PARTS AND OPERATION MANUAL

ST-1614

VIN NUMBER

SWAPLOADER® U.S.A. LTD.

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TO THE CUSTOMER:

Your new SwapLoader Trailer was carefully designed and manufactured to give years of dependable service. For your safety, read and understand this manual before operating your trailer. If there are any questions about information in this manual, please consult your dealer.

Record your VIN number in the appropriate space provided on the title page. Your SwapLoader dealer needs this information to give prompt, efficient service when ordering parts. It pays to rely on an authorized SwapLoader Distributor for your service needs. For the location of the Distributor nearest you, contact SwapLoader.

This manual covers the basic trailer. You must read, understand and follow the instructions given by the trailer manufacturer, tow vehicle and trailer hitch manufacturers. Keep all manuals always provided with your trailer in a safe place.

NOTE: It is SwapLoader's policy to constantly strive to improve SwapLoader products. The information, specifications, and illustrations in this publication are based on the information in effect at the time of approval for printing and publishing. SwapLoader therefore reserves the right to make changes in design and improvements whenever it is believed the efficiency of the unit will be improved without incurring any obligations to incorporate such improvements in any unit which has been shipped or is in service. It is recommended that users contact an authorized SwapLoader Distributor for the latest revisions.

LIMITED WARRANTY STATEMENT

Effective April 1, 2025

SwapLoader U.S.A., Ltd., (SwapLoader), warrants to the original purchaser of any new SwapLoader trailer product sold by an authorized SwapLoader distributor or service center, that such products are free of defects in material and workmanship. All SwapLoader trailer products with an original factory in-service date of April 1, 2025, or later qualify for warranty as defined in this Limited Warranty Statement.

		3 YEAR
		Not to extend beyond 48 months from the original factory ship date
TRAILER	**Manufactured Components**	
	SwapLoader Manufactured Parts (excludes replacement or service parts) includes but not limited to: • Weldments • Pins • Hardware • Piece Parts	✓
	Repair Labor	✓
	Vendor Supplied Components	
	Includes but not limited to: • Cylinders • Springs • Batteries • Tires • Power Units • Wheels • Jack Stands • Fenders • Couplers • Tarps • Hoses & Fittings • Lights • Remotes • Toolboxes • Jib Lockout Sensor • All vendor replacement parts	Reverts to Vendor Warranty
	Repair Labor	

Coverage Start Date:

- Derived from the completed warranty registration at Trailer Product Registration - SwapLoader USA, Ltd. In the event warranty registration is not completed, the factory ship date will be used.
- Items under “manufactured components” on page 1 are allowed a 12-month period between factory shipment and in service date to account for distributor stock.

Warranty Process:

- Unless otherwise stated the following warranty process must be followed for repairs and/or replacement parts to be covered:
  - Prior to any parts orders or repair work, contact SwapLoader at 888-767-8000 or warranty@swaploader.net to initiate a claim and pre-authorize repairs.
  - Distributor will then order replacement parts and SwapLoader will invoice the distributor for the replacement parts and freight.
  - After authorized repair is completed the distributor must submit a fully completed warranty claim form.
  - If required by SwapLoader, defective parts will be assigned an RGA (return goods authorization) number, and those parts must be returned freight prepaid with a copy of the RGA form within 30 days of repair or credit consideration will not be given.
  - Upon evaluation of the returned parts if warranty is approved credit will be issued to the appropriate distributor account for the approved warranty costs which may include parts, labor, and/or freight.
  - SwapLoader will, at its discretion, adjust labor credit to pre-authorized or known repair times for covered repairs or service.

Warranty Limitations & Responsibilities:

- Warranty service must be performed by a distributor or service center authorized by SwapLoader to sell and/or service SwapLoader products. Distributors or service centers will use only new or remanufactured parts or components furnished by SwapLoader U.S.A. LTD.
- Defects in material and workmanship must be reported to SwapLoader immediately at time of discovery, subsequent damage caused by delay of defect reporting and repair will not be covered under warranty.
- Defects observed inside of the active warranty period and reported outside of the active warranty period will not be covered.
- Warranty service, repairs or returns must be pre-authorized by SwapLoader to be considered for credit.
- SwapLoader will, at its discretion, either repair defective parts or replace them with equivalent parts.
- SwapLoader will ship any replacement parts by the most economical, yet expedient means possible. Expedited freight delivery will be at the expense of the owner.
- Labor rates and credits are determined by the SwapLoader Distributor agreement.
- This warranty covers only defective material and workmanship. It does not cover depreciation or damage caused by normal wear and tear, accident, mishap, untrained operators, or improper or unintended use. The owner has the obligation of performing routine care and maintenance duties as stated in SwapLoader’s written instructions, recommendations, and specifications. Any damage resulting from owner/operator failure to perform such duties shall void the coverage of this warranty. The cost of labor and supplies associated with routine maintenance will be paid by the owner.
- Warranty Registration must be submitted within 15 days of Retail Sale of SwapLoader hoist to www.swaploader.com. If unit has not been registered, then the warranty start date will revert to the original factory ship date. Warranty Registration is the ultimate responsibility of the owner. If the owner is unsure product registration has been completed, contact SwapLoader at 888-767-8000 or send email sales@swaploader.net to confirm.
- In no event will SwapLoader, the SwapLoader distributor or any company affiliated with SwapLoader be liable for business interruptions, costs of delay, or for any special, indirect, incidental, or consequential costs or damages. Such costs may include, but are not limited to:
  - loss of time
  - loss of revenue
  - loss of use
  - wages
  - salaries
  - commissions
  - lodging
  - meals
  - towing
  - hydraulic fluid
  - travel
  - mileage
  - any other incidental costs
- Warranty shall not apply if the equipment is operated in abnormal conditions or operated at capacities more than factory ratings.
- Warranty is expressly void if the seal on the main relief control valve has been tampered with or broken.
- Warranty is expressly void if serial number plate or stamping is tampered with.
- Paint, plating, and coatings are not covered under this warranty policy.
- All products purchased by SwapLoader from outside vendors shall be covered by the warranty offered by that respective manufacturer unless defined otherwise on page 1.

IT IS EXPRESSLY UNDERSTOOD AND AGREED THAT THERE ARE NO WARRANTIES MADE BY THE MANUFACTURER OR ITS AGENTS, REPRESENTATIVES OR DISTRIBUTORS, EITHER EXPRESSED, IMPLIED, OR IMPLIED BY LAW, EXCEPT THOSE EXPRESSLY STATED ABOVE IN THIS STANDARD LIMITED WARRANTY AGAINST DEFECTS IN MATERIAL AND WORKMANSHIP. THE MANUFACTURER AND ITS AGENTS, REPRESENTATIVES AND DISTRIBUTORS SPECIFICALLY DISCLAIM ANY IMPLIED WARRANTY OR MERCHANTABILITY OR FITNESS FOR ANY PARTICULAR PURPOSE.

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2.1 SAFETY ALERT SYMBOLS AND SIGNAL WORDS

An Owner's Manual can only provide general information about trailers and cannot include all the specific details needed for every possible trailer, tow vehicle, and hitch combination. It is essential that you read, understand, and follow the instructions provided by the manufacturers of your tow vehicle and trailer hitch, in addition to the guidance in this manual.

Our trailers incorporate components from various manufacturers, some of which come with their own instruction manuals. If this manual refers you to another manual and you do not have it, please contact your dealer for assistance.

You will find "DANGER," "WARNING," or "CAUTION" messages throughout this manual, highlighted in bold and accompanied by the relevant safety symbol. Be sure to read these messages carefully to avoid potential personal injury or damage to equipment.

2.2 MAJOR HAZARDS

Losing control of the trailer or the combined trailer and tow vehicle can result in serious injury or death. Common causes of trailer control loss include:

- Mismatching the trailer size with the tow vehicle.
- Driving at speeds unsuitable for road or weather conditions.
- Incorrect braking or steering during trailer sway.
- Overloading or improper weight distribution.
- Failure to regularly tighten lug nuts.
- Not adjusting driving habits when towing.
- Inadequate tire pressure maintenance.
- Improper or insecure coupling between the trailer and the hitch.

2.2.1 IMPROPER SIZING OF TRAILER TO TOW VEHICLE

Using a trailer that exceeds the capabilities of the tow vehicle can cause stability issues, increasing the risk of serious injury or death. It may also place undue stress on the tow vehicle's engine and drivetrain, leading to costly repairs.

Never exceed your tow vehicle's towing limits. These limits—such as the maximum Gross Trailer Weight (GTW) and the Gross Combined Weight Rating (GCWR) are specified in your tow vehicle's Owner's Manual.

DANGER **Use of an under-rated hitch, ball or tow vehicle can result in loss of control leading to death or serious injury.**

Make certain your hitch and tow vehicle are rated for your trailer.

2.2.2 DRIVING TOO FAST

With ideal road conditions, the maximum recommended speed for safely towing a trailer is 55 mph. Driving too fast can cause the trailer to sway, thus increasing the possibility for loss of control. Also, your tires may overheat, increasing the possibility of a blowout.

WARNING **Driving too fast for conditions can result in loss of control and cause death or serious injury.**

Adjust speed down when towing trailer.

2.2.3 ADJUST DRIVING WHEN TOWING TRAILER

Towing a trailer affects your vehicle's performance in several ways: it reduces acceleration, increases stopping distances, and widens your turning radius. The trailer alters your vehicle's handling, making it more responsive to steering inputs and more susceptible to being affected by crosswinds or passing large vehicles. Additionally, due to reduced acceleration and the added length, more space is required to safely pass other vehicles.

Keep the following guidelines in mind when towing:

- If trailer sway occurs, ease off the accelerator and make only minimal steering adjustments to stay on course. Avoid oversteering, which can worsen the sway. Do not apply the tow vehicle's brakes to stop the sway. Instead, apply the trailer brakes alone if possible—this is especially effective when traveling downhill, as it can help realign the trailer.
- Check your mirrors often to monitor both the trailer and surrounding traffic.
- Be mindful of trailer height when approaching overpasses, low-hanging branches, and covered areas.
- Stay alert in slippery conditions. Towing a trailer increases the likelihood of losing traction on wet or icy roads compared to driving without one.
- Anticipate trailer sway. It can be triggered by sudden steering movements, strong wind gusts, road edge drops, or the pressure wave from large passing vehicles like buses and trucks.
- Use lower gears on steep or extended descents. Rely on the engine and transmission to assist with braking. Avoid continuous braking, which can cause the brakes to overheat and lose effectiveness.

2.2.4 TRAILER NOT PROPERLY COUPLED TO HITCH

It is critical that the trailer be securely coupled to the hitch, and that the safety chains and emergency breakaway brake lanyard are correctly attached. Uncoupling may result in death or serious injury to you and to others.

WARNING **Proper selection and condition of the coupler and hitch are essential to safely towing a trailer.**

A loss of coupling may result in death or serious injury.

Hitch size must match coupler size.

Be sure hitch load rating is equal to or greater than load rating of the coupler.

Be sure hitch components are tight before coupling trailer to tow vehicle.

Observe hitch for wear, corrosion and cracks before coupling. Replace worn, corroded or cracked hitch components before coupling trailer to tow vehicle.

WARNING **An improperly coupled trailer can result in death or serious injury. Do not move the trailer until:**

- **The coupler is secured and locked to hitch.**
- **Safety chains are secured to tow vehicle.**
- **Trailer jack(s) are fully retracted.**
- **Trailer brakes are checked.**
- **Tires and wheels are checked.**
- **Breakaway switch is connected to tow vehicle;**
- **The trailer lights are connected and checked.**
- **Load is secured to trailer.**

2.2.5 PROPER USE OF SAFETY CHAINS

Safety chains are provided so that control of the trailer can be maintained if your trailer comes loose from the hitch.

WARNING **Improper rigging of the safety chains can result in loss of control of the trailer and tow vehicle, leading to death or serious injury, if the trailer uncouples from the tow vehicle.**

Cross chains underneath hitch and coupler with enough slack to permit turning and to hold tongue up, if the trailer comes loose.

Fasten chains to the frame of tow vehicle.

Do not fasten chains to any part of the hitch unless the hitch has holes or loops specifically for that purpose.

2.2.6 PROPER CONNECTION OF BREAKAWAY BRAKE

If your trailer is equipped with brakes, it will also include a breakaway brake system designed to automatically apply the trailer's brakes if it becomes disconnected from the hitch. If your trailer has this system, it may come with a separate instruction manual—be sure to review it carefully. For the breakaway system to function correctly, all components, including the battery, must be properly installed, maintained, and in good working condition.

WARNING **An ineffective or inoperative breakaway brake system can result in a runaway trailer, leading to death or serious injury if the coupler or hitch fails.**

Breakaway lanyard must be connected to the tow vehicle, NOT to any part of the hitch.

Before towing trailer, test the function of the breakaway brake system. If the breakaway brake system is not working, do not tow the trailer. Have it serviced or repaired.

2.2.7 MATCHING TRAILER AND HITCH

DANGER **Be sure hitch and tow vehicle are rated for the Gross Vehicle Weight Rating (GVWR) of your trailer.**

Use of a hitch with a load rating less than the load rating of the trailer can result in loss of control and may lead to death or serious injury.

Use of a tow vehicle with a towing capacity less than the load rating of the trailer can result in loss of control and may lead to death or serious injury.

2.2.8 WORN TIRES, LOOSE WHEELS AND LUG NUTS

Before each trip, thoroughly inspect all trailer tires. If any tire shows signs of damage—such as bald spots, bulges, cuts, cracks, or exposed cords—it must be replaced before towing.

If you notice uneven tread wear, have the trailer inspected at a certified trailer service center. This condition may be caused by issues such as tire imbalance, axle misalignment, or improper inflation.

Worn tires with insufficient tread depth cannot provide adequate traction on wet surfaces, increasing the risk of losing control, which could lead to serious injury or death.

Incorrect tire pressure contributes to accelerated tire wear and can compromise trailer stability, potentially leading to a blowout or loss of control. For this reason, tire pressure should be checked before every tow.

The correct tire pressure is specified on the Certification/VIN label, typically located on the front left side of the trailer. Tire pressure should be measured when the tires are cold. Allow the tires to cool for at least 3 hours after driving just one mile at 40 mph before checking pressure

WARNING **Inflate tires to pressure stated on the Certification / VIN label.**

Improper tire pressure may cause unstable trailer. Blowouts and loss of control may occur. Death or serious injury can result.

Make sure of proper tire pressure before towing trailer.

The tightness of the wheel nuts or bolts is very important in keeping the wheels properly seated to the hub. Before each tow, check to make sure they are tight.

WARNING **Metal creep between the wheel rim and wheel nuts or bolts may cause rim to loosen.**

Death or injury can occur if wheel comes off.

Tighten lug nuts or bolts before each tow.

The proper tightness (torque) for wheel nuts or bolts and tightening sequence is listed in the Inspection, Service and Maintenance section of this manual. Use a torque wrench to tighten the lug nuts and use the crisscross star pattern sequence. Improper tightening of the lug nuts voids the axle warranty.

Wheel nuts or bolts are also prone to loosen after first being assembled. When driving a new trailer (or after wheels have been remounted), check to make sure they are tight after the first 10, 25 and 50 miles of driving and before each tow thereafter.

Failure to perform this check can result in a wheel separating from the trailer and a crash, leading to death or serious injury.

WARNING **Wheel nuts or bolts are prone to loosen after being first assembled. Death or serious injury can result.**

Check wheel nuts or bolts for tightness on a new trailer, and after re-mounting a wheel at 10, 25 and 50 miles.

WARNING **Inadequate wheel nut or bolt torque can cause a wheel to separate from the trailer, leading to death or serious injury.**

Verify wheel nuts or bolts are tight before each tow.

2.2.9 IMPROPER LOADING

The total weight of the load you put on the trailer, plus the empty weight of the trailer itself, must not exceed the trailer's Gross Vehicle Weight Rating (GVWR).

If you do not know the empty weight of the trailer plus the cargo weight, you must weigh the loaded trailer at a commercial scale. In addition, you must distribute the load in the trailer such that the load on any axle does not exceed the Gross Axle Weight Rating (GAWR).

If your trailer is equipped with a Tire & Loading Information Placard, mounted next to the Certification / VIN label, the cargo capacity weight stated on that placard is only a close estimate. The GVWR and GAWR are listed on the Certification / VIN label normally located on the front left side of the trailer.

WARNING **An overloaded trailer can result in failure or loss of control of the trailer, leading to death or serious injury.**

Never load a trailer so that the weight on any tire exceeds its rating.

Never exceed the trailer Gross Vehicle Weight Rating (GVWR) or axle Gross Axle Weight Rating (GAWR).

2.2.10 UNSAFE LOAD DISTRIBUTION

Improper front / rear load distribution can lead to an unstable trailer or poor tow vehicle handling. Poor trailer stability results from tongue weights that are too low, and poor tow vehicle stability results from tongue weights that are too high.

Refer to the "Loading and Unloading" section for more information.

In the following table, the second column shows the rule of thumb percentage of total weight of the trailer plus its cargo (Gross Trailer Weight, or "GTW") that should appear on the tongue of the trailer. For example, a large trailer with a loaded weight of 6,000 pounds, should have 10-15% of 6,000 pounds (600-900 lbs.) on the hitch.

Tongue Weight as a Percentage of Loaded Trailer Weight	
Type of Hitch	Percentage
Ball Hitch or Ring & Pintle	10-15% for large trailers 6-10% for small trailers

The numbers quoted are for example purposes only and should be tailored to the specific trailer.

For questions regarding the actual percentage of tongue weight for the trailer, check with the manufacturer for specifics.

After loading, be sure to check that none of the axles are overloaded.

Uneven left / right load distribution can cause tire, wheel, axle or structural failure.

Be sure your trailer is evenly loaded left / right. Towing stability also depends on keeping the center of gravity as low as possible.

WARNING **Improper tongue weight (load distribution) can result in loss of control of the trailer, leading to death or serious injury.**

Make certain that tongue weight is within the allowable range.

Be sure to:

- **Distribute the load evenly, right and left.**
- **Keep the center of gravity low.**
- **Distribute the load front-to-rear to provide proper tongue weight (see chart).**

2.2.11 SHIFTING CARGO

Since the trailer "ride" can be bumpy and rough, you must secure the cargo so that it does not shift while the trailer is being towed.

WARNING **A shifting load can result in failure, or to loss of control of the trailer, and can lead to death or serious injury.**

You must tie down all loads with proper sized fasteners, chains, straps, etc. to prevent the load from shifting while towing

2.2.12 INAPPROPRIATE CARGO

The trailer may be designed for specific cargo. If your trailer is designed for specific cargo, only carry that cargo in the trailer. A trailer must not be used to carry certain items, such as people, containers of hazardous substances or containers of flammable substances.

WARNING **Do not transport people on your trailer.**

- **Besides putting their lives at risk, the transport of people on a trailer is illegal.**

Do not transport flammable, explosive, poisonous or other dangerous materials on your trailer.

- **The exception is fuel in the tank of a vehicle or equipment being hauled.**

2.2.13 INOPERABLE BRAKES OR LIGHTS

If your trailer has electric brakes, your tow vehicle will have an electric brake controller that sends power to the trailer brakes.

Before towing the trailer, you must operate the brake controller while trying to pull the trailer to confirm that the electric brakes operate. While towing the trailer at less than 5 mph, manually operate the electric brake controller in the tow vehicle cab. You should feel the operation of the trailer brakes.

If your trailer has hydraulic “surge” brakes, pull the emergency breakaway brake lanyard to check the operation of the surge mechanism.

Be sure that the electric brakes and all the lights on your trailer are functioning properly before towing the trailer. Electric brakes and lights on a trailer are controlled via a connection to the tow vehicle, generally a multi-pin electrical connector.

WARNING **Improper electrical connection between the tow vehicle and the trailer will result in inoperable lights and electric brakes and can lead to collision.**

Before each tow:

- **Check that the electric brakes work by operating the brake controller inside the tow vehicle.**
- **Check that all lights and turn signals work.**

You must provide mirrors that allow you to safely observe approaching traffic. Standard mirrors usually do not provide adequate visibility for viewing traffic to the sides and rear a towed trailer.

2.2.14 TRAILER MODIFICATIONS

Modification of the trailer structure or alteration of your trailer can make the trailer unsafe and will void all warranty options. Before making any alteration to the trailer, contact your dealer or the manufacturer and describe the alteration you are contemplating.

2.2.15 TRAILER TOWING GUIDE

Driving a vehicle with a trailer in tow is vastly different from driving the same vehicle without a trailer in tow. Acceleration, maneuverability and braking are all diminished with a trailer in tow. It takes longer to get up to speed; you need more room to turn and pass, and more distance to stop when towing a trailer.

You will need to spend time adjusting to the different feel and maneuverability of the tow vehicle with a loaded trailer. Because of the significant differences in all aspects of maneuverability

when towing a trailer, the hazards and risks of injury are also much greater than when driving without a trailer.

You are responsible for keeping your vehicle and trailer in control, and for all the damage that is caused if you lose control of your vehicle and trailer.

Find an open area with little or no traffic for your first practice. Before you start towing the trailer, you must follow all the instructions for inspection, testing, loading and coupling. Also, before you start towing, adjust the mirrors so you can see the trailer as well as the area to the rear of it.

Drive slowly at first, 5 mph or so, and turn the wheel to get a feel of how the tow vehicle and trailer combination responds. Next, make some right and left hand turns. Watch in your side mirrors to see how the trailer follows the tow vehicle. Turning with a trailer attached requires more room.

Stop the rig a few times from speeds no greater than 10 mph. If your trailer is equipped with brakes, try using different combinations of trailer/electric brake and tow vehicle brake. Note the effect that the trailer brakes have when they are the only brakes used. When properly adjusted, the trailer brakes will come on just before the tow vehicle brakes.

It will take practice to learn how to back up a tow vehicle with a trailer attached. Take it slow. Before backing up, get out of the tow vehicle and look behind the trailer to make sure that there are no obstacles.

Some drivers place their hands at the bottom of the steering wheel, and while the tow vehicle is in reverse, “think” of the hands as being on the top of the wheel. When the hands move to the right (counterclockwise, as you would do to turn the tow vehicle to the left when moving forward), the rear of the trailer moves to the right.

Conversely, rotating the steering wheel clockwise with your hands at the bottom of the wheel will move the rear of the trailer to the left, while backing up. Be careful not to allow the trailer to turn too much, because it will hit the rear of the tow vehicle. To straighten the rig, either pull forward, or turn the steering wheel in the opposite direction.

2.2.16 SAFE TRAILER TOWING GUIDELINES

Before towing, check coupling, safety chain, brakes, tires, wheels and lights.

Check the lug nuts or bolts for tightness. Recheck the load tie downs to make sure the load will not shift during towing.

Check coupler tightness after towing 50 miles.

Adjust the brake controller to engage the trailer brakes before the tow vehicle brakes. Follow the brake controller manufacturer’s literature.

Use your mirrors to verify that you have room to change lanes or pull into traffic.

Use your turn signals well in advance.

Allow plenty of stopping space for your trailer and tow vehicle.

Use lower gears for climbing and descending grades.

Do not ride the brakes while descending grades; they may get so hot that they stop working. Then you will potentially have a runaway tow vehicle and trailer.

Do not apply the tow vehicle brakes to correct extreme trailer swaying. Instead, lightly apply the trailer brakes with the hand controller.

Make regular stops, about once each hour. Confirm that:

- The coupler is secure to the hitch and is locked.
- Electrical connectors are made.
- There is appropriate slack in safety chains.
- There is appropriate slack in breakaway lanyard.
- The tires are not visibly low on pressure.
- The cargo is secure and in good condition.

Slow down for bumps in the road.

Do not brake while in a curve unless necessary. Instead, slow down before you enter the curve.

Do not drive so fast that the trailer begins to sway due to speed. Generally, never drive faster than 55 m.p.h.

Allow plenty of room for passing. A rule of thumb is that the passing distance with a trailer is 4 times the passing distance without a trailer.

2.2.17 SAFETY WARNING LABELS ON YOUR TRAILER

Your trailer will have the following safety labels:

90P08 – HOIST-BODY SPECIFICATIONS

90P10 – HYDRAULIC OIL FLAMMABLE

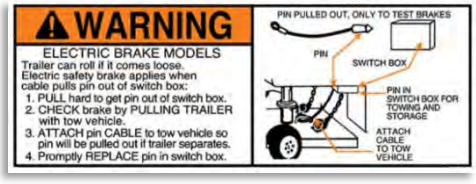
90P11 – HOIST FALLING

90P13 – SWAPLOADER SAFETY INSTRUCTIONS

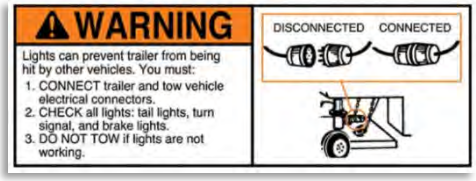
90P78 – HIGH-PRESSURE FLUID

91P52 – COUNTERBALANCE VALVE

91P85 – ELECTRIC BRAKE



91P86 – TRAILER LIGHTS



91P87 – TRAILER TIRES

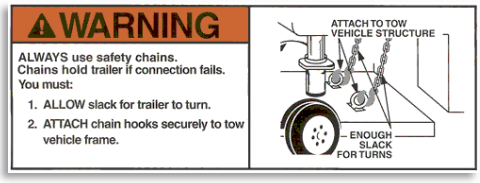
91P89 – TRAILER COUPLER

91P90 – TRAILER LOAD

91P94 – OUTSIDE CONTROLS

91P96 – TRAILER CHARGING

91P99 – TRAILER SAFETY CHAINS



WARNING **To protect you and others against death or serious injury, all applicable labels shown must be on the trailer and must be legible.**

If any of these labels are missing or cannot be read, contact your dealer for replacement labels.

2.2.18 REPORTING SAFETY DEFECTS

If you believe that your vehicle has a defect that 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 SwapLoader U.S.A. Ltd.

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 SwapLoader U.S.A. Ltd.

To contact NHTSA, you may call the Vehicle Safety Hotline toll-free at 1-888-327-4236 (TTY: 1-800-424-9153); or go to http://www.safercar.gov; or write to: Administrator, NHTSA, 1200 New Jersey SE, Washington, DC 20590. You can also obtain other information about motor vehicle safety from http://www.safercar.gov.

Call 888-767-8000 to reach SwapLoader U.S.A. Ltd.

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

Section 3.1 contains "Trailer Tire Information".

Section 3.2 contains "Steps for Determining Correct Load Limit - Trailer".

Section 3.3 contains "Steps for Determining Correct Load Limit – Tow Vehicle".

Section 3.4 contains a Glossary of Tire Terminology, including "cold inflation pressure", "maximum inflation pressure", "recommended inflation pressure", and other non-technical terms.

Section 3.5 contains 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:
  - Cold inflation pressure.
  - Vehicle Placard and location on the vehicle.
  - Adverse safety consequences of underinflation (including tire failure).
  - 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:
  - Locating and understanding the load limit information, total load capacity, and cargo capacity.
  - 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**.
  - Determining compatibility of tire and vehicle load capabilities.
  - Adverse safety consequences of overloading on handling and stopping on tires.

3.1 TRAILER TIRE INFORMATION

Trailer tires may be worn out even though they still have plenty of tread left. This is because trailer tires must carry a lot of weight all the time, even when not in use.

It is better for the tire to roll down the road than to be idle. During use, the tire releases lubricants that are beneficial to tire life. Using the trailer tires often also helps prevent flat spots from developing.

The main cause of tire failure is improper inflation. Check the cold tire inflation pressures at least once a week for proper inflation levels. "Cold" means that the tires are at the same temperature as the surrounding air, such as when the vehicle has been parked overnight. Wheel and tire manufacturers recommend adjusting the air pressure to the trailer manufacturer's recommended cold inflation pressure, in pounds per square inch (PSI) stated on the vehicle's Federal Certification Label or Tire Placard when the trailer is loaded to its gross vehicle weight rating (GVWR). If the tires are inflated to less than the recommended inflation level or the GVWR of the trailer is exceeded, the load carrying capacity of the tire could be dramatically affected. If the tires are inflated more than the recommended inflation level, handling characteristics of the tow vehicle/trailer combination could be affected. Refer to the

owner's manual or talk to your dealer or vehicle manufacturer if you have any questions regarding proper inflation practices.

Tires can lose air over time. In fact, tires can lose 1 to 3 PSI per month. This is because molecules of air, under pressure, weave their way from the inside of the tire, through the rubber, to the outside. A drop in tire pressure could cause the tire to become overloaded, leading to excessive heat buildup. If a trailer tire is under-inflated, even for a short period of time, the tire could suffer internal damage.

High speed towing in hot conditions degrades trailer tires significantly. As heat builds up during driving, the tire's internal structure starts to break down, compromising the strength of the tire. It is recommended to drive at moderate speeds.

Statistics indicate the average life of a trailer tire is about five years under normal use and maintenance conditions. After three years, replacing the trailer tires with new ones should be considered, even if the tires have adequate tread depth. Some experts claim that after five years, trailer tires are considered worn out and should be replaced, even if they have had minimal or no use. This is such a general statement that it may not apply in all cases. It is best to have your tires inspected by a tire supplier to determine if your tires need to be replaced.

If you are storing your trailer for an extended period, make sure the tires are fully inflated to the maximum rated pressure and that you store them in a cool, dry place, such as a garage. Use tire covers to protect the trailer tires from the harsh effects of the sun.

3.2 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 a 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.

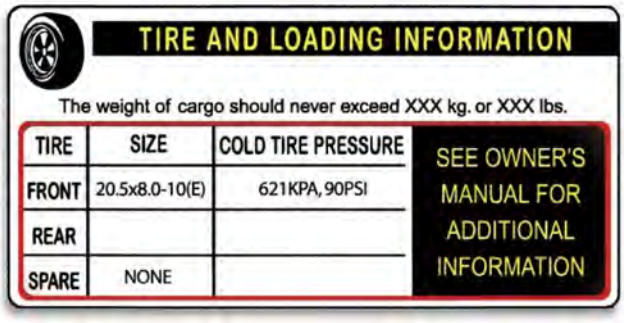
Cargo can be added to the trailer, up to the maximum weight specified on the placard. The combined weight of the cargo is provided as a single number. In any case, remember: the total weight of a fully loaded trailer cannot exceed the stated GVWR.

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 on 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 empty or unloaded weight, 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.

3.2.1 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.
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.



4. 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.

3.2.2 TRAILERS OVER 10,000 POUNDS GVWR

NOTE:

THESE TRAILERS ARE NOT REQUIRED TO HAVE A TIRE INFORMATION PLACARD ON THE TRAILER AND MAY NOT HAVE ONE INSTALLED

1. Determine the empty weight of your trailer by weighing the trailer using a public scale or other means.
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. National Highway Transportation Safety Administration (NHTSA) in addition to notifying us.

3.3 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 x 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 previous step.
6. If your vehicle is 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.

3.4 GLOSSARY OF TIRE TERMINOLOGY

Accessory Weight: The combined weight (more than 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 factoryinstalled equipment (whether installed or not).

Bead: The part of the tire that is made of steel wires, wrapped or reinforced by ply cords and 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. May be used on trailers.

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.

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 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.

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

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.) more than 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: 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 can be any rim listed as appropriate for use with that tire.

Tread: That portion of a tire that meets 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 divided 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 integral or separably, to the non-pneumatic rim and provides the connection between the nonpneumatic 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.

3.5 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

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.

3.5.1 SAFETY FIRST- BASIC TIRE MAINTENANCE

Properly maintained tires improve the steering, stopping, traction, and load-carrying capability of your vehicle. Underinflated 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.

3.5.2 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.

3.5.3 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.

3.5.4 SAFETY FIRST- BASIC TIRE MAINTENANCE

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.

3.5.5 STEPS FOR MAINTAINING PROPER TIRE PRESSURE

1. Locate the recommended tire pressure on the vehicle's tire information placard, certification label, or in the owner's manual.
2. Record the tire pressure of all tires.
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.
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.
5. At a service station, add the missing pounds of air pressure to each tire that is under inflated.
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.

3.5.6 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.

3.5.7 TIRE TREAD

The tire tread provides 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 2/32 of an inch. Tires have built-in tread wear 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.

3.5.8 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.

3.5.9 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 on the sidewall should not be repaired. Tires must be removed from the rim to be properly inspected before being plugged and patched.

3.5.10 TIRE FUNDAMENTALS

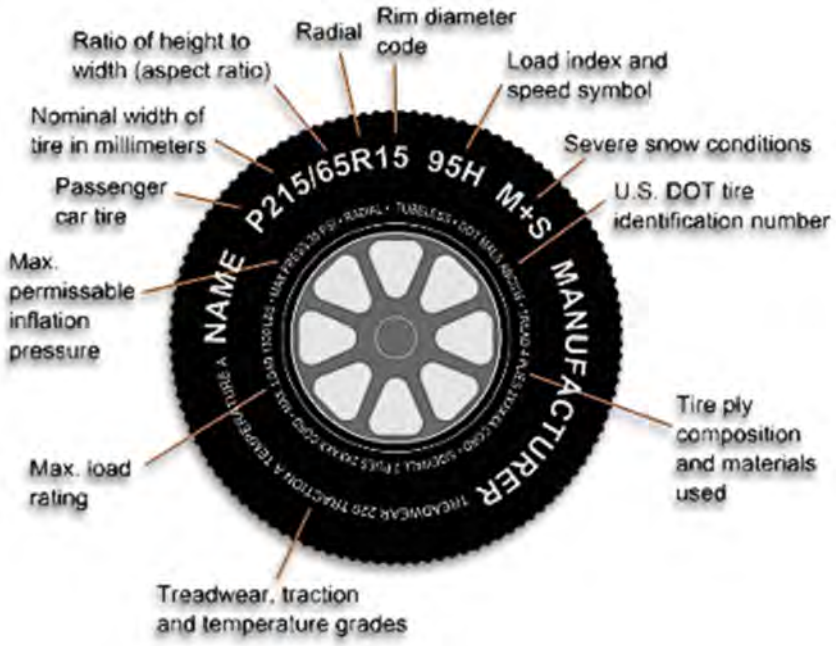
Federal law requires tire manufacturers to place standardized information on the sidewall of all tires. This information identifies and describes the fundamental characteristics of the tire and provides a tire identification number for safety standard certification and in case of a recall.

3.5.10.1 INFORMATION ON PASSENGER VEHICLE TIRES

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.

NOTE:
YOU MAY NOT FIND THIS INFORMATION ON ALL TIRES BECAUSE IT IS NOT REQUIRED BY LAW.

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.

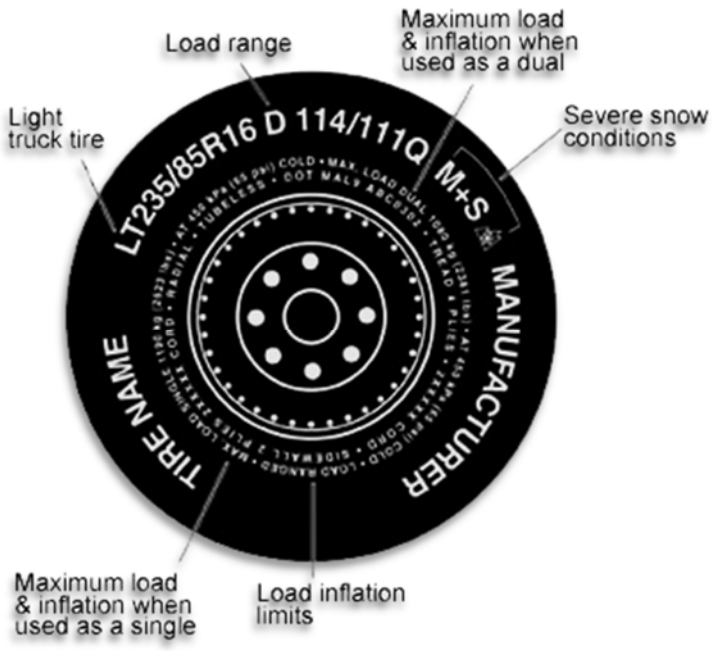
Tire Ply Composition and Materials Used: The number of plies indicates the number of layers of rubber-coated fabric in the tire. In general, the greater the number of plies, the more weight a tire can support. Tire manufacturers also must indicate the materials in the tire, which include steel, nylon,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

3.5.10.2 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".

Temperature Letter: This letter indicates a tire's resistance to heat. The temperature grade is for a tire that is inflated properly and not overloaded. Excessive speed, under inflation or excessive loading, either separately or in combination, can cause heat build-up and possible tire failure. From highest to lowest, a tire's resistance to heat is graded as "A", "B", or "C".

3.5.10.3 ADDITIONAL INFORMATION ON LIGHT TRUCK TIRES

Tires for light trucks have other markings besides those found on the sidewalls of passenger tires.

LT: The "LT" indicates the tire is for light trucks or trailers.

ST: An "ST" is an indication the tire is for trailer use only.

Max. Load Dual kg (lbs.) at kPa (psi) Cold: This information indicates the maximum load and tire pressure when the tire is used as a dual, that is, when four tires are put on each rear axle (a total of six or more tires on the vehicle).

Max. Load Single kg (lbs.) at kPa (psi) Cold: This information indicates the maximum load and tire pressure when the tire is used as a single.

Load Range: This information identifies the tire's loadcarrying capabilities and its inflation limits.

3.5.10.4 TIRE SAFETY TIPS

Preventing Tire Damage

- Slow down if you must go over a pothole or other object in the road.
- Do not run over curbs or other foreign objects in the roadway and try not to strike the curb when parking.

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 Placard or Owner's Manual for the maximum recommended load for the vehicle.

Follow all the safety precautions and instructions in this manual to ensure the safety of persons, cargo, and satisfactory life of the trailer.

4.1 TOW VEHICLE AND HITCH

If the vehicle and hitch are not properly selected and matched to the Gross Vehicle Weight Rating (GVWR)of your trailer, you can cause an accident that could lead to death or serious injury. If you already have a tow vehicle, know your vehicle tow rating and make certain the trailer's rated capacity is less than or equal to the tow vehicle's rated towing capacity.

DANGER **Use of a tow vehicle with a towing capacity less than the load rating of the trailer can result in loss of control and may lead to death or serious injury.**

Use of a hitch with a load rating less than the load rating of the trailer can result in loss of control and may lead to death or serious injury.

Verify hitch and tow vehicle are rated for the Gross Vehicle Weight Rating of your trailer.

4.1.1 TRAILER INFORMATION

The Certification / Vehicle Identification Number (VIN) tag is located on the front left side of the trailer.

The trailer Certification / VIN tag contains the following critical safety information for the use of your trailer:

Manufacturer: Name of trailer manufacturer.

Date Of Manufacture: Month and year the trailer was manufactured.

GVWR: The Gross Vehicle Weight Rating is the maximum allowable gross weight of the trailer and its contents. The gross weight of the trailer includes the weight of the trailer and all the items within it (such as cargo and other supplies).

GAWR: The Gross Axle Weight Rating is the maximum gross weight that an axle can support. It is the lowest of axle, wheel, or tire rating. Sometimes the tire or wheel rating is lower than the axle manufacturers' rating and will then determine GAWR.

The sum of the GAWR for all trailer axles may be less than the GVWR for the trailer, because some of the trailer load is carried by the tow vehicle, rather than by the trailer axle(s). The total weight of the cargo and trailer must not exceed the GVWR, and the load on an axle must not exceed its GAWR.

Tire Size: The tire size and load range for your trailer.

Rim Size: The rim size and load range for your trailer.

PSI: The tire air pressure (kPa / PSI) measured with tires cold.

VIN: The Vehicle Identification Number.

Vehicle Type: Model or style of trailer.

Certification Statement: "This trailer meets all the Federal Motor Vehicle Safety Standards in effect on the date of manufacture shown above".

4.1.2 TOW VEHICLE

When equipping a new vehicle or an older vehicle to tow a trailer, ask the vehicle dealer for advice on how to outfit the tow vehicle.

Vehicle manufacturers will provide you with the maximum towing capacities of their various models, as well as the GCWR. No amount of reinforcement will give a 100 horsepower, 2,500 pound truck the towing capacity that a 300 horsepower, 5,000 pound truck has.

4.2 COUPLING AND UNCOUPLING THE TRAILER

A secure coupling (or fastening) of the trailer to the tow vehicle is essential. A loss of coupling may result in death or serious injury. Therefore, you must understand and follow all of the instructions for coupling.

The following parts are involved in making a secure coupling between the trailer and tow vehicle:

Coupling: The trailer connecting mechanism by which the connection is made to the trailer hitch. This does not include any structural member, extension of the trailer frame, or brake controller.

Hitch: The connecting mechanism, including the ball support platform and ball and those components that extend and are attached to the towing vehicle, including bumpers intended to serve as hitches.

Safety chains: Chains permanently attached to the trailer such that if the coupler connection comes loose, the safety chains can keep the trailer attached to the tow vehicle. With properly rigged safety chains, it is possible to keep the tongue of the trailer from digging into the road pavement, even if the coupler-to-hitch connection comes apart.

Trailer lighting (and braking) connector: A device that connects electrical power from the tow vehicle to the trailer. In addition, if your trailer has a separate brake system, the electrical connector will also supply power to the trailer brakes from the tow vehicle.

Breakaway switch: If the trailer becomes uncoupled from the tow vehicle, the breakaway switch lanyard, attached independently to the tow vehicle hitch, will pull a pin in the emergency electrical breakaway switch on the trailer. The breakaway switch is activated by a battery on the trailer to energize the trailer brakes independently of the towing vehicle.

It is important to check the state of charge of the emergency breakaway battery before each trip. Simply pull the pin out of the switch by hand and then try to pull the trailer. If you feel a significant drag force the brakes are activated. Be sure to re-insert the pin in the breakaway switch. Also be sure to allow enough slack in the breakaway brake lanyard such that the switch will only activate (pin pulls out) if the coupler connection comes loose.

Jack: A device on the trailer that is used to raise and lower the trailer tongue.

WARNING **An improperly coupled trailer can result in death or serious injury. Do not move the trailer until:**

- **Coupler is secured and locked to hitch.**
- **Safety chains are secured to tow vehicle.**
- **Trailer jack(s) are fully retracted.**
- **Trailer brakes are checked.**
- **Tires and wheels are checked.**
- **Breakaway switch is connected to tow vehicle**
- **The trailer lights are connected and checked.**
- **Load is secured to trailer.**

4.3 COUPLE TRAILER TO TOW VEHICLE

Trailers are produced with a variety of coupler devices. One of the sections below will pertain to your trailer.

- Bumper pull (Ball Hitch) Coupler
- Ring and Pintle Coupler
- Gooseneck Hitch Coupler

4.3.1 BALL HITCH COUPLER

A ball hitch coupler connects to a ball that is located on or under the rear bumper of tow vehicle.

We have utilized a ball hitch coupler that is suitable for the size and weight of the trailer. The load rating of the coupler and the necessary ball size are listed on the trailer tongue.

You must provide a hitch and ball for your tow vehicle, that meets or exceeds the GVWR of the trailer.

The ball size must be the same as the coupler size. If the hitch ball is too small, too large, is underrated, is loose or is worn, the trailer can come loose from the tow vehicle, and may cause death or serious injury.

The tow vehicle, hitch and ball must have a rated towing capacity equal to or greater than the trailer gross vehicle weight rating (GVWR).

It is essential that the hitch ball be the same size as the coupler.

The ball size and load rating (capacity) are marked on the ball; hitch capacity is marked on the hitch.

4.3.1.1 BEFORE COUPLING TRAILER TO TOW VEHICLE

1. Be sure the size and rating of hitch ball match the size and rating of the coupler. Hitch balls and couplers are marked with their size and rating.

WARNING **Coupler-to-hitch mismatch can result in uncoupling, leading to death or serious injury.**

Be sure the LOAD RATING of the hitch ball is equal or greater than the load rating of the coupler.

Be sure the SIZE of the hitch ball matches the size of the coupler.

2. Wipe the hitch ball clean and inspect it visually and by feel for flat spots, cracks and pits.

WARNING **A worn, cracked or corroded hitch ball can fail while towing, and may result in death or serious injury.**
Before coupling trailer, inspect the hitch ball for wear, corrosion and cracks.
Replace worn or damaged hitch ball.

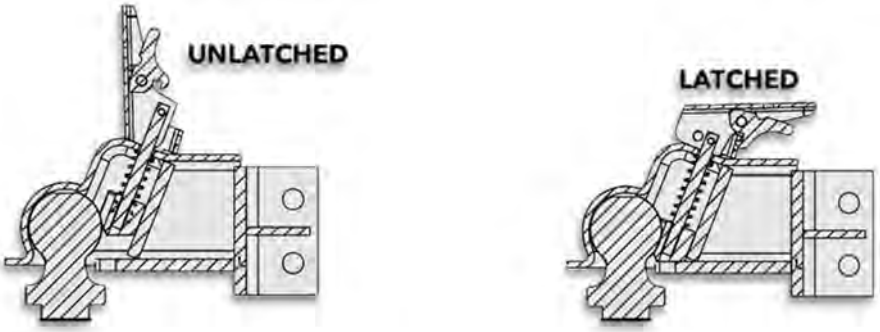
3. Rock the ball to make sure it is tight to the hitch and visually check that the hitch ball nut is solid against the lock washer and hitch frame.
4. Wipe the inside and outside of the coupler clean and inspect it visually for cracks and deformations; feel the inside of the coupler for worn spots and pits.
5. Be sure the coupler is tight to the tongue of the trailer. All coupler fasteners must be visibly solid against the trailer frame.

WARNING **A loose hitch ball nut can result in uncoupling, leading to death or serious injury.**
Make sure the hitch ball is tight to the hitch before coupling the trailer.

6. Raise the bottom surface of the coupler to be above the top of the hitch ball.

4.3.1.2 PREPARE COUPLER AND HITCH

1. Lubricate hitch ball and inside of coupler with a thin layer of automotive bearing grease.
2. Remove safety latch pin and open coupler locking mechanism. In the open position, coupler can drop fully onto hitch ball. See the coupler instructions for details of placing the coupler in the “open” position.
3. Slowly back up tow vehicle so that hitch ball is near or aligned under coupler.



Your trailer may be equipped with a different style coupler. If so, see the coupler manufacturers operating instructions.

4.3.1.3 COUPLE TRAILER TO TOW VEHICLE

1. Lower the trailer tongue until the coupler fully engages the hitch ball. If the coupler does not line up with the hitch ball, adjust the position of the tow vehicle.
2. Close the latch and engage the coupler locking mechanism. In the engaged position, the locking mechanism securely holds the coupler to the hitch ball.
3. Insert the safety lock pin through the hole in the locking mechanism.
4. Be sure the coupler is all the way on the hitch ball and the locking mechanism is engaged. A properly engaged locking mechanism will allow the coupler to raise the rear of the tow

vehicle. Using the trailer jack, test to see that you can raise the rear of the tow vehicle by 1 inch, after the coupler is locked to the hitch.

NOTICE:

THE TONGUE JACK CAN BE DAMAGED BY OVERLOADING. DO NOT USE THE TONGUE JACK TO RAISE THE TOW VEHICLE MORE THAN 1 INCH.

5. If the coupler cannot be secured to the hitch ball, do not tow the trailer. Contact your dealer for assistance.
6. Lower the trailer so that its entire tongue weight is held by the hitch and continue retracting the jack to its fully retraced position.

CAUTION **Drop leg jacks may be spring loaded and may rapidly return to the raise position when released.**

Keep clear when releasing drop legs.

7. Fully retract jack drop leg if equipped.

Go to Section 4.3.3 "Connect Safety Chains" to continue connecting trailer to tow vehicle.

4.3.2 TRAILER WITH RING AND PINTLE COUPLER

A ring on the trailer connects to the pintle that is located on or under the rear bumper of tow vehicle.

The tow vehicle, hitch and pintle must have a rated towing capacity equal to or greater than the trailer gross vehicle weight rating (GVWR).

It is essential that the pintle be the same size as the coupler.

The pintle size and load rating (capacity) are marked on the pintle; ring capacity is marked on the ring.

4.3.2.1 BEFORE COUPLING TRAILER TO TOW VEHICLE

1. Be sure the size and rating of pintle match the size and rating of the ring. Hitch ring and pintles are marked with their size and rating.

WARNING **Ring-to-pintle mismatch can result in uncoupling, leading to death or serious injury.**

Be sure the LOAD RATING of the pintle is equal or greater than the load rating of the ring.

Be sure the SIZE of the pintle matches the size of the ring.

2. Wipe the pintle clean and inspect it visually and by feel for flat spots, cracks and pits.

WARNING **A worn, cracked or corroded pintle can fail while towing, and may result in death or serious injury.**

Before coupling trailer, inspect the pintle for wear, corrosion and cracks.

Replace worn or damaged pintle.

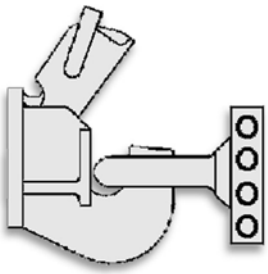
3. Rock the pintle to make sure it is tight to the hitch and visually check that the pintle fasteners are solid against the hitch frame.
4. Wipe the inside and outside of the ring clean and inspect it visually for cracks and deformations; feel the inside of the ring for worn spots and pits.
5. Be sure the ring is tight to the tongue of the trailer. All ring fasteners must be visibly solid against the trailer frame.

WARNING **A loose pintle can result in uncoupling, leading to death or serious injury. Make sure the pintle is tight to the hitch before coupling the trailer.**

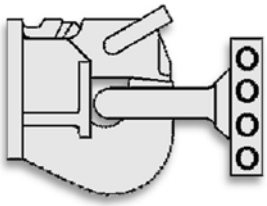
6. Raise the bottom surface of the ring to be above the top of the open pintle.

4.3.2.2 PREPARE RING AND PINTLE

1. Lubricate the inside of the pintle with a thin layer of automotive bearing grease.
2. Remove the safety latch pin and open the pintle locking mechanism.
3. In the open position, the ring can drop fully onto the pintle.
4. See the coupler instructions for details of placing the pintle in the “open” position.
5. Slowly back up the tow vehicle so that the pintle is aligned under the ring.



Pintle Open



Pintle Closed

4.3.2.3 COUPLE TRAILER TO TOW VEHICLE

1. Lower the trailer tongue until the ring fully engages the pintle. If the ring does not line up with the pintle, adjust the position of the tow vehicle.
2. Close the pintle and engage the pintle locking mechanism. In the engaged position, the locking mechanism securely holds the ring to the pintle.
3. Insert the safety lock pin through the hole in the locking mechanism.
4. Be sure the ring is all the way on the pintle, and the locking mechanism is engaged. A properly engaged locking mechanism will allow the pintle to raise the rear of the tow vehicle. Using the trailer jack, test to see that you can raise the rear of the tow vehicle by 1 inch, after the pintle is closed and locked.

NOTICE:

THE TONGUE JACK CAN BE DAMAGED BY OVERLOADING. DO NOT USE THE TONGUE JACK TO RAISE THE TOW VEHICLE MORE THAN 1 INCH.

5. If the ring cannot be secured to the pintle, do not tow the trailer. Contact your dealer for assistance.
6. Lower the trailer so that its entire tongue weight is held by the hitch and continue retracting the jack to its fully retraced position.

CAUTION **Drop leg jacks may be spring loaded and may rapidly return to the raise position when released.**

Keep clear when releasing drop legs.

7. Fully retract jack drop leg if equipped.

Go to Section 4.3.3 "Connect Safety Chains" to continue connecting trailer to tow vehicle.

4.3.3 TRAILER WITH GOOSENECK COUPLER

A gooseneck coupler on the trailer connects to a gooseneck ball that you must have installed in the bed of the tow vehicle. This system of coupling a trailer to a tow vehicle permits the tow vehicle to turn to sharper angles than are permitted by a bumper hitch system. A gooseneck coupler consists of a tube in an inverted "U" shape and a gooseneck ball receiver.

Install a gooseneck ball receiver that is suitable for the size and weight of the trailer. The load rating of the coupler and the necessary ball size are listed on the gooseneck. You must provide a gooseneck ball and support structure that is marked with a rating that meets or exceeds the GVWR of your trailer and matches the size of the gooseneck ball receiver. If the gooseneck ball is too small, is underrated, is loose or is worn, the trailer can come loose from the tow vehicle, and may lead to death or serious injury

The tow vehicle, support structure and gooseneck ball must have a rated towing capacity equal to or greater than the trailer gross vehicle weight rating (GVWR).

It is essential that the gooseneck ball be of the same size as the gooseneck ball receiver.

The ball size and load rating (capacity) are marked on the ball; hitch capacity is marked on the hitch.

4.3.3.1 BEFORE COUPLING TRAILER TO TOW VEHICLE

1. Be sure the size and rating of the gooseneck ball match the size and rating of the receiver.

WARNING **Coupler-to-hitch mismatch can result in uncoupling, leading to death or serious injury.**

Be sure the LOAD RATING of the hitch ball is equal or greater than the load rating of the coupler.

Be sure the SIZE of the hitch ball matches the size of the coupler

2. Wipe the gooseneck ball clean and inspect it visually and by feel for flat spots, cracks and pits.

WARNING **A worn, cracked or corroded gooseneck ball can fail while towing, and may result in death or serious injury.**

Before coupling the trailer, inspect the gooseneck ball for wear, corrosion and cracks, and replace the worn or damaged gooseneck ball.

3. Rock the ball to make sure it is tight to the ball support and visually check that the gooseneck ball nut is solid against the lock washer and ball support frame.

WARNING **A loose gooseneck ball can result in uncoupling, leading to death or serious injury.**

Be sure the gooseneck ball nut is tight before coupling the trailer.

4.3.3.2 PREPARE GOOSENECK COUPLER

1. Wipe the inside and outside of the receiver clean and inspect it visually for cracks; and feel the inside of the receiver for worn spots and pits. If any of these conditions exist, have the receiver replaced before coupling the trailer.
2. Lubricate the inside of the gooseneck ball receiver with automotive bearing grease.
3. Be sure the receiver is tight to the trailer. All receiver fasteners must be visibly solid against the trailer frame.
4. Release the jack handle or crank from its holder.
5. Make certain the ground beneath the jack foot is firm enough to support the tongue weight.
6. Rotate the handle/crank clockwise to raise the bottom surface of the gooseneck to be above the top of the gooseneck ball.

WARNING **If the trailer drops during coupling, death or serious injury may result.**
There must be no one under the trailer or coupler before or during the coupling operation.

4.3.3.3 COUPLE TRAILER TO TOW VEHICLE

1. Rotate the jack handle counterclockwise. This will retract the jack causing the gooseneck ball receiver to drop down so it can fully engage the gooseneck ball and transfer the weight of the trailer tongue to the towing vehicle hitch. If the receiver does not line up with the ball, raise the receiver again and adjust the position of the tow vehicle. Then lower the receiver over the ball. When the drop leg base is no longer resting on the ground, the towing vehicle hitch is holding all the weight of the trailer tongue.
2. Close the lock plate on the gooseneck ball receiver.
3. Move the spring-loaded lock plate locking pin to the CLOSED position. Be sure the locking pin is holding the lock plate.
4. Be sure the receiver is all the way on the gooseneck ball and the lock plate is engaged. A properly engaged locking mechanism will allow the coupler to raise the rear of the tow vehicle. Using the trailer jack, test to see that you can raise the rear of the tow vehicle by 1 inch.

NOTICE:

OVERLOADING CAN DAMAGE THE DROP LEG JACK. DO NOT USE THE DROP LEG JACK TO RAISE THE TO VEHICLE MORE THAN 1 INCH.

5. If the gooseneck ball cannot be secured to the receiver, do not tow the trailer. Contact your dealer for assistance.
6. After testing to see that the receiver is properly secured and locked to the ball, retract the jack to its fully retracted position.

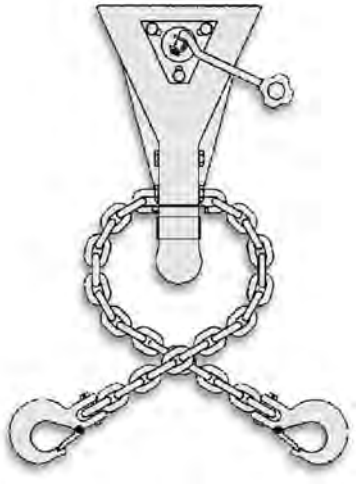
CAUTION **Drop leg jacks may be spring loaded and may rapidly return to the raise position when released.**
Keep clear when releasing drop legs.

7. Return the drop legs to their upper positions. The drop legs are held in the lowered position with a plunger pin. Rotating the plunger pin while pulling it outward will cause it to come out of engagement with the drop leg and the leg will rapidly rise

Go to Section 4.3.4 "Connect Safety Chains" to continue connecting trailer to tow vehicle.

4.3.4 CONNECT SAFETY CHAINS

1. Visually inspect the safety chains and hooks for wear or damage. Replace worn or damaged safety chains and hooks before towing.
2. Safety chains must crisscross under the coupler so if the trailer uncouples, the safety chains can hold the tongue up above the road. Loop around a frame member of the tow vehicle or holes provided in the hitch system, but do not attach them to an interchangeable part of the hitch assembly.
3. Attach hooks up from underneath the hole. Do not just drop into the hole.
4. Provide enough slack in chains to permit tight turns but not be close to the road surface to drag.



WARNING **Improper rigging of the safety chains can result in loss of control of the trailer and tow vehicle, leading to death or serious injury, if the trailer uncouples from the tow vehicle.**

Cross chains underneath hitch and coupler with enough slack to permit turning and to hold tongue up, if the trailer comes loose.

Fasten chains to the frame of tow vehicle.

Do not fasten chains to any part of the hitch unless the hitch has holes or loops specifically for that purpose.

4.3.5 CONNECT ELECTRICAL CABLE

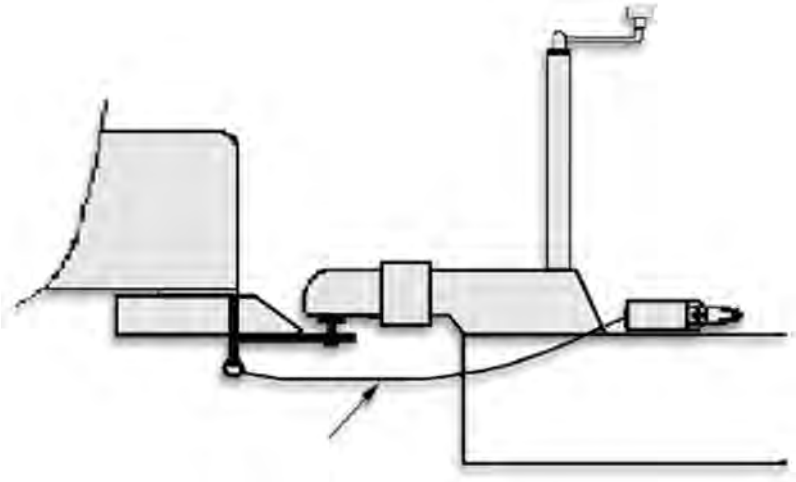
1. Connect the trailer lights to the tow vehicle's electrical system using trailer electrical cable.
2. Check all lights for proper operation. Repair or replace non-working lights before towing trailer.
3. Check electric brakes for proper operation using brake controller mounted in the cab.

WARNING **Improper electrical connection between the tow vehicle and the trailer will result in inoperable lights and electric brakes and can lead to collision.**

Before each tow:

- **Check that the electric brakes work by operating the brake controller inside the tow vehicle.**
- **Check that all lights and turn signals work.**

4.3.6 ATTACH BREAKAWAY BRAKE LANYARD



If the coupler or hitch fails, a properly connected and working breakaway brake system will apply the trailer brakes. The safety chains will keep the tow vehicle attached and as the trailer brakes are applied, the trailer/tow vehicle combination will come to a controlled stop.

Connect the lanyard to the tow vehicle so that the hydraulic actuator will engage, or the electric brake pull pin will be pulled out before all the slack in the safety chains is taken up. Do not connect the lanyard to a safety chain, hitch ball or hitch ball assembly. This would keep the breakaway brake system from operating when it is needed.

4.3.6.1 TEST ELECTRIC BRAKES

If your trailer has electric brakes, your tow vehicle will have an electric brake controller that sends power to the trailer brakes. Before towing the trailer on the road, you must operate the brake controller while trying to pull the trailer to confirm that the electric brakes operate.

While towing the trailer at less than 5 mph, manually operate the electric brake controller in the tow vehicle. You should feel the operation of the trailer brakes. If the trailer brakes are not functioning, the brake system MUST be evaluated to determine the cause of the problem and corrective action MUST be taken before the trailer is used. Take the unit to your dealer or a qualified brake specialist.

Use this procedure each time you tow the trailer to check the brake system operation.

4.3.6.2 TEST ELECTRIC BREAKAWAY BRAKES

The breakaway brake system includes a battery, a switch with a pull pin and lanyard, and a breakaway brake controller. Read and follow the instructions here as well as the instructions that have been prepared by the breakaway brake manufacturer. If you do not have these instructions, contact your dealer for assistance.

Most trailers are set up to charge the battery from the tow vehicle. If the electrical system on your tow vehicle does not provide power to the battery, you must periodically charge the battery with a commercial battery charger to keep the battery charged.

WARNING **Extreme cold weather can degrade battery performance and cause brakes to not operate properly.**
Check the battery charge level before towing.

Do not tow trailer if the battery requires recharging. A discharged brake battery will not activate the brakes if the trailer uncouples from the tow vehicle. The battery must be fully charged before towing trailer.

To test the breakaway brake battery, remove the pull pin from the switch and attempt to pull the trailer forward. You should feel the trailer resisting being towed, but the wheels will not necessarily be locked. If the brakes do not function, do not tow the trailer until brakes, or battery, are repaired.

Immediately replace the pullpin. The breakaway brake battery discharges rapidly when the pull pin is removed.

WARNING **An ineffective breakaway brake system can result in a runaway trailer, leading to death or serious injury if the coupler fails.**

Test the function of the breakaway brake system before towing trailer. Do not tow trailer if breakaway brake system is not working; have it serviced or repaired.

Connect breakaway lanyard to the tow vehicle, NOT to the safety chain, ball, pintle, hitch, or support.

Do not tow the trailer with the breakaway brake system ON because the brakes will overheat which can result in permanent brake failure.

WARNING **Failure to replace the pull pin can result in ineffective brakes, leading to loss of control, serious injury or death.**

If you do not use your trailer for three or more months, or during winter months:

- Store the battery indoors; and
- Charge the battery every three months.

Replace the breakaway brake battery according to the intervals specified by battery manufacturer.

4.3.6.3 TEST SURGE BRAKES (IF EQUIPPED)

WARNING **The field test procedure indicates only if the trailer brake system is functional but DOES NOT provide information on how efficiently it will operate.**

Regular inspection, maintenance, and adjustment of all brake system components (including the surge actuator, tubing, hoses, brake clusters, drums, and associated hardware/support structure) are still required to ensure maximum brake performance and smooth, even brake operation.

Move the trailer to flat, level ground, pulling FORWARD several feet before parking. This forward motion will ensure trailers equipped with free-backing brakes are in their normal operating mode. Disconnect the trailer from the tow vehicle and jack up the trailer's tongue until it is horizontal. Hook the trailer's safety chains (NOT the actuator's breakaway cable) together to form a loop, which is centered below the actuator's coupler. Place wheel chock blocks two feet behind the trailer to prevent a runaway trailer.

Place a sturdy board, such as a 2 inch by 4 inch piece of lumber, into the chain loop below the coupler. The board should be 4 feet or longer so it will extend several feet above the actuator. Keep the end of the board a few inches off the ground, and position it to press against the front end of the actuator's coupler. Press the board towards the rear of the trailer.

Keep pressing the top of the board to stroke the actuator and its internal master cylinder. If the trailer brake system is operational, the brakes will apply and keep the trailer from rolling away from you. Properly adjusted uni-servo or duo-servo type brakes will prevent you from moving the trailer back more than a few inches. Free-backing type brakes will initially provide rolling resistance, but continued force on the board will switch them into free-backing mode, and you'll be able to move the trailer backwards.

If you have uni-servo or duo-servo brakes and stroking the actuator (as described above) causes the trailer to roll away from you freely or with only minimal resistance, the brakes are NOT applied properly. If you have freebacking brakes and stroking the actuator (as described above) causes the trailer to roll away without initial resistance, then the brakes are NOT applied properly. The brake system MUST be evaluated to determine the cause of the problem and corrective action MUST be taken before the trailer is used. Use this procedure each time you tow your trailer to check your surge brake system operation.

4.4 UNCOUPLE TRAILER

Follow these steps to uncouple trailer from the tow vehicle:

1. Park the trailer on a firm level surface and block trailer tires.
2. Disconnect electrical connector.
3. Disconnect breakaway brake switch lanyard.
4. Disconnect safety chains from tow vehicle.
5. Unlock the coupler and open it.
6. Before extending the jack, make certain the ground surface below the jack pad will support the tongue load.
7. Rotate jack handle to extend the jack and transfer the weight of the trailer tongue to the jack.
8. Raise the trailer coupler above the tow vehicle hitch.
9. Drive tow vehicle forward.

4.5 TONGUE WEIGHT

It is critical to have a portion of the trailer load carried by the tow vehicle. That is, the trailer tongue must exert a downward force on the hitch. This is necessary for two reasons. First, the proper amount of tongue weight is necessary for the tow vehicle to be able to maintain control of the tow vehicle/trailer system. If, for example, the tongue exerts an upward pull on the hitch, instead of pushing down on it (because the trailer is overloaded behind its axle(s)), the rear wheel of the tow vehicle can lose traction or grip and cause loss of control. Also, even if there is some weight on the tongue, but not enough weight on the tongue, the trailer can become unstable at high speeds. Remember, the faster you go the more likely the trailer is to sway.

If there is too much tongue weight, the tow vehicle is prone to jack-knife. The front wheels of the tow vehicle can be too lightly loaded and cause loss of steering control and traction, if the front wheels are driving.

In addition to tow vehicle control, tongue weight is necessary to insure that the trailer axle(s) do not exceed their Gross Axle Weight Rating (GAWR).

In the following table, the second column shows the rule of thumb percentage of total weight of the trailer plus its cargo (Gross Trailer Weight, or "GTW") that should appear on the tongue of the trailer. For example, a large trailer with a loaded weight of 6,000 pounds, should have 10-15% of 6,000 pounds (600-900 lbs.) on the hitch.

Tongue Weight as a Percentage of Loaded Trailer Weight	
Type of Hitch	Percentage
Ball Hitch or Ring & Pintle	10-15% for large trailers 6-10% for small trailers

The numbers quoted are for example purposes only and should be tailored to the specific trailer.

For questions regarding the actual percent of tongue weight for the trailer, check with the manufacturer for specifics.

WARNING **Improper tongue weight (load distribution) can result in loss of control of the trailer, leading to death or serious injury.**

Make certain that tongue weight is within the allowable range.

Be sure to:

- **Distribute the load evenly, right and left.**
- **Keep the center of gravity low.**
- **Distribute the load front-to-rear to provide proper tongue weight (see chart).**

4.5.1 CHECKING TONGUE WEIGHT

To check the tongue weight, the tow vehicle and trailer must be on level ground, as they will be when the trailer is being towed.

Take the trailer to a truck stop or grain elevator where there is a “certified” scale. Place the tow vehicle only onto the scale and get the weight. This weight must be less than your tow vehicle’s GVWR.

Pull the trailer onto the scale and uncouple it from the tow vehicle, leaving just the trailer on the scale. Get a ticket which lists the total trailer weight. Re-connect the trailer to your tow vehicle and the drive the tow vehicle wheels off the scale, just leaving the trailer axles on the scale. Get a “ticket”, which lists the trailer’s axle weight. Simply subtract the axle weight from the total weight to determine the hitch weight.

While you are at the scale, you should weigh the entire combination vehicle. This result should be less than the Gross Combined Weight Rating (GCWR) for your towing vehicle. Some scales allow you to gain individual axle weights also. If this is possible, get the tow vehicles front and rear axle weights to make sure they are in the same proportion as the tow vehicle alone, and that the rear axle is not overloaded.

4.6 ADJUST HITCH HEIGHT (IF EQUIPPED)

The height of the hitch on the trailer must be adjusted so that the trailer, when loaded to rated capacity, is level while connected to the tow vehicle. A level trailer allows equal weight distribution on the axles.

Your dealer or a trailer service center can perform this adjustment, or you can use the following steps to adjust the hitch height yourself.

If the trailer is not equipped with an adjustable hitch, an offset ball mount may be available from your hitch manufacturer.

WARNING **Improper hitch height adjustment can result in overloaded tires, blowout and loss of control, leading to death or serious injury.**

Adjust the hitch height so that the loaded trailer is level.

1. Connect trailer to tow vehicle and load the trailer to rated capacity. See Loading and Unloading.
2. Park the tow vehicle and trailer on a firm level surface.
3. Stand away from the trailer and visually verify if the trailer is level front-to-rear. If the front of the trailer is higher than the rear, the hitch must be raised. If the front of the trailer is lower than the rear, the hitch must be lowered.
4. Uncouple trailer from tow vehicle. See Coupling and Uncoupling.
5. Remove the lock nuts and bolts (1) on hitch. Discard lock nuts. Inspect bolts for damage and replace if necessary. Contact your dealer for the correct size and grade of bolts.

WARNING **Used lock nuts are prone to loosen, resulting in the hitch separating from the trailer, which can lead to death or serious injury.**

NEVER re-use a lock nut.

Use new lock nuts each time the hitch height is adjusted.

Contact your dealer for the proper grade and size of lock nut.

6. Raise or lower the hitch as necessary.
7. Install bolts and new lock nuts.
8. Tighten lock nuts to torque specified by your dealer.
9. Couple the trailer to the tow vehicle and verify that the trailer is level front to rear. Adjust if necessary.
10. Unload trailer. See Loading and Unloading.

5.1 LOADING AND UNLOADING

Improper trailer loading causes many accidents and deaths. To safely load a trailer, you must consider:

- Overall load weight.
- Load weight distribution.
- Proper tongue weight.
- Securing the load properly.

To ensure your trailer is loaded within its rated capacity, you must consider not only the total weight of the trailer and its contents but also how that weight is distributed. Most of the trailer's total weight—referred to as Gross Vehicle Weight (GVW) is supported by the trailer axles, while the remaining weight is carried by the tow vehicle's hitch.

For safe towing, it is critical that the trailer tongue and tow vehicle hitch support the correct portion of the loaded trailer's weight. Improper tongue weight can lead to trailer sway at highway speeds or overloading of the tow vehicle's rear axle. Refer to the "Tongue Weight" section in Chapter 4 for detailed guidance.

Proper load distribution is also essential to avoid exceeding the weight limits of any trailer component, including tires, wheels, and axles. On tandem or triple axle trailers, make sure the load is evenly distributed front to rear so that no axle is overloaded.

Stability during towing also relies on keeping the trailer's center of gravity as low as possible. Heavy items should be placed on the floor, directly over the axles. When adding cargo, maintain even side-to-side weight distribution and appropriate tongue weight.

Never exceed the trailer's Gross Vehicle Weight Rating (GVWR), which is the maximum allowable combined weight of the trailer and its contents.

Do not use the trailer to transport passengers, hazardous materials, or flammable liquids—except for fuel contained in the tanks of vehicles or equipment being hauled.

WARNING **Do not transport flammable, explosive, poisonous or other dangerous materials on your trailer.**
The exception is fuel in the tank of a vehicle or equipment being hauled.

WARNING **Do not transport people on your trailer.**
Besides putting their lives at risk, the transport of people on a trailer is illegal.

5.1.1 LOADING

1. Couple the trailer to the tow vehicle.

WARNING **The trailer must be coupled to tow vehicle before loading trailer.**

2. Read and understand the hoist operating procedure before operating (see 5.2 Operating Instructions).

The trailer is designed to load 12’ to 14’ bodies with water-level loads.

- Performance will be affected by operating outside of these conditions.

WARNING **Do not exceed the maximum payload published on VIN tag.**

Do not exit the vehicle when dumping or loading a body.

- **Keep truck in gear when operating and be ready to press the brake pedal.**
- **If the rear axle of truck begins to leave the ground cease release remote button and do not continue to load, unload or dump.**
- **Even with the truck parking brake on the rear axle of the truck could experience an upforce causing the truck to roll.**

WARNING **Shifting cargo can result in loss of control of the trailer and can lead to death or serious injury.**

Tie down all loads with proper sized fasteners, chains, straps, etc.

5.1.2 UNLOADING

1. Couple the trailer to the tow vehicle.

WARNING **The trailer must be coupled to tow vehicle before loading trailer.**

2. Read and understand the hoist operating procedure before operating (see 5.2 Operating Instructions).

5.1.3 HYDRAULIC COMPONENTS

Do not alter or substitute hydraulic components on the trailer. The hydraulic system is designed with each component being compatible with the safe and reliable operation of the hydraulic system. **Under no circumstances should you alter the hydraulic pressure or flow rate in the hydraulic system.**

DANGER **Crushing hazard.**

An altered or component substituted hydraulic system may malfunction, resulting in the hoist falling without warning.

NEVER alter or substitute any hydraulic system component.

Always have the hydraulic system repaired or maintained by a qualified technician.

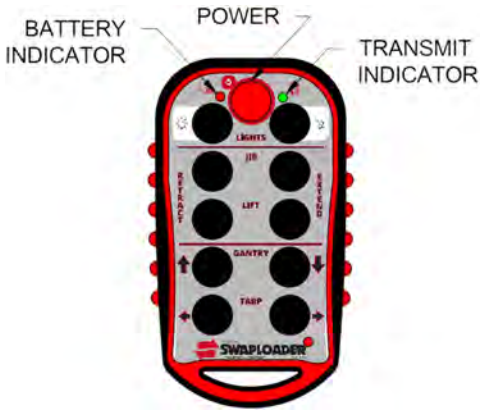
5.2 OPERATION INSTRUCTIONS

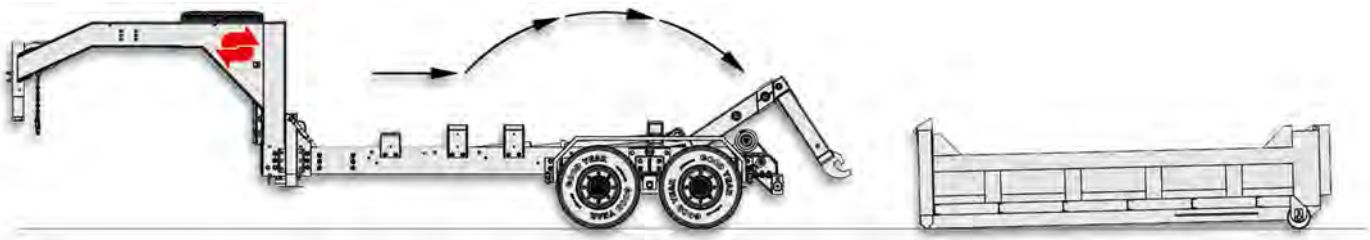
LOADING A CONTAINER

STEP 1. TURN POWER ON FROM THE POWER UNIT. THIS IS LOCATED ON THE SIDE OF THE POWER UNIT'S ENCLOSURE, ON THE DRIVER SIDE.

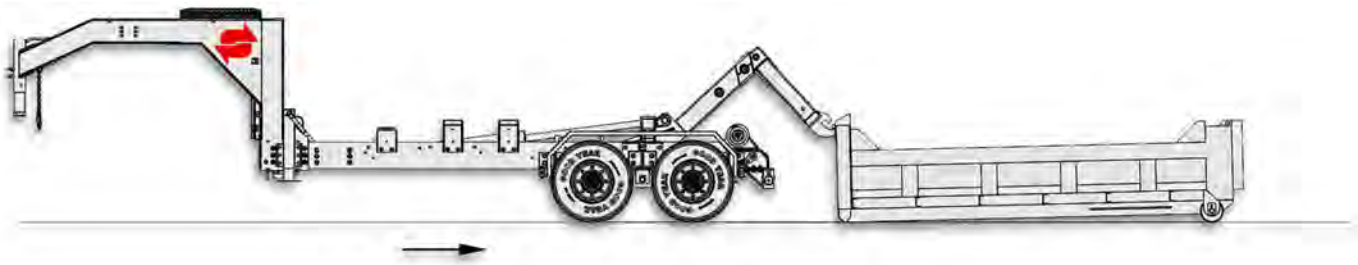
NOTE: TO PREVENT BATTERY DRAIN, TURN OFF AFTER OPERATION.

TURN REMOTE ON BY HOLDING THE POWER BUTTON.





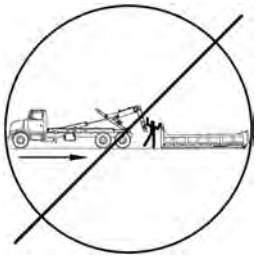
STEP 2. USING THE REMOTE, RETRACT THE JIB (LEFT JIB BUTTON). THEN, TILT THE ARM BACKWARD (RIGHT LIFT BUTTON).



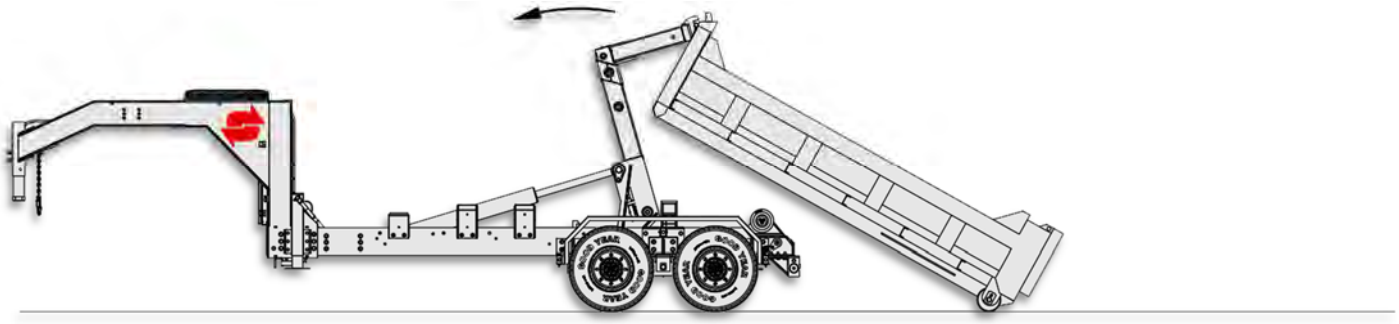
STEP 3. MAKE SURE THE WORK AREA IN FRONT OF THE CONTAINER IS CLEAR OF PEOPLE AND OBSTACLES. MOVE THE TRAILER BACKWARDS UNTIL THE HOOK ENGAGES THE CURVED LIFTING BAR OF THE CONTAINER. **NEVER EXTEND THE JIB** TO REACH THE PROPER CATCHING HEIGHT, RATHER TILT THE ARM.

WARNING:

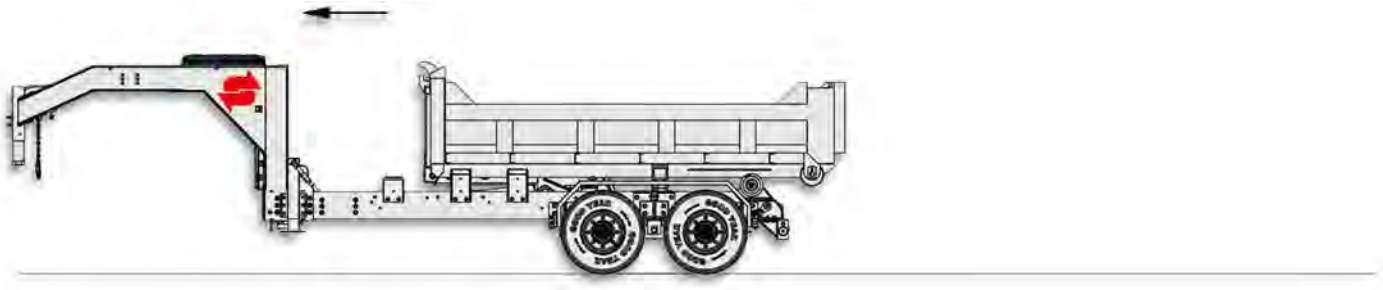
MAKE SURE WORK AREA IS CLEAR OF PEOPLE AND OBSTACLES PRIOR TO DUMPING OR UNLOADING CONTAINERS. SWAPLOADER STRONGLY RECOMMENDS THAT A BACKUP ALARM BE INSTALLED ON THE TRUCK CHASSIS. THE OPERATION OF THE HOOK HOIST IS THAT THE TRAILER IS BACKED UP TO THE BODY TO PICK IT UP AND SO THERE IS A POTENTIAL PINCH POINT BETWEEN THE BODY AND THE HOOK.



LOADING A CONTAINER *(cont'd)*



STEP 4. CYCLE THE ARM FORWARD (LEFT LIFT BUTTON), MAKING SURE THE CURVED LIFTING BAR IS SECURELY ATTACHED TO THE HOOK. WITH THE TRUCK IN NEUTRAL, RELEASE THE BRAKES OF THE TRUCK AND STEER TO CORRECTLY ALIGN THE TRUCK WITH THE CONTAINER. WATCH THE CONTAINER RAILS TO SEE THAT THEY COME TO REST CENTERED ON THE REAR ROLLERS. DO NOT EXTEND THE JIB DURING LIFTING.



STEP 5. WHEN THE CONTAINER IS RESTING ON THE FRAME, MOVE THE JIB FORWARD ALL THE WAY TO ENSURE THE CONTAINER IS HELD IN THE BODY LOCKS (RIGHT JIB BUTTON).

DUMPING:

STEP 1. MOVE THE JIB FORWARD (RIGHT JIB BUTTON) TO ENSURE THAT THE CONTAINER IS LOCKED.

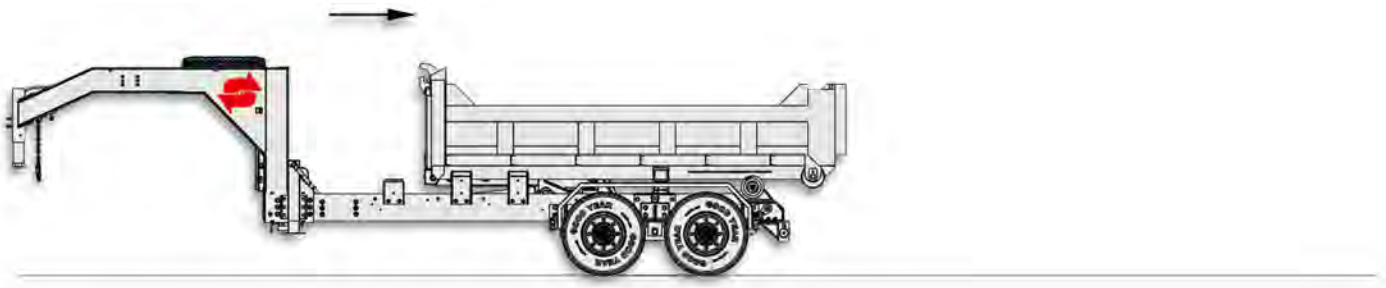
STEP 2. EXTEND THE MAIN LIFT CYLINDERS (RIGHT LIFT BUTTON).

CAUTION:

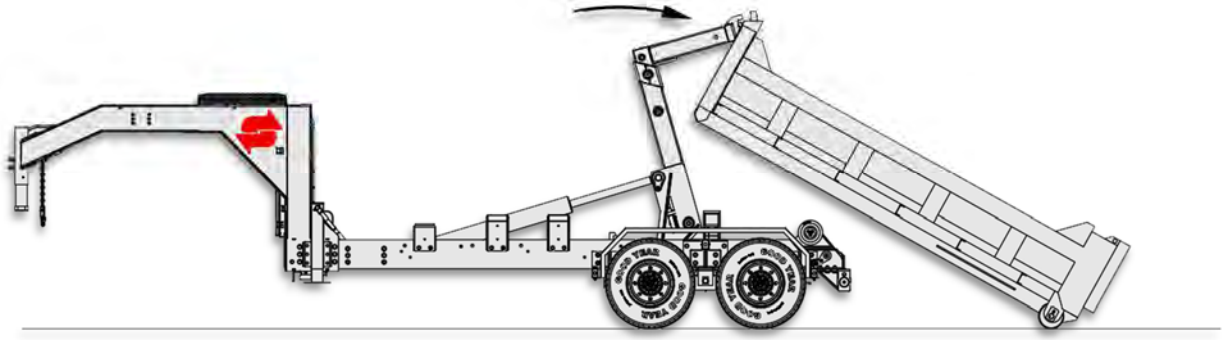
DO NOT RETRACT THE JIB WHILE DUMPING. RETRACTING THE JIB DURING DUMPING MAY UNLOCK THE MECHANICAL JIB LATCHES WHICH COULD ALLOW THE CONTAINER TO CRASH DOWN ONTO THE HOIST AND/OR ABRUPTLY UNLOAD.

LOADING/UNLOADING AND DUMPING SHOULD BE PERFORMED ON LEVEL GROUND ONLY.

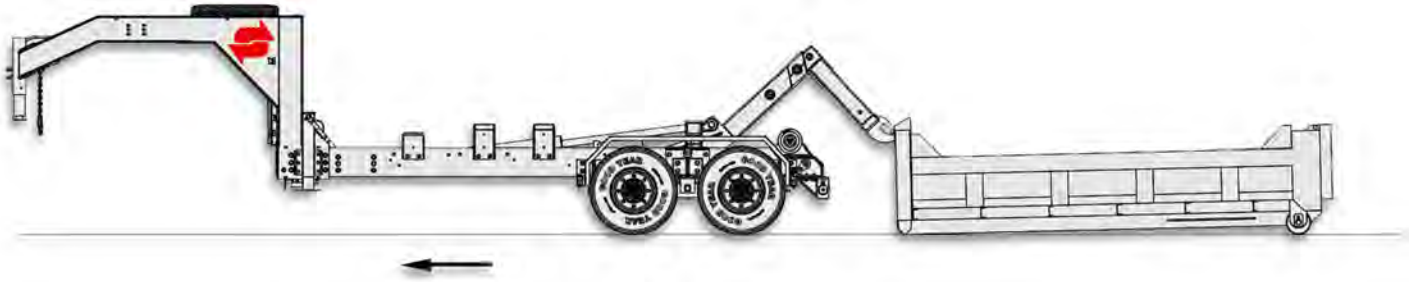
PLACING A CONTAINER ON THE GROUND:



STEP 1. MOVE THE SLIDING JIB ALL THE WAY BACK (LEFT JIB BUTTON) UNTIL MECHANICAL JIB LATCHES UNLOCK.



STEP 2. TILT THE ARM BACKWARDS (RIGHT LIFT BUTTON). WHEN THE CONTAINER TOUCHES THE GROUND, RELEASE THE BRAKES TO FREE THE TRUCK FOR FORWARD MOVEMENT CAUSED BY THE CONTAINER.



STEP 3. ROTATE JIB ALL THE WAY BACK UNTIL THE CONTAINER TOUCHES THE GROUND. PULL AWAY FROM CONTAINER AND ROTATE JIB BACK INTO THE TRANSPORT POSITION.

WARNING:

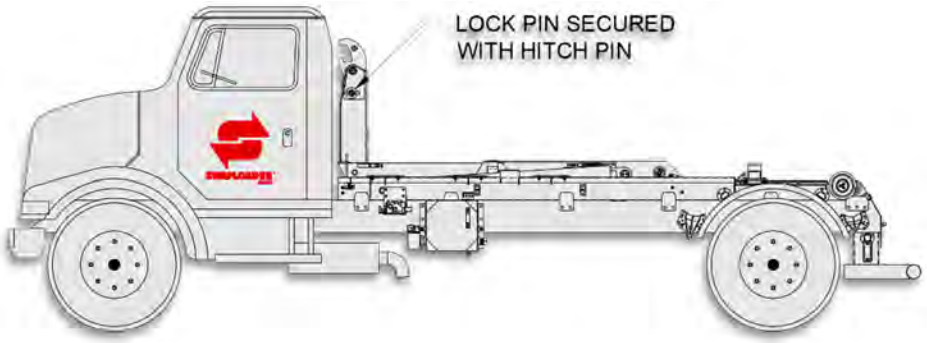
1. **DON'T DUMP, MOUNT OR DISMOUNT BODIES ON UNEVEN GROUND.**
2. **DON'T DRIVE WITH THE HOIST IN THE DUMP POSITION OR WITH THE HOOK TILTED BACK.**

5.3 CHANGING HOOK HEIGHT

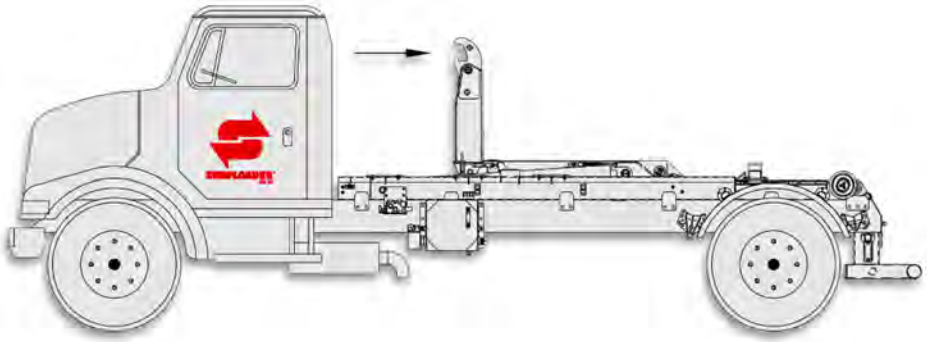
CHANGING HOOK HEIGHT: 36” TO 54” (54” TO 62”) JIB HT ADJUSTMENT PROCEDURE

CAUTION:

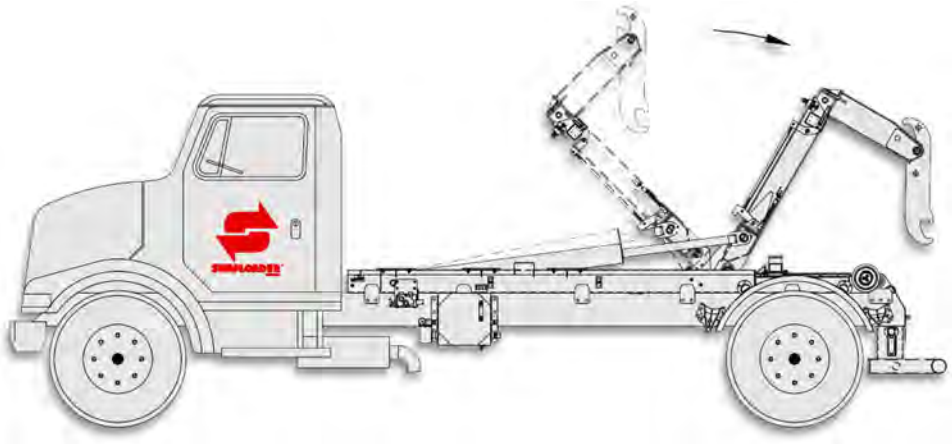
THE FOLLOWING IS THE RECOMMENDED PROCEDURE FOR CHANGING HOOK HEIGHTS ON THE ADJUSTABLE JIB FROM 36” TO 54” HEIGHTS. FAILURE TO FOLLOW AND ADHERE TO THIS PROCEDURE MAY RESULT IN POSSIBLE PROPERTY DAMAGE AND/OR PERSONAL INJURY. MAKE SURE WORK AREA IS CLEAR OF PEOPLE AND OBSTACLES PRIOR TO CHANGING THE HOOK HEIGHT ON THE ADJUSTABLE JIB.



STEP 1. WITH THE TELESCOPIC ARM IN THE TRANSPORT POSITION (AS SHOWN); REMOVE THE HITCH PIN FROM THE LOCK PIN. THEN PULL THE LOCK PIN LOOSE FROM THE JIB ARM.

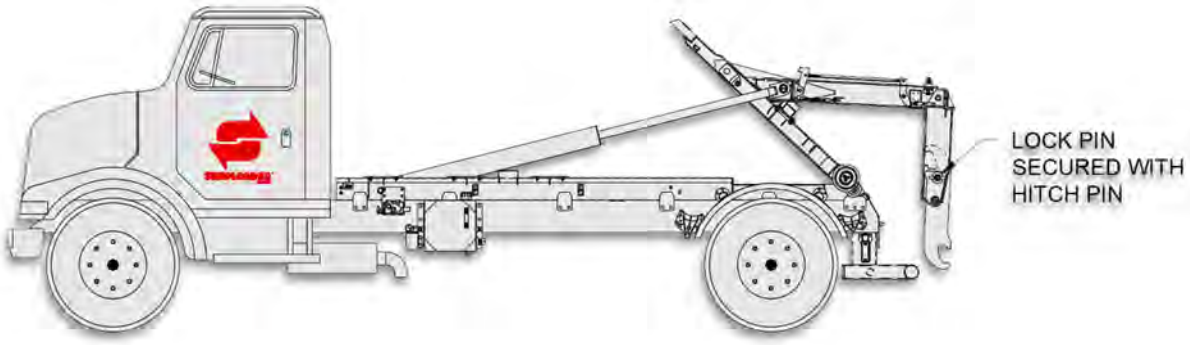


STEP 2. RETRACT THE JIB (RIGHT CONTROL LEVER BACKWARD).



STEP 3. TILT THE TELESCOPIC ARM REARWARD (LEFT CONTROL LEVER BACKWARD).

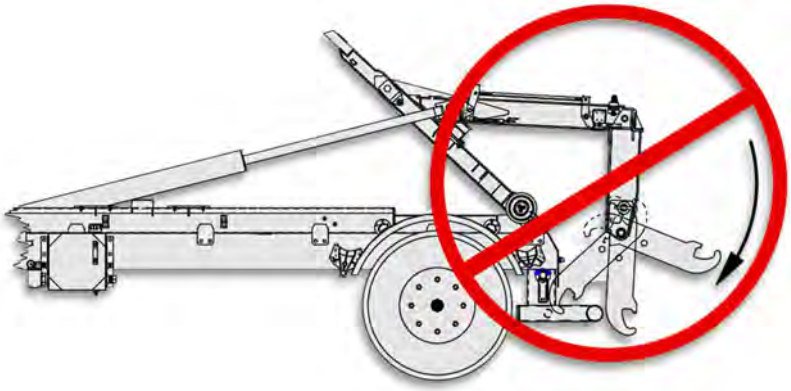
CHANGING HOOK HEIGHT: 36” TO 54” (54” TO 62”) JIB HT ADJUSTMENT PROCEDURE *(cont’d)*



STEP 4. CONTINUE TO TILT TELESCOPIC ARM REARWARD UNTIL THE DUMP CYLINDERS ARE FULLY EXTENDED. REPLACE LOCK PIN AND SECURE WITH HITCH PIN.

WARNING:

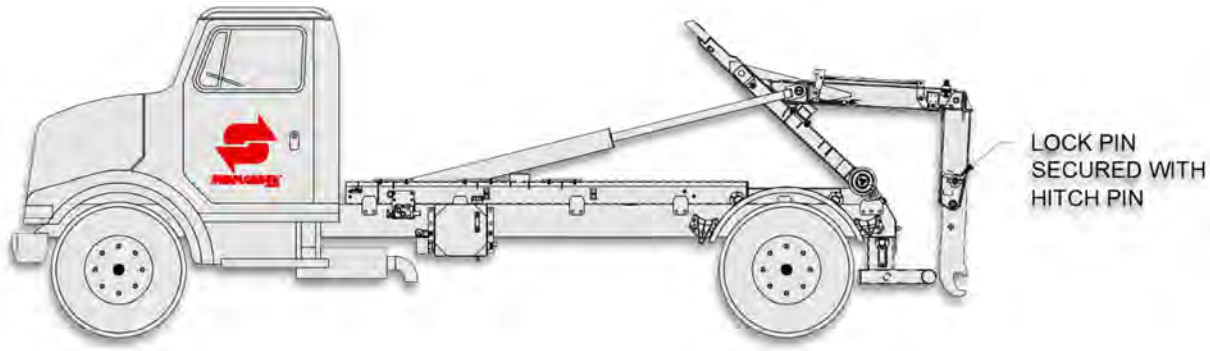
DO NOT REMOVE LOCK PIN ON THE ADJUSTABLE JIB WHILE JIB IS IN THE 36” (54”) HOOK POSITION AND THE TELESCOPIC ARM IS TILTED REARWARD (AS SHOWN). POSSIBLE PROPERTY DAMAGE AND/OR PERSONAL INJURY MAY RESULT.



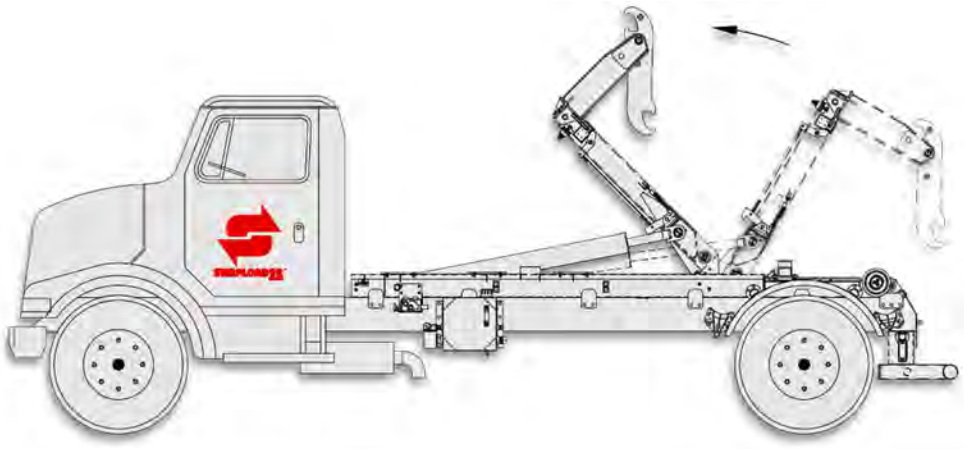
CHANGING HOOK HEIGHT: 54” TO 36” (62” TO 54”) JIB HT ADJUSTMENT PROCEDURE

CAUTION:

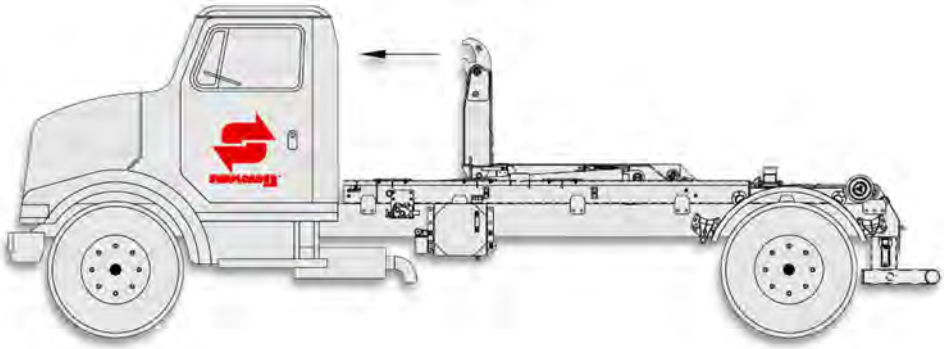
THE FOLLOWING IS THE RECOMMENDED PROCEDURE FOR CHANGING HOOK HEIGHTS ON THE ADJUSTABLE JIB FROM 54” TO 36” (62” TO 54”) HEIGHTS. FAILURE TO FOLLOW AND ADHERE TO THIS PROCEDURE MAY RESULT IN POSSIBLE PROPERTY DAMAGE AND/OR PERSONAL INJURY. MAKE SURE WORK AREA IS CLEAR OF PEOPLE AND OBSTACLES PRIOR TO CHANGING THE HOOK HEIGHT ON THE ADJUSTABLE JIB.



STEP 1. WITH THE TELESCOPIC ARM IN FULL LOAD/UNLOAD POSITION (AS SHOWN); REMOVE THE HITCH PIN FROM THE LOCK PIN. THEN PULL THE LOCK PIN LOOSE FROM THE JIB ARM.

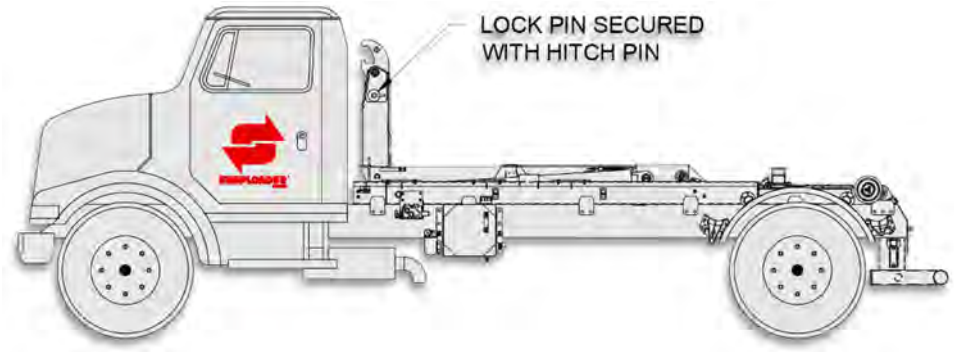


STEP 2. TILT THE TELESCOPIC ARM TOWARD THE CAB (LEFT CONTROL LEVER FORWARD).



STEP 3. EXTEND THE JIB TOWARD THE CAB (RIGHT CONTROL LEVER FORWARD).

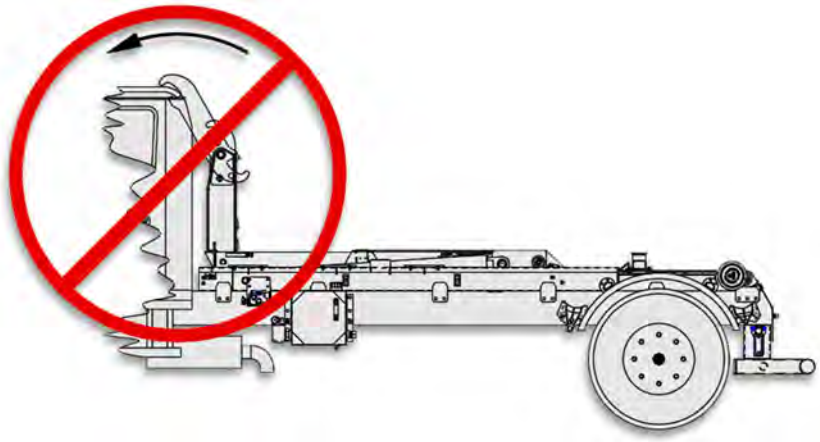
CHANGING HOOK HEIGHT: 54” TO 36” (62” TO 54”) JIB HT ADJUSTMENT PROCEDURE *(cont’d)*



STEP 4. WITH THE TELESCOPIC JIB FULLY EXTENDED IN THE TRANSPORT POSITION (AS SHOWN); REPLACE THE LOCK PIN AND SECURE WITH HITCH PIN.

WARNING:

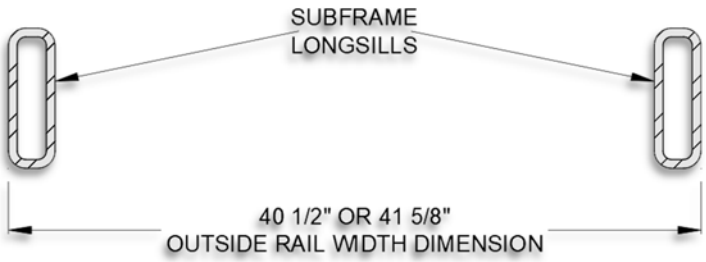
DO NOT REMOVE LOCK PIN ON THE ADJUSTABLE JIB WHILE JIB IS IN THE 54” HOOK POSITION AND THE TELESCOPIC ARM IN TRANSPORT POSITION (AS SHOWN). POSSIBLE PROPERTY DAMAGE AND/OR PERSONAL INJURY MAY RESULT.



5.4 REAR ROLLER SPACING ADJUSTMENT INSTRUCTIONS

Industry standard for the outside rail width dimension on subframe longsills is either 40 1/2" or 41-5/8" (see illustration below). For most 35 5/8" hook height (100 series) and 53 7/8" hook height (200/300 series) subframes the outside width dimension of the longsill rails is 41 5/8". For most 61 3/4" hook height (400 series) subframes the outside width dimension of the longsill rails is 40 1/2".

From this point forward we will refer to the rear rollers' setup for 40 1/2" outside width as 'narrow spacing' and rear rollers setup for 41 5/8" outside width as 'wide spacing'.



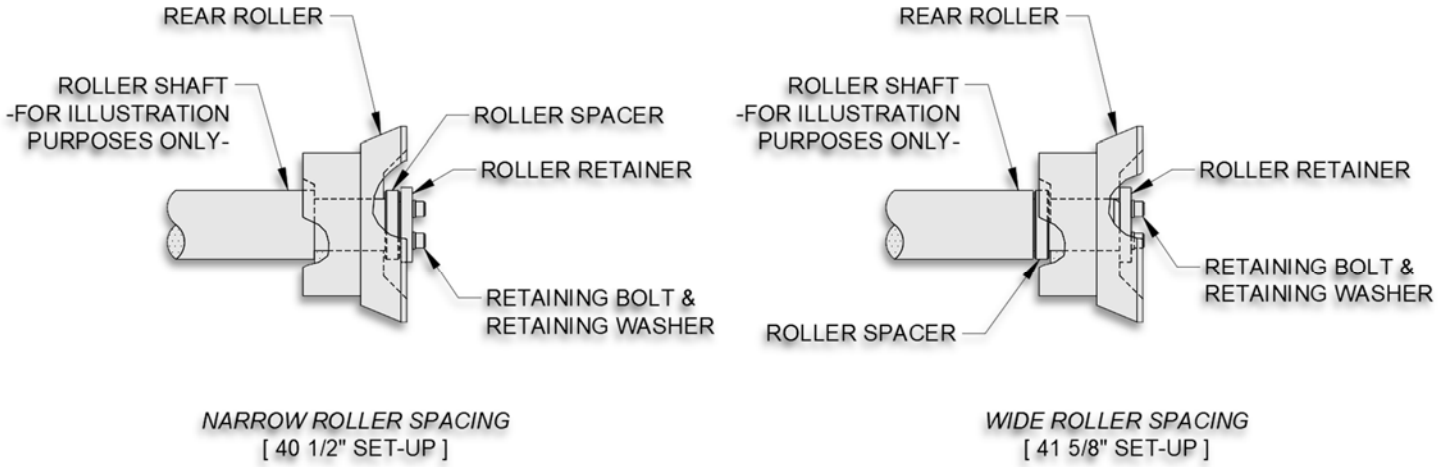
SUBFRAME STANDARD WIDTHS

5.4.1 HOIST STANDARD:

All SwapLoader hooklift hoists and trailers are made so that the rear rollers can be spaced at either the wide spacing or narrow spacing depending on the subframe design (the only exception is the SL-105 which can only accommodate a 'wide spacing' or 41 5/8" outside width). Unless instructed otherwise SwapLoader will ship hoists with the rear rollers setup per the previously discussed industry standard for a given hook height of subframe, or as detailed in the chart below.

SUBFRAME HOOK HEIGHT (SERIES)	HOIST MODELS	STANDARD ROLLER SPACING
35 5/8" (100 SERIES)	SL-75, SL-105, SL-145, SL-160, SL-180, SL-185, SL-212, SL-214, ST-1614	41 5/8" (WIDE WIDTH)
53 7/8" (200 & 300 SERIES)	SL-220, SL-222, SL-240, SL-2418	41 5/8" (WIDE WIDTH)
61 3/4" (400 SERIES)	SL-330, SL-400, SL-406, SL-412, SL-418X, SL-518, SL-518X, SL-520, SL-520X, SL-650	40 1/2" (NARROW WIDTH)

5.4.2 NARROW TO WIDE ROLLER SPACING ADJUSTMENT:



NARROW ROLLER SPACING
[40 1/2" SET-UP]

WIDE ROLLER SPACING
[41 5/8" SET-UP]

REAR ROLLER NARROW & WIDE SPACING ILLUSTRATION

To change a hoist from the narrow roller spacing to a wide roller spacing follow these instructions:

1. Loosen and remove the retaining bolts, washers, and roller retainer.
2. Remove the roller spacer and rear roller from the hoist roller shaft.
3. Place the roller spacer on first; then place the rear roller back on the roller shaft.
4. Replace and tighten the retaining bolts, retaining washer and roller retainer.

5.4.3 WIDE TO NARROW ROLLER SPACING ADJUSTMENT:

To change the hoist from the wide roller spacing to a narrow roller spacing follow these instructions:

1. Loosen and remove the retaining bolts, washers, and roller retainer.
2. Remove the rear roller and roller spacer from the hoist roller shaft.
3. Place the rear roller first; then place the roller spacer back on the roller shaft.
4. Replace and tighten the retaining bolts, washers, and roller retainer.

NOTE:
SWAPLOADER ADVISES REPLACING NORD LOCK WASHERS WITH NEW. APPLY LOCTITE TO ALL BOLTS AND FOLLOW THE TORQUE SPECS PROVIDED.

HEX HEAD CAP SCREW TORQUE SPECS	
BOLT SIZE	SAE GR 8 W/ LOCK WASHER (FT-LBS)
3/8	53
7/16	85
1/2	130
5/8	258
3/4	459
7/8	739
1	1108

Note: Apply Loctite 243 (Blue) to all bolts.

5.5 ELECTRIC POWER UNIT

5.5.1 CHARGING

SwapLoader electric over hydraulic power units are equipped with smart chargers to protect battery life. These chargers provide many valuable features including:

- Isolation between the trailer and the truck batteries.
- Overcharge protection.
- Phased charging.
- Battery desulphation.
- Wireless applications to monitor the charge state.
- Digital display to monitor battery health and charge.

Please see the Victron Energy operation manual.

5.5.2 WALL CHARGING

All electric power units are equipped with AC charging via a male AC outlet located on the rear of the power unit enclosure. To charge:

- Use an outdoor extension cord.
- Plug the female end into the back of the power unit
- Plug the male end into a wall outlet.

It is recommended that the trailer be plugged in overnight in-between operations.

WARNING **DO NOT use AC and DC charging at the same time. Batteries may catch fire or explode.**

5.5.3 TRUCK CHARGING – AC CHARGE OPTION

If your trailer did not come with a dual charging power unit, you may still charge the power unit from your truck by installing a 12V/110VAC pure sine wave power inverter on your truck and connecting an extension cord from this to your trailer AC power outlet.

5.5.4 TRUCK CHARGING – DUAL CHARGE OPTION

If the trailer is equipped with the dual charging option, install provided Anderson connector harness to the truck's alternator.

- Secure any extra harness length via heavy duty zip ties to the bottom of the truck chassis.

Connect the truck side Anderson connector to the trailer side Anderson connector to charge when the truck is running.

5.6 ELECTRIC POWER UNIT MAINTENANCE AND OPERATION WARNINGS

5.6.1 24V HYDRAULIC POWER UNIT

It is critical to maintain a full hydraulic oil tank to ensure the hydraulic pump does not become damaged.

- Oil tank should be full when the jib cylinder and lift cylinder are in the fully retracted position (see Hooklift Maintenance Instructions).

WARNING **Damage from running a pump dry will NOT be covered under warranty.**
To reduce risk of damage from overheating, do not "dead head" the power unit for extended periods of time.

5.6.2 BATTERIES

Your trailer should not be operated with a battery charge of less than 50% capacity. For example, in SwapLoader's electric power units there are two 12V 100AH batteries in series producing a 24V 100AH capacity.

- This capacity can be set and monitored through the Victron smart charging app and display.

CAUTION **These batteries should not be operated when the display reads less than 50% or 50AH.**

WARNING **Do not operate the power unit if the internal temperature of the enclosure exceeds 130 degrees Fahrenheit to reduce risk to electrical components**

To cool the internal temperature of the control panel, open the door to ventilate. Shut door prior to operation.

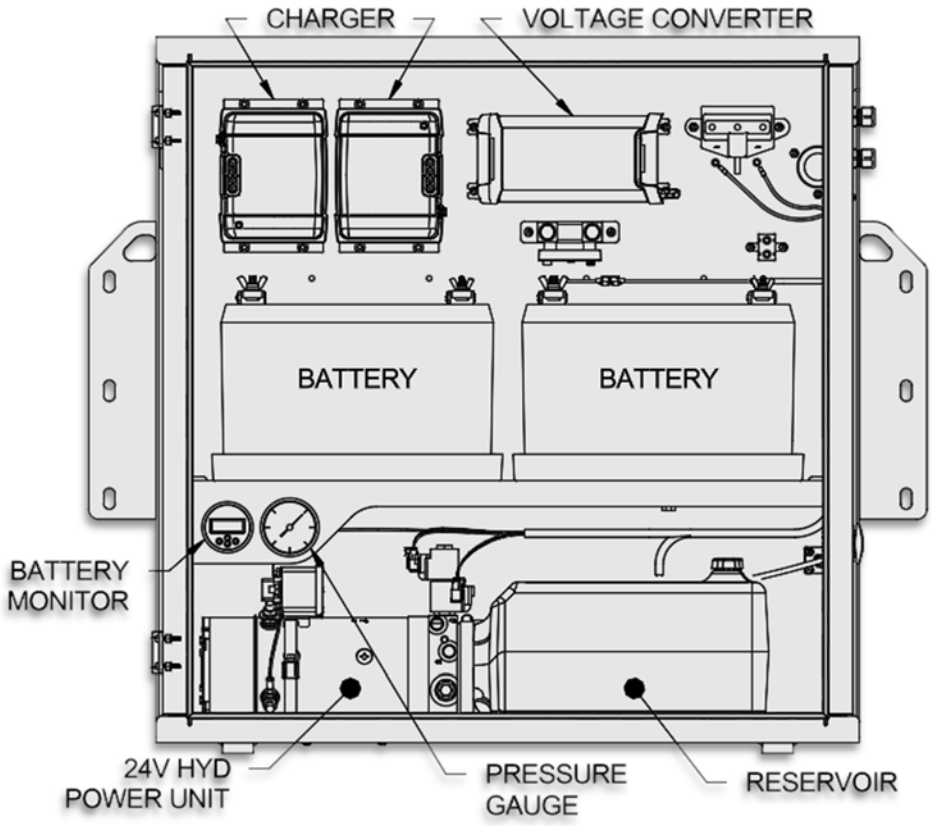


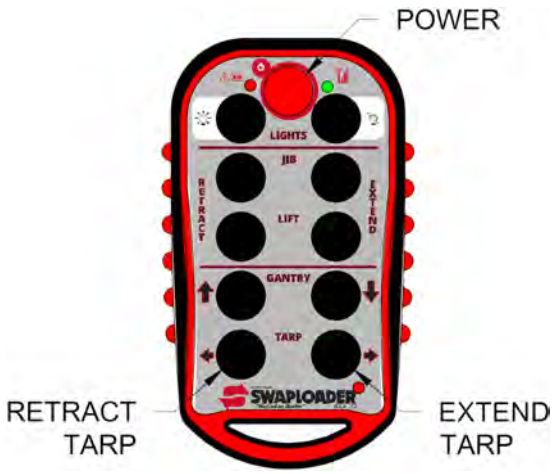
ILLUSTRATION OF ELECTRIC POWER UNIT

5.7 TARP OPERATION

If equipped, the single stage tarp can be operated by the supplied remote control. Keep in mind that it is a single stage gantry, and the height is manually adjustable.

To operate the tarp:

- Turn power on to power unit.
- Turn power on from the remote.
- Use the buttons labeled tarp (see illustration).
  - The right button will extend the tarp out to cover the load.
  - The left button will retract the tarp back to the gantry.



6.1 PRE-TOW CHECKLIST

Before towing, double-check all these items:

- Tires, wheels and lug nuts. See “Breaking in a New Trailer” section of this manual.
- Tire Pressure. Inflate tires on trailer and tow vehicle to the pressure stated on the Certification / VIN label.
- Coupler secure and locked. See “Coupling to Tow Vehicle” section of this manual.
- Safety chains properly rigged to tow vehicle, not to hitch or ball. See “Coupling to Tow Vehicle” section of this manual.
- Test Tail, Stop, and Turn Lights.
- Test trailer brakes.
- The safety breakaway lanyard fastened to tow vehicle, not to safety chains. See “Coupling to Tow Vehicle” section of this manual.
- Cargo properly loaded, balanced and tied down. See the appropriate “Loading and Unloading” section of this manual.
- Tongue weight and weight distribution set-up.
- Ramps secured for travel.
- Fire extinguisher.
- Flares and reflectors.
- Body Locks engaged.
- Load evenly distributed side to side.

6.1.1 MAKE REGULAR STOPS

After each 50 miles, or one hour of towing, stop and check the following items:

- Coupler secured.
- Safety chains are fastened and not dragging.
- Cargo secured.

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7.1 RETIGHTEN LUGS AT FIRST 10, 25 & 50 MILES

Wheel lugs can shift and settle quickly after being first assembled, and must be checked after the first 10, 25 and 50 miles of driving. Failure to perform this check may result in a wheel coming loose from the trailer, causing a crash leading to death or serious injury. Improper tightening of the lug nuts or bolts voids the axle warranty.

Refer to the Inspection, Service and Maintenance section of this manual.

WARNING **Lug nuts or bolts are prone to loosen after being first assembled. Death or serious injury can result.**

Check lug nuts or bolts for tightness on a new trailer, and after re-mounting a wheel at 10, 25 and 50 miles.

7.2 ADJUST BRAKE AT FIRST 200 MILES

Brake shoes and drums experience rapid initial wear. The brakes must be adjusted after the first 200 miles of use, and each 3,000 miles thereafter. Some axles are fitted with a mechanism that will automatically adjust the brake shoes.

Read your axle and brake manual to see if your brakes adjust automatically. If you do not have the axle and brake manual, contact your dealer for assistance.

If your trailer is not fitted with automatically adjusting brakes, the brakes will need to be manually adjusted. See section 8 for instructions.

7.3 SYNCHRONIZING BRAKE SYSTEMS

Trailer brakes are designed to work in synchronization with the brakes on the tow vehicle. When the tow vehicle and trailer braking systems are synchronized, both braking systems contribute to slowing, and the tongue of the trailer will neither dive nor rise sharply.

WARNING **If trailer and tow vehicle brakes do not work properly together, death or serious injury can occur.**

Road test the brakes in a safe area at no more than 30 m.p.h. before each tow.

To ensure safe brake performance and synchronization, read and follow the axle/brake and the brake controller manufacturers' instructions. If you do not have these instructions, contact your dealer for assistance.

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8.1 INSPECTION, SERVICE & MAINTENANCE SUMMARY CHARTS

You must inspect, maintain and service your trailer regularly to ensure safe and reliable operation. If you cannot or are unsure how to perform the items listed here, have your dealer do them. Note: In addition to this manual, also check the relevant component manufacturer's manual.

INSPECTION AND SERVICE BEFORE EACH TOW		
ITEM	**INSPECTION/SERVICE**	**MANUAL SECTION REFERENCE**
Breakaway Brakes • **Electric** • **Hydraulic**	 Check operation Check operation	 Section 4 Section 4
Breakaway Battery	Fully charged, connections clean	Section 4 and 8
Brakes • **Electric** • **Surge**	 Check operation Check operation Check master cylinder level	Section 4 and 8
Shoes and Drums	Adjust	Section 8
Safety Chains and Hooks	Check for wear, damage	Section 4
Coupler and Hitch Ball	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating Grease Check locking device & replace when worn.	Section 4 and 8 Section 4 and 8 Section 4 and 8
Ring and Pintle	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating Grease Check locking device & replace when worn	Section 4 and 8 Section 4 and 8 Section 4 and 8
Gooseneck Coupler	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating Grease Check locking device & replace when worn	Section 4 and 8 Section 4 and 8 Section 4 and 8
Tires	Check tire pressure when cold. Inflate as needed Check for damage	Section 6 and 8 Section 6 and 8
Wheels – Lug Nuts or Bolts and Hub	Check for tightness Tighten. For new and remounted wheels, check torque after the first 10, 25 & 50 miles of driving and after any impact	Section 6 Section 7 and 8

INSPECTION AND SERVICE EVERY MONTH		
ITEM	**INSPECTION/SERVICE**	**MANUAL SECTION REFERENCE**
Lubrication	Lubricate manual jacks (if equipped)	Section 8

INSPECTION AND SERVICE EVERY 6 MONTHS OR 6,000 MILES		
ITEM	**INSPECTION/SERVICE**	**MANUAL SECTION REFERENCE**
Brakes, Electric • **Magnet** • **Controller (in tow vehicle)**	 Check wear and current draw Check power output (amperage) and modulation	 Section 8 Section 8 See Controller Mfr's Manual
Tires	Inspect tread and sidewalls thoroughly Replace tire when treads are worn, when sidewall has a bulge, or sidewall is worn Rotate every 5,000 Miles	Section 8 Section 8 Section 8
Brakes • **Electric** • **Surge**	 Check operation Check operation Check master cylinder level	 Section 4 Section 4
Brake Shoes and Drums	Adjust	Section 7 and 8
Safety Chains and Hooks	Check for wear, damage	Section 4

INSPECTION AND SERVICE EVERY 6 MONTHS OR 6,000 MILES		
ITEM	**INSPECTION/SERVICE**	**MANUAL SECTION REFERENCE**
Coupler and Hitch Ball	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating	Section 4
	Grease	Section 4 and 8
	Check locking device & replace when worn.	Section 4 and 8
Ring and Pintle	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating	Section 4
	Grease	Section 4 and 8
	Check locking device & replace when worn	Section 4 and 8
Gooseneck Coupler	Check for cracks, pits, and flats. Replace w/ ball and coupler having trailer GVW Rating	Section 4
	Grease	Section 4 and 8
	Check locking device & replace when worn	Section 4 and 8
Brakes, all types • **Shoes and Drums**	Check for scoring and wear. Replace per manufacturer's specifications	Section 8 See Brake Mfr's Manual
Manual Jack	Grease gears at top	See Jack Mfr's Manual
Structure • **Frame Members** • **Welds**	Inspect all frame members, bolts & rivets. Repair or replace damaged, worn or broken parts Inspect all welds. Repair as needed	Section 8 Section 8
Wheels • **Wheel Bearings** • **Rims**	Disassemble / inspect / assemble and repack. Replace promptly if immersed in water Inspect for cracks & dents. Replace as needed.	Section 8 See Axle Mfr's Manual
Structure • **Axle Attachment Bolts**	Check by Dealer	Section 8

8.2 INSPECTION AND SERVICE INSTRUCTIONS

WARNING **Worn or broken suspension parts can cause loss of control and injury may result.**

Have the trailer professionally inspected annually and after any impact.

Many inspection and maintenance tasks require the trailer to be lifted with a jack.

When using jack and jack stands, ensure they are positioned away from wiring, brake lines, and suspension components such as springs or torsion bars. Always place the jack and stands under the outer frame rail that supports the axles.

WARNING **Never go under trailer unless it is on firm and level ground and resting on properly placed and secured jack stands.**

WARNING **Crushing hazard.**

The tow vehicle and trailer could be inadvertently moved while a person is under the trailer.

The tow vehicle engine must be off, ignition key removed, and parking brakes set before entering the area under the trailer.

8.2.1 TRAILER STRUCTURE

Wash the trailer as needed with a power washer and a detergent solution.

8.2.1.1 FASTENERS AND FRAME MEMBERS

Inspect all fasteners and structural frame components for signs of bending, cracking, damage, or failure. Replace any damaged fasteners and repair any compromised frame members. If you're unsure about the condition of these parts or the appropriate repair method, consult your dealer for guidance or have them perform the necessary repairs.

WARNING **Broken or damaged fasteners can cause injury or damage to trailer and contents.**

Inspect and repair all damaged parts at least once a year.

8.2.1.2 WELDS

Welds may crack or fail when exposed to heavy loads or shifting cargo that hasn't been properly secured. If you know or suspect that the trailer has experienced such conditions, inspect all welds and fasteners immediately for signs of damage. To avoid serious structural issues, inspect all welds for cracks or failures at least once a year. If you discover any weld damage, contact your dealer for an evaluation and repair.

WARNING **Do not attempt to repair a cracked or broken weld unless you have the skills and equipment to make the repair.**

Improper weld repair will lead to early failure of the trailer structure and serious injury or death.

See your dealer for weld repairs.

WARNING **Broken or damaged welds can cause injury or damage to trailer and contents.**

Inspect and repair all damaged parts at least once a month.

8.2.2 TRAILER BRAKES - ELECTRIC

8.2.2.1 BRAKE DISCS, SHOES AND DRUMS

Properly working brake shoes and drums are critical for safe trailer operation. Have your dealer inspect these components at least once a year or every 12,000 miles, whichever comes first. Note that brake adjustments are not included under the axle warranty.

Brake shoes should be adjusted after the first 200 miles of use, and then every 3,000 miles. Most axles are equipped with a brake system that automatically adjusts the shoes when the trailer is firmly braked in reverse. Trailer disc brakes are self-adjusting and do not require routine adjustment.

Using brake shoes or pads with worn-out lining can lead to brake damage, excessive heat buildup, and possible brake failure. Refer to your axle and brake manuals for proper brake adjustment procedures. If you don’t have the manuals, contact your dealer for guidance.

8.2.2.2 MANUALLY ADJUSTING BRAKE SHOES

Some brake systems do not self-adjust and require manual adjustment. The steps below outline the general process for adjusting most manually adjustable brakes.

Always refer to your axle and brake manuals for specific instructions. If you do not have these manuals, contact your dealer for assistance.

1. Jack up the trailer and secure it using adequate capacity jack stands.
2. Be sure the wheel and brake drum rotate freely.
3. Remove the adjusting-hole cover from the adjusting slot on the bottom of the brake backing plate.
4. With a screwdriver or standard adjusting tool, rotate the star wheel of the adjuster assembly to expand the brake shoes. Adjust the brake shoes out until the pressure of the linings against the drum makes the wheel very difficult to turn. Note: Your trailer may be equipped with drop spindle axles. See axle manual for your axle type. You will need a modified adjusting tool for adjusting the brakes in these axles.
5. Rotate the star wheel in the opposite direction until the wheel turns freely with a slight drag.
6. Replace the adjusting-hole cover.
7. Repeat the above procedure on all brakes.
8. Lower the trailer to the ground.

8.2.2.3 ELECTRIC BRAKES

Two different types of electric brakes may be present on the trailer: an emergency electric breakaway system, which acts only if the trailer comes loose from the hitch and the breakaway pin is pulled. The other brake is an electric brake system that acts whenever the brakes of the tow vehicle are applied.

Breakaway Battery - This battery supplies the power to operate the trailer brakes if the trailer uncouples from the tow vehicle. Be sure to check, maintain and replace the battery according to the battery manufacturer's instructions. Your trailer may use the hydraulic system battery to operate the breakaway brakes.

CAUTION **Extreme cold weather can degrade battery performance and cause brakes to not operate properly.**
Check the battery charge level before towing.

Breakaway Switch - This switch engages the electric brakes if the trailer uncouples from the tow vehicle. To check for proper functioning of the switch, battery and brakes, you must pull the pin from the switch and confirm that the brakes apply to each wheel. You can do this by trying to pull the trailer with the tow vehicle, after pulling the pin. The trailer brakes may not lock, but you will notice that a greater force is needed to pull the trailer.

WARNING **If electric breakaway brakes do not operate when trailer is uncoupled from the tow vehicle, death or serious injury can occur.**
Check the emergency breakaway brake system before each tow.

8.2.2.4 TOW VEHICLE OPERATED ELECTRIC BRAKES

Electric brakes, which work in coordination with the tow vehicle's brakes, must be properly synchronized to ensure balanced braking between the trailer and tow vehicle. To achieve

correct operation and synchronization, carefully follow the instructions provided by both the axle/brake manufacturer and the brake controller manufacturer. If you do not have these instructions, contact your dealer for assistance.

8.2.2.5 ELECTRIC BRAKE MAGNETS

To ensure the proper performance of an electric braking system, have the brake magnets inspected by your dealer at least once a year or every 12,000 miles, whichever comes first. Refer to the brake manual for specific guidelines on wear limits and current testing procedures.

8.2.3 TRAILER CONNECTION TO TOW VEHICLE

8.2.3.1 COUPLER AND BALL

Before each trip, apply a thin layer of automotive bearing grease to the hitch ball to minimize wear and ensure smooth operation. Also, inspect the locking mechanism that secures the coupler to the ball to confirm it's functioning correctly.

Refer to the coupler manufacturer's manual for additional inspection and maintenance guidelines. If you don't have this manual, contact your dealer for assistance.

If you notice any signs of wear—such as flat spots, deformation, pitting, or corrosion—on the ball or coupler, have your dealer inspect them immediately to determine the appropriate corrective action and avoid potential system failure. Any damaged or bent coupler components must be replaced before towing.

The coupler latch lever should rotate freely and snap securely into the latched position on its own. Lubricate the pivot points, sliding surfaces, and spring ends using SAE 30W motor oil. Keep the ball socket and latch mechanism clean, as dirt and debris can interfere with proper latching.

When replacing the hitch ball, make sure its load rating is equal to or greater than the trailer's Gross Vehicle Weight Rating (GVWR).

8.2.3.2 RING AND PINTLE

Before each tow, apply a thin coat of automotive bearing grease to the ring to minimize wear and ensure smooth operation. Also, inspect the locking mechanism that secures the pintle to the ring to confirm it is functioning correctly.

Refer to the pintle manufacturer's manual for additional inspection and maintenance procedures. If you do not have this manual, contact your dealer for assistance.

If you notice any signs of wear—such as flat spots, deformations, pitting, or corrosion—on the pintle or ring, have your dealer inspect them immediately to determine the appropriate corrective action. To prevent potential failure of the coupling system, replace any bent or damaged components before towing.

The pintle latch handle should move freely and snap securely into the latched position. Lubricate the pivot points, sliding surfaces, and spring ends with SAE 30W motor oil. Keep the ring socket and latch mechanism clean, as dirt or debris can interfere with proper operation.

When replacing the ring, ensure its load rating is equal to or greater than the trailer's Gross Vehicle Weight Rating (GVWR).

8.2.3.3 GOOSENECK RECEIVER AND BALL

Before every tow, apply a thin layer of automotive bearing grease to the hitch ball to help reduce wear and ensure smooth operation. Also, check that the locking mechanism securing the receiver to the ball is functioning properly.

If you notice any signs of wear—such as flat spots, pitting, or corrosion—on the ball or receiver, have your dealer inspect them right away to determine the necessary steps to prevent potential failure of the coupling system

When replacing the hitch ball, be sure its load rating is equal to or greater than the trailer's Gross Vehicle Weight Rating (GVWR).

8.2.4 LANDING LEG OR JACK

If grease fitting is present, use a grease gun to lubricate the jack mechanism. Grease the gears in the top of hand-cranked jacks once a year, by removing the top of the jack and pumping or hand packing grease into the gears.

8.2.5 LIGHTS AND SIGNALS

Before each tow, check all trailer lights for proper operation.

WARNING To avoid risk of collisions, all lights must work.

8.2.6 WHEEL RIMS

If the trailer has been struck, or impacted, on or near the wheels, or if the trailer has struck a curb, inspect the rims for damage. Replace any damaged wheel. Inspect the wheels for damage every year, even if no obvious impact has occurred.

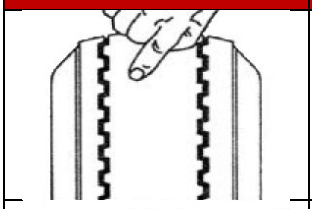
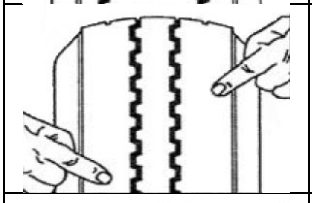
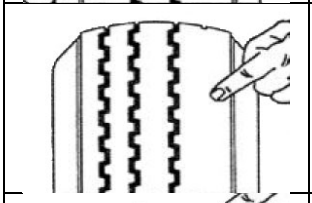
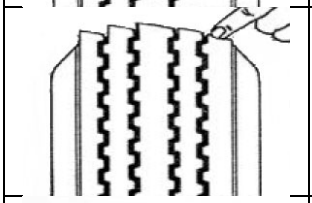
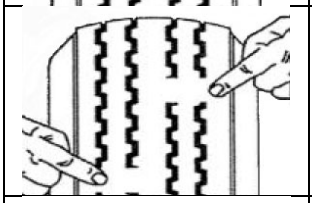
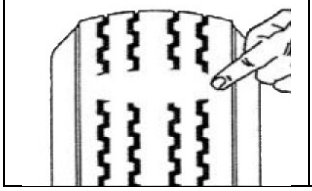
8.2.7 TIRES

Before each tow, check the tire pressure to make sure it is at the level indicated on the tire sidewall or VIN label. Tire pressure must be checked while the tire is cold. Do not check tire pressure immediately after towing the trailer. Allow at least three hours for the tires to cool, if the trailer has been towed for as much as one mile. Tires can lose air over time.

Replace the tire before towing the trailer if the tire treads have less than 2/32 inch depth or the telltale bands are visible.

A bubble, cut or bulge in a side wall can result in a tire blowout. Inspect both side walls of each tire for any bubble, cut or bulge; and replace a damaged tire before towing the trailer.

If you are storing your trailer for an extended period, make sure the tires are inflated to the maximum rated pressure indicated on the sidewall or VIN label and that you store them in a cool, dry place such as a garage. Use tire covers to protect the tires from the harsh effects of the sun.

	CONDITION	POSSIBLE CAUSE	REMEDY
	Even Center Wear	Over Inflation	Check & Adjust Pressure When Cold
	Inside & Outside Wear	Under Inflation	Check & Adjust Pressure When Cold
	Smooth, Side Wear -One Side	Loss of Camber or Overloading	Check & Unload as Necessary Have Alignment Checked
	"Feathering" Across the Face	Axle Not Square to Frame or Incorrect Toe In	Square Axles Have Alignment Checked
	Cupping	Loose Bearings or Wheel Balance	Check Bearing Adjustment and Wheel & Tire Balance
	Flat Spots	Wheel Lockup	Adjust Brakes

Tire Inspection Chart

WARNING **Worn, damaged or under-inflated tires can cause loss of control, injury and damage.**

Check tires before each tow.

8.2.8 WHEEL BEARINGS

A loose, worn or damaged wheel bearing is the most common cause of brakes that grab.

To check your bearings, jack up the trailer and secure it on adequate capacity jack stands. Check wheels for side-to-side looseness.

If the wheels are loose, or spin with a wobble, the bearings must be serviced or replaced.

WARNING **Never go under trailer unless it is on firm and level ground and resting on properly placed and secured jack stands**

If your axle(s) are equipped with a grease zerk on the ends of the axle(s), the bearings must be greased every 6 months or 6,000 miles to ensure reliable and safe operation of your trailer.

1. Remove the rubber plug from the axle end.
2. Place grease gun on zerk.
3. Pump grease until new grease begins to appear. Use a different color grease each time so you will know when the new grease begins to appear.
4. Install rubber plug and cap. Repeat for remaining wheel bearings.

If your trailer axle(s) are not equipped with grease zerks, refer to the axle manufacturer's manual for service and maintenance information.

8.2.9 LUBRICATION

Lubricate hoist pivots and hydraulic cylinder ends every month (if equipped).

8.2.10 HYDRAULIC RESERVOIR

Check the fluid level prior to towing the trailer. The reservoir is normally located inside the control box.

The hoist must be fully lowered with all cylinders fully retracted before checking fluid level. The reservoir should be filled to the full mark on the side of the reservoir.

Use quality hydraulic fluid with anti-wear properties, rust and oxidation inhibitors. Fluid ejecting from the reservoir could indicate a low battery.

8.2.11 LUG NUTS OR BOLTS

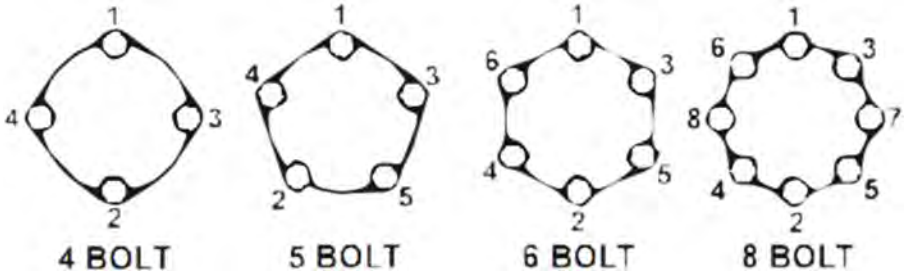
Lug nuts or bolts are prone to loosen right after a wheel is mounted to a hub. When driving on a remounted wheel, check to see if the lug nuts or bolts are tight after the first 10, 25 and 50 miles of driving, and before each tow thereafter.

WARNING **Lug nuts or bolts are prone to loosen after being first assembled. Death or serious injury can result.**
Check lug nuts or bolts for tightness on a new trailer, and after re-mounting a wheel at 10, 25 and 50 miles.

WARNING **Metal creep between the wheel rim and lug nuts or bolts can cause rim to loosen.**
Death or injury can occur if wheel comes off.
Tighten lug nuts or bolts before each tow.

Tighten the lug nuts or bolts in three stages to the final torque for the axle size on your trailer, to prevent wheels from coming loose. Tighten each lug nut or bolt in the order shown in the following figure.

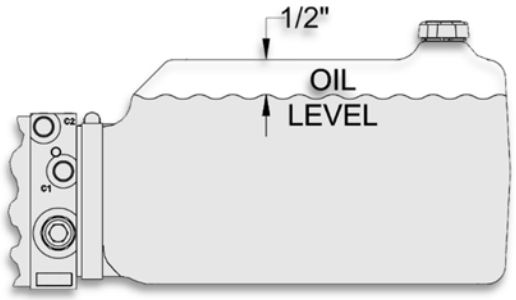
Use a calibrated torque wrench to tighten the fasteners. Verify that wheel studs are free of contaminants such as paint or grease, which may result in inaccurate torque readings. Over-tightening will result in breaking the studs or permanently deforming the mounting stud holes in the wheels and will void the axle warranty.



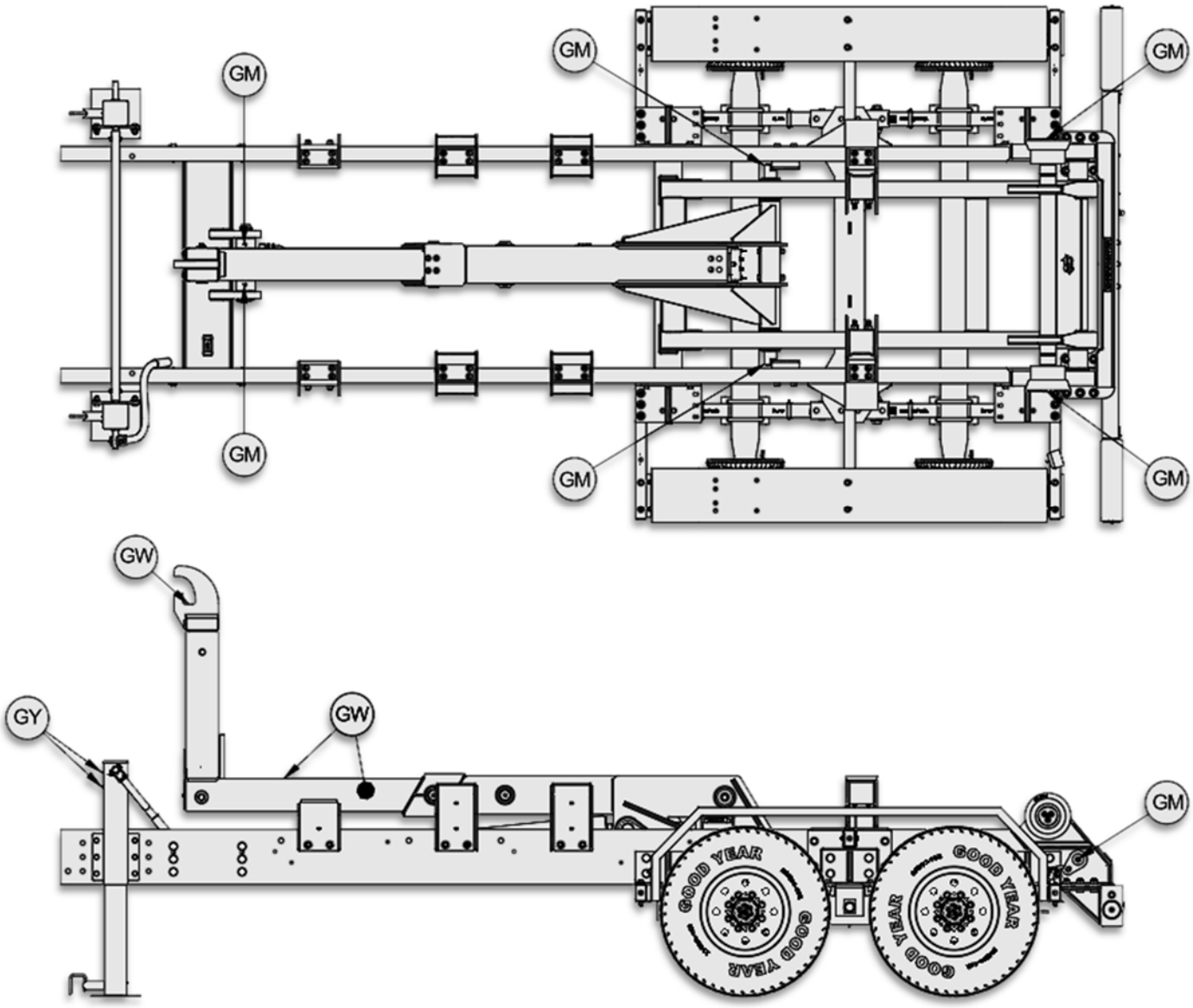
See your axle manufacturers manual or your dealer for wheel nut or bolt torque specifications.

8.3 HOOKLIFT SERVICE & MAINTENANCE

8.3.1 RECOMMENDED SCHEDULED MAINTENANCE

WEEKLY SERVICE **(50 OPERATIONS)**	1. Lubricate with grease (refer to lubrication diagram). • Lifting hook on jib. 2. Check hydraulic oil level. With the hoist in the transport position (lift cylinder retracted and jib cylinders retracted) the oil level in the tank should read approximately one half inch below the top of the hydraulic tank (see diagram ➡).  3. Check hydraulic hose and fittings for leaks. Also check hydraulic hose for wear. Repair and/or retighten as necessary.
MONTHLY SERVICE **(200 OPERATIONS)**	1. Lubricate with grease (refer to lubrication diagram) • Fittings on lift cylinders (quantity: 2). • Front pins on rear pivot joint weldment (quantity: 2). • Fittings on rear pivot pins and rollers (quantity: 4). 2. Check all bolts and retighten as required. 3. Check adjustments on mast lock (safety latch) mechanism. Refer to the Mast Lock Inspection & Adjustment Instructions. 4. Check adjustments on the proximity switch. Refer to the Proximity Switch Inspection & Adjustment Instructions
YEARLY SERVICE	1. Check for proper gapping on outer tube. Refer to the Outer Tube and Jib Wear Pad Replacement Instructions. 2. Change hydraulic oil, replace hydraulic filter element, and wash out suction strainer. 3. Check main relief valve setting. Refer to the Pressure Check Instructions.

8.3.2 LUBRICATION DIAGRAM



LEGEND		
GW	=	Grease Weekly
GM	=	Grease Monthly
GY	=	Grease Yearly

8.3.3 MAST LOCK INSPECTION INSTRUCTIONS

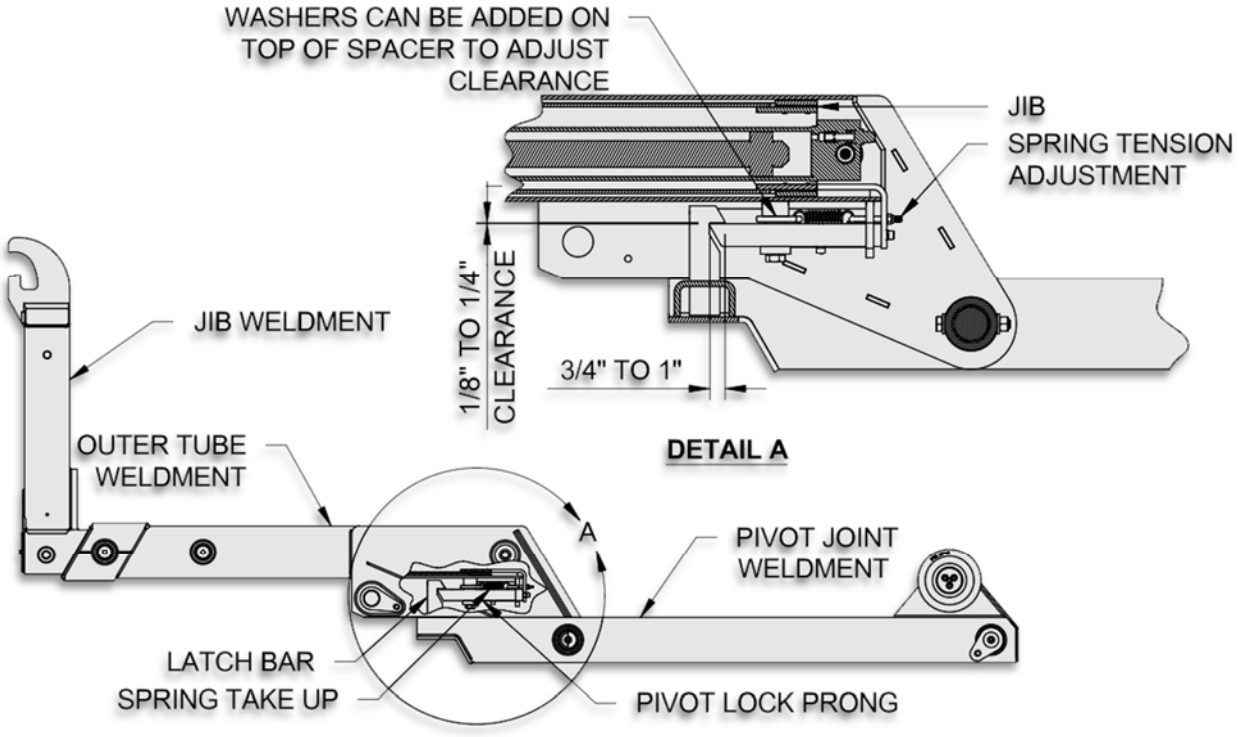
Your SwapLoader hooklift trailer comes with a mast lock (Pivot Lock) Assembly that is located on the bottom side of the outer tube. When the jib is extended the mast lock then engages the latch bars (forks) on the pivot joint, making the jib, outer tube, and pivot joint into a continuous member for raising the container or body up into a dump mode.

With the jib fully retracted the mast lock then disengages the latch bars on the pivot joint allowing the hook-lift to enter the mount-dismount cycle by pivoting around the front pin of the pivot joint. A properly adjusted mast lock will function smoothly and clear the latch bars on the pivot joint approximately a **1/4"** (see illustrations below).

8.3.3.1 INSPECTION

The mast lock (safety latch) assembly comes adjusted from the factory and should provide years of trouble free operation, however there may come a time when an adjustment may be required. Prior to making any adjustments, SwapLoader recommends that you begin with inspecting all mast lock components for damage or wear (see illustrations below).

Inspect the safety latch assembly; look for any missing or bent components such as bumpers, bearings, ears or screws. Repair or replace any missing or bent components prior to making any adjustment to the mast lock assembly; refer to the mast lock (safety latch) assembly in the Parts section of the manual for proper part numbers and identification of the components.



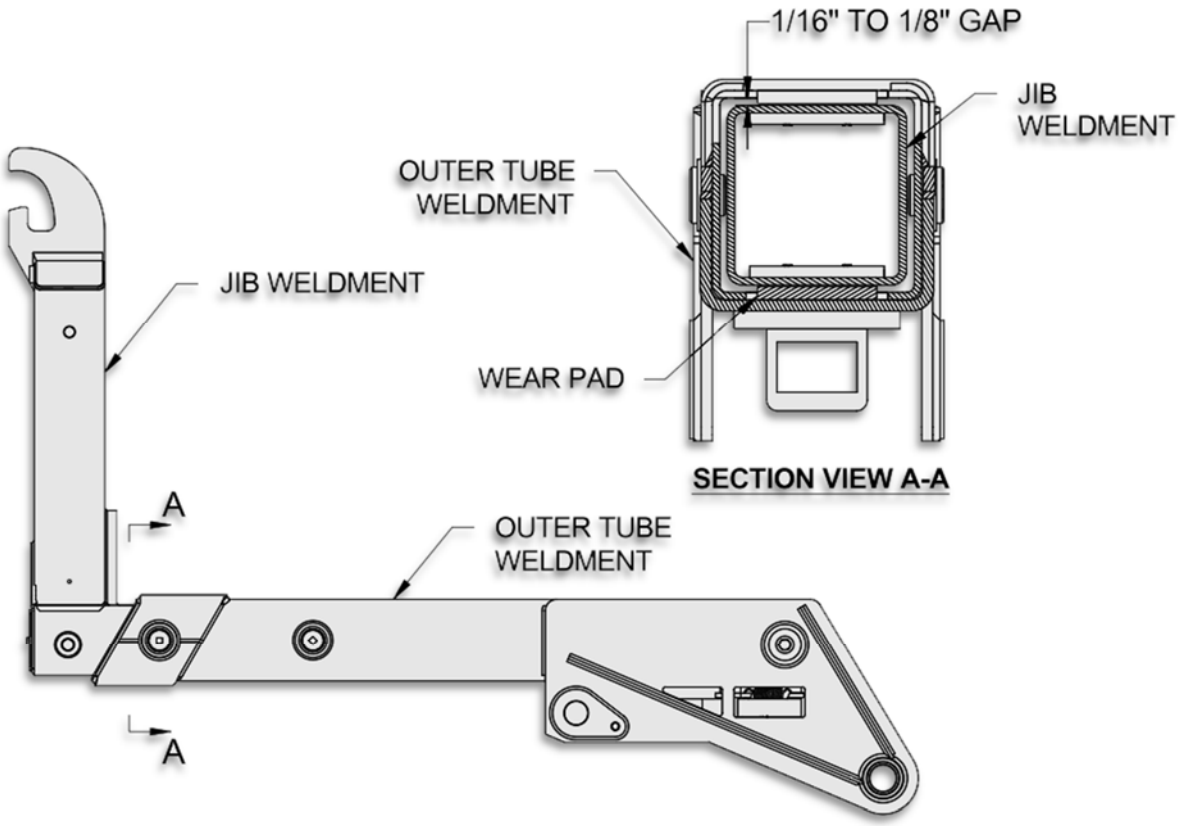
MAST LOCK LOCATION ILLUSTRATION
(shown with jib retracted)

8.3.4 OUTER TUBE & JIB WEAR PAD REPLACEMENT INSTRUCTIONS

The SwapLoader ST-1614 comes equipped with several wear pads throughout the outer tube and jib assemblies that are conveniently accessible and makes replacement easy for an end user.

8.3.4.1 WEAR PAD INSPECTION

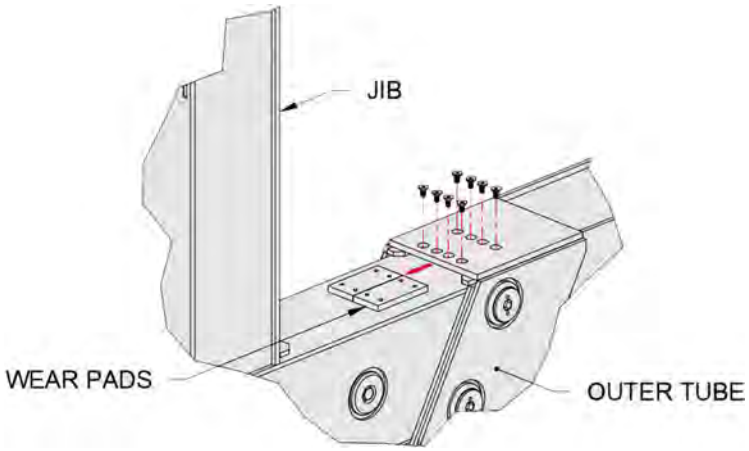
The illustration below is a typical outer tube-jib assembly for the SwapLoader Trailer models. For optimum performance out of your SwapLoader Trailer hooklift the gap between the top of the jib horizontal tube and the top inside surface of the outer tube should be kept between 1/16" to 1/8" (see Section View A-A below). When a gap greater than 1/8" exists, inspect the upper and lower wear pads on the jib and outer tube as well as the fasteners for excessive wear or damage (see Section View A-A below). Replace parts as needed to bring the outer tube-jib assembly back to recommended specifications (see Outer Tube Assembly in the Parts section).



OUTER TUBE & JIB ASSEMBLY ILLUSTRATION
(shown with jib retracted)

8.3.4.2 WEAR PAD REPLACEMENT

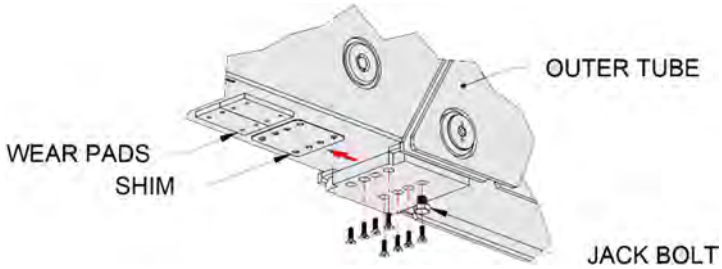
Outer Tube – Upper Wear Pads



- Remove the bolts and slide the wear pads out the front.
- Insert new wear pads in the same orientation, making sure the larger holes are facing the jib. If shims were installed on top of the old wear pads, reinsert them in the same position.
- Bolt wear pads back in (see Thread Lock Application instructions)..

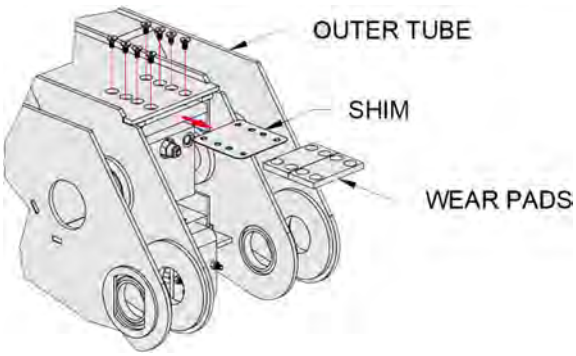
Outer Tube – Lower Wear Pads

- There is a threaded hole in the bottom of the outer tube used to jack the jib up for wear pad replacement. Insert a 3/4-10 bolt into this hole and raise the jib until weight is taken off the wear pads.
- Remove the bolts and slide out the wear pads.
- Insert new wear pads in the same orientation, making sure the larger holes are facing the jib. If shims were installed beneath the old wear pads, reinsert them in the same position.



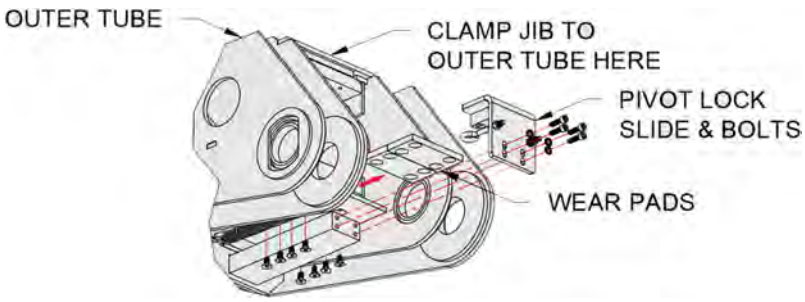
- Bolt wear pads back in (see Thread Lock Application instructions). Back out the jack bolt so it is no longer contacting the jib.

Jib – Upper Wear Pads



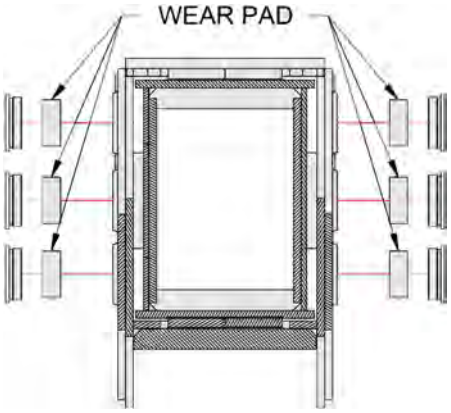
- Fully retract the jib, then remove the bolts using the access holes on the top of the outer tube (see illustration ➡).
- Slide the wear pads out the back.
- Insert new wear pads in the same orientation, making sure the countersink is facing away from the jib. If shims were installed beneath the old wear pads, reinsert them in the same position.
- Bolt wear pads back in (see Thread Lock Application instructions).

Jib – Lower Wear Pads



- Disconnect the springs and remove the four bolts to take off the pivot lock slide (see illustration ➡).
- With the jib fully retracted, clamp together the top of the jib and outer tube to remove the weight from the lower wear pads.
- Remove the bolts using the access holes on the bottom of the outer tube.
- Slide the wear pads out the back.
- Insert new wear pads in the same orientation, making sure the countersink is facing away from the jib. If shims were installed on top of the old wear pads, reinsert them in the same position.
- Bolt wear pads back in (see Thread Lock Application instructions)..

Outer Tube – Side Wear Pads



- If you are noticing your jib sitting to one side or moving excessively from side to side, inspect the side wear pads on the outer tube (see illustration ➡).
- Each of the six round wear pads should be just contacting the sides of the jib.
- It is possible to tighten the wear pad mount in the hole, but with excessive wear will require replacement wear pads (see Outer Tube Assembly in the Parts & Installation manual).
- When adjusting or replacing the wear pad mount, apply thread locker (Vibra-Tite VC-3 or equivalent) to the threads.
- As part of the weekly equipment inspection, it is recommended to apply a paint mark line between the wear pad threaded plug and wear pad mount to visually inspect for movement or loosening.

THREAD LOCK APPLICATION:

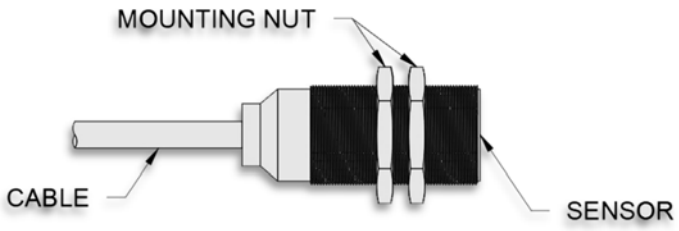
IF WEAR PADS CEASE TO HOLD THE JIB TIGHTLY OR UNTHREAD FROM THEIR HOLES, REMOVE THE PLUG AND CLEAN OFF ANY OLD THREAD LOCKER FROM THE INTERNAL AND EXTERNAL THREADS. ADD A NEW LAYER OF THREADLOCKER TO THE STEEL PLUG PER THE FOLLOWING INSTRUCTIONS.

IF THREAD LOCKER IS WORN OR NO LONGER PRESENT, REAPPLY PER THE FOLLOWING INSTRUCTIONS.

- PRODUCT SHOULD BE VIBRA-TITE VC3 OR COMPARABLE ANAEROBIC THREAD LOCKER AND SEALANT, NO SUBSTITUTIONS WITHOUT PRIOR APPROVAL.
- ENSURE THAT THE THREADS ON THE PLUG ARE CLEAN AND FREE OF GREASE, OIL, AND OTHER CONTAMINANTS.
- SHAKE THE CONTAINER WELL BEFORE USE TO ENSURE PROPER MIXING.
- ENSURE THAT THE FULL LENGTH OF THE THREADS ARE COVERED AROUND THE FULL DIAMETER, FILLING THREADS 30-50%.
- ALTHOUGH MATERIAL WILL BE DRY TO TOUCH WITHIN MINUTES, ALLOW THREAD LOCKER TO DRY FOR AT LEAST 30 MINUTES BEFORE HANDLING OR STORING.

8.3.5 JIB PROXIMITY SENSOR INSPECTION & ADJUSTMENT INSTRUCTIONS

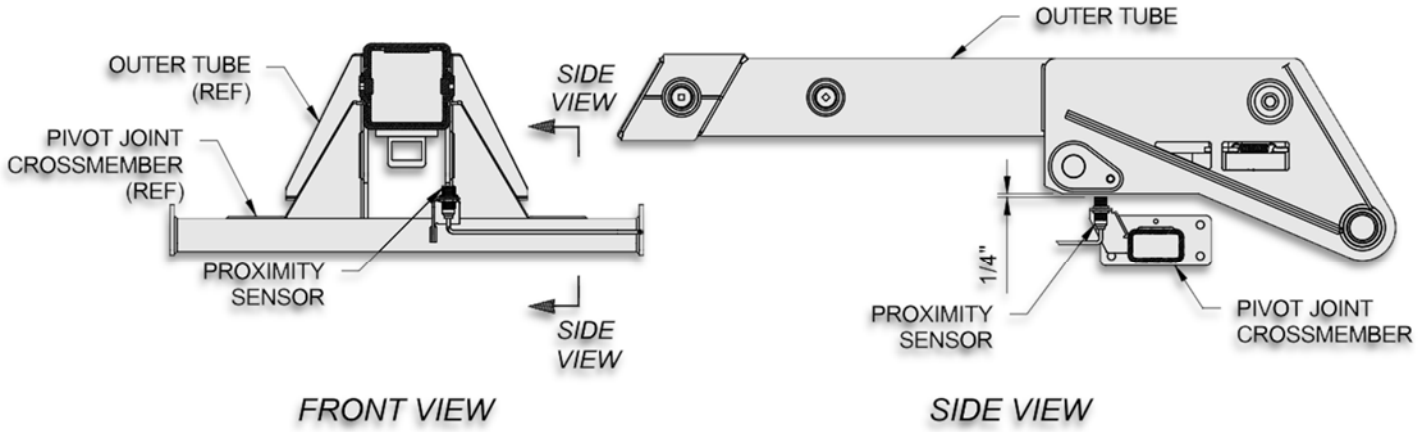
The ST-1614 has a proximity sensor to prevent accidental operation of the telescopic jib, while the hoist is up in dump mode. If the jib is operational while using the lift cylinders, then an adjustment will need to be made to the jib proximity switch.



PROXIMITY SENSOR ILLUSTRATION

8.3.5.1 ADJUSTMENT

Should the jib proximity switch need adjustment the first step will be to loosen the mounting nuts (see illustration below). Reposition the jib proximity switch with respect to the Outer Tube making sure to leave a gap of 1/4". The jib proximity switch should not contact the Outer Tube. Retighten the mounting nuts.

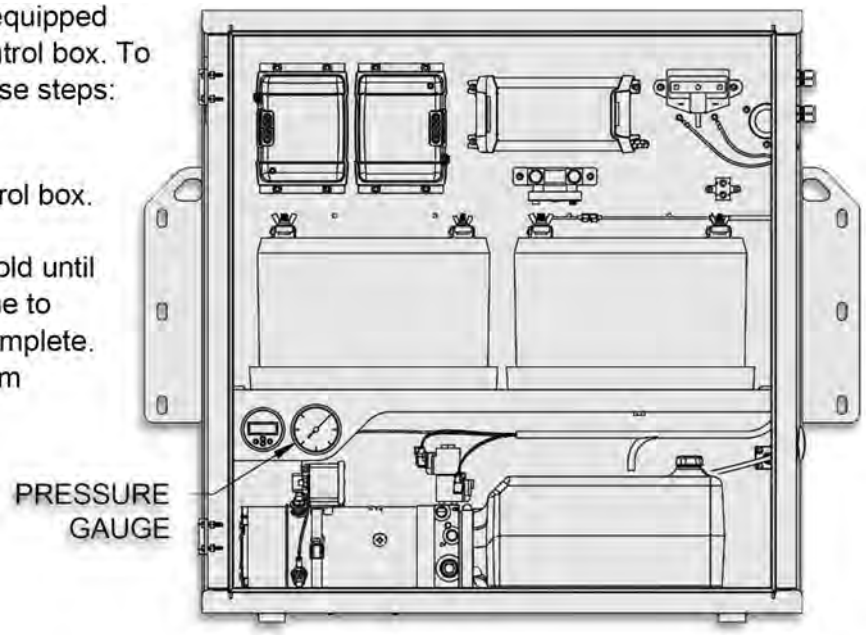


JIB LOCKOUT SENSOR ADJUSTMENT ILLUSTRATION

8.3.4 HOW TO PERFORM A PRESSURE CHECK

All SwapLoader hooklift trailers are equipped with a pressure gauge inside the control box. To perform a pressure check, follow these steps:

1. Start the truck.
2. Turn power switch on to the control box. Turn power on to the remote.
3. Push the lift extend button and hold until the cylinder bottoms out. Continue to hold button until steps 4-5 are complete.
4. Check the gauge for the maximum developed system pressure.
5. With the pressure check complete; release all functions.

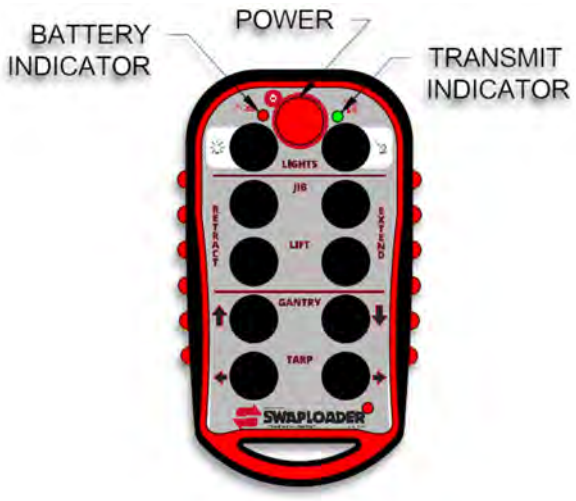


8.4 WIRELESS REMOTE

Power must be applied to the receiver module for the system to work.

8.4.1 REMOTE ON/OFF

1. Press and hold the POWER button until the red and green LEDs appear.
2. Press and hold the POWER button until the LEDs stop toggling.



NOTE:

WHEN POWER IS ON:

1. **PRESSING THE POWER BUTTON WILL TURN OFF ALL FUNCTIONS AS A SAFETY MEASURE.**
2. **IF THE TRANSMITTER (REMOTE) GOES OUT OF RANGE FOR MORE THAN 2 SECONDS, ALL FUNCTIONS WILL TURN OFF AS A SAFETY MEASURE.**
3. **TO SAVE BATTERY LIFE, THE TRANSMITTER WILL TURN OFF AFTER 15 MINUTES IF THE RECEIVER IS OFF.**

PRESS POWER BUTTON TO RESTORE OPERATION.

8.4.2 INDICATOR LEDs

1. Transmitter Indicator - blinks rapidly whenever there is communication between the transmitter and the receiver. It will double-blink when no functions are used.
2. Battery Indicator - blinks once every second when the battery voltage is low and requires charging.
3. U-Lock Indicator (if applicable) - LED light will turn on when the U-Lock is engaged.

8.4.3 PARKING BRAKE

As a safety feature, the parking brake must be engaged when operating the hoist using the remote.

CAUTION **DO NOT OPERATE THE HOIST WHILE OUTSIDE OF THE CAB UNLESS THE PARKING BRAKE IS ENGAGED OR THE TRUCK MAY MOVE POSTION.**

MAINTAIN A SAFE DISTANCE AND STAY CLEAR OF MOVING OBJECTS WHEN OUTSIDE OF THE CAB.

8.4.4 ON-BOARD GATE

The GATE creates a Wi-Fi access point which allows you to connect to any device with Wi-Fi and web browser such as smart phones, pads, or computers and allows users to configure, diagnose, and troubleshoot the system.

8.4.5 ACCESSING THE CONTROL PANEL

1. Turn on the power to the receiver. The GATE will remain active for up to 5 minutes of wi-fi activity, after which it will turn off to conserve power.
2. Use your device and look for the available Wi-Fi networks. A network under the name of “SWAPLOADER3A5893”, “SWAPLOADER3A589B”, “SWAPLOADER3A589F”, or “SWAPLOADER3A589L” should be available at this point. Connect to the network, the password is:
   - 3A5893X1 for 3A5893A receiver modules
   - 3A589BX1 for 3A589BA receiver modules

- 3A589FX1 for 3A589FB receiver modules
- 3A589LX1 for 3A589LA receiver modules.

3. Once the connection is established, open a web browser on your device. Kar-Tech recommends using Chrome browser.
4. Enter the address http://192.168.4.1 in the address bar
5. The following options are available from the main screen. Note: some of these options require a password: 1262.
   - Diagnostics - shows the present state of remote communications.
   - Histogram - shows which error codes are active and how many times a specific error code has been active.
   - Wi-Fi Remote - in the event the transmitter is lost, the receiver can be operated here.
   - Software Update – to install new software updates.
   - Wi-Fi Configuration – allows you to change the name of the Wi-Fi network you're connecting to.

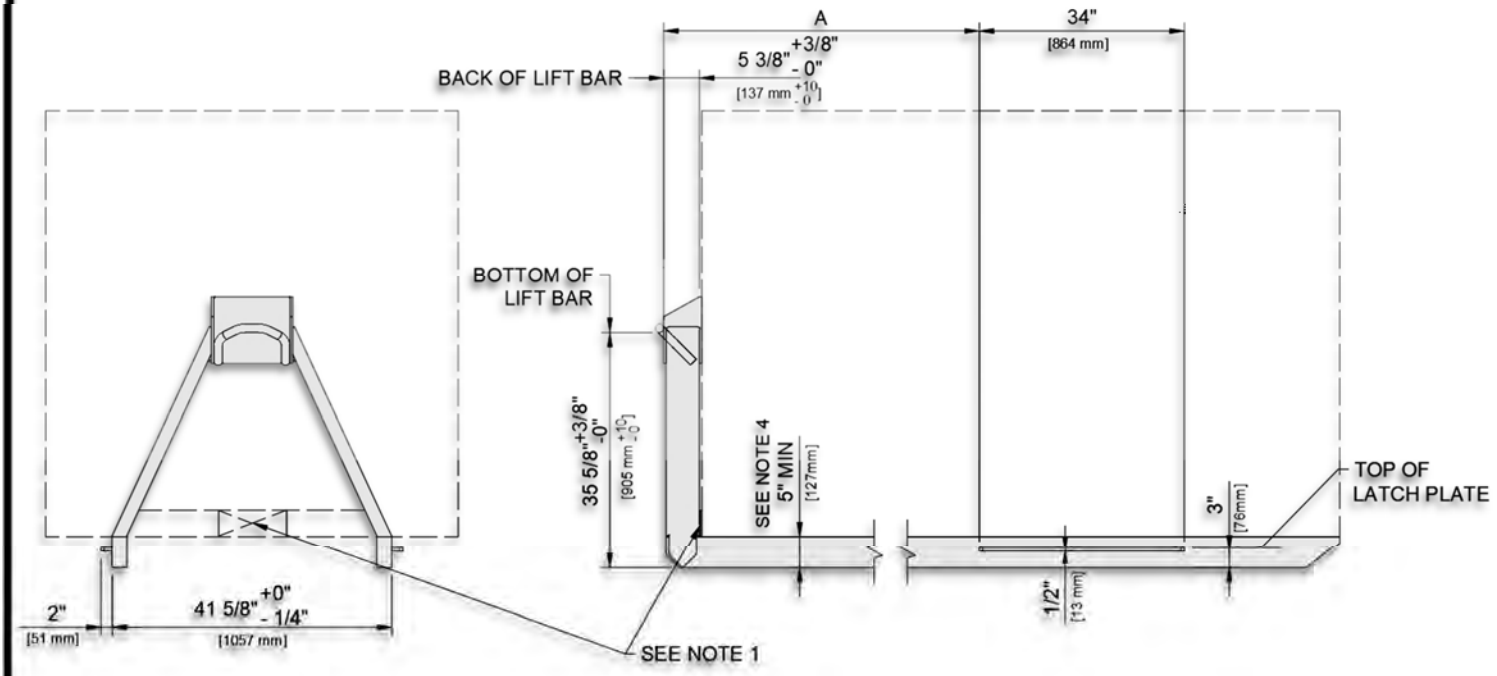
8.4.6 ROUTINE MAINTENANCE

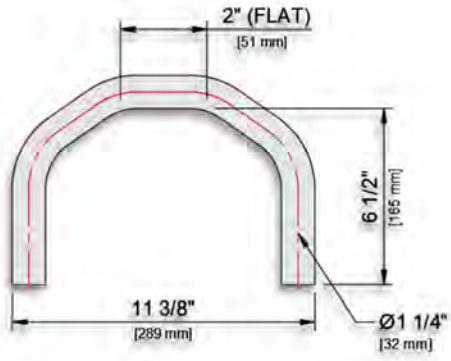
Clean transmitter regularly with damp cloth and mild detergent.

Inspect electrical wiring for wear points or other damage. Repair as required.

Inspect all connections for looseness or corrosion. Tighten and/or "seal" as necessary.

9.1 100 SERIES SUB-FRAME CRITICAL DIMENSIONS





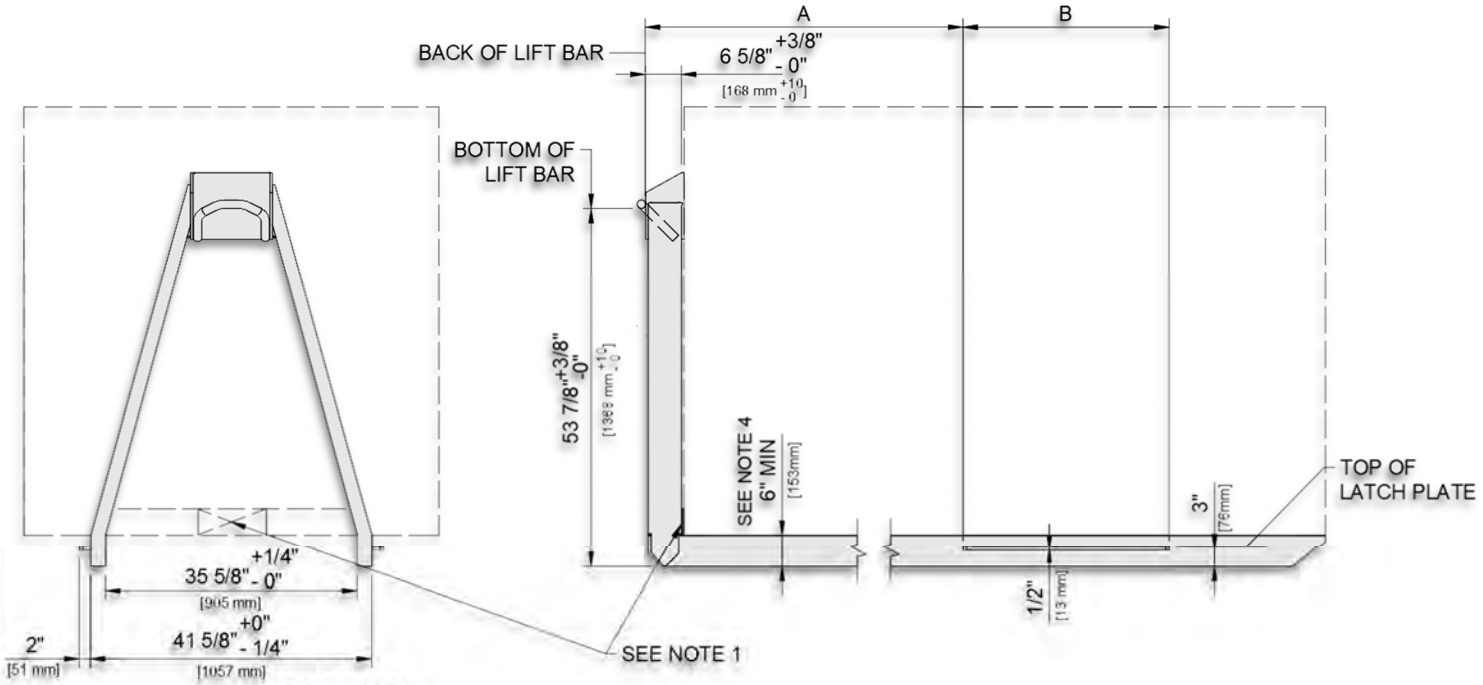
LIFT BAR DETAIL

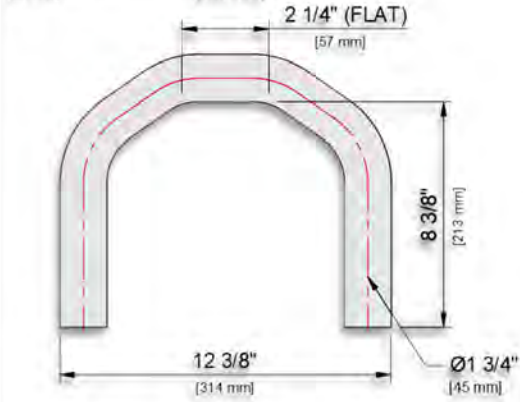
100 SERIES SUB-FRAME DIMENSIONS	
HOIST COMPATABILITY	**A**
ST-1614	95 1/2" [2418 mm]
SL-75/95/105	82 1/2" [2096 mm]
SL-145/160/180/185/212/214	95 1/2" [2418 mm]

NOTE:

1. **A STRUCTURAL JIB CONTACT POINT LOCATED AS LOW AS ALLOWABLE ON THE CONTAINER FRONT IS REQUIRED.**
2. **WELD HOOK GUARD TO BODY OR ADD STRUCTURAL SUPPORT AS NEEDED FOR THE APPLICATION.**
3. **THIS DRAWING PROVIDES THE CRITICAL SUB-FRAME DIMENSIONS FOR COMPATABILITY WITH THE SWAPLOADER HOOK LIFT HOIST. IT IS THE SUB-FRAME SUPPLIER'S RESPONSIBILITY TO PROVIDE A SUB-FRAME OF SUFFICIENT CAPACITY WHICH PROPERLY SUPPORTS THE BODY/CONTAINER WHEN USED WITH THE HOOK LIFT HOIST.**
4. **SWAPLOADER MANUFACTURED 100 SERIES A-FRAMES REQUIRE A 5 INCH LONGSILL HEIGHT.**

9.2 200 SERIES SUB-FRAME CRITICAL DIMENSIONS





LIFT BAR DETAIL

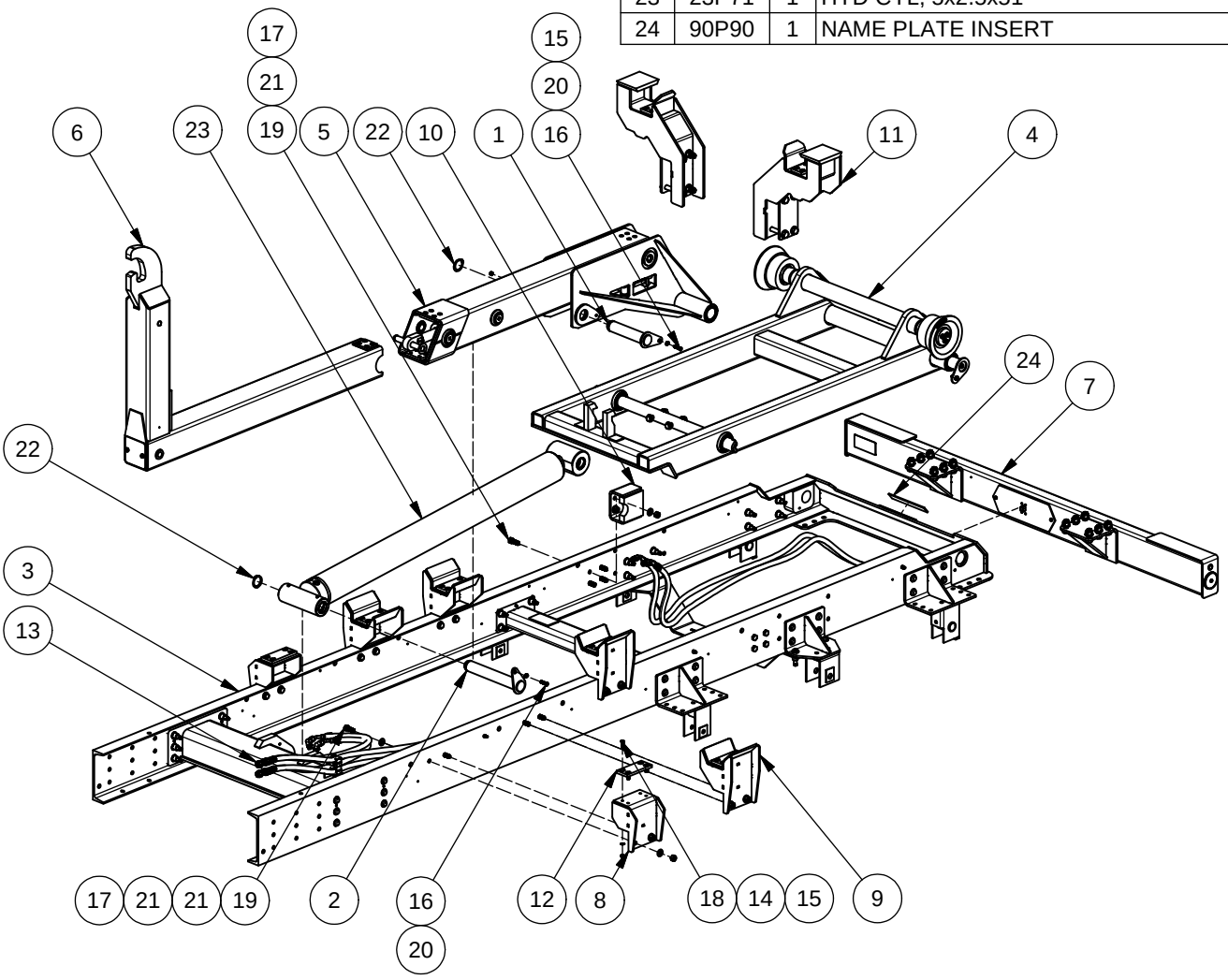
200 SERIES SUB-FRAME DIMENSIONS		
HOIST COMPATABILITY	**A**	**B**
95 1/2" [2418 mm]	111 3/4" [2839 mm]	48" [1220 mm]
SL-2418HD	84 1/8" [2137 mm]	24" [610 mm]
SL-225	110 3/4" [2813 mm]	36" [915 mm]
SL-180/185/212/214/240	111 3/4" [2839 mm]	48" [1220 mm]
SL-205	122 3/4" [3118 mm]	36" [915 mm]
SL-220/222	123 3/4" [3143 mm]	48" [1220 mm]

NOTE:

1. **A STRUCTURAL JIB CONTACT POINT LOCATED AS LOW AS ALLOWABLE ON THE CONTAINER FRONT IS REQUIRED.**
2. **WELD HOOK GUARD TO BODY OR ADD STRUCTURAL SUPPORT AS NEEDED FOR THE APPLICATION.**
3. **THIS DRAWING PROVIDES THE CRITICAL SUB-FRAME DIMENSIONS FOR COMPATABILITY WITH THE SWAPLOADER HOOK LIFT HOIST. IT IS THE SUB-FRAME SUPPLIER'S RESPONSIBILITY TO PROVIDE A SUB-FRAME OF SUFFICIENT CAPACITY WHICH PROPERLY SUPPORTS THE BODY/CONTAINER WHEN USED WITH THE HOOK LIFT HOIST.**
4. **SWAPLOADER MANUFACTURED 200 SERIES A-FRAMES REQUIRE A 6 INCH LONGSILL HEIGHT.**

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

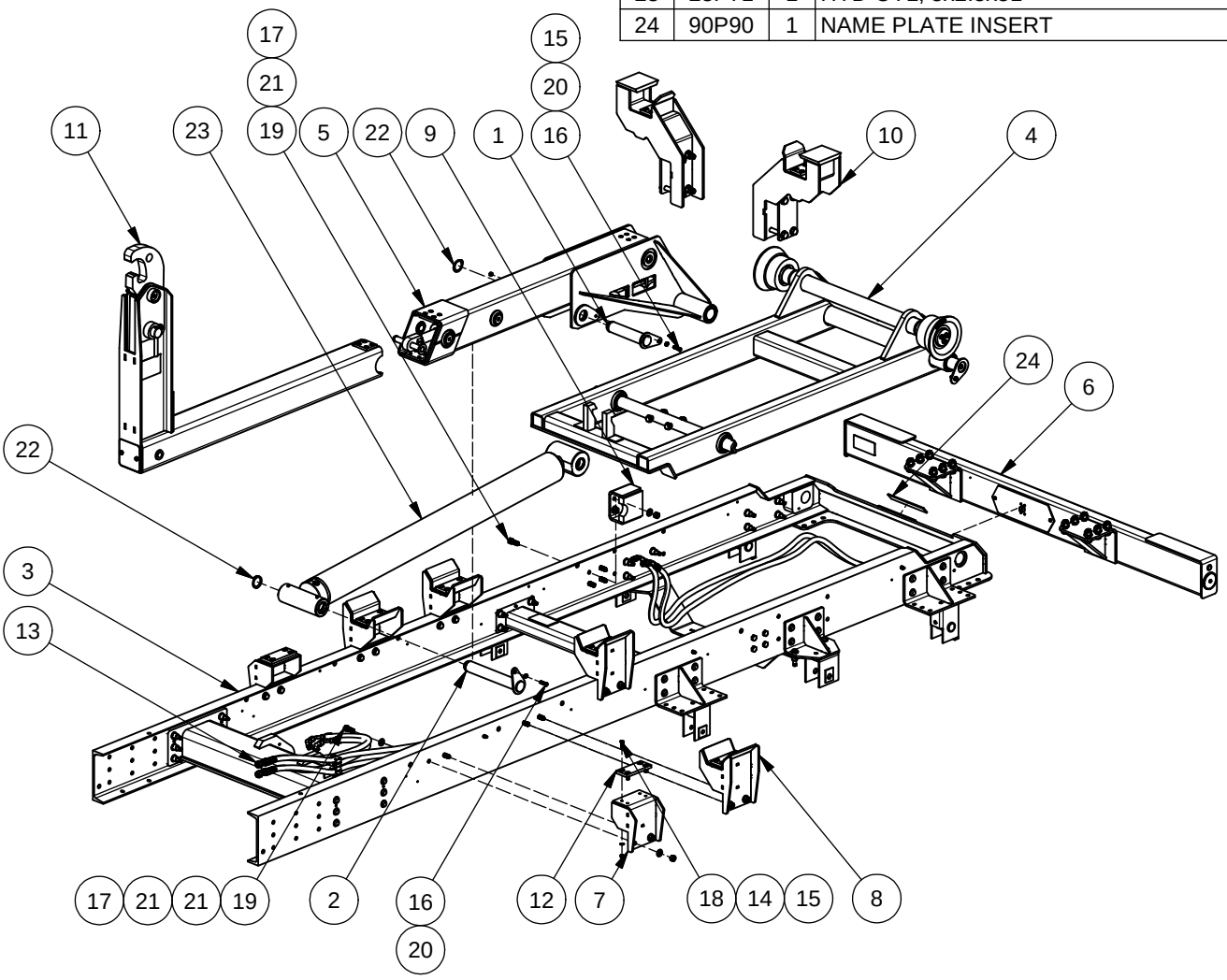
55H31 - HOOKLIFT ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H22	1	PIN, LIFT/CYL 2 x 9-1/2 ZP	9.38
2	55H24	1	PIN, LIFT/CYL 2 x 13-5/8 ZP	13.05
3	55H25	1	HUCK ASSEMBLY, TRAILER	1337.96
4	55H26	1	PJ ASSEMBLY, TRAILER	583.47
5	55H27	1	OT ASSEMBLY, TRAILER	394.82
6	55H28	1	FIXED JIB SUB-ASSY, 1614	188.87
7	55H34	1	BUMPER ASSEMBLY	190.74
8	55H76	2	NO GUIDE SUPPORT, TRAILER	14.56
9	55H78	4	GUIDE SUPPORT, TRAILER	21.89
10	55H80	2	LOCK PIN WDMT	14.15
11	55H89	2	BODY LOCK ASSY, TRAILER	54.27
12	60H31	6	WEAR PAD, 2-3/4 x 1/2 x 6-1/2	0.34
13	92H07	1	BASE CYL CIRCUIT, 1614	17.75
14	00755	24	WASHER, LOCK 3/8	0.03
15	00P14	25	NUT, HEX 3/8-16 UNC GR8	0.02
16	00P44	2	HHCS 3/8-16 UNC x 1-1/2 GR8	0.06
17	00P55	20	NUT, LOCK 5/8-11 UNC GR8	0.08
18	00P68	24	FHCS 3/8-16 UNC x 1-1/4 SS	0.04
19	00P91	20	HHCS 5/8-11 UNC x 1-3/4 GR8	0.21
20	01P28	2	WASHER, DISC LOCK 3/8 PR	0.00
21	01P86	32	WASHER, FLAT 5/8 ZP	0.06
22	02P69	2	SNAP RING, EXT 2 SHAFT	0.06
23	23P71	1	HYD CYL, 5x2.5x51	285.35
24	90P90	1	NAME PLATE INSERT	0.09



ST-1614 BASE TRL W/ FIX JIB

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

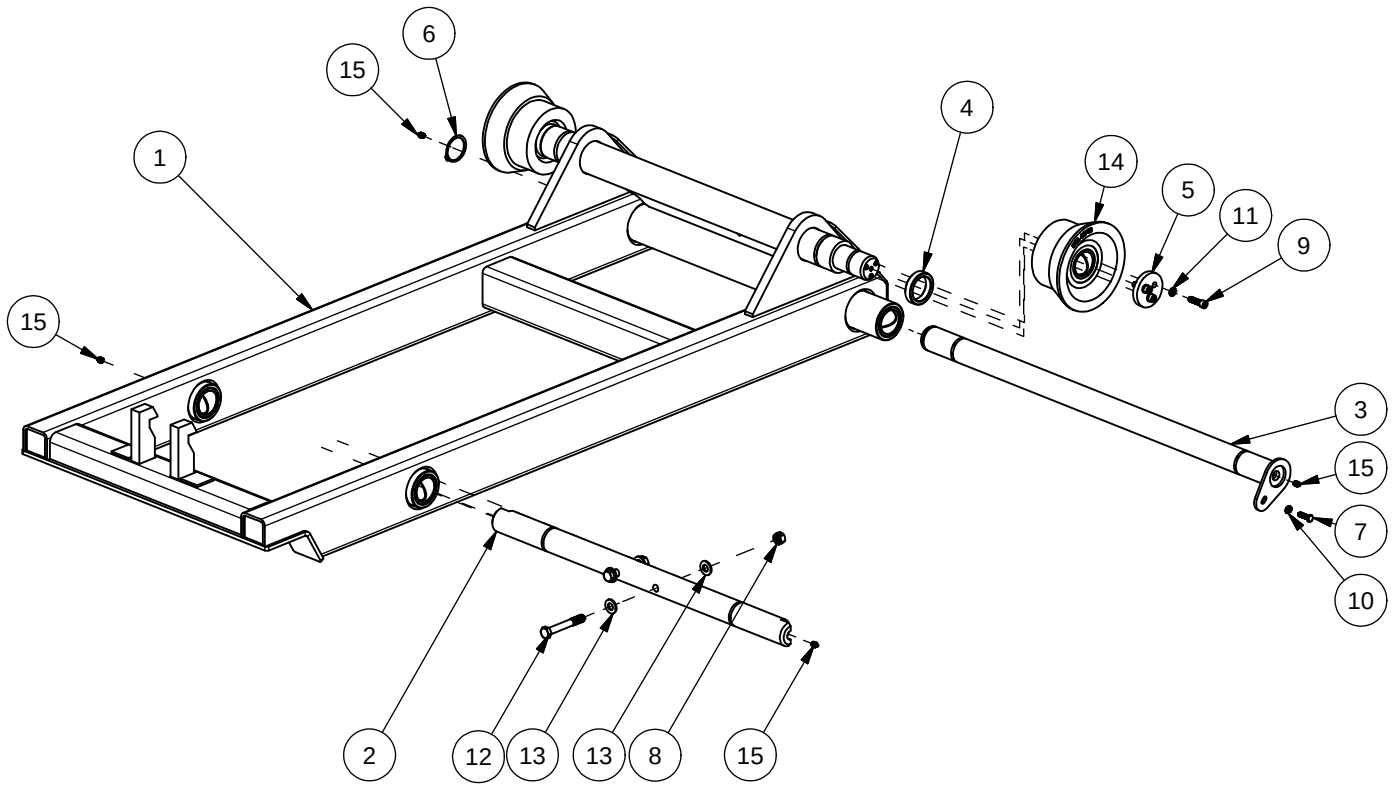
55H93 - HOOKLIFT ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H22	1	PIN, LIFT/CYL 2 x 9-1/2 ZP	9.38
2	55H24	1	PIN, LIFT/CYL 2 x 13-5/8 ZP	13.05
3	55H25	1	HUCK ASSEMBLY, TRAILER	1337.96
4	55H26	1	PJ ASSEMBLY, TRAILER	583.47
5	55H27	1	OT ASSEMBLY, TRAILER	394.82
6	55H34	1	BUMPER ASSEMBLY	190.74
7	55H76	2	NO GUIDE SUPPORT, TRAILER	14.56
8	55H78	4	GUIDE SUPPORT, TRAILER	21.89
9	55H80	2	LOCK PIN WDMT	14.15
10	55H89	2	BODY LOCK ASSY, TRAILER	54.27
11	55H94	1	ADJ JIB SUB-ASSY, 1614	358.08
12	60H31	6	WEAR PAD, 2-3/4 x 1/2 x 6-1/2	0.34
13	92H07	1	BASE CYL CIRCUIT, 1614	17.75
14	00755	24	WASHER, LOCK 3/8	0.03
15	00P14	25	NUT, HEX 3/8-16 UNC GR8	0.02
16	00P44	2	HHCS 3/8-16 UNC x 1-1/2 GR8	0.06
17	00P55	20	NUT, LOCK 5/8-11 UNC GR8	0.08
18	00P68	24	FHCS 3/8-16 UNC x 1-1/4 SS	0.04
19	00P91	20	HHCS 5/8-11 UNC x 1-3/4 GR8	0.21
20	01P28	2	WASHER, DISC LOCK 3/8 PR	0.00
21	01P86	32	WASHER, FLAT 5/8 ZP	0.06
22	02P69	2	SNAP RING, EXT 2 SHAFT	0.06
23	23P71	1	HYD CYL, 5x2.5x51	285.35
24	90P90	1	NAME PLATE INSERT	0.09



ST-1614 BASE TRL W/ ADJ JIB

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

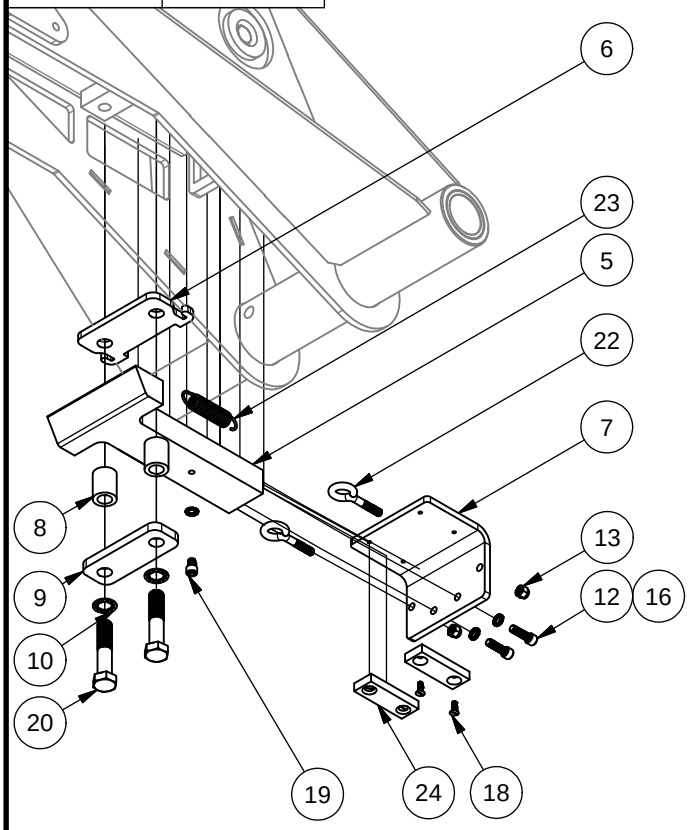
55H26 - PIVOT JOINT SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H13	1	PJ WDMT, TRAILER	420.95
2	55H15	1	PIN, PJ/OT 2-1/4 x 32-3/8 ZP	39.10
3	55H17	1	PIN, PJ 3 x 43-15/16 ZP	49.85
4	61H94	2	SPACER, ROLLER 11/16x2-1/4 ZP	0.56
5	85H21	2	ROLLER RETAINER, 1/2 x 3-1/4 ZP	1.05
6	00P04	1	SNAP RING, EXT 2.25	0.03
7	00P13	1	HHCS 3/8-16 UNC x 1-1/4 GR8	0.05
8	00P55	2	NUT, LOCK 5/8-11 UNC GR8	0.08
9	01P25	6	SHCS 7/16-14 UNC x 1-1/2 GR8	0.08
10	01P28	1	WASHER, DISC LOCK 3/8 PR	0.00
11	01P29	6	WASHER, DISC LOCK 7/16 PR	0.02
12	01P39	2	HHCS 5/8-11 UNC x 4-1/2 GR8	0.45
13	01P86	4	WASHER, FLAT 5/8 ZP	0.06
14	80P09	2	ROLLER ASSY, 6-1/4x2-1/4ID	34.12
15	90P03	6	GREASE ZERK, 1/8-27 NPT STR	0.02



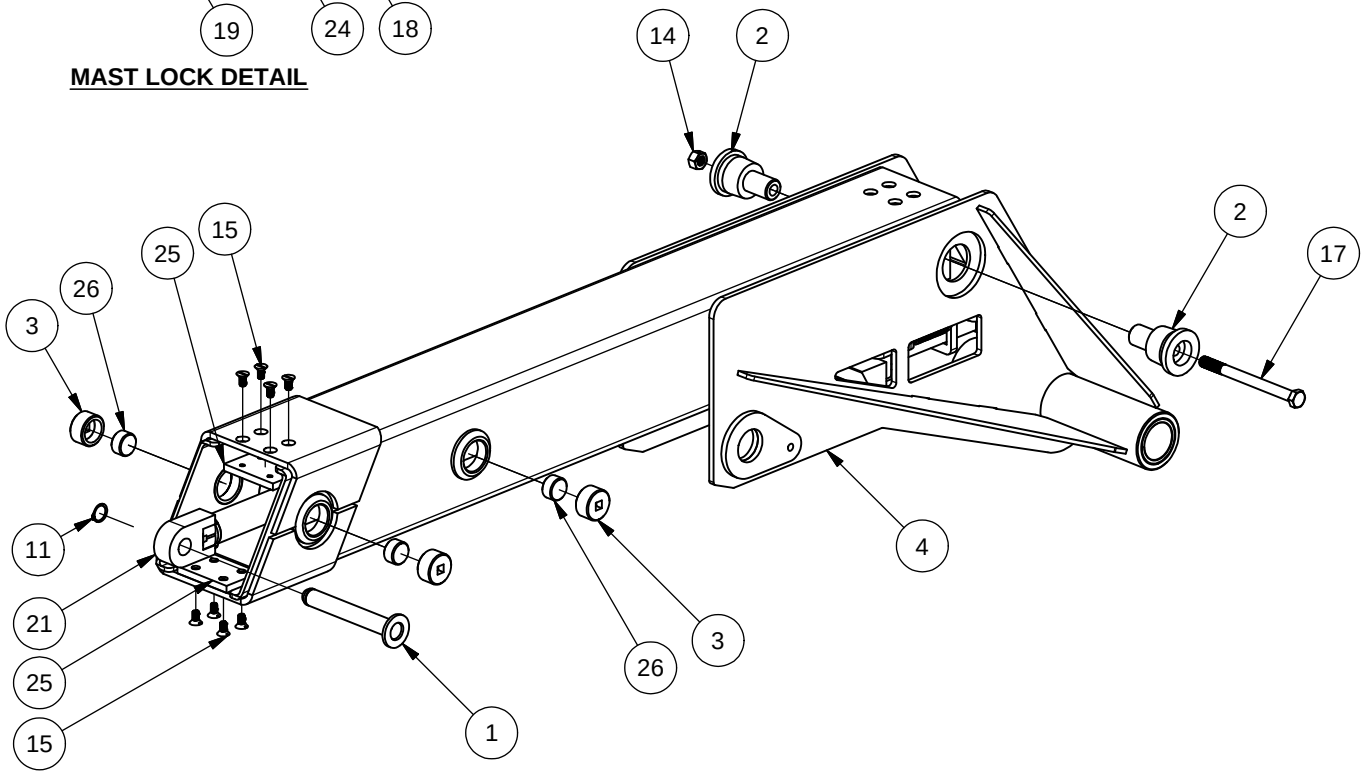
PJ ASSEMBLY, TRAILER

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

55H27 - OUTER TUBE SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	10H08	1	PIN, JIB/CYL 1 x 6-3/4 ZP	1.72
2	24H68	2	PIN, OT/CYL 1-1/4 x 1-7/8 ZP	2.38
3	28H33	4	POCKETED PLUG 24MB ZP	0.51
4	55H09	1	OUTER TUBE WDMT	266.32
5	65H45	1	PIVOT LOCK PRONG, TRAILER	14.39
6	66H73	1	SPRING PLATE, PL	1.56
7	66H74	1	SLIDE, PL TRAILER	4.94
8	66H75	2	PIVOT LOCK SPACER, TRAILER	0.34
9	66H76	1	PIVOT LOCK CONNECTOR, TRAILER	1.41
10	00769	2	WASHER, LOCK 3/4	0.01
11	00P05	1	SNAP RING, EXT 1.00	0.00
12	00P32	2	SHCS 3/8-16 UNC x 1-1/4 GR8	0.05
13	00P43	2	NUT, NYLOCK 3/8-16 UNC GR8	0.02
14	00P55	1	NUT, LOCK 5/8-11 UNC GR8	0.08
15	00P79	8	FHCS 3/8-16 UNC x 3/4 BR	0.03
16	01P28	3	WASHER, DISC LOCK 3/8 PR	0.00
17	01P43	1	HHCS 5/8-11 UNC x 7-12 GR8	0.71
18	01P67	4	FHCS 1/4-20 UNC x 3/4 BR	0.01
19	02P01	1	SHCS 3/8-16 UNC x 1/2 ZP	0.03
20	02P68	2	HHCS 3/4-10 UNC x 3 GR8	0.55
21	21P91	1	HYD CYLINDER 3 x 1.75 x 36	93.36
22	23P91	2	EYEBOLT, 3/8"-16 x 2"	0.16
23	91P20	2	SPRING, SS 27/32 X 4	0.13
24	91P21	2	WEAR PAD 1-1/4x1/2x3-1/2	0.08
25	91P75	2	WEAR PAD, 2-3/4x7/16x4	0.19
26	92P08	4	WEAR PAD, 1-3/8 DIA x 3/4	0.04
JIB CYLINDER SERVICE PARTS				
27	20P28		C'BAL CART, 3000 PSI CBCA-LHN	0.40
28	21P95		SEAL KIT, CYL	0.10

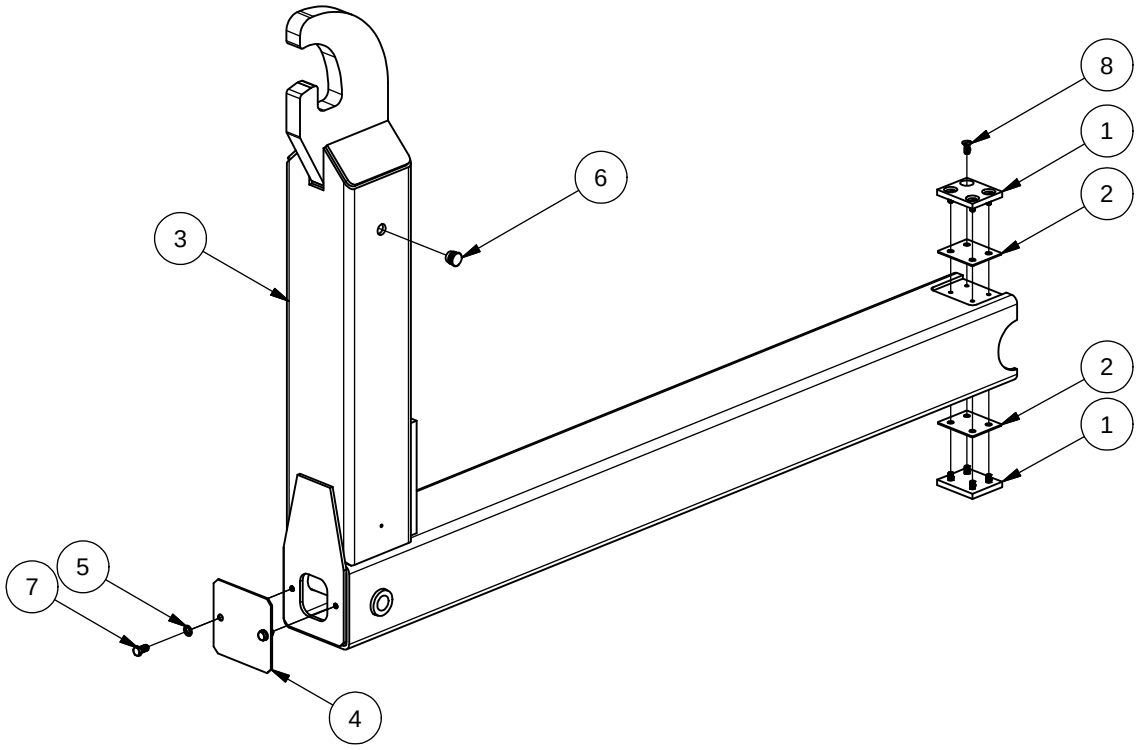


MAST LOCK DETAIL



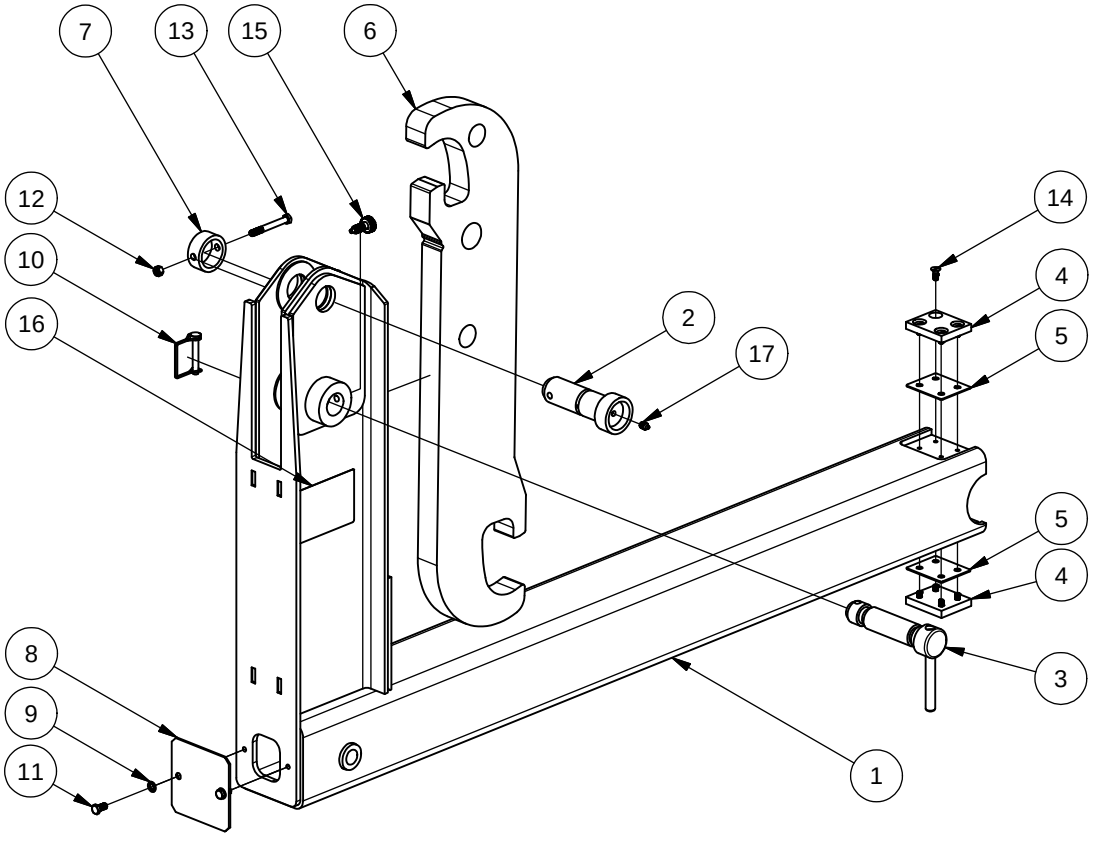
OT ASSEMBLY, TRAILER

55H28 - FIXED JIB SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	22H27	2	WEAR PAD, 2-3/4 x 3/8 x 3-1/4	0.12
2	24H67	2	SHIM, WP 2-3/4 x 14GA x 3-1/4	0.18
3	55H12	1	FIXED JIB WDMT 36, TRAILER	187.05
4	62H11	1	COVER, JIB 5-1/4x11GAx5-1/4	0.92
5	00755	2	WASHER, LOCK 3/8	0.03
6	15889	2	FORM FACE HOLE PLUG - 3/4	0.01
7	00P03	2	HHCS 3/8-16 UNC x 3/4 GR8	0.04
8	01P50	8	FHCS 5/16-18 UNC x 3/4 ZP	0.02



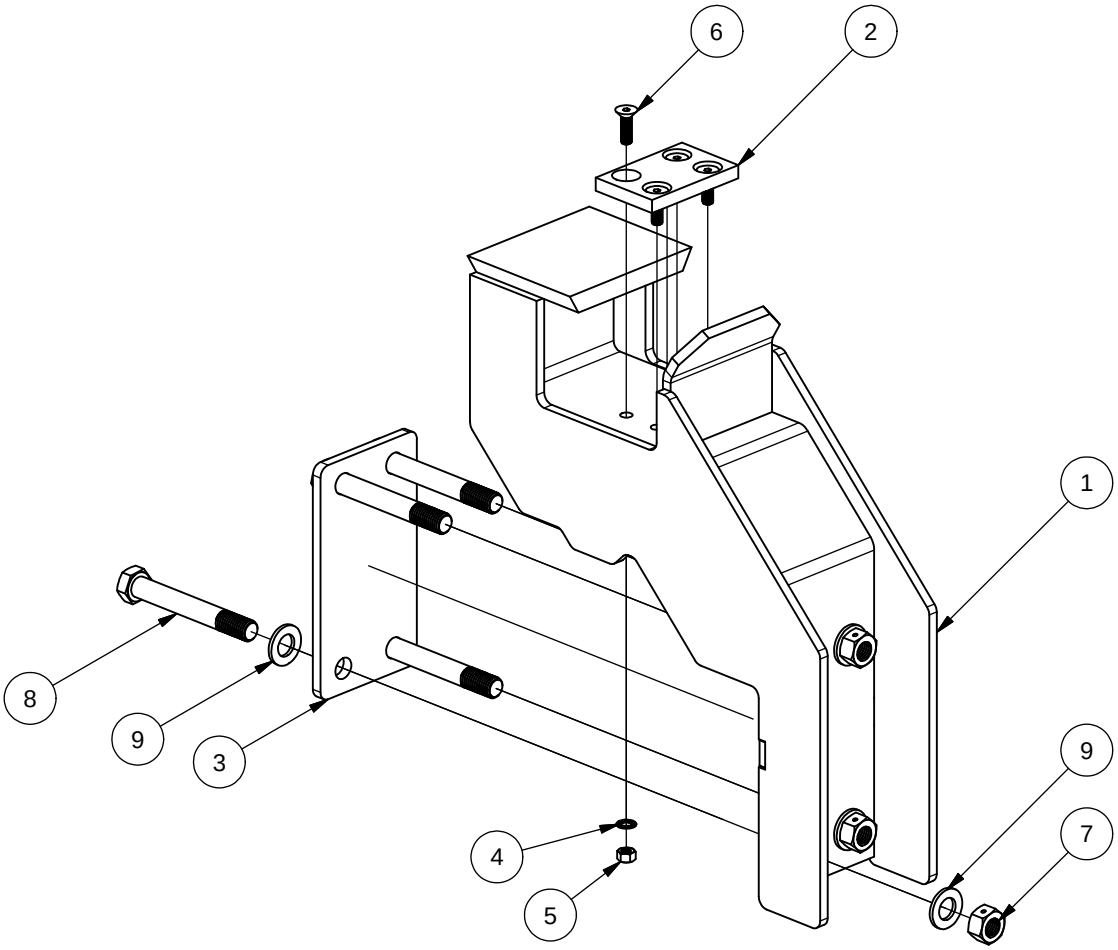
FIXED JIB SUB-ASSY, 1614

55H94 - ADJUSTABLE JIB SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H95	1	ADJ JIB WDMT 36/54, 1614	229.58
2	12H35	1	PIN, HK PVT 1-3/4 x 4-1/2 ZP	4.36
3	14H08	1	PIN, HOOK LOCK 1-1/2 x 6-5/8 ZP	4.35
4	23H54	2	WEAR PAD, 2-3/4 x 1/2 x 3-1/4	0.16
5	24H67	2	SHIM, WP 2-3/4 x 14GA x 3-1/4	0.18
6	24H80	1	HOOK, ADJ JIB 36/54	116.93
7	24H83	1	LOCK TUBE, JIB 2-1/2ODx1	0.53
8	62H11	1	COVER, JIB 5-1/4x11GAx5-1/4	0.92
9	00755	2	WASHER, LOCK 3/8	0.03
10	53586	1	SAFETY SNAP PIN, 3/8 x 2-1/2	0.14
11	00P03	2	HHCS 3/8-16 UNC x 3/4 GR8	0.04
12	00P34	1	NUT, LOCK 3/8-16 UNC GRC	0.02
13	01P01	1	HHCS 3/8-16 UNC x 3-1/4 GR8	0.11
14	01P50	8	FHCS 5/16-18 UNC x 3/4 ZP	0.02
15	23P40	1	SPRING PLUNGER, 1/2-13	0.14
16	90P91	2	DECAL, ADJ JIB OP 36/54	0.00
17	90P03	1	GREASE ZERK, 1/8-27 NPT STR	0.02



ADJ JIB SUB-ASSY, 1614

55H89 - BODY LOCK SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H18	1	BODY LOCK WDMT, TRAILER	49.07
2	60H11	1	WEAR PAD, 2-3/4 x 1/2 x 4-1/4	0.21
3	65H66	1	CLAMP PLATE, TRAILER	0.54
4	00755	4	WASHER, LOCK 3/8	0.03
5	00P14	4	NUT, HEX 3/8-16 UNC GR8	0.02
6	00P68	4	FHCS 3/8-16 UNC x 1-1/4 SS	0.04
7	00P72	4	NUT, LOCK 3/4-10 UNC GR8	0.13
8	01P84	4	HHCS 3/4-10 UNC x 5-1/2 GR8	0.80
9	02P04	8	WASHER, FLAT 3/4 DS GR8	0.04

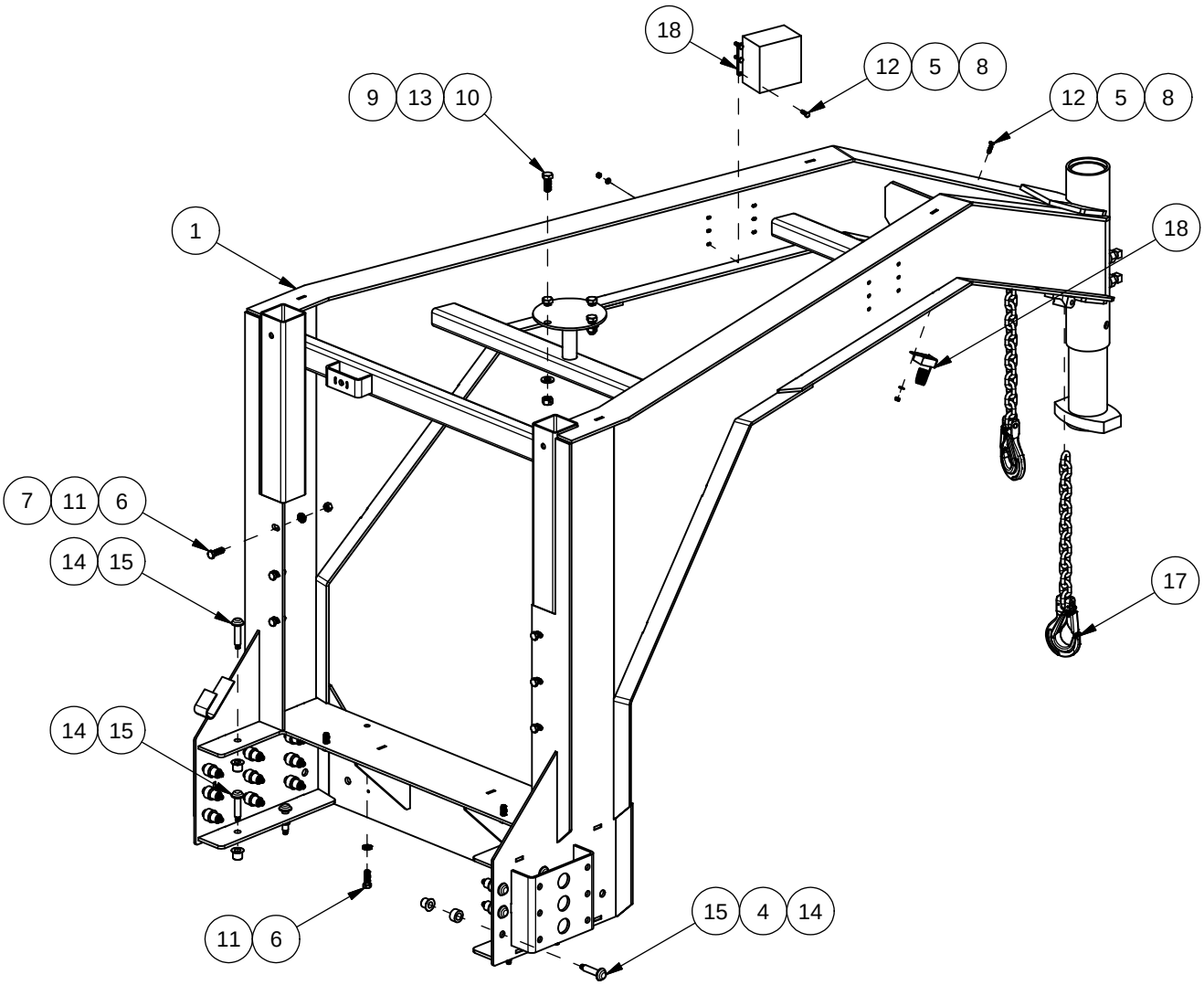


BODY LOCK ASSY, TRAILER

DISC-LOCK WASHER TORQUE SPECS	
BOLT SIZE	TORQUE (FT-LBS)
3/8	50
7/16	80
1/2	120
5/8	230
3/4	380
7/8	400
1	400

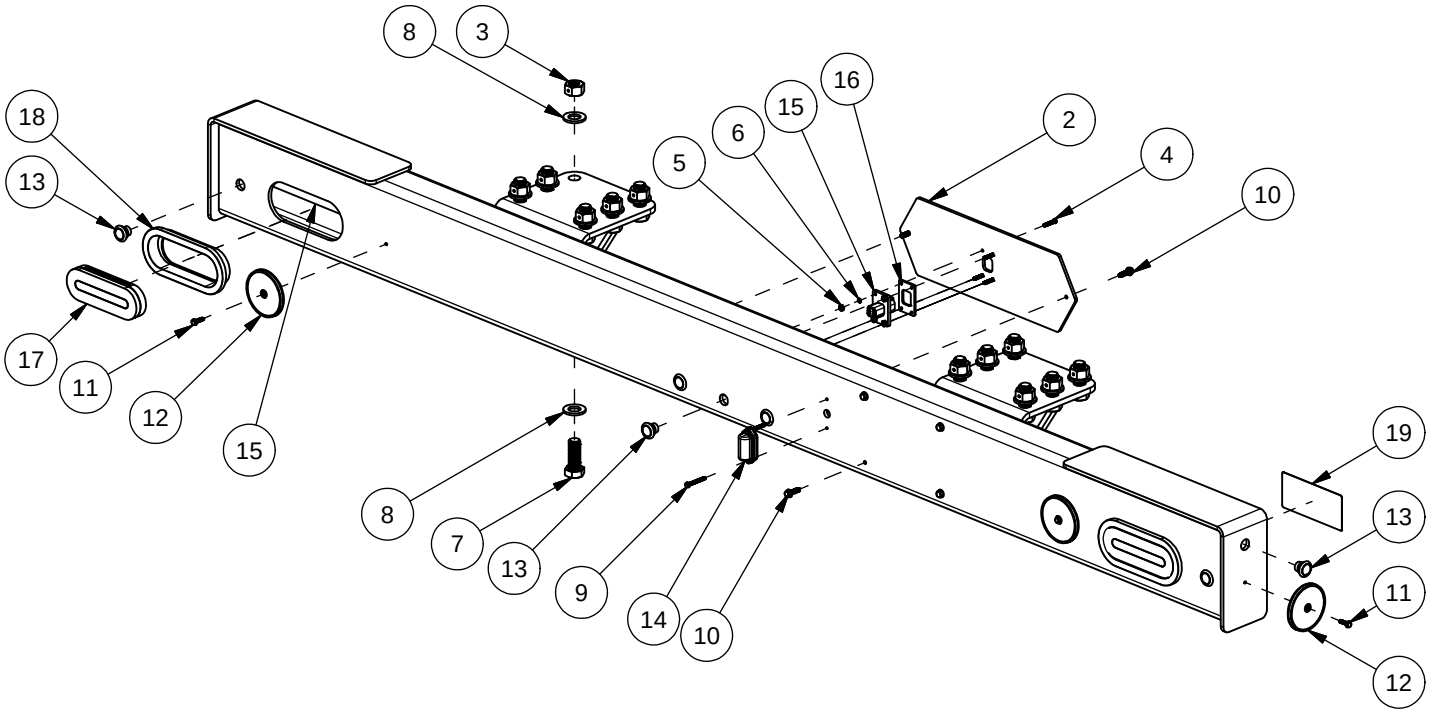
	55H39 - GOOSENECK SUB-ASSEMBLY				
	ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
	1	55H40	1	GOOSENECK WDMT	709.65
*	2	55H41	1	CONTROL ASSEMBLY, ELECTRIC	11.63
*	3	55H68	1	DECAL ASSY, ST-1614	5.00
	4	55H90	18	SPACER, GN 1 x 11/16 ZP	0.15
	5	00770	7	WASHER, FLAT 1/4	0.00
	6	00P01	10	HHCS 1/2-13 UNC x 1-1/2 GR8	0.11
	7	00P02	6	NUT, HEX 1/2-13 UNC GR8	0.04
	8	00P51	7	NUT, LOCK 1/4-20 UNC GR8	0.01
	9	00P55	4	NUT, LOCK 5/8-11 UNC GR8	0.08
	10	00P56	4	HHCS 5/8-11 UNC x 1-1/2 GR8	0.19
	11	01P30	10	WASHER, DISC LOCK 1/2 PR	0.02
	12	01P56	7	HHCS 1/4-20 UNC x 1 GR8	0.02
	13	01P86	4	WASHER, FLAT 5/8 ZP	0.06
	14	02P46	24	HUCK COLLAR 16MM BLK	0.14
	15	02P47	24	HUCK BOLT 16MM x 25-35MM ZP	0.38
*	16	91P98	1	PARTS MANUAL, ST-1614	0.00
	17	92P11	2	SAFETY CHAIN, TRAILER	5.02
	18	92P12	1	BREAKAWAY KIT, TRAILER	4.29

*Item not shown.



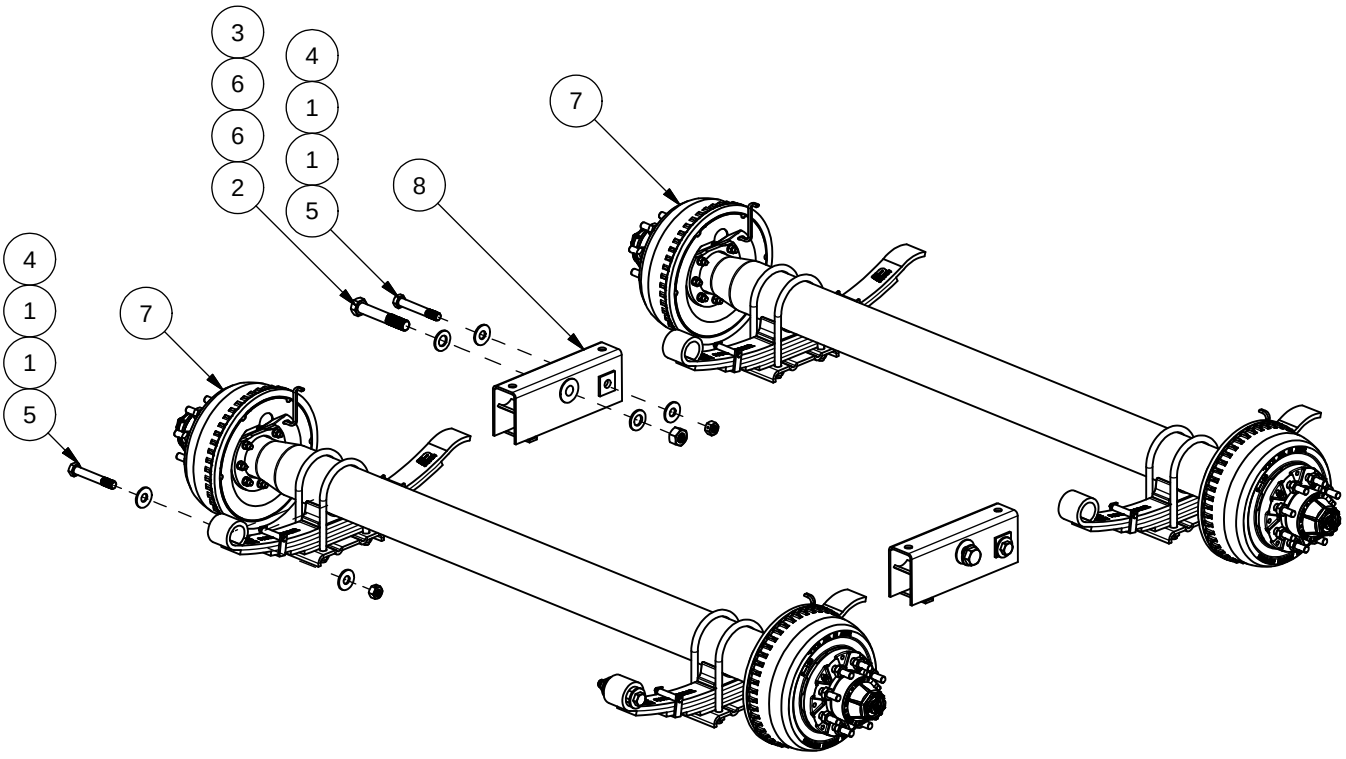
GOOSENECK ASSEMBLY

55H34 - BUMPER SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H03	1	BUMPER WDMT, TRAILER	169.55
2	66H97	1	REAR BUMPER PLATE	4.21
3	00P72	12	NUT, LOCK 3/4-10 UNC GR8	0.13
4	00P81	4	RHMS #8-32 UNC x 1	0.01
5	00P82	4	NUT, HEX #8-32 UNC GR8	0.00
6	00P83	4	WASHER, LOCK #8	0.00
7	01P07	12	HHCS 3/4-10 UNC x 2 GR8	0.35
8	02P04	24	WASHER, FLAT 3/4 DS GR8	0.04
9	02P40	2	HHCS #8-32 UNC x 1-1/2 TC	0.01
10	02P41	6	HHCS 1/4-20 UNC x 7/8 TC	0.02
11	02P42	4	HHCS #10-24 UNC x 3/4 TC	0.01
12	40P67	4	REFLECTOR, 3-3/16 DIA	0.08
13	40P68	7	SIDE MARKER, LED	0.11
14	40P69	1	LICENSE LAMP, LED	0.45
15	40P93	1	BUMPER HARNESS, TRAILER	0.96
16	41P10	1	GASKET, DT BULKHEAD 6/8-PIN	0.01
17	41P18	2	COMB. TAILLIGHT LAMP, LED	3.54
18	41P19	2	TAIL LIGHT GROMMET, 6IN OVAL	0.13
19	92P34	1	DECAL, BUMPER COMPLIANCE	0.00



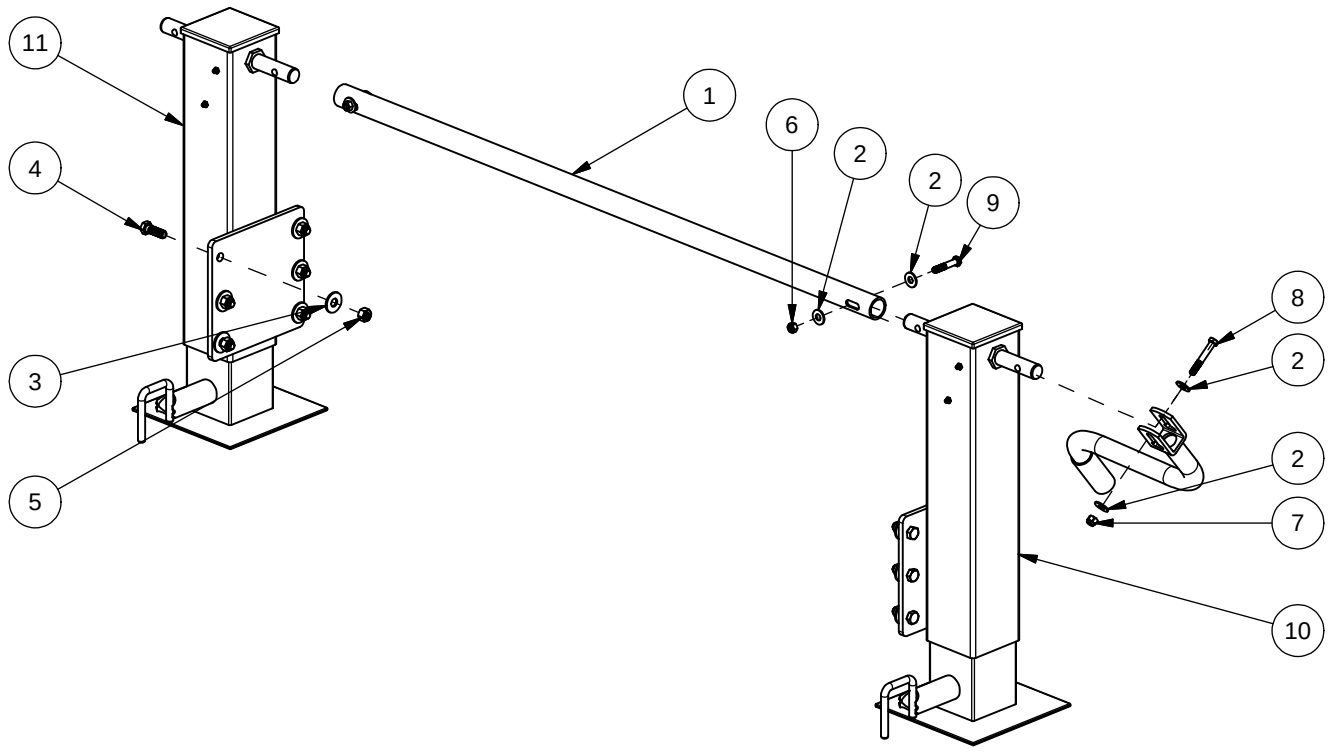
BUMPER ASSEMBLY

55H57 - 10K SPRING AXLE SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	00774	8	WASHER, FLAT 3/4	0.11
2	00P59	2	HHCS 1-8 UNC x 6 GR8	1.60
3	00P67	2	NUT, LOCK 1-8 UNC GR8	0.31
4	00P72	4	NUT, LOCK 3/4-10 UNC GR8	0.13
5	00P80	4	HHCS 3/4-10 UNC x 5 GR8	0.74
6	01P87	4	WASHER, FLAT 1 ZP	0.10
7	92P15	2	10K SPRING AXLE	259.74
8	92P19	2	EQUALIZER BKT	13.90



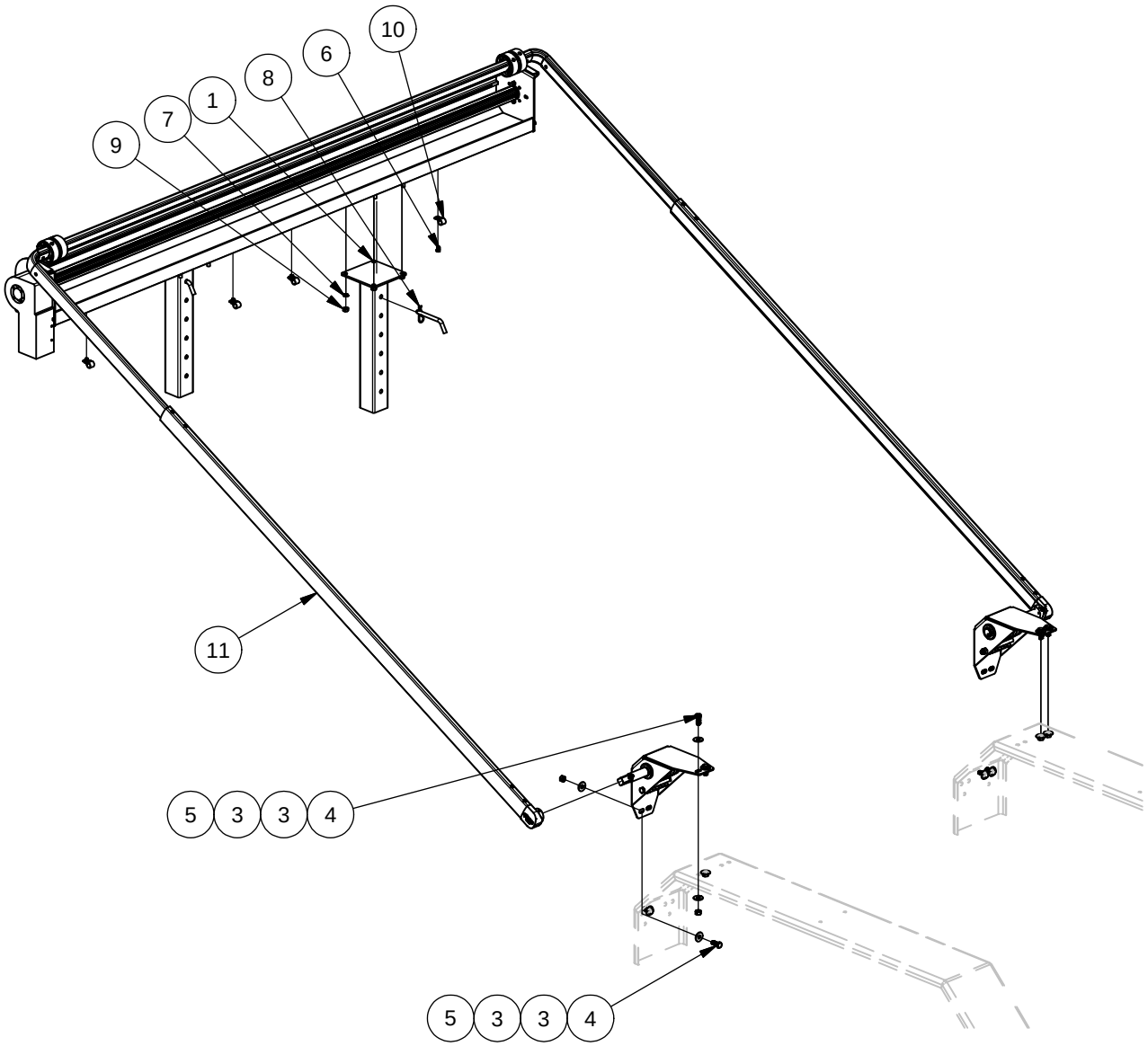
10K SPRING AXLE ASSEMBLY

55H91 - MANUAL JACK SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	66H66	1	JACK SHAFT, TRAILER	7.94
2	00771	6	WASHER, FLAT 3/8	0.01
3	00772	12	WASHER, FLAT 1/2	0.04
4	00P01	12	HHCS 1/2-13 UNC x 1-1/2 GR8	0.11
5	00P02	12	NUT, HEX 1/2-13 UNC GR8	0.04
6	00P34	2	NUT, LOCK 3/8-16 UNC GRC	0.02
7	00P43	1	NUT, NYLOCK 3/8-16 UNC GR8	0.02
8	01P21	1	HHCS 3/8-16 UNC x 2-1/2 GR8	0.09
9	02P66	2	HHCS 3/8-16 UNC x 2-1/2 GR8	0.07
10	92P09	1	JACK STAND, LH TRAILER	20.58
11	92P10	1	JACK STAND, RH TRAILER	20.58



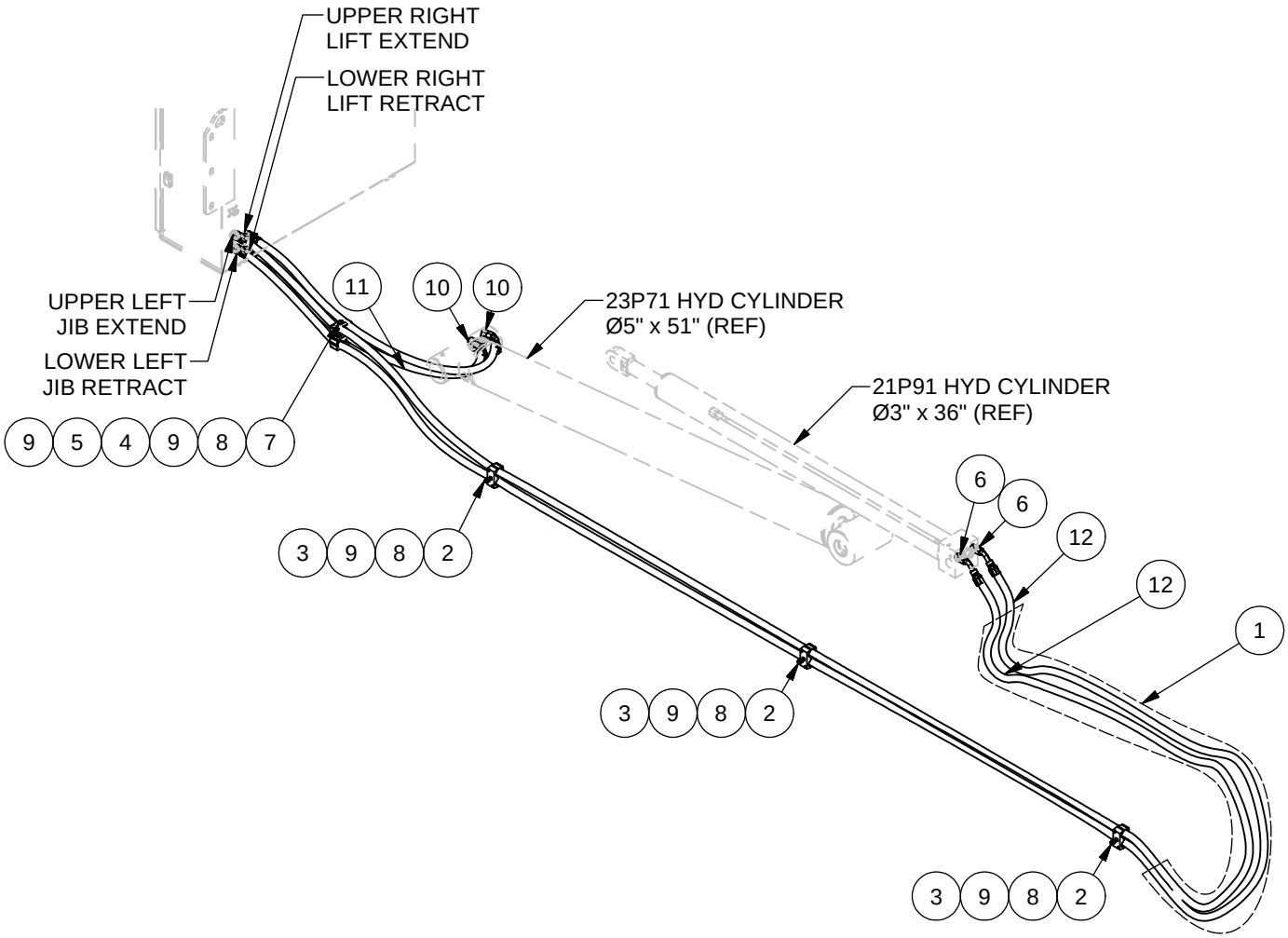
MANUAL JACK KIT

55H43 - TARP ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	55H52	2	TARP MOUNT, GN	11.39
3	00772	28	WASHER, FLAT 1/2	0.04
4	00P31	14	HHCS 1/2-13 UNC x 1-1/4	0.10
5	00P35	14	NUT, LOCK 1/2-13 UNC GRC	0.04
6	00P49	4	HHCS 5/16-18 UNC x 1/2 GR8	0.02
7	01P29	8	WASHER, DISC LOCK 7/16 PR	0.02
8	02P63	2	PIN, CLEVIS 1/2 x 4	0.39
9	02P64	8	NUT, HEX 7/16-14 UNC GR8	0.03
10	14P95	4	CLAMP, HYD HOSE 5/8	0.07
11	41P07	1	TARP ASSEMBLY	220.00
2	67H04	2	TARP ARM MNT, TRAILER	13.06



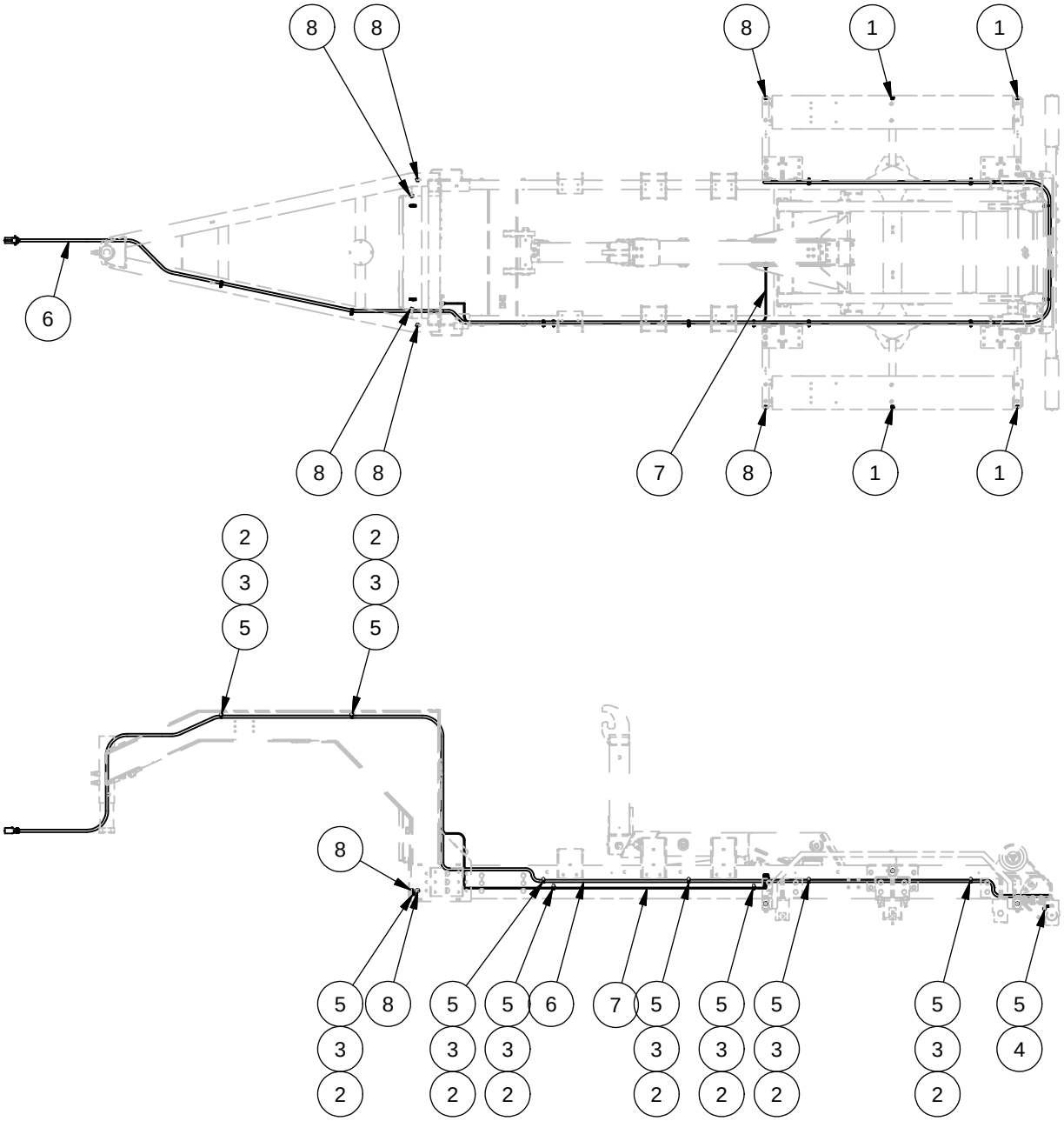
TARP ASSEMBLY, TRAILER

92H07 - BASE CYLINDER CIRCUIT				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	90H74	1	NYLON HOSE SLEEVE x 60"	0.30
2	00P19	3	HHCS 5/16-18 UNC x 2-3/4 GR8	0.07
3	00P84	3	NUT, LOCK 5/16-18 UNC GR8	0.00
4	01P97	1	EXTENSION SCREW 5/16-18	0.04
5	01P98	1	EXT. PLATE, CLAMP	0.00
6	10P39	2	ADP HYD 08MJ/08MB	0.40
7	10P63	1	HHCS 5/16-18 UNC x 1-3/4 ZP	0.04
8	10P64	4	COVER PLATE, CLAMP 1/2	0.10
9	10P65	5	CLAMP ASSY, TWIN 7/8	0.07
10	11P23	2	ADP HYD 08MJ/08MB 90	0.29
11	13P25	2	HOSE ASSY 58 08-08FJ/08FJ45	2.00
12	14P94	2	HOSE ASSY 266 08-08FJ/08FJ45	5.50



BASE CYL CIRCUIT, 1614

55H41 - ELECTRIC CONTROL SUB-ASSEMBLY				
ITEM	PART #	QTY	DESCRIPTION	WT-lb/ea
1	15889	4	FORM FACE HOLE PLUG - 3/4	0.01
2	00P51	12	NUT, LOCK 1/4-20 UNC GR8	0.01
3	01P56	12	HHCS 1/4-20 UNC x 1 GR8	0.02
4	02P41	2	HHCS 1/4-20 UNC x 7/8 TC	0.02
5	13P63	14	CLAMP, HYD HOSE 5/8	0.05
6	40P94	1	CHASSIS HARNESS, TRAILER	8.52
7	40P95	1	PROX SENSOR, TRAILER	1.27
8	41P03	6	SIDE MARKER, AMBER LED	0.11



CONTROL ASSEMBLY, ELECTRIC

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