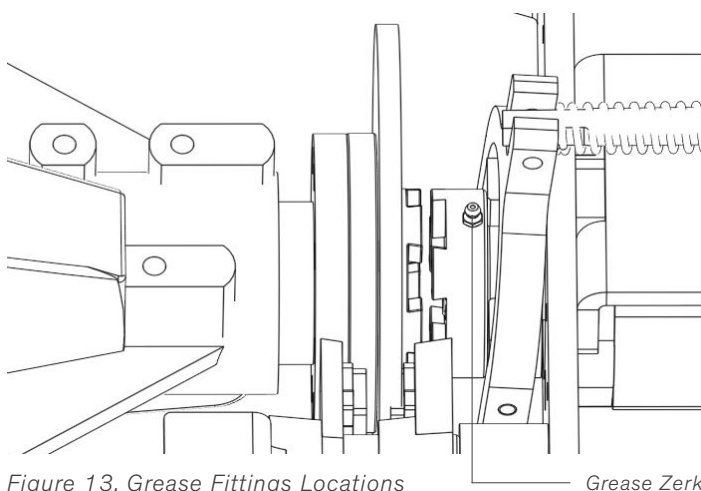


Figure 13. Grease Fittings Locations

Grease Zerk

**⚠ CAUTION**

Be sure to lubricate like items on the opposite sides of the Equipter. Worn grease fittings that will not hold the grease gun, and fittings with a stuck ball, must be replaced.

## Lubricate the Axle Engagement System

In the drive system is a grease fitting. This fitting should be lubricated every 40 hours to ensure proper operation. To access the grease fitting:

1. Engage Parking Brake.
2. Lower the outriggers.
3. Release the safety latch and raise the front steering wheels completely.
4. Tilt the dump box to gain access to the top of the drive axle. Place the support arm under the dump box before entering the area under the dump box.

**NOTE: If the grease fitting is rotated away and cannot be accessed, the drive system can be operated to spin the drive shaft. Use the drive control lever to “bump” the system until the grease fitting is accessible.**

5. Apply lubricant as needed.

### DANGER

**Place the support arm under the dump box to provide extra safety while lubricating the axle engagement system.**

## Engine Operation

This manual is intended to provide an overview of how the engine works within the Equipter. Additional information regarding engine operation and maintenance is available within the Engine Manual supplied with the machine.

The engine is used to drive a hydraulic pump. The hydraulic pump then powers various cylinders and the drive motor. Engine controls consist of a keyed ignition switch, choke, remote ignition switch, remote throttle, and fuel shut-off valve. The ignition switch has three positions: OFF, ON, and START.

The engine has a rope pull-start in the event the battery is not operational (ignition switch must be in the ON position to pull-start).

RB4000s produced in 2018 and later feature a remote ignition switch on the operator's station, underneath the remote throttle. This allows the operator to easily engage the engine from the control panel rather than through the engine cage.

The remote ignition switch will only engage if the engine key is in the On position. If the key is switched to Off, the engine will crank but will not fire.

The throttle is located at the operator station next to the directional control lever. Press red button in center of knob to adjust throttle, release button to lock. More gradual adjustment of throttle can be made by turning black knob. When starting a cold engine, pull throttle part way out, slide choke lever toward the front of the Equipter. After the engine is running, slowly move the choke into the run position. If the engine is warm, choke operation should not be necessary.

The engine should be turned OFF after the machine is positioned for loading.

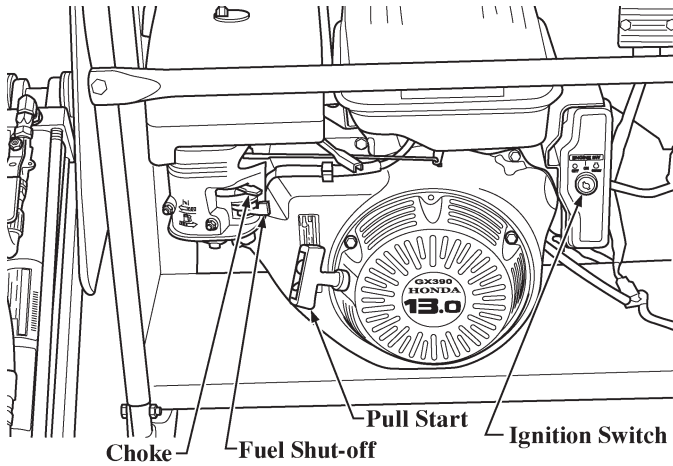


Figure 14. Ignition Switch, Choke, Fuel Shutoff and Pull Start

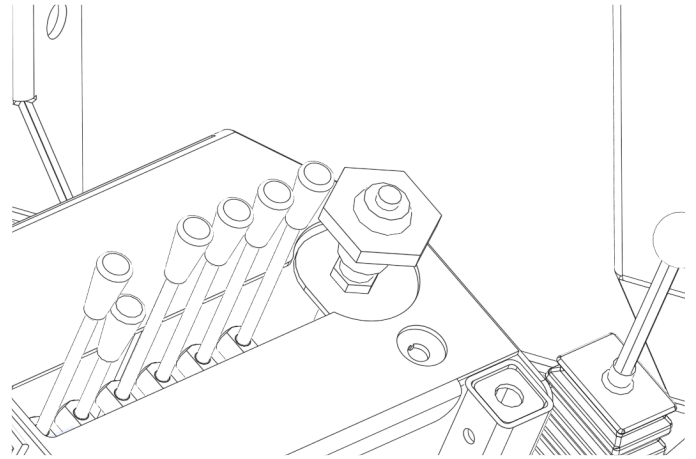


Figure 15. Throttle at Operator Station

### **⚠ WARNING**

Always turn engine OFF using the ignition switch and close fuel shut-off valve when towing Equipter.

## **DRIVING THE EQUIPTER**

The Equipter is self-propelled and can be driven across lawns and driveways. It is not intended to travel across rough terrain, up or down steep hills, or through soft ground. The Equipter can be driven across uneven ground but be aware of the load. When loaded with debris, the center of gravity is higher which could result in rollover.

### **⚠ DANGER**

Never drive the Equipter on public roads. If it must be moved along a public road, it must be towed using a licensed tow vehicle.

### **⚠ CAUTION**

Always engage the parking brake when parking the Equipter.

**NOTE:** When driving the Equipter it is recommended that the engine be operated at a slow speed until the operator is familiar with the controls and how the machine reacts to the controls.

**NOTE:** Directional reference is as follows: the front is toward the hitch, back is the tailgate, the operator platform is on the left, the hydraulic tank is on the right.

### **⚠ DANGER**

Always place the dump box in the transport position (fully retracted and lowered) and raise the outriggers completely when driving or transporting the Equipter.

### **⚠ CAUTION**

Never walk beside the machine. Always lower the operator's platform and stand on it when driving.

Steering and travel are controlled by levers at the operator station. The steering lever is located to the left of the dump box controls. Push the lever away to turn the machine to the right, pull the lever to turn to the left.

The direction of travel is controlled by the large lever on the right. Push the lever away to go forward, pull it to go backward. When released, the lever will return to neutral and the machine stops.

Braking is partially controlled by the hydraulic motor through the use of the directional control lever. Always engage the Parking Brake when parking the Equipter.

### Loading and Unloading

The main purpose of the Equipter is to simplify the collection of shingles removed from a roof. To increase the efficiency of this process, it is important to properly position the machine.

each way so the Equipter is not moved as often. (A chute kit is available to assist in debris collection.)

Normally, it is not very efficient to carry debris along the roof to a single “toss point” unless roof access by the Equipter is limited or it is a flat roof.

The dump box extends and raises. When positioning the Equipter, keep in mind that rearward extension is much greater with the dump box down. When it is raised, it pivots and brings it back over the frame.

### Outrigger Operation

The dump box should not be raised without outriggers down. Always leave clearance for the outriggers when positioning the Equipter.

#### After the machine is driven into position:

1. Lower all outriggers. Outriggers are controlled using the lower control levers at the operator station. Each outrigger is individually controlled. Push the lever away to raise the outrigger, pull the lever to lower the outrigger.
2. Park Equipter on firm, level surface. If surface is smooth, block wheels to prevent unexpected movement. Level the machine using the outriggers. A bubble level indicator is located at the control station. Continue to lower the outriggers until the bubble in the level is within the circle. For dump box operation, the bubble on the indicator must be within the circle. Use cribbing or blocking under outriggers to level.
  - a. Lower the front or rear set of outriggers first, whichever is closest to the ground, until that end of the machine starts to raise.
  - b. Still at the same end of the machine, raise the lowest “side” using the appropriate outrigger.

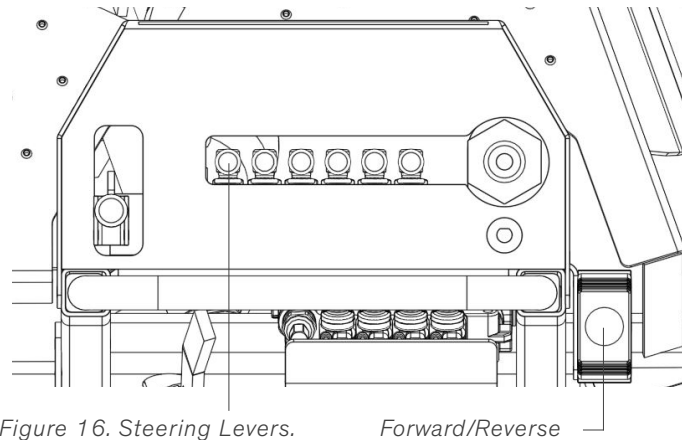


Figure 16. Steering Levers. Forward/Reverse

### **⚠ DANGER**

**Never extend or raise dump box without the outriggers lowered.**

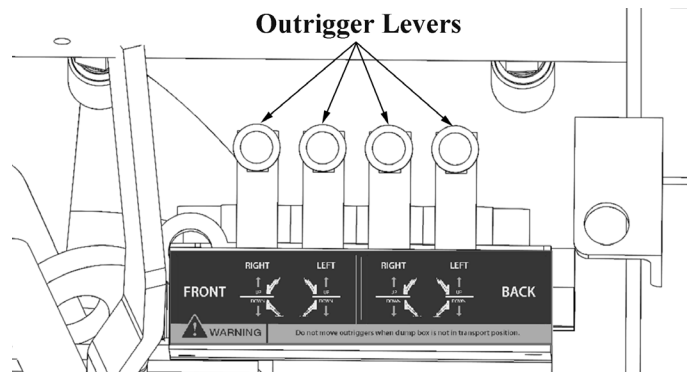


Figure 18. Outrigger Levers



c. Lower the other set of outriggers to raise the other end of the machine until level front to back.

d. Use the appropriate outrigger to raise the remaining low corner.

e. Make any adjustments using the appropriate outrigger. Use only small adjustments.

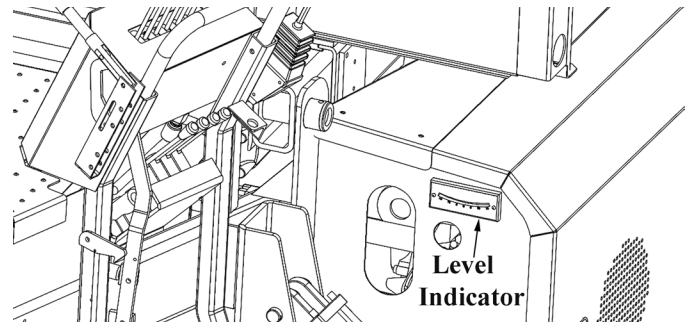



Figure 17. Bubble Level Indicator.

 **DANGER**

Never raise the steering wheels to lower the front of the Equipter. This disconnects the drive motor from the drive axle causing it to free the wheel.

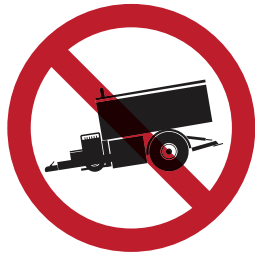



Figure 19. Decal-Raise or Lower Steering Wheels.

 **DANGER**

Never move or adjust the outriggers unless the dump box is in the transport position.

 **CAUTION**

Always raise the outriggers completely before moving the Equipter. Lowered outriggers can get caught on personnel, fences, and shrubs as the machine passes by.

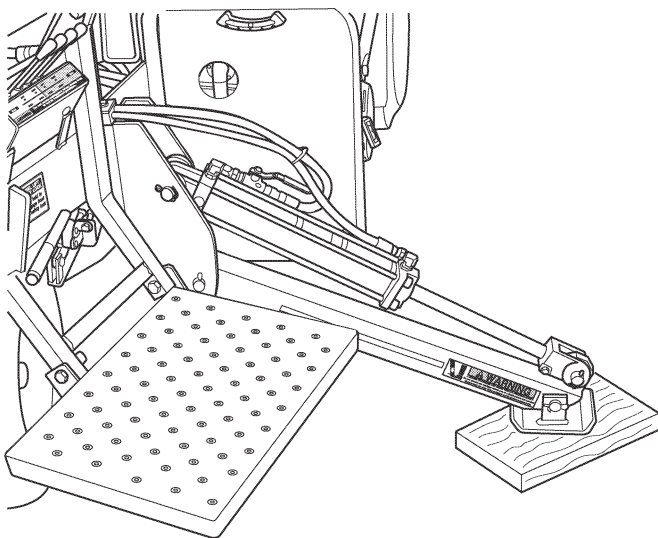


Figure 20. Front Outriggers with Blocking.

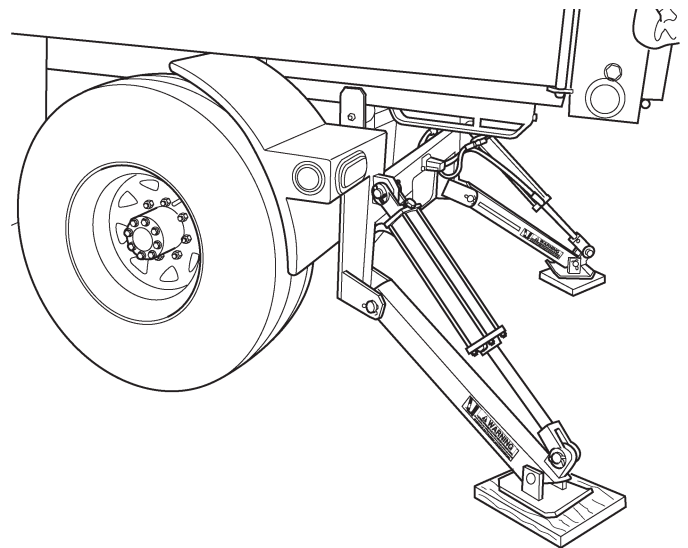


Figure 21. Rear Outriggers with Blocking.

## DUMP BOX

The dump box utilizes “lids” as a cover. To extend catch area flaps must be opened before raising or extending the dump box.

Three levers, located at the operator station, control the “Roll Back” (extension), “Lift”, and “Dump” (angle) of the dump box. A fourth lever, “Tailgate,” controls the tailgate.

There are several characteristics that must be remembered as the dump box is moved and positioned.

- As the dump box is raised and lowered, the angle changes. Therefore, the angle must be adjusted as it is raised and lowered.
- If extended after it is raised, it will also rise further.
- Engine speed effects the speed of the dump box. While it may be necessary to increase engine speed above idle, full throttle is not recommended. The hydraulics are powerful enough to cause serious damage to a building if contact occurs.
- It is possible to contact the operator and controls at the operator station with the dump box if the dump box is not fully lowered before retracting.
- Never tilt the dump box forward if it is over half full or debris could contact the operator.

### With the outriggers down and the machine level:

1. Open the lids on top of the dump box.
2. Using the “Roll Back” and “Lift” levers, extend or raise the dump box. If raising, use the “Dump” lever concurrently to keep the dump box fairly level.

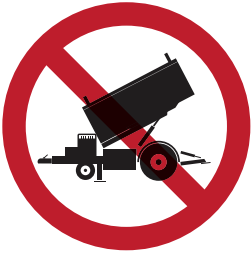
**NOTE: When working in close areas, use a spotter.**

3. When the Equipter is ready to be moved, lower the dump box using all appropriate levers. The dump box must be in the complete transport position before driving or towing.

### **WARNING**

Be sure the tailgate is closed before loading the dump box.

### **DANGER**



Dumping the box forward on the RB4000® trailer could result in operator injury.

Figure 22. Decal-Operator Contact Possible

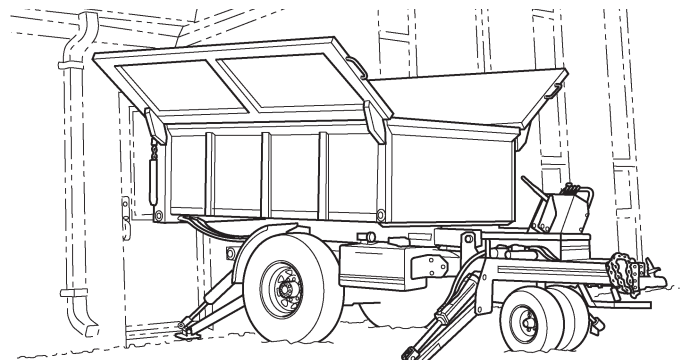


Figure 23. Flaps Open Under Roof.

### **CAUTION**

The angle of the dump box must be kept level as it is lowered or debris may fall out.

### **CAUTION**

Keep personnel away from the Equipter when lowering. Debris may fall out, causing injury to personnel in the vicinity.



## Emptying the Dump Box

The dump box can be dumped from any height or extension point. This allows transfer of debris into a truck or roll back-type container.

### To dump the debris from the Equipter:

1. Drive the Equipter into position.
2. Engage parking brakes.
3. Lower the outriggers using the appropriate precautions as outlined in the outrigger section.
4. Using the “Roll Back” and “Lift” control levers, raise and extend the dump box to position it above the truck or container. Maintain a level orientation using the “Dump” lever.
5. Fully open the tailgate using the “Tailgate lever”.
6. Use the “Dump” lever to angle the dump box backward and empty the contents completely. As the contents begin to unload, the dump box should be raised slowly.
7. After the dump box is empty, close the tailgate and return the dump box to the transport position using all appropriate levers.
8. Raise the outriggers completely using the appropriate precautions outlined in the outrigger section.
9. Disengage parking brake.

### DANGER

Never extend or raise dump box without the outriggers lowered. Always leave clearance for the outriggers when positioning the Equipter.

### DANGER

Be aware of overhead power lines at all times. Failure to maintain adequate clearance will result in death or serious injury.

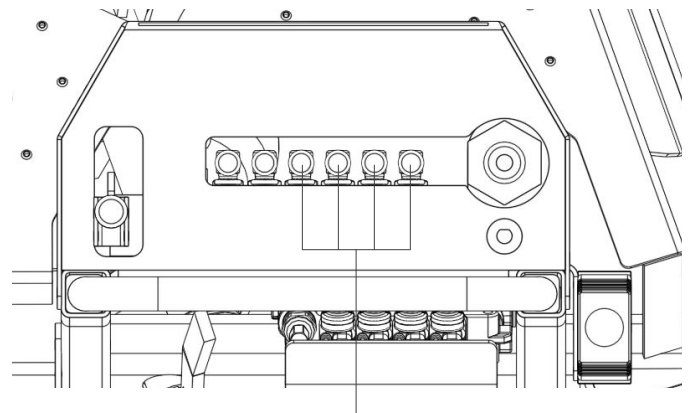


Figure 24. Dump, Roll Back, Lift, and Tailgate levers

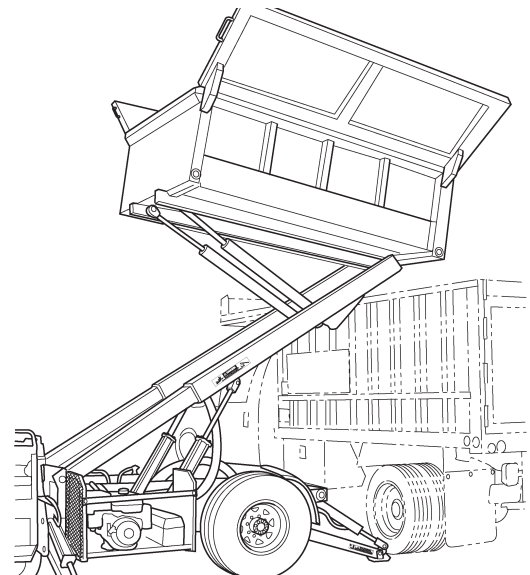


Figure 25. Dumping Debris from Dump Box.

## EXTENSION RAILS

Optional rear extension rails extend the reach of the Equipter in situations that the standard reach is insufficient. Two sheets of plyboard (not included) are placed on the rails to extend reach approximately 8 ft. The rails are stored on the side of the dump bed for transport.

Remove the two rails stored on the side of the mainframe (see illustration). Insert the 1-1/2 inch square tubes into the longer 2 inch square rails and place the 5/16 inch pins or bolts through the holes in the tubes and rails. Insert the other end of the 2 inch square rails into sockets on each side of the dump box tailgate.

Place first 4 × 8 ft. sheet of 5/8 inch plyboard on the top of the rails and down against the open flaps. Place plyboard holders over the rails and overlapping the plyboard. Place the 5/16 inch pins or bolts on the bottom side of the rails.

Position the second sheet of plyboard by sliding it into the inserts on the 1-1/2 inch square tubes.

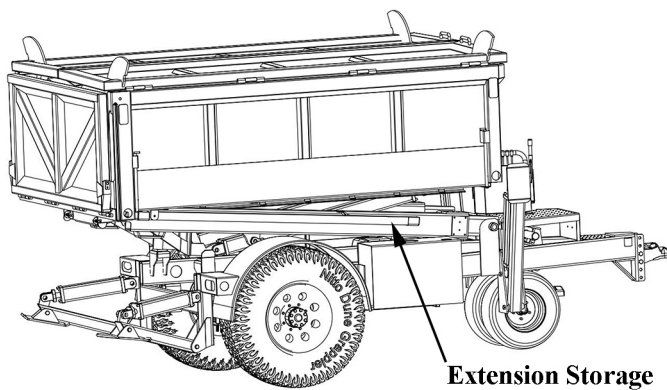


Figure 28. Rear Extension Rails Stored

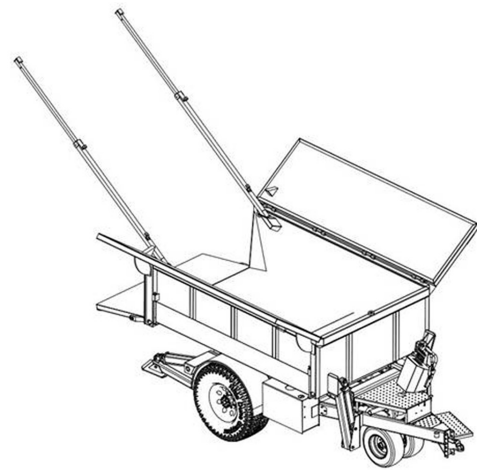


Figure 29. Rear Extension Rails Installed

Lower the plyboard down into the plyboard holder overlapping the first sheet of plyboard. For added safety place four 2 inch screws through the holes provided in the plyboard holder.

Position the second sheet of plyboard by sliding it into the inserts on the 1-1/2 inch square tubes.

### **⚠ WARNING**

**Never remove or replace rails or spouting guard from storage unless dump box is in the transport position.**

**If rear extension rails are used never extend the lift or roll back beyond half of their full extension.**

**Extension rails are only to be used as a debris slide. Never allow debris to build up (weight limit 150 lbs.).**

## OPTIONAL MATS

Mats allow the Equipter to traverse areas that would normally be damaged by a vehicle driving across. The mats distribute the load across a wider foot print, provide improved traction on slippery surfaces, and are lightweight and portable.

The mats store under the dump bed, sliding in from the rear. To store or remove the mats the dump bed must be dumped slightly to allow sufficient clearance. After sliding them into the storage position, the dump bed must be lowered back to the transport position.

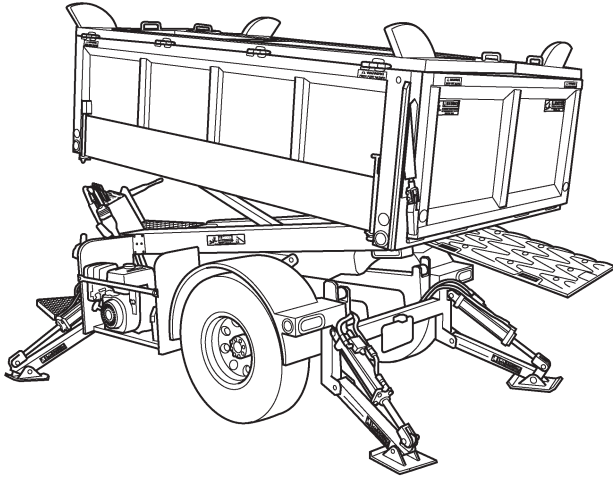


Figure 26. Preparing to Store the Mats.

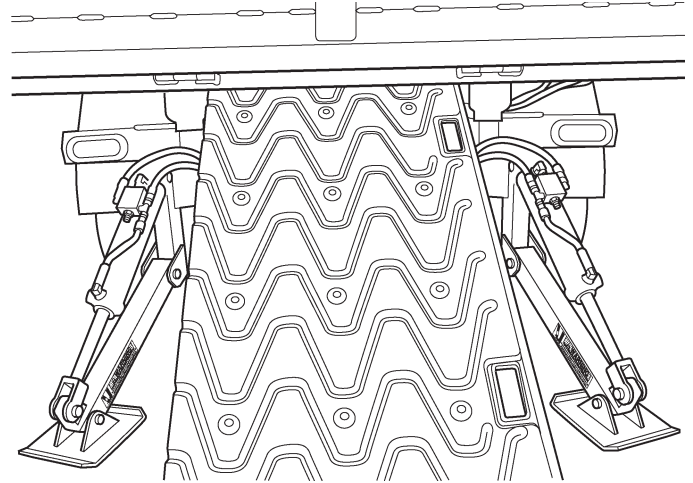


Figure 27. Mat Storage.

## CHUTES

The optional Chute kit “funnels” debris into the Equipter, reducing the need for repositioning. The Chutes can be stored on the side of the dump box when not in use.

These chutes can be screwed or nailed onto the roof to “funnel” debris into the dump box. For most efficient results angle the chutes towards the dump box using them as slide chutes.

### **WARNING**

Never step or walk on chutes. Chutes are not designed as a support for personnel.

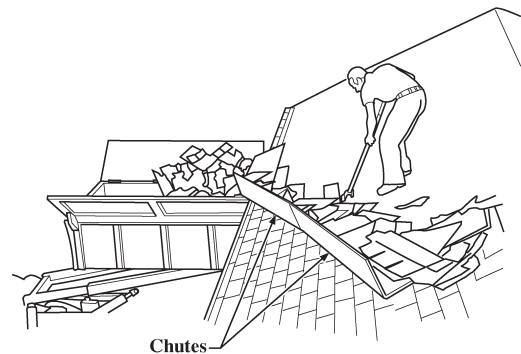


Figure 30. Chutes in Use.

## SPOUTING GUARD

The optional Spouting Guard protects the spouting from collecting debris and possibly causing damage. It lies on the edge of the roof, wrapping around the spout.

Screw or nail the guard up approximately 8 inches from the bottom edge of the roof. The remaining part of the sheet now extends over the spouting causing all debris to slide smoothly over the spouting, falling

### Chute and Spouting Guard Storage

Optional chutes and gutter guards are stored by sliding them into the space underneath the dump box. A small support above the fender provides a guide to rest the Chutes and Guides on as they are slid under the dump box. If both options are to be stored together, the Spouting Guard must be inserted first.

After sliding the chute/gutter guard into the space, secure it by fully lowering the orange latch at each end of the dump box.

#### **WARNING**

Never step or walk on Spouting Guard as it will not support personnel and could cause falling from the roof.

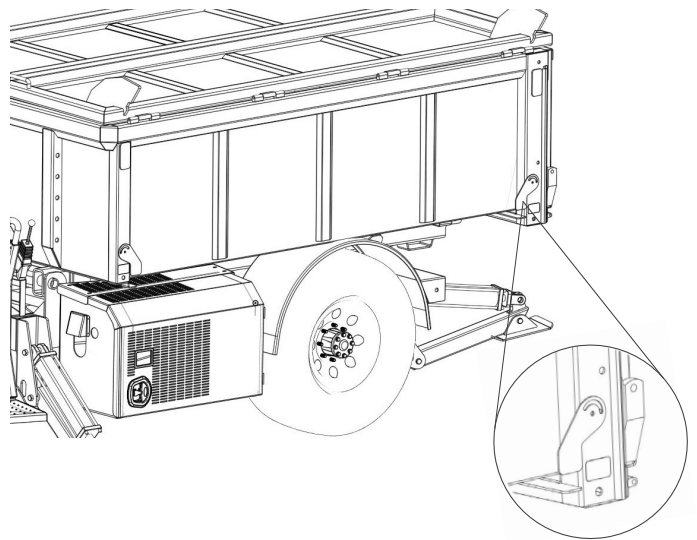


Figure 31. Chute and Spouting Guard Storage

## CONTROL PANEL COVER

The optional black vinyl control panel cover protects the valves from water and ice damage, extending the life of the hydraulic system.

Affix the cover by extending the two bungee cords on the bottom of the cover and latching the hooks around the bottom of the operator's stand.

## SPARE TIRE MOUNT AND OUTRIGGER STORAGE PAD

The optional spare tire mount and outrigger pad storage attach to the front of the RB4000 dump box. Note: the dump box accommodates only one accessory; that is, it cannot fit a spare tire mount and outrigger pad storage at the same time.

## How to attach the spare tire mount or outrigger pad storage:

1. Attach the accessory to the center-left section on the front of the RB4000.
2. Align the installation holes on the sides of the accessory to the holes on the front of the dump box. Insert each of the 2 rods fully through the holes. Secure the accessory by clipping the provided cotter pins through the small hole in each rod.

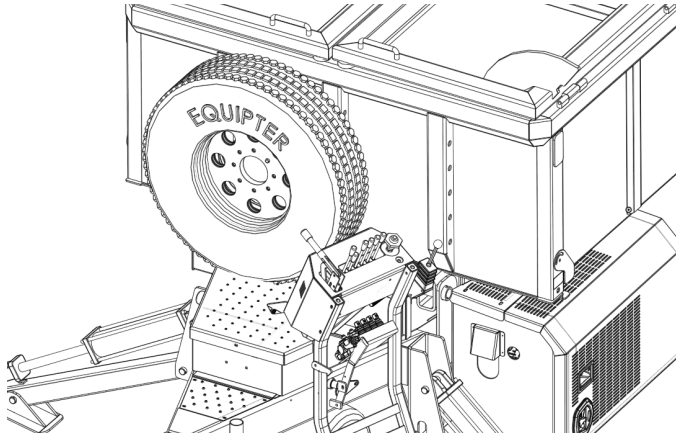


Figure 32. Spare Tire

## TIRE SAFETY INFORMATION

This portion of the User's Manual contains tire safety information as required by 49 CFR 575.6. This section covers:

“Steps for Determining Correct Load Limit - Trailer.”

“Steps for Determining Correct Load Limit – Tow Vehicle.”

A Glossary of Tire Terminology, including “cold inflation pressure,” “maximum inflation pressure,” “recommended inflation pressure,” and other non-technical terms.

Information from the NHTSA brochure entitled “Tire Safety – Everything Rides On It”. This brochure, as well as the preceding subsections, describes the following items;

- Tire labeling, including a description and explanation of each marking on the tires, and information about the DOT Tire Identification Number (TIN).
- Recommended tire inflation pressure, including a description and explanation of:
  - a. Cold inflation pressure.
  - b. Vehicle Placard and location on the vehicle.
  - c. Adverse safety consequences of under inflation (including tire failure).
  - d. Measuring and adjusting air pressure for proper inflation.
- Tire Care, including maintenance and safety practices.

- Vehicle load limits, including a description and explanation of the following items:
  - a. Locating and understanding the load limit information, total load capacity, and cargo capacity.
  - b. Calculating total and cargo capacities with varying seating configurations including quantitative examples showing / illustrating how the vehicles cargo and luggage capacity decreases as combined number and size of occupants' increases. This item is also discussed in Section 3.
  - c. Determining compatibility of tire and vehicle load capabilities.
  - d. Adverse safety consequences of overloading on handling and stopping on tires.

### **Steps for Determining Correct Load Limit – Trailer**

Determining the load limits of a trailer includes more than understanding the load limits of the tires alone. On all trailers there is a Federal certification/VIN label that is located on the forward half of the left (road) side of the unit. This certification/VIN label will indicate the trailer's Gross Vehicle Weight Rating (GVWR). This is the most weight the fully loaded trailer can weigh. It will also provide the Gross Axle Weight Rating (GAWR). This is the most a particular axle can weigh. If there are multiple axles, the GAWR of each axle will be provided.

If your trailer has a GVWR of 10,000 pounds or less, there is a vehicle placard located in the same location as the certification label described above. This placard provides tire and loading information. In addition, this placard will show a statement regarding maximum cargo capacity. Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer can not exceed the stated GVWR.

For trailers with living quarters installed, the weight of water and propane also need to be considered. The weight of fully filled propane containers is considered part of the weight of the trailer before it is loaded with cargo, and is not considered part of the disposable cargo load. Water however, is a disposable cargo weight and is treated as such. If there is a fresh water storage tank of 100 gallons, this tank when filled would weigh about 800 pounds. If more cargo is being transported, water can be off-loaded to keep the total amount of cargo added to the vehicle within the limits of the GVWR so as not to overload the vehicle. Understanding this flexibility will allow you, the owner, to make choices that fit your travel needs.

When loading your cargo, be sure it is distributed evenly to prevent overloading front to back and side to side. Heavy items should be placed low and as close to the axle positions as reasonable. Too many items on one side may overload a tire. The best way to know the actual weight of the vehicle is to weigh it at a public scale. Talk to your dealer to discuss the weighing methods needed to capture the various weights related to the trailer. This would include the weight empty or unloaded, weights per axle, wheel, hitch or king-pin, and total weight.

Excessive loads and/or under inflation cause tire overloading and, as a result, abnormal tire flexing occurs. This situation can generate an excessive amount of heat within the tire. Excessive heat may lead to tire failure. It is the air pressure that enables a tire to support the load, so proper inflation is critical. The proper air pressure may be found on the certification/VIN label and/or on the Tire Placard. This value should never exceed the maximum cold inflation pressure stamped on the tire.

## Trailers 10,000 Pounds Gvwr or Less

1. Locate the statement, “The weight of cargo should never exceed XXX kg or XXX lbs.,” on your vehicle’s placard. See Figure 27.
2. This figure equals the available amount of cargo and luggage load capacity.
3. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage load capacity.

The trailer’s placard refers to the Tire Information Placard attached adjacent to or near the trailer’s VIN (Certification) label at the left front of the trailer.

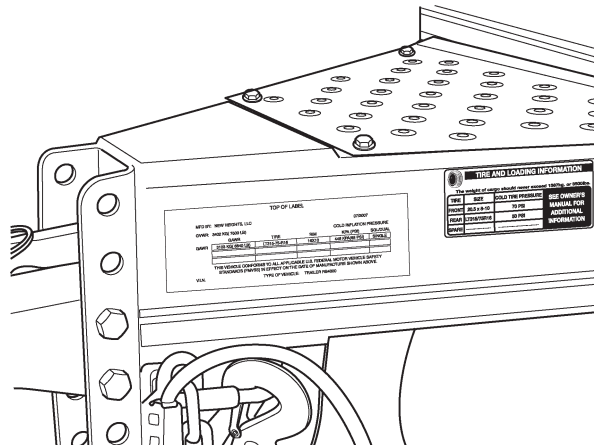


Figure 32. VIN Label, Tire and Loading Information Placard

## Trailers Over 10,000 Pounds GVWR

**NOTE: Trailers over 10,000 lb. GVWR are not required to have a tire information placard on the vehicle.**

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means. This step does not have to be repeated.
2. Locate the GVWR (Gross Vehicle Weight Rating) of the trailer on your trailer’s VIN (Certification) label.
3. Subtract the empty weight of your trailer from the GVWR stated on the VIN label. That weight is the maximum available cargo capacity of the trailer and may not be safely exceeded.

## Steps For Determining Correct Load Limit – Tow Vehicle

1. Locate the statement, “The combined weight of occupants and cargo should never exceed XXX lbs.,” on your vehicle’s placard.
2. Determine the combined weight of the driver and passengers who will be riding in your vehicle.
3. Subtract the combined weight of the driver and passengers from XXX kilograms or XXX pounds.
4. The resulting figure equals the available amount of cargo and luggage capacity. For example, if the “XXX” amount equals 1400 lbs. and there will be five 150 lb. passengers in your vehicle, the amount of available cargo and luggage capacity is 650 lbs. ( $1400 - 750 (5 \times 150) = 650$  lbs.).



5. Determine the combined weight of luggage and cargo being loaded on the vehicle. That weight may not safely exceed the available cargo and luggage capacity calculated in Step # 4.
6. If your vehicle will be towing a trailer, load from your trailer will be transferred to your vehicle. Consult the tow vehicle's manual to determine how this weight transfer reduces the available cargo and luggage capacity of your vehicle.

## GLOSSARY OF TIRE TERMINOLOGY

**Accessory weight** – The combined weight (in excess of those standard items which may be replaced) of automatic transmission, power steering, power brakes, power windows, power seats, radio and heater, to the extent that these items are available as factory-installed equipment (whether installed or not).

**Bead** – The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and that is shaped to fit the rim.

**Bead separation** – This is the breakdown of the bond between components in the bead.

**Bias ply tire** – A pneumatic tire in which the ply cords that extend to the beads are laid at alternate angles substantially less than 90 degrees to the centerline of the tread.

**Carcass** – The tire structure, except tread and sidewall rubber which, when inflated, bears the load.

**Chunking** – The breaking away of pieces of the tread or sidewall.

**Cold inflation pressure** – The pressure in the tire before you drive.

**Cord** – The strands forming the plies in the tire.

**Cord separation** – The parting of cords from adjacent rubber compounds.

**Cracking** – Any parting within the tread, sidewall, or inner liner of the tire extending to cord material.

**CT** – A pneumatic tire with an inverted flange tire and rim system in which the rim is designed with rim flanges pointed radially inward and the tire is designed to fit on the underside of the rim in a manner that encloses the rim flanges inside the air cavity of the tire.

**Curb weight** – The weight of a motor vehicle with standard equipment including the maximum capacity of fuel, oil, and coolant, and, if so equipped, air conditioning and additional weight optional engine.

**Extra load tire** – A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

**Groove** – The space between two adjacent tread ribs.

**Gross Axle Weight Rating** – The maximum weight that any axle can support, as published on the Certification / VIN label on the front left side of the trailer. Actual weight determined by weighing each axle on a public scale, with the trailer attached to the towing vehicle.

**Gross Vehicle Weight Rating** – The maximum weight of the fully loaded trailer, as published on the Certification/VIN label. Actual weight determined by weighing trailer on a public scale, without being attached to the towing vehicle.

**Hitch Weight** – The downward force exerted on the hitch ball by the trailer coupler.



**Innerliner** – The layer(s) forming the inside surface of a tubeless tire that contains the inflating medium within the tire.

**Innerliner separation** – The parting of the innerliner from cord material in the carcass.

**Intended outboard sidewall** – The sidewall that contains a white-wall, bears white lettering or bears manufacturer, brand, and/or model name molding that is higher or deeper than the same molding on the other sidewall of the tire or the outward facing sidewall of an asymmetrical tire that has a particular side that must always face outward when mounted on a vehicle.

**Light truck (LT) tire** – A tire designated by its manufacturer as primarily intended for use on lightweight trucks or multipurpose passenger vehicles.

**Load rating** – The maximum load that a tire is rated to carry for a given inflation pressure.

**Maximum load rating** – The load rating for a tire at the maximum permissible inflation pressure for that tire.

**Maximum permissible inflation pressure** – The maximum cold inflation pressure to which a tire may be inflated.

**Maximum loaded vehicle weight** – The sum of curb weight, accessory weight, vehicle capacity weight, and production options weight.

**Measuring rim** – The rim on which a tire is fitted for physical dimension requirements.

**Pin Weight** – The downward force applied to the 5th wheel or gooseneck ball, by the trailer kingpin or gooseneck coupler.

**Non-pneumatic rim** – A mechanical device which, when a non-pneumatic tire assembly incorporates a wheel, supports the tire, and attaches, either integrally or separably, to the wheel center member and upon which the tire is attached.

**Non-pneumatic spare tire assembly** – A non-pneumatic tire assembly intended for temporary use in place of one of the pneumatic tires and rims that are fitted to a passenger car in compliance with the requirements of this standard.

**Non-pneumatic tire** – A mechanical device which transmits, either directly or through a wheel or wheel center member, the vertical load and tractive forces from the roadway to the vehicle, generates the tractive forces that provide the directional control of the vehicle and does not rely on the containment of any gas or fluid for providing those functions.

**Non-pneumatic tire assembly** – A non-pneumatic tire, alone or in combination with a wheel or wheel center member, which can be mounted on a vehicle.

**Normal occupant weight** – This means 68 kilograms (150 lbs.) times the number of occupants specified in the second column of Table I of 49 CFR 571.110.

**Occupant distribution** – The distribution of occupants in a vehicle as specified in the third column of Table I of 49 CFR 571.110

**Open splice** – Any parting at any junction of tread, sidewall, or innerliner that extends to cord material.

**Outer diameter** – The overall diameter of an inflated new tire.

**Overall width** – The linear distance between the exteriors of the sidewalls of an inflated tire, including elevations due to labeling, decorations, or protective bands or ribs.

**Ply** – A layer of rubber-coated parallel cords.

**Ply separation** – A parting of rubber compound between adjacent plies.

**Pneumatic tire** – A mechanical device made of rubber, chemicals, fabric and steel or other materials, that, when mounted on an automotive wheel, provides the traction and contains the gas or fluid that sustains the load.

**Production options weight** – The combined weight of those installed regular production options weighing over 2.3 kilograms (5 lbs.) in excess of those standard items which they replace, not previously considered in curb weight or accessory weight, including heavy duty brakes, ride levelers, roof rack, heavy duty battery, and special trim.

**Radial ply tire** – A pneumatic tire in which the ply cords that extend to the beads are laid at substantially 90 degrees to the centerline of the tread.

**Recommended inflation pressure** – This is the inflation pressure provided by the vehicle manufacturer on the Tire Information label and on the Certification/VIN tag.

**Reinforced tire** – A tire designed to operate at higher loads and at higher inflation pressures than the corresponding standard tire.

**Rim** – A metal support for a tire or a tire and tube assembly upon which the tire beads are seated.

**Rim diameter** – This means the nominal diameter of the bead seat.

**Rim size designation** – This means the rim diameter and width.

**Rim type designation** – This means the industry of manufacturer's designation for a rim by style or code.

**Rim width** – This means the nominal distance between rim flanges.

**Section width** – The linear distance between the exteriors of the sidewalls of an inflated tire, excluding elevations due to labeling, decoration, or protective bands.

**Sidewall** – That portion of a tire between the tread and bead.

**Sidewall separation** – The parting of the rubber compound from the cord material in the sidewall.

**Special Trailer (ST) tire** – The "ST" is an indication the tire is for trailer use only.

**Test rim** – The rim on which a tire is fitted for testing, and may be any rim listed as appropriate for use with that tire.

**Tread** – That portion of a tire that comes into contact with the road.

**Tread rib** – A tread section running circumferentially around a tire.

**Tread separation** – Pulling away of the tread from the tire carcass.

**Treadwear indicators (TWI)** – The projections within the principal grooves designed to give a visual indication of the degrees of wear of the tread.

**Vehicle capacity weight** – The rated cargo and luggage load plus 68 kilograms (150 lbs.) times the vehicle's designated seating capacity.

**Vehicle maximum load on the tire** – The load on an individual tire that is determined by distributing to each axle its share of the maximum loaded vehicle weight and dividing by two.

**Vehicle normal load on the tire** – The load on an individual tire that is determined by distributing to each axle its share of the curb weight, accessory weight, and normal occupant weight (distributed in accordance with Table I of CRF 49 571.110) and dividing by 2.

**Weather side** – The surface area of the rim not covered by the inflated tire.

**Wheel center member** – In the case of a non-pneumatic tire assembly incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic rim and provides the connection between the non-pneumatic rim and the vehicle; or, in the case of a non-pneumatic tire assembly not incorporating a wheel, a mechanical device which attaches, either integrally or separably, to the non-pneumatic tire and provides the connection between tire and the vehicle.

**Wheel-holding fixture** – The fixture used to hold the wheel and tire assembly securely during testing.

## **TIRE SAFETY - EVERYTHING RIDES ON IT**

The National Traffic Safety Administration (NHTSA) has published a brochure (DOT HS 809 361) that discusses all aspects of Tire Safety, as required by CFR 575.6. This brochure is reproduced in part below. It can be obtained and downloaded from NHTSA, free of charge, from the following web site:

[http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires\\_index.html](http://www.nhtsa.dot.gov/cars/rules/TireSafety/ridesonit/tires_index.html)

Studies of tire safety show that maintaining proper tire pressure, observing tire and vehicle load limits (not carrying more weight in your vehicle than your tires or vehicle can safely handle), avoiding road hazards, and inspecting tires for cuts, slashes, and other irregularities are the most important things you can do to avoid tire failure, such as tread separation or blowout and flat tires. These actions, along with other care and maintenance activities, can also:

- Improve vehicle handling
- Help protect you and others from avoidable breakdowns and accidents
- Improve fuel economy
- Increase the life of your tires

This booklet presents a comprehensive overview of tire safety, including information on the following topics:

- Basic tire maintenance
- Uniform Tire Quality Grading System
- Fundamental characteristics of tires
- Tire safety tips

Use this information to make tire safety a regular part of your vehicle maintenance routine. Recognize that the time you spend is minimal compared with the inconvenience and safety consequences of a flat tire or other tire failure.

## Safety First - Basic Tire Maintenance

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Under inflated tires and overloaded vehicles are a major cause of tire failure. Therefore, as mentioned above, to avoid flat tires and other types of tire failure, you should maintain proper tire pressure, observe tire and vehicle load limits, avoid road hazards, and regularly inspect your tires.

### Finding Your Vehicle's Recommended Tire Pressure and Load Limits

Tire information placards and vehicle certification labels contain information on tires and load limits. These labels indicate the vehicle manufacturer's information including:

- Recommended tire size
- Recommended tire inflation pressure
- Vehicle capacity weight (VCW—the maximum occupant and cargo weight a vehicle is designed to carry)
- Front and rear gross axle weight ratings (GAWR— the maximum weight the axle systems are designed to carry)

Both placards and certification labels are permanently attached to the trailer near the left front.

### Understanding Tire Pressure and Load Limits

Tire inflation pressure is the level of air in the tire that provides it with load-carrying capacity and affects the overall performance of the vehicle. The tire inflation pressure is a number that indicates the amount of air pressure— measured in pounds per square inch (psi)—a tire requires to be properly inflated. (You will also find this number on the vehicle information placard expressed in kilopascals (kpa), which is the metric measure used internationally.)

Manufacturers of passenger vehicles and light trucks determine this number based on the vehicle's design load limit, that is, the greatest amount of weight a vehicle can safely carry and the vehicle's tire size. The proper tire pressure for your vehicle is referred to as the "recommended cold inflation pressure." (As you will read below, it is difficult to obtain the recommended tire pressure if your tires are not cold.)

Because tires are designed to be used on more than one type of vehicle, tire manufacturers list the "maximum permissible inflation pressure" on the tire sidewall. This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

### Checking Tire Pressure

It is important to check your vehicle's tire pressure at least once a month for the following reasons:

- Most tires may naturally lose air over time.
- Tires can lose air suddenly if you drive over a pothole or other object or if you strike the curb when parking.
- With radial tires, it is usually not possible to determine under inflation by visual inspection.

For convenience, purchase a tire pressure gauge to keep in your vehicle. Gauges can be purchased at tire dealerships, auto supply stores, and other retail outlets.

The recommended tire inflation pressure that vehicle manufacturers provide reflects the proper psi when a tire is cold. The term cold does not relate to the outside temperature. Rather, a cold tire is one that has not been driven on for at least three hours. When you drive, your tires get warmer, causing the air pressure within them to increase. Therefore, to get an accurate tire pressure reading, you must measure tire pressure when the tires are cold or compensate for the extra pressure in warm tires.

### Steps For Maintaining Proper Tire Pressure

- Step 1: Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
- Step 2: Record the tire pressure of all tires.
- Step 3: If the tire pressure is too high in any of the tires, slowly release air by gently pressing on the tire valve stem with the edge of your tire gauge until you get to the correct pressure.
- Step 4: If the tire pressure is too low, note the difference between the measured tire pressure and the correct tire pressure. These "missing" pounds of pressure are what you will need to add.
- Step 5: At a service station, add the missing pounds of air pressure to each tire that is under inflated.
- Step 6: Check all the tires to make sure they have the same air pressure (except in cases in which the front and rear tires are supposed to have different amounts of pressure).

If you have been driving your vehicle and think that a tire is under inflated, fill it to the recommended cold inflation pressure indicated on your vehicle's tire information placard or certification label. While your tire may still be slightly under inflated due to the extra pounds of pressure in the warm tire, it is safer to drive with air pressure that is slightly lower than the vehicle manufacturer's recommended cold inflation pressure than to drive with a significantly under inflated tire. Since this is a temporary fix, don't forget to recheck and adjust the tire's pressure when you can obtain a cold reading.

### Tire Size

To maintain tire safety, purchase new tires that are the same size as the vehicle's original tires or another size recommended by the manufacturer. Look at the tire information placard, the owner's manual, or the sidewall of the tire you are replacing to find this information. If you have any doubt about the correct size to choose, consult with the tire dealer.

### Tire Tread

The tire tread provides the gripping action and traction that prevent your vehicle from slipping or sliding, especially when the road is wet or icy. In general, tires are not safe and should be replaced when the tread is worn down to 1/16 of an inch. Tires have built-in treadwear indicators that let you know when it is time to replace your tires. These indicators are raised sections spaced intermittently in the bottom of the tread grooves. When they appear "even" with the outside of the tread, it is time to replace your tires. Another method for checking tread depth is to place a penny in the tread with Lincoln's head upside down and facing you. If you can see the top of Lincoln's head, you are ready for new tires.

## Tire Balance and Wheel Alignment

To avoid vibration or shaking of the vehicle when a tire rotates, the tire must be properly balanced. This balance is achieved by positioning weights on the wheel to counterbalance heavy spots on the wheel-and-tire assembly. A wheel alignment adjusts the angles of the wheels so that they are positioned correctly relative to the vehicle's frame. This adjustment maximizes the life of your tires. These adjustments require special equipment and should be performed by a qualified technician.

## Tire Repair

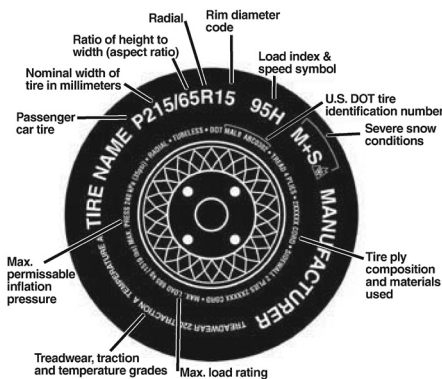
The proper repair of a punctured tire requires a plug for the hole and a patch for the area inside the tire that surrounds the puncture hole. Punctures through the tread can be repaired if they are not too large, but punctures to the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

## Tire Fundamentals

Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and also provides a tire identification number for safety standard certification and in case of a recall.

## Information on Passenger Vehicle Tires

Please refer to the diagram below.



**P** - The “P” indicates the tire is for passenger vehicles.

**Next number** - This three-digit number gives the width in millimeters of the tire from sidewall edge to sidewall edge. In general, the larger the number, the wider the tire.

**Next number** - This two-digit number, known as the aspect ratio, gives the tire's ratio of height to width. Numbers of 70 or lower indicate a short sidewall for improved steering response and better overall handling on dry pavement.

**R** - The “R” stands for radial. Radial ply construction of tires has been the industry standard for the past 20 years.

**Next number** - This two-digit number is the wheel or rim diameter in inches. If you change your wheel size, you will have to purchase new tires to match the new wheel diameter.

**Next number** - This two- or three-digit number is the tire's load index. It is a measurement of how much weight each tire can support. You may find this information in your owner's manual. If not, contact a local tire dealer. Note: You may not find this information on all tires because it is not required by law.

**M+S** - The "M+S" or "M/S" indicates that the tire has some mud and snow capability. Most radial tires have these markings; hence, they have some mud and snow capability.

**Speed Rating** - The speed rating denotes the speed at which a tire is designed to be driven for extended periods of time. The ratings range from 99 miles per hour (mph) to 186 mph. These ratings are listed below. Note: You may not find this information on all tires because it is not required by law.

Letter Rating	Speed Rating
Q	99 mph
R	106 mph
S	112 mph
T	118 mph
U	124 mph
H	130 mph
V	149 mph
W	168* mph
Y	186* mph

*\*For Tires with a maximum speed capability over 149 mph, tire manufacturers sometimes use the letters ZR.  
For those with a maximum speed capability over 186 mph, tire manufacturers always use the letters ZR*

**U.S. DOT Tire Identification Number** - This begins with the letters "DOT" and indicates that the tire meets all federal standards. The next two numbers or letters are the plant code where it was manufactured, and the last four numbers represent the week and year the tire was built. For example, the numbers 3197 means the 31st week of 1997. The other numbers are marketing codes used at the manufacturer's discretion. This information is used to contact consumers if a tire defect requires a recall.

**Tire Ply Composition and Materials Used** - The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon, polyester, and others.

**Maximum Load Rating** - This number indicates the maximum load in kilograms and pounds that can be carried by the tire.

**Maximum Permissible Inflation Pressure** - This number is the greatest amount of air pressure that should ever be put in the tire under normal driving conditions.

### UTQGS Information

**Treadwear Number** - This number indicates the tire's wear rate. The higher the treadwear number is, the longer it should take for the tread to wear down. For example, a tire graded 400 should last twice as long as a tire graded 200.

**Traction Letter** - This letter indicates a tire's ability to stop on wet pavement. A higher graded tire should allow you to stop your car on wet roads in a shorter distance than a tire with a lower grade. Traction is graded from highest to lowest as "AA," "A," "B," and "C".





**Tire safety checklist:**

- Check tire pressure regularly (at least once a month), including the spare.
- Inspect tires for uneven wear patterns on the tread, cracks, foreign objects, or other signs of wear or trauma.
- Remove bits of glass and foreign objects wedged in the tread.
- Make sure your tire valves have valve caps.
- Check tire pressure before going on a long trip.
- Do not overload your vehicle. Check the Tire Information and Loading Placard or User's Manual for the maximum recommended load for the vehicle.

## SPECIFICATIONS

GVWR.....	7500 lbs.
Empty Weight .....	4140 lbs.
Tongue Weight (approximate).....	660 lbs.
Overall Transport Width.....	6 feet
Overall Length.....	13 feet
Width with Lids Open.....	10-1/2 feet
Extension Back (from rear axle centerline).....	6-1/2 feet
Dump Height (from pivot pin).....	11 feet
Dump Box Capacity (lift, dump and rollback) .....	4000 lbs.
Dump Box Capacity (towing).....	3540 lbs.*
Maximum Travel Speed .....	55 mph (88 kph)
Engine Power.....	13 hp.

### Hydraulic Pump Rating

Hydrostat..... 18 gpm 3000 psi (Axle only)

Cylinder Pump .....

Hydraulic Tank Capacity..... 15 Gallon

Oil Type .....Chevron® Rando HD Prem MV Hyd Oil, Mobil® DTE 12 or

..... 12Mor Castrol® - Aerial Lift

Tire Size .....Rear Wheels LT315/75R16 E Nitto Dune Grappler Tire 3860 Load Rating \*\*

..... Front wheels 20.5 × 8/10

Wheel (Rear)..... 16 × 10 Aluminum Procomp, Part Number 10696182, 3420 lb Load Rating

*\*Dump box capacity is reduced by the weight of any accessories, such as mats, Chutes, etc. and tools, such as shovels and rakes, which are stored on the Equipter.*

*\*\*Replace with this tire of the equivalent.*

- LT315/75R16 E Fuzion XTI
- LT315/75R16 E Kelly Safari TSR tire
- LT315/75R161E Fierce MT tire

## OPERATIONS CHECKLIST

- The Operator's Manual must be read and understood by the operator
- The Equipter must be licensed and registered according to all local, state and federal laws and regulations.
- Some states require annual trailer inspections

### Tow Vehicle Requirements

- Tow capacity of at least 7500 lbs.
- 2-5/16 inch ball
- Electric brake controller

### Connect and Disconnect

- Safety chains should be attached to tow vehicle before front wheels are raised or lowered.
- Always disconnect and connect Equipter on level ground. If disconnecting or connecting on level ground is not possible, use blocking in front of and behind rear wheels to prevent the machine from rolling.

### Trailer Connect

- Position trailer hitch over tow vehicle ball
- Fasten safety chains
- Engage parking brake
- Raise front wheels to lower hitch onto ball
- Confirm front wheels are in locked position
- Slightly engage the reverse drive lever to ensure the hydraulic motor has disengaged from the rear axle
- Stop engine and turn off fuel
- Lock coupler and insert pin
- Connect light plug
- Fasten break-away switch (not to chains or removable hitch)
- Raise and latch step
- Disengage parking brake
- Check hitch and safety chain connections
- Confirm all lights and brakes work

### Trailer Disconnect

- Engage parking brake
- Start engine and turn on fuel
- Disconnect coupler, light plug and break-away switch
- Lower front wheels and ensure they are in locked position
- Slightly engage the reverse drive lever to ensure the hydraulic motor has engaged the rear axle for job site use
- Disconnect safety chains

### General Driving

- Disengage parking brake
- Dump box must be in transport position
- Drive forward or reverse with the drive lever
- Steer using the marked lever
- When not moving equipment, engage parking brake

### Dump Box Operation

- Park Equipter on firm, level surface
- Level equipment with outriggers before raising or extending the dump box.
- Open lids
- Move dump box into desired position with appropriate levers
- Keep all outriggers firmly on ground until box is in transport position
- Never adjust outriggers while dump box is not in transport position

### Parking

- Always engage parking brake
- Always park Equipter on firm, level surface. If surface is smooth, block wheels to prevent unexpected movement.



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[www.equipter.com](http://www.equipter.com)