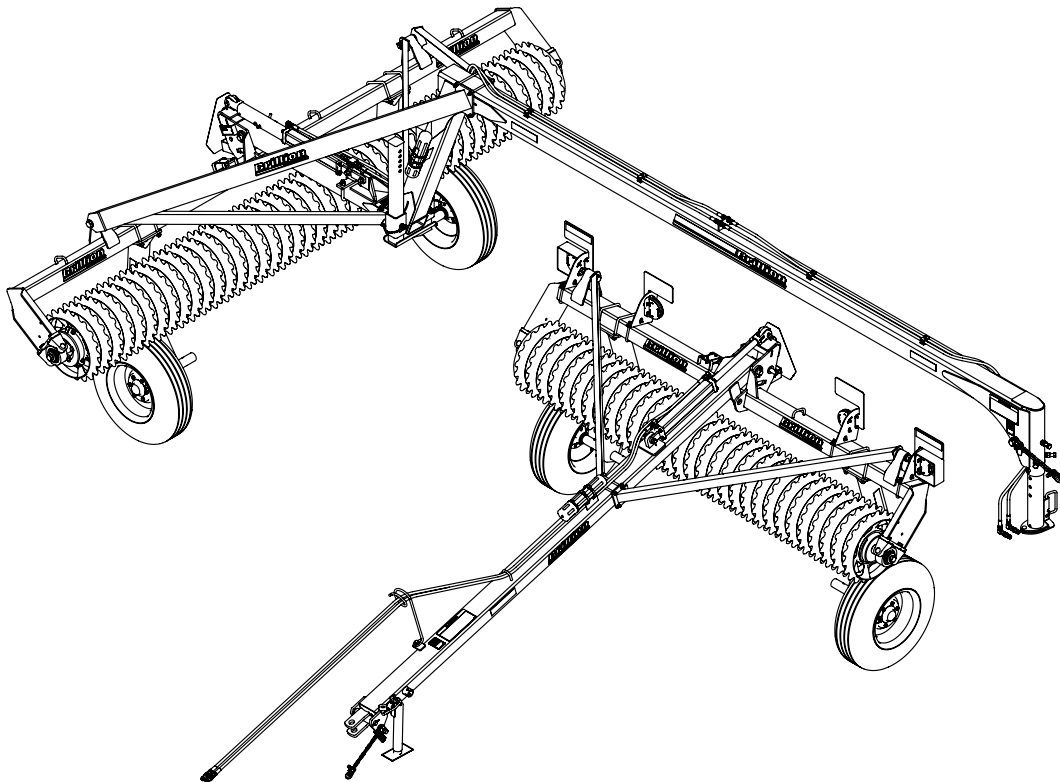




**P and PT Series Pulverizer
with 1-3/4 Trunnion Bearing
10FT thru 20FT
Operator's Manual**



LANDOLL COMPANY, LLC

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DANGER

DO NOT operate or perform any maintenance tasks on this equipment until you have completed the following:

- 1. Receive proper training to operate this equipment safely.**
- 2. Read and understand the operator's manual.**
- 3. Be thoroughly trained on inspection and repair procedures.**

Failure to comply with this warning may result in serious injury or possibly death.

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5 General Reference and Specifications

Safety Information

Introduction

The implement described in this manual has been designed with care and built by skilled workers using quality materials and processes. Proper assembly and maintenance will provide you with satisfactory use for seasons to come.



DANGER

Read this entire manual before attempting to assemble, adjust or operate this implement. Failure to comply with this warning can result in personal injury or death, damage to the implement or its components and inferior operation.

Description of Unit

The Brillion Transport Pulverizer is designed with the versatility to operate under a wide variety of soil conditions. Brillion's unique transport concept hydraulically rotates the machine weight over the wheels for transport. This reduces drawbar hitch weight considerably and provides ample clearance for transporting.

Using this Manual

This manual will familiarize you with safety, assembly, operation, adjustment, and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

- The information in this manual is current at time of printing. Some parts may have changed to assure top performance.
- Location reference: Right and Left designations in this manual are determined by facing the direction the implement will travel during field operation, unless otherwise stated.

Owner Assistance

If customer service or repairs are needed, contact your Brillion dealer. Implement parts should only be replaced with Brillion parts. Have Serial Number and complete Model Number available when ordering parts from your Brillion Dealer. If items covered in this manual are not understood, contact your local Brillion Dealer.

Warranty Registration

Brillion Farm Equipment, by Landoll, shall have no warranty obligation unless each product is registered, within 10 days of retail purchase, using the Landoll Corporation Ag Products on-line registration process. Please refer to the Ag Products Policy and Procedures Manual, accessible at www.landoll.com for step by step instructions regarding product registration.

Enter your product information below for quick reference. Refer to the ID plate as shown. **See Figure 1-1.**

MODEL NUMBER

SERIAL NUMBER

DATE OF PURCHASE



Figure 1-1: ID Plate

Safety

NOTE

Investigation has shown that nearly 1/3 of all farm accidents are caused by careless use of machinery. Insist that all people working with you or for you abide by all safety instructions.

Understanding Safety Statements

You will find various types of safety information on the following pages and on the implement decals (signs) attached to the implement. This section explains their meaning.

NOTICE

Special notice - read and thoroughly understand.



CAUTION

Proceed with caution. Failure to heed caution may cause injury to person or damage product.



WARNING

Proceed with caution. Failure to heed warning will cause injury to person or damage product.



DANGER

Proceed with extreme caution. Failure to heed notice will cause injury or death to person and/or damage product.

NOTE

You should read and understand the information contained in this manual and on the implement decals before you attempt to operate or maintain this equipment.

- Examine safety decals and be sure you have the correct safety decals for the implement.
- Order replacement decals through your Brillion dealer.
- Keep these signs clean so they can be observed readily. It is important to keep these decals cleaned more frequently than the implement. Wash with soap and water or a cleaning solution as required.
- Replace decals that become damaged or lost. Also, be sure that any new implement components installed during repair include decals which are assigned to them by the manufacturer.

- When applying decals to the implement, be sure to clean the surface to remove any dirt or residue. Where possible, sign placement should protect the sign from abrasion, damage, or obstruction from mud, dirt, oil etc.



DANGER

- **Do not allow anyone to ride on the tractor or implement. Riders could be struck by foreign objects or thrown from the implement.**
- **Never allow children to operate equipment.**
- **Keep bystanders away from implement during operation.**

Transporting Safety

IMPORTANT

It is the responsibility of the owner/operator to comply with all state and local laws.

- When transporting the implement on a road or highway, use adequate warning symbols, reflectors, lights and slow moving vehicle sign as required. Slow moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.
- Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of the towing vehicle.
- Carry reflectors or flags to mark the tractor and implement in case of breakdown on the road.
- Do not transport at speeds over 20 MPH under good conditions. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes
- Avoid sudden stops or turns because the weight of the implement may cause the operator to lose control of the tractor. Use a tractor heavier than the implement.
- Use caution when towing behind articulated steering tractors; fast or sharp turns may cause the implement to shift sideways.
- Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your implement. **See “General Reference and Specifications” on page 5-1.**

Safety Instructions for Towing Vehicles

The maximum travel speed is the lesser of

- The limit of the road conditions;
- The maximum specified ground speed;
 - for towing operations as indicated in this manual or SIS;
 - of the towed vehicle as indicated in its operator's manual, SIS, or information sign;
- The maximum ground speed of the towed equipment combination shall be limited to the lowest specified ground speed of any of the towed machines. This speed is the ground speed limitation.

EXAMPLE: If the tractor is capable of 25 km/h, the first implement has a SIS for 19 km/h, and the last implement's operator's manual states its specified ground speed is 15 km/h, the towed equipment combination ground speed limitation is 15 km/h.

Attaching, Detaching and Storage

- Do not stand between the tractor and implement when attaching or detaching implement unless both are not moving.
- Block implement so it will not roll when unhitched from the tractor.
- Lower implement to ground when not in use.
- Block implement so it will not roll when unhitched from the tractor.
- Relieve pressure in hydraulic lines before uncoupling hydraulic hoses from tractor.

NOTE

*To relieve hydraulic pressure: Depending on tractor hydraulic system, some can be relieved by actuating control lever after engine is stopped. If tractor has electric over hydraulic controls, it may be necessary to move the control lever to the float position. **Refer to Tractor's Operator's Manual.***

Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

Maintenance Safety

- Block the implement so it will not roll when working on or under it to prevent injury.
- Transport Locks installed.
- Do not make adjustments or lubricate the machine while it is in motion.
- Make sure all moving parts have stopped.
- Understand the procedure before doing the work. Use proper tools and equipment.

Protective Equipment

- Wear protective clothing & equipment appropriate for the job. Avoid loose fitting clothing.
- Because prolonged exposure to loud noise can cause hearing impairment or hearing loss, wear suitable hearing protection, such as earmuffs or earplugs.

Tire Safety

Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

- When inflating tires, use a clip-on chuck and extension hose long enough to allow you to stand to one side, not in front of or over the tire assembly. Use a safety cage if available.
- When removing and installing wheels use wheel-handling equipment adequate for the weight involved.

Chemical Safety

Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

1. Read chemical manufactures instructions and store or dispose of unused chemicals as specified. Handle chemicals with care & avoid inhaling smoke from any type of chemical fire.
2. Store or dispose of unused chemicals as specified by the chemical manufacturer.

Prepare for Emergencies

- Keep a First Aid Kit and Fire Extinguisher handy
- Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.

High Pressure Fluid Safety

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands, to search for suspected leaks.

- Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.
- Avoid the hazard by relieving pressure before disconnecting hydraulic lines.

NOTE

*To relieve hydraulic pressure: Depending on tractor hydraulic system, some can be relieved by actuating control lever after engine is stopped. If tractor has electric over hydraulic controls, it may be necessary to move the control lever to the float position. **Refer to Tractor's Operator's Manual.***

Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

Safety Chain

1. Use a Safety Chain to help control drawn machinery should it separate from the tractor drawbar.
2. Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, in accordance with ASAE S338.2 specifications. If two or more machines are pulled in tandem, a larger chain may be required. Chain capacity must be greater than the total weight of all towed implements. A second chain should be used between each implement.
3. Attach the chain to the tractor drawbar support or specified anchor location. Never attach the chain to an intermediate support. Allow only enough slack in the chain to permit turning. The distance from hitch pin to attachment point or intermediate support point should not exceed 9 inches. **See Figure 1-2.** If the distance from the drawbar pin to either the front or rear chain attachment point exceeds 9 inches, intermediate chain support is required. **See Tractor Operator's Manual.**
4. Replace chain if any links or end fittings are broken, stretched or damaged.
5. Do not use a Safety Chain for towing.

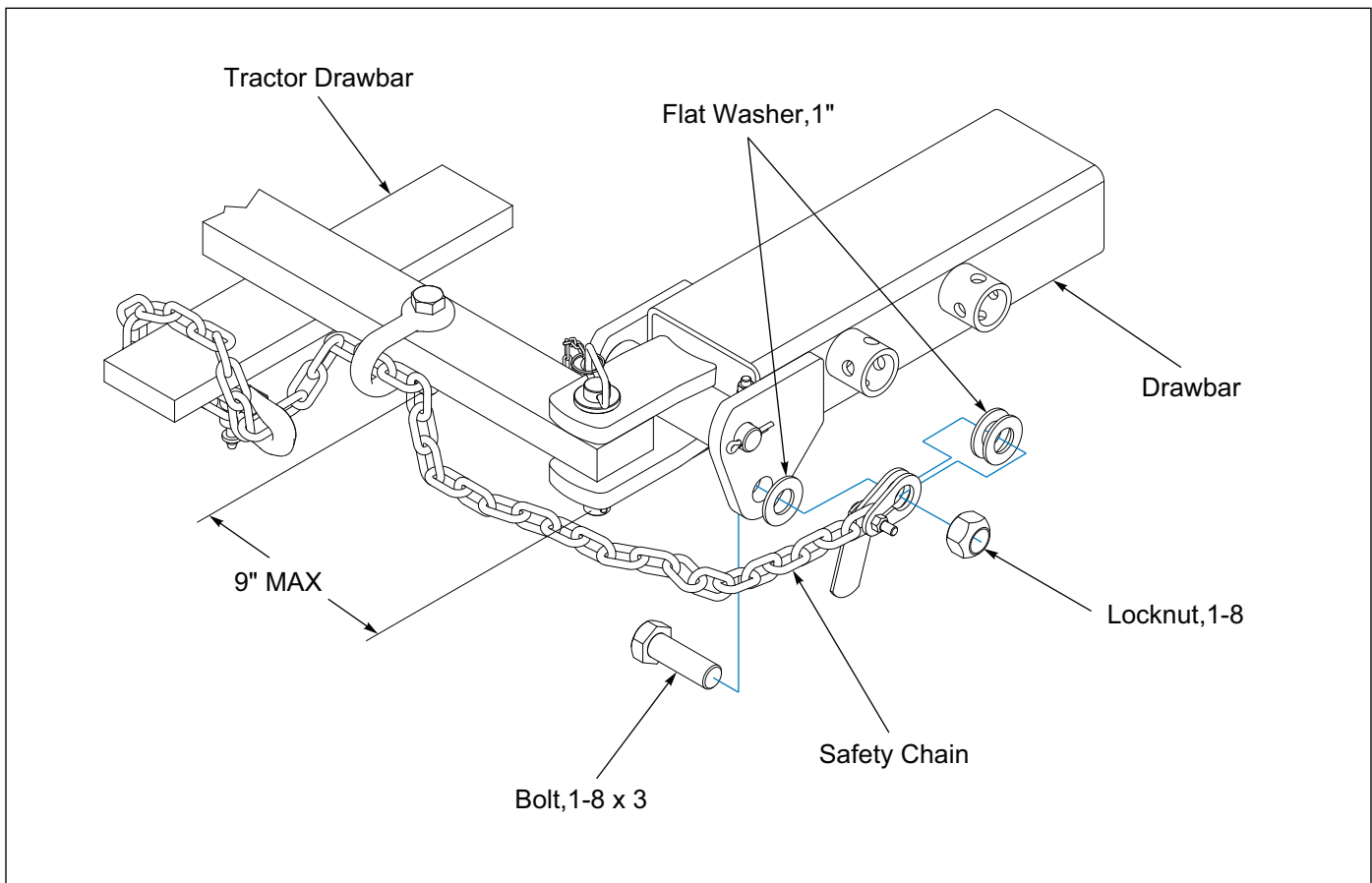
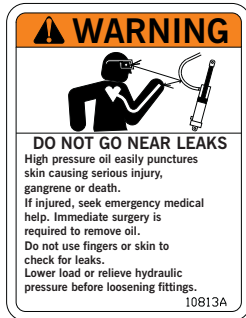


Figure 1-2: Safety Chain

Decals



ITEM 1
3K706



ITEM 3
193500



ITEM 4
193501



ITEM 5
170509



ITEM 6
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ITEM 7
528934



ITEM 8
528938



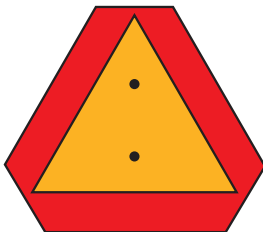
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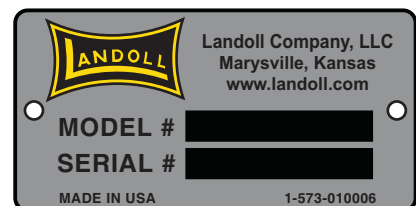
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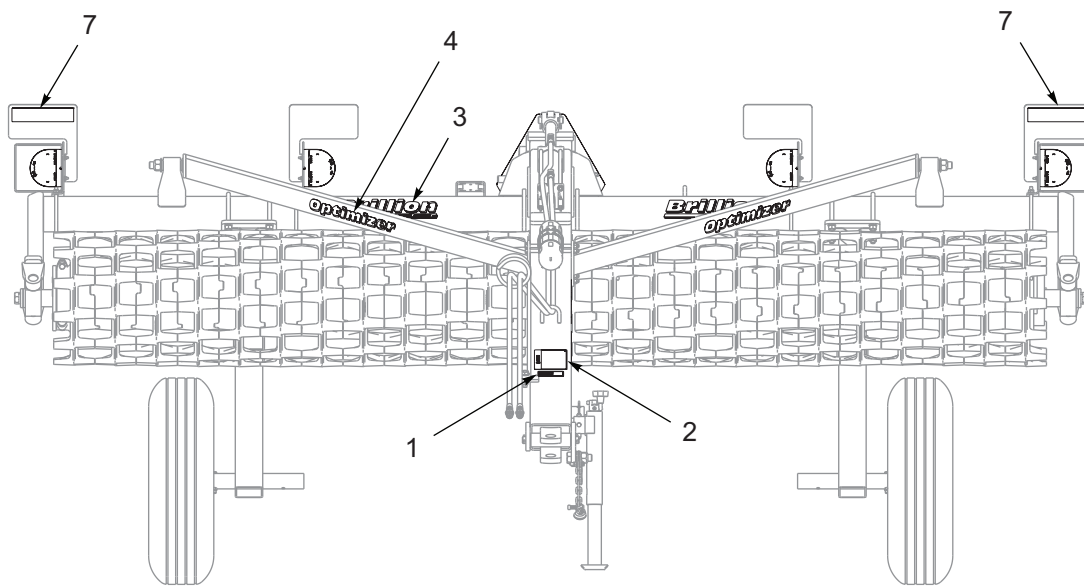


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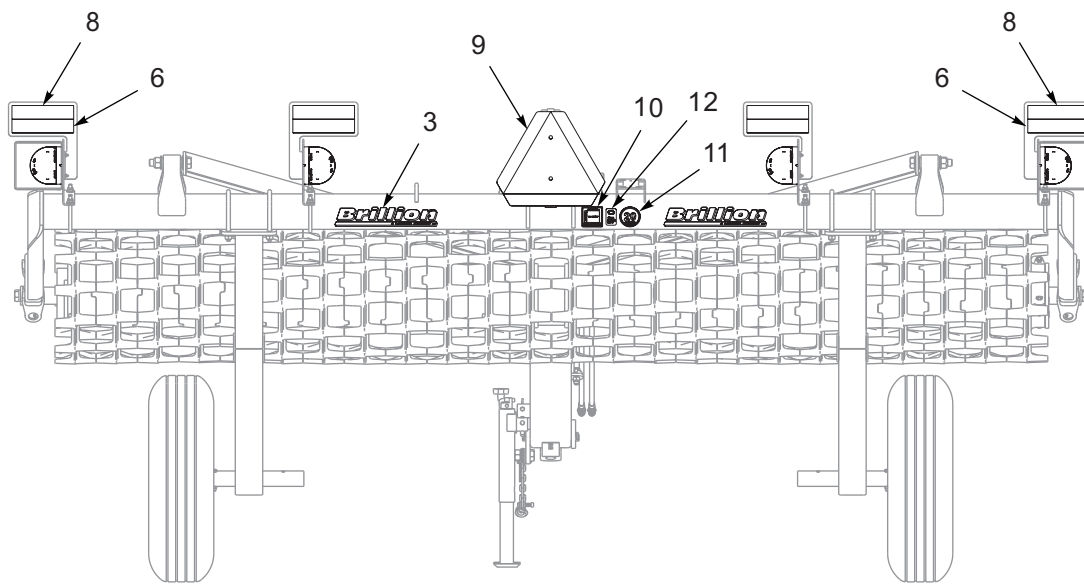


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Figure 1-3: Safety Decals



FRONT VIEW



REAR VIEW

Figure 1-4: PT10 - PT16 Decal Placement (1 of 6)

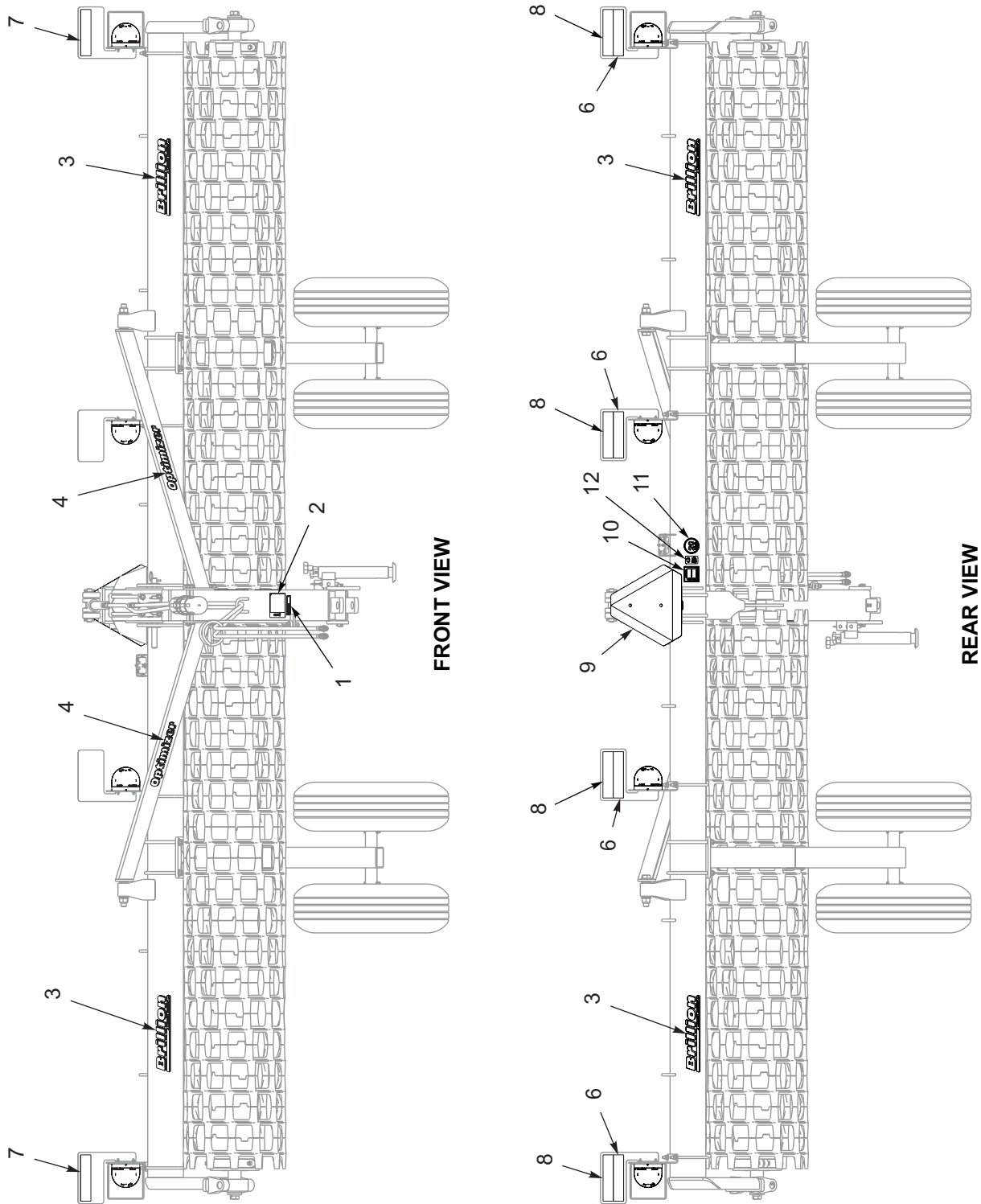


Figure 1-5: PT18 - PT20 Decal Placement (2 of 6)

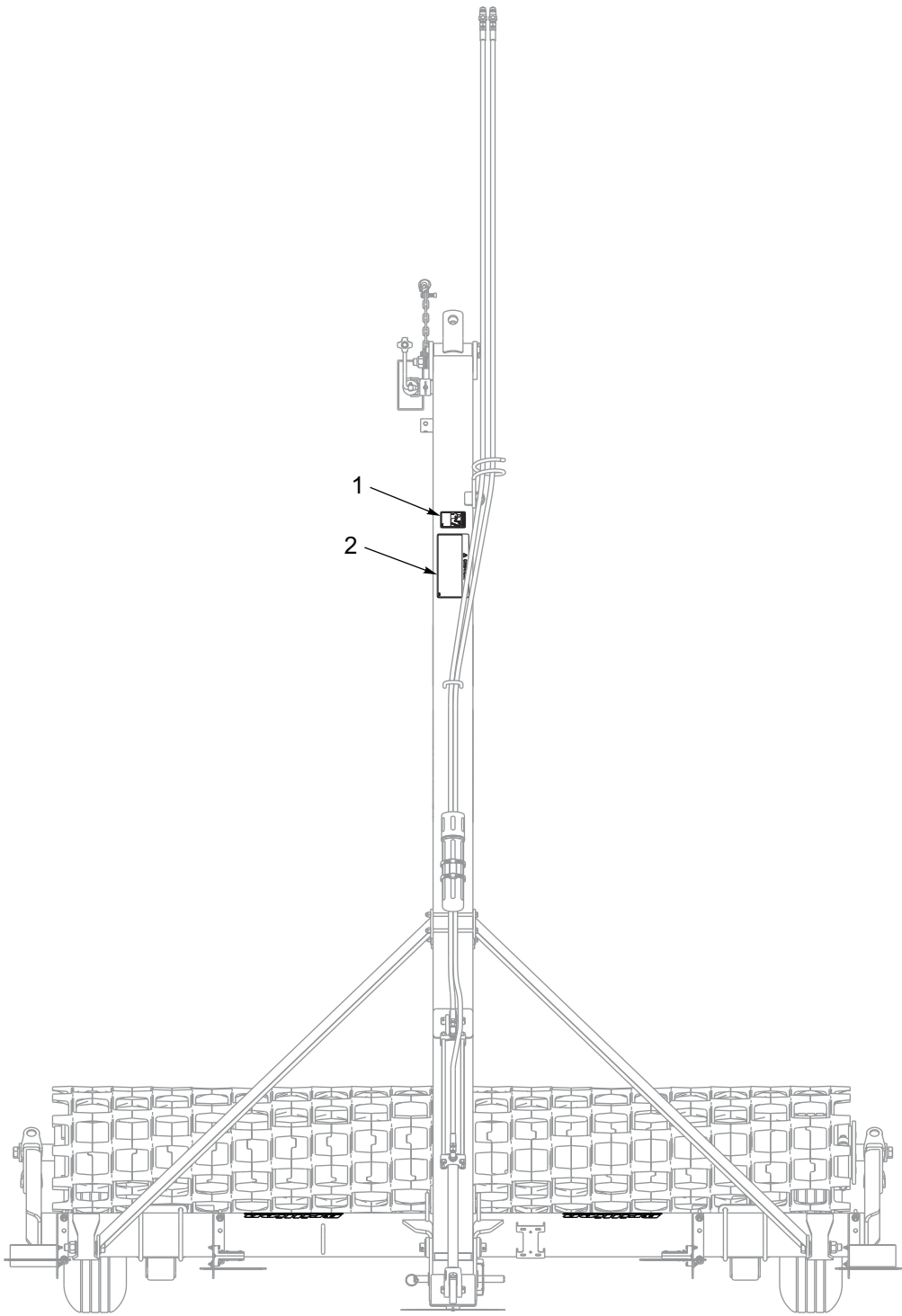


Figure 1-6: Decal Placement (3 of 6)

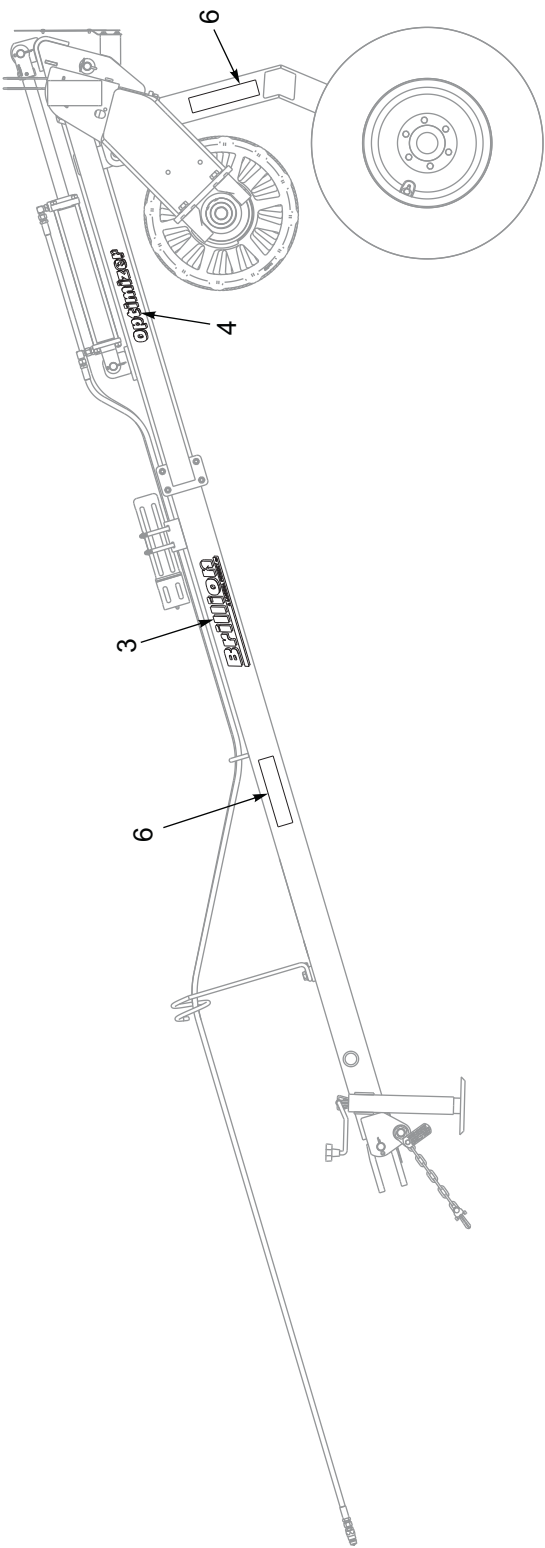
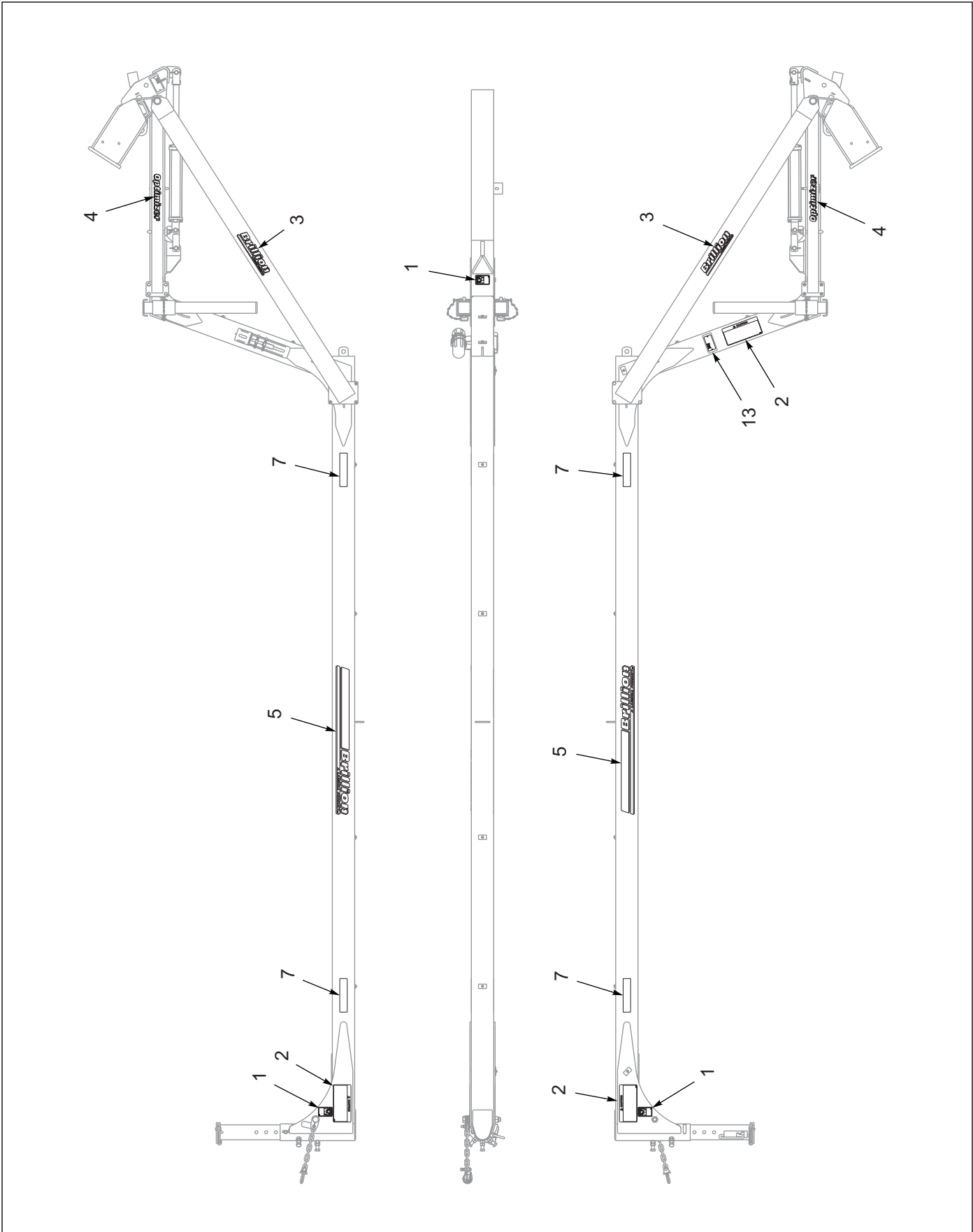


Figure 1-7: Decal Placement (4 of 6)



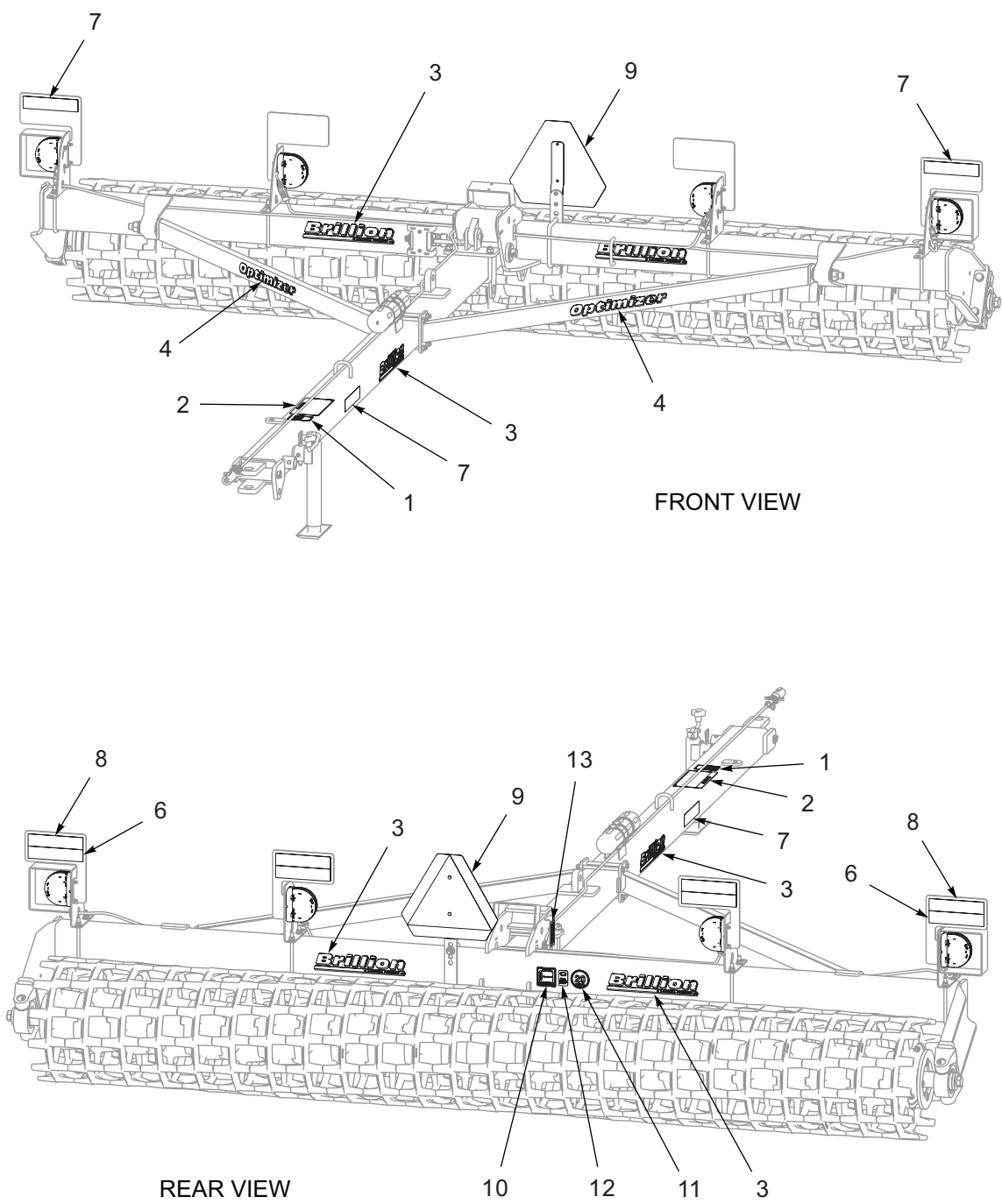


Figure 1-9: P10 - P16 Decal Placement (6 of 6)

SAFETY INFORMATION

Table provided for general use.

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Chapter 2

Assembly



CAUTION

Do not work on or under this machine unless securely blocked and supported by a hoist or tractor or by other sufficient means.



WARNING

Do not attempt to lift heavy parts (such as the frame, rock shaft, and pull hitch) manually. Use a hoist or a fork lift to move these parts into position.

NOTE

Refer to the repair parts manual F-850 for identification of parts and for the approximate relationship of the parts in assembly.

To ensure alignment of assemblies, **leave the nuts loose until completion** of final assembly. Use lock washers or flat washers as specified. Spread cotter pins.

After completion of final assembly, tighten all nuts **evenly** to prevent misalignment, distortion or binding. Tighten all screws and nuts to the recommended torques.

IMPORTANT

- If pre-assembled parts or fasteners are temporarily removed, remember where they go. It is best to keep parts separated.
- Check that all working parts move freely, bolts are tight and cotter pins spread.
- Refer to the Torque Table for proper torque values. Note the different torque requirements for bolts with lock nuts. See “General Torque Specifications” on page 4-1.

“Left” and “Right” refer to directions seen as if standing behind the machine and facing in the direction of forward travel.

Using blocks or other supports, block up the Pre-Assembled Frame. Be sure that it is secure and cannot topple. **See Figure 2-1.**

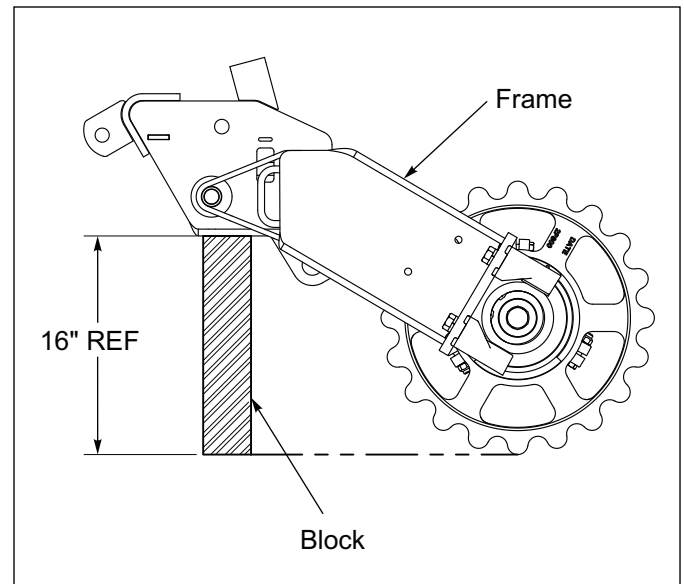


Figure 2-1: Block up Frame

Wheel Arms to Frame Installation 10FT - 16FT Models

The distance separating the wheel arms is adjustable. It is recommended that the wheel arms be 7 feet apart or 1/2 the Pulverizer width, whichever is greater. See **Figure 2-4**. View oriented for clarity.

1. Using 5/8-11 U-Bolts, Lock Washers and Nuts, attach the Wheel Arms to the Frame. See **Figure 2-2**. View oriented for clarity.

2. Apply anti-seize to spindle. Install Hub and Spindle into Wheel Arm Sleeve. Secure with 3/8-16 x 3 Bolt and Locknut.
3. Mount the Wheels to the axle hubs with the 1/2-20 x 1 Wheel Bolts.



CAUTION

Wheel Arms should always be equidistant from the center of the machine.

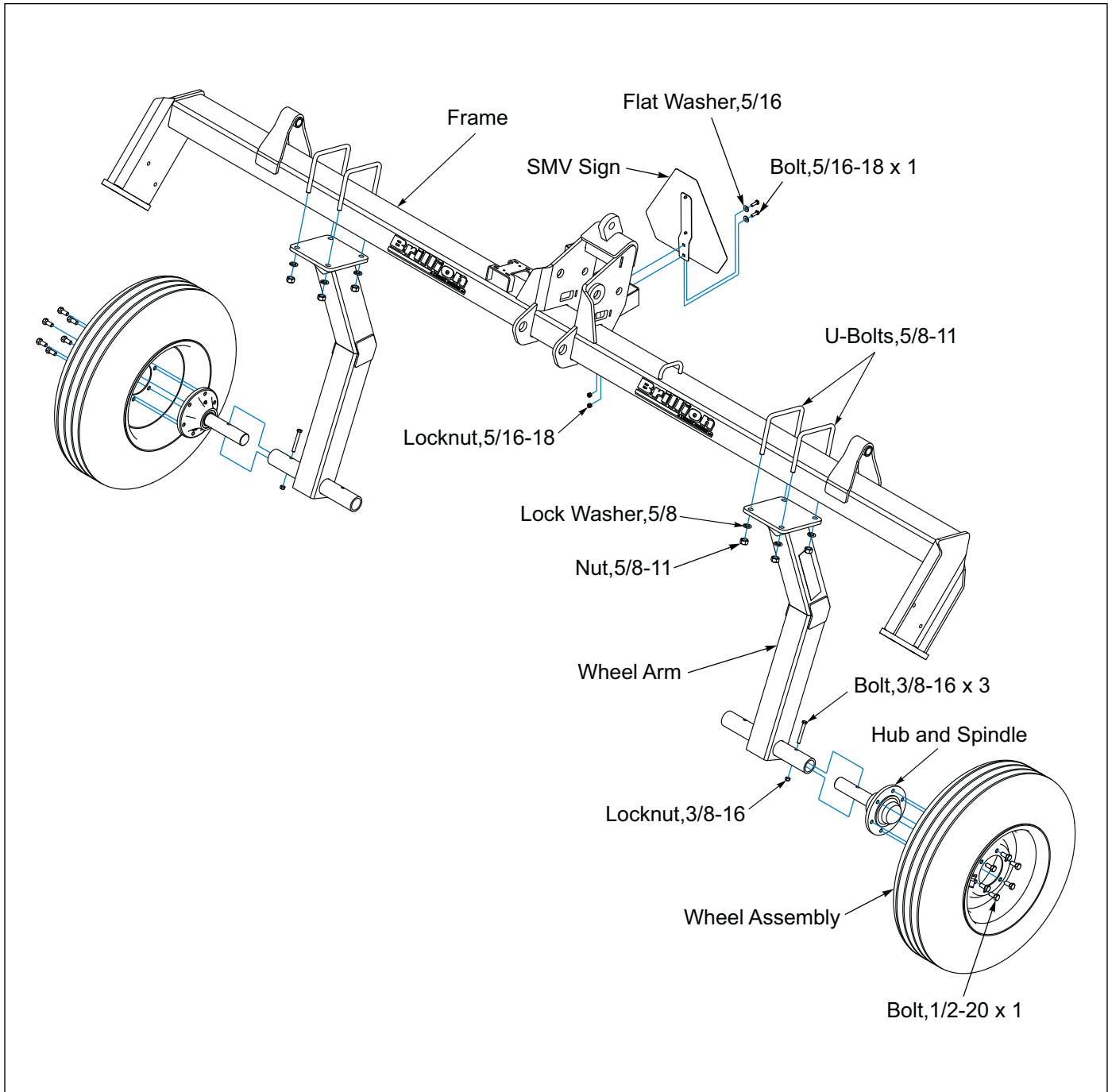


Figure 2-2: Wheel Arm Installation, 10FT - 16FT Models

Wheel Arms to Frame Installation 18FT - 20FT Models

The distance separating the wheel arms is adjustable. It is recommended that the wheel arms be 94 inches apart.

See Figure 2-4. View oriented for clarity.

1. Using 5/8-11 U-Bolts and Flanged Locknuts, attach the Wheel Arms to the Frame. **See Figure 2-3.** View oriented for clarity.

2. Apply anti-seize to spindle. Install Hub and Spindle into Wheel Arm Sleeve. Secure with 3/8-16 x 3 Bolt and Locknut.
3. Mount the Wheels to the axle hubs with the 1/2-20 x 1 Wheel Bolts.



CAUTION

Wheel Arms should always be equidistant from the center of the machine.

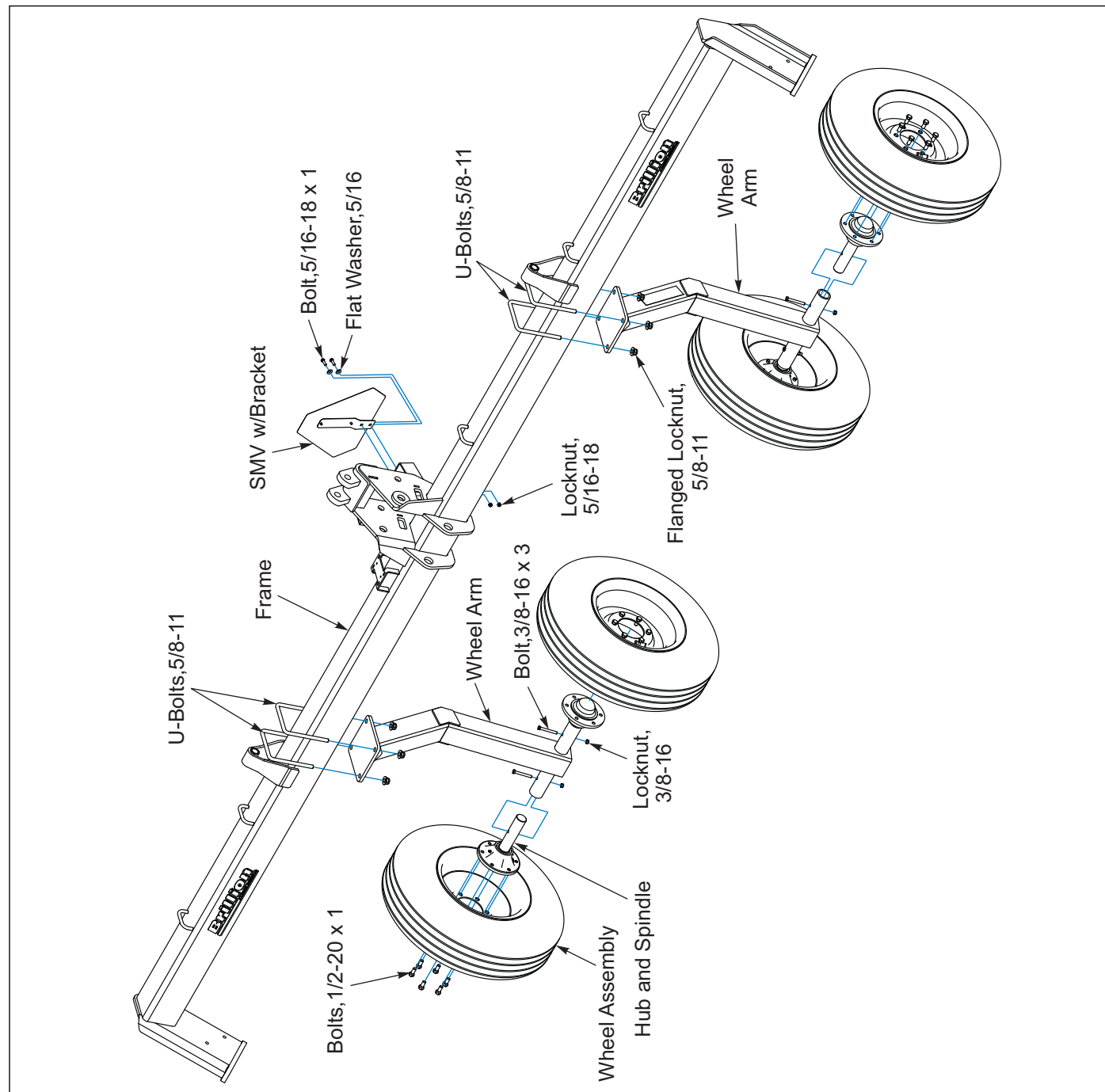


Figure 2-3: Wheel Arm Installation, 18FT - 20FT Models

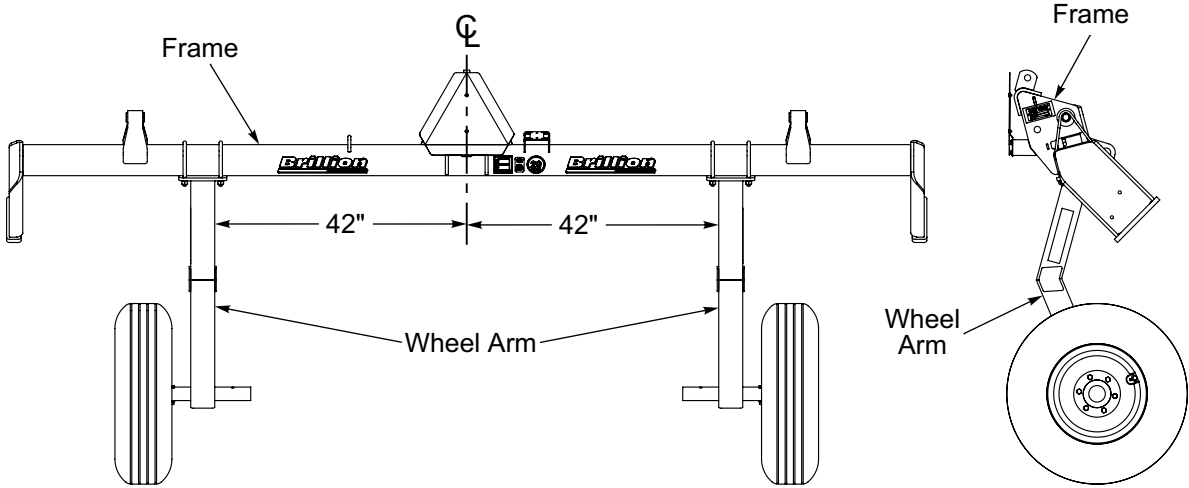


Figure 2-4: Wheel Arm Mounting Dimensions, 10FT - 16FT Models

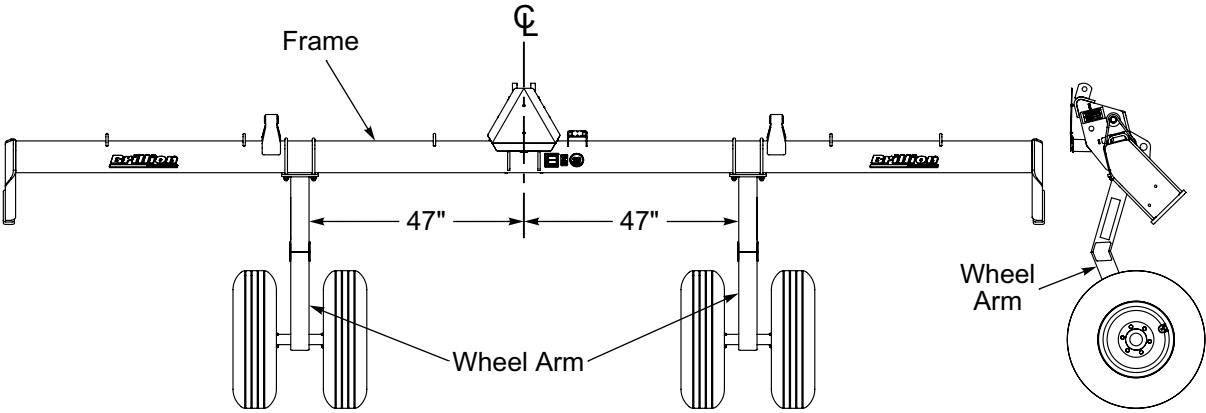


Figure 2-5: Wheel Arm Mounting Dimensions, 18FT - 20FT Models

Drawbar with Lift: Brace Installation

1. Bring the rear of the Drawbar into position between the Frame Hitch Plates at the center of the Frame. Place two Machinery Bushings on each side between the Drawbar and the Frame Hitch Plates.
2. Attach the Drawbar to the Frame with 1-1/4 x 10 Pin, Flat Washers and 5/16 x 2-1/2 Roll Pins. **See Figure 2-8.**
3. Install Transport Lock Pin into the Frame Lug and through the Drawbar Lugs. Pin should be under the drawbar. Secure with a Flat Washer and 1/4 x 1-1/4 Lynch Pin. **See Figure 2-8.**
4. Attach the Brace to the inside of the Frame Brace Lug. Slide Flat Washer onto 1-8 x 5-1/2 Bolt and insert bolt through Brace. Add another Flat Washer and slide Bolt through Frame Brace Lug. Add Flat Washers and Locknut, tighten so that the Frame is free to pivot on the Drawbar. Repeat for the opposite side. **See Figure 2-6.**

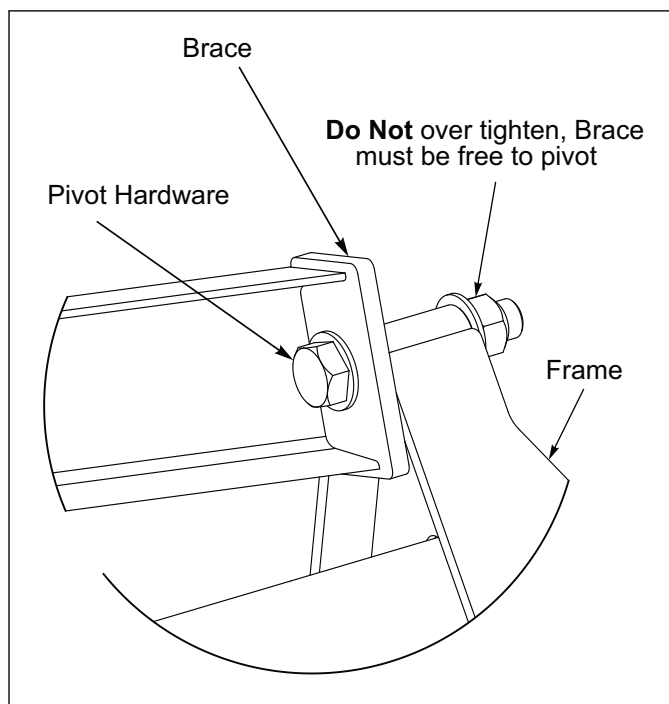


Figure 2-6: Frame Brace Lugs

5. Rotate the braces so they are against the Drawbar, with two holes above and two holes below. Insert 1/2-13 x 7-1/2 Bolts through the holes and secure with Locknuts.
6. Mount the Hose Support to the Drawbar using 5/8-11 x 2 Bolt, Flat Washer and Locknut. **See Figure 2-7.**
7. Attach the Jack using the pin provided. Attach the Manual Storage Canister using two Hose Clamps. **See Figure 2-7.**

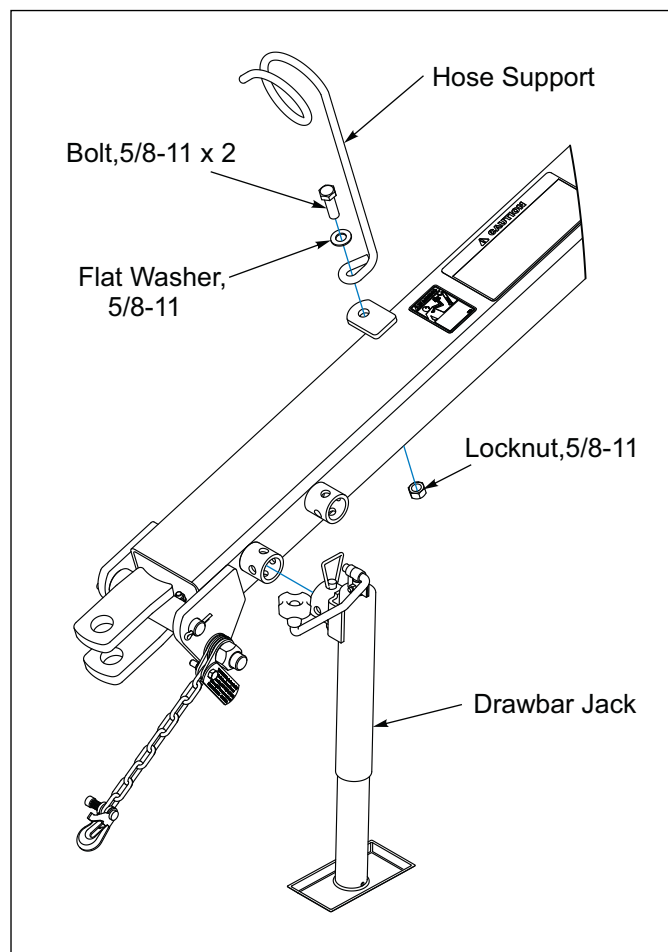


Figure 2-7: Hose Support and Jack

8. **10FT - 16FT Models:**
Attach the 3 x 16 Hydraulic Cylinder Base End to the drawbar lug and extend the cylinder rod to connect the Cylinder Clevis to the Frame Lug with vendor supplied hardware. **See Figure 2-8.**
9. **18FT - 20FT Models:**
Attach the 3-1/2 x 16 Hydraulic Cylinder Base End to the drawbar lug and extend the cylinder rod to connect the Cylinder Clevis to the Frame Lug. Place Spacer between Cylinder Clevis and place clevis between the Frame Lugs. Insert 1 x 6-1/2 Pin. Place Flat Washers on each end of the Pin and secure with 5/16 x 2 Roll Pins. **See Figure 2-9.**

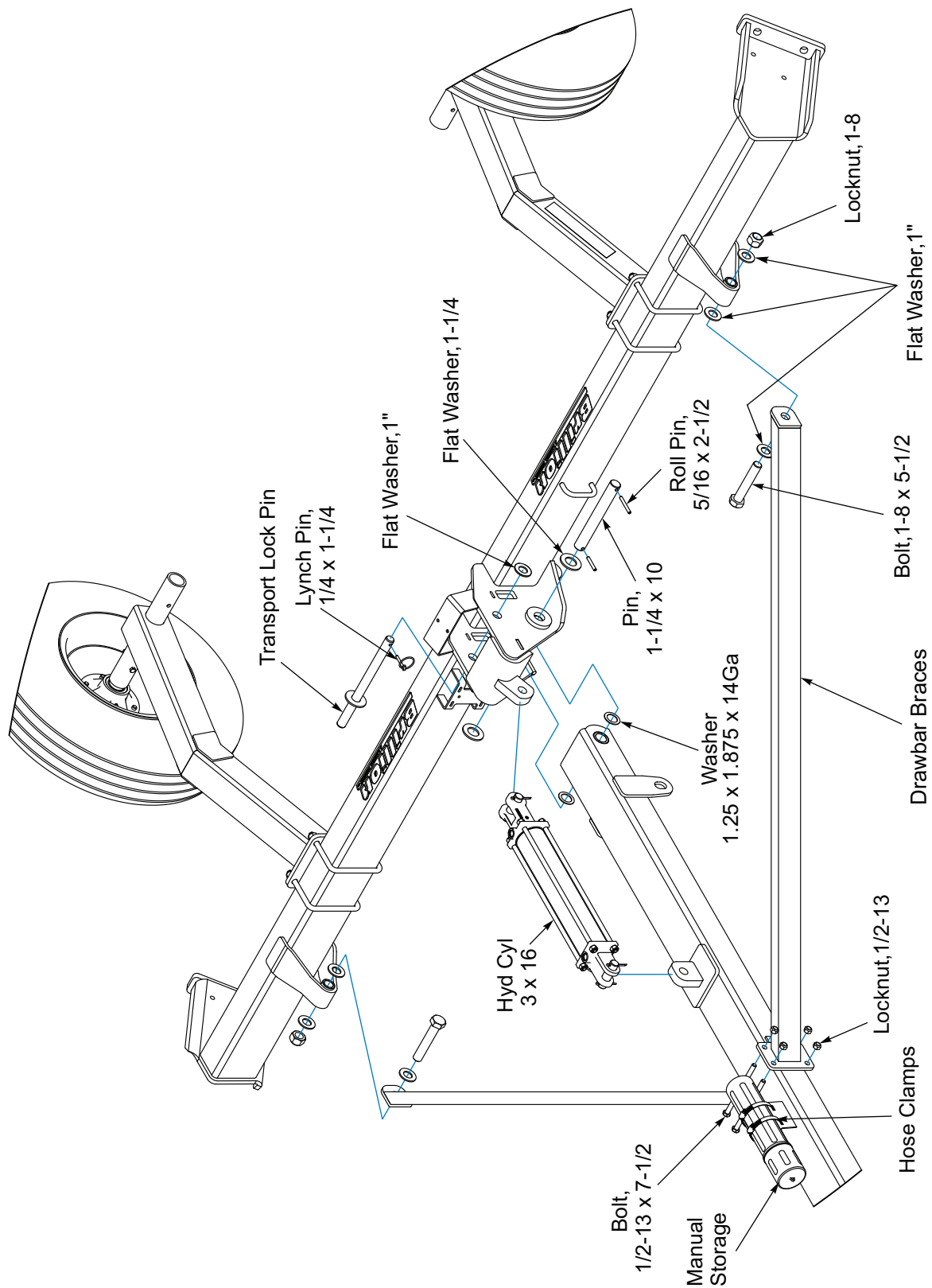
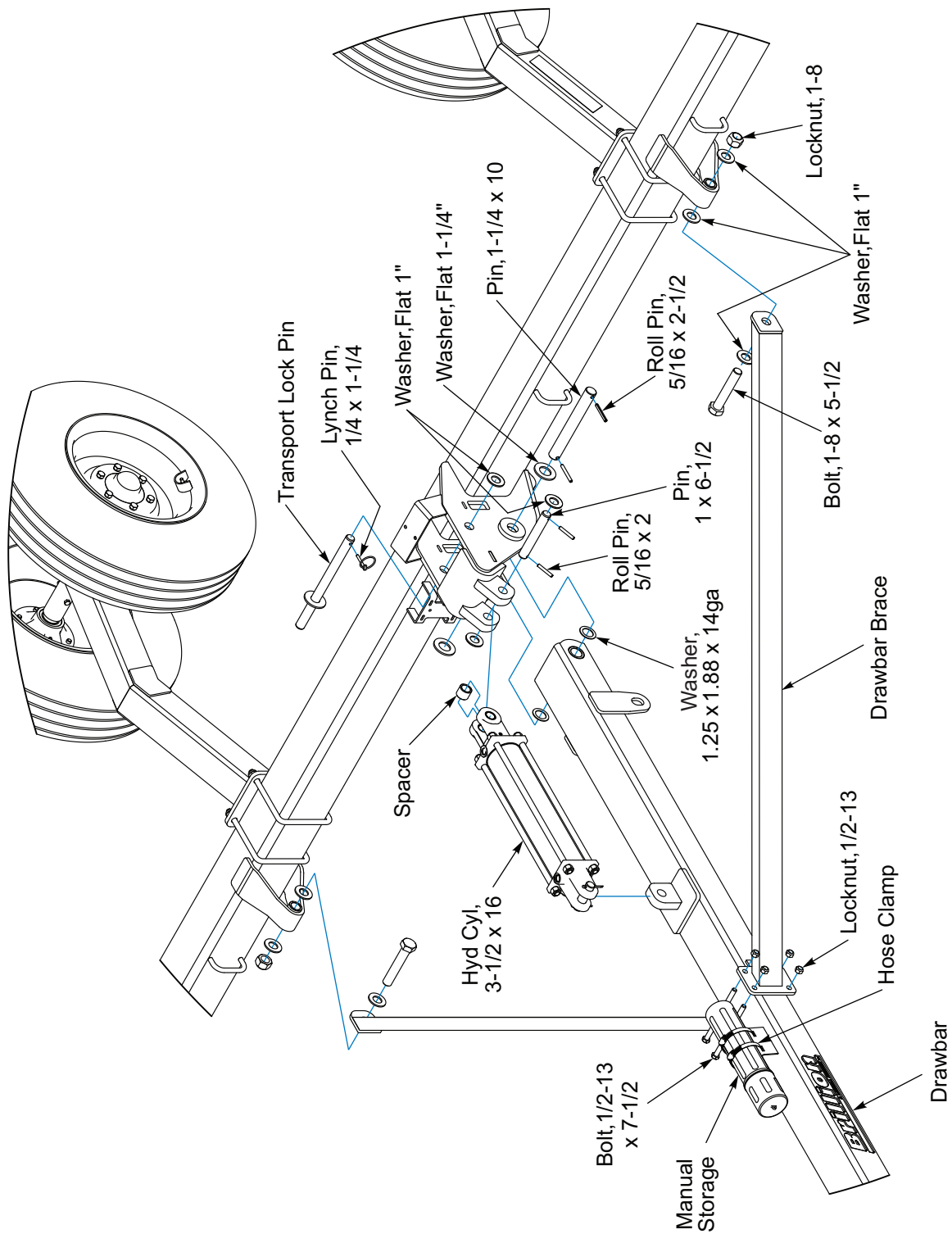


Figure 2-8: Drawbar with Lift: Brace Installation, 10FT - 16FT Models



Hydraulic System Installation



WARNING

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands, to search for suspected leaks. Wear protective gloves & safety glasses or goggles when working with hydraulic systems.



CAUTION

Do not raise the machine without the use of hydraulics. This would introduce air into the hydraulic cylinder. When the transport pin is removed the frame would lower rapidly possibly causing injury.

Tightening Procedure For JIC Swivel Female Nuts

1. Check the flare and seat for defects.
2. Lubricate the connection.
3. Install the hoses without twists.
4. Hand tighten until connection bottoms.
5. Using 2 wrenches to prevent twisting, rotate the swivel nut 1/3 turn.
6. For reassembly, follow the same procedure but tighten only 1/6 turn.

Tightening Procedure For Swivel O-Ring Fittings

1. Lubricate O-Ring and install the fitting until the metal washer which backs up the O-Ring contacts the face of the boss.
2. Then orient the fitting by turning counterclockwise up to 1 turn.
3. Tighten the locknut using 50-60 foot pounds of torque.

Hydraulic Assembly

1. Install Male O-Ring Elbow 08MJ x 08MOR into cylinder rod end port and Restrictor into the cylinder base port. Install Female Swivel Elbow onto Restrictor. **See Figure 2-10.**
2. Attach longer hose to Cylinder rod end Elbow Fitting and the shorter hose to Cylinder base end Elbow Fitting. Run hoses along the frame and down the drawbar under the manual canister mount through the hose loop and hose support towards the tractor.
3. Turn the adapter fitting into each Male Coupler and install adapter at each end of the hose.
4. Secure hoses with tie straps.
5. Hook tractor to implement.
6. Ensure the Transport Lock Pin is in the storage location on the frame. **See Figure 3-1.**

Purge the Lift Cylinder

The hydraulic system is not filled with oil and should be purged of air before transporting and field operations. Carefully hitch the Pulverizer to the tractor and connect the hydraulic lift hoses. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil.

Slowly raise machine and continue to hold hydraulic lever until the lift cylinder is completely extended.

Lower and raise unit completely extend and retract cylinders 5-6 times to purge air from the lift circuit. Do not loosen hoses/fittings. Recheck tractor reservoir oil level.

Pulverizer with Lift Hydraulic Fluid Capacity

10FT - 16FT Models = 0.65 gallon

18FT - 20FT Models = 0.83 gallon

Bridge Hitch Hydraulic Fluid Capacity

10FT - 16FT Models = 0.8 gallons

18FT - 20FT Models = 0.98 gallons

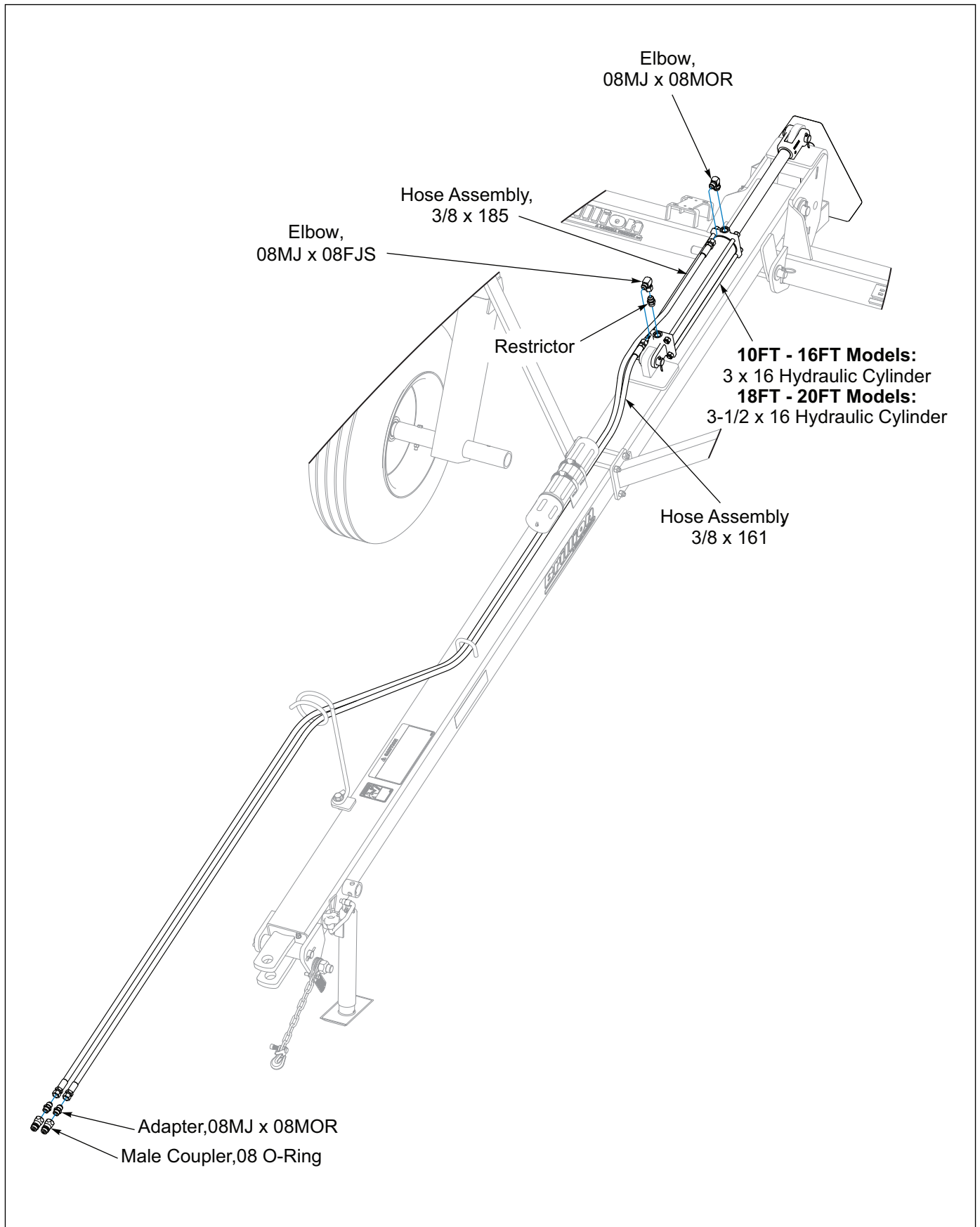


Figure 2-10: Hydraulic System Installation

Drawbar with No Lift: Brace Installation (10FT - 16FT Models Only)

1. Bring the rear of the Drawbar into position between the Frame Hitch Plates at the center of the Frame. Place two Machinery Bushings on each side between the Drawbar and the Frame Hitch Plates. Attach the Drawbar to the Frame with 1-1/4 x 10 Pin, Flat Washers and 5/16 x 2-1/2 Roll Pins. **See Figure 2-13.**
2. Attach the Bracket to the Drawbar using 5/8-11 U-Bolt, Lock Washer and Nuts.
3. Position hitch bracket lug between bracket lugs. Secure with 1 x 2-1/2 Clevis Pin and 3/16 x 1-1/2 Cotter Pin. Tighten 5/8-11 U-Bolts and Nuts.
4. Attach the Brace to the inside of the Frame Brace Lug. Slide Flat Washer onto 1-8 x 5-1/2 Bolt and insert bolt through Brace. Add another Flat Washer and slide Bolt through Frame Brace Lug. Add Flat Washers and Locknut, tighten so that the Frame is free to pivot on the Drawbar. Repeat for the opposite side. **See Figure 2-11.**

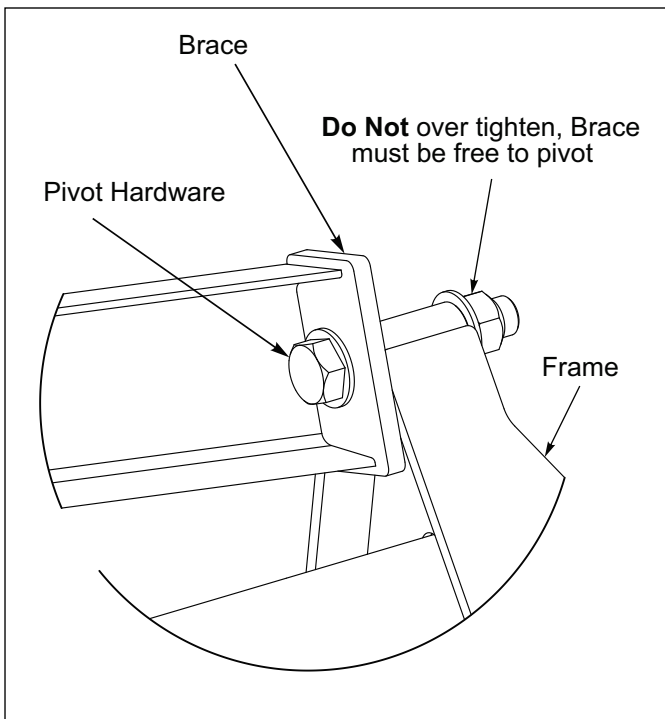


Figure 2-11: Frame Brace Lugs

5. Rotate the braces so they are against the Drawbar, with two holes above and two holes below. Insert 1/2-13 x 7-1/2 Bolts through the holes and secure with Locknuts.
6. Attach the Jack using the pin provided. **See Figure 2-12.**

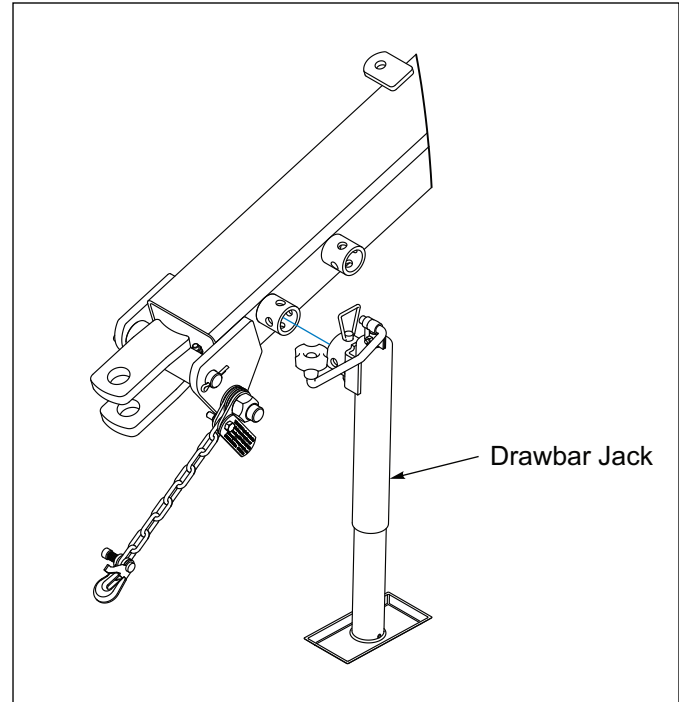


Figure 2-12: Drawbar Jack

7. Attach the Manual Storage Canister using two Hose Clamps. **See Figure 2-13.**

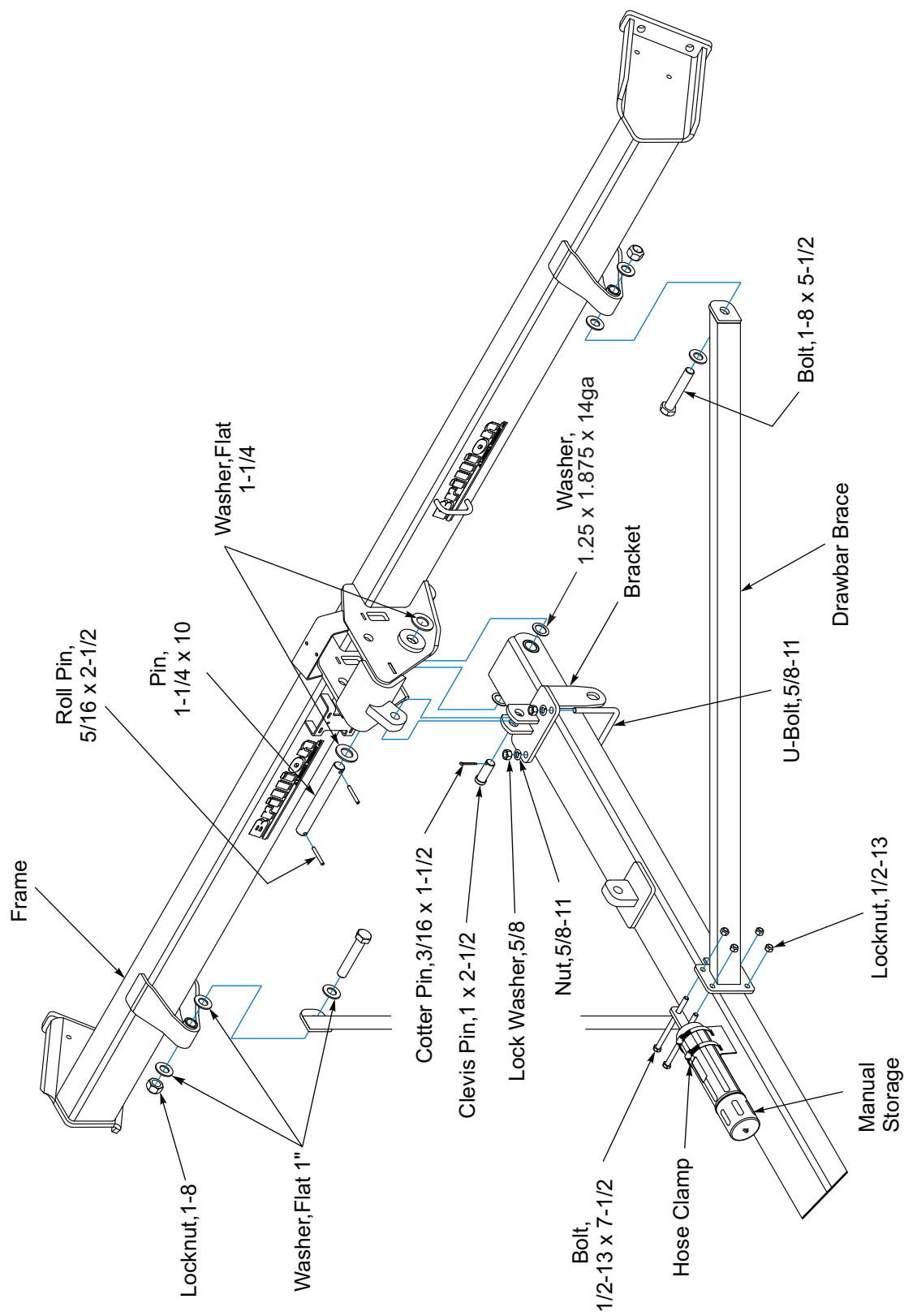


Figure 2-13: Drawbar with No Lift: Brace Installation, 10FT - 16FT Models Only

Bridge Hitch Installation

1. At the front of the Bridge Hitch slide the Gooseneck Coupler up into the Gooseneck tube, align the top hole and insert the Bent Pin, secure with Hair Pin Cotter.
2. Thread a 3/4-10 Nut halfway onto each 3/4-10 x 2 Bolt. Screw them into the 3/4-10 welded nuts on the Gooseneck tube. Snug the Bolts up against the Gooseneck Coupler, turn the 3/4-10 Nuts so they are tight against the welded 3/4-10 Nuts. **See Figure 2-14.**
3. Install the Lug Extension onto the Bridge Hitch Lug, by aligning the Lug Extension Clevis with the Bridge Hitch Lug and inserting the 1 x 3-5/8 Pin. Secure Pin by inserting 3/16 x 2 Cotter Pins.
4. With Lug Extension resting flat on top of Bridge Hitch Tube, insert 3/4-10 U-Bolt and secure with Locknuts. Tighten.
5. With ports facing up attach the 3 x 16 Hydraulic Cylinder (**10FT-16FT Models**) or 3-1/2 x 16 Hydraulic Cylinder(**18FT-20FT Models**) base end to the Lug Extension.
6. Attach the Safety Chain to the Bridge Hitch by sliding three 1 inch Washers between the two plates on the end of the chain, place two 1 inch Washers between the chain and the Bridge Hitch. Insert 1-8 x 9-1/2 Bolt through the Chain, Washers and Hitch, secure with 1-8 Locknut.
7. Install the Double Stand into the rear of the Bridge Hitch by sliding it up into the stand tubes, secure with two 3/4 Pins with Chains.
8. Mount the Manual Storage Canister to the right side rear of the hitch using two Hose Clamps.

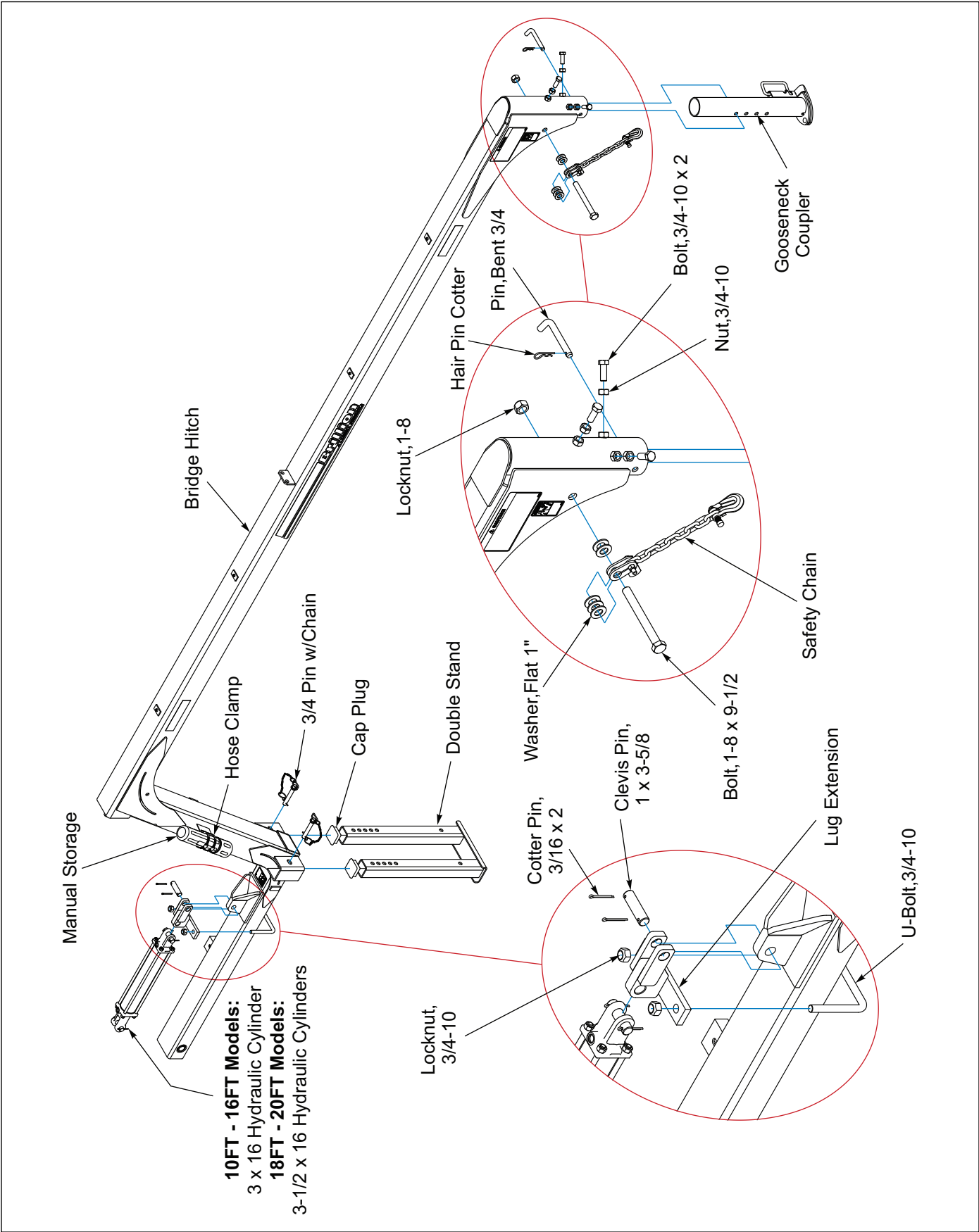


Figure 2-14: Bridge Hitch Installation

Bridge Hitch: Brace Installation

1. Bring the rear of the Bridge Hitch into position between the frame hitch plates at the center of the frame.
2. Place one 1-1/4 x 1-7/8 Machinery Bushing on each side between the Bridge Hitch and the Hitch Plates. Line up the holes and insert 1-1/4 x 10 Pin, secure with Flat Washers and 5/16 x 2-1/2 Roll Pins. **See Figure 2-15.**
3. Attach the LH Hitch Brace to the outside of the Frame Brace Lug and a Brace to the inside of the Frame Brace Lug. Slide Flat Washer onto 1-8 x 6 Drilled Bolt and insert bolt through LH Hitch Brace. Add another Flat Washer and slide Bolt through Frame Brace Lug and Pulverizer Brace. Add as many Flat Washers necessary so the Slotted Nut groove is aligned with the end hole. The Slotted Nut should be tightened so that the Frame is free to pivot on the Bridge Hitch. Insert 1/4 x 2 Cotter Pin.
4. Repeat for the Right Hand side. Rotate the braces so they are against the Lower Bridge Hitch Tube, with two holes above and two holes below.
5. Insert 1/2-13 x 8 Bolts through the holes and secure with Locknuts.
6. Rotate the LH and RH Hitch Braces so they are against the Upper Bridge Hitch Tube, with two holes above and two holes below. Insert on both sides a 1/2-13 x 1-3/4 Bolt into the Hitch Brace and into the Bridge Hitch Gusset, secure with Washers and Locknuts, do not tighten.
7. Insert three 1/2-13 x 8-1/2 Bolts through the Hitch Braces, secure with Locknuts. Tighten all Hardware at this time. **See “General Torque Specifications” on page 4-1.**
8. **10FT - 16FT Models:**
Attach rod end of the 3 x 16 Hydraulic Cylinder to the Pulverizer Frame Lug with vendor supplied hardware. It maybe necessary to extend the cylinder rod or raise the frame slightly to make this connection. **See Figure 2-15.**
9. **18FT - 20FT Models:**
Place Spacer between 3-1/2 x 16 Hydraulic Cylinder clevis and place clevis between the frame lugs. Insert 1 x 6-1/2 Pin. Place Flat Washers on each end of the pin and secure with 5/16 x 2 Roll Pins. Secure with two 5/16 x 2 Roll Pins. It may be necessary to extend the cylinder rod or raise the frame slightly to make this connection. **See Figure 2-16.**

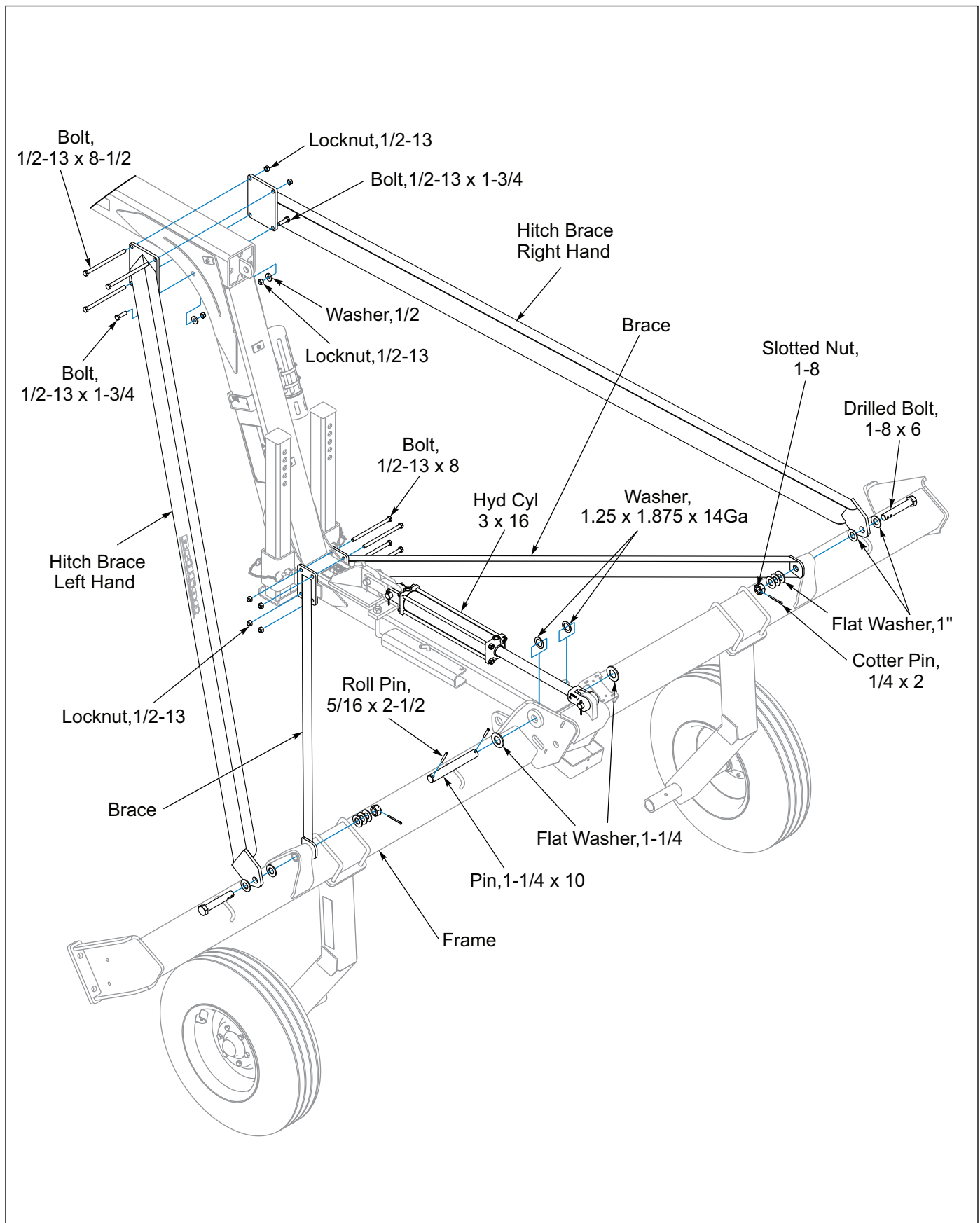


Figure 2-15: Bridge Hitch: Brace Installation, 10FT - 16FT Models

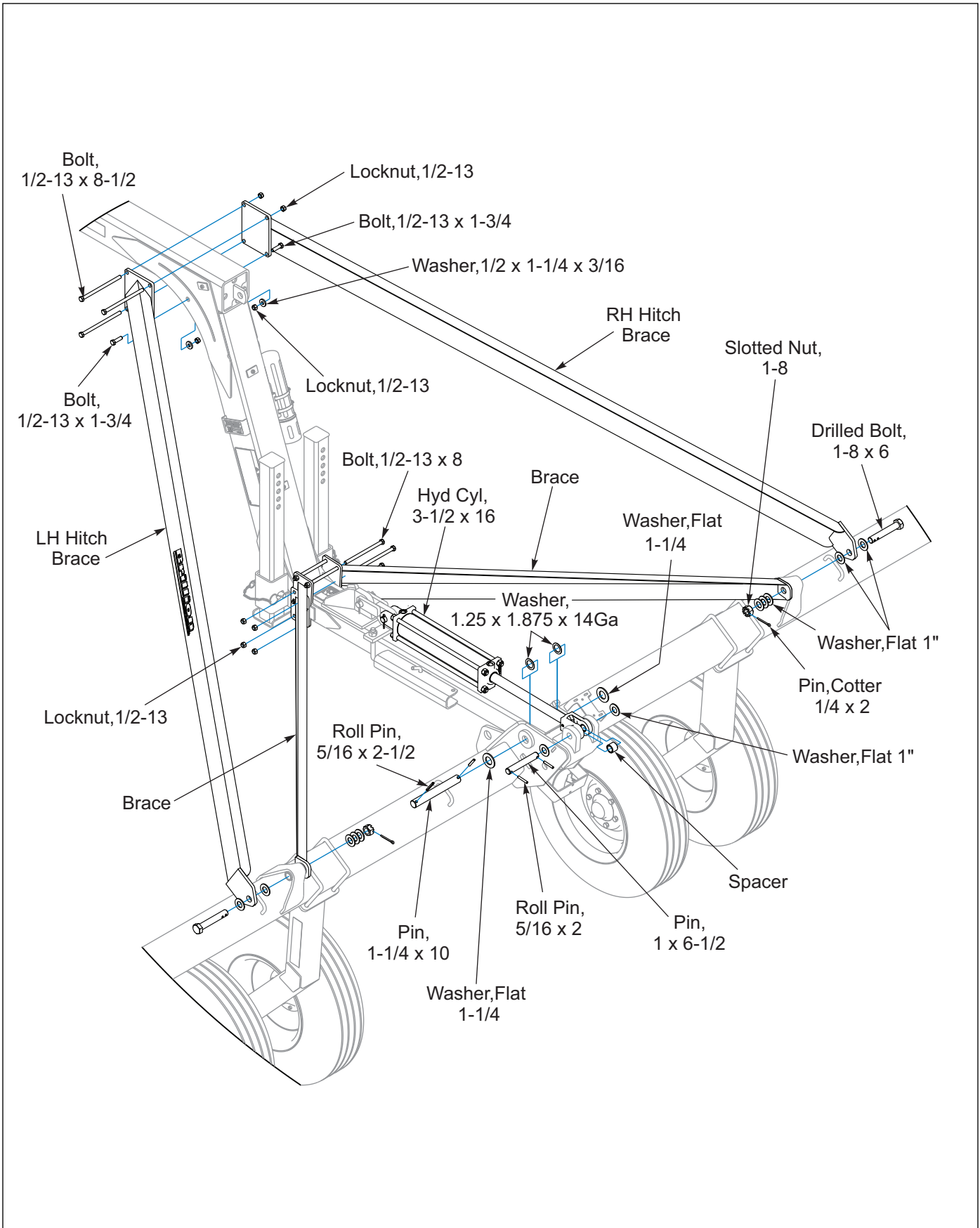


Figure 2-16: Bridge Hitch: Brace Installation, 18FT - 20FT Models

Bridge Hitch: Hydraulic System Installation



WARNING

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than hands, to search for suspected leaks. Wear protective gloves & safety glasses or goggles when working with hydraulic systems.

Tightening Procedure For JIC 37° Swivel Female Nuts

1. Check flare and seat for defects.
2. Lubricate the connection.
3. Install hoses without twists.
4. Hand tighten until connection bottoms.
5. Using 2 wrenches to prevent twisting, rotate the swivel nut 2 wrench flats (1/3 turn).
6. For reassembly, follow the same procedure but tighten only 1 wrench flat (1/6 turn).

Tightening Procedure For Swivel O-Ring Fittings

1. Lubricate O-Ring and install the fitting until the metal washer which backs up the o-ring contacts the face of the boss.
2. Orient the fitting by turning counterclockwise up to 1 turn.
3. Tighten the locknut using 50-60 Ft-Lbs of torque. **See “Hydraulic Fitting Torque Specifications” on page 4-2.**
4. Attach the Manual Storage Canister using two 4-1/2 Hose Clamps.

Hydraulic Assembly



CAUTION

Do not raise the machine without the use of hydraulics. This would introduce air into the hydraulic cylinder. When the transport pin is removed the frame would lower rapidly possibly causing injury.

Bridge Hitch Hydraulic Fluid Capacity

10FT - 16FT Models = 0.8 gallons

18FT - 20FT Models = 0.98 gallons

1. Remove Fitting Caps prior to installing Fittings.
2. Screw a Male O-Ring x Male JIC Elbow Fitting into the rod end port and a Male O-Ring x Female Swivel JIC Elbow Fitting into the base end port of the Hydraulic Cylinder.
3. Screw a Restrictor into the Ball Valve port that will connect up to the base end of the Hydraulic Cylinder and a Male O-Ring x Male JIC Adapter Fitting into the other port of the Ball Valve. Connect the Ball Valve Restrictor to the Elbow in the base end port of the Cylinder.
4. Assemble Bulkhead 08MJ Fittings into the bulkhead plate located on the top of the of the Bridge Hitch Tube.
5. Connect 3/8 x 185 Hose Assembly to the Cylinder Rod End Elbow Fitting and 3/8 x 161 Hose Assembly to the Ball Valve Adapter Fitting.
6. Route hose up the Bridge Hitch connecting them to the Bulkhead Fittings. Connect 3/8 x 150 Hose Assemblies to the bulkhead fittings and route them along the Bridge Hitch to the Gooseneck Coupler.
7. Turn a Male JIC x Female Swivel JIC Elbow Fittings into the end of the Hoses. Assemble Male O-Ring x Male JIC Adapter Fittings into Male Couplers and turn them into Elbow Fittings at the end of the Hoses.
8. Secure hoses with Twin Clamps, Top Plate and 5/16-18 x 1-1/4 Bolts in the mounts provided on the Bridge Hitch. **See Figure 2-17.**

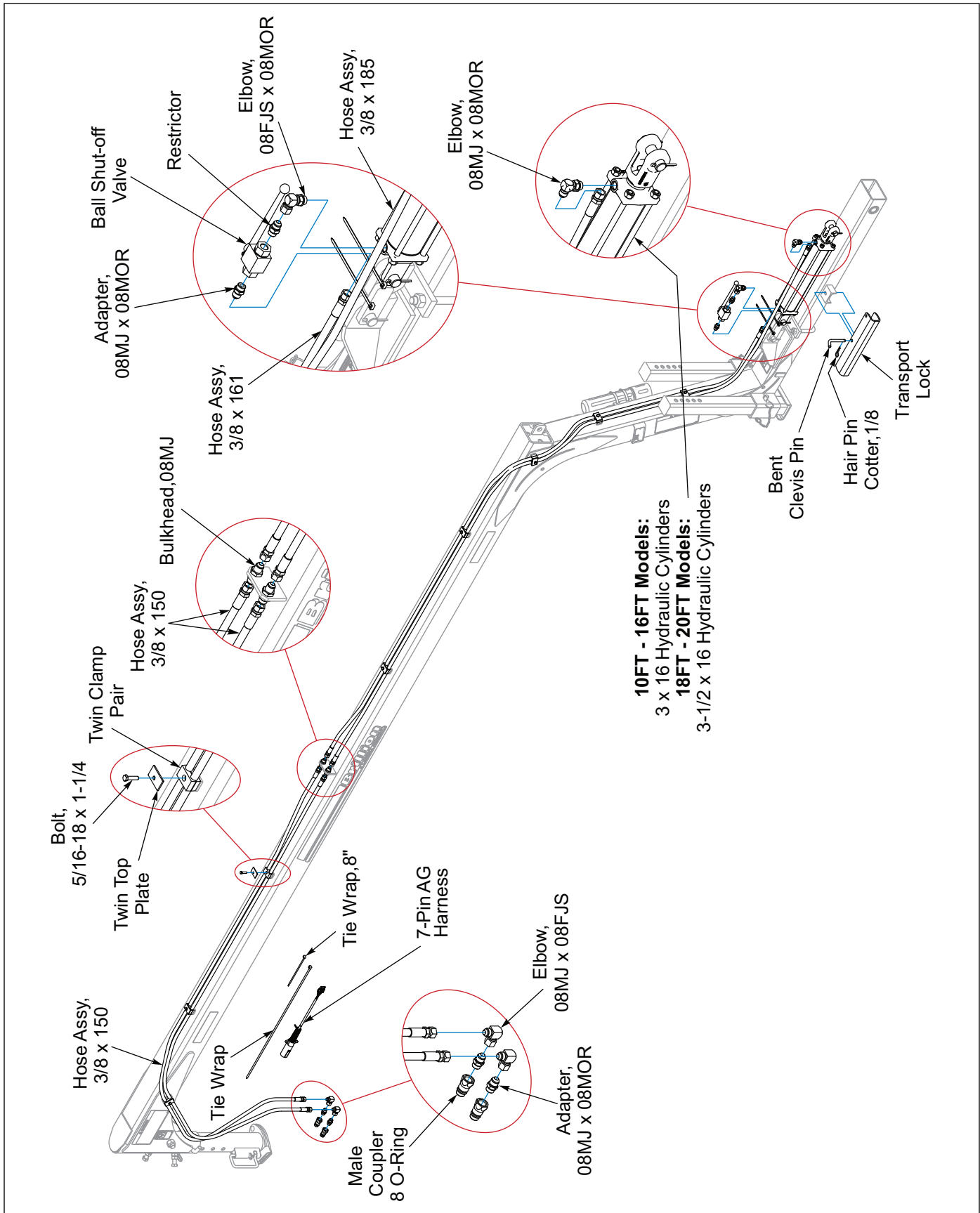


Figure 2-17: Bridge Hitch Hydraulic System Installation

Pulverizer with Lift: LED Lamp and Harness Installation

NOTE

Unless otherwise noted the following installation instructions apply to all Models.

1. Install outer light mount brackets approximately 2-1/2" from the Bearing Hanger Plate using 1/2-13 U-Bolts and Locknuts. **See Figure 2-19.**
2. Install the inner Light Mount Brackets approximately 36" from center line using 1/2-13 U-Bolts and Locknuts. **See Figure 2-20.**
3. Install the Amber LED inside the Tube Light Shield, attach to the outer Light Mount Bracket using four 1/4-20 x 1-3/4 Bolts. Secure lamp and shield to Light Mount Bracket with Flat Washers and Locknuts. Attach the Decal Bracket and secure with Locknuts.
4. Install the Red LED to the inner Light Mount Bracket using four 1/4-20 x 1-1/2 Bolts. Secure Lamps to Light Mount Bracket with Flat Washers and Locknuts. Attach the Decal Plate and secure with 1/4-20 Locknuts.
5. Attach the Light Module to the Light Module Bracket using two 1/4-20 x 1-1/2 Bolts and Locknuts.

IMPORTANT

Cords are marked Left or Yellow / Right or Green.

6. Raise the machine if not done previously.
7. Layout the LED Lamp Harness and attach the harness to the Light Module.
8. Route the left and right 3 plug cord along the frame and connect to each Red LED Lamp.
9. Route the remaining left and right 2 plug cords along the left and right of the frame and connect into each Amber LED Lamp.
10. Layout the 7-Pin Harness and attach the harness to the Light Module.
11. Route the 7-Pin Harness across the frame and along the drawbar tube and over to hitch point.
12. Adjust the LED Lamp angle so that the lamp is vertical (perpendicular) to the ground when the Pulverizer is in the transport position. Whether the Pulverizer is towed behind a tractor or a companion tool, the Light Mount Bracket provides lamp adjustment for higher or lower drawbar heights, ensuring that the lamp will always be vertical (perpendicular) to the ground and clearly viewable from the front and rear of the machine. **See Figure 2-18.**
13. Tighten all hardware.

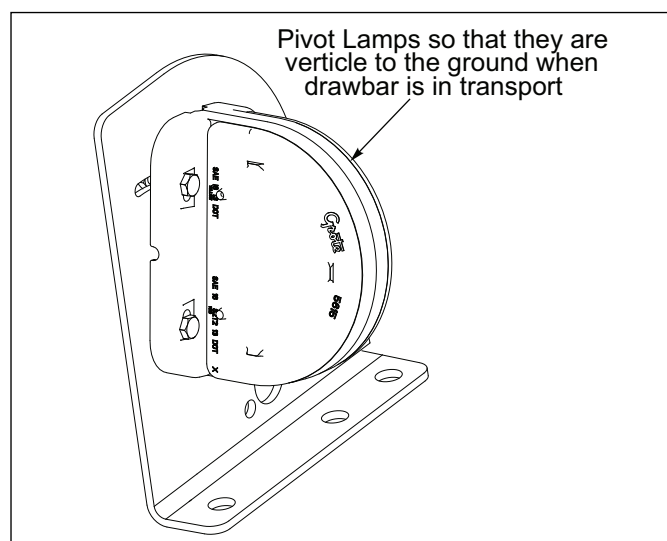


Figure 2-18: LED Adjustment

14. Bundle and secure any excess cord with tie straps.
15. Apply the reflector decals to Decal Brackets. The amber reflector decals should be front facing on the outer Decal Brackets. The red reflector decals and orange decals should be rear facing on both the inner and outer Decal Brackets.

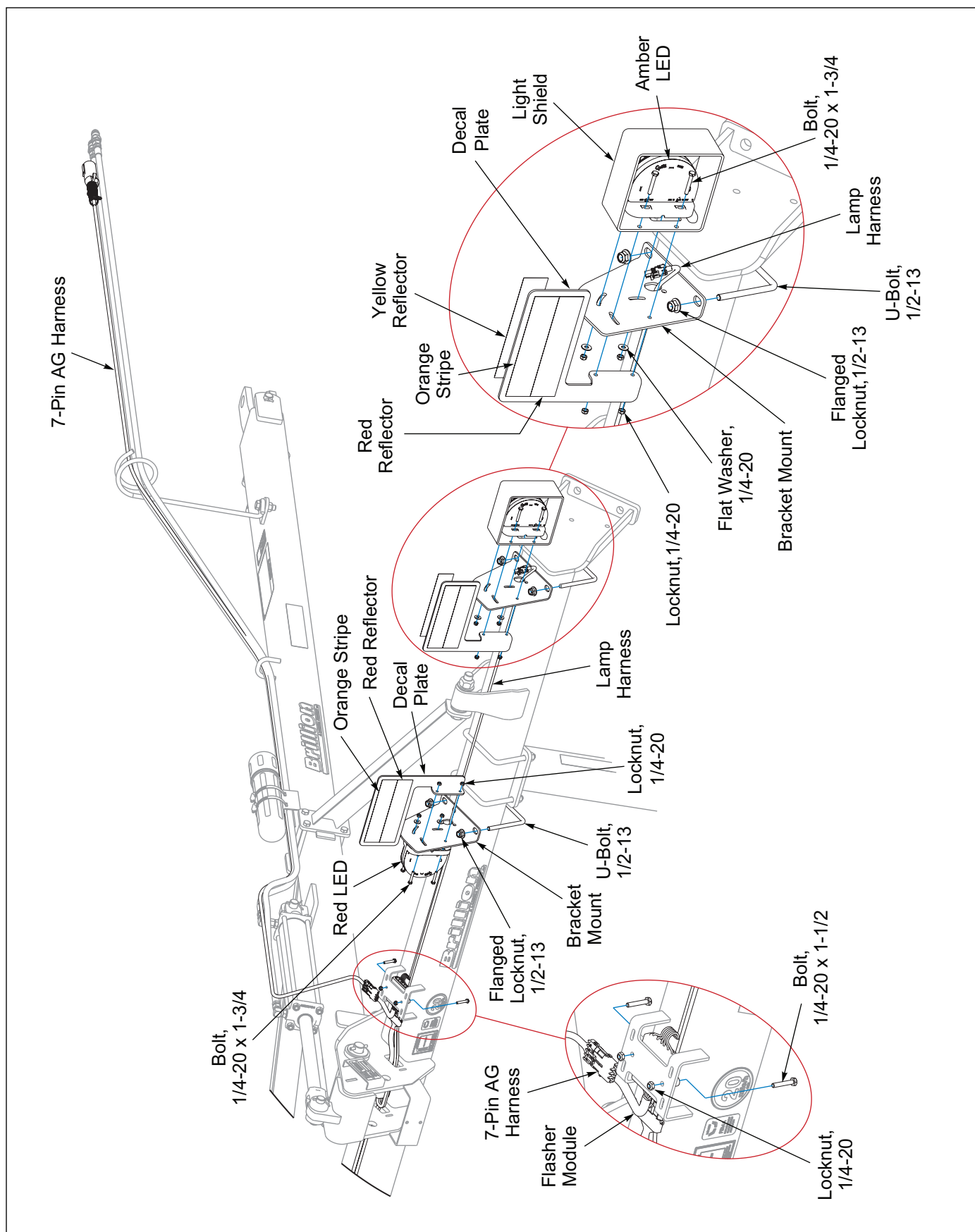
IMPORTANT

All wires must be firmly attached to machine frame members, or hydraulic lines, so they don't sag or become torn loose by field debris. Use the cable and hose ties provided.

Check to be sure that wiring at center of machine is slack enough so as not to be stretched or interfered with while rotating frame from transport to field working position and vice versa.

Pulverizer with Bridge Hitch: LED Lamp and Harness Installation

1. Install LED Lamps and Led Lamp Harness to the Pulverizer Frame per Steps 1-10 listed at the left.
2. Route the 7-Pin Ag Harness, with the Hydraulic Hoses, along the Bridge Hitch up to the Gooseneck Coupler.
3. Adjust the LED Lamp angle so that the lamp is vertical (perpendicular) to the ground when the Pulverizer is in the transport position. The bracket provides lamp adjustment for higher or lower Bridge Hitch heights, ensuring that the lamp will always be vertical (perpendicular) to the ground and clearly viewable from the front and rear of the machine. **See Figure 2-18.**
4. Tighten all hardware. Bundle and secure any excess cord with tie straps.



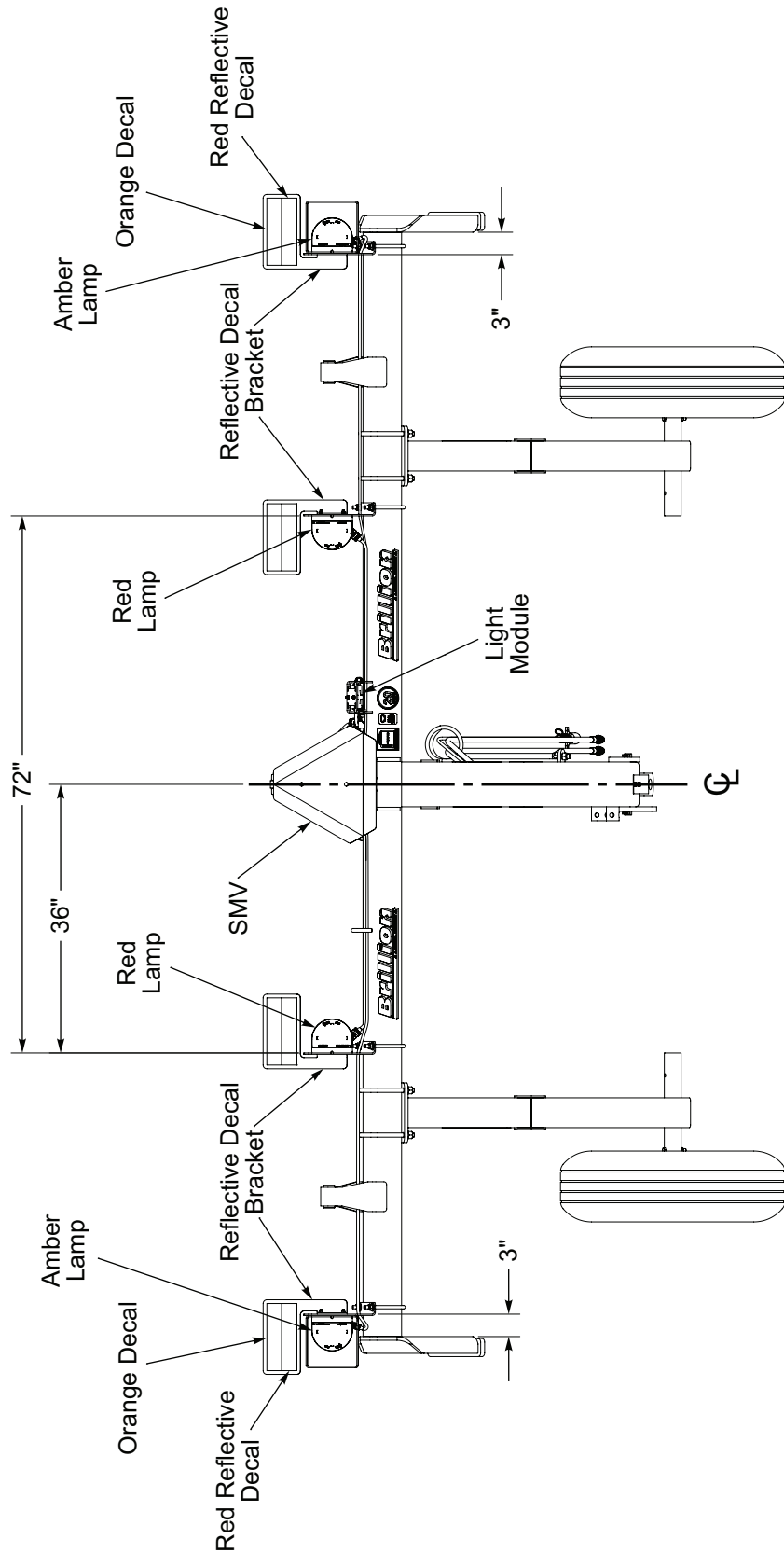


Figure 2-20: Pulverizer with Lift: LED Warning Lights Installation Dimensions

Pulverizer with No Lift: LED Lamp and Harness Installation (10FT - 16FT Models Only)

NOTE

Unless otherwise noted the following installation instructions apply to all Models.

1. Install the outer Light Mount Brackets approximately 2-1/2" from the Frame Bearing Hanger Plate, using 1/2-13 U-Bolts and Locknuts. **See Figure 2-22.**
2. Install the inner Light Mount Brackets approximately 36" from center line using 1/2-13 U-Bolts and Locknuts. **See Figure 2-23.**
3. Install the Amber LED inside the Tube Light Shield, attach to the inside of the outer Light Mount Bracket using four 1/4-20 x 1-3/4 Bolts. Secure Lamp and Shield to Light Mount Bracket with Flat Washers and Locknuts. Attach the Decal Plate and secure with Locknuts.
4. Attach the Red LED to the inner Light Mount Brackets using four 1/4-20 x 1-1/2 Bolts. Secure Lamp to Light Mount Bracket with Flat washers and Locknuts. Attach the Decal Bracket and secure with Flat Washers and Locknuts. *Ensure the red lens faces rearward.*
5. Attach the Light Module to the Light Module Bracket using two 1/4-20 x 1-1/2 Bolts and Locknuts.

IMPORTANT

Cords are marked Left or Yellow / Right or Green.

6. Layout the LED Lamp Harness and attach the harness to the Light Module.
7. Route the left and right 3 plug cords along the left and right top of frame and connect to each Red LED Lamp.
8. Route the remaining left and right 2 plug cords along the left and right top of frame. Plug a 2 plug harness into each Amber LED Lamp.
9. Layout the 7-Pin Harness and attach the harness to the Light Module.
10. Route the 7-Pin Harness along the frame and the drawbar with the hydraulic hoses.

11. Adjust the LED Lamp angle so that the lamp is vertical (perpendicular) to the ground when the Pulverizer is in the transport position. Whether the Pulverizer is towed behind a tractor or a companion tool, the Light Mount Bracket provides lamp adjustment for higher or lower drawbar heights, ensuring that the lamp will always be vertical (perpendicular) to the ground and clearly viewable from the front and rear of the machine. **See Figure 2-21.**

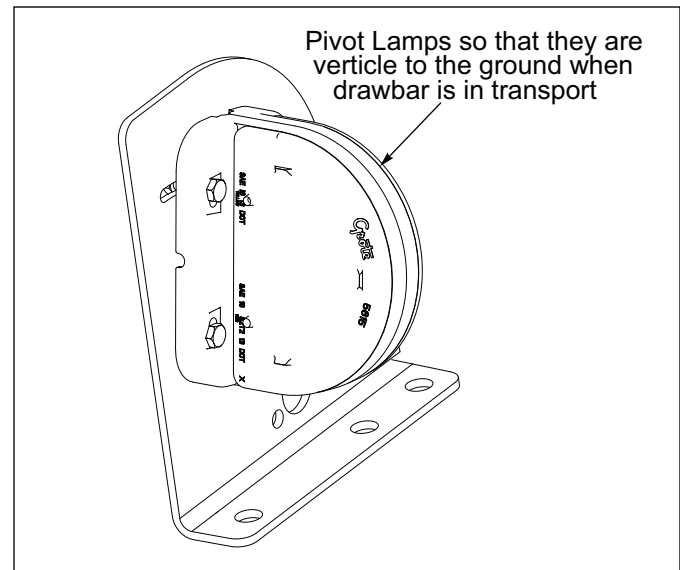


Figure 2-21: LED Adjustment

12. Tighten all hardware.
13. Bundle and secure any excess cord with tie straps.
14. Apply the reflector decals to Decal Brackets. The amber reflector decals should be front facing on the outer Decal Brackets. The red reflector decals and orange decals should be rear facing on both the inner and outer Decal Brackets. **See Figure 2-22.**

IMPORTANT

All wires must be firmly attached to machine frame members, or hydraulic lines, so they don't sag or become torn loose by field debris. Use the cable and hose ties provided.

15. Attach the SMV Mount to the frame using 5/8-11 U-Bolts and Flanged Locknuts. Attach the SMV sign to the SMV Mount using 5/16-18 x 1 Bolts, Flat Washers and Locknuts.

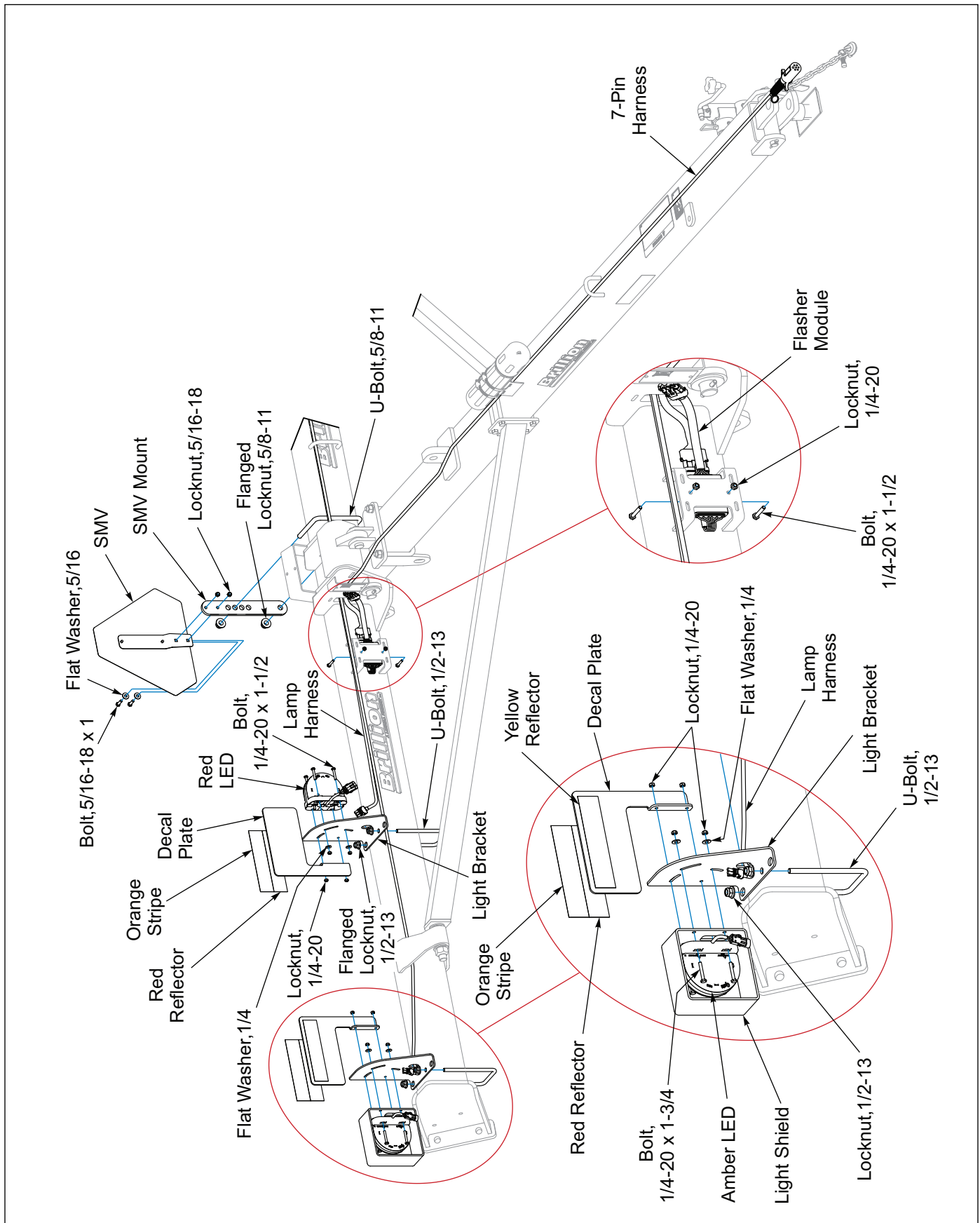


Figure 2-22: Pulverizer with No Lift: LED Lamp and Harness Installation, 10FT - 16FT Models Only

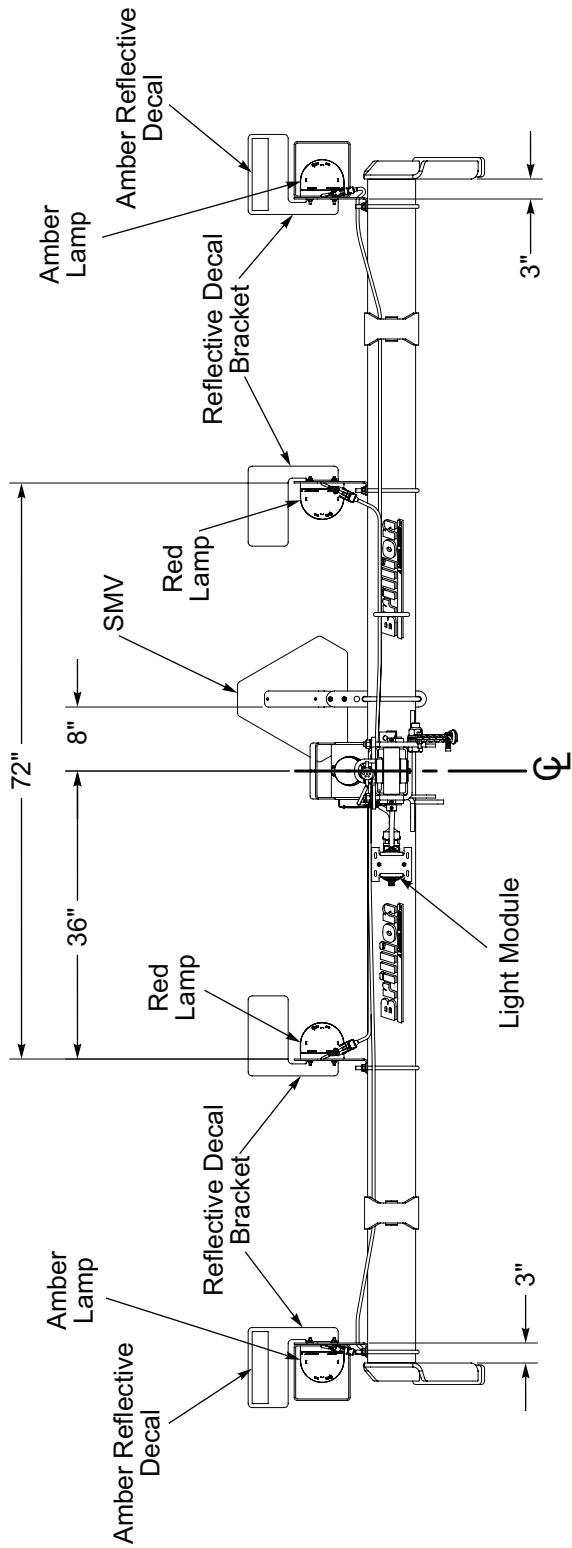


Figure 2-23: Pulverizer with No Lift: LED Mounting Dimensions

Table provided for general use.

NOTES:

Notched/Heavy Notched Scraper Installation, 10FT - 16FT Models

1. With the rollers on level ground, place four 5/8-11 U-Bolts over the Frame Tube and through the Scraper Brackets. Hand tighten Flanged Locknuts. **See Figure 2-25.**
2. Attach the Scrapers in the bottom of the top two slots to the Scraper Tube approximately 4 inches apart, except for the four that will be attached when the tube is attached to the Scraper Brackets. Secure with 3/8-16 U-Bolt and Flanged Locknuts.
3. Roughly center and attach the Scraper Tube to the Scraper Brackets with the four remaining Scrapers, 3/8-16 U-Bolts and Flanged Locknuts.
4. Adjust the Scrapers to obtain 1/4" clearance from the Notched Wheels. **See Figure 2-24.** Tighten all Hardware.
5. Heavy Notched Scraper Installation is the same.

Notched/Heavy Notched Scraper Installation, 18FT - 20FT Models

1. With the rollers on level ground, place six 5/8-11 U-Bolts over the Frame Tube and through the Scraper Brackets. Hand tighten Flanged Locknuts. **See Figure 2-26.**
2. Attach the Scrapers in the bottom of the top two slots to the Scraper Tube approximately 4 inches apart, except for the six that will be attached when the tube is attached to the Scraper Brackets. At the ends of each Tube, 2 inch wide Scrapers are used. Secure with 3/8-16 U-Bolt and Flanged Locknuts.
3. Roughly center and attach the Scraper Tube to the Scraper Brackets with the six remaining Scrapers, 3/8-16 U-Bolts and Flanged Locknuts.
4. Adjust the Scrapers to obtain 1/4" clearance from the Notched Wheels. **See Figure 2-24.** Tighten all Hardware.
5. Heavy Notched Scraper Installation is the same.

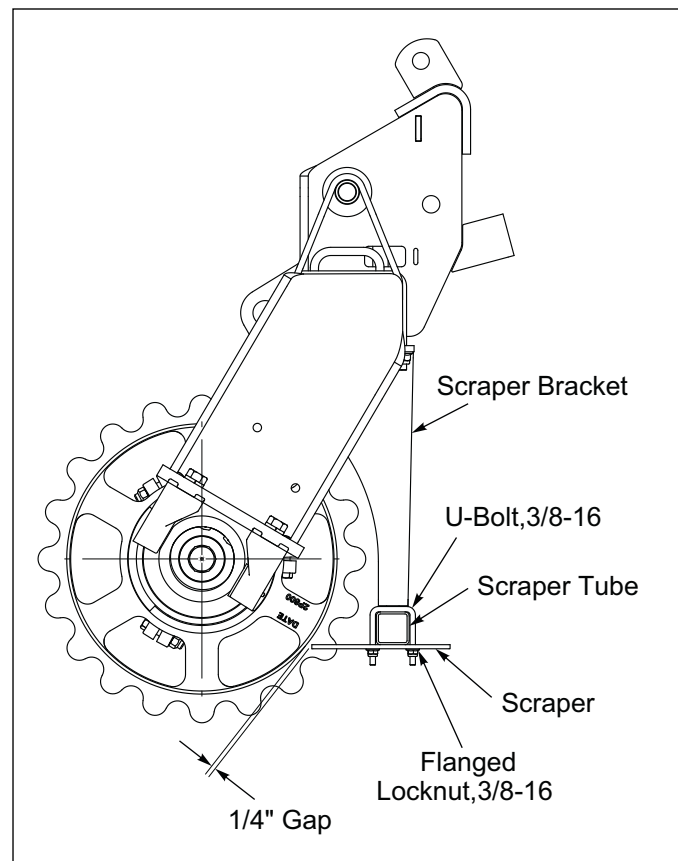


Figure 2-24: Scraper Gap

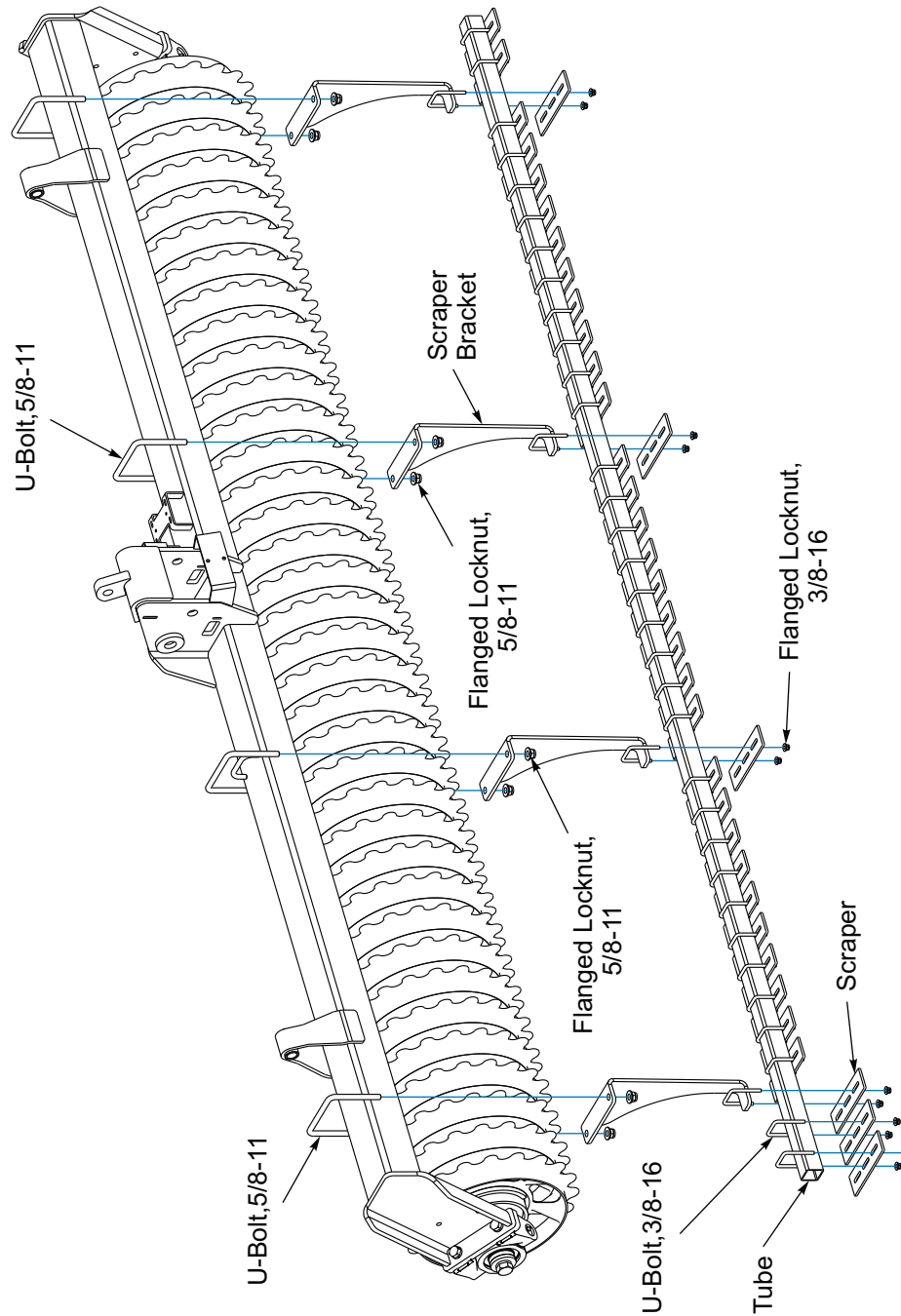


Figure 2-25: Notched Scraper Installation, 10FT - 16FT Models

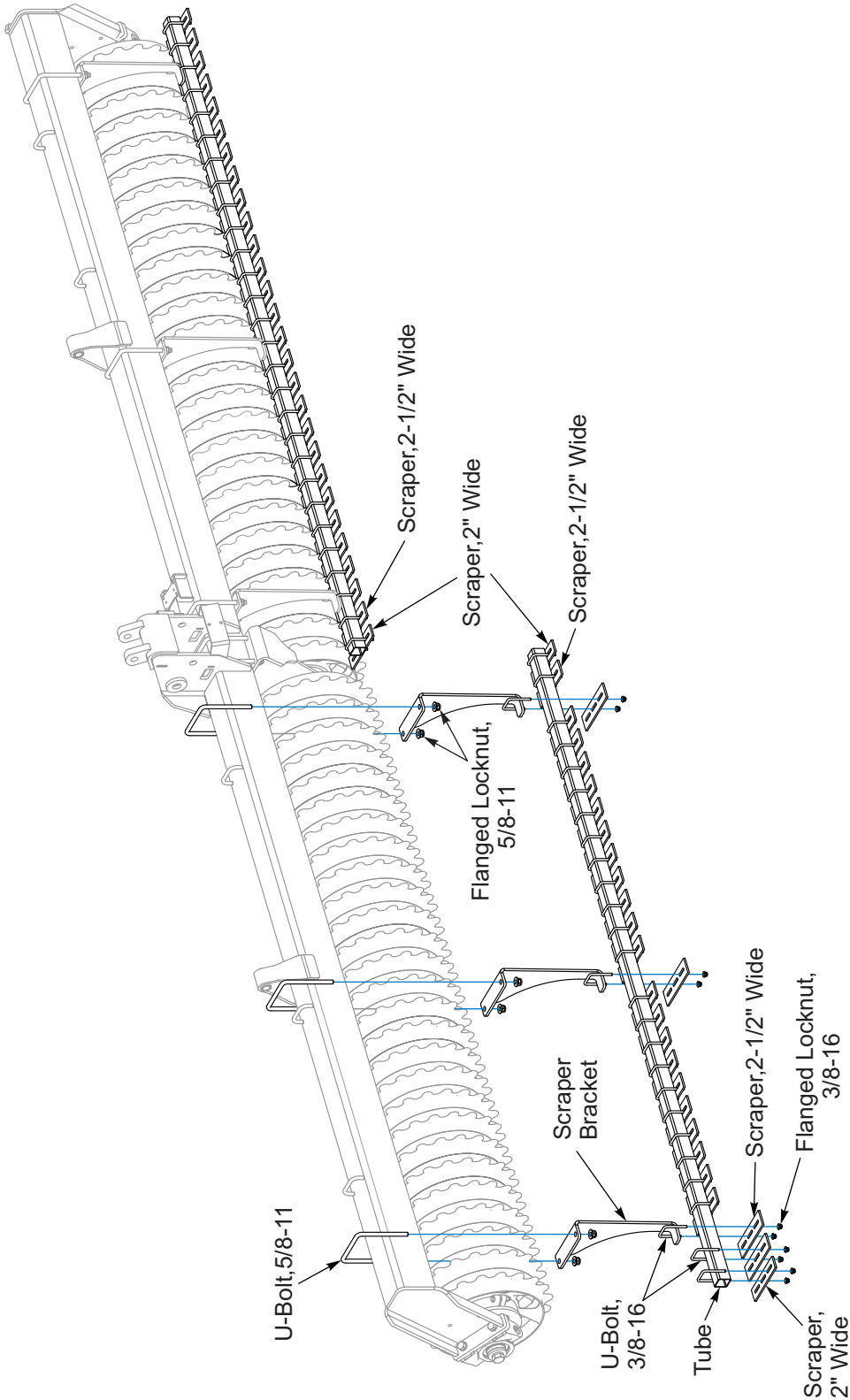


Figure 2-26: Notched Scraper Installation, 18FT - 20FT Models

V-Wheel Scraper Installation, 10FT - 12FT Models

1. With the Rollers on level ground, place 5/8-11 U-Bolts over the frame tube and through the Scraper Brackets. Hand tighten Locknuts.
2. The Scraper Bar is pre-assembled with scrapers attached (spaced approximately 6 inches apart). Remove the eight Locknuts from the U-Bolts where the Scraper Bar will attach to the Scraper Brackets. **See Figure 2-27.**
3. Roughly center and attach the Scraper Bar to the Scraper Brackets with previously removed eight 1/2-13 Locknuts. Tighten all hardware. 12FT Model shown other models similar.

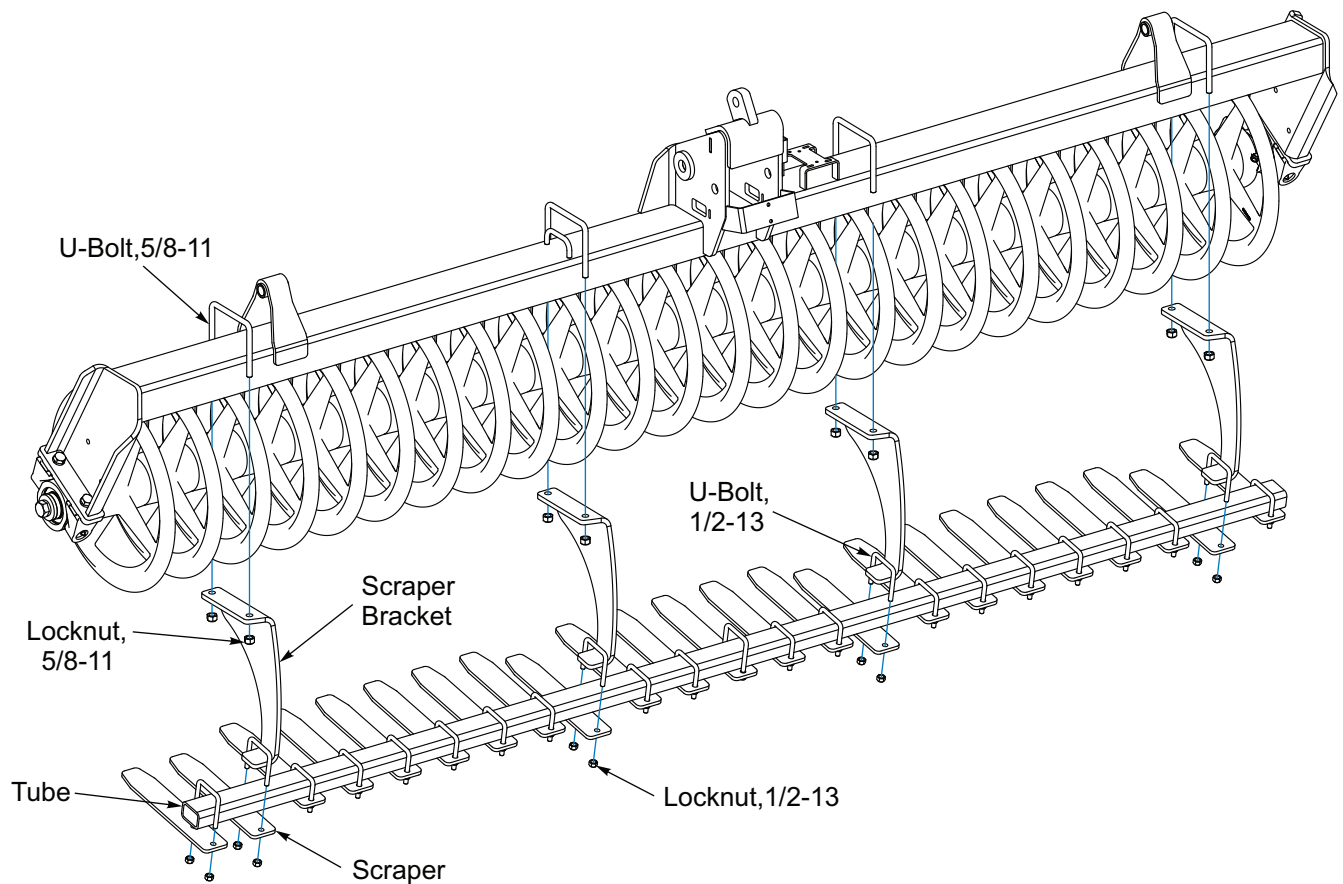


Figure 2-27: V-Wheel Scraper Installation, 10FT - 12FT Models

V-Wheel Scraper Installation, 14FT - 16FT Models

1. With the Rollers on level ground, place 5/8-11 U-Bolts over the frame tube and through the Scraper Brackets. Hand tighten Locknuts.
2. The Scraper Bar is pre-assembled with scrapers attached (spaced approximately 6 inches apart). Remove the twelve Locknuts from the U-Bolts where the Scraper Bar will attach to the Scraper Brackets. **See Figure 2-28.**
3. Roughly center and attach the Scraper Bar to the Scraper Brackets with previously removed twelve 1/2-13 Locknuts. Tighten all hardware.

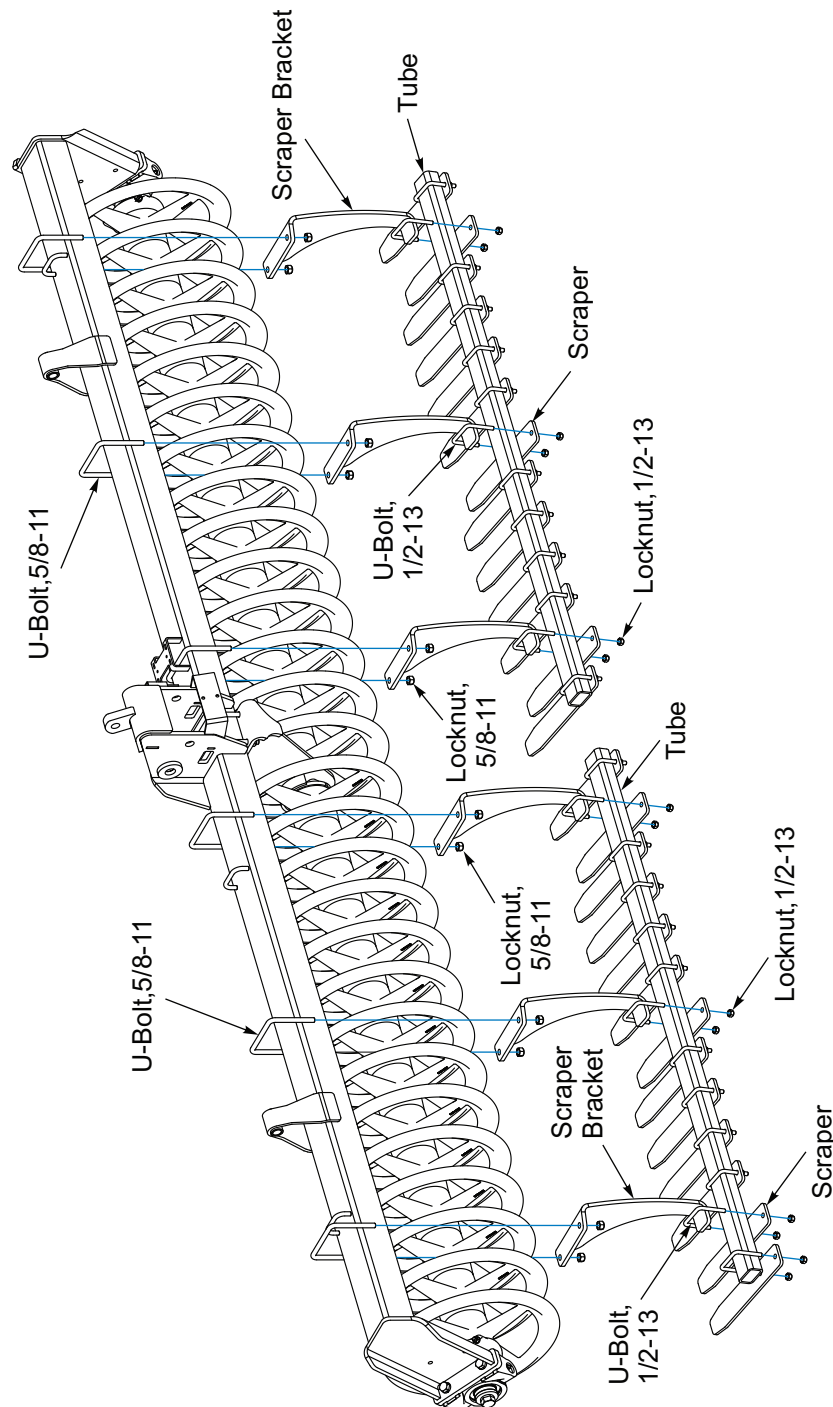


Figure 2-28: V-Wheel Scraper Installation, 14FT - 16FT Models

V-Wheel Scraper Installation, 18FT - 20FT Models

1. With the Rollers on level ground, place eight 5/8-11 U-Bolts over the frame tube and through the Scraper Brackets. Hand tighten Flanged Locknuts.
2. The Scraper Bar is pre-assembled with scrapers attached (spaced approximately 6 inches apart). Remove the sixteen Flanged Locknuts from the U-Bolts where the Scraper Bar will attach to the Scraper Brackets. **See Figure 2-28.**
3. Roughly center and attach the Scraper Bar to the Scraper Brackets with previously removed sixteen 1/2-13 Flanged Locknuts. Tighten all hardware.

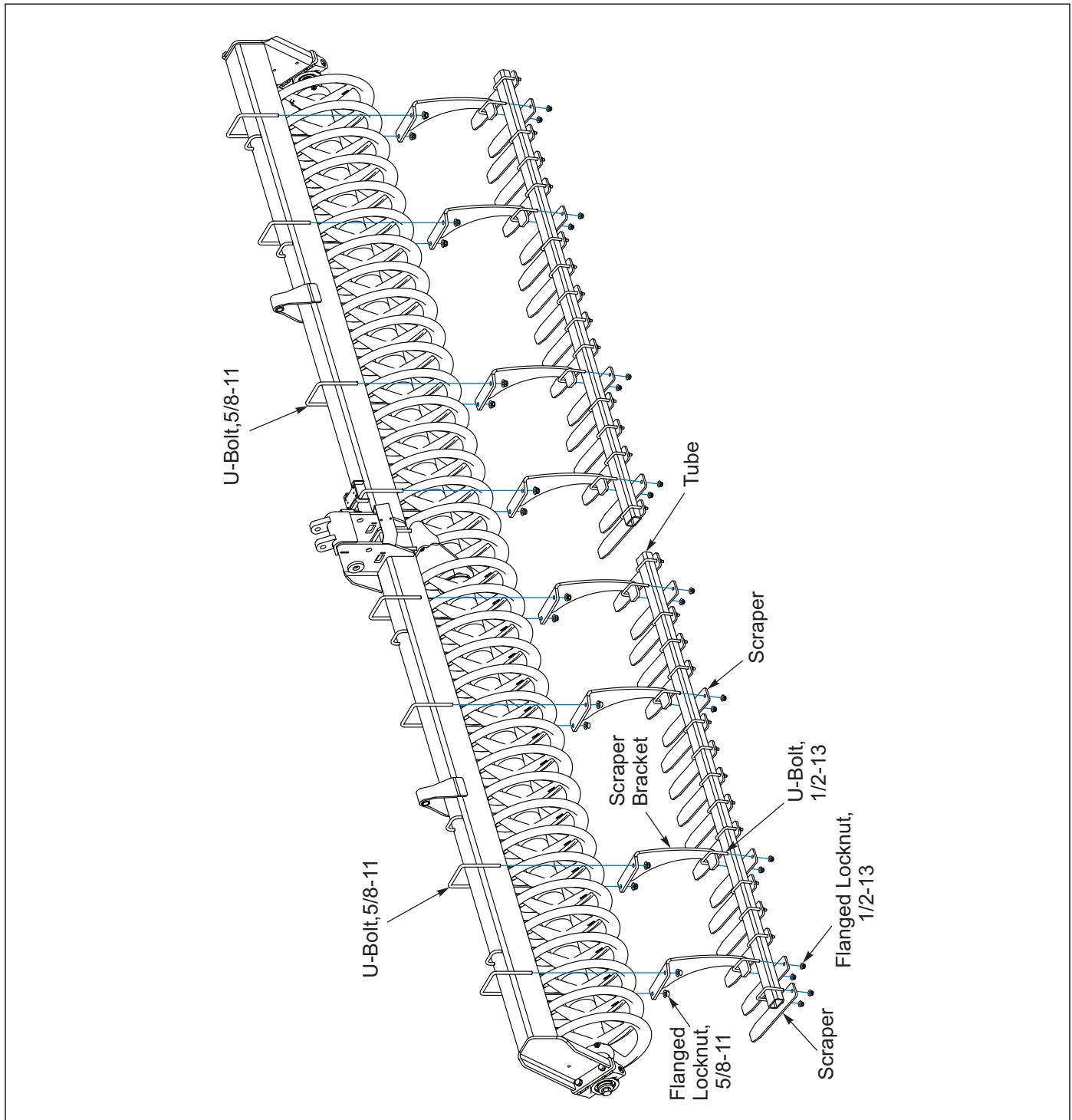


Figure 2-29: V-Wheel Scraper Installation, 18FT - 20FT Models

Sprocket 4K775 Installation, (10FT - 16FT Models Only) - Optional

NOTE

Sprocket 4K775 is an option used only with 164648 Wheel.

1. Position the sprocket between each wheel so it rides on top of wheels. **See Figure 2-30.**
2. Make sure the sprocket does not bind.

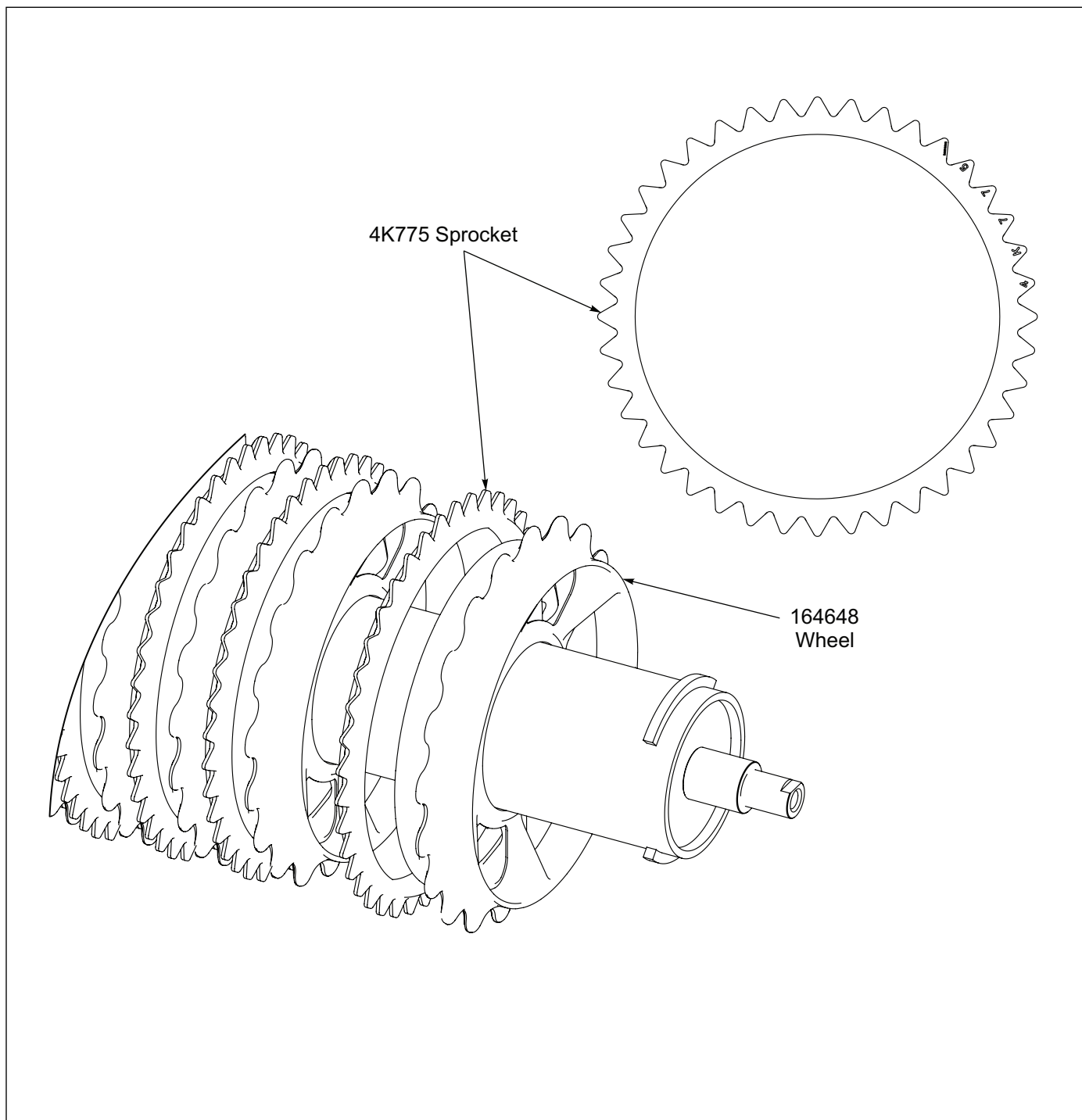


Figure 2-30: Sprocket 4K775

Chapter 3

Operation



DANGER

Never allow anyone to ride on the Pulverizer at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.



WARNING

All hydraulically elevated equipment must have cylinder lockout installed or be lowered to the ground, when servicing or when equipment is idle. Failure to take preventive measures against accidental lowering can result in serious personal injury.



DANGER

Always lock the tractor drawbar in the center position when transporting the unit. Failure to do so can result in serious injury or death and cause damage to the equipment.



DANGER

When transporting the unit, place cylinder lockout pin in the transport lock position after fully extending the cylinder. Insert the lockout pin to secure the cylinder lockout. Failure to lockout the cylinder can cause the unit to settle during transport, which can result in serious injury or death and cause damage to the equipment.



CAUTION

When transporting farm implements on public roads, it is the responsibility of the operator to abide by state and local laws concerning wide loads, speed, safety emblems and safety lighting equipment. Drive at safe speeds, particularly when rounding corners, crossing rough ground or driving on hillsides, to prevent tipping the tractor.

Operation of the Transport Pulverizer with Drawbar

Pulverizer Preparation

1. Prior to operating the Pulverizer, inspect it thoroughly for good operating condition.
2. Replace worn or missing parts.
3. When the machine is new, check the bolt tightness after a few hours of operation. Tighten any loose nuts or bolts. Check the lift wheel lug bolts daily.
4. Check the lift wheel tire inflation. Inflate all tires equally to avoid side draft. Follow the tire manufacturer's recommended pressures listed on the sidewall of the tires.

Attaching to the Tractor

1. Align the tractor drawbar with the machine. Raise or lower the hitch, as needed, using the jack. Attach the unit with proper size hitch pin. **See Table 3-1.**

Table 3-1: Pin Size

DRAWBAR CAT	Min Pin Size	Max PTO HP
2	1-1/4" (30mm)	154 (115 Kw)
3	1-1/2" (38mm)	248 (185 Kw)

2. Attach safety chain to tractor allowing plenty of movement for turning both directions. The safety chain should latch securely to prevent it coming loose. **See Figure 1-2.**
3. Always swing the jack to the up position and pin it before setting the machine in motion.
4. Clean all hydraulic couplings and attach to the tractor.
5. Fully extend the hydraulic lift cylinder. Secure Transport Lock Pin in the lock position. **See Figure 3-2.**
6. Plug in the 7-Pin Connector for the lights.
 - Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
 - Make sure the 7-Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the connector is all the way in, but really isn't.
 - Make sure the tractor receptacle cover latches over the keyway on the 7-Pin Connector to hold the connector in place.
 - If an operator plugs in the 7-Pin Connector, but the lights do not seem to work right, check the above items to make sure there is a good connection with the 7-Pin Connector.

Field Operation

The Transport Pulverizer is designed to be pulled behind field cultivators and discs. It can also be used as an individual unit with the tractor to prepare a seedbed or, after seeding, to break down and pulverize large surface clods. The long drawbar allows for easy, short turns when pulled behind other equipment.

It maybe necessary to extend the Cylinder Rod slightly to remove the Transport Lock Pin from the locked position to the storage position. **See Figures 3-1 and 3-2.**

During field operation, it is not necessary to raise the machine when making turns, but turns should be made wide. Slow down when operating on rocky soil.

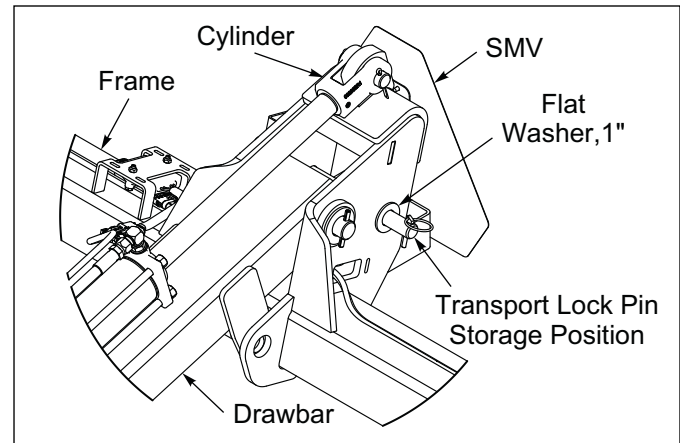


Figure 3-1: Transport Pin Storage Position

Transporting

To prepare the machine for transport, hitch pulverizer to desired device, lower jack and pin it up out of the way. Then raise the machine fully. Remove Transport Lock Pin from storage position and install the Transport Lock Pin in its locked position. **See Figures 3-1 and 3-2.**

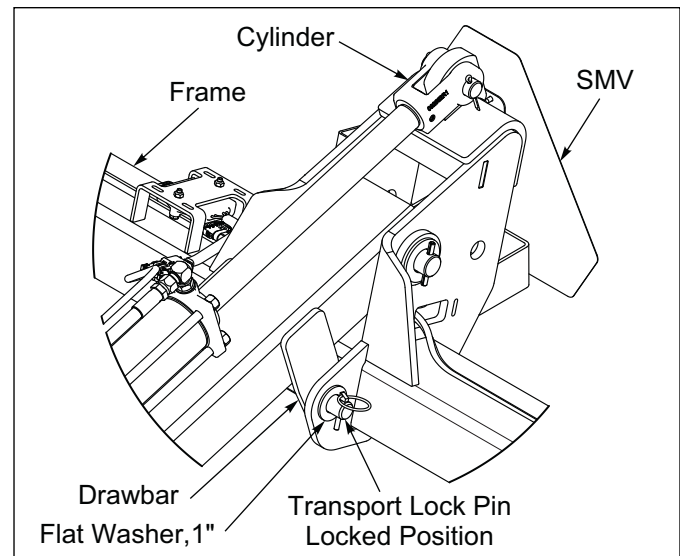


Figure 3-2: Transport Pin Locked Position

Parking the Transport Pulverizer

The best way to park the pulverizer is to place the machine in its desired location. Once there, remove the Transport Lock Pin and place it in the rear-most hole. Lower the machine to the ground. Place blocks in front and behind the pulverizer to prevent it from rolling when unhitched. Lower the jack and adjust height of drawbar to allow for unhitching. Then unhitch the pulverizer.

If you must park the pulverizer with the wheels in transport position, start by placing the jack in the foremost position. Place the blocking in front and behind the pulverizer wheels to prevent rolling. Finally, adjust the jack height to allow for unhitching and disconnect of the pulverizer.

Operation of the Transport Pulverizer with Bridge Hitch

Before operating your Brillion machine check all hardware for tightness. Use the Torque Tightening Chart as a guide. **See Page 4-1.**



WARNING

Escaping hydraulic fluid can cause serious personal injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands. Keep all components (cylinders, hoses, fittings, etc.) in good repair

NOTE

Prevent wheel breakage by reducing speed when operating in rocky conditions.



WARNING

Maximum road speed is 20 MPH under good conditions. Do not tow the machine at a speed which makes vehicle control difficult.



CAUTION

Do not stand between the two pieces of equipment when attaching to the bridge hitch unless they are not moving.

Transporting on Roadways

To prepare the machine for transport, raise the Transport Pulverizer completely. Remove Transport Lock from the left side of the Bridge Hitch. Place the Transport Lock over the cylinder rod. Secure in place by inserting Bent Pin and Hair Pin. **See Figure 3-3.**

Field Operation

Once the machine has been transported to the field, remove the Transport Lock from the cylinder rod. Place the Transport Lock on the storage channel located on the left side of the Bridge Hitch. Secure in place by inserting Bent Pin and Hair Pin. **See Figure 3-3.**

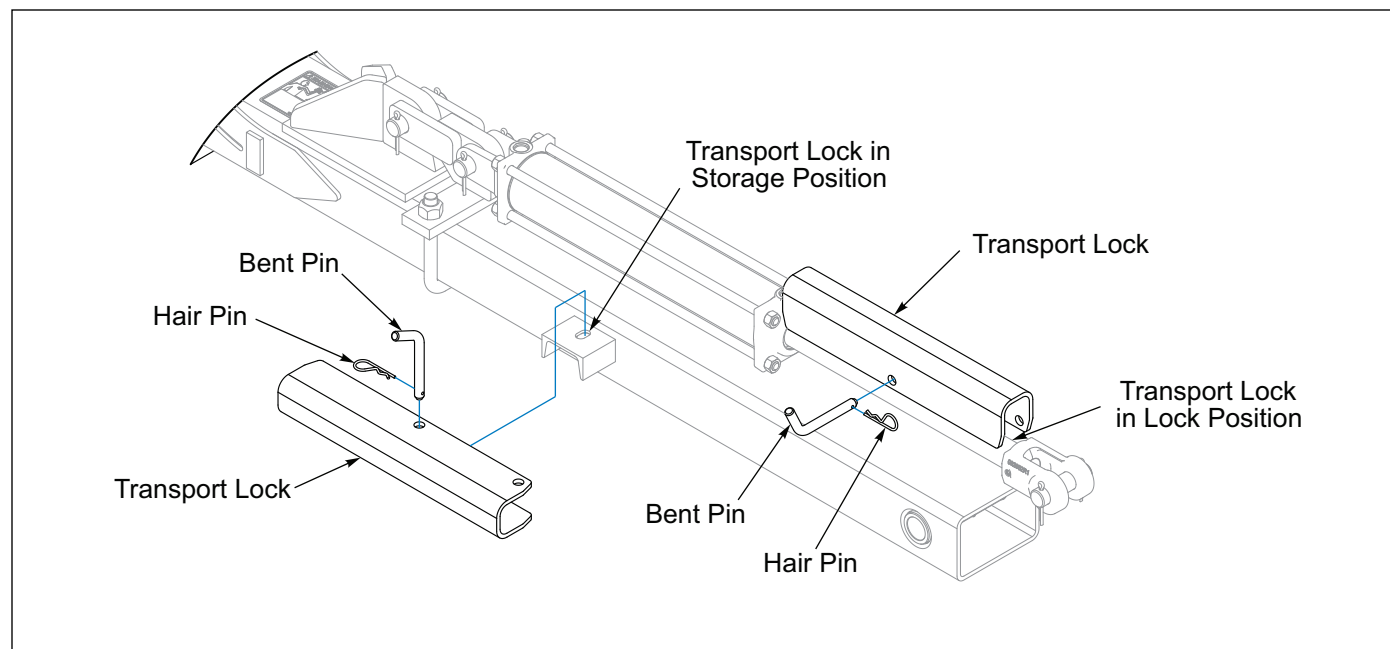


Figure 3-3: Transport Lock

Hitching the BH1020 Bridge Hitch

The BH1020 is designed to closely link a pulverizer with another implement. Proper hitching to the towing implement requires a hitch built to safely tow the Bridge Hitch on the road and in the field. A 2-5/16 Hitch Ball is required.

The unhitched BH1020 and Pulverizer should have the parking stand and roller on the ground. The wheels and hydraulic lift will be used to control the gooseneck coupler.

1. Back the towing implement under the gooseneck coupler, hook-up the hydraulic hoses. It may be necessary to raise the gooseneck coupler by actuating the hydraulic circuit. Use caution and slowly adjust gooseneck couple height to allow for positioning over ball hitch.
2. Lower gooseneck coupler onto ball.
3. Latch gooseneck coupler, attach safety chain.
4. Connect warning lamp harness plug. If machine is to be transported on a roadway install transport locks. **See Figure 3-3.**

Unhitching/Parking Pulverizer with BH1020 Bridge Hitch

NOTE

Be sure ground is level.

To prepare for unhitching, the towing implement needs to be in Transport position with transport locks installed.

1. Lower Parking Stand by removing two hitch pins and repositioning stand to a parking position. Use caution the parking stand weighs approximately 50lbs. **See Figure 3-4.**
2. Uncouple gooseneck hitch and AG harness if equipped.
3. Slowly lower pulverizer until parking stand makes contact with ground. At this point weight on gooseneck coupler will be transferred to parking stand. Continue to lower until there is enough clearance between ball and coupler.
4. Close ball valve to lock cylinder in position.
5. Uncouple Safety Chain and Hydraulic Hoses from towing implement.
6. Pull towing implement ahead, ensuring pulverizer has clearance and harness, hoses and safety chain do not become tangled.

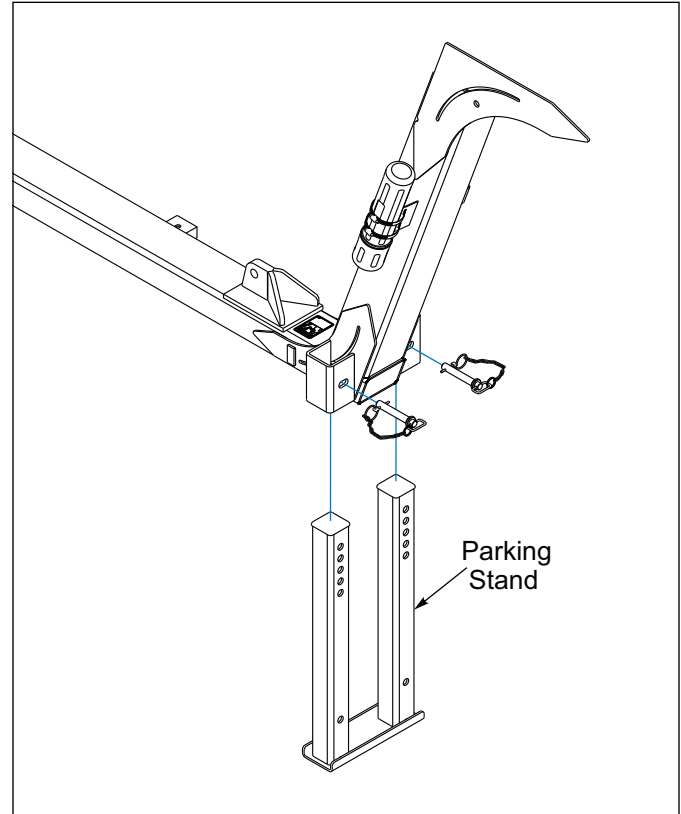


Figure 3-4: Parking Stand

Hydraulic Lift System

The Pulverizer is equipped with a hydraulic system to raise and lower the unit.



WARNING

Escaping hydraulic fluid can cause serious personnel injury. Relieve system pressure before repairing, adjusting, or disconnecting. Wear proper hand and eye protection when searching for leaks. Use cardboard instead of hands (See Figure 3-5.) Keep all components (cylinders, hoses, fittings, etc.) in good repair.

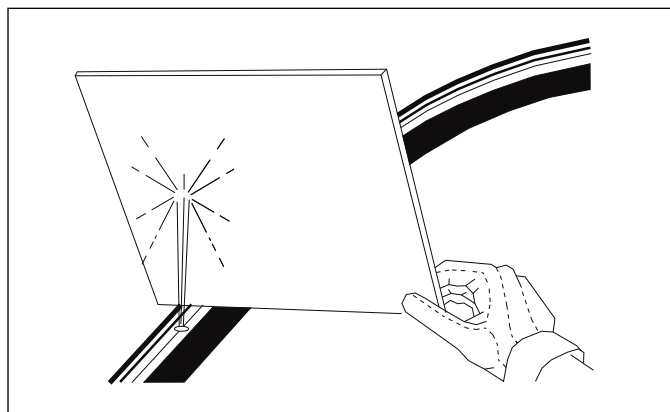


Figure 3-5: Hydraulic Leak Detection

The hydraulic system is not factory filled with oil and should be purged of air before transporting and field operations.

1. Carefully hitch the Pulverizer to the tractor and connect the hydraulic lift hoses.
2. Check to make sure the tractor hydraulic reservoir is full of the manufacturer's recommended oil.
3. Slowly raise the machine until lift cylinder is fully extended. Fully extend the lift cylinder and continue to hold the lever until all cylinder rod movement stops. Raise/Lower machine 5 times to purge air from the system.
4. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

Pulverizer with Lift Hydraulic Fluid Capacity

10FT - 16FT Models = 0.65 gallon

18FT - 20FT Models = 0.83 gallon

Bridge Hitch Hydraulic Fluid Capacity

10FT - 16FT Models = 0.8 gallons

18FT - 20FT Models = 0.98 gallons

Hydraulic Lift Circuit

For Transport

Raise the machine. Ensure that the lift cylinder is fully extended. Install the Transport Lock Pin. See Figure 3-2. Install Transport Lock Channel for Bridge Hitch. See Figure 3-3.

For Field Operation

Raise the machine slightly to loosen the Transport Lock Pin. Remove Transport Lock Pin and place it in the storage position. See Figure 3-1. Remove Transport Lock Channel from Bridge Hitch Cylinder Rod and place in storage position. See Figure 3-3. Lower the machine until the Wheel and Tire Assemblies are off the ground and the lift cylinder is completely retracted.

Scraper Adjustment

To adjust scrapers; lower machine on level surface. Adjust scrapers to obtain 1/4" gap between scraper and wheel.

NOTE

Scrapers are optional on notched and heavy notched rollers.

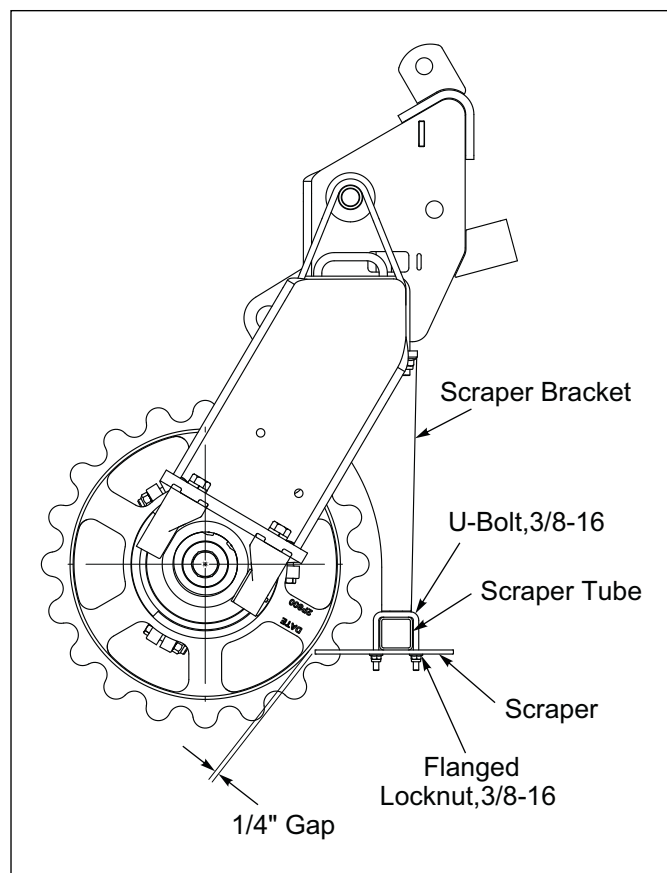


Figure 3-6: Scraper Gap

Transport

1. Check and follow all federal, state, and local requirements before transporting the Pulverizer.
2. The Pulverizer should be transported only by tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight. Maximum transport speed for the Pulverizer is 20 mph for the implement and is designated on the speed identification symbol located on the front of the implement.



CAUTION

Excessive speed may result in loss of control of the tractor and implement, reduced braking ability, or failure of the implement tire or structure. Do not exceed the implement maximum specified ground speed regardless of the capability of the maximum tractor speed.

3. When towing equipment in combination, the maximum equipment ground speed shall be limited to the lowest specified ground speed of any of the towed implements.
Maximum transport speed shall be the lesser of travel speed specified in the operator's manual, speed identification symbol, information sign of towed equipment, or limit of road conditions.
4. Slow down when driving on rough roads. Reduce speed when turning, or on curves and slopes to avoid tipping. Equipment altered other than the place of manufacture may reduce the maximum transport speed. Additional weight, added tanks, harrowing attachments, etc. may reduce implement load carrying capabilities.
5. A Safety Chain is provided with the implement to ensure safe transport.
 - The Safety Chain should have a tensile strength equal to or greater than the gross weight of the implement. The chain is attached to the lower hitch clevis hole with two flat washers between the clamp plates to assure a tight connection. Always use a 1" diameter Grade 8 bolt for this connection.
 - Attach the Safety Chain to the tractor drawbar. **See Figure 1-2.** Provide only enough slack in the chain for turning. Do not use an intermediate chain support as the attaching point for the chain on the tractor. Do not pull the implement by the Safety Chain.
 - Regularly inspect the Safety Chain for worn, stretched, or broken links and ends. Replace the Safety Chain if it is damaged or deformed in any way.

6. Before Transporting:

- Know the transport heights and widths of the unit before transporting. Use caution when transporting near bridges and power lines.



DANGER

Stay away from power lines when transporting, extending implement. Electrocution can occur without direct contact

- Raise the machine to full transport height.
- Install transport lock on lift system. Do not depend solely on implement hydraulics for transport.



WARNING

Failure to use transport lock pins during transport may result in permanent equipment damage, serious injury or death

- Check that tires are of proper size, load rating, and inflated to manufacture specifications before transporting. Check wheel lug bolts to ensure tightness. **See "Tires" on page 4-3.**
- Transport during daylight hours when ever possible. Always use flashing warning lights, except where such use is prohibited by law. Make sure lights, reflectors and SMV emblem are clearly visible and operating. Remove any obstructions such as dirt, mud, stalks or residue that restricts view before transporting. **See Figure 3-7.**

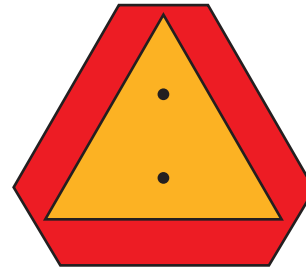


Figure 3-7: SMV Sign

Maintenance

General Torque Specifications

(rev. 4/97)

This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and capscrews assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to (as received condition) torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [] if using prevailing torque nuts.

TORQUE SPECIFIED IN FOOT POUNDS

UNF SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8	UNF SIZE	SAE Grade 2	SAE Grade 5	SAE Grade 8
1/4-20	4 [5]	6 [7]	9 [11]	1/4-28	5 [6]	7 [9]	10 [12]
5/16-18	8 [10]	13 [13]	18 [22]	5/16-24	9 [11]	14 [17]	20 [25]
3/8-16	15 [19]	23 [29]	35 [42]	3/8-24	17 [21]	25 [31]	35 [44]
7/16-14	24 [30]	35 [43]	55 [62]	7/16-20	27 [34]	40 [50]	60 [75]
1/2-13	35 [43]	55 [62]	80 [100]	1/2-20	40 [50]	65 [81]	90 [112]
9/16-12	55 [62]	80 [100]	110 [137]	9/16-18	60 [75]	90 [112]	130 [162]
5/8-11	75 [94]	110 [137]	170 [212]	5/8-18	85 [106]	130 [162]	180 [225]
3/4-10	130 [162]	200 [250]	280 [350]	3/4-16	150 [188]	220 [275]	320 [400]
7/8-9	125 [156]	320 [400]	460 [575]	7/8-14	140 [175]	360 [450]	500 [625]
1-8	190 [237]	408 [506]	680 [850]	1-14	210 [263]	540 [675]	760 [950]
1-1/8-7	270 [337]	600 [750]	960 [1200]	1-1/8-12	300 [375]	660 [825]	1080 [1350]
1-1/4-7	380 [475]	840 [1050]	1426 [1782]	1-1/4-12	420 [525]	920 [1150]	1500 [1875]
1-3/8-6	490 [612]	1010 [1375]	1780 [2225]	1-3/8-12	560 [700]	1260 [1575]	2010 [2512]
1-1/2-6	650 [812]	1460 [1825]	2360 [2950]	1-1/2-12	730 [912]	1640 [2050]	2660 [3325]

METRIC:

Coarse thread metric class 10.9 fasteners and class 10.0 nuts and through hardened flat washers, phosphate coated, Rockwell "C" 38-45. Use value in [] if using prevailing torque nuts.

Nominal Thread Diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque)	Nominal Thread Diameter (mm)	Newton Meters (Standard Torque)	Foot Pounds (Standard Torque)
6	10 [14]	7 [10]	20	385 [450]	290 [335]
7	16 [22]	12 [16]	24	670 [775]	500 [625]
8	23 [32]	17 [24]	27	980 [1105]	730 [825]
10	46 [60]	34 [47]	30	1330 [1470]	990 [1090]
12	80 [125]	60 [75]	33	1790 [1950]	1340 [1450]
14	125 [155]	90 [115]	36	2325 [2515]	1730 [1870]
16	200 [240]	150 [180]	39	3010 [3210]	2240 [2380]
18	275 [330]	205 [245]			

Hydraulic Fitting Torque Specifications

37 degree JIC, ORS, &ORB (REV. 10/97)

This chart provides tightening torques for general purpose applications when special torques are not specified on process or drawing. Assembly torques apply to plated nuts and capscrews assembled without supplemental lubrication (as received condition). They do not apply if special graphite moly-disulfide or other extreme pressure lubricants are used. When fasteners are dry (solvent cleaned) add 33% to (as received condition) torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [] if using prevailing torque nuts.

TORQUE SPECIFIED IN FOOT POUNDS

PARKER® BRAND FITTINGS			
Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-4	11-13	15-17	13-15
-5	14-16	-----	21-23
-6	20-22	34-36	25-29
-8	43-47	58-62	40-44
-10	55-65	100-110	58-62
-12	80-90	134-146	75-85
-16	115-125	202-218	109-121
-20	160-180	248-272	213-237
-24	185-215	303-327	238-262
-32	250-290	-----	310-340

GATES® BRAND FITTINGS			
Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-4	10-11	10-12	14-16
-5	13-15	-----	-----
-6	17-19	18-20	24-26
-8	34-38	32-40	37-44
-10	50-56	46-56	50-60
-12	70-78	65-80	75-83
-14	-----	65-80	-----
-16	94-104	92-105	111-125
-20	124-138	125-140	133-152
-24	156-173	150-180	156-184
-32	219-243	-----	-----

AEROQUIP® BRAND FITTINGS			
Dash Size	37 Deg. JIC	O-ring (ORS)	O-ring boss
-4	11-12	10-12	14-16
-5	15-16	-----	16-20
-6	18-20	18-20	24-26
-8	38-42	32-35	50-60
-10	57-62	46-50	75-80
-12	79-87	65-70	125-135
-14	-----	-----	160-180
-16	108-113	92-100	200-220
-20	127-133	125-140	210-280
-24	158-167	150-165	270-360

Fasteners

Before operating your Brillion machine, check all hardware for tightness. **See Page 4-1.**

After a few hours of use, check entire machine and tighten any loose nuts or bolts. Daily or periodic checks should be made thereafter.

When replacing bolts, be sure to use fasteners of equal grade.

Tires

Recommended Tire Size: 9.5L x 15, 8PLY Rib

Implement Tires

Tire Inflation Pressure: 44PSI

NOTE

Use of smaller or lighter tires will cause premature tire failure and may cause an accident.

*After several hours of use re-torque Wheel Bolts 90-100 Ft-Lbs. For tightening sequence, **See Figure 4-1.***

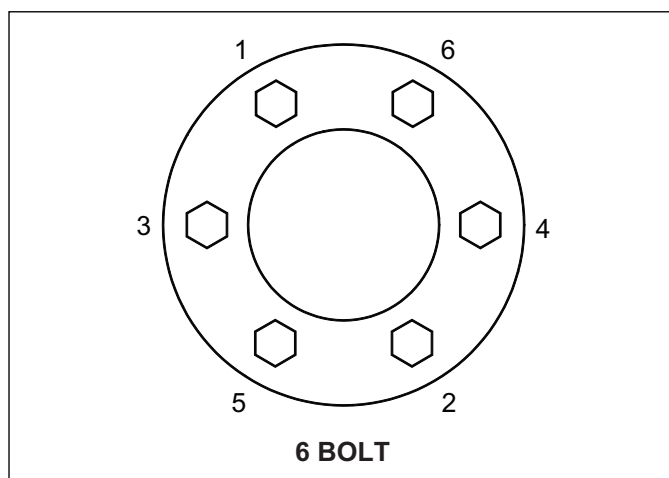


Figure 4-1: Wheel Bolt Tightening Sequence

Wheel Hub Bearing Maintenance

Wheel Bearing maintenance should be performed at the beginning of every season of use. Check the Wheel Bearings periodically for excessive end play. If needed, adjust or replace them using the following procedure:

1. Place the frame on blocks or stands sufficient to lift the tire clear of the ground.
2. Remove the tire.
3. Remove the Hub Cap, Cotter Pin, Slotted Nut and Washer.
4. Remove the Hub. Clean and inspect the Bearings and Hub Cavity. Replace any worn or defective parts.
5. Repack the Bearings using a high-quality wheel bearing grease.
6. Slide the triple-lip seal onto the spindle. Do not install the seal into the hub.

NOTE

The Triple-Lip Seals should point away from the hub to keep contaminants out and allow grease to pass.

7. Slide the Inner Bearing Cone and Hub onto the Spindle.
8. Install the Outer Bearing Cone, Washer and Slotted Nut.
9. Tighten the Slotted Nut while rotating the Hub until there is a slight resistance to wheel rotation. Then, back the Slotted Nut off one notch, until the wheel rotates freely without end play.
10. Slide the triple lip seal to the hub and install the seal in the hub.
11. Install a new Cotter Pin and re-install the Hub Cap.

Lubrication Maintenance

- Grease Trunnion Bearings every 20 hours. **See Figure 4-2.**
- Grease Wheels Hubs every 50 hrs. **See Figure 4-2.**
- Grease Drawbar to Frame zerk fitting every 12 hrs. **See Figure 4-2.**
- When machine is not used for some time, exposed portions of the cylinder rod should be cleaned and covered with a thick coat of grease. This will prevent corrosion, which will damage seals.

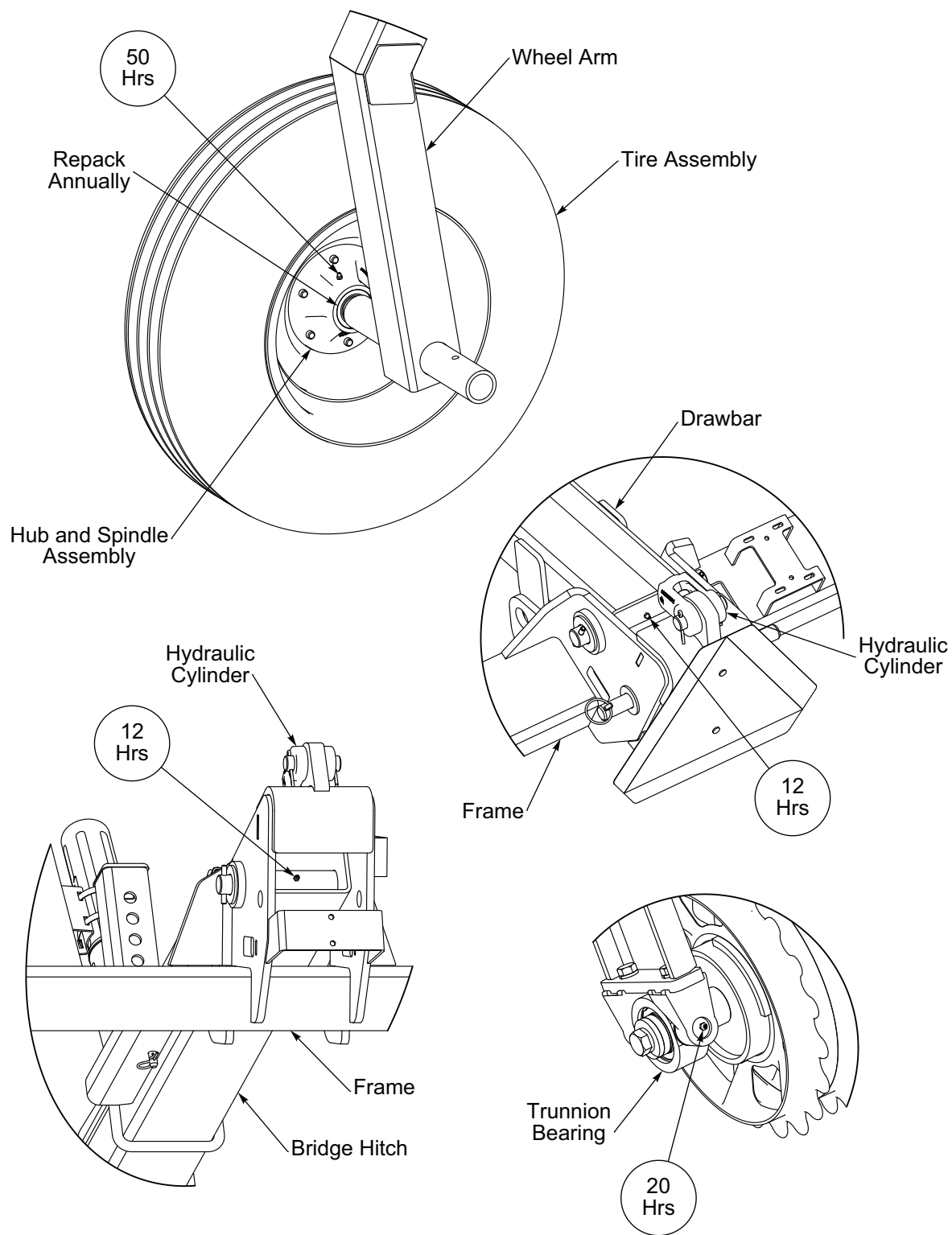


Figure 4-2: Lubrication Intervals

Hydraulic Maintenance

IMPORTANT

Lower the unit to the ground, and relieve hydraulic pressure before attempting to service any hydraulic component.



WARNING

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than your hands, to search for suspected leaks. Wear protective gloves & safety glasses or goggles when working with hydraulic systems.

1. Check the hydraulic fluid level per tractor owner's manual and after any leakage. Check fluid level when the machine is in the raised position.
2. If a cylinder or valve leaks, disassemble the parts to determine the cause of the leak. Any time a cylinder is opened up, or whenever any seal replacement is necessary, it is advisable to clean all parts and replace all seals. Seal kits are available from your Brillion dealer.
3. Check all hydraulic hoses weekly. Look for binding or cracking. Replace all worn or defective parts immediately.
4. A Transport Lock Pin is used to hold the implement in a raised position. **See Figures 3-1 and 3-2.** Do not attempt to perform any service work under the implement without first installing the Transport Lock Pin. Before servicing any hydraulic component, lower the implement to the ground and relieve all system pressure. If a hydraulic component is disconnected, repaired, or replaced, it will be necessary to purge the system of air before operation. **See "Purge the Lift Cylinder" on page 2-8.**

Roller Bearing Maintenance

If bearings are removed from frame refer to the steps below to ensure minimum axle load is applied to prolong bearing life.

1. With the Bearing Grease Fitting facing towards the rear or upward of the machine, slide the Trunnion Bearing Mounts onto the Trunnion Bearings and lift the Roller Assembly up to the Center Frame Bearing Hangers. Hand tighten 3/4-10 hardware to hold Trunnion Bearing Mounts in place.
2. Look at each Trunnion Bearing Mount to make sure that it is sitting perpendicular to the Center Frame Bearing Hanger. If not adjust the Shim Washers accordingly, for each side there are two 11ga and one 14ga Shim Washers. Shim Washers can be all three on the inside between the Stub Shaft shoulder and the Trunnion Bearing, all three can be on the outside between the Trunnion Bearing and Flat Top Washer, or a combination on either side, but all three must be used to minimize the gap. If gap cannot be properly minimized with bearing snap rings to outside, turn bearing around to have snap ring to inside. The bearing inner race is offset with respect to the trunnion bosses by 1/32". By installing bearings with snap rings in versus out, 1/16" difference can be made up at assembly if needed. **See Figure 4-3.**
3. Tighten 3/4-10 and 1-8 hardware to specification per torque chart. **See Page 4-1.**

NOTE

Wheel Stop is on the Clamp side of the Roller Assembly

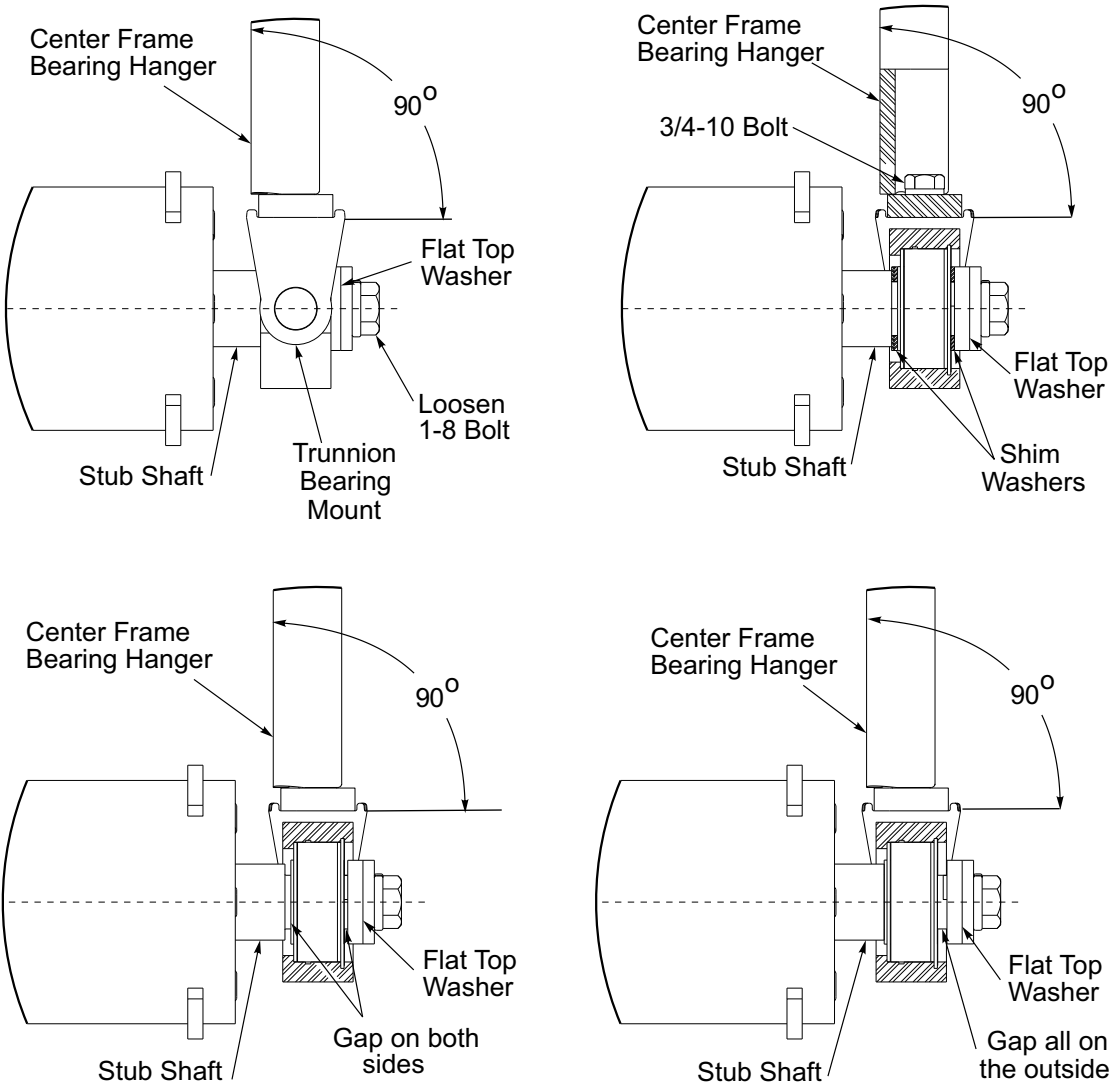


Figure 4-3: Trunnion Spacers

Roller Axle Assemblies

After an initial run of 5-10 hours, check the Roller Axle Assemblies to insure that the wheels are tight to one another. If not slide the wheels tight together and adjust the Axle Clamps.

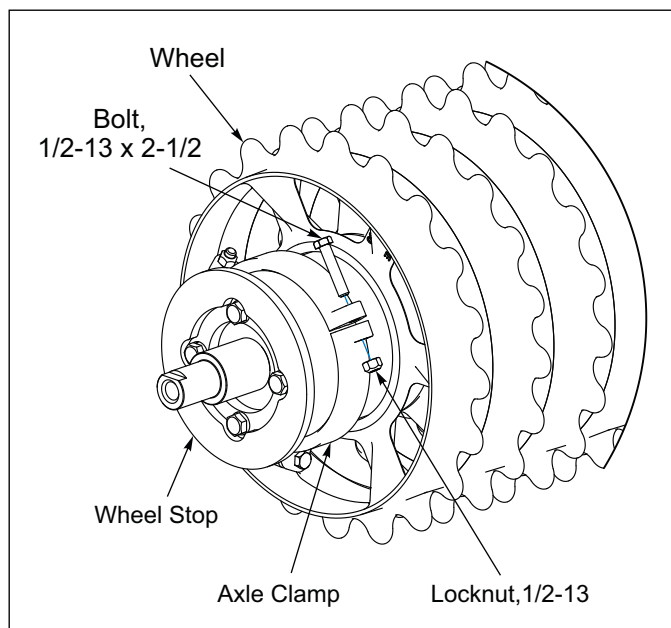


Figure 4-4: Roller Axle Assemblies

Clamp Tightening

Tighten the Clamp bolts evenly to achieve equal spacing between clamp section. Torque to 75 Ft-lbs. Thereafter check assemblies every 50-100 hours.

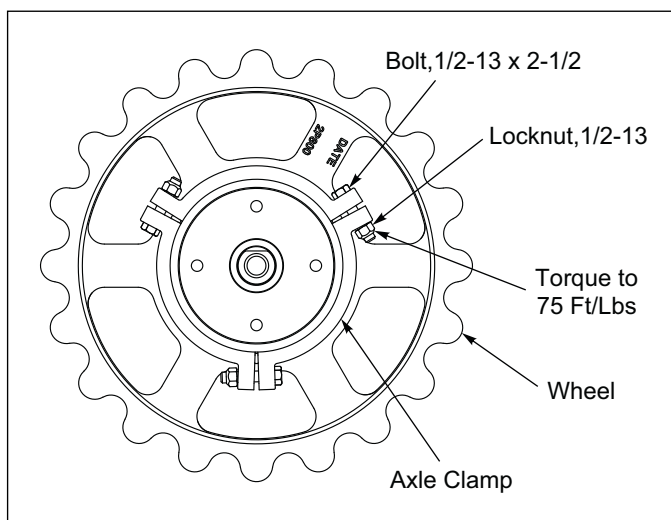


Figure 4-5: Clamp Tightening

Clamp End Spacers - Optional

The Clamp End Spacer Kits are used to eliminate space between the Axle Clamp and the Wheel Stop.

IMPORTANT

Unfold and lower machine prior to performing any steps.

Kit Part Number 201442 - 3/4" Axle Spacer

Kit Part Number 201443 - 1/2" Axle Spacer

Installation is the same for either kit.

1. Place the two Axle Spacers between the Axle Clamp and the Wheel Stop.
2. Insert two 3/8-16 x 1-3/4 Bolts through the Axle Spacers and secure with 3/8-16 Locknuts.
3. Refer to the Torque Table for proper bolt torque values. Note the different torque requirement for Bolts with Locknuts. **See Page 4-1.**

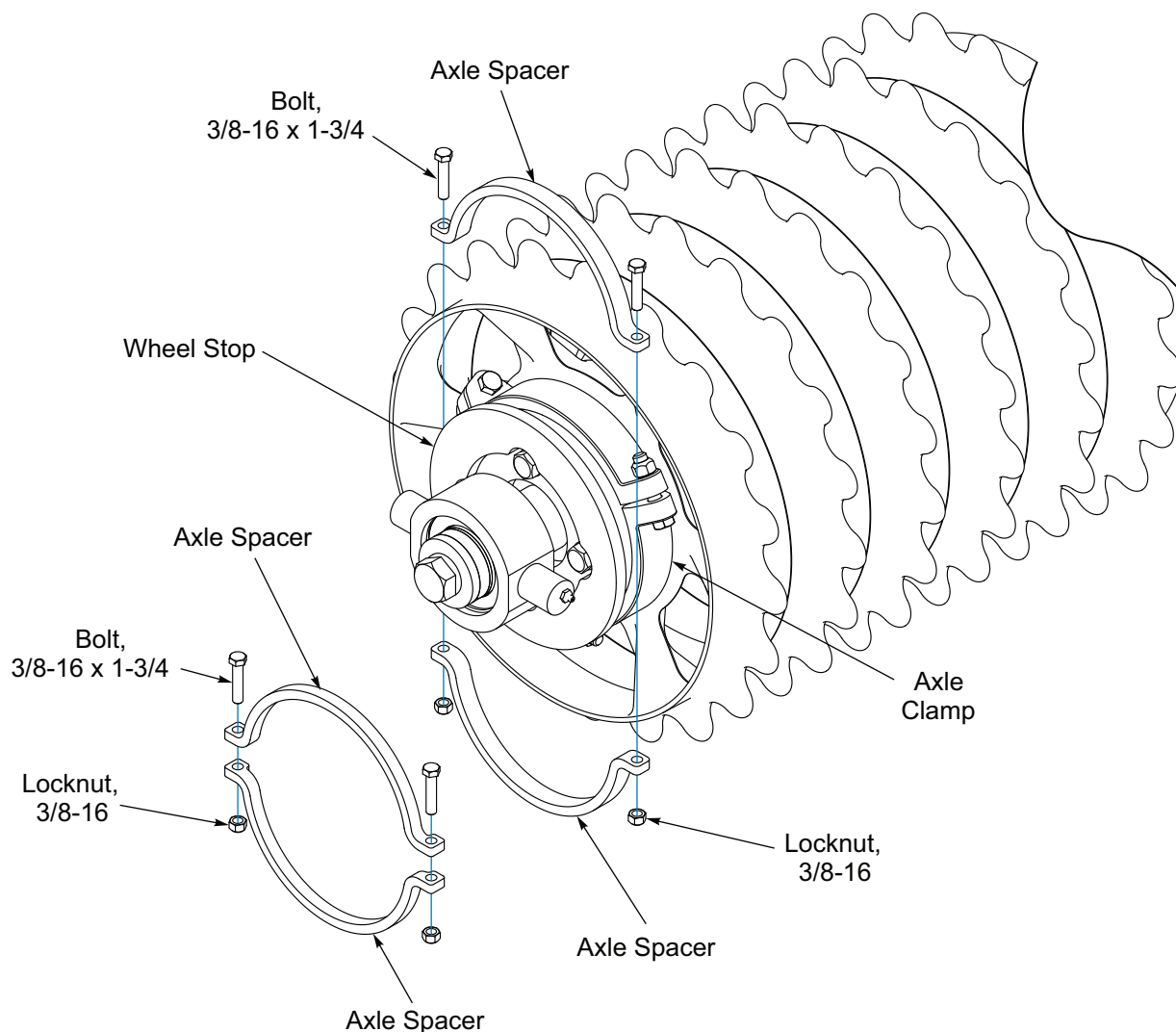


Figure 4-6: Clamp End Spacer Kit (1 of 2) - Optional

Kit Part Number 204831 - 1" Axle Spacer
Kit Part Number 204832 - 1-1/4" Axle Spacer
Kit Part Number 204833 - 1-1/2" Axle Spacer

1. Place the two Axle Spacers between the Axle Clamp and the Wheel Stop.

2. Insert two 3/8-16 x 1 Bolts through the Axle Spacers and secure with 3/8-16 Locknuts.

Refer to the Torque Table for proper bolt torque values. Note the different torque requirement for Bolts with Locknuts. **See Page 4-1.**

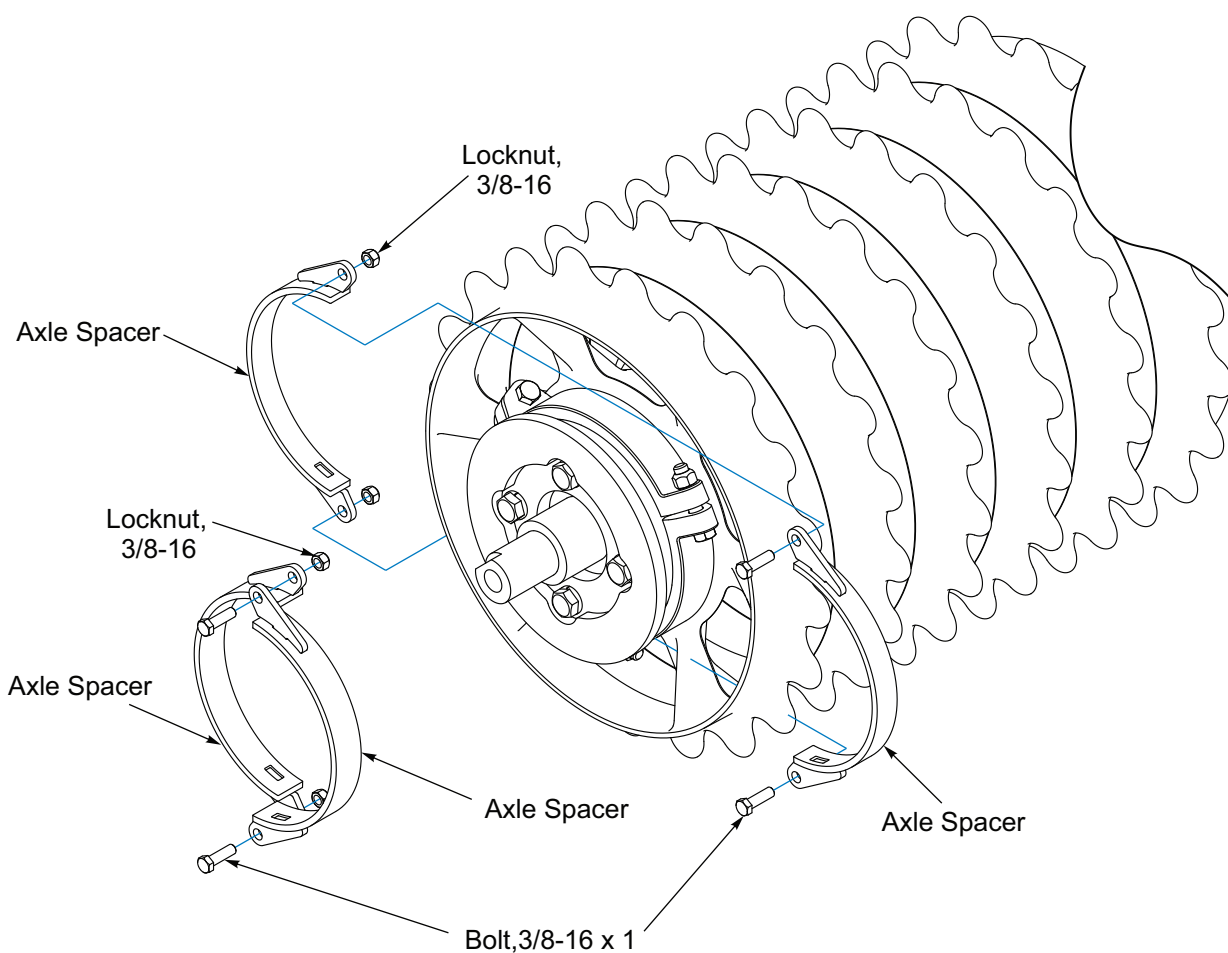


Figure 4-7: Clamp End Spacer Kit (2 of 2) - Optional

LED Warning Lamps

When plugging in the LED 7-Pin Connector:

1. Make sure the tractor has a good clean receptacle, free of dirt and corrosion.
2. Make sure the 7-Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the connector is all the way in, but really isn't.
3. Make sure the tractor receptacle cover latches over the keyway on the 7-Pin Connector to hold the connector in place.

If an operator plugs in the 7-Pin Connector, but the lights do not seem to work right, check the above items to make sure there is a good connection with the 7-Pin Connector.

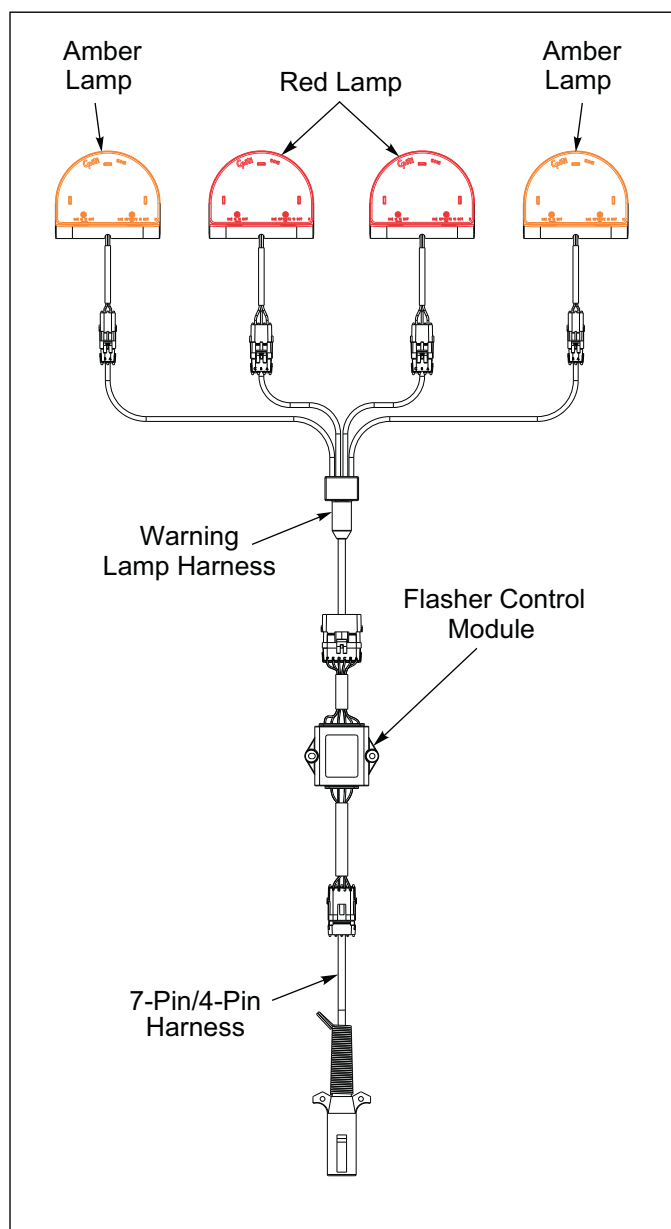



























Figure 4-8: LED Warning Lamps

Storage

1. The service life of the Pulverizer will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
 - Completely clean the unit.
 - Inspect the machine for worn or defective parts. Replace as needed.
 - Repaint all areas where the original paint is worn off.
 - Apply a light coating of oil or grease to exposed cylinder rods to prevent them from rusting.
 - Lubricate each point of the machine as stated in **"Lubrication Intervals" on page 4-4.**
2. Store the unit in a shed or under a tarpaulin to protect it from the weather. The ground tools and tires should rest on boards, or some other object, to keep them out of the soil.
3. Raise the machine and install Transport Locks. Lower Drawbar Jack.
 - a. Relieve Hydraulic Pressure in hoses after locks are installed.
 - b. Block wheels before unhitching from tractor.

General Reference and Specifications

Pulverizer Wheel Usage Guide

Functions	Notched Wheel	Optimizer® Wheel	CrowFoot Wheel	V-Style Wheel
Firms and Levels Seedbed for Enhanced Planter/Drill Performance				
Pins Residue to Soil Surface				
Pushes Stones Into Soil				
Eliminates Soil Crusting				
Breaks Root Balls & Clods				
Texturizes the Soil Surface for Improved Water Intake				
Post-Plant Firming of Seedbed for Improved Seed to Soil Contact				
Firms and Levels Sandy/ Coarse Textured Soils				
Scraper Compatible				

Additional Information

230 lbs./ft. Average Rolling Pressure, Dependent on Model & Size.

Pulverizer Wheels Are Not Designed to Operate in Excessively Wet Conditions.

Scrapers Are Recommended When Pulverizers are Used as Companion Implements During Tillage and Seedbed Preparation.

GENERAL REFERENCE AND SPECIFICATIONS

	PT10	PT12	PT14
Approximate Weight			
(PD) 20" Notched Ductile Iron Wheels	2265 lbs (1027 kg)	2535 lbs (1150 kg)	2815 lbs (1277 kg)
(PDS) 20" Notched Ductile Iron Wheels with Scrapers	2390 lbs (1084 kg)	2680 lbs (1216 kg)	2971 lbs (1348 kg)
(PH) 20" Heavy Notched Ductile Iron Wheels	2602 lbs (1180 kg)	2944 lbs (1335 kg)	3287 lbs (1491 kg)
(PHS) 20" Heavy Notched Ductile Iron Wheels with Scrapers	2725 lbs (1236 kg)	3082 lbs (1398 kg)	3440 lbs (1560 kg)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	3049 lbs (1383 kg)	3483 lbs (1580 kg)	3918 lbs (1777 kg)
(PC) 20" Crowfoot Ductile Iron Wheels	2151 lbs (976 kg)	2403 lbs (1090 kg)	2657 lbs (1205 kg)
(PO) 20" Optimizer Ductile Iron Wheels	2501 lbs (1134 kg)	2826 lbs (1282 kg)	3152 lbs (1430 kg)
(PV) 22" V-Style Ductile Iron Wheels	2415 lbs (1095 kg)	2723 lbs (1235 kg)	3073 lbs (1394 kg)
(PVS) 22" V-Style Ductile Iron Wheels with Scrapers	2649 lbs (1202 kg)	2993 lbs (1358 kg)	3400 lbs (1542 kg)
Working Width	10 ft. 0 in. (3.0 m)	12 ft. 0 in. (3.6 m)	14 ft. 0 in. (4.2 m)
Transport Width	11 ft. 0 in. (3.3 m)	13 ft. 2 in. (3.9 m)	15 ft. 2 in. (4.5 m)
Transport Height	6 ft. 0 in. (1.8 m)	6 ft. 0 in. (1.8 m)	6 ft. 0 in. (1.8 m)
Overall Length, Transport	12 ft. 6 in. (3.8 m)	12 ft. 6 in. (3.8 m)	12 ft. 6 in. (3.8 m)
Overall Length, Operation	17 ft. 4 in. (5.3m)	17 ft. 4 in. (5.3m)	17 ft. 4 in. (5.3m)
Number of Pulverizer Wheels			
(PD) 20" Notched Ductile Iron Wheels	30	36	42
(PH) 20" Heavy Notched Ductile Iron Wheels	30	36	42
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	30/29	36/35	42/41
(PC) 20" Crowfoot Ductile Iron Wheels	20	24	28
(PO) 20" Optimizer Ductile Iron Wheels	20	24	28
(PV) 22" V-Style Ductile Iron Wheels	20	24	28
Axle Size			
(PD) 20" Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)	8 in. (203 mm)
(PH) 20" Heavy Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)	8 in. (203 mm)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	8 in. (203 mm)	8 in. (203 mm)	8 in. (203 mm)
(PC) 20" Crowfoot Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)	8 in. (203 mm)
(PO) 20" Optimizer Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)	8 in. (203 mm)
(PV) 22" V-Style Ductile Iron Wheels	4.5 in. (114 mm)	4.5 in. (114 mm)	4.5 in. (114 mm)
Roller Center Bearing			
(PD) 20" Notched Ductile Iron Wheels	No	No	No
(PH) 20" Heavy Notched Ductile Iron Wheels	No	No	No
(PC) 20" Crowfoot Ductile Iron Wheels	No	No	No
(PO) 20" Optimizer Ductile Iron Wheels	No	No	No
(PV) 22" V-Style Ductile Iron Wheels	No	No	Yes
Drawbar	Pull-Type with Hydraulic Transport	Pull-Type with Hydraulic Transport	Pull-Type with Hydraulic Transport
Tire Size	9.5L x 15-8 Ply Implement Rib	9.5L x 15-8 Ply Implement Rib	9.5L x 15-8 Ply Implement Rib
Scraper Kits (PD,PH,PV)	Optional	Optional	Optional
Rear Hitch Kit	Optional	Optional	Optional
Dual Wheel Kit	Optional	Optional	Optional
LED Safety Warning Lights & SMV Emblem	Standard	Standard	Standard
Safety Chain Kit	Standard	Standard	Standard
Powder Coat Paint, Red	Standard	Standard	Standard
Horsepower Requirements	50 HP (40.3 kW)	50 HP (40.3 kW)	60 HP (44.8 kW)
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

GENERAL REFERENCE AND SPECIFICATIONS

	PT15	PT16
Approximate Weight		
(PD) 20" Notched Ductile Iron Wheels	2952 lbs (1339 kg)	3089 lbs (1401 kg)
(PDS) 20" Notched Ductile Iron Wheels with Scrapers	3116 lbs (1413 kg)	3261 lbs (1479 kg)
(PH) 20" Heavy Notched Ductile Iron Wheels	3457 lbs (1568 kg)	3628 lbs (1646 kg)
(PHS) 20" Heavy Notched Ductile Iron Wheels with Scrapers	3618 lbs (1641 kg)	3797 lbs (1722 kg)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	4135 lbs (1876 kg)	4352 lbs (1974 kg)
(PC) 20" Crowfoot Ductile Iron Wheels	2783 lbs (1262 kg)	2909 lbs (1320 kg)
(PO) 20" Optimizer Ductile Iron Wheels	3310 lbs (1501 kg)	3472 lbs (1575 kg)
(PV) 22" V-Style Ductile Iron Wheels	3226 lbs (1463 kg)	3380 lbs (1533 kg)
(PVS) 22" V-Style Ductile Iron Wheels with Scrapers	3572 lbs (1620 kg)	3743 lbs (1698 kg)
Working Width	15 ft. 0 in. (4.6 m)	16 ft. 0 in. (4.8 m)
Transport Width	17 ft. 2 in. (5.2 m)	17 ft. 2 in. (5.2 m)
Transport Height	6 ft. 0 in. (1.8 m)	6 ft. 0 in. (1.8 m)
Overall Length, Transport	12 ft. 6 in. (3.8 m)	12 ft. 6 in. (3.8 m)
Overall Length, Operation	17 ft. 4 in. (5.3m)	17 ft. 4 in. (5.3m)
Number of Pulverizer Wheels		
(PD) 20" Notched Ductile Iron Wheels	45	48
(PH) 20" Heavy Notched Ductile Iron Wheels	45	48
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	45/44	48/47
(PC) 20" Crowfoot Ductile Iron Wheels	30	32
(PO) 20" Optimizer Ductile Iron Wheels	30	32
(PV) 22" V-Style Ductile Iron Wheels	30	32
Axle Size		
(PD) 20" Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PH) 20" Heavy Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	8 in. (203 mm)	8 in. (203 mm)
(PC) 20" Crowfoot Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PO) 20" Optimizer Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PV) 22" V-Style Ductile Iron Wheels	4.5 in. (114 mm)	4.5 in. (114 mm)
Roller Center Bearing		
(PD) 20" Notched Ductile Iron Wheels	No	No
(PH) 20" Heavy Notched Ductile Iron Wheels	No	No
(PC) 20" Crowfoot Ductile Iron Wheels	No	No
(PO) 20" Optimizer Ductile Iron Wheels	No	No
(PV) 22" V-Style Ductile Iron Wheels	Yes	Yes
Drawbar	Pull-Type with Hydraulic Transport	Pull-Type with Hydraulic Transport
Tire Size	9.5L x 15-8 Ply Implement Rib	9.5L x 15-8 Ply Implement Rib
Scraper Kits (PD,PH,PV)	Optional	Optional
Rear Hitch Kit	Optional	Optional
Dual Wheel Kit	Optional	Optional
LED Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	Standard
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	60 HP (44.8 kW)	60 HP (44.8 kW)
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

GENERAL REFERENCE AND SPECIFICATIONS

	PT18	PT20
Approximate Weight		
(PD) 20" Notched Ductile Iron Wheels	3700 lbs (1678 kg)	3979 lbs (1805 kg)
(PDS) 20" Notched Ductile Iron Wheels with Scrapers	3912 lbs (1774 kg)	4206 lbs (1908 kg)
(PH) 20" Heavy Notched Ductile Iron Wheels	4307 lbs (1954 kg)	4653 lbs (2111 kg)
(PHS) 20" Heavy Notched Ductile Iron Wheels with Scrapers	4514 lbs (2048 kg)	4875 lbs (2211 kg)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	N/A	N/A
(PC) 20" Crowfoot Ductile Iron Wheels	3456 lbs (1568 kg)	3709 lbs (1682 kg)
(PO) 20" Optimizer Ductile Iron Wheels	4127 lbs (1872 kg)	4457 lbs (2022 kg)
(PV) 22" V-Style Ductile Iron Wheels	4099 lbs (1859 kg)	4430 lbs (2009 kg)
(PVS) 22" V-Style Ductile Iron Wheels with Scrapers	4534 lbs (2057 kg)	4901 lbs (2223 kg)
Working Width	18 ft. 2 in. (5.5 m)	20 ft. 2 in. (6.1 m)
Transport Width	19 ft. 3 in. (5.9 m)	21 ft. 3 in. (6.5 m)
Transport Height	6 ft. 0 in. (1.8 m)	6 ft. 0 in. (1.8 m)
Overall Length, Transport	12 ft. 6 in. (3.8 m)	12 ft. 6 in. (3.8 m)
Overall Length, Operation	17 ft. 4 in. (5.3m)	17 ft. 4 in. (5.3m)
Number of Pulverizer Wheels		
(PD) 20" Notched Ductile Iron Wheels	54	60
(PH) 20" Heavy Notched Ductile Iron Wheels	54	60
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	N/A	N/A
(PC) 20" Crowfoot Ductile Iron Wheels	36	40
(PO) 20" Optimizer Ductile Iron Wheels	36	40
(PV) 22" V-Style Ductile Iron Wheels	36	40
Axle Size		
(PD) 20" Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PH) 20" Heavy Notched Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PHR) 20" Heavy Notched Ductile Iron Wheels with Sprockets	8 in. (203 mm)	8 in. (203 mm)
(PC) 20" Crowfoot Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PO) 20" Optimizer Ductile Iron Wheels	8 in. (203 mm)	8 in. (203 mm)
(PV) 22" V-Style Ductile Iron Wheels	4.5 in. (114 mm)	4.5 in. (114 mm)
Roller Center Bearing		
(PD) 20" Notched Ductile Iron Wheels	Yes	Yes
(PH) 20" Heavy Notched Ductile Iron Wheels	Yes	Yes
(PC) 20" Crowfoot Ductile Iron Wheels	Yes	Yes
(PO) 20" Optimizer Ductile Iron Wheels	Yes	Yes
(PV) 22" V-Style Ductile Iron Wheels	Yes	Yes
Drawbar	Pull-Type with Hydraulic Transport	Pull-Type with Hydraulic Transport
Tire Size	9.5L x 15-8 Ply Implement Rib	9.5L x 15-8 Ply Implement Rib
Scraper Kits (PD,PH,PV)	Optional	Optional
Rear Hitch Kit	Optional	Optional
Dual Wheel Kit	Standard	Standard
LED Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	Standard
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	70 HP (52.2 kW)	70 HP (52.2 kW)
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Document Control Revision Log:

Date	Revision	Improvement(s) Description and Comments
8/2016	R0	Initial Release
09/2019	0919	Added 18FT - 20FT Models
02/2024	F-851-2402	ECN - 49745 - Decals Added



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