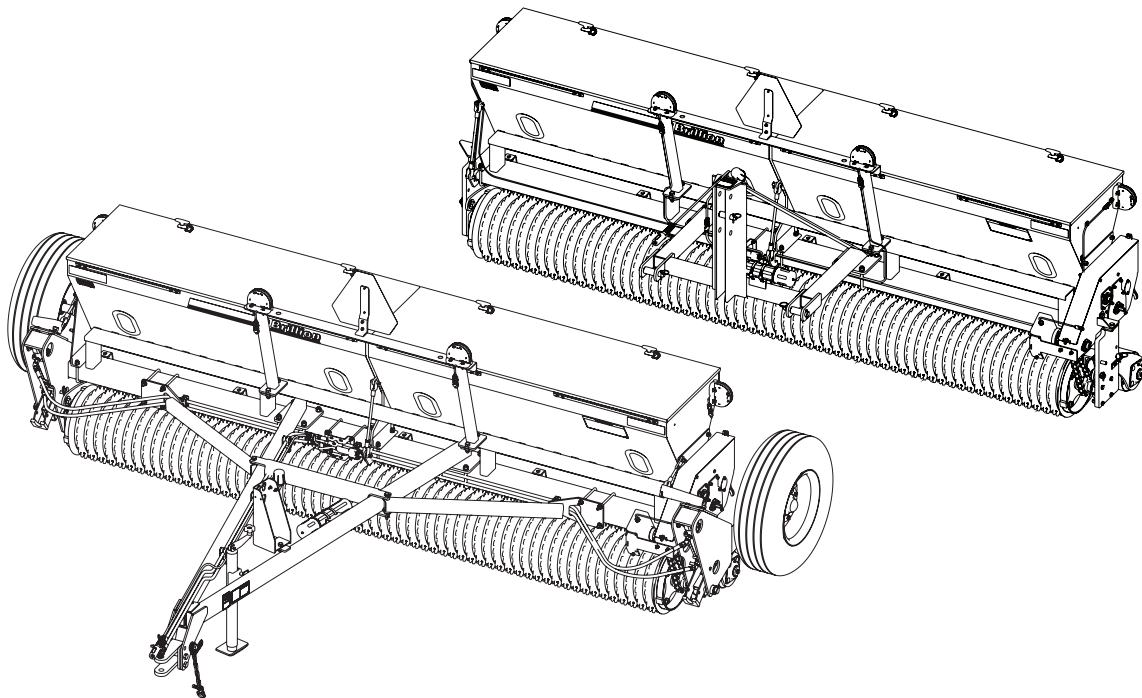




Turfmaker II
Models SL2081/SL2101/SL2121
SLP2081/SLP2101/SLP2121
SLB2081/SLB2101/SLB2121
SLPB2081/SLPB2101/SLPB2121
Operator's Manual



LANDOLL COMPANY, LLC

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**Manuals for Turfmaker II,
Models SL2081/SL2101/SL2121, SLP2081/SLP2101/SLP2121,
SLB2081/SLB2101/SLB2121 and SLPB2081/SLPB2101/SLPB2121**

Manual Number	Manual Type
9K998	Operator's Manual
9K997	Parts Manual



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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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, maintenance and safe operation will allow this machine to provide you with satisfactory use for seasons to come.



DANGER

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

Description of Unit

The Brillion Turfmaker II Landscape Seeder provides precision seed metering and accurate seed depth placement, offering optimum germination. The SL2 Series Seeder utilizes a Large Capacity Seed Box with High Capacity Meters, spaced 4-1/4" for an even high volume distribution of grass and lawn seed varieties. High Capacity Meters can be adjusted to permit precise metering with an infinite range of settings. Units are available in 3-PT Hitch and Drawbar.

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 change to assure top performance.
- Location reference: Right and Left designations in this manual are determined by facing the direction the machine 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 the 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 Company, LLC 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 in **Figure 1-1**. The ID Plate is located on the right front of the machine.

MODEL NUMBER _____

SERIAL NUMBER _____

DATE OF PURCHASE _____

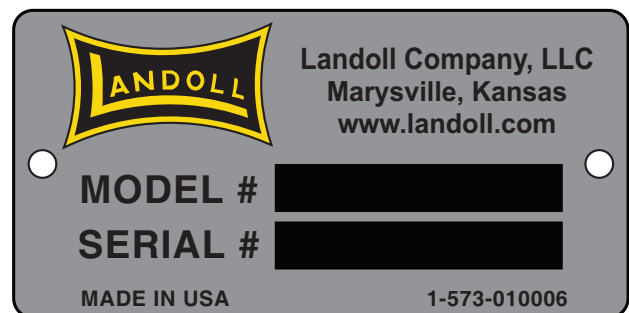


Figure 1-1: ID Plate

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. **See Figure 1-3.**
- 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.**

High Power Magnet

The Brillion Elite Mini Monitor uses very powerful Neodymium Magnets. Read all the warnings before operating the machine.

WARNING

1. Neodymium Magnets are brittle; they can be broken or can splinter in a collision. One should wear gloves and protective glasses when handling these magnets, because splinters and/or spacers could disengage and fly from the magnets.
2. Normal Neodymium Magnets will lose their magnetic properties if heated above 175°F (80° C).
3. The strong magnetic fields of Neodymium Magnets can damage items such as televisions, computer monitors, credit cards, bank cards, computers, diskettes and other data carriers, video tapes, mechanical watches, hearing aides, loud speakers and VCRs. Pace-Makers may be damaged or switch to "Test Mode" in the presence of a strong magnetic force, if a Pace-Maker or other electrical body implant is in use, Keep a Minimum of 3 Feet Distance.
4. Children should not be allowed to handle Neodymium Magnets as they can be dangerous. Small magnets pose a choking hazard and should never be swallowed or inserted into any part of the body.
5. Under no circumstances should you try to cut, saw or drill the Neodymium Magnet! Not only would the magnet break, but the resulting dust from the magnet is very flammable. Neodymium Magnets should never be burned, as burning them will create toxic fumes.

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 caution when towing behind articulated steering tractors; fast or sharp turns may cause the machine to shift sideways.
- Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your machine. **See “Specifications” on Pages 6-1 through 6-6.**

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 mph, the first implement has a SIS for 19 mph, and the last implement’s operator’s manual states its specified ground speed is 15 mph, the towed equipment combination ground speed limitation is 15 mph.

Attaching, Detaching and Storage

- Do not stand between the tractor and machine when attaching or detaching machine unless both are not moving.
- Before applying pressure to the hydraulic system, be sure all connections are tight and that hydraulic hoses are not damaged.
- Completely raise machine and install transport locks. If desired to store lowered and on unpaved surface, place hardwood blocks under roller to keep off ground.
- Block implement so it will not roll when unhitched from the tractor.
- Relieve pressure in hydraulic lines before uncoupling hydraulic hoses from tractor.
- Use the Safety Chain to help control drawn machinery should it separate from the tractor drawbar.

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

Protective Equipment

- Wear protective clothing and 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.

Prepare for Emergencies

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

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.

- Read chemical manufacturer's instructions and store or dispose of unused chemicals as specified. Handle chemicals with care and avoid inhaling smoke from any type of chemical fire.
- Store or dispose of unused chemicals as specified by the chemical manufacturer.

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 the 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 machines.
A second chain should be used between each machine.
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.

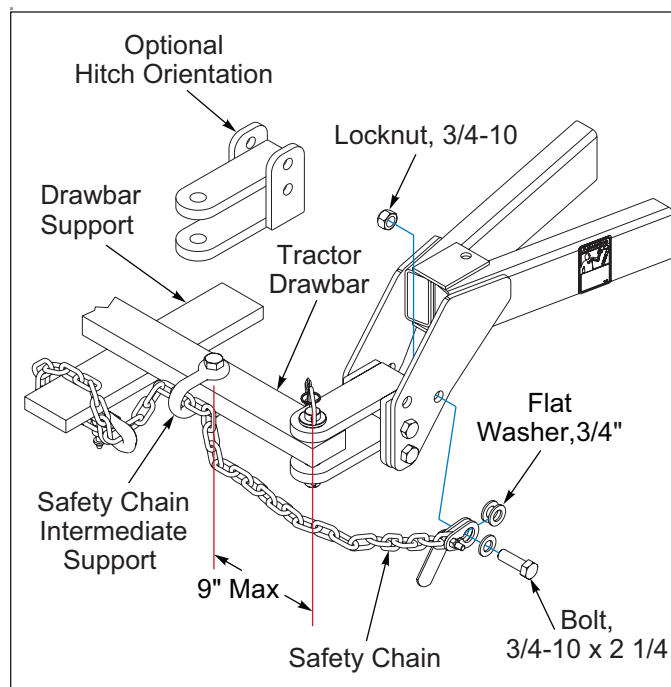


Figure 1-2: Safety Chain

Decals



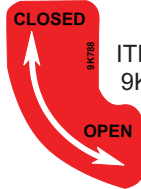
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ITEM 2 - 4K039



ITEM 3 - 4K388



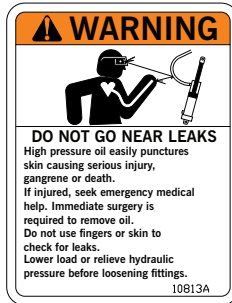
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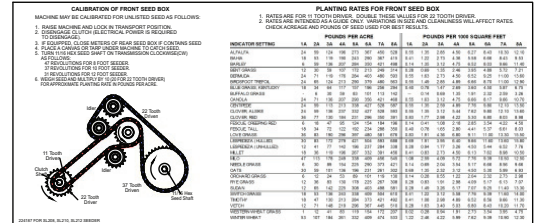
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ITEM 8
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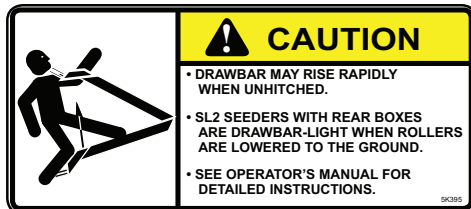
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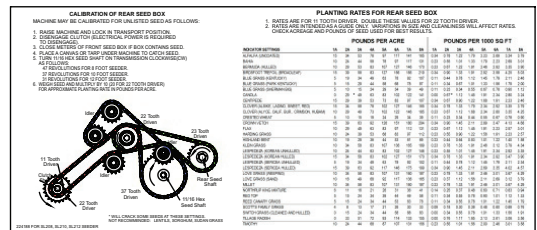
ITEM 11
224187 - (Front) Seed Chart (After 01/2020)
5K286 - (Front) Seed Chart (Before 01/2020)



ITEM 13
2P151



ITEM 15
5K395



ITEM 12
224188 - (Rear) Seed Chart (After 01/2020)
5K285 - (Rear) Seed Chart (Before 01/2020)



ITEM 16
9J302



ITEM 17
235624



ITEM 18
1-573-010006



ITEM 20
9J429

Figure 1-3: Decals

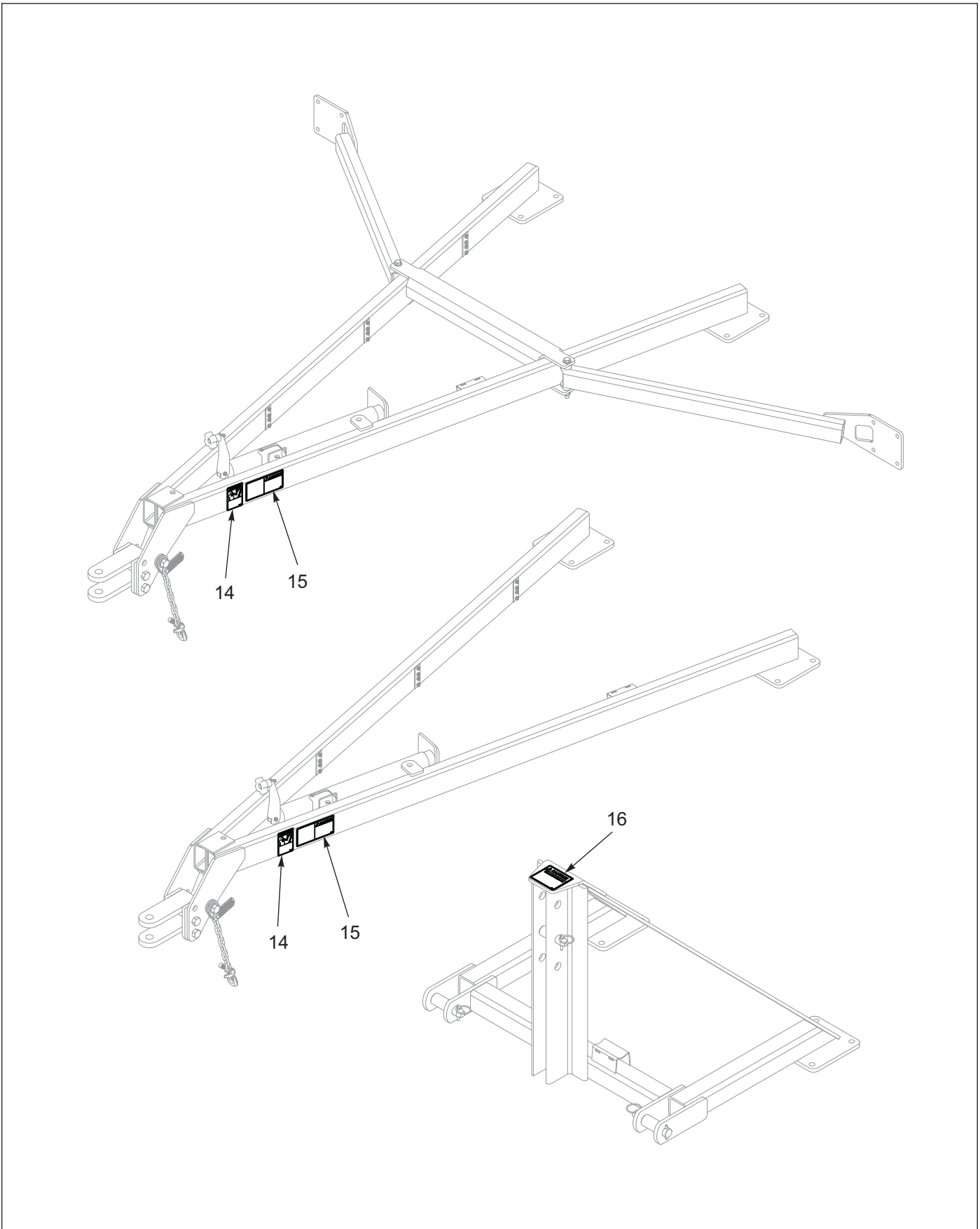


Figure 1-4: Decal Placement - Hitch

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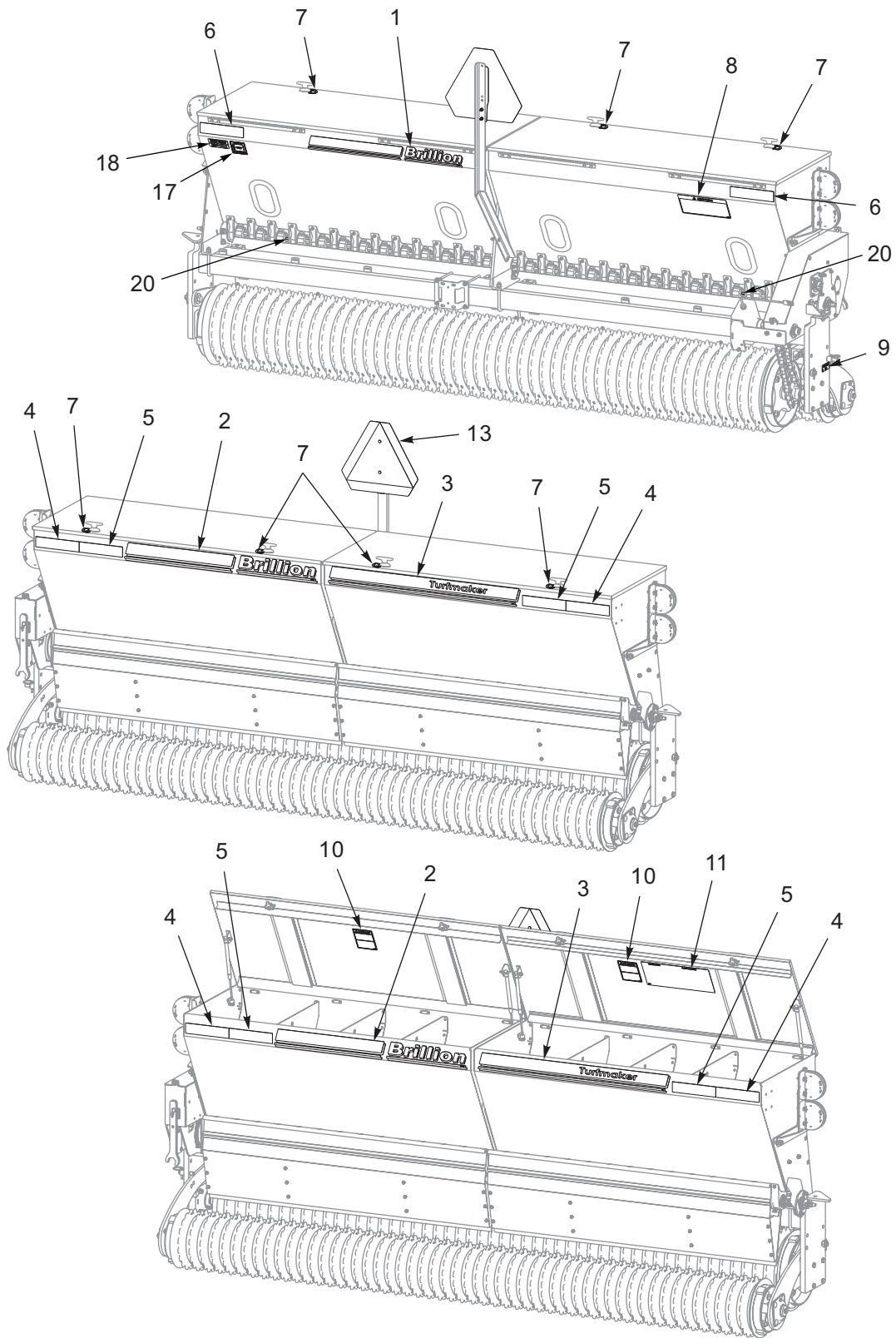


Figure 1-5: Decal Placement - Single Box, 8FT and 10FT

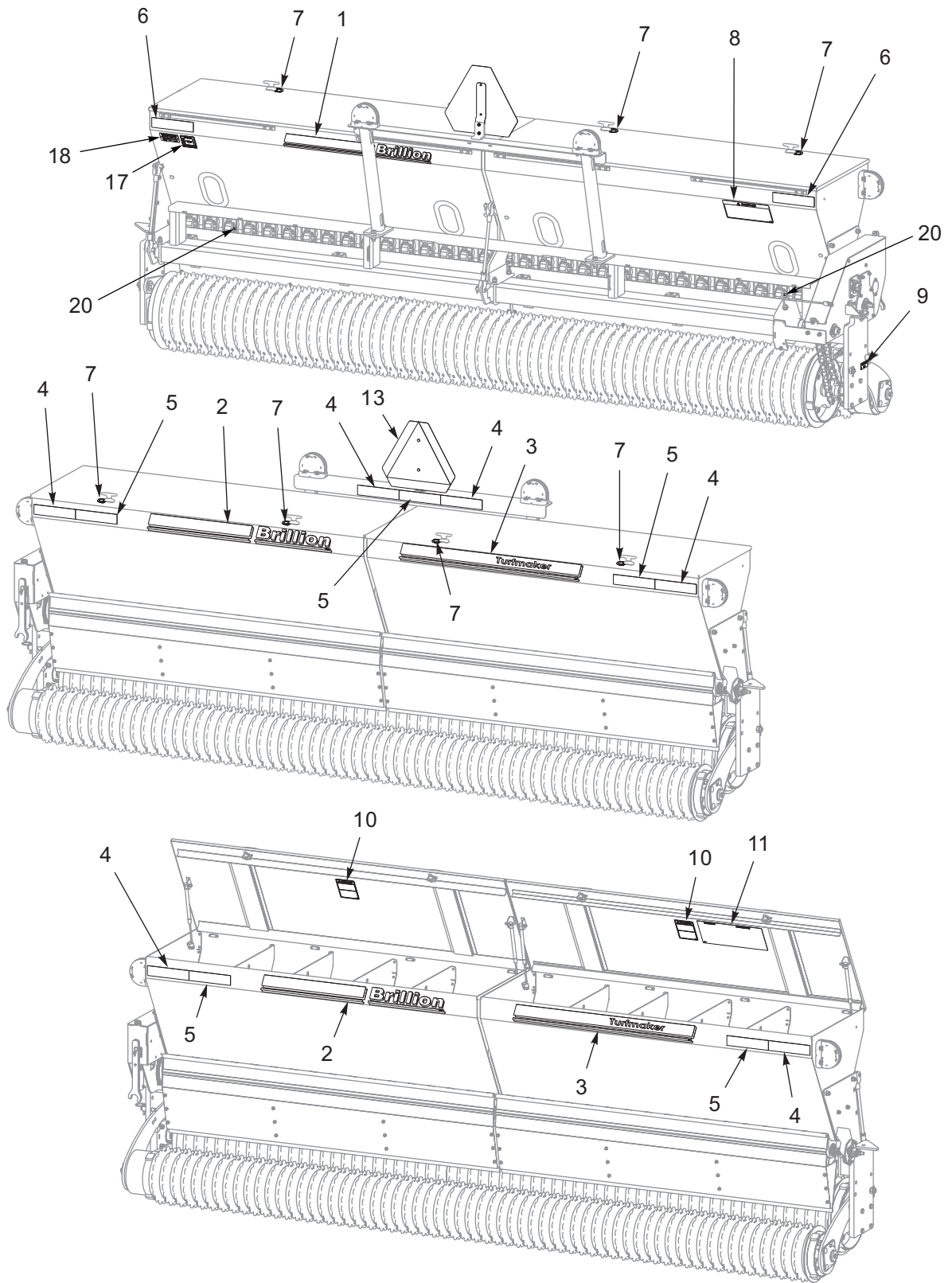


Figure 1-6: Decal Placement - Single Box, 12FT

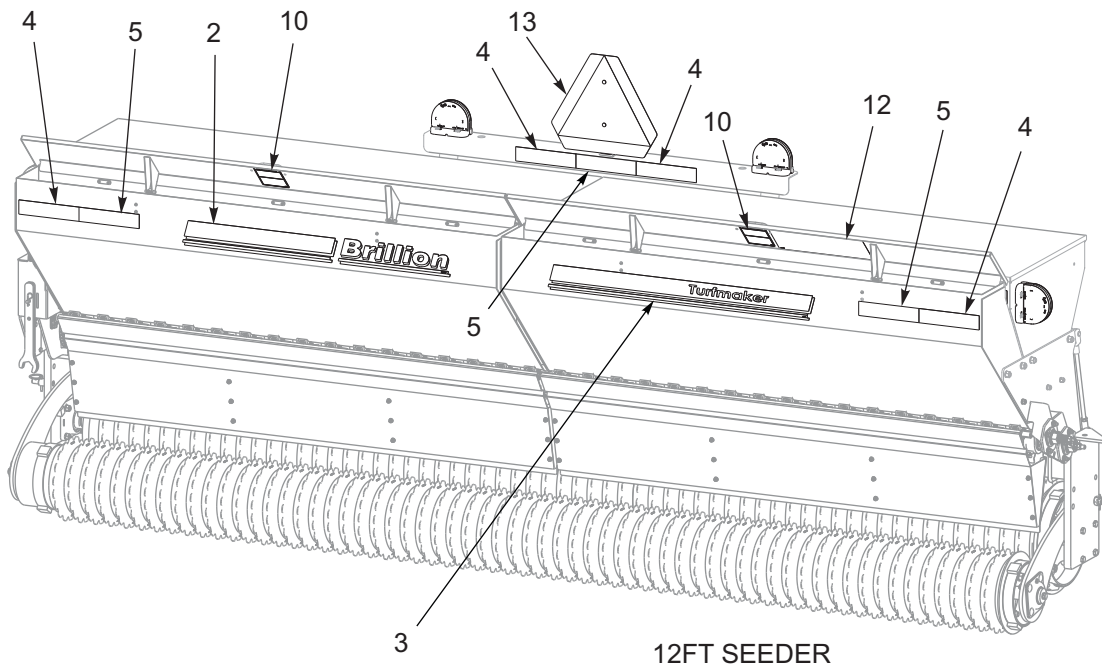
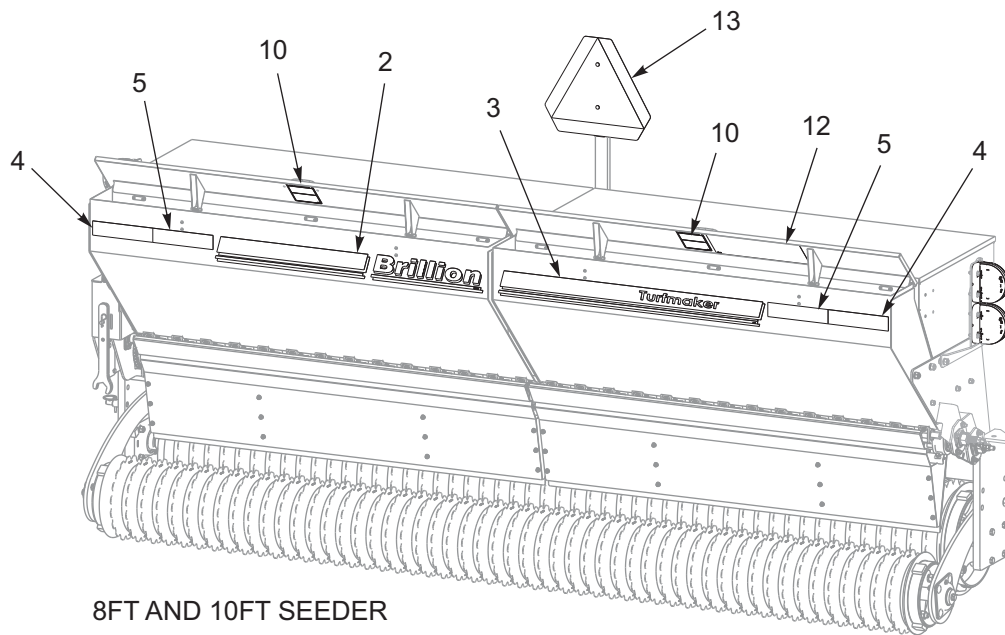


Figure 1-7: Decal Placement - Double Box

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 manually. Use a hoist or a fork lift to move these parts into position.

NOTE

Refer to the repair parts manual 9K997 for identification of parts and for the approximate relationship of the parts in assembly. Your exact Seeder Model may vary slightly from the illustration.

To ensure alignment of assemblies, **leave the nuts loose until completion** of final assembly. Use lock washers or flat washers as specified. Spread all 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 Page 5-1.**

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

IMPORTANT

All harnesses must be firmly attached to machine frame members, so they don't sag or become torn loose by field debris. Use the tie wraps provided.

Check to be sure the harnesses 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.

3-PT Hitch Seeder Assembly

When shipped, seeder comes assembled except for Lights and 3-PT Hitch.

1. Support Seeder Assembly with a hoist or by similar means capable of supporting its weight without tipping.
2. Center 3-PT Hitch Assembly in relationship with the Seed Box Center Bracket. Attach 3-PT Hitch to Seeder Frame Tube with 5/8-11 U-Bolts, Lock Washers and Locknuts. **See Figure 2-4.**
3. Install Manual Holder to 3-PT Hitch with Hose Clamps.
4. 8FT and 10FT Seeders, install SMV Support to Seed Box Center Bracket with 3/8-16 x 1-1/2 Bolts, Flat Washers, Lock Washers, and Locknuts. **See Figure 2-1.**

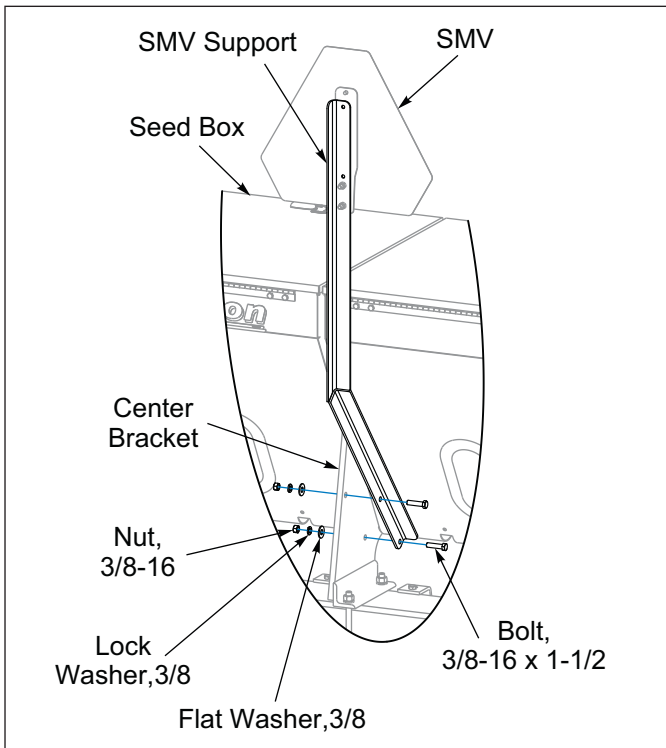


Figure 2-1: SMV Support



CAUTION

Do not disengage pin unless seeder is fully attached to a tractor. Seeder may be rear-heavy and tip backward on frame.

5. Be sure Parking Pin is locking Rear Roller down and raise the Seeder. **See Figure 2-2.**

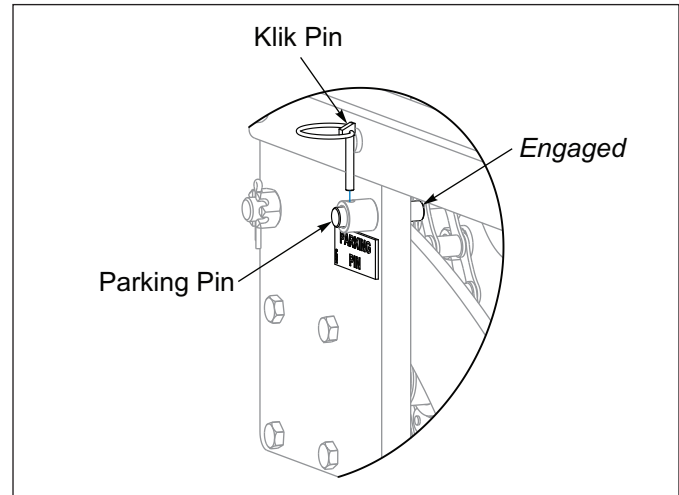


Figure 2-2: Parking Pin Engaged

6. On the right side of the Seeder Frame, in a similar position as the Parking Pin, remove the 5/8-11 Shipping Bolt that also locks the Rear Roller down. **See Figure 2-3.**

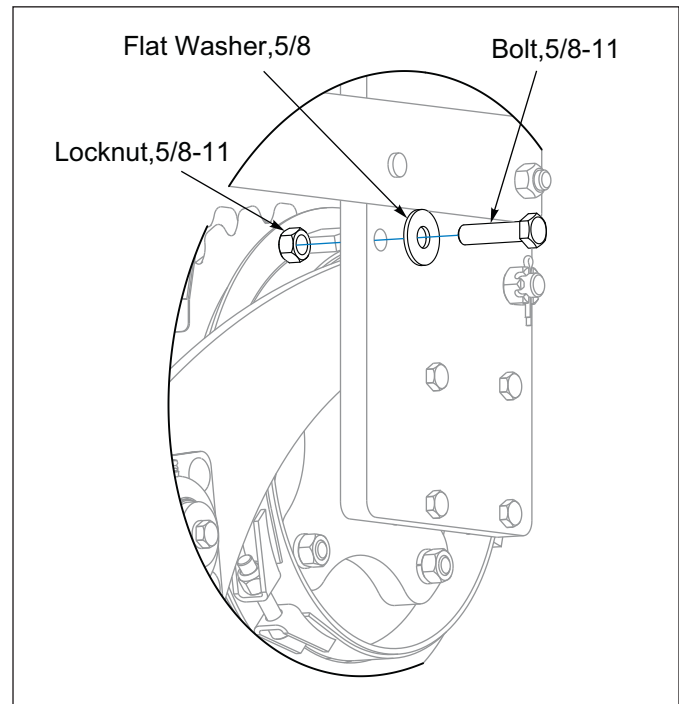


Figure 2-3: Shipping Bolt

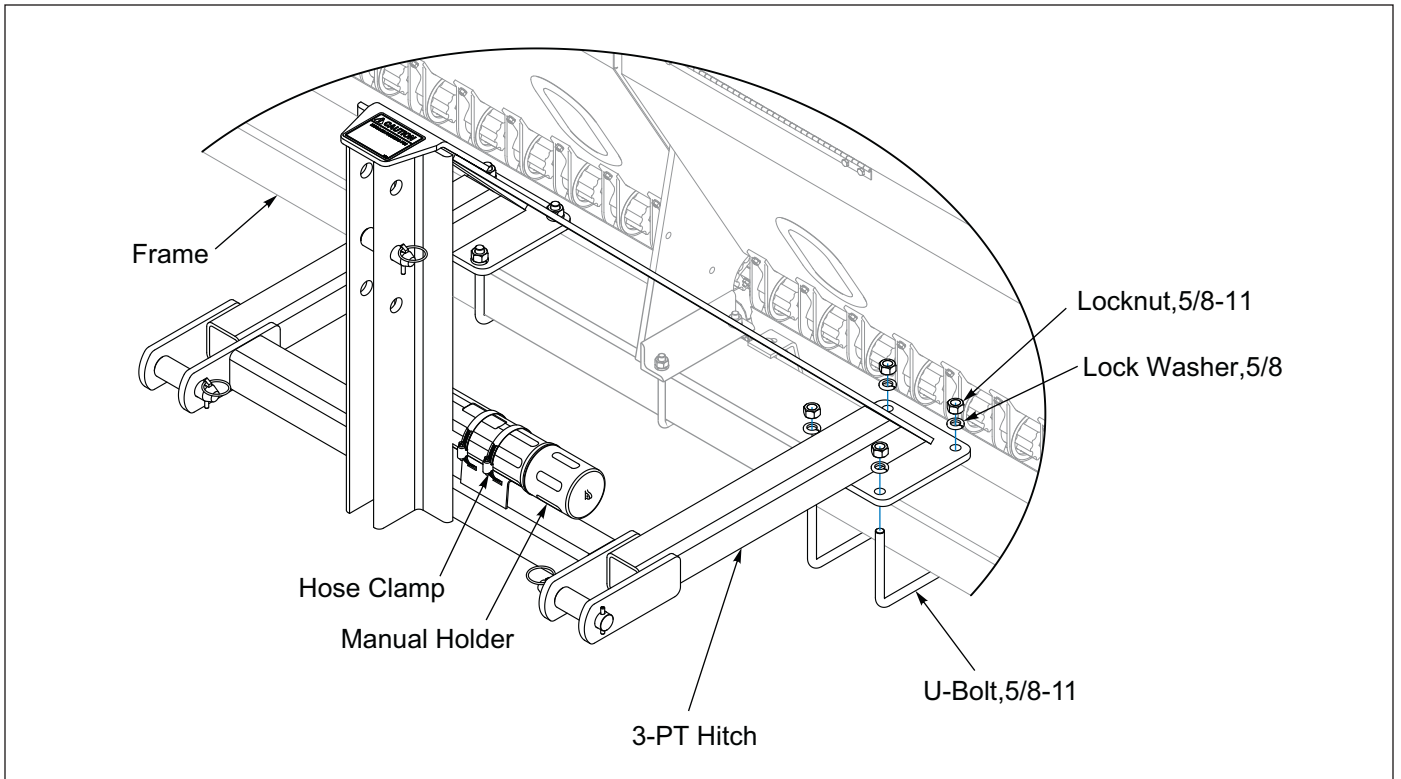


Figure 2-4: 3-PT Hitch

Pull Type Seeder Assembly

When shipped, Seeder comes assembled except for Lights, Hub and Spindle Assemblies, Tire and Wheels Assemblies and Drawbar.

8FT and 10FT Assembly

1. Untie the two rolled up Drawbar Hydraulic Hoses near the center of the Frame Tube. Ensure the hoses are not interfering with where the Drawbar is to be attached.
2. Center Drawbar in relationship with the Seed Box Center Bracket. Attach Drawbar to Seeder Frame Tube with 5/8-11 U-Bolts, Lock Washers and Locknuts. **See Figure 2-6.**
3. Attach the Hose Holder to the Drawbar with 5/8-11 x 1-1/2 Bolt, Lock Washer and Nut.
4. Install Manual Holder to Drawbar with Hose Clamps.
5. Install SMV Mount to Seed Box Center Bracket with 1/2-13 x 1-1/2 Bolts and Locknuts. **See Figure 2-5.**
6. Apply anti-seize to Spindles and insert a Hub and Spindle Assembly into each Wheel Arm. Secure in with 1/2-13 x 3 Bolts and Locknuts. **See Figure 2-9.**

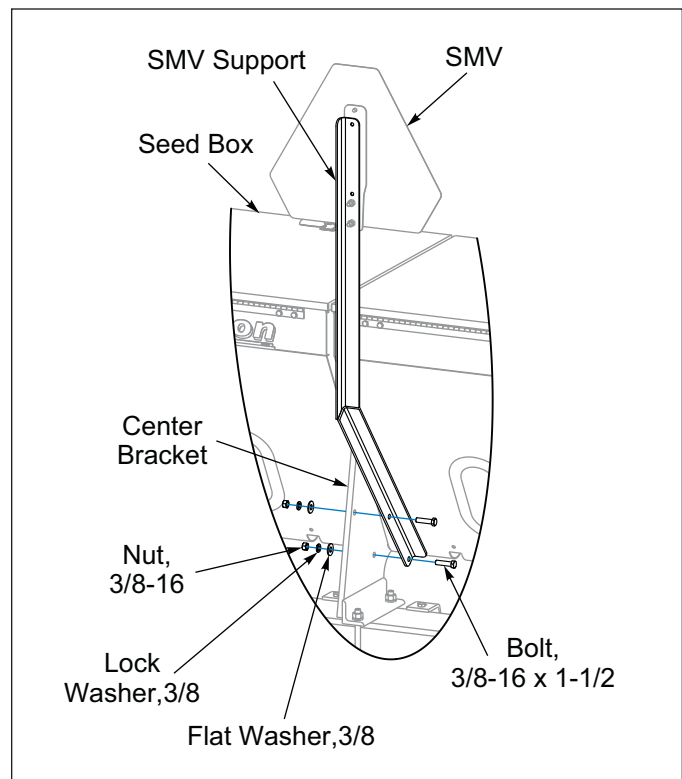


Figure 2-5: SMV Support

12FT Assembly

When shipped, Seeder comes assembled except for Lights, Hub and Spindle Assemblies, Tire and Wheels Assemblies and Drawbar.

1. Untie the two rolled up Drawbar Hydraulic Hoses near the center of the Frame Tube. Ensure the hoses are not interfering with where the Drawbar and Drawbar Braces are to be attached. Remove Drawbar Braces shipping bands so that the Braces can pivot outward to clear the Seeder Frame Tube.
2. Center Drawbar in relationship with the Seed Box Center Bracket. Attach Drawbar to Seeder Frame Tube with 5/8-11 U-Bolts, Lock Washers and Nuts. Align Braces with the front of the Seeder Frame Tube and insert the Hydraulic Hoses through the Brace Bracket opening. Attach Braces to Seeder Frame Tube with 1/2-13 U-Bolts, Flat Washers and Locknuts. **See Figure 2-7.**
3. Attach the Hose Holder to the Drawbar with 5/8-11 x 1-1/2 Bolt, Lock Washer and Nut.
4. Install Manual Holder to Drawbar with Hose Clamps.
5. Apply anti-seize to Spindles and insert a Hub and Spindle Assembly into each Wheel Arm. Secure in with 1/2-13 x 3 Bolts and Locknuts. **See Figure 2-9.**

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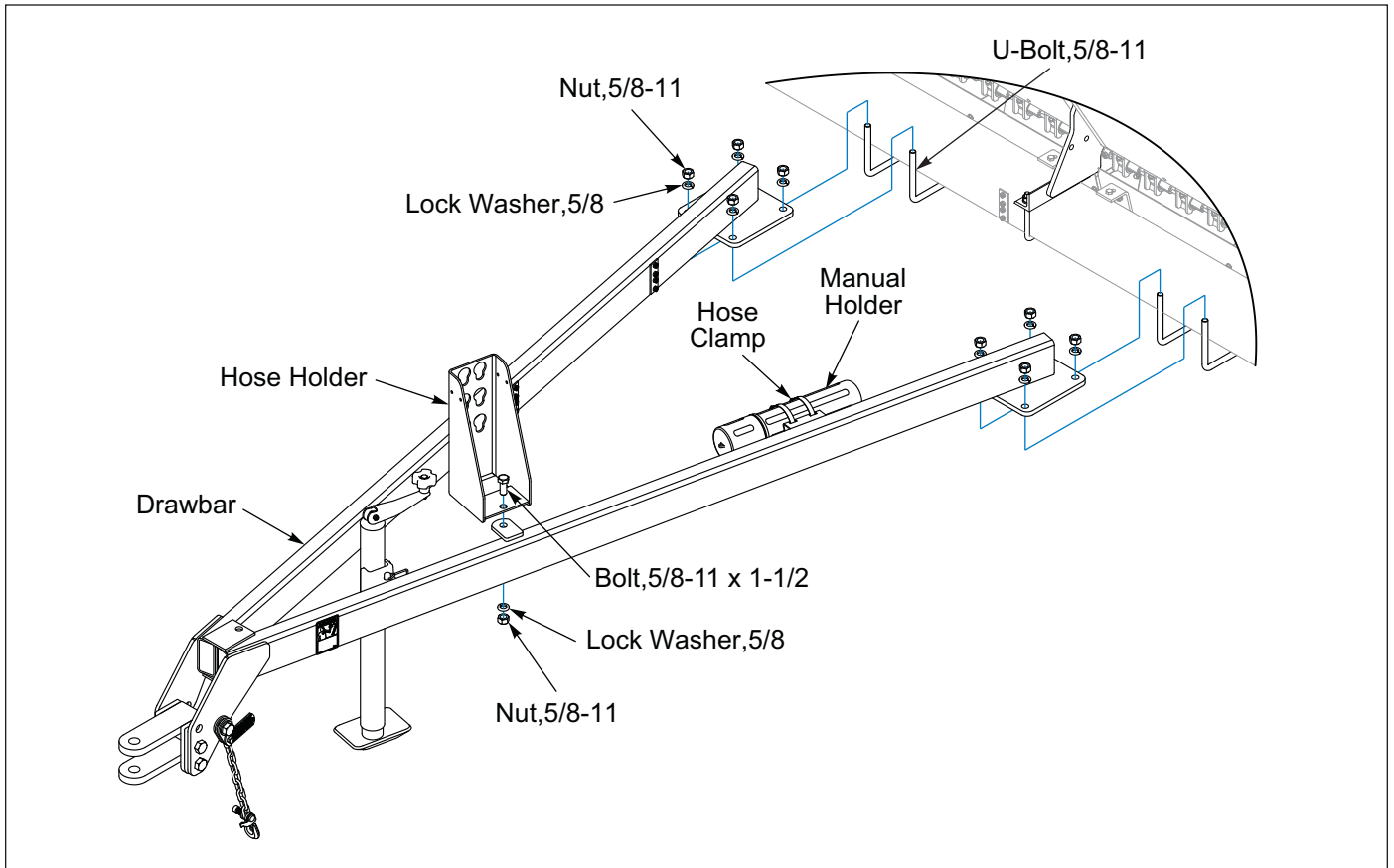


Figure 2-6: 8FT and 10FT Drawbar

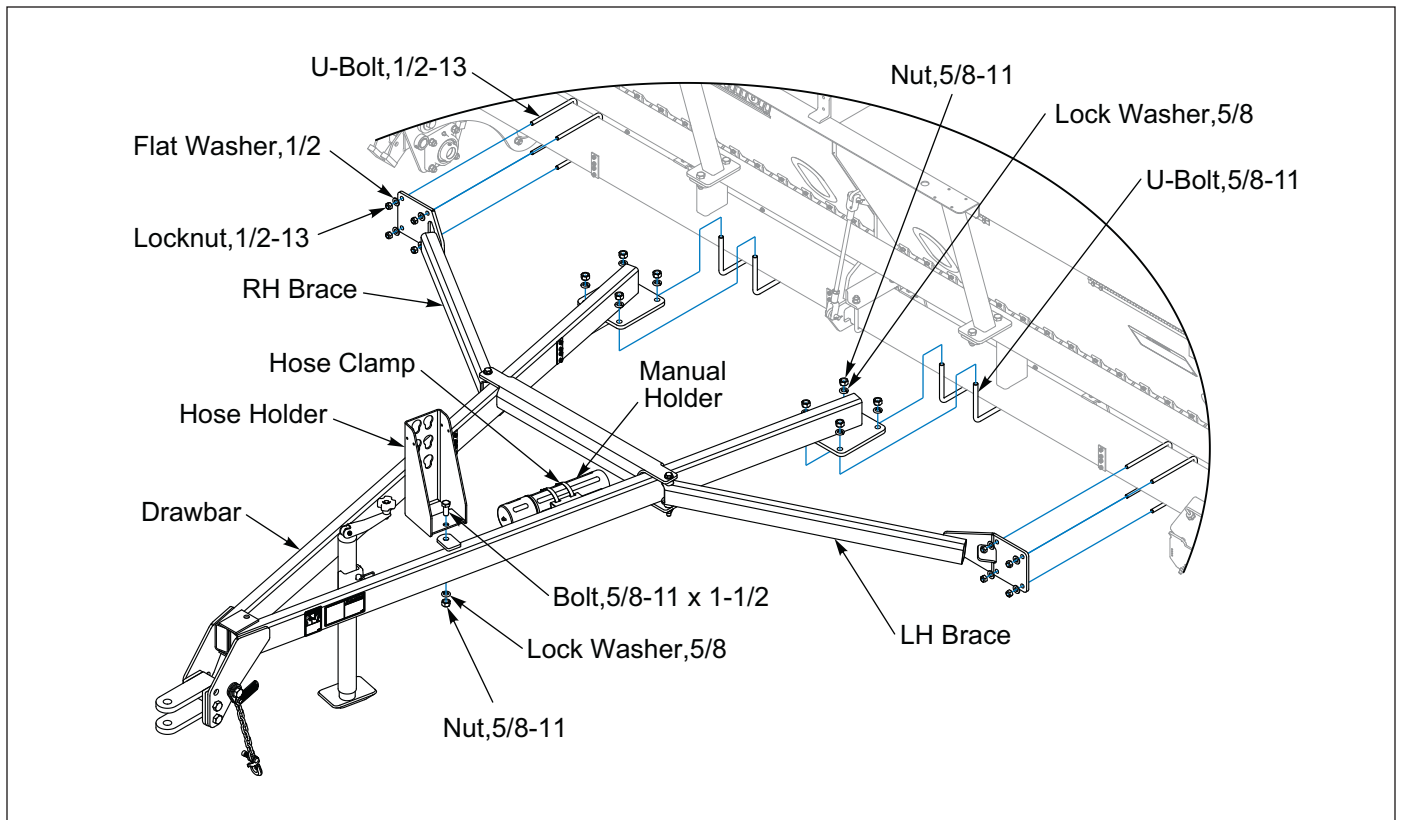


Figure 2-7: 12FT Drawbar

Tire and Wheel Installation



WARNING

Use a torque wrench to assure proper torque. Insufficient torque can cause stud breakage and damage the wheel pilots. Over torque can stress the Bolts and strip the threads.

NOTE

All tire/wheel assemblies are mounted with the valve stem facing outward from Hub and Spindle.

IMPORTANT

Torque will drop after the first 10 hours of operation. Check the Wheel Bolts for proper torque after this interval and re-tighten them.

- **8FT Seeder** uses 9.5L x 15, 8Ply Implement Rib Rating Tires and should be inflated to 44 PSI.
- **10FT and 12FT Seeder** uses 11L x 15, 12Ply Implement Rib Rating Tires and should be inflated to 52 PSI.
- Install a Tire and Wheel Assembly onto each Hub with 1/2-20 x 1 Wheel Bolts and tighten Wheel Bolts to 50 Ft-Lbs using the sequence in **Figure 2-8**. Then tighten to a full torque of 80-85 Ft-Lbs.

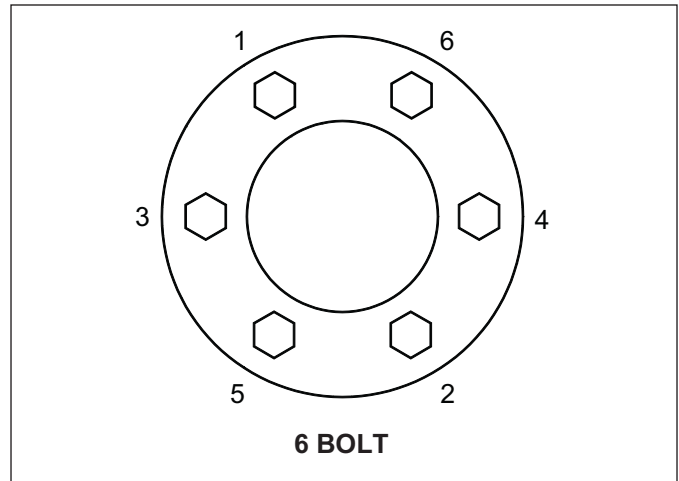


Figure 2-8: Tightening Sequence

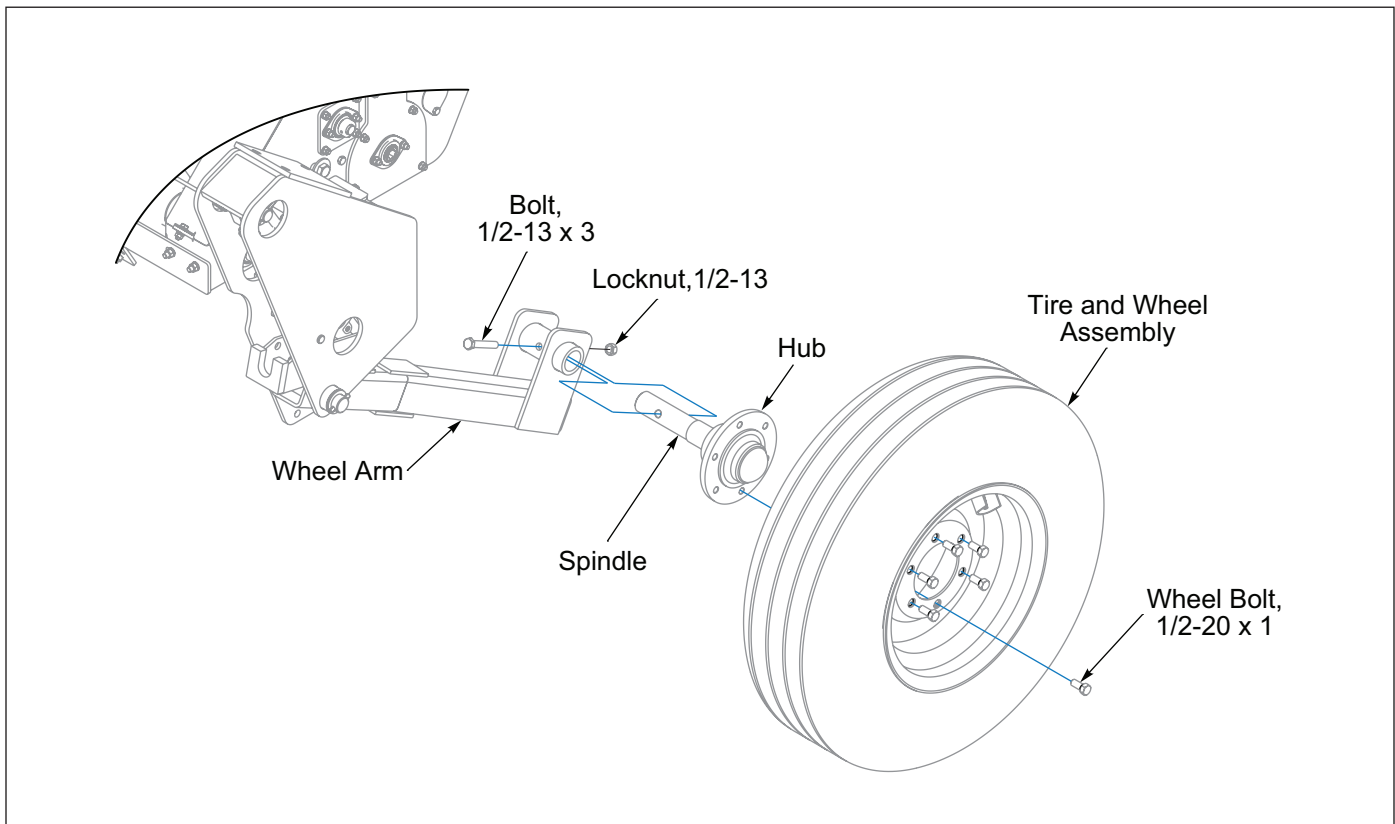


Figure 2-9: Tire and Wheel Installation

Hydraulic Installation



WARNING

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Using a piece of cardboard, rather than your hands, to search for suspected leaks. (See Figure 2-10.) Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

Tightening Procedure for JIC 37 degree Swivel Female Nuts.

1. Check Fitting Flare and seat for defects.
2. Lubricate the connection.
3. Install Hydraulic Hoses without twists.
4. Hand Tighten until connections 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 (1/16 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 5-2.**

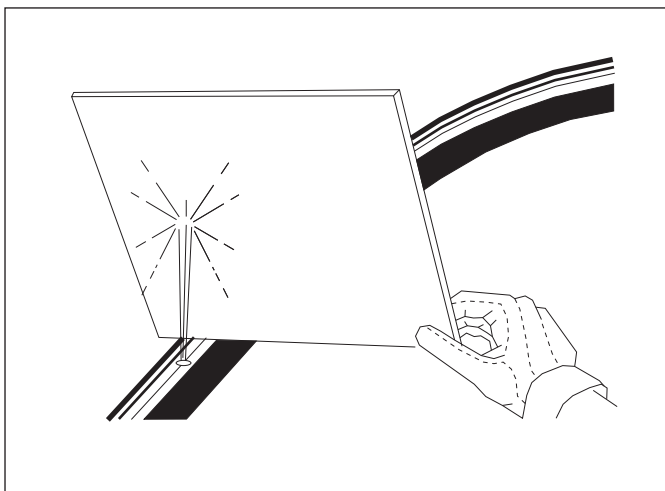


Figure 2-10: Leak Detection

Hydraulic Assembly

1. Restrictors installed in Cylinder Ports, connect 45 Degree Fitting so they are free to swivel. Connect top Hydraulic Hose to the Cylinder Base and bottom Hydraulic Hose to the Cylinder Rod End. Position the Hydraulic Hoses so that the Cylinder Base End points downward and the Cylinder Rod End points upward. Merge Hydraulic Hoses together and tie wrap them together about 12 inches from the Hose End. **See Figure 2-11.** Be sure that the Hoses cannot sag and make contact with the Front Roller Wheels.

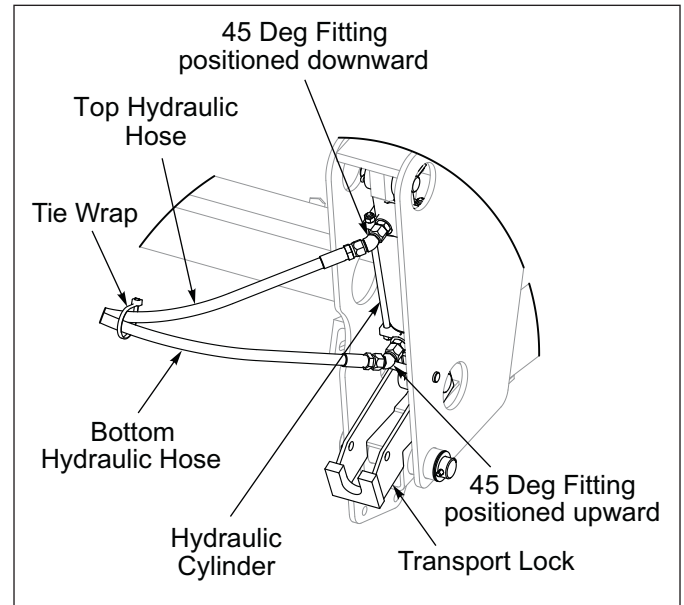


Figure 2-11: Cylinder Fittings Positioning

2. Route the Drawbar Hydraulic Hoses along Drawbar toward the Tractor. Secure Hoses to Drawbar with Hose Clamp Pairs, Top Plate and 1/4-20 x 1-1/2 Bolt. **See Figures 2-12 and 2-13.**

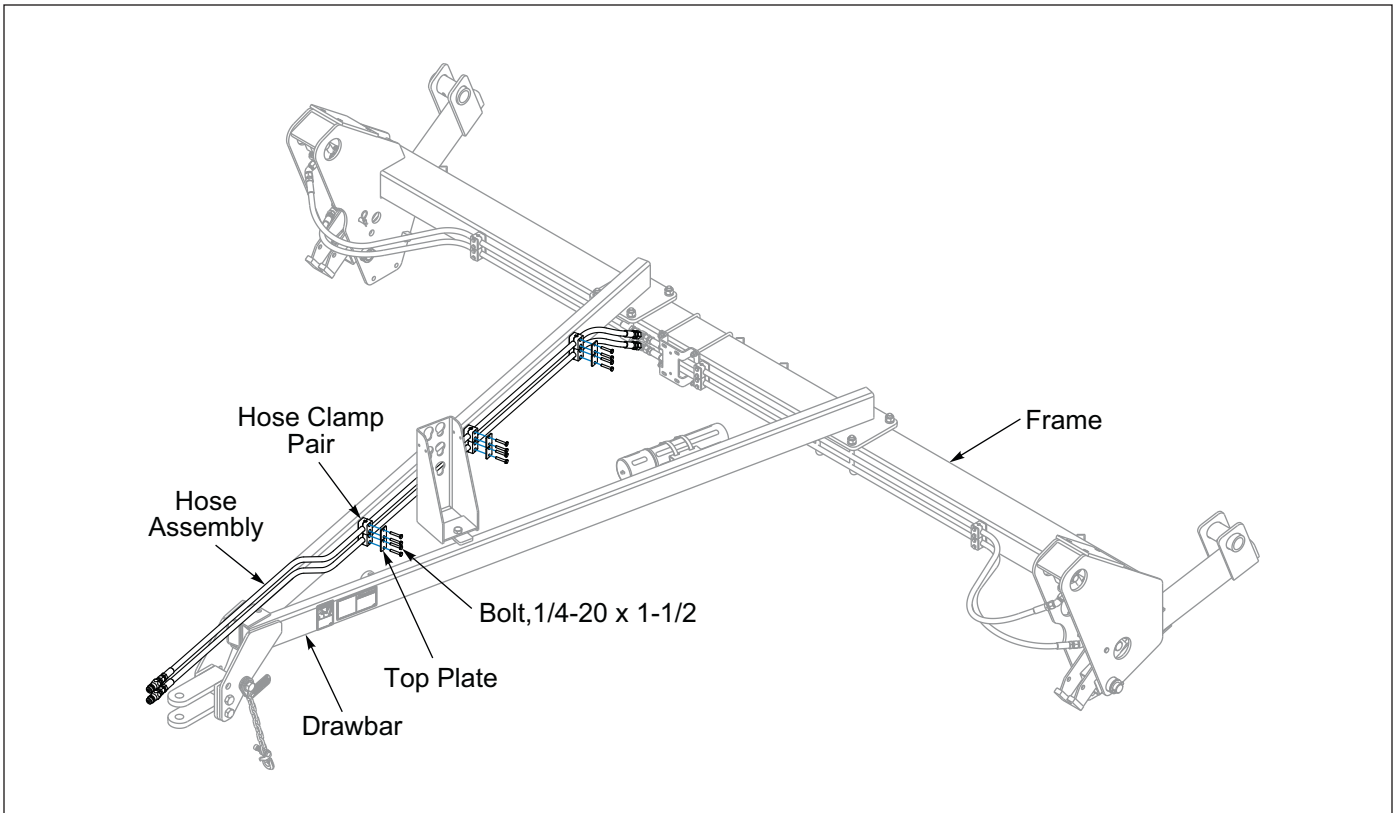


Figure 2-12: 8FT and 10FT Drawbar Hydraulics

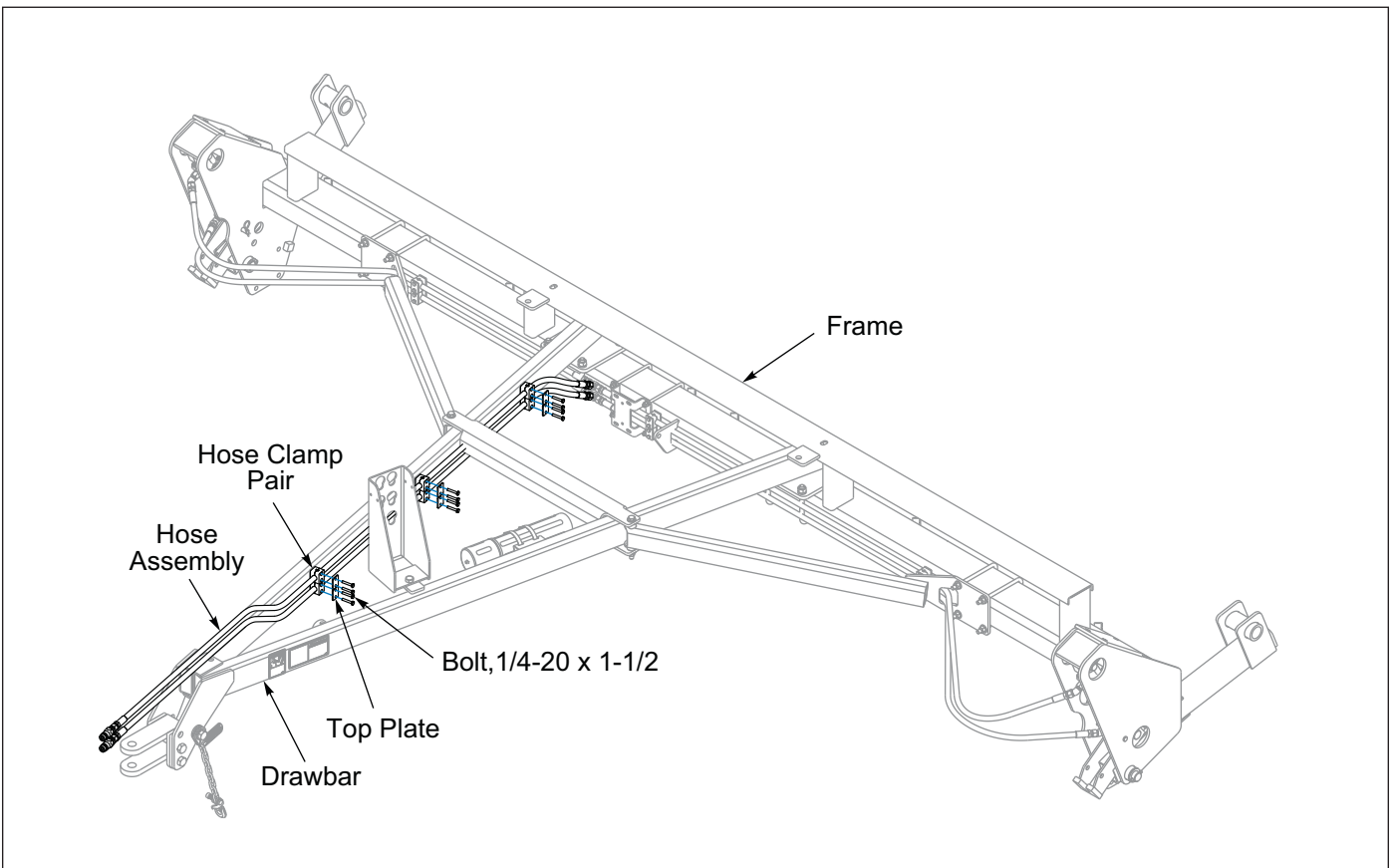


Figure 2-13: 12FT Drawbar Hydraulics

Purge the Hydraulic Lift System

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

Lift Circuit approximate oil requirement: 0.4 gallons.

1. Carefully Hitch the Seeder 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 both Lift Cylinders are fully extended. Lower and raise the Seeder to verify that both Cylinders are working throughout the stroke. Fully extend the Lift Cylinders and continue to hold the lever until both Cylinder Rod movement stops. Raise/Lower Seeder 5 times to purge air from the system.
4. Do Not loosen any Hydraulic Hoses or Fittings.
5. Recheck Tractor Reservoir to make sure it is within operating limits.
6. Raise the Seeder and install Transport Locks. **See Figure 2-14.**
7. Remove from the RH and LH Frame End Plate the 5/8-11 Shipping Bolts that locks the Rear Roller Arms Down. **See Figure 2-15.**

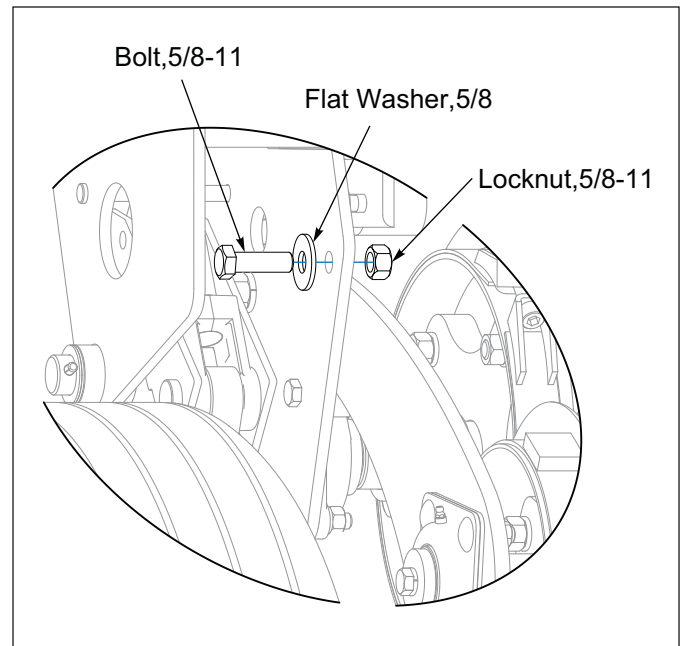


Figure 2-15: Shipping Bolt

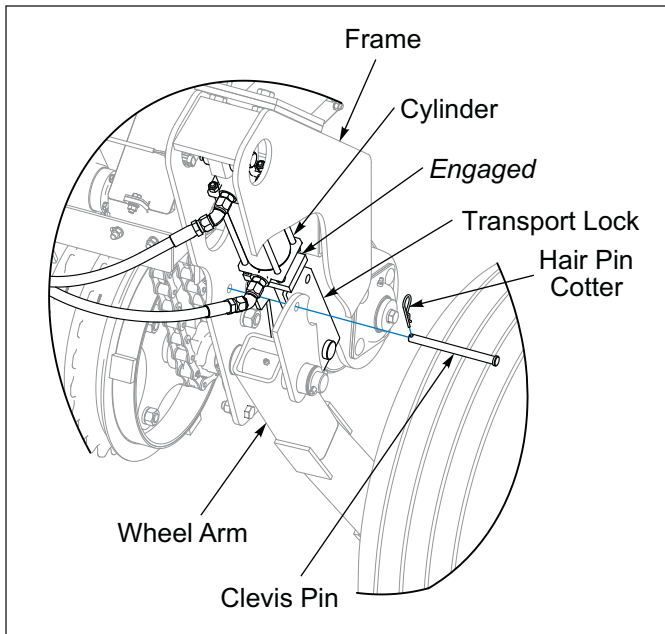


Figure 2-14: Transport Lock Engaged

Warning Lamp Installation, 8FT and 10FT

NOTE

10FT Drawbar model is shown, 10FT 3-PT, 8FT Drawbar and 8FT 3-PT models similar.

1. Attach Amber Lamp to the upper portion of the Light Bracket located at the ends of the Seed Box with 1/4-20 x 1-1/4 Bolts and Locknuts. **See Figure 2-16.**
2. Attach Red Lamp below the Amber Lamp with 1/4-20 x 1-1/4 Bolts and Locknuts. Ensure Red Lamp Lens faces rearward.
3. Attach the Flasher Control Module to the Module Bracket with 1/4-20 x 1-1/2 Bolts and Locknuts.

IMPORTANT

Cords are marked Yellow Tape for Left and Green Tape for Right.

4. Lay out the Lamp Harness along the Seeder Frame, Cords with Yellow Tape Left and Cords with Green Tape Right. Connect the Harness to the Flasher Control Module 6-Prong Connector.
5. Route the left and right cords along the front of the Frame Tube up to the outer Light Brackets. Connect the 2-Prong Connector to the Amber Lamps and the 3-Prong Connector to the Red Lamps.
6. Lay out the 7-Pin Harness along the 3-PT Hitch or Drawbar with the 4-Prong Connector towards the Seeder. 3-PT Hitch, route the 4-Prong Connector Cord through the Frame Loop to the Module. Drawbar, route the 7-Pin Harness along the Drawbar, through the Hose Support up to the Tractor. Connect 7-Pin Harness 4-Prong Connector to the Flasher Control Module.
7. Bundle and secure excess cord to the Module Bracket with Tie Wraps. Along the Frame, secure Harnesses with Tie Wraps to the Frame End Plate Slots, Slotted Tabs and Hydraulic Hoses. Secure the Lamp cords to the ends of the Seed Box with Adhesive Mounts and Tie Wraps. Bundle and secure 7-Pin Harness to the Drawbar Hydraulic Hoses or 3-PT Hitch Frame Slots allowing enough Harness length to reach the Tractor Socket.

NOTE

Install, route and secure Electric Clutch Harness with the Lamp Harness.

IMPORTANT

All Harnesses must be firmly attached to Machine Frame members or Hydraulic Hoses so they do not sag or become torn loose by field debris.

8. Attach the SMV sign to the SMV Support with 5/16-18 x 1" Bolts, Flat Washers, and Locknuts.
9. Attach the Connector Holder to the Drawbar Hose Holder or 3-PT Hitch with 1/4-20 x 1 Bolts, Flat Washers, and Locknuts.

NOTE

The 7-Pin Plug on the other end of the 7-Pin Harness connects to the Tractor Socket when in use. When not in use, it can be stored in the Connector Holder on the Drawbar Hose Holder or 3-PT Hitch. Allow enough harness length to reach Tractor Socket and roll or fold up excess and secure to Drawbar Hydraulic Hoses or 3-PT Hitch.

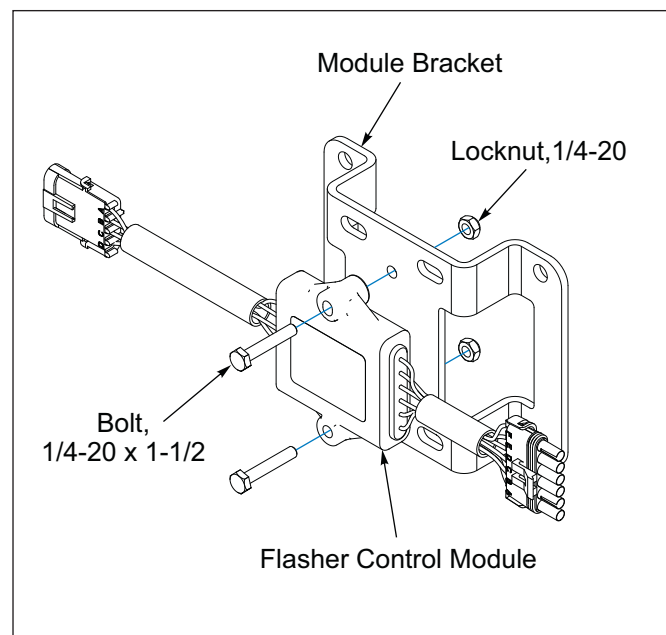


Figure 2-16: Flasher Control Module and Bracket

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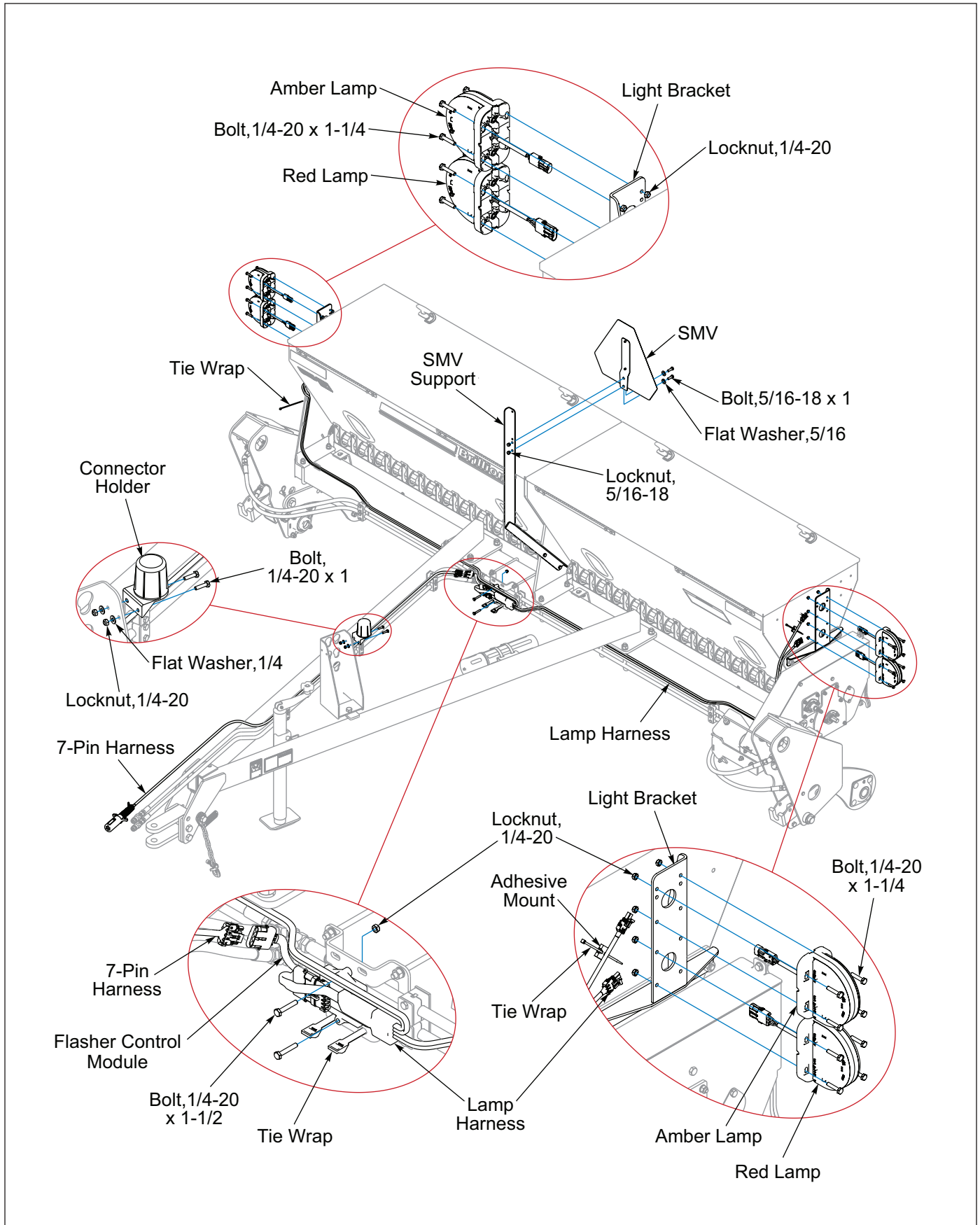


Figure 2-17: Warning Lamp Installation, 8FT and 10FT

Warning Lamp Installation, 12FT

NOTE

12FT 3-PT model is shown, Drawbar model similar.

1. Place a Red Lamp at each end of the Light Bar and insert the Red Lamp Cord into the Light Bar cutout. Secure Red Lamp to Light Bar with 1/4-20 x 1-1/4 Bolts and Locknuts. **See Figure 2-18.**
2. Attach Amber Lamps to the outer ends of the Seed Boxes with 1/4-20 x 1-1/4 Bolts and Locknuts.
3. Attach the Light Module to the Module Bracket with 1/4-20 x 1-1/2 Bolts and Locknuts.

IMPORTANT

Cords are marked Yellow Tape for Left and Green Tape for Right.

4. Lay out the Lamp Harness along the Seeder Frame Tube, Cords with Yellow Tape Left and Cords with Green Tape Right. Connect the Harness to the Flasher Control Module 6-Prong Connector.
5. Route the left and right cords along the front of the Frame Tube. Route the 3-Prong Connector Cords into the Light Bar vertical tube openings up to the Red Lamps and connect. Continue routing the 2-Prong Connector Cord along the front of the frame, up the outer Light Bracket to the Amber Lamps and connect.
6. Lay out the 7-Pin Harness along the 3-PT Hitch or Drawbar with the 4-Prong Connector towards Seeder. 3-PT Hitch, route the 4-Prong Connector Cord through the Frame Loop to the Module. Drawbar, route the 7-Pin Harness along the Drawbar, through the Hose Support up to the Tractor. Connect 7-Pin Harness 4-Prong Connector to the Flasher Control Module.
7. Bundle and secure excess cord to the Module Bracket with Tie Wraps. Along the Frame, secure Harnesses with Tie Wraps to slots within the Frame, and Harness Mounting Strips. Secure the Amber Lamp cords to the ends of the Seed Box with Adhesive Mounts and Tie Wraps. Bundle and secure 7-Pin Harness to the Drawbar Hydraulic Hoses or 3-PT Hitch Frame Slots allowing enough Harness length to reach the Tractor Socket.

NOTE

Install, route and secure Electric Clutch Harness with the Lamp Harness.

IMPORTANT

All Harnesses must be firmly attached to Machine Frame members or Hydraulic Hoses so they do not sag or become torn loose by field debris.

8. Attach the SMV sign to the SMV Mount located on the center on the Light Bar with 5/16-18 x 1 Bolts, Flat Washers, and Locknuts.
9. Attach the Connector Holder to the 3-PT Hitch or Drawbar Hose Holder with 1/4-20 x 1 Bolts, Flat Washers, and Locknuts.

NOTE

The 7-Pin Plug on the other end of the 7-Pin Harness connects to the Tractor Socket when in use. When not in use, it can be stored in the Connector Holder on the Drawbar Hose Holder or 3-PT Hitch. Allow enough Harness length to reach Tractor Socket and roll or fold up excess and secure to Drawbar Hydraulic Hoses or 3-PT Hitch.

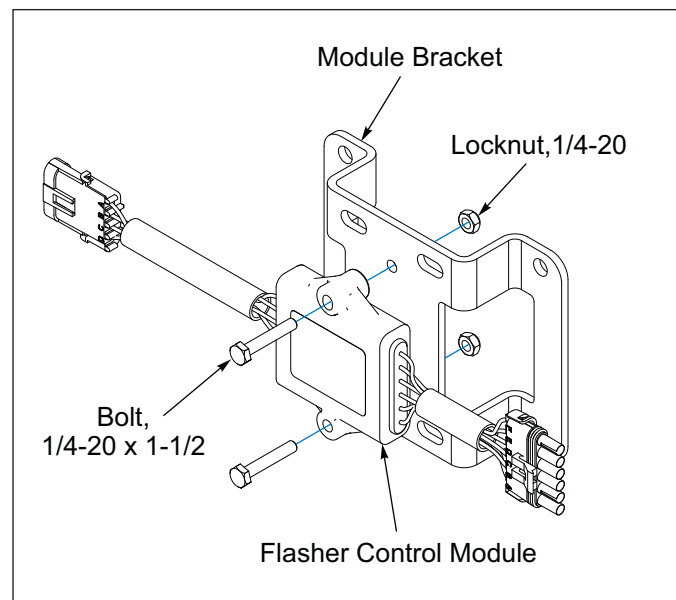


Figure 2-18: Flasher Control Module and Bracket

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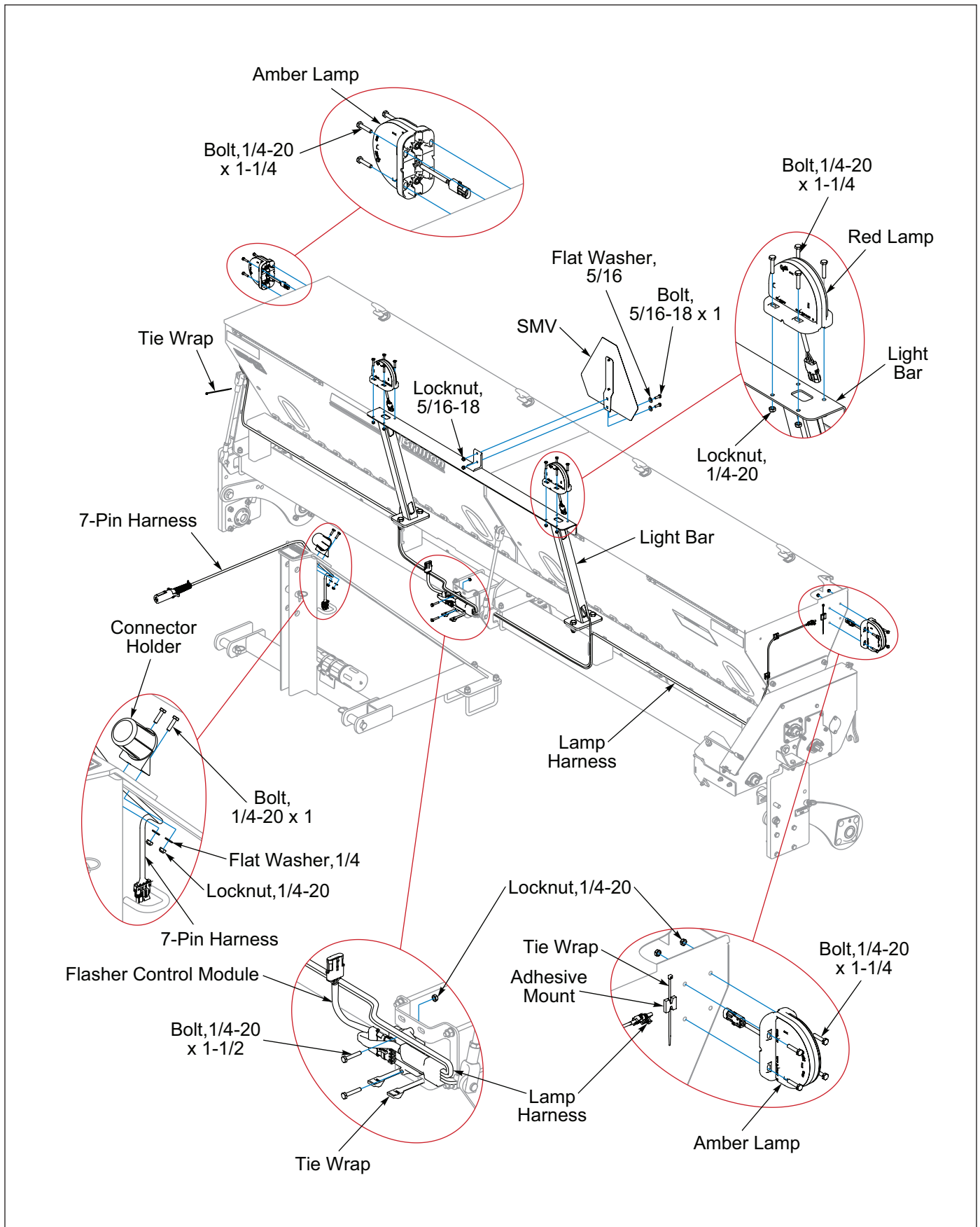


Figure 2-19: Warning Lamp Installation, 12FT

Latch Installation

Large Seed Box Cover with Latches and Gas Springs

1. Place the gasket on latch base and place on Seed Box Cover.
2. Install slotted screws to secure Latch to Cover.
3. Thread the nut onto latch rod, then slide on Internal Tooth Washer, Pawl, the other Internal Tooth Washer and then thread on the other nut. Hand tighten only.

Close the Cover and turn Latch to see if Pawl fits snug up against seed box lip. If it does not, open Cover and adjust nuts accordingly. When properly adjusted, securely tighten latch nuts.

Cover Gas Spring Installation

NOTE

Gas Spring rod end must be down for proper functionality.

1. Snap Gas Spring rod end onto Seed Box Gas Spring Bracket.
2. Swing Gas Spring base end up to Cover Ball Stud and snap in place.

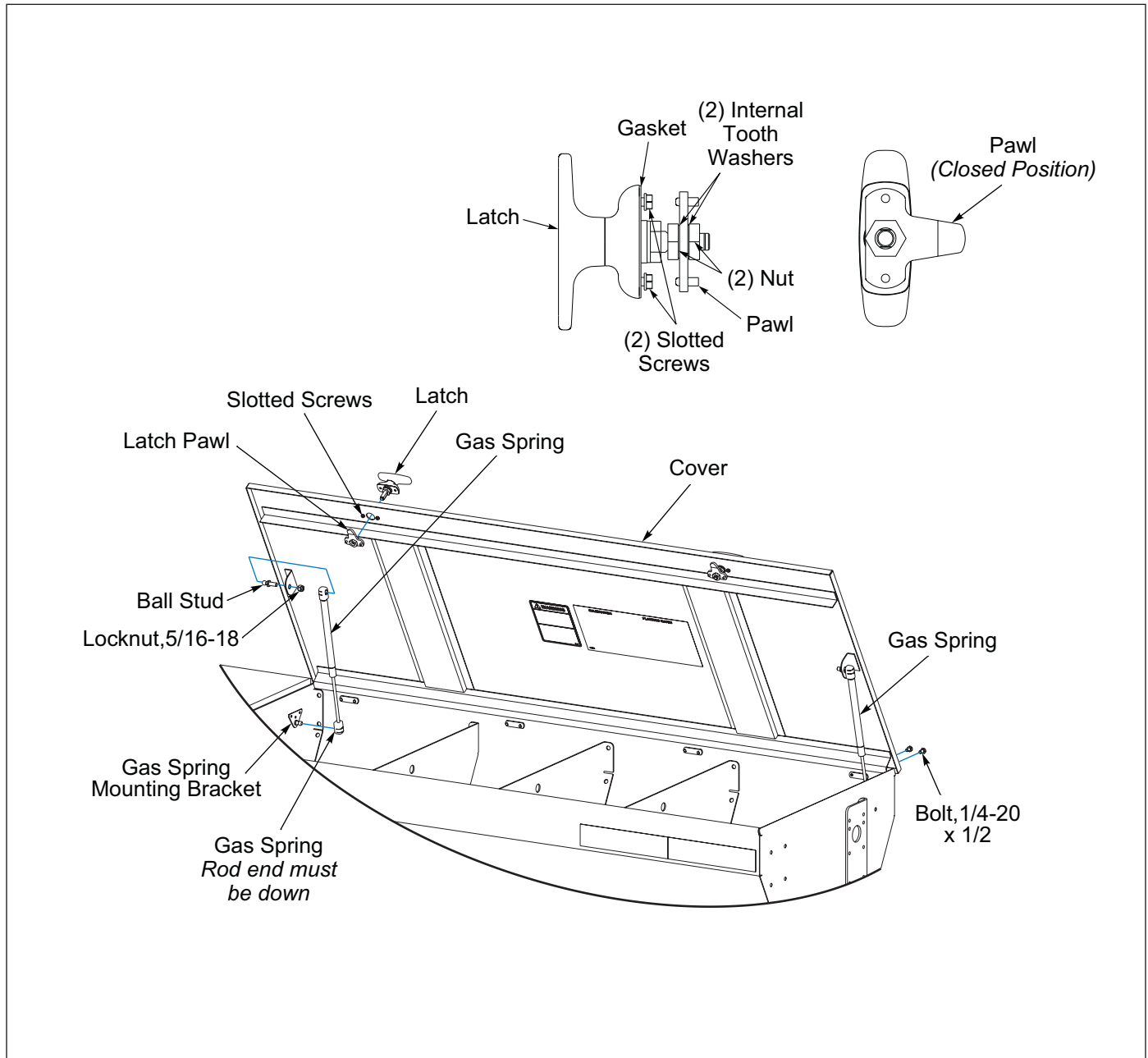


Figure 2-20: Latch Installation

Electric Clutch Kit - Optional

IMPORTANT

At no time use high pressure water or air to clean the Electric Clutch as damage could occur.

1. Verify that the Electric Clutch has 1/8" clearance between the Clutch Housing and Rubber Bumper Stop. Improper clearance may prevent the Clutch from engaging or disengaging. **See Figure 2-21.**

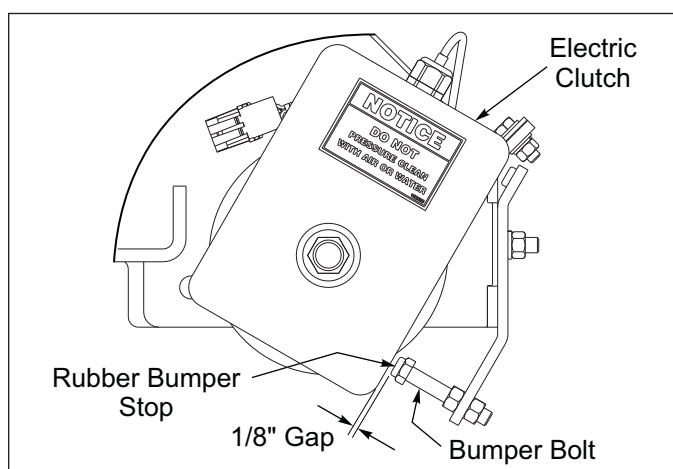


Figure 2-21: Clutch Detail

2. Connect Clutch Harness or Seeder Harness 2-Pin Connector to Clutch Lead and route along Frame and Drawbar/3-PT Hitch. Secure to Frame and Drawbar/3-PT Hitch or to Hydraulic Hoses and Warning Lamp Harness with tie wraps. **See Figure 2-22.**

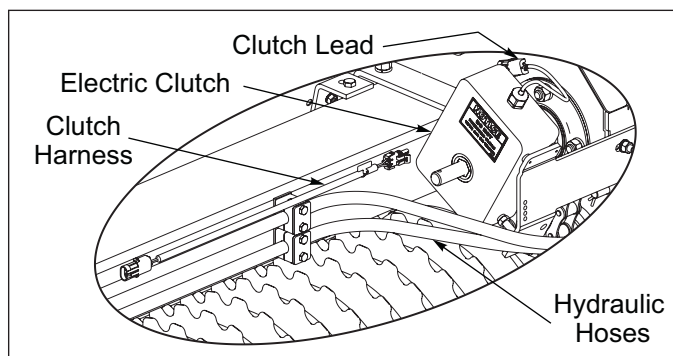


Figure 2-22: Clutch Harness

3. Install Clutch Switch Box or Monitor on Tractor in a convenient location with Hook and Loop Tape or Brackets included or another type of mount (not included).
4. **Clutch Switch Box:** Connect Clutch Harness to Clutch Switch Box Cord. Connect Clutch Switch Box Cord with Ring Terminals to tractor power source. **See Figure 2-23.** Ring Terminals can be removed and replaced with a different power source connector. **Brillion Elite Mini Monitor:** Connect the Elite Mini Tractor Harness 14-Pin Connector to Brillion Elite

Mini Monitor, 3-Pin Power Plug to 12 Volt Tractor Convenience Outlet and 6-Pin Connector to the 240" Extension Harness. 4-Pin Connector is not used at this time. Connect 240" Extension Harness to Seeder Harness. Secure Harnesses with tie wraps.

5. Check Electric Clutch Operation. The Electric Clutch will disengage when power is applied. (Clutch will make a clicking sound). Set Seeder on the ground and drive a short distance while toggling the Seeder Clutch to "ON/SEED" and "OFF/NO SEED". The Seed Shaft will stop rotating when Monitor or Toggle Switch is set to "OFF/NO SEED".
6. Set Monitor or Toggle Switch to "ON/SEED" position when Seeder is not used to shut off power to prevent possible overheating of Clutch Coil.

Electric Clutch Attributes:

- The Electric Clutch is controlled by a Touch Screen Monitor or a Toggle Switch Box mounted to the Tractor.

Brillion Elite Mini Monitor: Touch Screen Monitor provides the user the ability to turn the Seeder Clutch "ON" or "OFF".

Clutch Switch Box: Toggle Switch on the Switch Box, turns the Seeder Clutch to "SEED" or "NO SEED".

Console w/Clutch Control: Toggle Switch on the Console, turns the Seeder Clutch to "SEED" or "NO SEED".

- The Electric Clutch is disengaged when power (12 Volts) is applied. If there is a power failure or electrical problem, the Seeder will continue to operate, so the machine must be raised to stop seeding.
- Seed Shafts will not rotate when the machine is backed up.
- The Clutch Switch Box contains a 5 Amp Time-Delay Fuse.
- The Electric Clutch must be disengaged (power applied) when Seed Shafts are turned manually for Calibration.

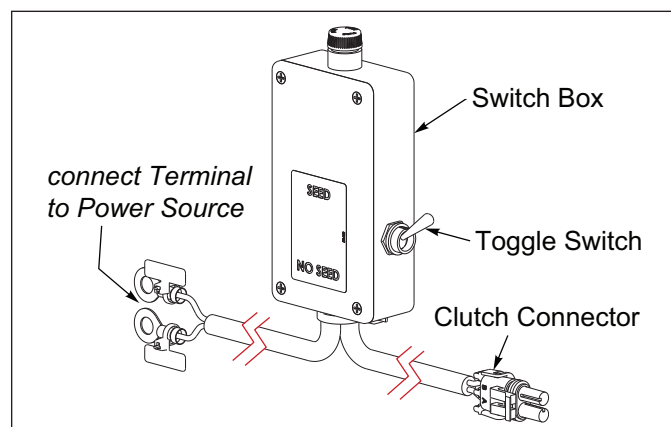


Figure 2-23: Switch Box Assembly

Acre Meter Kit, 5K275 - Optional

Not Used with Brillion Elite Mini Monitor

NOTE

The Acre Meter Kit consists of three main parts, the Acre Meter, the Pick-Up Switch and the Magnet Wheel Assembly. The Acre Meter Assembly is mounted on the left side of the Front Seed Box.

IMPORTANT

Alignment of the Pick-Up Switch and the Magnet Wheel Assembly is critical. Improper alignment will cause the Acre Meter to record acres erratically or not at all.

1. Use the Acre Meter Mount as a guide to drill two 13/32" holes into the left Seed Box.
2. Attach the Acre Meter Assembly to the Seed Box with 3/8-16 x 1 Bolts, Lock Washers and Nuts. **See Figure 2-26.**
3. Attach Pick-Up Switch Mount to Clutch Bracket with #10-24 x 3/4 Screws, Lock Washers and Nuts. Do Not tighten at this time.
4. Attach the Pick-Up Switch to the top of Pick-Up Switch Mount with #8-32 x 1-1/4 Screws, Flat Washers, Lock Washers and Nuts. Do Not tighten at this time.
5. Press the Magnet Wheel Assembly onto the Clutch Shaft until it is vertically centered with the Pick-Up Switch. **See Figure 2-24.**
6. Adjust the Pick-Up Switch and Pick-Up Switch Mount so the centerline of the Magnet Wheel Assembly and Pick-Up Switch are horizontally and vertically aligned with maximum 1/8" between the Magnet Wheel Assembly and Pick-Up Switch. Tighten all Screws. **See Figure 2-24.**
7. Attach the Pick-Up Switch Ground Wire to the small hole in the Pick-Up Switch Mount with a #6-32 x 1/2 Screw, removing paint under the wire connector to assure a good electrical ground connection. **See Figure 2-25.**
8. Plug the Extension Harness into the Acre Meter Cord.
9. Route the cord from the Acre Meter down the front of the Seed Box to the Pick-Up Switch and connect the mating plugs.
10. Securely fasten the cords to the Seed Box and Transmission with the Adhesive Mounting Plates and tie wraps to prevent the Cords from becoming entangled or rubbing moving parts.
11. Program the Acre Meter. **See "Settings for Loup Acre Meters" on Page 3-17.**

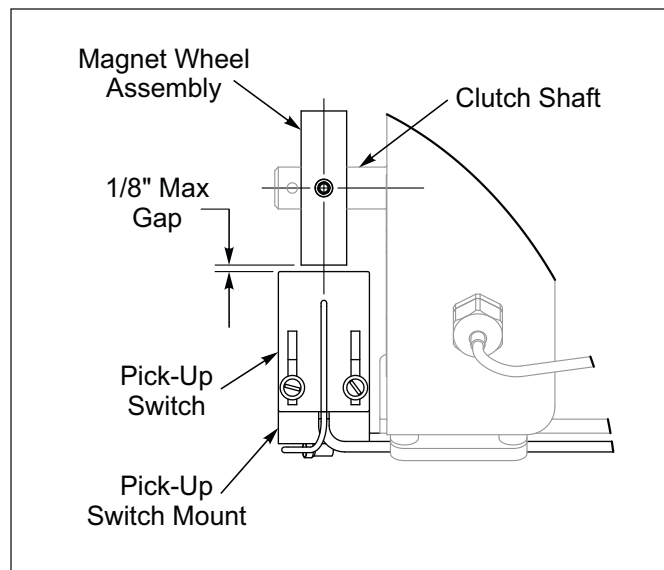


Figure 2-24: Pick-Up Switch Positioning

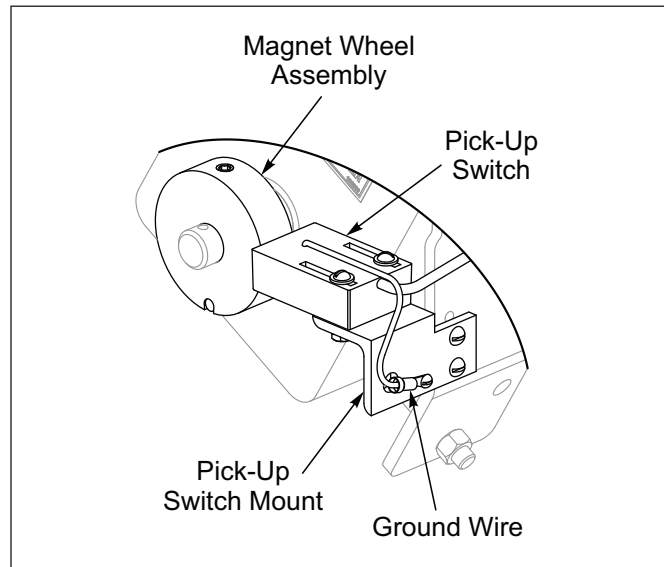


Figure 2-25: Pick-Up Switch Ground Wire

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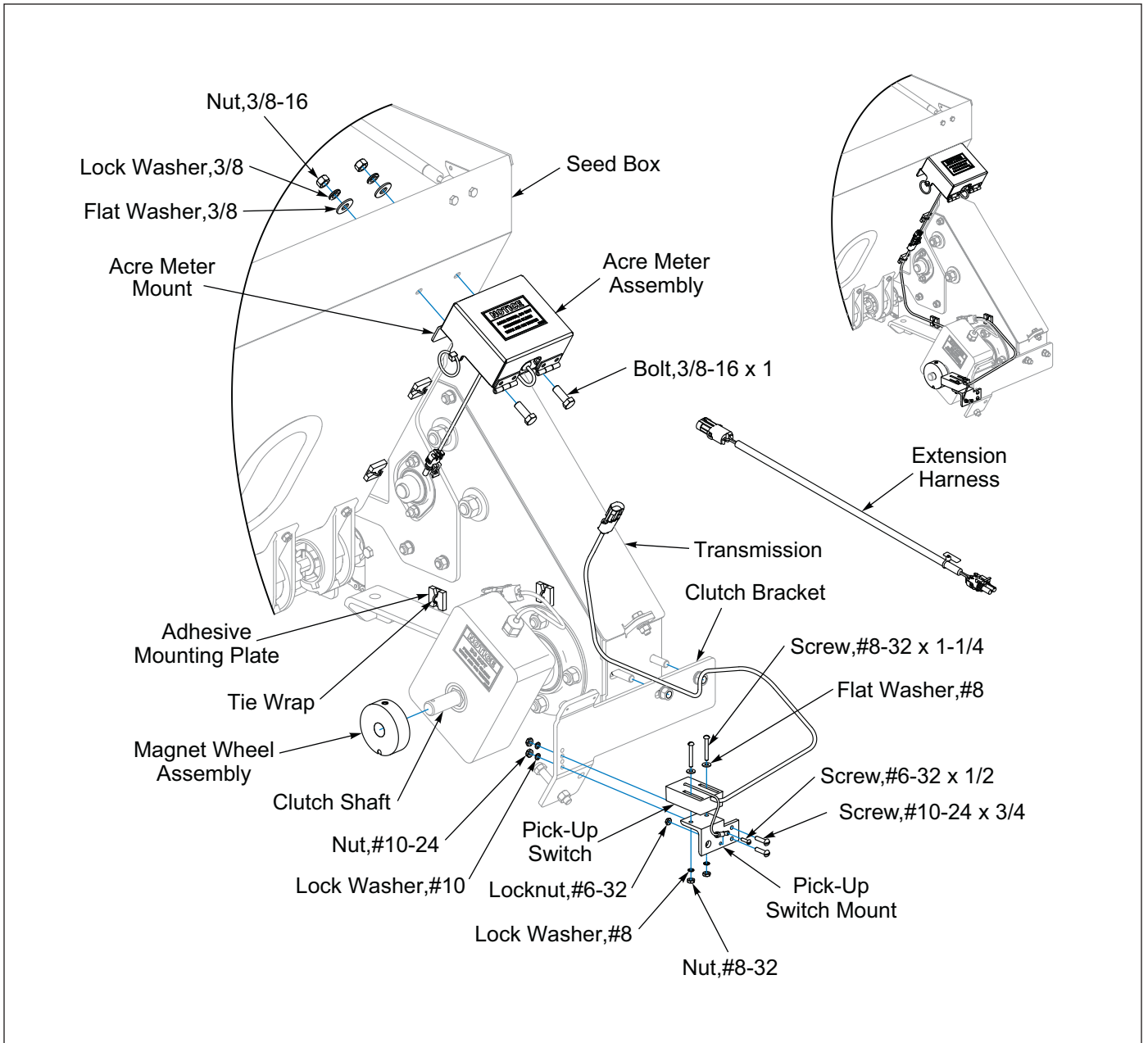


Figure 2-26: Electronic Acre Meter

Brillion Elite Mini Monitor - Optional

The Brillion Elite Mini Monitor System by Loup utilizes a MUX communication line. Sensors must be learned into the Monitor. Location of each pre-learned Smart Shaft Sensor or Bin Level Sensor is important for proper Monitor display. Each Sensor utilizes 3 wires (+, -, MuxBus) to connect to the system. The Sensors do not require specific Harness connection points. Each Sensor is identified in the Monitor by its own signal.



WARNING

High Power Magnet is use. See "High Power Magnet" on Page 1-2.

IMPORTANT

All Harnesses must be firmly attached to Machine Frame members so they do not sag or become torn loose by field debris.

Refer to Brillion Elite Mini Monitor Single or Double Box Electrical Schematic. **See Figures 2-31 and 2-32.**

1. Lay out the Seeder Harness on the front of the Seeder ensuring that the Electric Clutch 2-Pin Connector is on the left side. The Seeder Harness 24" Branch is connected to the LH Bin Level Sensor.
2. Remove Seeder Clutch. Install Actuator Assembly onto the Quill Shaft outer diameter, securing with Actuator Assembly Set Screw. Reinstall Clutch. **See Figure 2-33.** Install Pick-up Switch Bracket to the Transmission Input Shaft Bearing Flangette Hardware. Assemble Smart Shaft Sensor onto the Pick-Up Switch Bracket with sensor provided hardware and #8-32 Flange Locknuts. Adjust the Smart Shaft Sensor so that it is 1/8" Max away from the Actuator Assembly. **See Figure 2-27.** Connect Ground Speed Smart Shaft Sensor to the Center Seeder Harness.
3. Front RH side Seed Box between the 2nd and 3rd Seed Meters, install Magnet Wheel Assembly on the Hex Seed Shaft. **See Figure 2-34.** Remove the 3rd and 4th Seed Meter front Round Head Machine Screws that mount the Seed Meter to the Seed Box and replace them with 1/4-20 x 1 Round Head Machine Screws. Install the Sensor Mount on the 1/4-20 x 1 Machine Screws. Secure with Flat Washers, Lock Washers and Nuts. Install a Smart Shaft Sensor to the Sensor Mount with sensor provided hardware and #8-32 Flange Locknuts. Adjust the Smart Shaft Sensor so that it is 1/8" Max away from the Magnet Wheel Assembly on the Seed

Shaft. **See Figure 2-29.** Connect the Smart Seed Shaft Sensor to the Seeder Harness.

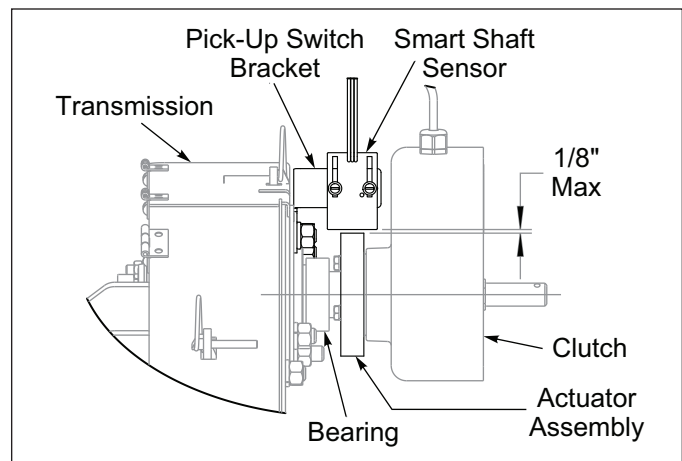


Figure 2-27: Ground Speed Sensor Detail

4. If equipped with a Rear Seed Box, removed the RH Rear Deflector and replace it with notched RH Rear Deflector which allows access to the Smart Shaft Sensor. **See Figure 2-35.** Rear RH side Seed Box between the 2nd and 3rd Seed Meters, place 1-1/4 x 1/4 x 1/16 Magnet on the Seed Shaft. Secure with Magnet Collar. Remove the 1st and 2nd Seed Meter rear Round Head Machine Screws that mount the Seed Meter to the Seed Box and replace them with 1/4-20 x 3/4 Round Head Machine Screws. Install the Sensor Mount on the 1/4-20 x 3/4 Machine Screws. Secure with Flat Washers, Lock Washers and Nuts. Install a Smart Shaft Sensor to the Sensor Mount with sensor provided hardware and #8-32 Flange Locknuts. Adjust the Smart Shaft Sensor so that it is 1/8" Max away from the Magnet Collar on the Seed Shaft. **See Figure 2-30.** Connect the Smart Seed Shaft Sensor to the Seeder Harness.
5. In not equipped with a Rear Seed Box, seal the Seeder Harness Connector with a 3-Pin Shroud and Cavity Plugs to protect the Harness from the environment.
6. The Seeder RH and LH ends only, remove the .803 Knockouts in the Seed Box. *Do Not remove the Knockouts in the Seed Boxes at the center of the Seeder.*
7. On the inside at either end of the Seed Box, install a Bin Level Sensor Bracket with the Seed Box Mounting 3/8-16 Hardware. **See Figure 2-36.** Determine the desired level for the alarm to be indicated on the Brillion Elite Mini Monitor and assemble the Bin Level Sensors to Bin Level Sensor Brackets with sensor provided hardware and #8-32 Flange Locknuts. If more adjustment is needed, the Bin Level Sensor Brackets can also be raised or lowered to the desired seed level. Install Cord Grips from the inside of the Seed Box out and secure with supplied Locknut on the outside of the Seed Box. To get the Sensor

Connector outside the Seed Box, feed the terminals through the Cord Grip. Install the terminals into the 3-Pin Shroud labeled "A", "B" and "C" as follows "A" White, "B" Black, "C" Green. **See Figure 2-28.** Inside the Seed Box, provide enough cord slack to the Bin Level Sensor Cord to allow for future adjustments of the Sensor. Secure the Bin Level Cord by tightening the Cord Grip Compression Nut. Connect both Bin Level Sensors to the Seeder Harness.

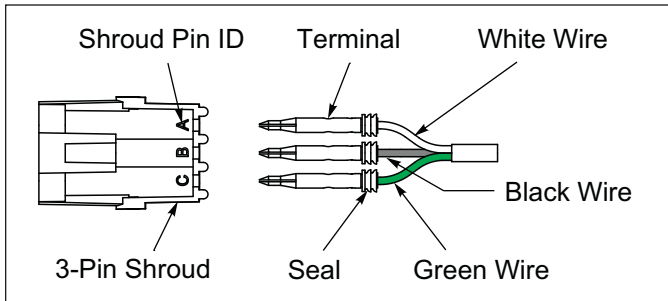


Figure 2-28: Bin Level Sensor Wire Detail

8. Connect the 240" Extension Harness to the Seeder Harness. Route the 240" Extension Harness along the Seeder Frame and down the Drawbar/3-PT Hitch to the Tractor.
9. Install Brillion Elite Mini Monitor on Tractor. **See "Brillion Elite Mini Monitor Tractor Installation - Optional" on Page 2-23.**
10. If not already installed, install Smart Clutch Relay into Elite Mini Tractor Harness 3-Pin Connectors.
11. Connect the Elite Mini Tractor Harness 14-Pin Connector to Brillion Elite Mini Monitor, 3-Pin Power Plug to 12 Volt Tractor Convenience Outlet and 6-Pin Connector to the 240" Extension Harness. 4-Pin Connector is not used at this time.
12. Bundle and secure all Harnesses along the Seeder Frame and Drawbar/3-PT Hitch with Tie Wraps.
13. Program Bin Level Sensors and Smart Shaft Sensors if not already pre-programmed. **See "Brillion Elite Mini Monitor" on Page 4-1.**

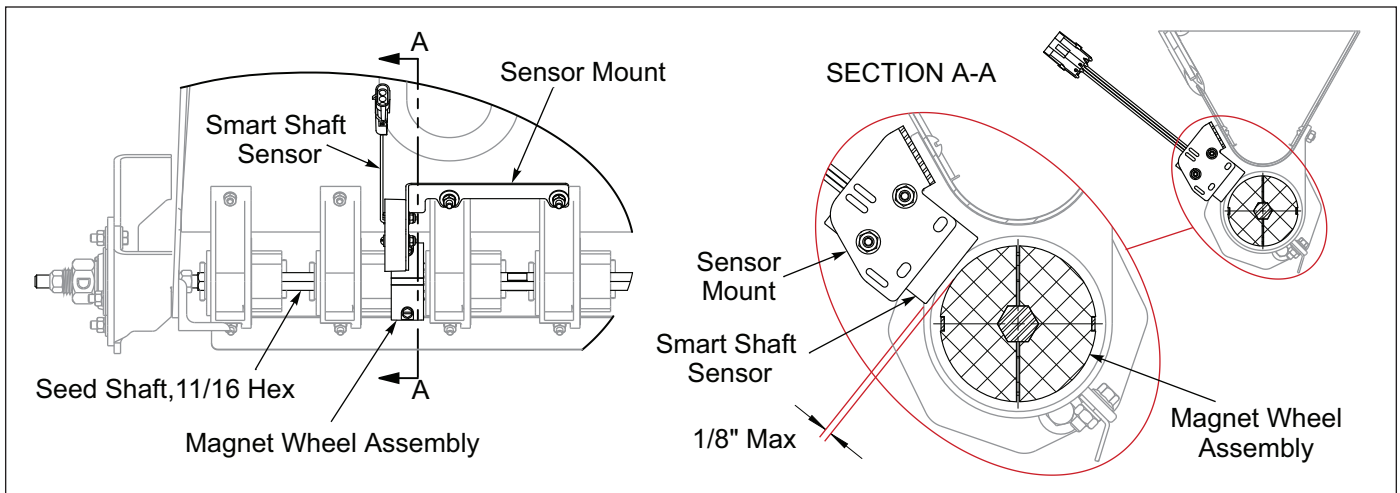


Figure 2-29: Front Seed Box Smart Shaft Sensor Detail

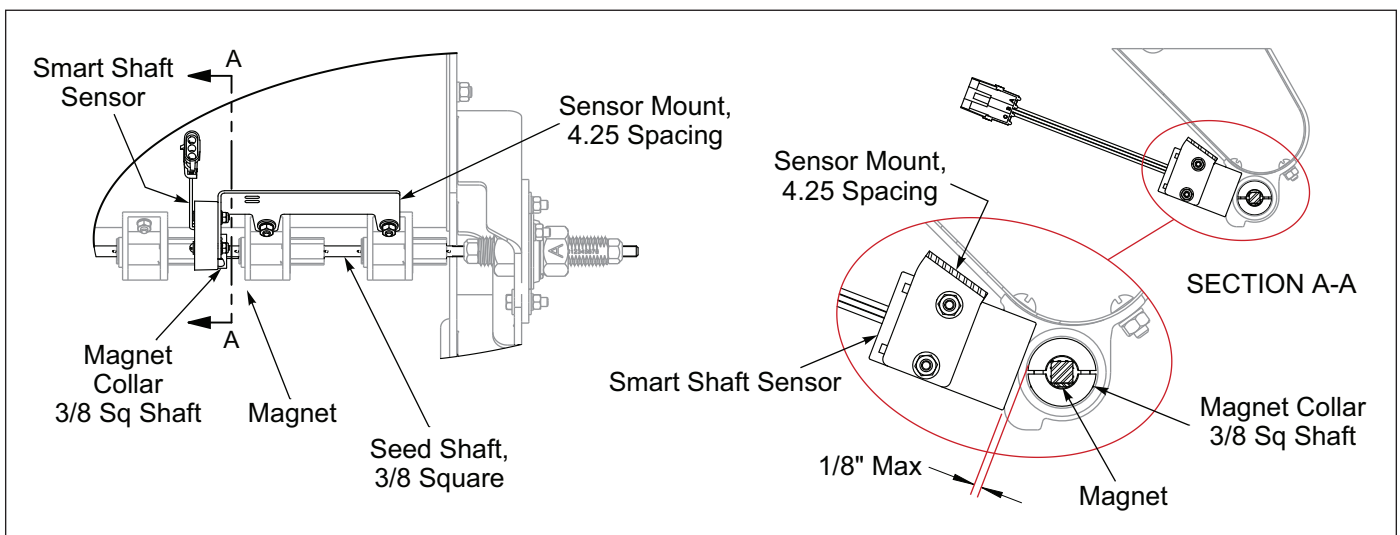


Figure 2-30: Rear Seed Box Smart Shaft Sensor Detail

Brillion Elite Mini Monitor Electrical Schematic - Single Seed Box

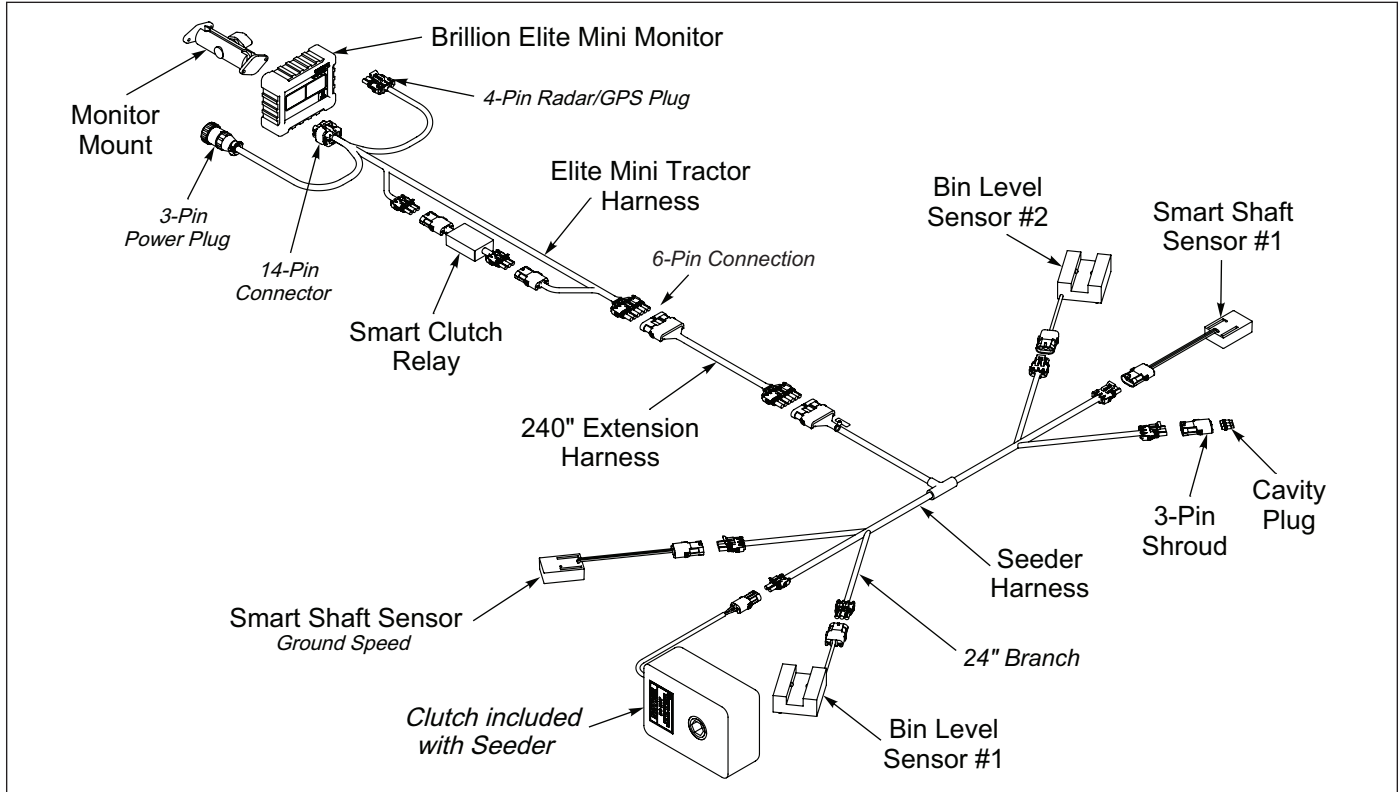


Figure 2-31: Brillion Elite Mini Monitor Electrical Schematic - Single Seed Box

Brillion Elite Mini Monitor Electrical Schematic - Double Seed Box

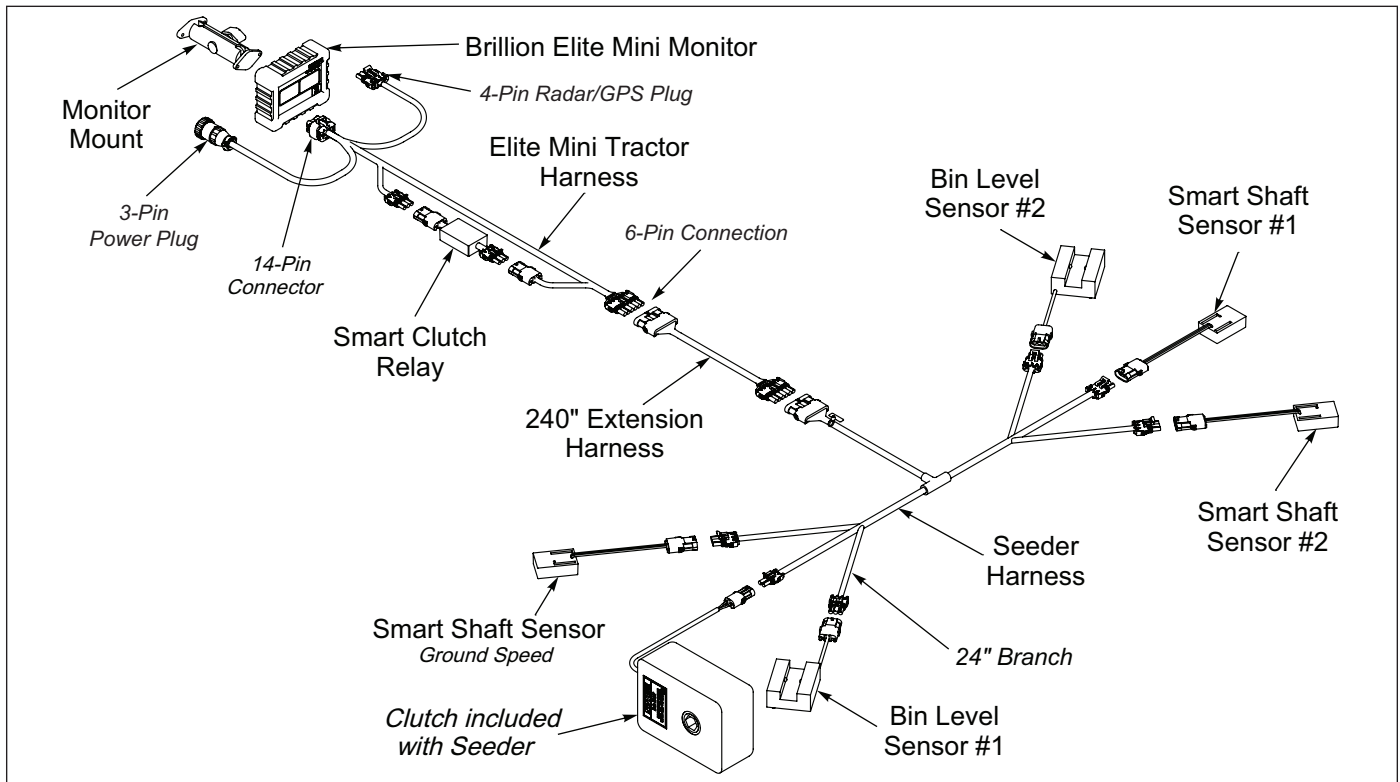


Figure 2-32: Brillion Elite Mini Monitor Electrical Schematic - Double Seed Box

Brillion Elite Mini Monitor - Ground Speed Sensor

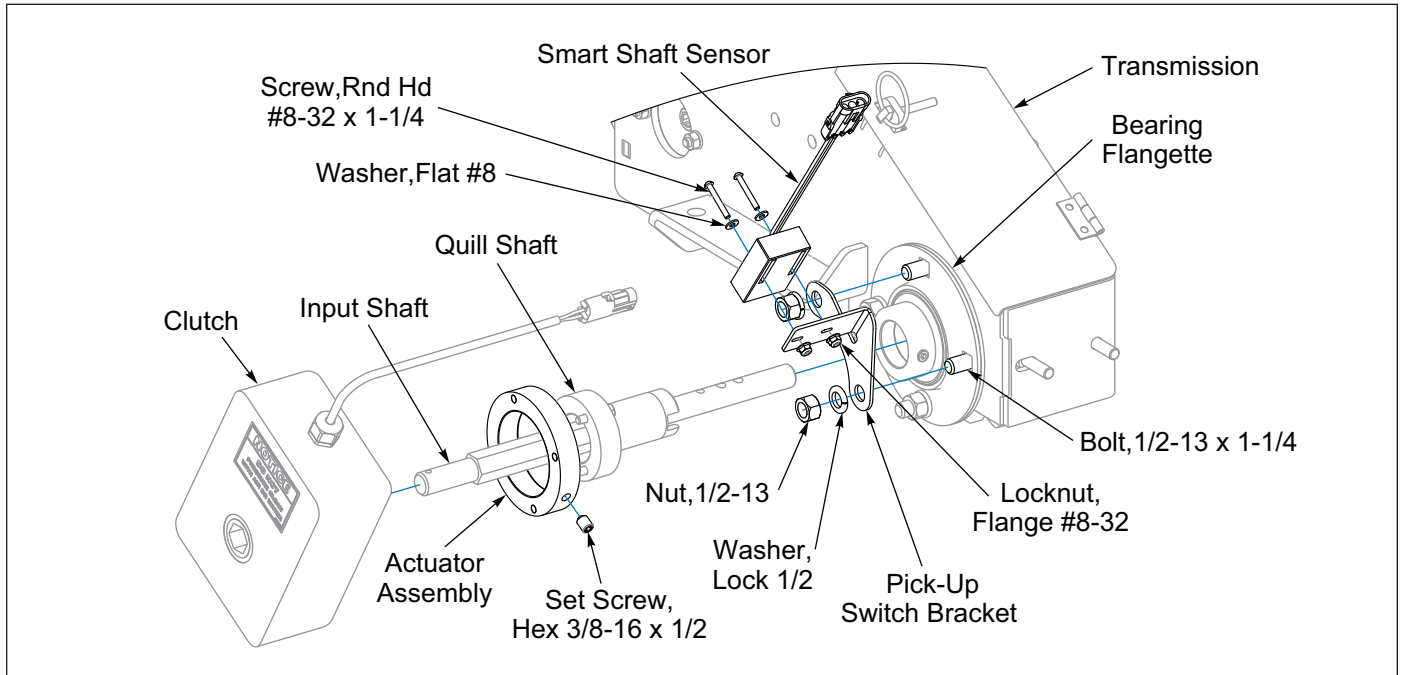


Figure 2-33: Brillion Elite Mini Monitor - Ground Speed Sensor

Brillion Elite Mini Monitor - Front Seed Box Seed Shaft Sensor

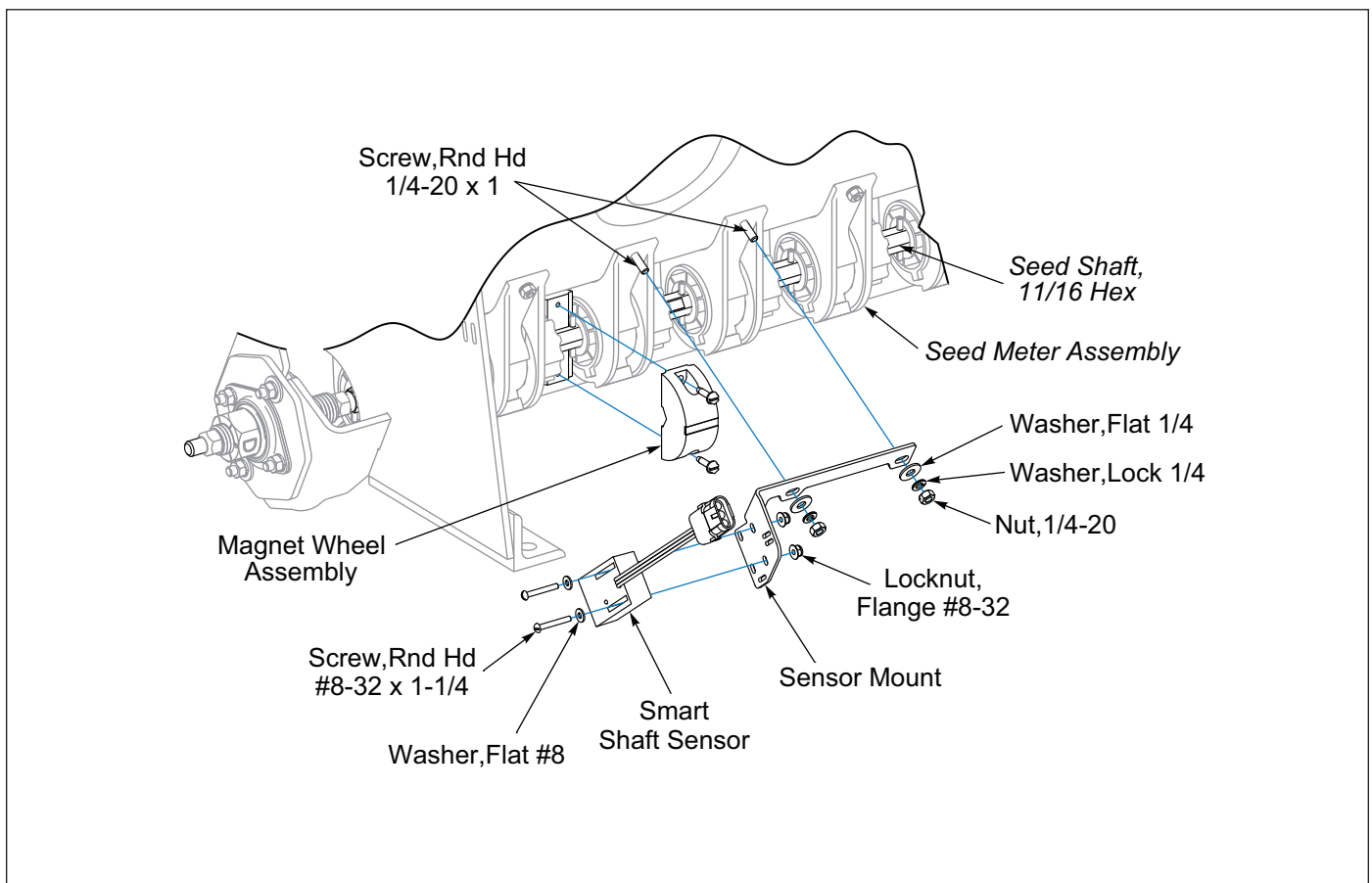


Figure 2-34: Brillion Elite Mini Monitor - Front Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Rear Seed Box Seed Shaft Sensor

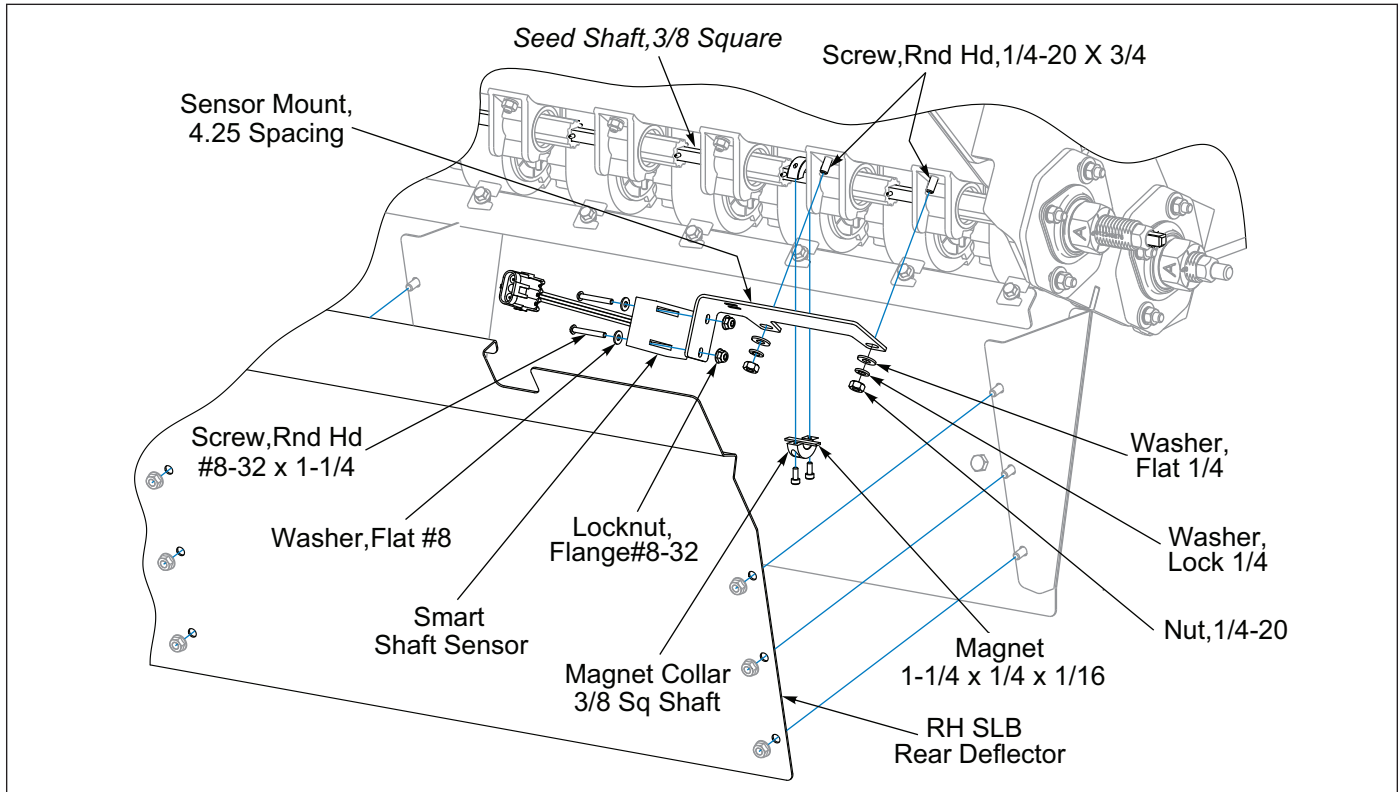


Figure 2-35: Brillion Elite Mini Monitor - Rear Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Bin Level Sensor

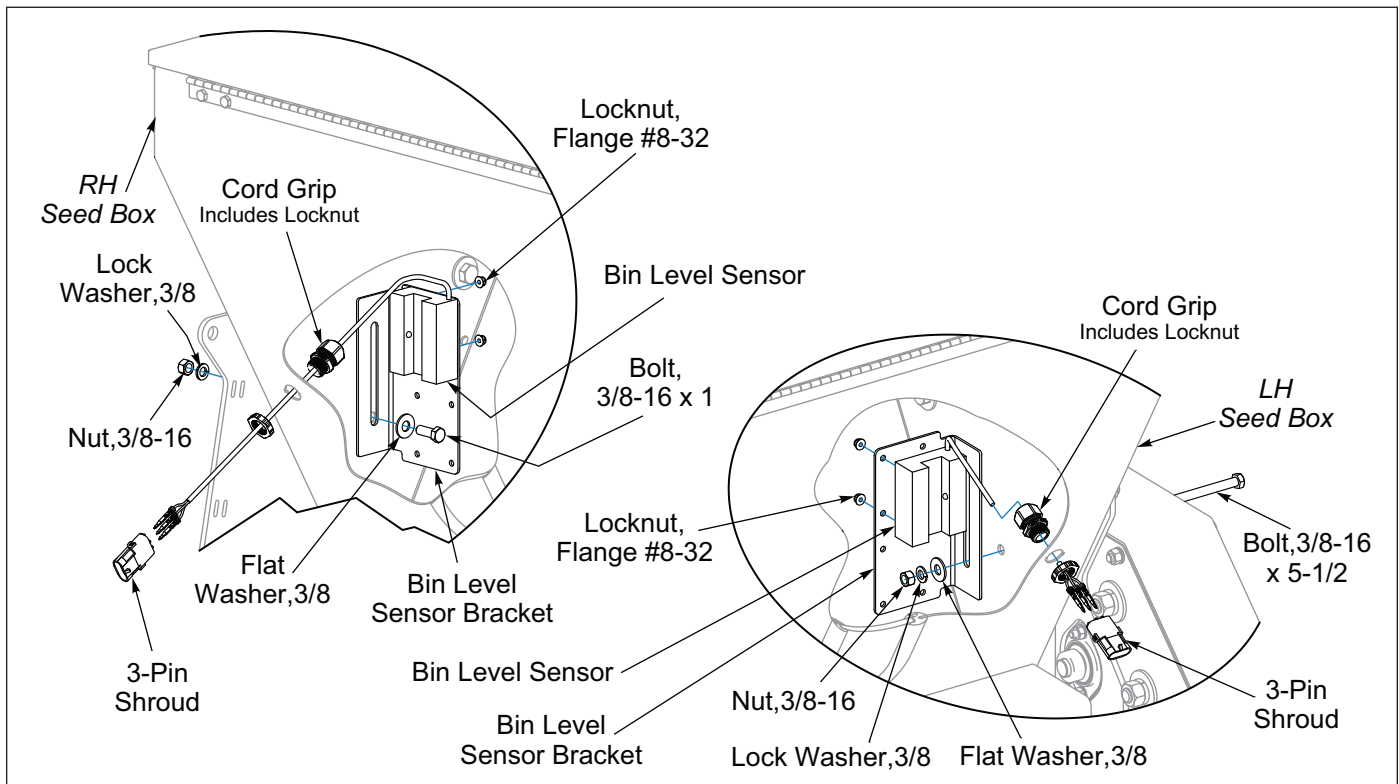


Figure 2-36: Brillion Elite Mini Monitor - Bin Level Sensor

Brillion Elite Mini Monitor Tractor Installation - Optional

1. Mount Angle Bracket onto Tractor where convenient for the operator. **See Figure 2-37.**
2. Attach Straight Bracket to Angle Bracket with 1/2-13 x 1-1/2 Bolt and Flanged Locknut.
3. Attach the Brillion Elite Mini Monitor to the Monitor Mount with Metric Machine Screws, provided with Monitor.
4. Attach the Monitor Mount to the Straight Bracket with #10-24 x 1 Machine Screws, Flat Washers, Lock Washers, and Nuts, provided with Monitor Mount.
5. With the Brillion Elite Mini Tractor Harness, plug the 14-Pin Connector into the Monitor, the 3-Pin Power Connector into the Tractor Convenience Outlet and the 6-Pin Connector into the 240" Extension Harness.
6. Check clutch operation: Clutch will engage when power is applied. (Clutch will make a clicking sound). **See "Brillion Elite Mini Monitor" on Page 4-1.**

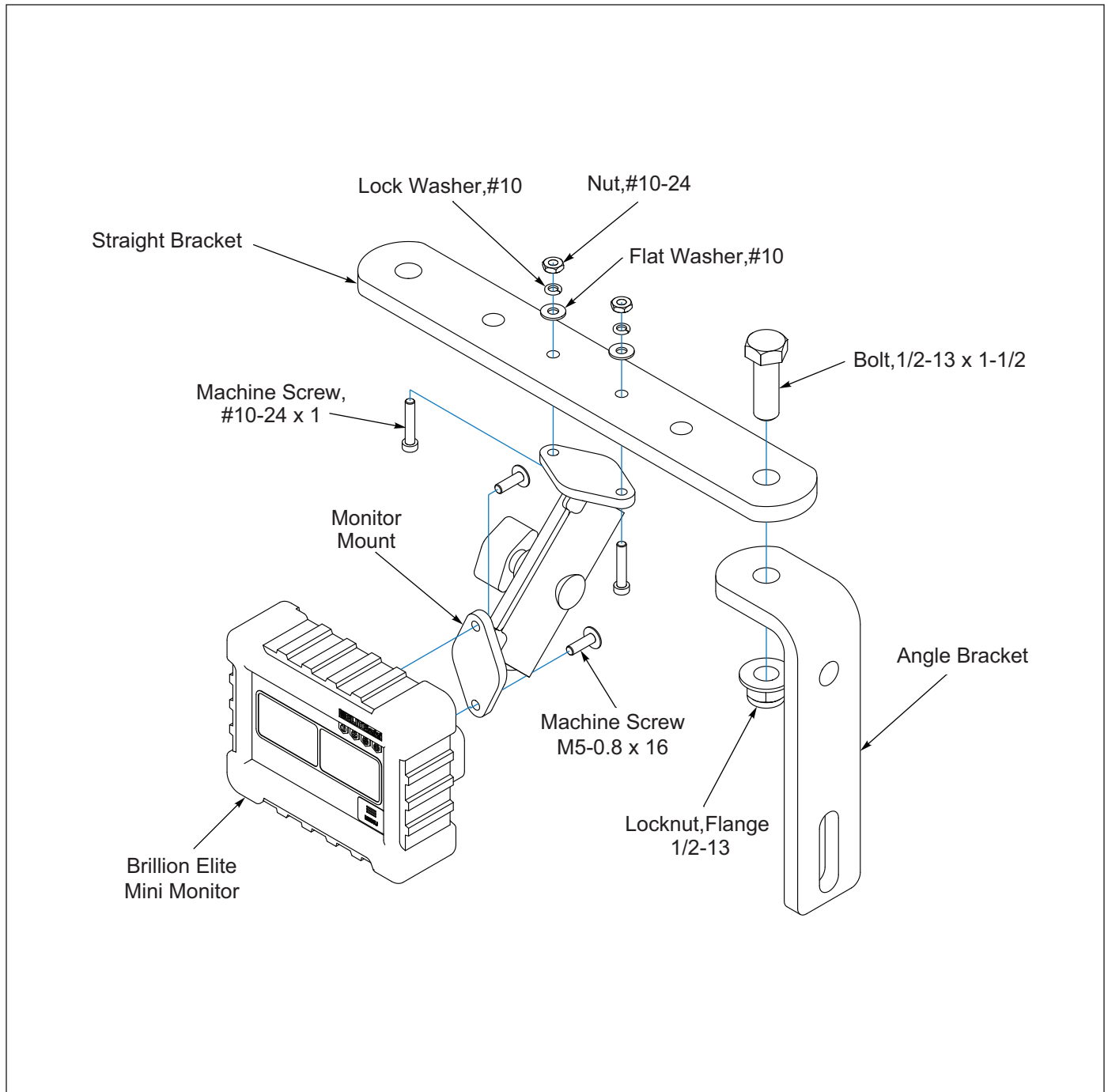


Figure 2-37: Brillion Elite Mini Monitor Tractor Installation - Optional

Console w/Clutch Control Installation - Optional

1. If equipped with Clutch Switch Bar, remove from Tractor and remove Clutch Harness from Seeder.
2. Mount Seeder Console with Clutch Control on Tractor.
3. Route Console Harness with 9-Pin Connector to the Seeder Harness.
4. Attach 3-Pin Power Plug to Tractor.
5. Secure Console Harness with tie wraps.
6. Route Seeder Harness along Frame of Seeder. Ensure plug labeled Electric Clutch Power is on the left side.
7. On left side connect plug labeled "Electric Clutch Power" to the Electric Clutch Lead. **See Figure 2-38.**
8. Connect plug labeled "Left Front Seed Shaft Sensor" to the left front Seed Shaft Sensor. Seal the plug end using a 3-Pin Tower and Cavity Plug to protect it from the environment.
9. Repeat for the right side.
10. Secure all Harnesses with tie wraps.

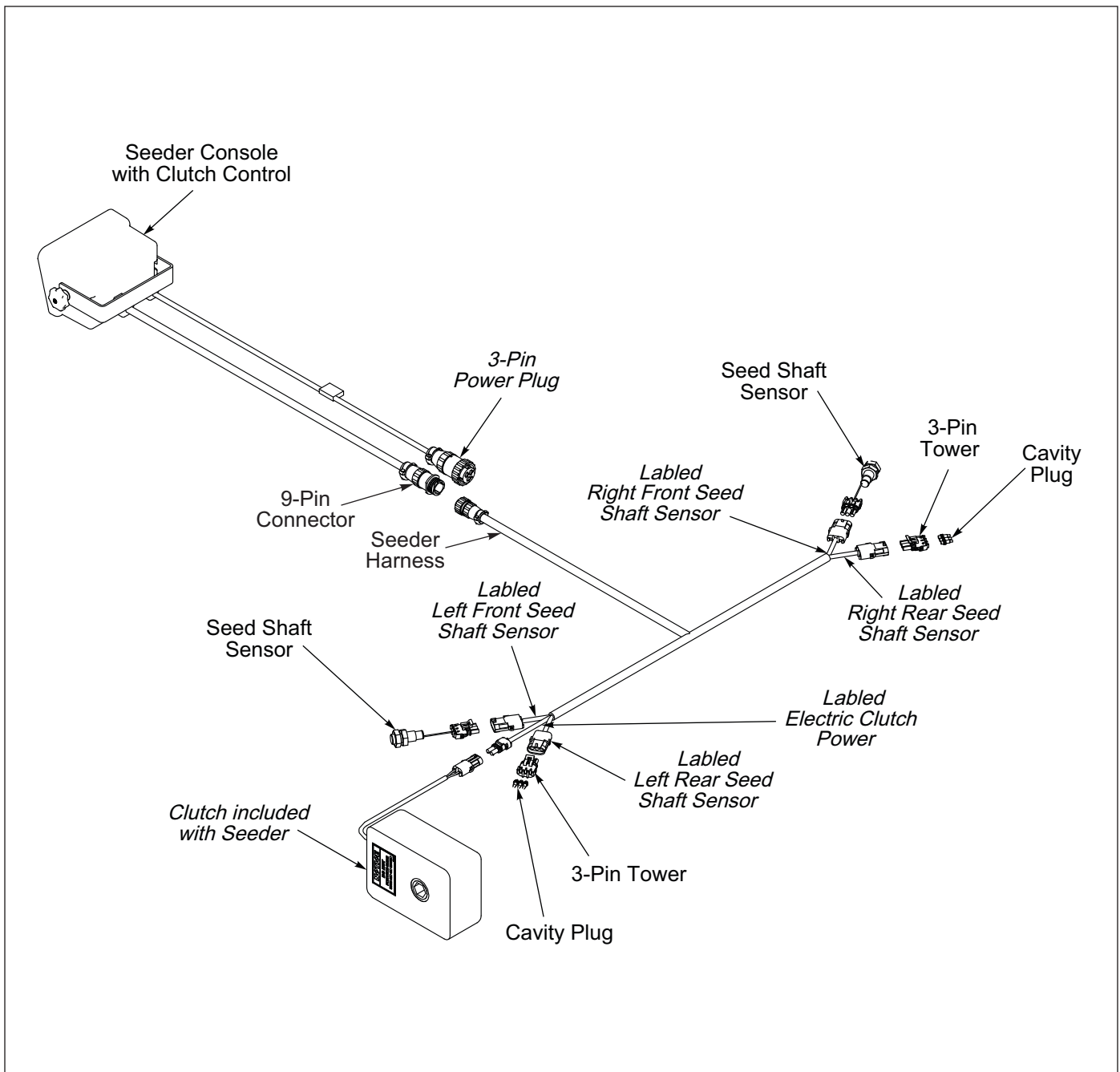


Figure 2-38: Console w/Clutch Control Electrical Schematic

Console w/Clutch Control - Seed Shaft Sensor - Optional

Seed Shaft Sensor and Magnet Wheel Assembly Installation

1. Remove the two #10-24 x 3/4 Self Tapping Screws from the Magnet Wheel Assembly.
2. Position half of the Magnet Wheel Assembly on the Seed Shaft. Ensure it fits squarely onto Seed Shaft.
3. Mount the other half, ensuring it fits squarely onto Seed Shaft.
4. Fasten the two halves together using two #10-24 x 3/4 Self Tapping Screws. *Do not over tighten.*
5. Identify the Seed Meters on either side of the Magnet Wheel Assembly and remove the 1/4-20 hardware.
6. Insert Seed Shaft Sensor into Shaft Sensor Bracket Slot. **See Figure 2-40.**
7. Align the Shaft Sensor Bracket with the two 1/4-20 Bolts. Secure with existing Lock Washers and Nuts.

8. Position Seed Shaft Sensor so it is 1/8" from the Magnet Wheel Assembly. **See Figure 2-39.** Tighten both Seed Shaft Sensor Retaining Nuts.

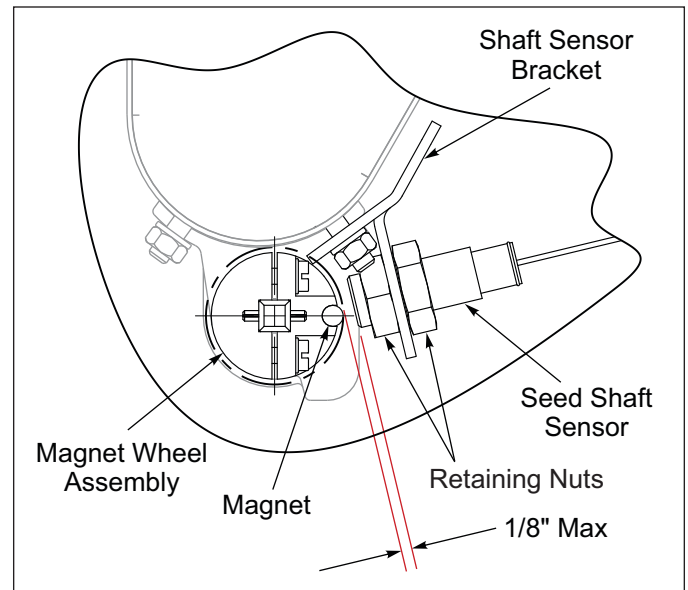


Figure 2-39: Console w/Clutch Control Detail

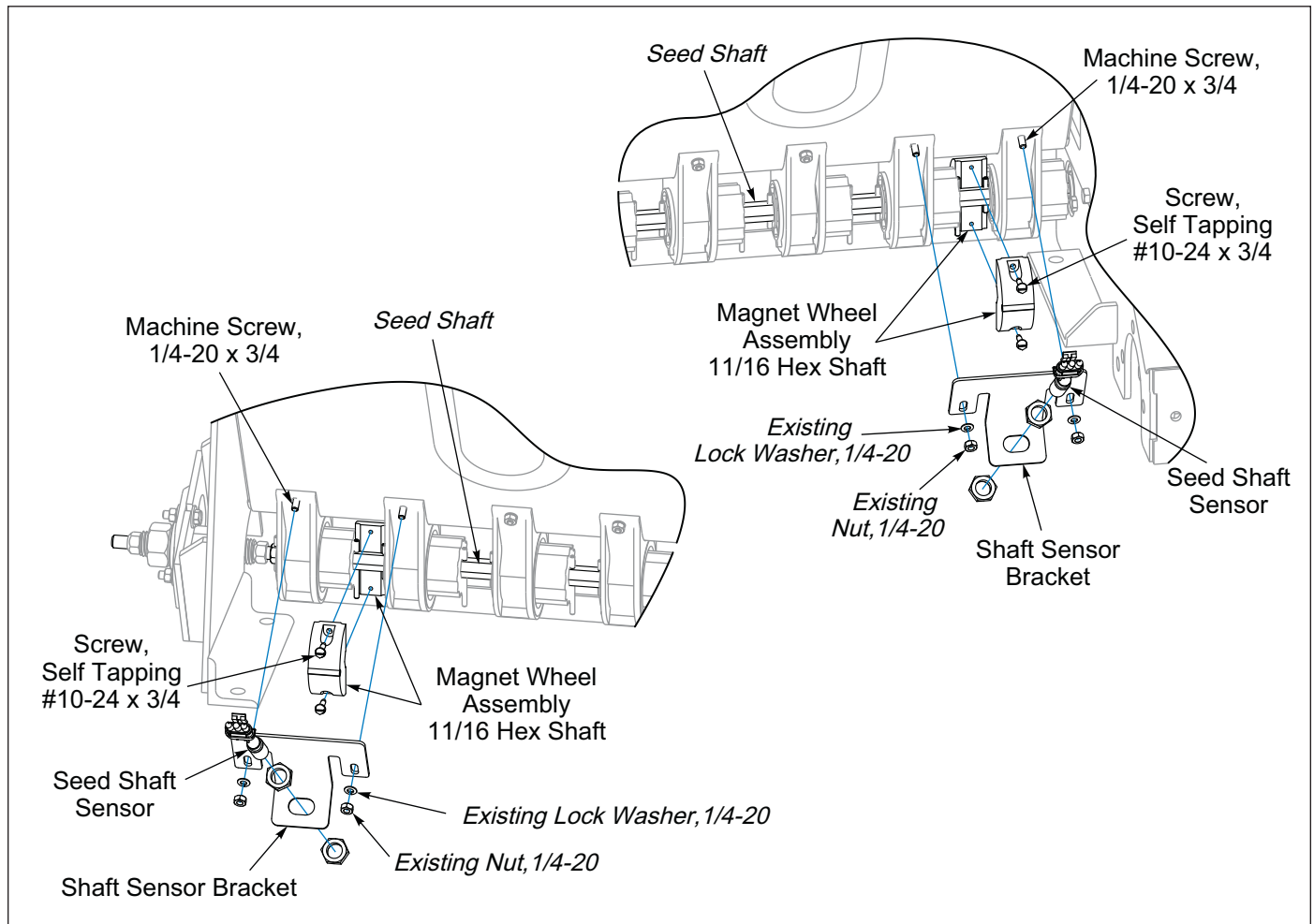


Figure 2-40: Console w/Clutch Control Seed Shaft Sensor

Console w/Clutch Control Tractor Installation - Optional

1. Mount Angle Bracket onto Tractor where convenient for the operator. **See Figure 2-41.**
2. Attach Straight Bracket to Angle Bracket with 1/2-13 x 1-1/2 Bolt and Flanged Ny-Lok Nut.
3. Attach the Console to the Straight Bracket with 1/4-20 x 1 Bolt, Flat Washers and Locknut.
4. Plug Console 3-Pin Power Cord into the Tractor Convenience Outlet and 9-Pin Cord into the Seeder Harness.
5. Check clutch operation: Clutch will disengage when power is applied. (Clutch will make a clicking sound). Set seeder on the ground and drive a short distance while turning switch on and off. The seed shaft will stop rotating when switch is turned to **"NO SEED"** position. **See "Console w/Clutch Control - Optional" on Page 3-8.**

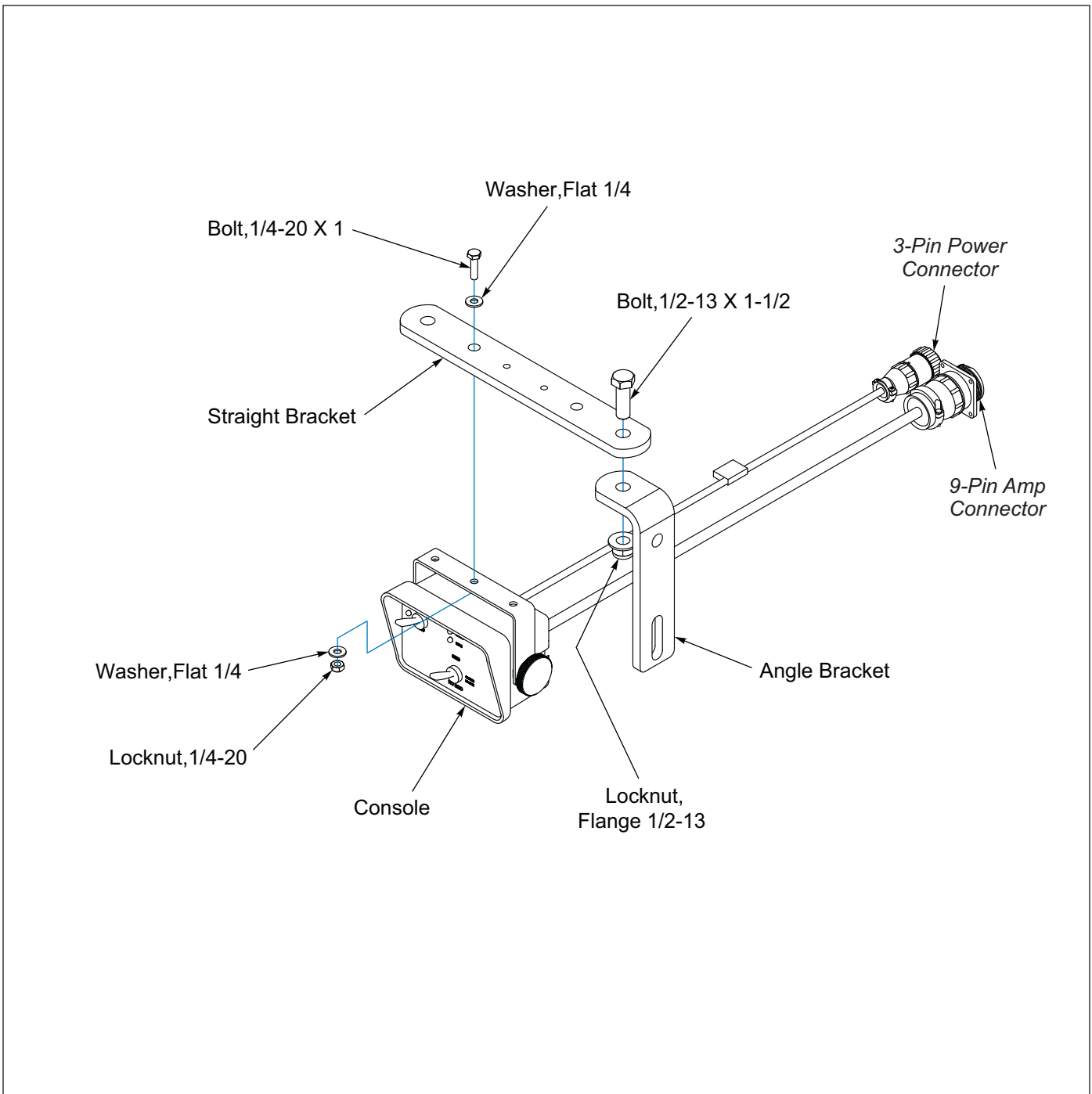


Figure 2-41: Console w/Clutch Control Tractor Installation

Rear Seed Box Installation - Optional (After 01/2020)

1. Engage Parking Pin on 3-PT Models. Lower Seeder and empty Seed Boxes.
2. Disconnect Acre Meter and Warning Lamps.
3. 8FT and 10FT Models, remove RH and LH Light Brackets.
4. 12FT Models, remove Turnbuckles from Seed Box RH Support, Center Bracket and LH Mount Plate.
5. On the side of the Transmission by the Electric Clutch, loosen the Transmission #40 Drive Chain Idler Sprocket Nut to disengage Drive Chain tension. **See Figure 2-42.**

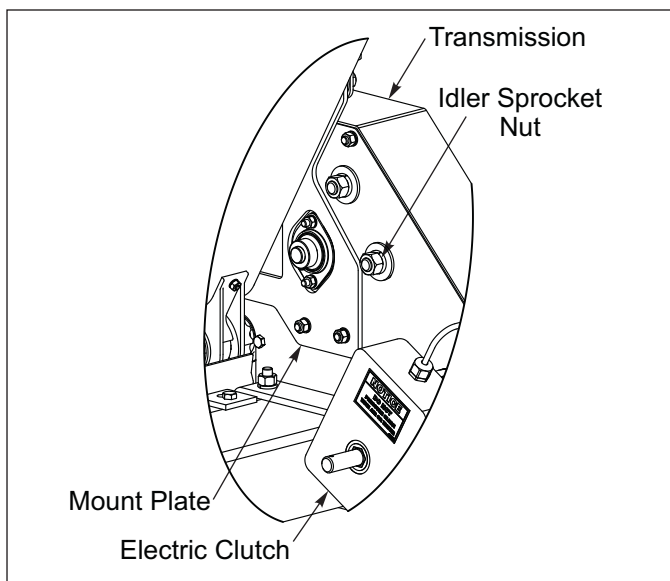


Figure 2-42: Loosen Idler Sprocket

6. Remove Seed Shaft Seed Rate Adjusting Nut. Do Not loosen 1/2-13 Locknuts at the end of the Seed Rate Adjusting Screw. **See Figure 2-43.**

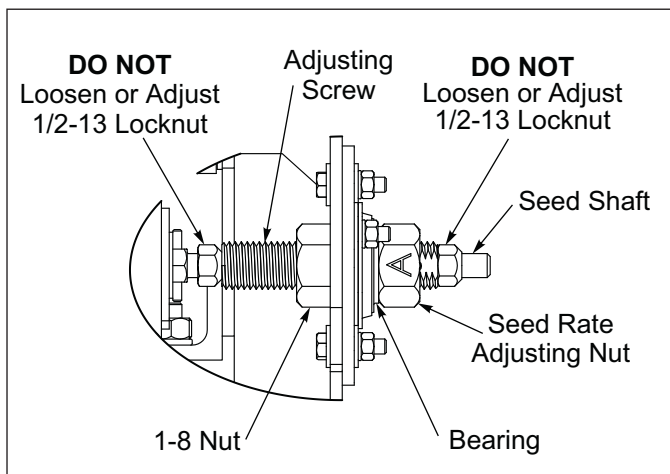


Figure 2-43: Front Box Seed Rate Adjuster

7. Remove Seed Rate Adjuster Bearing Carrier Plate with Bearing still assembled to it, from the Seed Box RH Support and Seed Rate Adjusting Screw.
8. At the center of the Seeder where the RH and LH Hex Seed Shafts come together, remove Seed Shaft Coupling and unscrew RH Seed Shaft from LH Seed Shaft. **See Figure 2-44.**

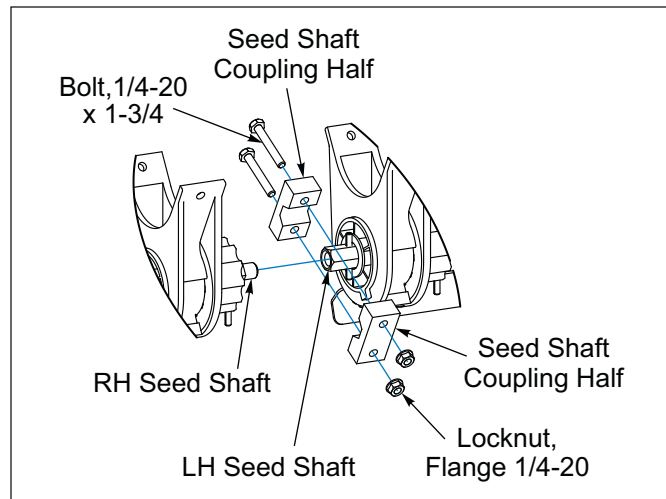


Figure 2-44: Front Box Seed Shaft Coupler

9. Support RH and LH Seed Boxes by using the hole in the Dividers inside the Seed Box. Remove Seed Box RH Support, RH Seed Box and Seed Box Center Bracket.
10. Remove Rear Deflectors. Turn Rear Deflectors around so that the lip angles rearward. Re-install Rear Deflectors. **See Figure 2-45.**

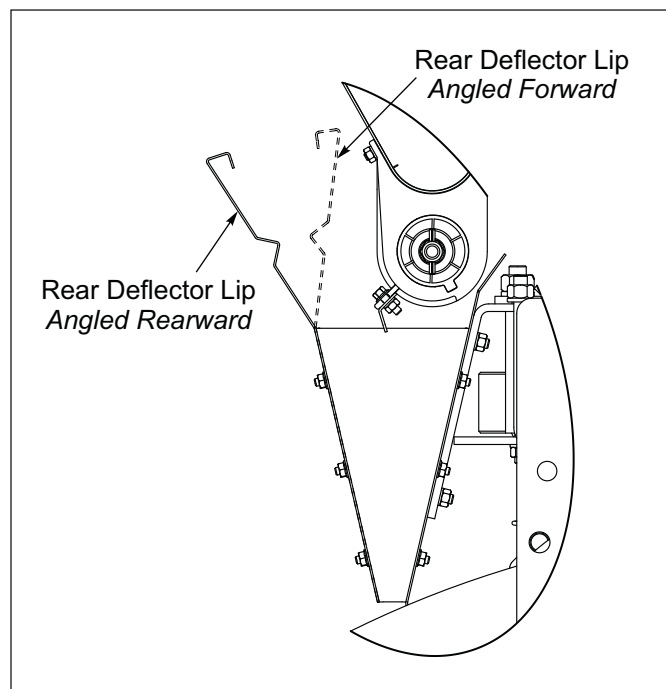


Figure 2-45: Deflector Flipped

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11. Remove the Mount Plate Hardware and slide the LH Seed Box far enough to the right to remove the Mount Plate from the Seed Box and Transmission. Complete removal of the Seed Box is not required, the Seed Shaft will slide in the 37 Tooth Sprocket and Bearing. Remove the Single Box Mount Plate and replace it with a Double Box Mount Plate on the Transmission and LH Seed Box ensuring that the Seed Shaft is aligned and free to rotate. Tighten Hardware.
12. Remove Transmission Shield, Sprocket Cover and 2-Hole Cover from Transmission. **See Figure 2-46.**
13. Disassemble Hex Bore Bearing from Sprocket Cover and assemble it onto the outside of Sprocket Cover Weldment (surface opposite channel). Do not tighten at this time. **See Figure 2-47.** Assemble Idler Sprocket onto Sprocket Cover Weldment Channel with 5/8-11 X 2-1/4 Bolt, Flat Washers, 5/8 x 1 x 14ga Washers, Lock Washer and Nut. Do not tighten at this time. Mount Sprocket Cover Weldment on Transmission while sliding Hex Bore Bearing onto Front Seed Shaft. Check Idler Sprocket alignment with Jackshaft Sprocket and adjust 5/8 x 1 x 14ga Washers accordingly. Ensure that the Front Seed Shaft is aligned and free to rotate, tighten Hardware.

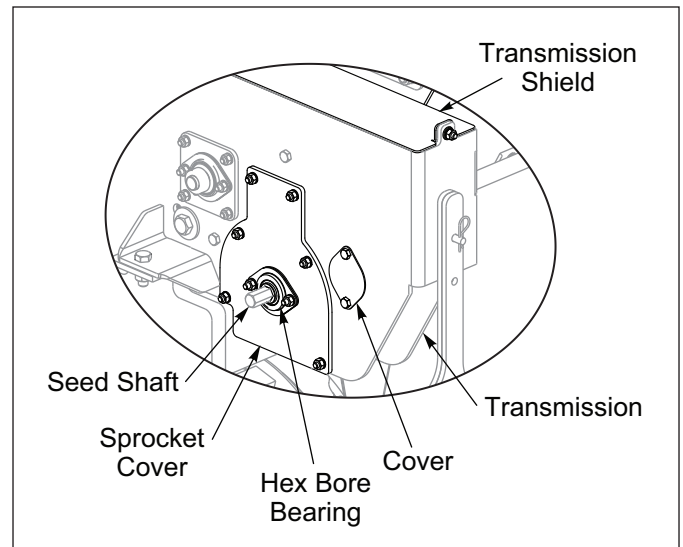


Figure 2-46: Transmission Shield

14. Install 3/4 Bearings and Flangettes on Transmission with 5/16-18 x 1 Bolts, Lock Washers and Nuts. Do Not Tighten at this time.

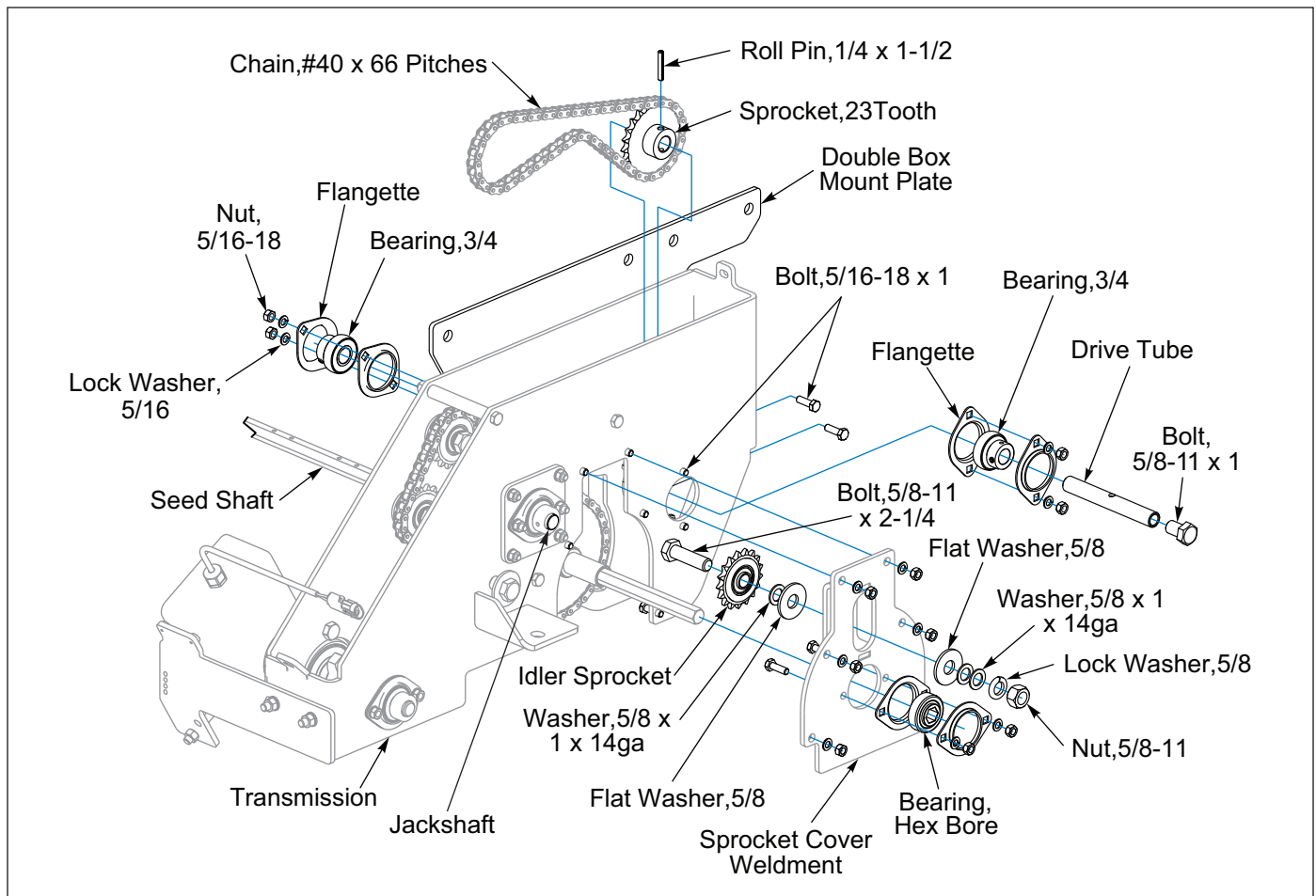


Figure 2-47: Rear Box Transmission

15. Install 5/8-11 x 1 Bolt into Drive Tube Threaded End. Slide Square Bore End of Drive Tube, towards the Seed Box, through the 3/4" Bearings while installing 23 Tooth Sprocket and secure Sprocket to Drive Tube with 1/4 x 1-1/2 Roll Pin. Align 23 Tooth Sprocket with Idler Sprocket. Tighten Bearing Hardware and Lock Bearing Collars. **See Figure 2-47.**
16. Support LH Rear Seed Box. Align and insert Rear Seed Box 3/8" Square Seed Shaft into Transmission Drive Tube. Seed Shaft should be free to rotate. **See Figure 2-48.**

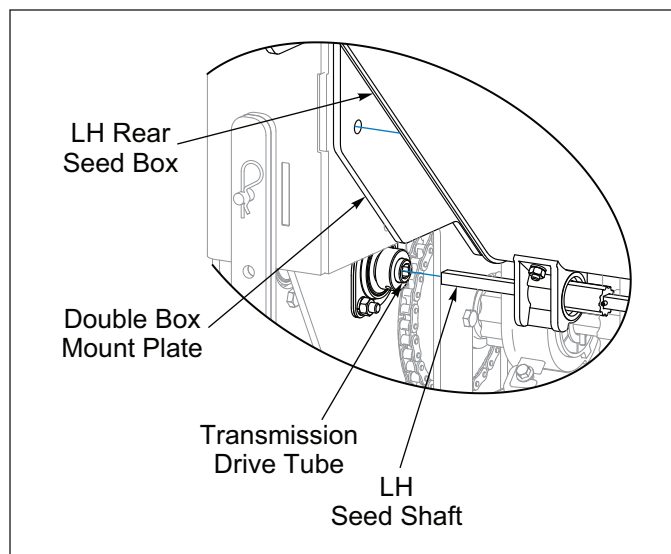


Figure 2-48: Rear Box Seed Shaft

17. Install #40 x 66 Pitches Chain. **See Figure 2-49.**

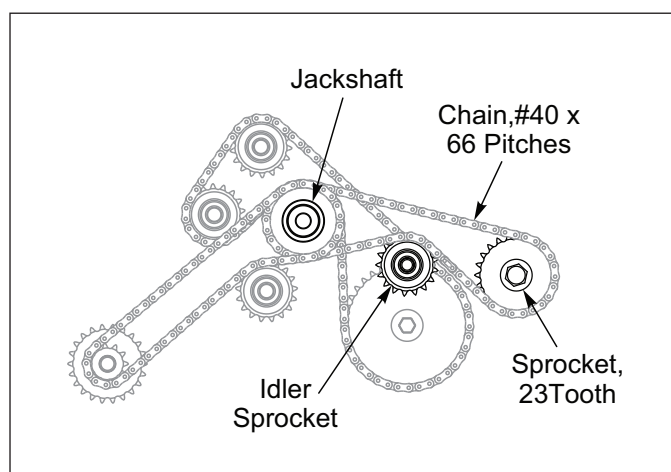


Figure 2-49: Sprocket Chain

18. Assemble the LH Rear Seed Box to the Transmission Double Box Mount Plate with two 1/2-13 x 1-1/4 Bolts and a 3/8-16 x 1-1/4 Bolt, Flat Washers, Lock Washers and Nuts. Tighten Hardware.
19. Position Double Box Center Bracket against LH Front and LH Rear Seed Boxes.

20. While supporting the RH Front Seed Box, position Seed Box against Double Box Center Bracket. Assemble Seed Boxes and Center Bracket together with Hardware but do not tighten at this time.
21. Support RH Rear Seed Box and position Seed Box against Double Box Center Bracket. Assemble Seed Boxes and Center Bracket together with two 1/2-13 x 1-3/4 Bolts and a 3/8-16 x 1-1/2 Bolt, Flat Washers and Lock Washers and Nuts. Do not tighten at this time.
22. Assemble RH Double Box Support onto RH Front Seed Box with Hardware but do not tighten at this time.
23. Assemble RH Rear Seed Box onto RH Double Box Support with two 1/2-13 x 1-1/4 Bolts and a 3/8-16 x 1 Bolt, Flat Washers, Lock Washers and Nuts. Do not tighten at this time.
24. Turn the RH Front Seed Box Hex Seed Shaft into the LH Front Hex Seed Shafts.
25. Turn the RH Rear Seed Box 3/8" Square Seed Shafts into the LH Rear 3/8" Square Seed Shafts. Do not tighten Rear Seed Box Feed Roll Coupler at this time.
26. Sight along Seed Boxes from ends, front and rear to ensure Seed Boxes are straight and level, ensure that all Seed Shafts turn freely and are not binding. Tighten Double Box Center Bracket and RH Double Box Support Hardware that attaches the Seed Boxes. Tighten U-Bolts that mount the Center Bracket and the RH Support to the Seeder Frame Tube.
27. Slide the Bearing Carrier Bearing onto the Front Seed Box Seed Rate Adjusting Screw and attach the Bearing Carrier to the RH Double Box Support.
28. Install Seed Rate Adjusting Nut onto Front Seed Box Seed Rate Adjusting Screw.
29. Install Bearing Carrier onto RH Double Box Support with 5/16-18 x 1-1/4 Bolts, Flat Washers, Lock Washers and Nuts. **See Figure 2-51.**

30. Assemble onto the Rear Seed Box Seed Shaft the Seed Rate Adjusting Screw, 1-8 Nut, Bearing, Seed Rate Adjusting Nut and 1/2-13 Locknut. Place Bearing between Flangettes and attach to Bearing Carrier with 5/16-18 x 1 Bolts, Lock Washers and Nuts. **See Figures 2-50 and 2-51.**

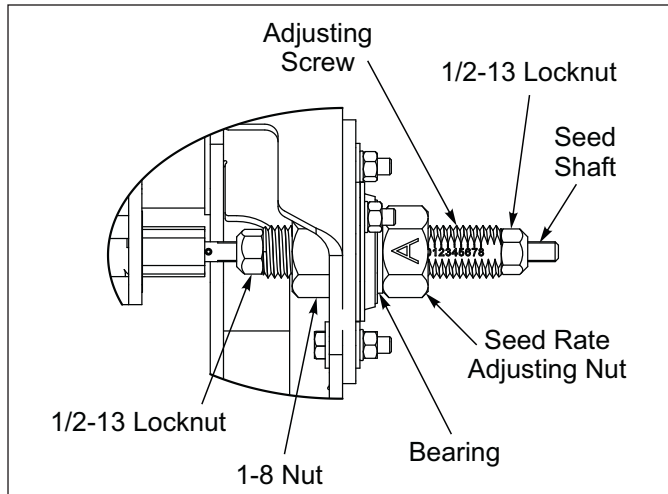


Figure 2-50: Rear Box Seed Rate Adjuster

31. Adjust Front and Rear Seed Box Seed Meters so that all the Seed Meters are closed. Perform Seed Meter "0" Adjustment in **"Seed Meter Adjustment"** on **Page 5-8.**
32. Install Front Seed Shaft Coupler and tighten Rear Seed Box Feed Roll Coupler Assembly Set Screws against the Seed Shaft and tighten Jam Nuts against Feed Roll Coupler.
33. On the side of the Transmission by the Electric Clutch, position the Idler Sprocket so that it applies tension to the #40 Drive Chain. Tighten the Idler Sprocket Nut. **See "Chain Tension" on Page 5-6.**
34. Install Transmission Shield.
35. 8FT and 10FT Seeders, Install RH and LH Light Brackets.
36. 12FT Seeders, Install Turnbuckles to Double Box RH Support, Double Box Center Bracket and LH Double Box Mounting Plate.
37. Connect Acre Meter and Warning Lamps.

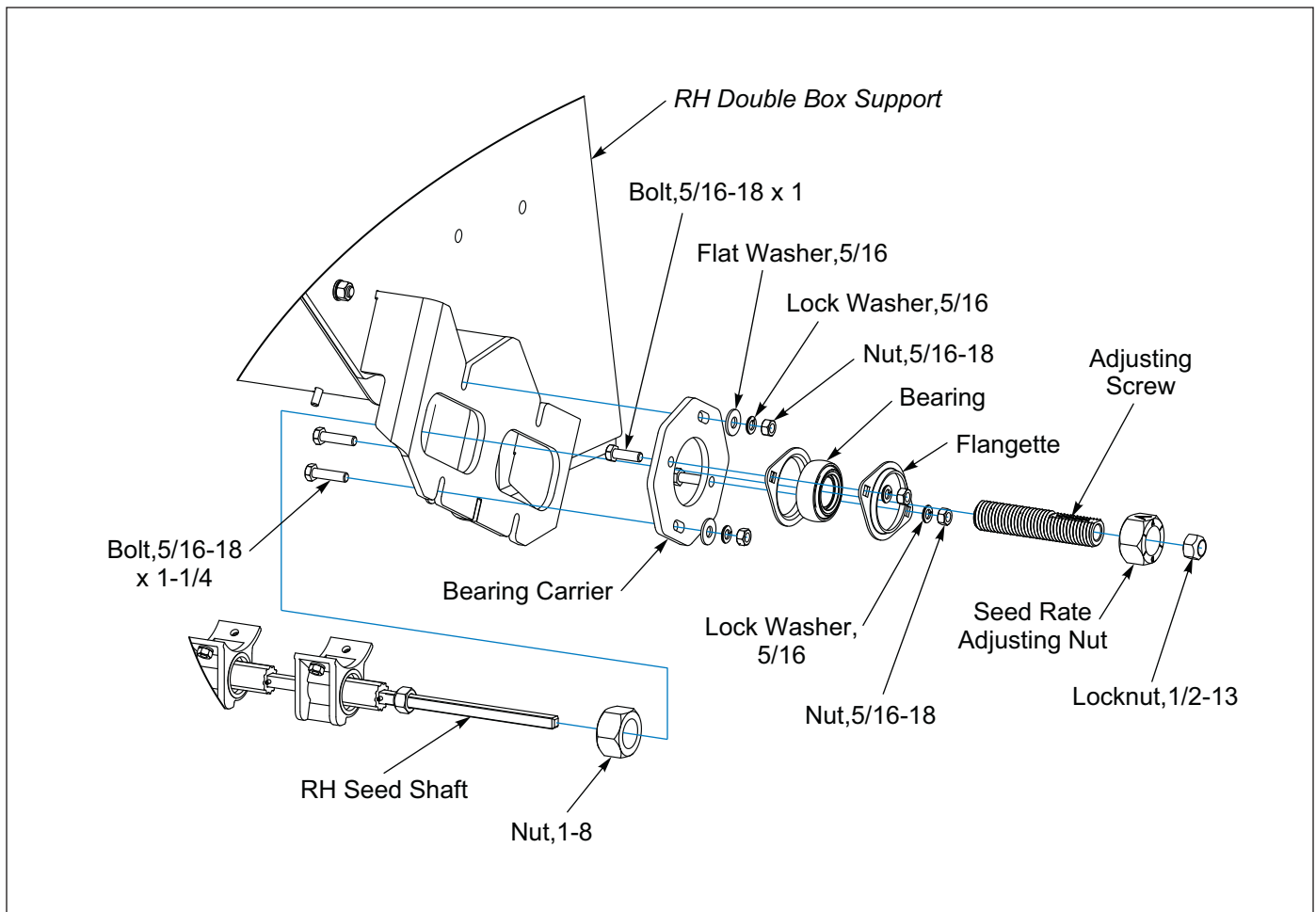


Figure 2-51: Rear Box RH End Assembly

Rear Seed Box Installation - Optional (Before 01/2020)

1. Engage Parking Pin on 3-PT Models. Lower Seeder and empty Seed Boxes.
2. Disconnect Acre Meter and Warning Lamps.
3. 8FT and 10FT Models, remove RH and LH Light Brackets.
4. 12FT Models, remove Turnbuckles from Seed Box RH Support, Center Bracket and LH Mounting Plate.
5. On the back of the Transmission by the Calibration Wrenches, loosen the Transmission #40 Drive Chain Idler Sprocket Axle Bolt and Clevis Drawbolt Locknut to loosen Drive Chain tension. **See Figure 2-52.**

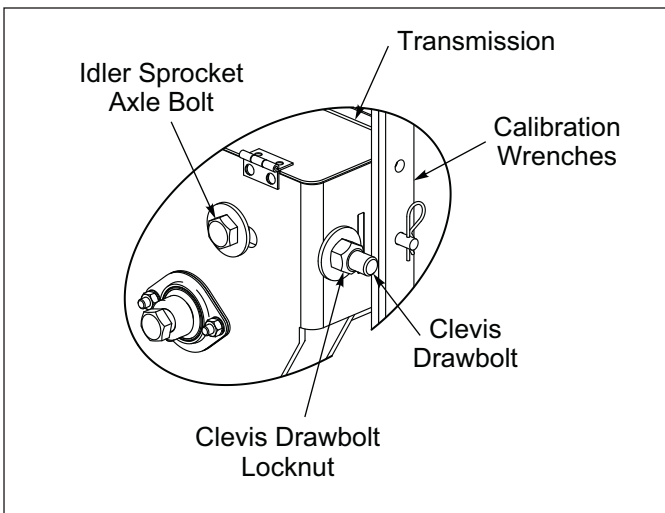


Figure 2-52: Loosen Idler Sprocket

6. Remove Seed Shaft Seed Rate Adjusting Nut. Do Not loosen 1/2-13 Locknuts at the end of the Seed Rate Adjusting Screw. **See Figure 2-53.**

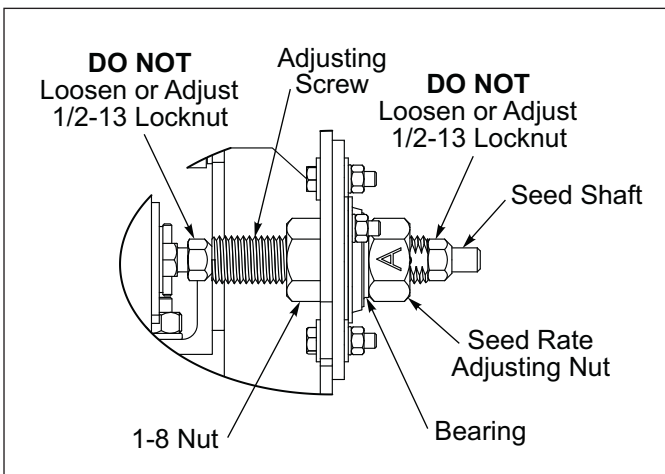


Figure 2-53: Front Box Seed Rate Adjuster

7. Remove Seed Rate Adjuster Bearing Carrier Plate with Bearing still Assembled to it, from the Seed Box RH Support and Seed Rate Adjusting Screw.
8. At the center of the Seeder where the RH and LH Hex Seed Shafts come together, remove Seed Shaft Coupling and unscrew RH Seed Shaft from LH Seed Shaft. **See Figure 2-54.**

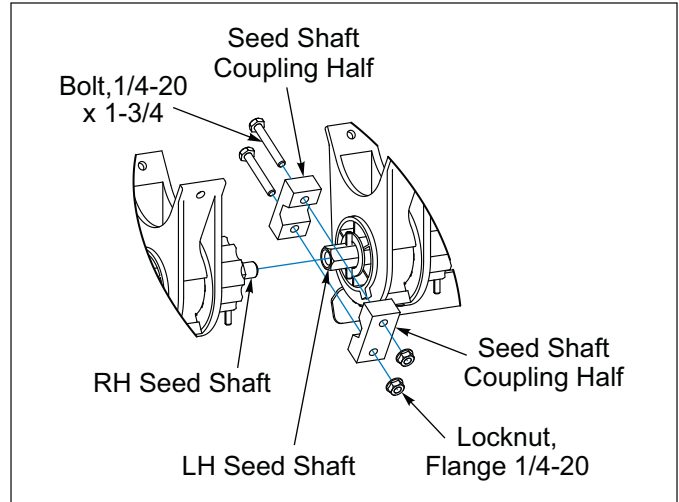


Figure 2-54: Front Box Seed Shaft Coupler

9. Support RH and LH Seed Boxes by using the hole in the Dividers inside the Seed Box. Remove Seed Box RH Support, RH Seed Box and Seed Box Center Bracket.
10. Remove Rear Deflectors. Turn Rear Deflectors around so that the lip angles rearward. Re-install Rear Deflectors. **See Figure 2-55.**

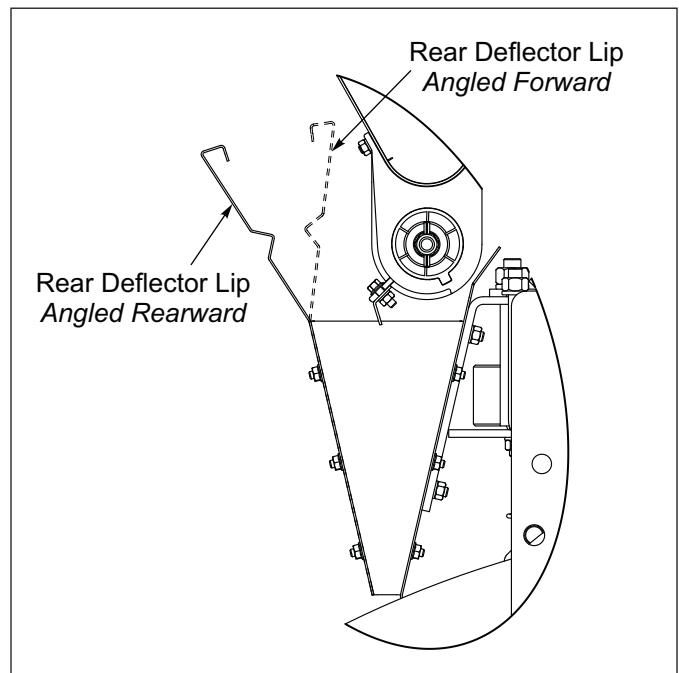


Figure 2-55: Deflector Flipped

11. Remove the Mounting Plate Hardware and slide the LH Seed Box far enough to the right to remove the Mounting Plate from the Seed Box and Transmission. Complete removal of the Seed Box is not required, the Seed Shaft will slide in the 37 Tooth Sprocket and Bearing. Remove the Single Box Mounting Plate and replace it with a Double Box Mounting Plate on the Transmission and LH Seed Box ensuring that the Seed Shaft is aligned and free to rotate. Tighten Hardware.
12. Support LH Rear Seed Box. Align and insert Rear Seed Box 3/8" Square Seed Shaft into Transmission Drive Tube. Seed Shaft should be free to rotate. **See Figure 2-56.**

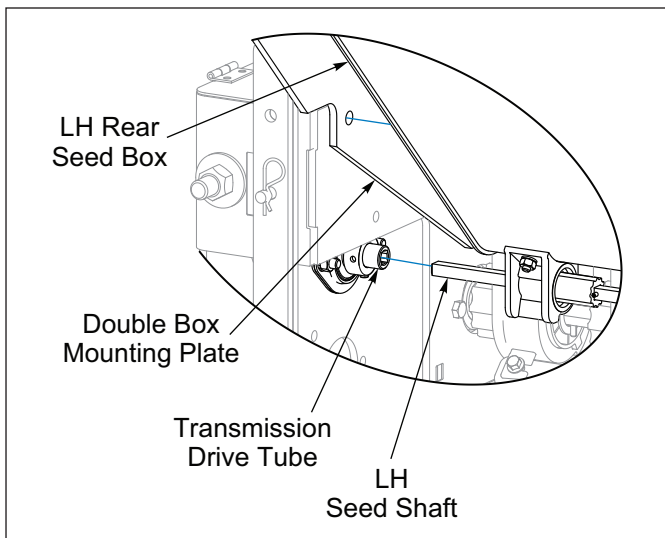


Figure 2-56: Rear Box Seed Shaft

13. Assemble the LH Rear Seed Box to the Transmission Double Box Mounting Plate with two 1/2-13 x 1-1/4 Bolts and a 3/8-16 x 1-1/4 Bolt, Flat Washers, Lock Washers and Nuts. Tighten Hardware.
14. Position Double Box Center Bracket against LH Front and LH Rear Seed Boxes.
15. While supporting the RH Front Seed Box, position Seed Box against Double Box Center Bracket. Assemble Seed Boxes and Center Bracket together with Hardware but do not tighten at this time.
16. Support RH Rear Seed Box and position Seed Box against Double Box Center Bracket. Assemble Seed Boxes and Center Bracket together with two 1/2-13 x 1-3/4 Bolts and a 3/8-16 x 1-1/2 Bolt, Flat Washers and Lock Washers and Nuts. Do not tighten at this time.
17. Assemble RH Double Box Support onto RH Front Seed Box with Hardware but so not tighten at this time.

18. Assemble RH Rear Seed Box onto RH Double Box Support with two 1/2-13 x 1-1/4 Bolts and a 3/8-16 x 1 Bolt, Flat Washers, Lock Washers and Nuts. Do not tighten at this time.
19. Turn the RH Front Seed Box Seed Shafts into the LH Seed Shafts.
20. Turn the RH Rear Seed Box Seed Shafts into the LH Seed Shafts. Do not tighten Rear Seed Box Feed Roll Coupler at this time.
21. Sight along Seed Boxes from ends, front and rear to ensure Seed Boxes are straight and level, ensure that all Seed Shafts turn freely and are not binding. Tighten Double Box Center Bracket and RH Double Box Support Hardware that attaches the Seed Boxes. Tighten U-Bolts that mount the Center Bracket and the RH Support to the Seeder Frame Tube.
22. Slide the Bearing Carrier Bearing onto the Front Seed Box Seed Rate Adjusting Screw and attach the Bearing Carrier to the RH Double Box Support.
23. Install Seed Rate Adjusting Nut onto Front Seed Box Seed Rate Adjusting Screw.
24. Install Bearing Carrier onto RH Double Box Support with 5/16-18 x 1-1/4 Bolts, Flat Washers, Lock Washers and Nuts. **See Figure 2-58.**
25. Assemble onto the Rear Seed Box Seed Shaft the Seed Rate Adjusting Screw, 1-8 Nut, Bearing, Seed Rate Adjusting Nut and 1/2-13 Locknut. Place Bearing between Flangettes and attach to Bearing Carrier with 5/16-18 x 1 Bolts, Lock Washers and Nuts. **See Figures 2-57 and and 2-58.**

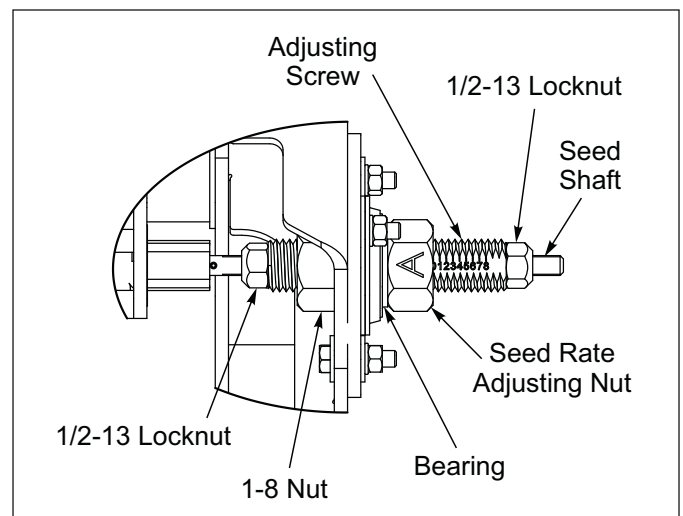


Figure 2-57: Rear Box Seed Rate Adjuster

26. Adjust Front and Rear Seed Box Seed Meters so that all the Seed Meters are closed. Perform Seed Meter "0" Adjustment in "**Seed Meter Adjustment**" on **Page 5-8.**

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27. Install Front Seed Shaft Coupler and tighten Rear Seed Box Feed Roll Coupler Assembly Set Screws against the Seed Shaft and tighten Jam Nuts against Feed Roll Coupler.
28. Tighten the Transmission #40 Drive Chain Idler Sprocket Clevis Drawbolt Locknut to apply tension to the Drive Chain and secure by tightening the Axle Bolt. **See “Transmission (Before 01/2020)” on Page 5-7.**

29. **8FT and 10FT Seeders:** Install RH and LH Light Brackets.
- 12FT Seeders:** Install Turnbuckles to Double Box RH Support, Double Box Center Bracket and LH Double Box Mounting Plate.
30. Connect Acre Meter and Warning Lamps.

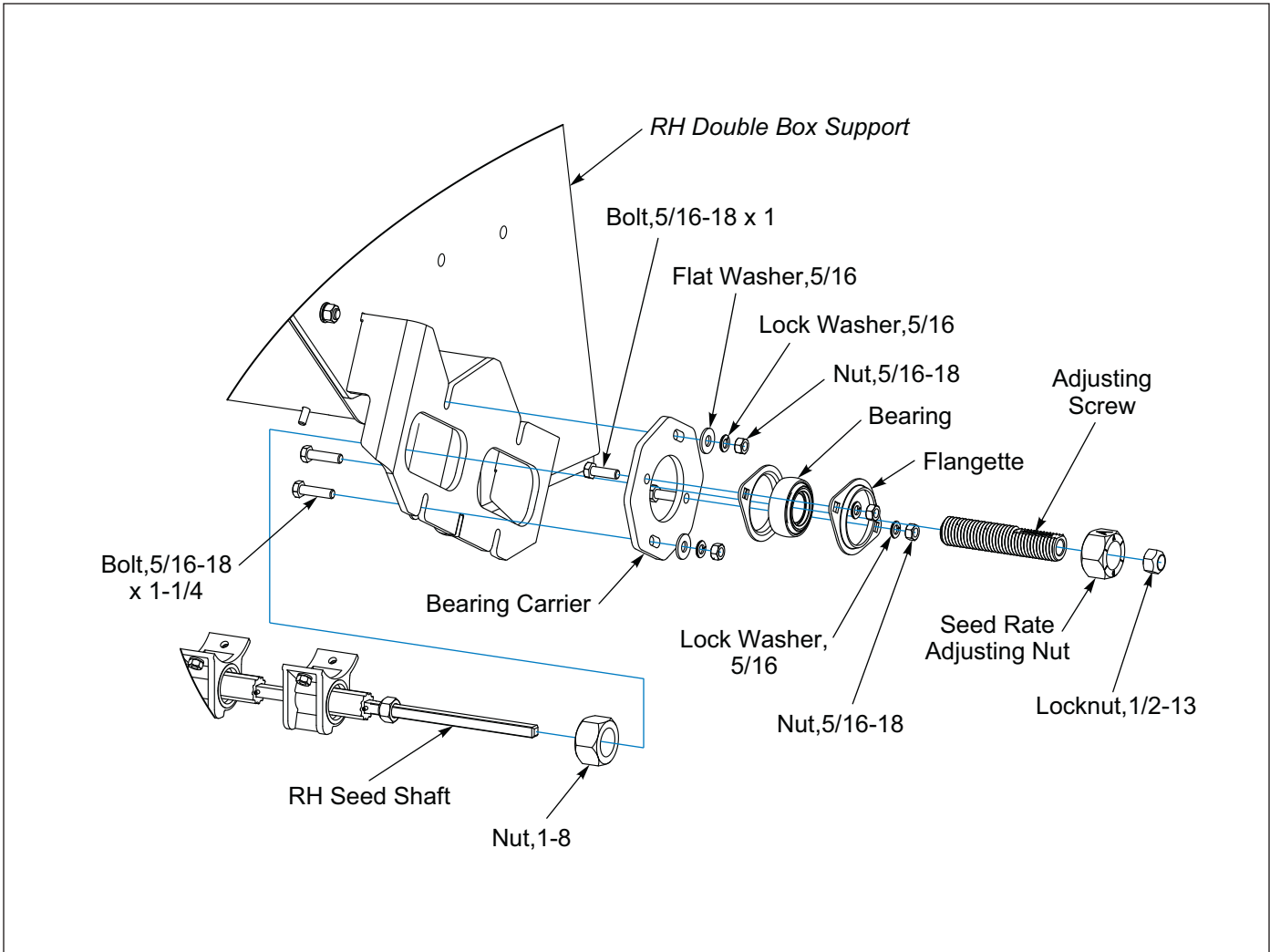


Figure 2-58: Rear Box RH End Assembly

Scraper Kit, Tube Mounted - Optional

IMPORTANT

Cannot be used with Coil Tine Track Remover Kit.

NOTE

If Seeder has been used, check Front Roller Assembly Wheels that they are tight to one another before installing Scraper Kit. See “Front and Rear Roller Adjustment” on Page 4-5.

1. Lower implement onto level ground.
2. Position and assemble the Brackets with the 4-Hole Plate approximately as dimensioned on the front of the Seeder Frame Tube. See Figures 2-64 and 2-65. Secure with 1/2-13 x 4-1/2 x 7-1/2 U-Bolts and Flanged Locknuts.

NOTE

Scraper Brackets should be positioned per application. Use Figures 2-64 and 2-65 only as a reference.

- **12FT Machines with Drawbar Braces:**
Mount the Brackets with the 4-Hole Plate to the Drawbar Brace Plates with the Drawbar Brace Hardware. See Figure 2-60.
- **3rd Bracket:**
10FT and 12FT Models require a 3rd Bracket that is to be installed on the Seeder Frame Tube left of center in a place that clears the Drawbar or 3-PT Hitch. See Figure 2-61.

NOTE

S-Tine Tire Track Remover Kit can be used with Scraper Kit. Do Not mount the outer Brackets with the 4-Hole Plate to the front of the Seeder Frame Tube. Attach the outer Scraper Bracket Angle to the Tire Track Remover Kit S-Tine Bracket Tube with a 1/2-13 x 4-9/16 x 3-1/4 U-Bolt and Flange Locknuts. See Figure 2-62.

3. Attach the Scraper Brackets to the Bracket Tube with a 1/2-13 x 4-9/16 x 3-1/4 U-Bolt and Flange Locknuts. Do Not tighten at this time. See Figure 2-59.

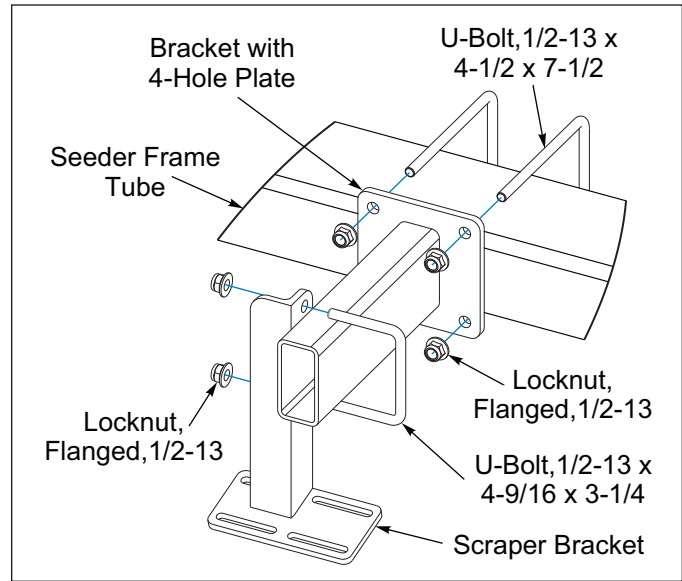


Figure 2-59: Scraper Brackets

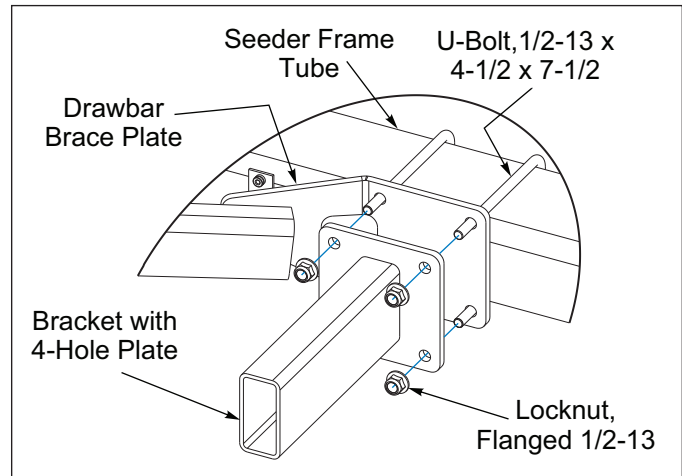


Figure 2-60: 12FT Drawbar with Braces

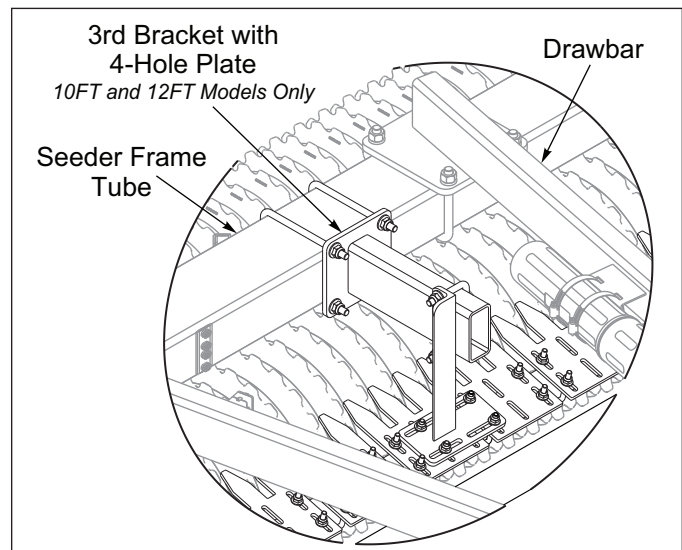


Figure 2-61: 3rd Bracket Placement - 10' & 12'

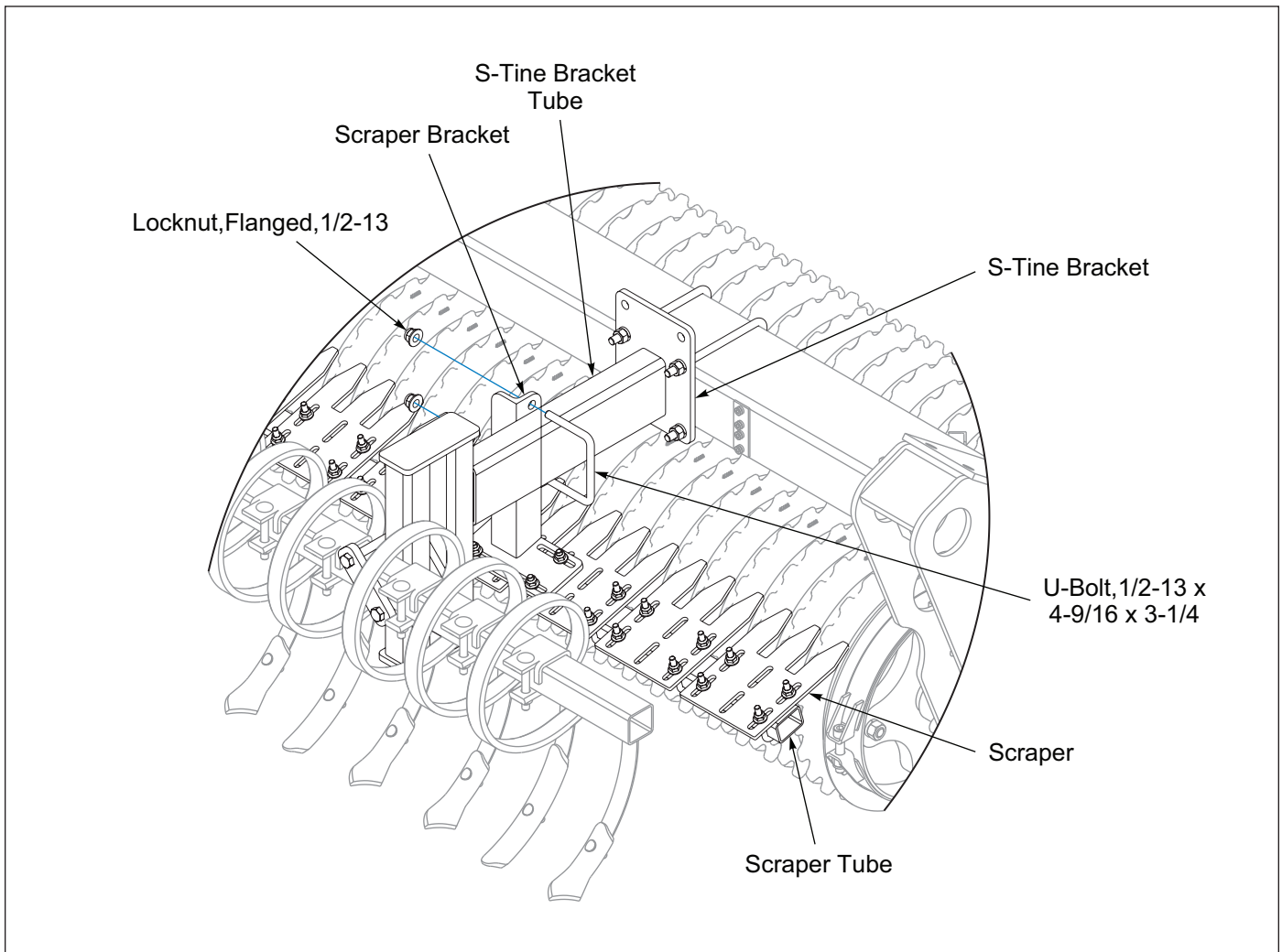


Figure 2-62: Tube Mounted Scrapers with S-Tine Tire Track Remover

4. Center Scraper Tube with the Seeder Front Roller.
5. Center the Scrapers between the Roller Wheels and attach them to the top of the Scraper Tube in the outer slots with 3/8-16 U-Bolts and Flange Locknuts. Attach the Single Scrapers to the end of the Scraper Tube as needed.
6. Align the Scraper Brackets Slotted Plate to the appropriate Scrapers and attach with the Scraper 3/8-16 Hardware. **See Figure 2-63.** It may be necessary to use the center pair and an outer pair of slots in the Scraper to attach the Scraper Bracket to the Scraper and Tube Assembly. **See Figures 2-64 and 2-65.**
7. Move the Scraper Bracket on the Bracket with 4-hole Plate Tube until the Scrapers are close enough to the Roller Wheels to be functional but without interference, about 3/16" to 1/4" gap between the Scraper and Roller Wheel.
8. Tighten all 1/2-13 Hardware. Adjustment may be required after use.

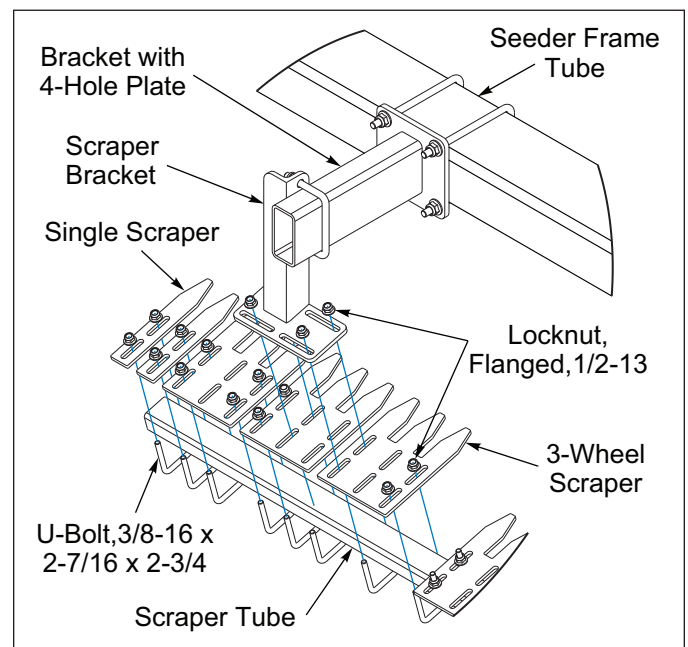


Figure 2-63: Scraper Assembly

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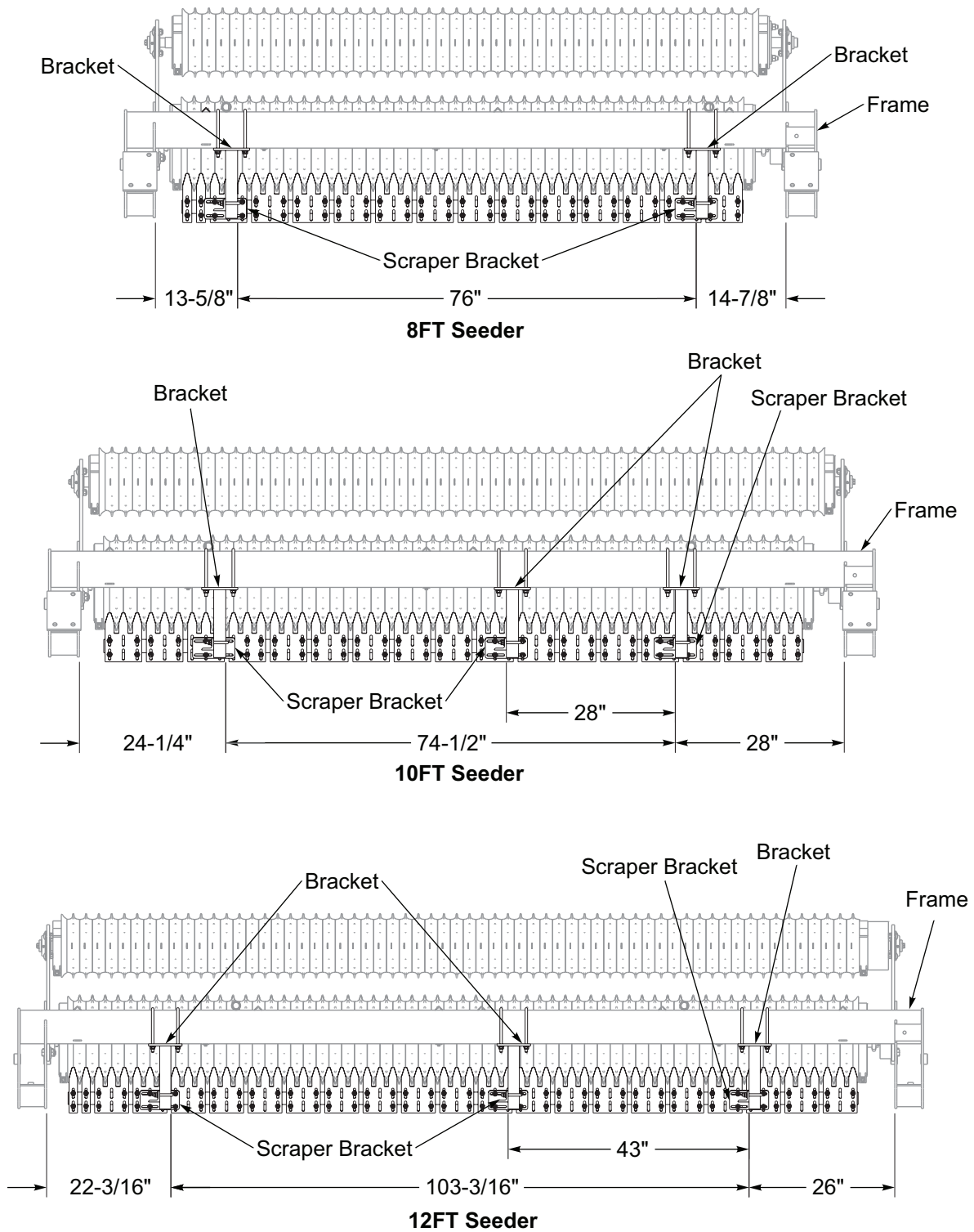


Figure 2-64: Scraper Mounting Dimensions - Pull-Type

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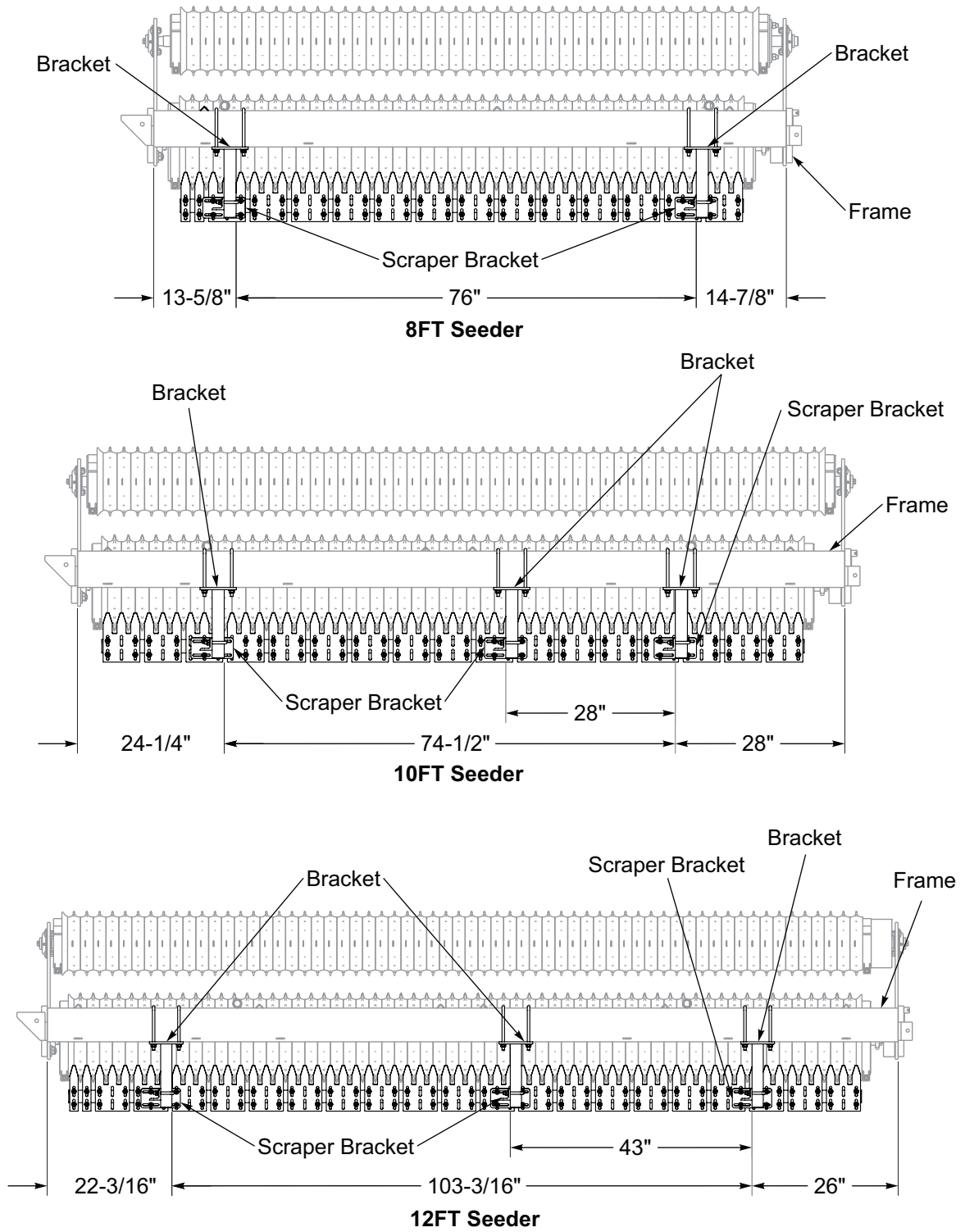


Figure 2-65: Scraper Mounting Dimensions - 3PT Hitch

S-Tine Tire Track Remover Kit - Optional

IMPORTANT

S-Tines should not be operated any deeper than necessary to remove Tractor Tire Tracks. Wet soil will stick to the Front Roller Wheels. As the S-Tine draft load is increased the S-Tines may deflect back and make contact with the Front Roller and break.

NOTE

S-Tine Tire Track Remover Kit includes six S-Tines. Additional S-Tines can be purchased and installed or fewer S-Tines can be used.

S-Tine Brackets and S-Tines should be positioned per application. Use **Figure 2-68** only as a reference.

1. Center and position the S-Tine Brackets in relationship with the center of the Drawbar or 3-PT Hitch to the front of the Seeder Frame Tube. **See Figure 2-68.** Secure S-Tine Brackets to the Seeder Frame Tube with 1/2-13 x 7-1/2 x 4-1/2 U-Bolts, Lock Washers and Nuts. **See Figure 2-67.**
2. Center the Tooth Tube between the S-Tine Brackets and attach with Straps, 1/2-13 x 6 Bolts, Lock Washers and Nuts.
3. Attach the S-Tines onto the Tooth Tube in the desired position to cover the Tractor Tire Tracks with Clamps, 7/16-14 x 3-1/2 Carriage Bolts and Locknuts.
4. Assemble the Points to the S-Tines. The suggested pattern is to assemble the Reversible Point onto the center S-Tine and a Duck Foot Point on the S-Tine on either side of the center S-Tine with 3/8-16 x 1-3/4 Plow Bolt and Flanged Locknut. **See Figure 2-66.**

NOTE

Scraper Kit can be used with the S-Tine Tire Track Remover. Attach the outer Scraper Bracket Angle to the S-Tine Bracket Tube. Outer Scraper Kit Brackets with the 4-Hole Plate are not used. **See Figure 2-62.** It may be necessary to adjust the Scraper Brackets on the Scraper Assembly for proper positioning of the Scrapers to the Front Roller Wheels.

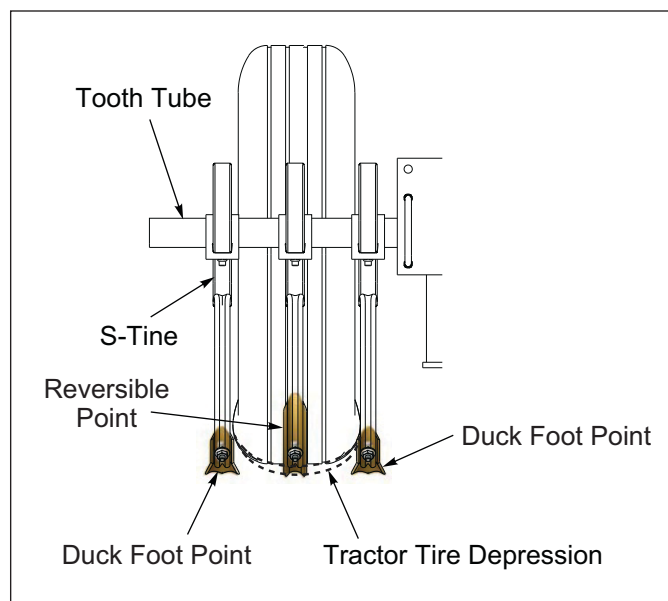


Figure 2-66: S-Tine Point Position

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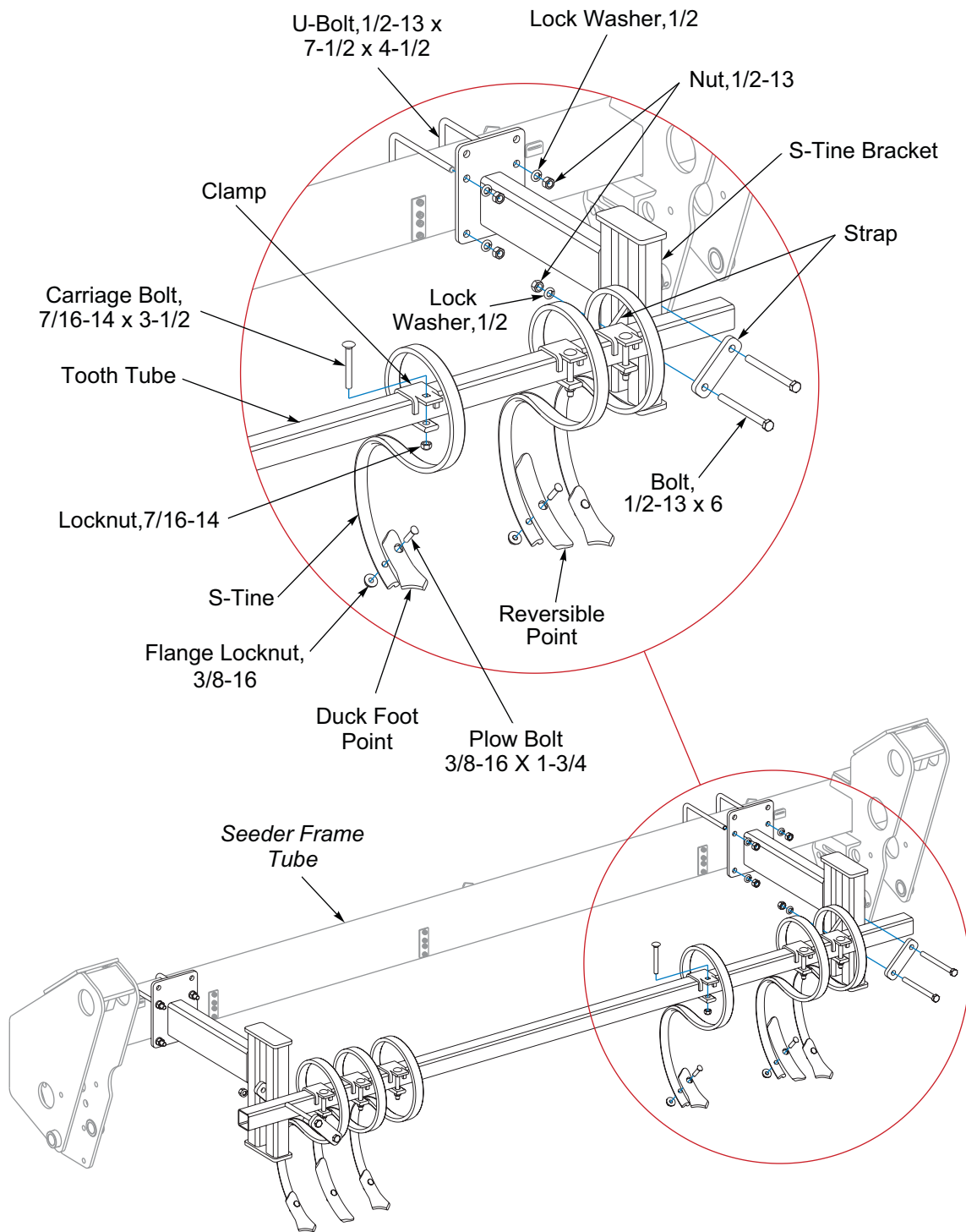


Figure 2-67: S-Tine Track Remover Kit - Optional

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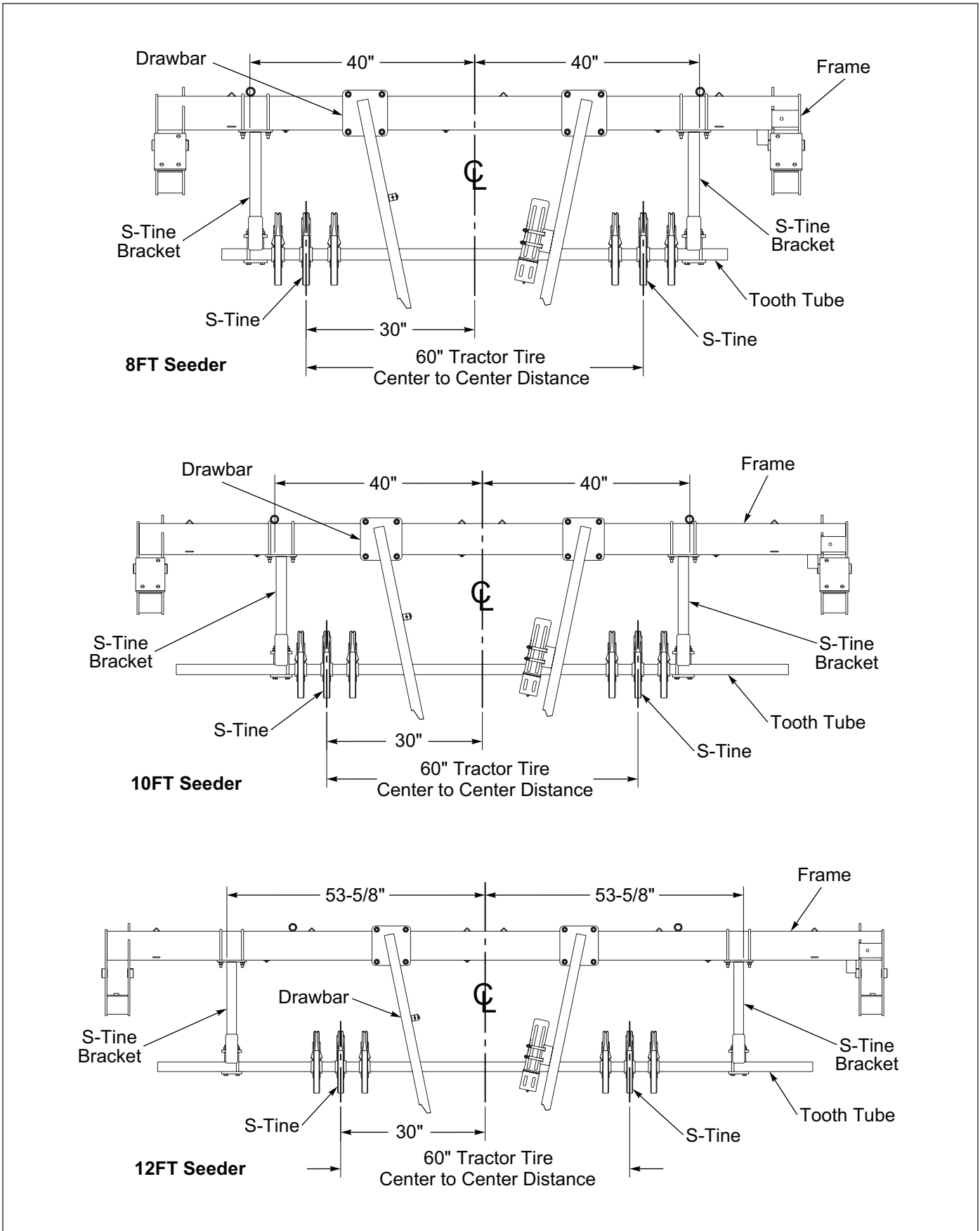


Figure 2-68: S-Tine Mounting Dimensions

Coil Tine Track Remover Kit - Optional

IMPORTANT

Cannot be used with the Scraper Kit

1. Slide the Coil Tines onto the Round Bar so that the straight leg is frontward. **See Figure 2-69.**
2. Mount an Arm Weldment and a Coil Tine to the Round Bar second hole from the right end and the third hole from the left end with 3/8-16 x 3 Bolts, Flat Washers, Lock Washers and Nuts.
3. Mount the Coil Tines to the Round Bar with 3/8-16 x 2-1/2 Bolts, Flat washers, Lock Washers and Nuts.
4. Position the Brackets on the Seeder Frame Tube and attach with 1/2-13 U-Bolts, Lock Washers and Nuts. **Do Not** tighten at this time.
5. Attach the Adjusting Angles to Brackets with Lock Screws. Secure the Adjusting Angles vertically to the Brackets with a 1/2 x 1-1/4 Clevis Pin and Hair Pin Cotter.
6. Attach the Arm Weldment to the Adjusting Angles with 1/2-13 x 1-3/4 Bolts and Locknuts. Tighten the Locknuts to allow free side to side swinging.
7. Center each Coil Tine Track Remover Assemble behind the Tractor Tires. Tighten the Bracket U-Bolts on the Seeder Frame Tube.
8. On each Coil Tine Track Remover Assemble, attach a Chain End Link to an Adjusting Angles with 3/8 x 1-1/4 Bolt, Flat Washer, Lock Washer and Nut. Drape the chain across to the other Adjusting Angle and place the Chain in the Adjusting Angle Slot ensure that the chain.

The vertical position can be changed by removing the Clevis Pins and Lock Screws and moving the Adjusting Angles up or down.

To inactivate the Coil Tines, remove the 1/2 x 1-1/4 Clevis Pins and loosen the Lock Screws. Swing the Coil Tine Bar Assembly upward and sideways. Hold Coil Tine Bar Assembly in place by wrapping the Chain under the Round Bar and placing the Chain into the Adjusting Angle Slot. Re-tighten the Lock Screws. Insert Clevis Pin into Adjusting Angle for storage.

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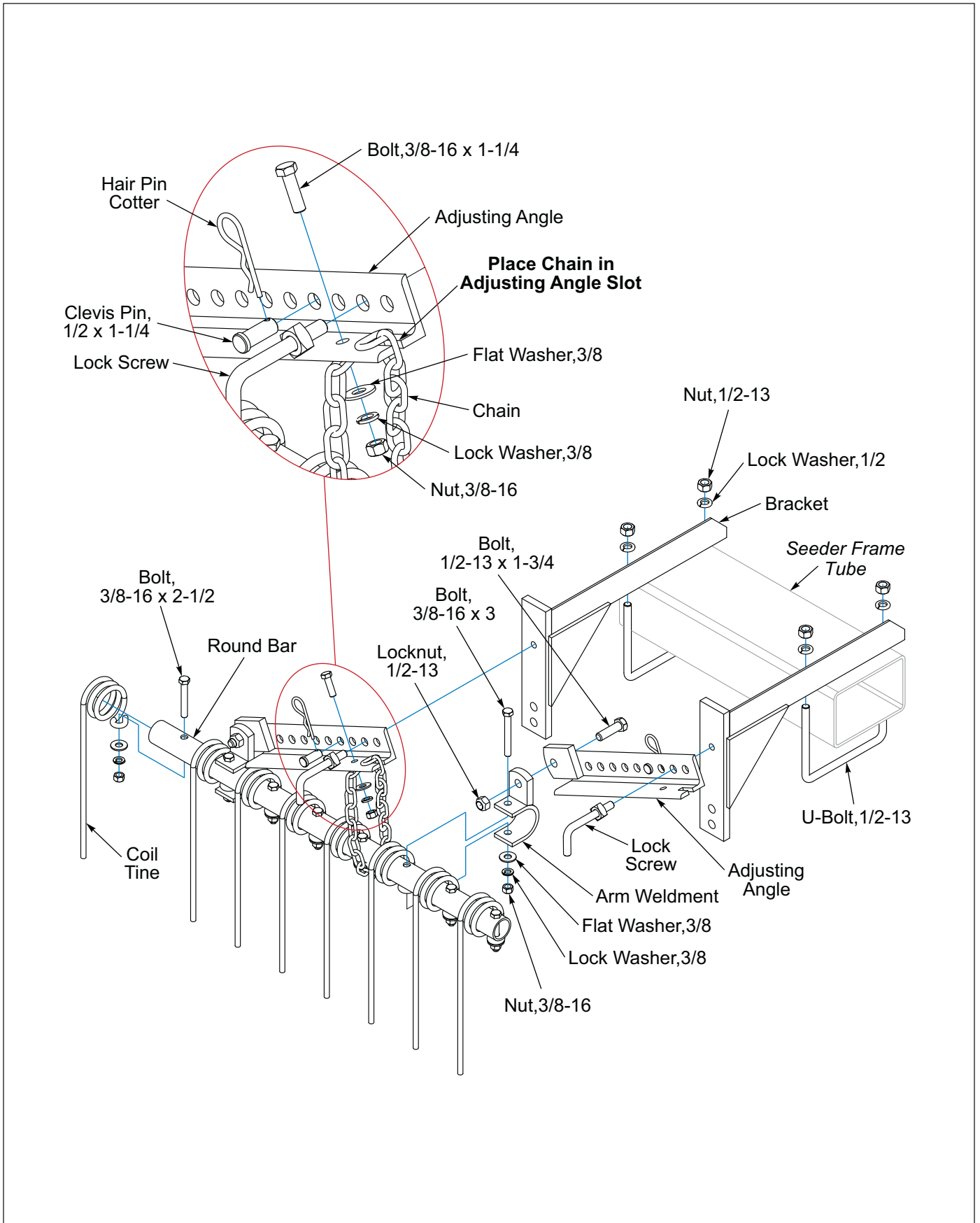


Figure 2-69: Coil Tine

Turfmaker Sprockets - Optional

Turfmaker Sprockets provide extra traction in certain soil types. See your Landoll/Brillion dealer for more information.

1. Position the Wheel Spacer between each Sand Wheel. **See Figure 2-70.**
2. At the end of the process slide a Half Wheel onto the Drum Pipe next to the last Wheel Spacer.
3. Slide the Clamp Band over the Drum Pipe and next to the Half Wheel. Position the Clamp Band Socket Head Bolt (Clamp Band open section) over the weld seam on the Roller Drum. **See Figure 5-3.**
4. Insert 1/2-13 x 2-1/2 Socket Head Screw into Clamp Band, secure with Locknut.
5. Make sure the Wheel Spacers do not bind.

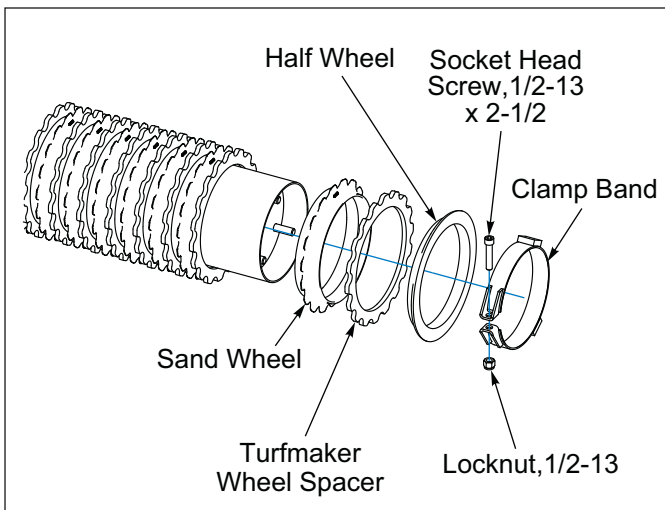


Figure 2-70: Turfmaker Sprockets

Operation

**DANGER**

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

**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.

**WARNING**

All hydraulically elevated equipment must have cylinder lockouts 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**

When transporting the unit, place cylinder lockouts in the transport lock position after fully extending the cylinders. Insert the lockout pins to secure the cylinder lockouts. Failure to lockout the cylinders 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.

Tractor Preparation

The Turfmaker Seeder is available as a Pull Type or 3-PT mounted version.

- A Pull Type Seeder is equipped to be pulled by a Tractor with a drawbar, no clevis.
- A 3-PT mounted Seeder is compatible with CAT 2 Free Link, CAT 2 Quick Coupler and CAT 3 Narrow Quick Coupler.

Tractor Preparation for Attaching 3-PT Hitch Seeder

1. Brillion 8, 10, and 12 Foot 3-PT Seeders are designed to be pulled with Category 2 Free Link and Category 2 or 3N Quick Hitch Coupler. **See Figure 3-1.** Be sure Tractor's Hitch Capacity is not exceeded by the Laden Mass of the Seeder. **Refer to Tractor Operator's Manual.**
2. Be sure Tractor is properly ballasted. A minimum 25% of Tractor and Equipment Laden Mass must be on Tractor Front Wheels in transport position to maintain stability. Calculate the Loaded Seeder Mass. **See "Specifications" on Page 6-1.** (Seeder weight plus the seed box capacity with desired seed.) **Refer to Tractor Operator's Manual.**
3. Check the Tractor tire inflation levels to ensure that they are properly inflated for the additional Laden Seeder Mass. **Refer to the Tractor Operator's Manual.** Be sure not to over ballast and exceed Tractor Tire Capacity.
4. Set Tractor 3-PT Lower Links to allow lateral (torsional) float. **Refer to Tractor Operator's Manual.** If left rigid, your Brillion Seeder may not follow ground contours resulting in poor germination.
5. Set Lift Rod length long enough to ensure Seeder can float downward in the case of a furrow or waterway. Lower Links should be the same height, leveling your Brillion Seeder side to side. Fine adjustments may need to be made after hookup is completed. **Refer to the Tractor Operator's Manual.**
6. Attach Seeder to the Tractor's 3-PT Free Link or Quick Hitch Coupler using the appropriate size pins and bushings. Be sure to use the hardware provided and is in good working order. **See Figure 3-1.**
7. **Refer to the Tractor Operator's Manual** for Quick Hitch Operation.



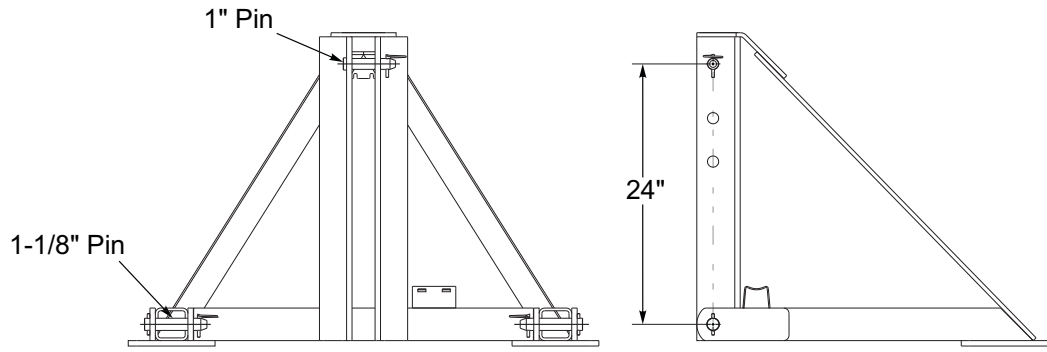
DANGER

Do not allow any bystanders to stand between the tractor and the implement while backing up to the implement.

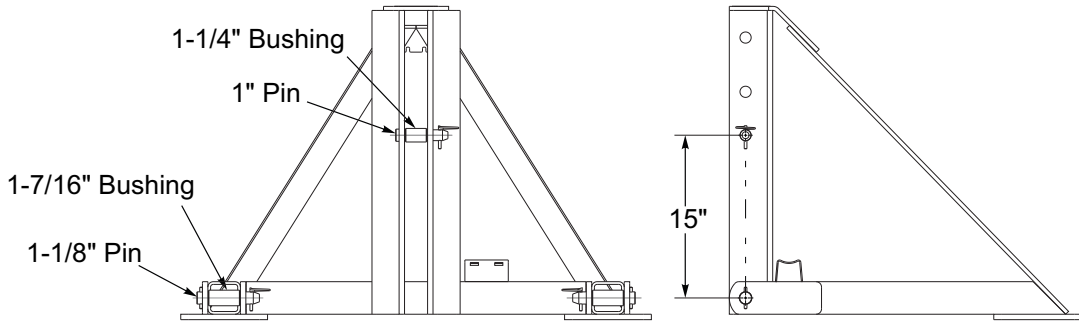
8. Connect 7-Pin Connector to Tractor Outlet, routing cable by avoiding pinch points.
 - Make sure the Tractor has a good clean Receptacle, free of dirt and corrosion.
 - Make sure the 7-Pin Connector is inserted ALL the way in. With tighter fitting pins, operator may think the Connector is all the way 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.
9. Install Clutch Switch Box or Brillion Elite Mini Monitor to tractor.

Clutch Switch Box: Connect Clutch Switch Box Cord with Ring Terminals to tractor power source. Ring Terminals can be removed and replaced with a different power source connector. Connect 2-Pin Connector to Clutch Harness.

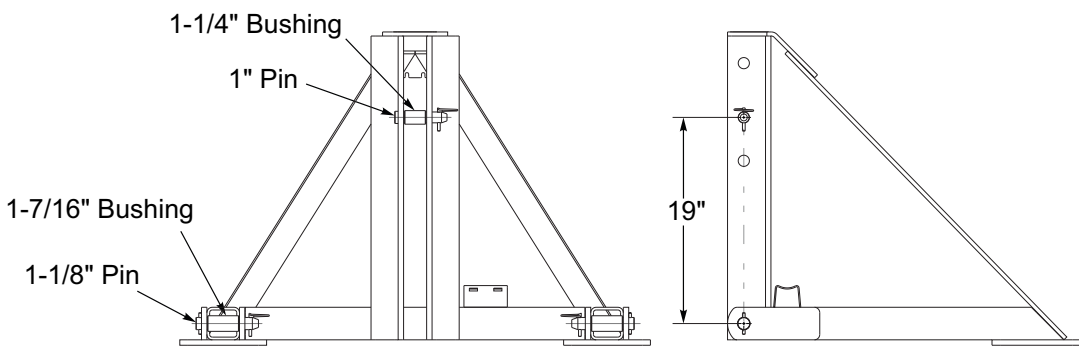
Brillion Elite Mini Monitor: Connect the Elite Mini Tractor Harness to 14-Pin Connector to Brillion Mini Monitor, 3-Pin Plug to the 12 Volt Tractor Convenience Outlet and 6-Pin Connector to 240" Extension Harness. Elite Mini Tractor Harness 4-Pin Connector is not used this time.
10. Raise seeder. Remove Parking Pin. **See Figures 3-2 and 3-3.** Adjust or lock tractor sway stabilizers if equipped, centering the Seeder with the Tractor. **Refer to the Tractor Operator's Manual.**
11. Lower Seeder, if necessary level Seeder side to side (laterally) by adjusting Lift Rod length. Level Seeder front to back by adjusting the Tractor Upper Link length as required. **Refer to the Tractor Operator's Manual.**



Category 2 Free Link



Category 2 Quick Coupler



Category 3 Narrow Quick Coupler

Figure 3-1: 3-PT Hitch

Attaching/Detaching 3-PT Hitch Seeder

WARNING

To prevent the implement from tipping backward on the frame, disengage parking pin only when the seeder is fully attached to the tractor. Be sure to observe the following sequences.

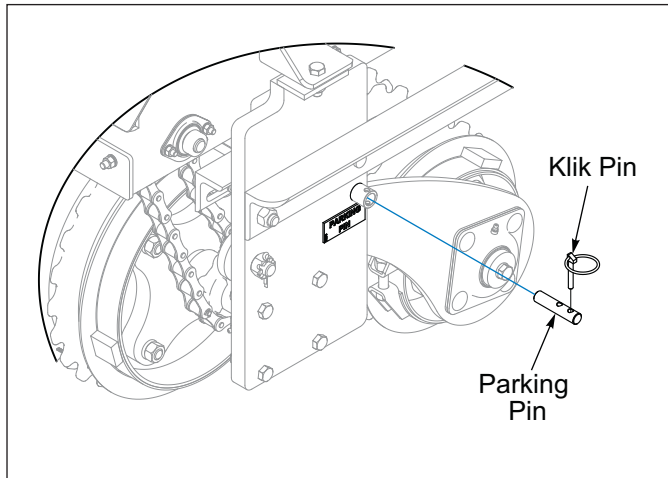


Figure 3-2: Parking Pin

Hooking Up the Seeder:

1. Attach Seeder to the Tractor.
2. Raise Seeder. Remove the Klik Pin, pull the Parking Pin into the outer position, replace the Klik Pin. **See Figures 3-2 and 3-3.**

Unhooking the Seeder:

1. With Seeder raised, remove the Klik Pin, push in the Parking Pin, replace the Klik Pin. **See Figures 3-2 and 3-4.**
2. Lower the Seeder and disconnect the Tractor from Seeder.

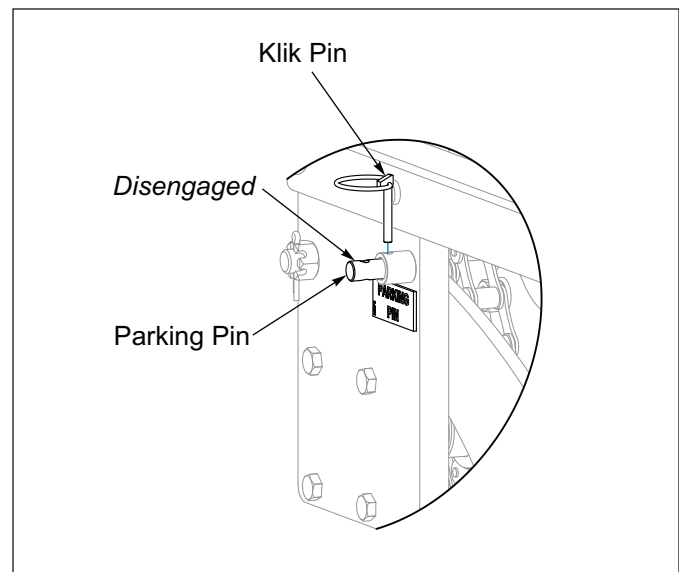


Figure 3-3: Parking Pin Disengaged

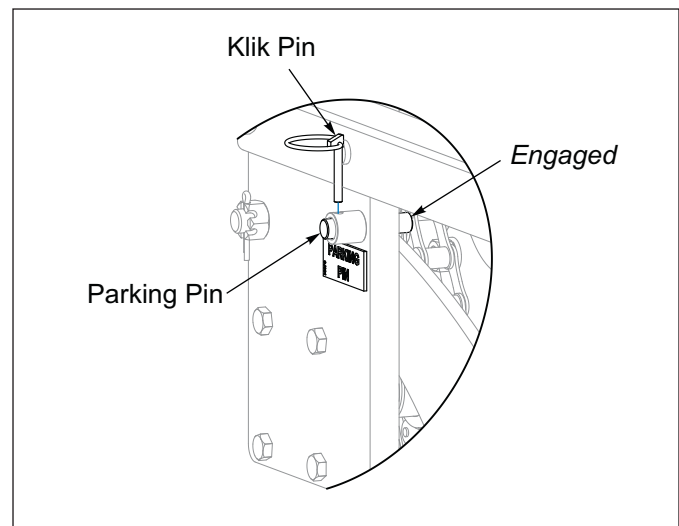


Figure 3-4: Parking Pin Engaged

Tractor Preparation for Attaching Pull Type Seeder

⚠ DANGER

Do not allow any bystanders to stand between the tractor and the implement while backing up to the implement.

1. Align the Tractor Drawbar with the machine. Raise or lower the Drawbar, as needed, using the Jack. Attach the unit with proper size Hitch Pin and Safety Clip.
2. Always move the Jack to the transport position before setting the machine in motion.
3. Clean all Hydraulic Couplings and attach to the Tractor.
4. Attach Safety Chain to tractor allowing plenty of movement for turning both directions. The Safety Chain should latch securely to prevent it from coming loose. **See Figure 3-5.**

IMPORTANT

If the Clevis Pin is not installed, the Transport Lock may bounce up and cause significant damage to the Cylinder and Hydraulic Fittings.

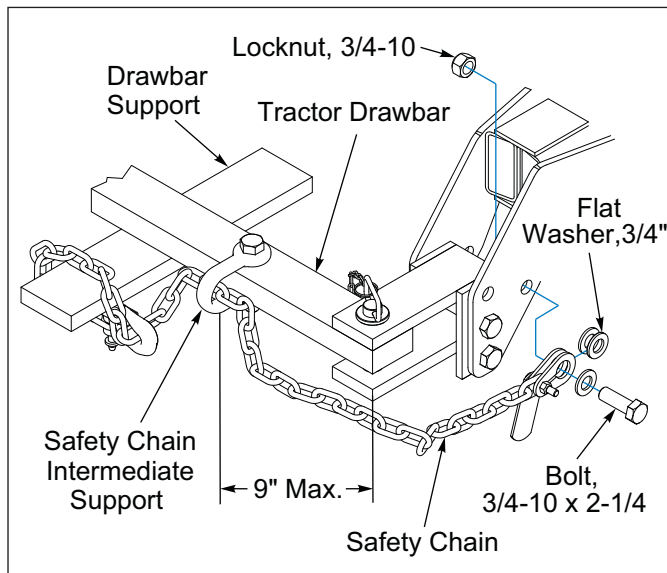


Figure 3-5: Safety Chain

5. If Transport Locks are not engaged, fully extend the Hydraulic Lift Cylinders and rotate Transport Locks in the engaged position over the Cylinder Rods. Secure with the Clevis Pins and Hairpin Cotter. **See Figure 3-6.**

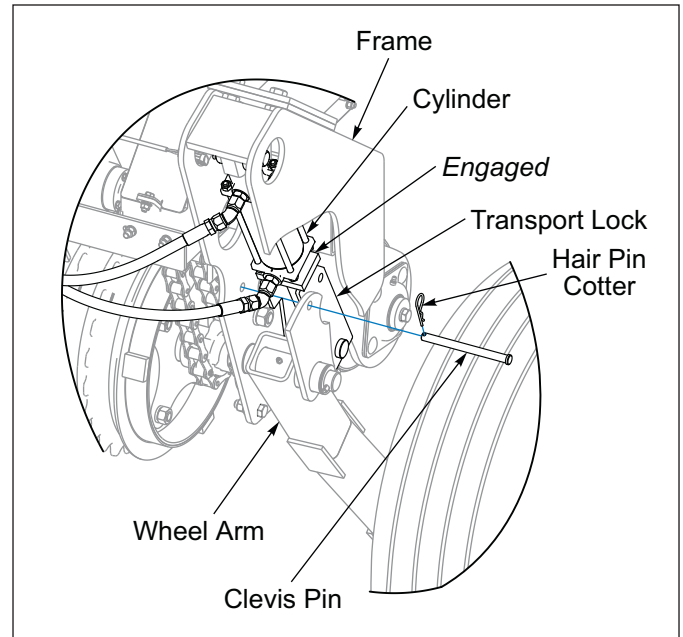


Figure 3-6: Transport Lock Engaged

6. Connect the 7-Pin Connector to Tractor Outlet, routing cable by avoiding pinch points.
 - 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.
7. Install Clutch Switch Box or Brillion Elite Mini Monitor to tractor.

Clutch Switch Box: Connect Clutch Switch Box Cord with Ring Terminals to tractor power source. Ring Terminals can be removed and replaced with a different power source connector. Connect 2-Pin Connector to Clutch Harness.

Brillion Elite Mini Monitor: Connect the Elite Mini Tractor Harness to 14-Pin Connector to Brillion Mini Monitor, 3-Pin Plug to the 12 Volt Tractor Convenience Outlet and 6-Pin Connector to 240" Extension Harness. Elite Mini Tractor Harness 4-Pin Connector is not used this time.

Attaching/Detaching Pull Type Seeder

Attaching the Seeder for Field Operations:

Seeder parked lowered

1. Attach Seeder to the Tractor.
2. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks in the engaged position over the Cylinder Rod. Secure with the Clevis Pins and Hairpin Cotter. **See Figure 3-5.**
3. Raise and rotate Drawbar Jack to stored position before setting the machine in motion.
4. Transport the Seeder to the area to be seeded.
5. Disengage each Transport Lock so that the Transport Lock rests on the Wheel Arm. Insert the Clevis Pin in front of the Transport Lock. **See Figure 3-7.**

Seeder parked raised

1. Attach Seeder to the Tractor.
2. Raise and rotate Drawbar Jack to stored position before setting the machine in motion.
3. If not already done, raise Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks in the engaged position over the Cylinder Rod. Secure with the Clevis Pins and Hairpin Cotter. **See Figure 3-5.**
4. Transport the Seeder to the area to be seeded.
5. Disengage each Transport Lock so that the Transport Lock rests on the Wheel Arm. Insert the Clevis Pin in front of the Transport Lock. **See Figure 3-7.**

Detaching the Seeder:

Parking Seeder lowered

1. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks to the stored position. Secure with the Clevis Pins and Hairpin Cotter. **See Figure 3-7.**
2. Lower Seeder, relieve pressure from Hydraulic Hoses.
3. Rotate and Lower Drawbar Jack.
4. Disconnect the Tractor from Seeder.

Parking Seeder raised

1. Raise the Seeder fully to extend the Hydraulic Lift Cylinders and rotate the Transport Locks to the engaged position. Secure with the Clevis Pins and Hairpin Cotter. **See Figure 3-5.**
2. Relieve pressure from Hydraulic Hoses.
3. Rotate and lower Drawbar Jack.
4. Disconnect the Tractor from Seeder.

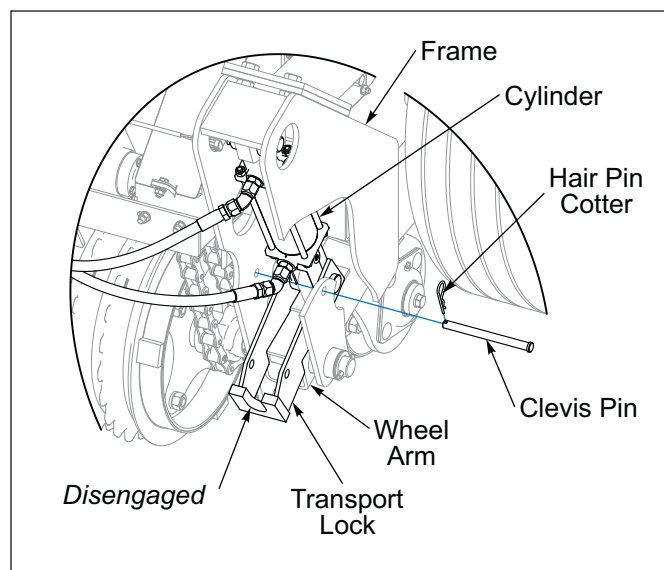


Figure 3-7: Transport Lock Disengaged

General Operation

1. The minimum horsepower requirements are typically 6-8 horsepower per foot. This will vary widely due to speed, moisture, and types of soils. Local dealers can help in making recommendations for your areas. For 3-PT Hitch models size tractor by 3-PT Hitch Capacity.
2. Operating speed is typically 4-6 mph. Excessive speed can result in undesirable germination, seeder bouncing, or other unpredictable results. Reduce speed in rocky conditions to prevent wheel breakage.

Hydraulic Lift System

The Drawbar Seeder is equipped with a Hydraulic Lift System to raise and lower the unit in the field.



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 (See Figure 3-8.) Keep all components (cylinders, hoses, fittings, etc.) in good repair.

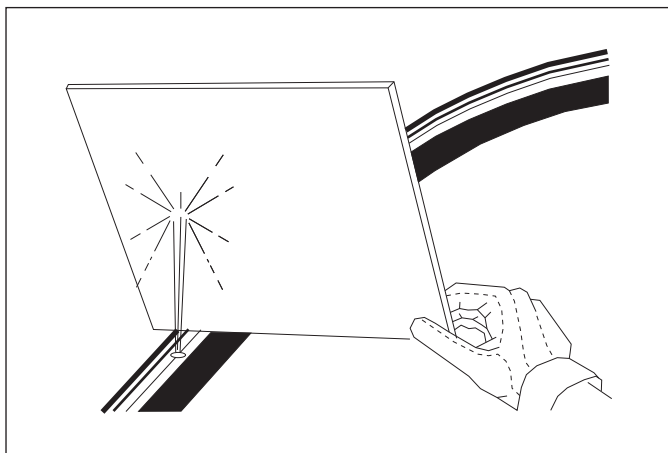


Figure 3-8: Hydraulic Leak Detection

If the Hydraulic System is not filled with oil it should be purged of air before transporting and field operations.

1. Carefully hitch the Seeder 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. If Transport Locks are engaged, raise the Seeder and disengage the Transport Locks. **See Figure 3-7.**
4. Slowly raise the machine until both Lift Cylinders are fully extended. Lower and raise the Seeder to verify that both Cylinders are working throughout the stroke. Fully extend the Lift Cylinders and continue to hold the lever until both Cylinder Rods movement stops. Raise/Lower machine 5 times to purge air from the system.
5. Do not loosen any Hoses or Fittings.
6. Recheck Tractor Reservoir to make sure it is within operating limits.
7. Raise the Seeder and install Transport Locks. **See Figure 3-5.**

Lift Circuit approximate oil requirement: .4 gallons.

Transmission Electric Clutch

IMPORTANT

At no time use high pressure water or air to clean the Electric Clutch as damage could occur.

Clutch characteristics are as follows:

- The Electric Clutch is controlled by a Touch Screen Monitor or a Toggle Switch on the Switch Box mounted to the Tractor.

Brilliance Elite Mini Monitor: Touch Screen Monitor provides the user the ability to turn the Seeder Clutch "ON" or "OFF".

Clutch Switch Box: Toggle Switch on the Switch Box, turns the Seeder Clutch to "SEED" or "NO SEED".

Console w/Clutch Control: Toggle Switch on the Console, turns the Seeder Clutch to "SEED" or "NO SEED".

- The Electric Clutch is disengaged when power (12 Volts) is applied. If there is a power failure or electrical problem, the Seeder will continue to operate, so the machine must be raised to stop seeding.
- Seed Shafts will not rotate when the machine is backed up.
- The Clutch Switch Box contains a 5 Amp Time-Delay Fuse.
- The Electric Clutch must be disengaged (power applied) when Seed Shafts are turned manually for Calibration.
- Check Electric Clutch Operation. The Electric Clutch will disengage when power is applied. (Clutch will make a clicking sound). Set Seeder on the ground and drive a short distance while toggling the Seeder Clutch to "ON/SEED" and "OFF/NO SEED". The Seed Shaft will stop rotating when Monitor or Toggle Switch is set to "OFF/NO SEED".
- Set Monitor or Toggle Switch to "ON/SEED" position when Seeder is not used to shut off power to prevent possible overheating of Clutch Coil.

Brillion Elite Mini Monitor

Brillion Elite Mini Monitor provides information to the operator and acts as an interface for clutch control. The display shows seed shaft rotation, low bin levels, acres seeded, and clutch engagement. The touch screen allows the operator to engage the clutch.

See "**Brillion Elite Mini Monitor**" Chapter for more information and a detailed guide to the use of your monitor.

The Brillion Elite Mini Monitor System by Loup utilizes a MUX communication line. Sensors must be learned into the Monitor. Location of each pre-learned Smart Shaft Sensor or Bin Level Sensor is important for proper Monitor display. Each Sensor utilizes 3 wires (+, -, MuxBus) to connect to the system. The Sensors do not require specific Harness connection points. Each Sensor is identified in the Monitor by its own signal.

 **WARNING**

High Power Magnet in use. See "High Power Magnet" on Page 1-2.

- Bin Level Sensors are installed on adjustable brackets in the outer ends of the Seed Box. When the sensor is submerged in seed, no alarm will sound. As the seed level falls below the sensor eye, an alarm will be indicated on the Brillion Elite Mini Monitor. Raise or lower the Bin Level Sensor Bracket inside the Seed Box to the desired seed level.
- On the Seeder RH Front and Rear Seed Shaft if equipped with a Rear Seed Box, are Smart Shaft Sensors. The Smart Shaft Sensors are installed on a Sensor Mount that is attached to the mounting hardware of two Seed Cups. The Front Seed Box High Powered Magnet in the Magnet Wheel Assembly clamps onto the Seed Shaft. Rear Seed Box if equipped, the High Powered magnet is placed on the Seed Shaft and kept in place with a Collar. As the Seed Shafts rotate the Smart Shaft Sensors detect the Magnet. When no signal is detected for a pre-defined seconds, an alarm will be indicated on the Brillion Elite Mini Monitor.

NOTE

If the Smart Shaft Sensor stall alarm occurs, be aware that the Seeder has not been planting for the pre-defined time.

- Brillion Elite Mini Monitor provides users the ability to toggle the seeder clutch on or off.
- Brillion Elite Mini Monitor will monitor field and total acres.

- Brillion Elite Mini Monitor is operated on a 12-Volt DC negative ground system. The monitor should be connected using the existing convenience plug connection.
- The Elite Mini Tractor Harness attaches to the Brillion Elite Mini Monitor and connects to the Seeder 240" Extension Harness. **See Figure 2-31.** The 6-Pin Connection may be plugged/unplugged at the front of the Seeder Hitch when hooking/unhooking the Seeder. This allows the monitor to stay in the tractor if so desired.
- A 4-Pin radar connection is provided as an optional connection for the speed sensor. The speed signal may be determined by either the tractor radar or the speed sensor located on the Seeder.

For service or setup questions contact Loup Electronics Inc. See "Service And Technical Support" on Page 4-7.

Console w/Clutch Control - Optional

Basic Operation:

During normal operation the Console LED for the Seed Shaft will not be illuminated. The Shaft Sensor will be activated by a Magnet Wheel installed on the Seed Shaft being monitored. The Shaft Sensor is a standard Loup Shaft Sensor, set to 20 second delay timing. When no signal is detected for 20 seconds by the sensor, the corresponding LED in the Console will illuminate and the audible alarm will sound indicating a fault. The alarm will become silent after 30 seconds and will not sound again until the Seed Shaft returns to a fully functional condition.

NOTE

If the Shaft Sensor stall alarm occurs, be aware that the Seeder has not been planting for 20 seconds.

- The Clutch Master toggle switch allows you to go from "SEED" to "NO SEED" operations. **See Figure 3-9.**

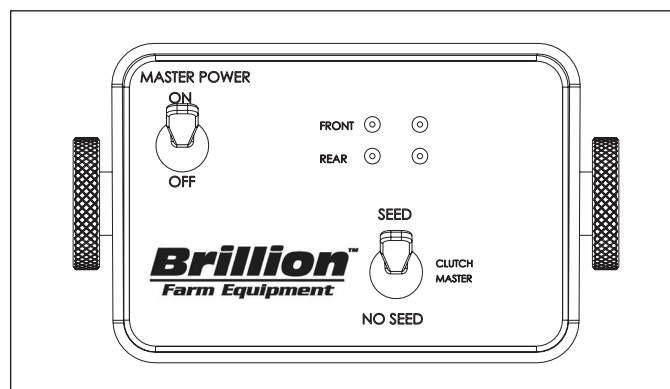


Figure 3-9: Console w/Clutch Control

Seed Box Rate Adjustment

WARNING

- To prevent damage to seed meters, do not apply excessive force to adjusting nuts. Failure to do so may result in the seed being pinched between the cut-off and washer inside the seed cup.
- Do not close the meters more than 1/8" when there is seed in the meters without rotating the seed shaft to prevent damage to the rotating washers and retainer rings in the seed meters.
- Do not attempt to open the meters more than 1". (Feed rolls could become disengaged from washer in the seed cup.)

NOTE

To avoid Seed Meter damage, if there is seed in the Meters, decrease rate in small increments. Decrease rate no more than one nut revolution and rotate Seed Shaft to purge seed from Meters. Continue adjustment as needed.

NOTE

Before filling with seed be sure Seed Shaft turns freely and Seed Meters are free of any foreign matter. Wrenches for adjustment are stored on a Pin at the back of the Transmission. See Figure 3-10.

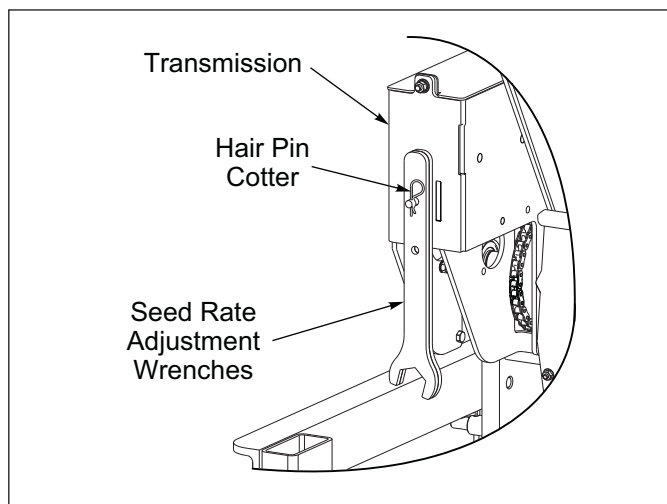


Figure 3-10: Adjustment Wrenches

IMPORTANT

The Clutch must be disengaged when Seed Shafts are turned manually for Calibration.

Seed Rate Chart is located inside the Seed Box Cover and in this manual. See Figures 3-1 and 3-2. It should be used as a general guide only.

Because of seed variation, a more accurate rate can be determined by turning the 11/16 Hex Seed Shaft on the Transmission to Calibrate the Seeder. See "Calibration for Unlisted Seeds" on Page 3-13.

On the right side, the Seed Rate for the Seed Meters can be set by adjusting the Seed Rate Adjusting Nut and Adjusting Screw. See Figures 3-11 and 3-12.

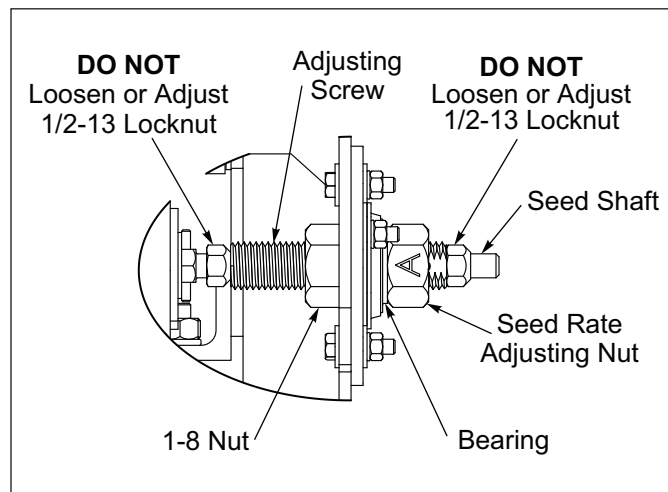


Figure 3-11: Front Seed Box Seed Rate Adjustment

IMPORTANT

DO NOT Loosen or Adjust the 1/2-13 Locknut. See Figures 3-11 and 3-12.

1. To **increase** the rate of seeding, loosen the 1-8 Nut and Seed Rate Adjusting Nut with supplied wrenches. Back the 1-8 Nut away from the Bearing. Set the Seed Rate Adjusting Nut appropriate letter with the Adjusting Screw corresponding number for the desired Seed Rate. Tighten the 1-8 Nut up to the Bearing.
2. To **decrease** the rate of seeding, loosen the 1-8 Nut and Seed Rate Adjusting Nut with supplied wrenches. Set the Seed Adjusting Nut appropriate letter with the Adjusting Screw corresponding number for the desired Seed Rate. Tighten the 1-8 Nut up to the Bearing.

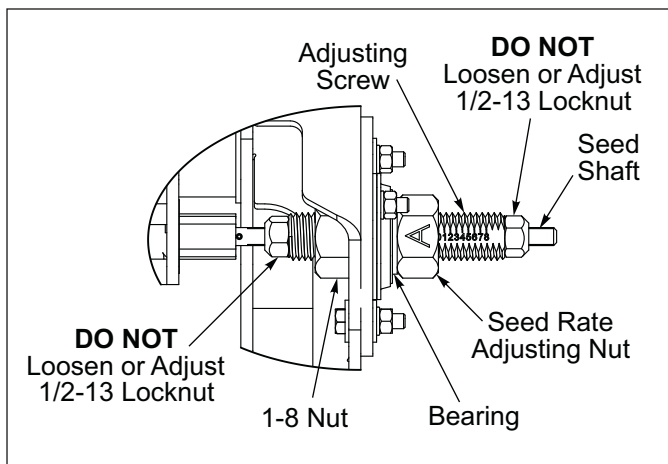


Figure 3-12: Rear Seed Box Seed Rate Adjustment

IMPORTANT

DO NOT Loosen or Adjust the 1/2-13 Locknut. See Figures 3-11 and 3-12.

1. To **increase** the rate of seeding, loosen the 1-8 Nut and Seed Rate Adjusting Nut with the supplied wrenches. Set the Seed Rate Adjusting Nut appropriate letter with the Adjusting Screw corresponding number for the desired Seed Rate. Tighten the 1-8 Nut up to the Bearing.
2. To **decrease** the rate of seeding, loosen the 1-8 Nut and Seed Rate Adjusting Nut with supplied wrenches. Back the 1-8 Nut away from the Bearing. Set the Seed Rate Adjusting Nut appropriate letter with the Adjusting Screw corresponding number for the desired Seed Rate. Tighten the 1-8 Nut up to the bearing.

Seed Meters discharge to the front of the machine to aid the operator in determining proper operation. In addition, reflective amber decals are placed on the seed shafts to indicate rotation.

PLANTING RATES FOR FRONT SEED BOX

1. RATES ARE FOR 11 TOOTH DRIVER. DOUBLE THESE VALUES FOR 22 TOOTH DRIVER.
2. RATES ARE INTENDED AS A GUIDE ONLY. VARIATIONS IN SIZE AND CLEANLINESS WILL AFFECT RATES. CHECK ACREAGE AND POUNDS OF SEED USED FOR BEST RESULTS.

INDICATOR SETTING	POUNDS PER ACRE								POUNDS PER 1000 SQUARE FEET							
	1A	2A	3A	4A	5A	6A	7A	8A	1A	2A	3A	4A	5A	6A	7A	8A
ALFALFA	24	59	124	196	273	367	450	528	0.55	1.35	2.85	4.50	6.27	8.43	10.30	12.10
BAHIA	18	53	119	190	243	290	367	415	0.41	1.22	2.73	4.36	5.58	6.66	8.43	9.53
BARLEY	6	59	136	207	284	350	421	498	0.14	1.35	3.12	4.75	6.52	8.03	9.66	11.40
BENT GRASS	12	30	59	107	172	213	249	314	0.28	0.69	1.35	2.46	3.95	4.89	5.72	7.21
BERMUDA	24	71	119	176	284	403	480	593	0.55	1.63	2.73	4.50	6.52	9.25	11.00	13.60
BIRDFOOT TREFOIL	24	65	124	213	290	379	480	563	0.55	1.49	2.85	4.89	6.66	8.70	11.00	12.90
BLUE GRASS, KENTUCKY	18	34	64	117	157	196	256	294	0.40	0.78	1.47	2.69	3.60	4.50	5.87	6.75
BUFFALO GRASS	-	6	30	59	83	101	113	142	--	0.14	0.69	1.35	1.91	2.32	2.59	3.26
CANOLA	24	71	136	207	290	356	421	468	0.55	1.63	3.12	4.75	6.66	8.17	9.66	10.70
CENTIPEDE	24	59	113	213	338	427	528	587	0.55	1.35	2.59	4.89	7.76	9.80	12.10	13.50
CLOVER, ALSIKE	24	59	136	237	332	427	528	593	0.55	1.35	3.12	5.44	7.62	9.80	12.10	13.60
CLOVER, RED	36	77	130	184	231	296	350	391	0.83	1.77	2.98	4.22	5.30	6.80	8.03	8.98
FESCUE, CREEPING RED	6	18	47	95	124	154	184	196	0.14	0.41	1.08	2.18	2.85	3.54	4.22	4.50
FESCUE, TALL	18	34	72	122	192	234	288	350	0.40	0.78	1.65	2.80	4.41	5.37	6.61	8.03
LOVE GRASS	36	83	190	296	397	480	581	676	0.83	1.91	4.36	6.80	9.11	11.00	13.30	15.50
LESPEDEZA (HULLED)	30	83	172	279	421	504	593	688	0.69	1.91	3.95	6.40	9.66	11.60	13.60	15.80
LESPEDEZA (UNHULLED)	12	41	77	142	196	237	284	338	0.28	0.94	1.77	3.26	4.50	5.44	6.52	7.76
MILLET	18	36	119	196	267	332	391	456	0.41	0.83	2.73	4.50	6.13	7.62	8.98	10.50
MILLO	47	113	178	249	338	409	456	545	1.08	2.59	4.09	5.72	7.76	9.39	10.50	12.50
NEEDLE GRASS	6	30	89	154	225	290	373	421	0.14	0.69	2.04	3.54	5.17	6.66	8.56	9.66
OATS	30	59	101	136	196	231	261	302	0.69	1.35	2.32	3.12	4.50	5.30	5.99	6.93
ORCHARD GRASS	6	12	24	53	89	101	119	130	0.14	0.28	0.55	1.22	2.04	2.32	2.73	2.98
RYE GRASS	12	36	83	130	178	225	267	308	0.28	0.83	1.91	2.98	4.09	5.17	6.13	7.07
SUDAN	12	65	142	225	308	403	498	581	0.28	1.49	3.26	5.17	7.07	9.25	11.40	13.30
SWITCH GRASS	18	53	136	243	338	409	504	610	0.41	1.22	3.12	5.58	7.76	9.39	11.60	14.00
TIMOTHY	18	47	130	213	284	373	421	492	0.41	1.08	2.98	4.89	6.52	8.56	9.66	11.30
VETCH	12	71	148	219	296	367	445	510	0.28	1.63	3.40	5.03	6.80	8.43	10.20	11.70
WESTERN WHEAT GRASS	1	12	41	83	119	154	172	207	0.02	0.28	0.94	1.91	2.73	3.54	3.95	4.75
WINTER WHEAT	53	107	184	261	332	409	474	533	1.22	2.46	4.22	5.99	7.62	9.39	10.90	12.30

Table 3-1: Seed Chart, Front Box

NOTE

Brillion assumes no liability pertaining to seeding rates achieved with this seeder. Rates listed are general in nature and should be used as starting points only. Seed varieties and blends listed represent those calibrated through in-house test meters. Variations in actual rates may be realized due to differences in seed lots. For accurate rates with seeds being used, follow the calibration instructions listed on the seed chart inside the box cover or refer to the Operator's Manual. *The information listed in the above seed charts is subject to change without notice.*

PLANTING RATES FOR REAR SEED BOX

1. RATES ARE FOR 11 TOOTH DRIVER. DOUBLE THESE VALUES FOR 22 TOOTH DRIVER.
2. RATES ARE INTENDED AS A GUIDE ONLY. VARIATIONS IN SIZE AND CLEANLINESS WILL AFFECT RATES. CHECK ACREAGE AND POUNDS OF SEED USED FOR BEST RESULTS.

INDICATOR SETTINGS	POUNDS PER ACRE								POUNDS PER 1000 SQ FT								
	1A	2A	3A	4A	5A	6A	7A	8A	1A	2A	3A	4A	5A	6A	7A	8A	
ALFALFA (UNCOATED)	15	34	53	78	97	117	141	165	0.34	0.78	1.22	1.79	2.23	2.69	3.24	3.79	
BAHA	10	24	44	58	78	97	117	131	0.23	0.55	1.01	1.33	1.79	2.23	2.69	3.01	
BERMUDA (HULLED)	10	29	53	83	107	127	146	170	0.23	0.67	1.22	1.91	2.46	2.92	3.35	3.90	
BIRDSFOOT TREFOIL (BROADLEAF)	15	39	58	83	127	156	185	219	0.34	0.90	1.33	1.91	2.92	3.58	4.25	5.03	
BLUE GRASS (KENTUCKY)	5	19	34	49	63	78	92	107	0.11	0.44	0.78	1.12	1.45	1.79	2.11	2.46	
BLUE GRASS (PARK KENTUCKY)	5	15	29	44	58	68	78	87	0.11	0.34	0.67	1.01	1.33	1.56	1.79	2.00	
BLUE GRASS (SHERMAN BIG)	5	10	15	24	29	34	39	49	0.11	0.23	0.34	0.55	0.67	0.78	0.90	1.12	
CANOLA	0	29	*	49	63	83	102	122	141	0.00	0.67	* 1.12	1.45	1.91	2.34	2.80	3.24
CENTPEDE	15	29	39	53	73	83	97	107	0.34	0.67	0.90	1.22	1.68	1.91	2.23	2.46	
CLOVER (ALSIKE, LADINO, SWEET, RED)	15	34	58	78	102	127	146	165	0.34	0.78	1.33	1.79	2.34	2.92	3.35	3.79	
CLOVER (ALYCE, CALIF., BUR., CRIMSON, HUBAM)	10	29	49	73	102	122	146	185	0.23	0.67	1.12	1.68	2.34	2.80	3.35	4.25	
CRESTED WHEAT	5	10	15	19	24	29	34	39	0.11	0.23	0.34	0.44	0.55	0.67	0.78	0.90	
CROWN VETCH	15	39	63	92	126	151	180	204	0.34	0.90	1.45	2.11	2.89	3.47	4.13	4.68	
FLAX	10	29	49	63	83	97	112	131	0.23	0.67	1.12	1.45	1.91	2.23	2.57	3.01	
HARDING GRASS	10	24	39	53	68	83	97	112	0.23	0.55	0.90	1.22	1.56	1.91	2.23	2.57	
HIGHLAND BENT	10	19	28	36	44	53	61	69	0.23	0.44	0.64	0.83	1.01	1.22	1.40	1.58	
KLEIN GRASS	10	34	58	83	107	136	165	189	0.23	0.78	1.33	1.91	2.46	3.12	3.79	4.34	
LESPEDEZA (KOREAN UNHULLED)	10	24	44	63	83	102	127	146	0.23	0.55	1.01	1.45	1.91	2.34	2.92	3.35	
LESPEDEZA (KOREAN HULLED)	15	34	58	83	102	127	151	170	0.34	0.78	1.33	1.91	2.34	2.92	3.47	3.90	
LESPEDEZA (SERICEA UNHULLED)	5	19	34	49	63	78	92	102	0.11	0.44	0.78	1.12	1.45	1.79	2.11	2.34	
LESPEDEZA (SERICEA HULLED)	15	39	63	92	117	146	175	199	0.34	0.90	1.45	2.11	2.69	3.35	4.02	4.57	
LOVE GRASS (WEEPING)	10	34	58	83	107	131	160	187	0.23	0.78	1.33	1.91	2.46	3.01	3.67	4.29	
LOVE GRASS (SAND)	10	16	49	68	92	117	136	165	0.23	0.37	1.12	1.56	2.11	2.69	3.12	3.79	
MILLET	10	34	58	83	107	131	160	187	0.23	0.78	1.33	1.91	2.46	3.01	3.67	4.29	
NORTHUP KING MIXTURE	6	11	16	21	26	31	36	41	0.14	0.25	0.37	0.48	0.60	0.71	0.83	0.94	
RED TOP	5	15	24	34	39	44	49	58	0.11	0.34	0.55	0.78	0.90	1.01	1.12	1.33	
REED CANARY GRASS	5	15	24	34	44	53	63	78	0.11	0.34	0.55	0.78	1.01	1.22	1.45	1.79	
SCOTT'S FAMILY GRASS	4	8	13	17	21	26	30	33	0.09	0.18	0.30	0.39	0.48	0.60	0.69	0.76	
SWITCH GRASS (CLEANED AND HULLED)	0	15	24	34	44	58	68	83	0.00	0.34	0.55	0.78	1.01	1.33	1.56	1.91	
TILLAGE RADISH	0	33	51	72	93	114	133	155	0.00	0.76	1.17	1.65	2.13	2.61	3.06	3.56	
TIMOTHY	10	24	44	68	87	107	131	156	0.23	0.55	1.01	1.56	2.00	2.46	3.01	3.58	

Table 3-2: Seed Chart, Rear Box

NOTE

Brillion assumes no liability pertaining to seeding rates achieved with this seeder. Rates listed are general in nature and should be used as starting points only. Seed varieties and blends listed represent those calibrated through in-house test meters. Variations in actual rates may be realized due to differences in seed lots. For accurate rates with seeds being used, follow the calibration instructions listed on the seed chart inside the box cover or refer to the Operator's Manual. *The information listed in the above seed charts is subject to change without notice.*

Calibration for Unlisted Seeds

IMPORTANT

The Clutch must be disengaged when Seed Shafts are turned manually for Calibration. Electrical Power is required to disengage the Clutch.

Landoll assumes no liability pertaining to Seeding Rates achieved with this Seeder. Rates listed are general in nature and should be used as starting points only. Seed varieties and blends listed represent those calibrated through in-house test meters.

Variations in actual rates may be realized due to differences in Seed Lots. **For accurate rates with seeds being used, follow the Calibration Instructions listed on the Seed Chart inside the Seed Box Cover or refer to the Operator's Manual.**

NOTE

The information listed in the Seed Charts is subject to change without notice.

IMPORTANT

Rates are for the 11 Tooth Driver. Double these values for the 22 Tooth Driver. See Figures 3-1 and 3-2.

Front Seed Box may be Calibrated for Unlisted Seed as follows.

1. Raise Seeder and install Transport Locks. **See Figure 3-6.**
2. Disengage Electrical Clutch. Electrical Power is required to disengage the Clutch.
3. If equipped, close Meters of Rear Seed Box if they contain Seed.
4. Place a Canvas or Tarp under the Machine to catch Seed.
5. Turn 11/16 hex Seed Shaft on the Transmission Clockwise(CW). **See Figure 3-13.**

8FT Seeder: Use 47 turns if you follow Step 5.
Reference, the Seed Shaft rotates 470 Revolutions per Acre Seeded with 11 Tooth Driver.

10FT Seeder: Use 37 turns if you follow Step 5.
Reference, the Seed Shaft rotates 370 Revolutions per Acre Seeded with 11 Tooth Driver.

12FT Seeder: Use 31 turns if you follow Step 5.
Reference, the Seed Shaft rotates 310 Revolutions per Acre Seeded with 11 Tooth Driver.

6. Weigh Seed (lbs) and Multiply by 10 (20 for 22 Tooth Driver) for approximate Planting Rate in Pounds per Acre.

Rear Seed Box may be Calibrated for Unlisted Seed as follows.

1. Raise Seeder and install Transport Locks. **See Figure 3-6.**
2. Disengage Electrical Clutch. Electrical Power is required to disengage the Clutch.
3. Close Meters of Front Seed Box if they contain Seed.
4. Place a Canvas or Tarp under the Machine to catch Seed.
5. Turn 11/16 hex Seed Shaft on the Transmission Clockwise(CW). **See Figure 3-14.**

8FT Seeder: Use 47 turns if you follow Step 5.
Reference, the Seed Shaft rotates 470 Revolutions per Acre Seeded with 11 Tooth Driver.

10FT Seeder: Use 37 turns if you follow Step 5.
Reference, the Seed Shaft rotates 370 Revolutions per Acre Seeded with 11 Tooth Driver.

12FT Seeder: Use 31 turns if you follow Step 5.
Reference, the Seed Shaft rotates 310 Revolutions per Acre Seeded with 11 Tooth Driver.

6. Weigh Seed (lbs) and Multiply by 10 (20 for 22 Tooth Driver) for approximate Planting Rate in Pounds per Acre.

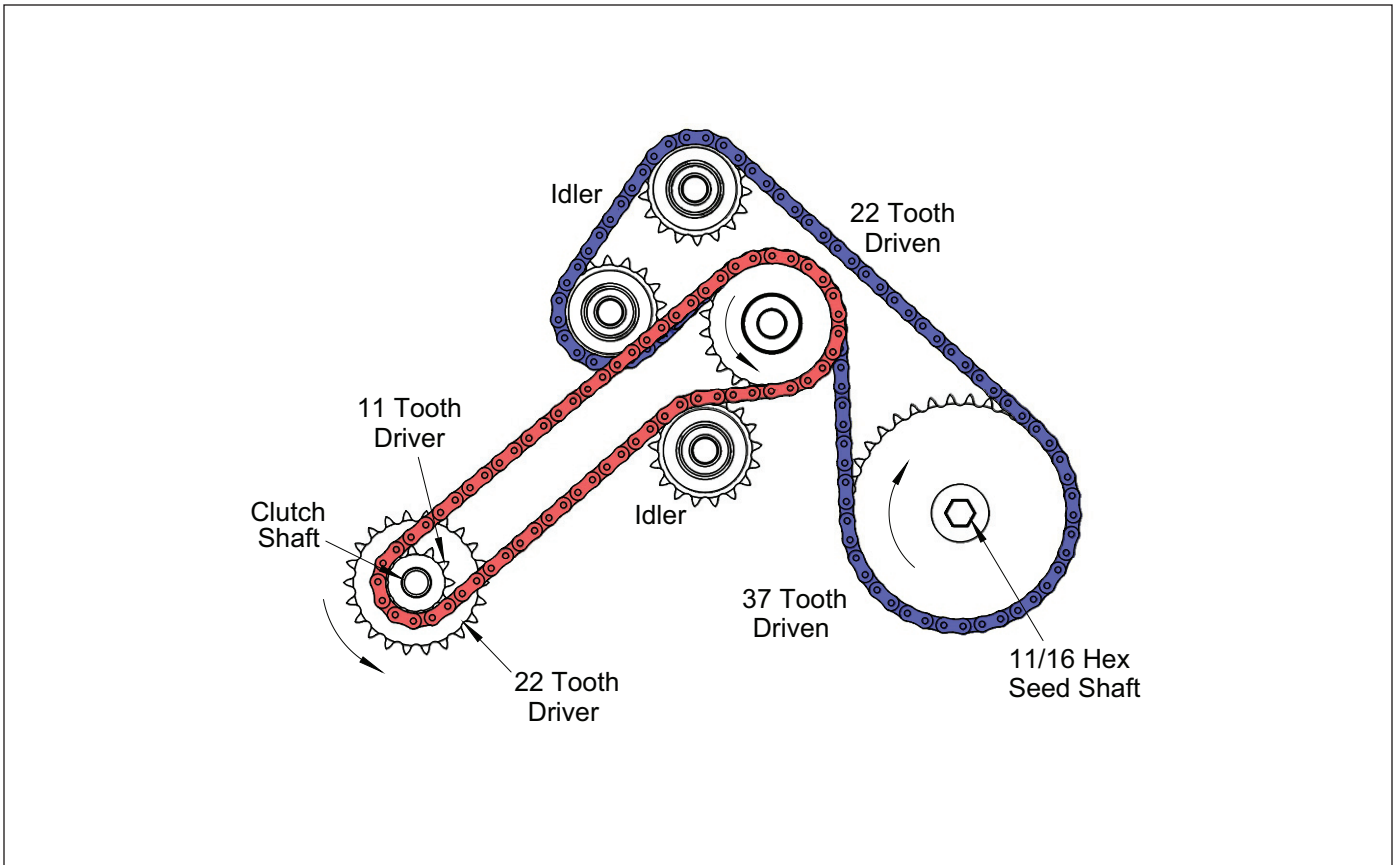


Figure 3-13: Front Seed Box Transmission Drive (After 01/2020)

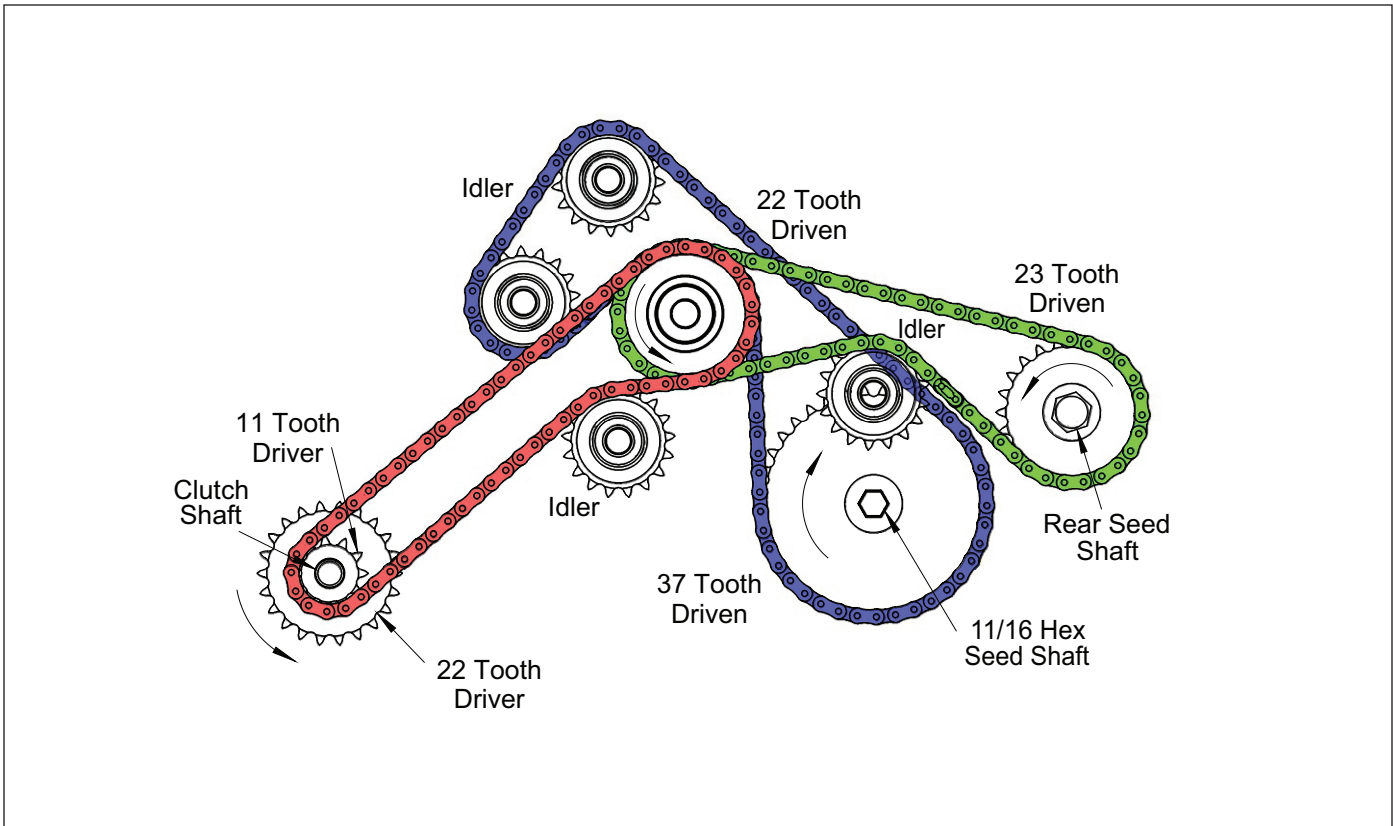


Figure 3-14: Front and Rear Seed Box Transmission Drive (After 01/2020)

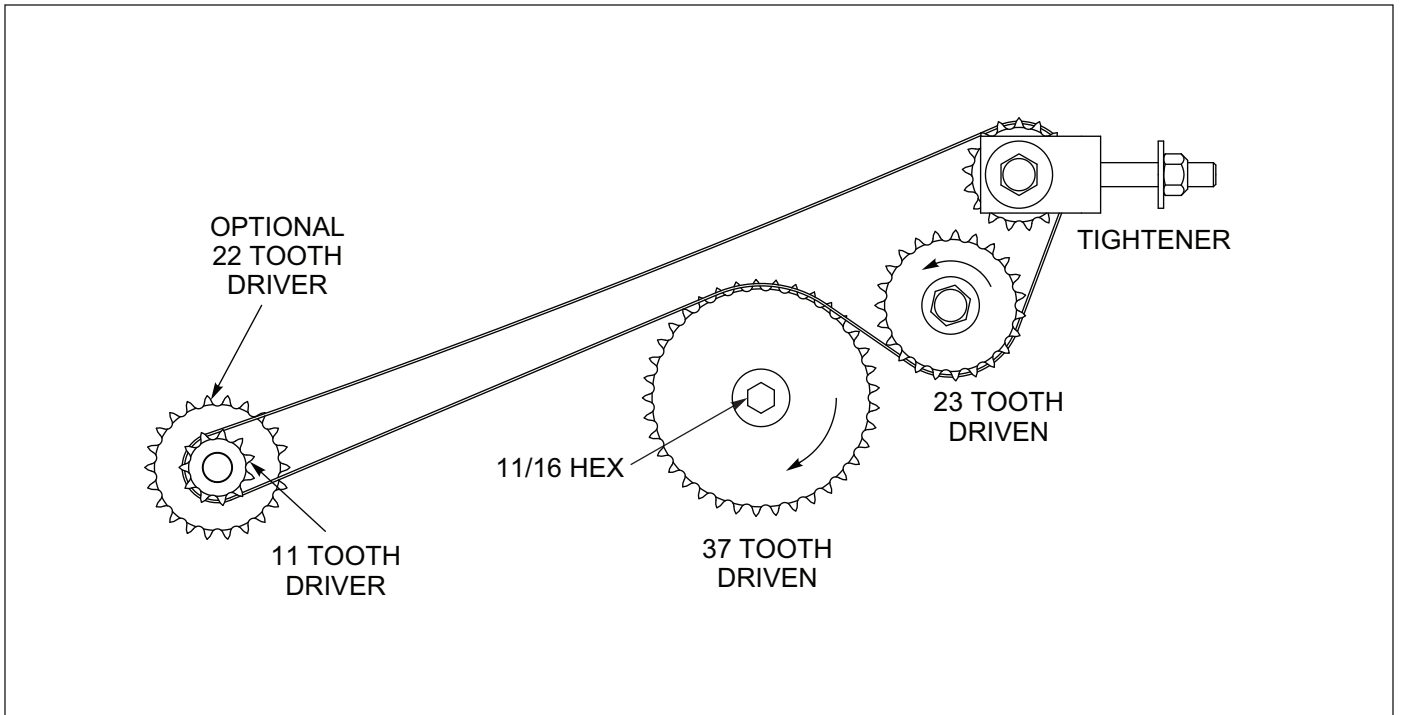


Figure 3-15: Transmission Drive (Before 01/2020)

Speed-Up Kit - Optional

Seed Rate shown on Seed Rate Charts can be doubled by using the 22 Tooth Sprocket provided in the Transmission. **See Figures 3-16 and 3-17.**

1. Loosen Drive Chain.
2. Open Drive Chain at Connector Link.
3. Remove Roll Pin in the 11-22 Tooth Sprocket.
4. Move the 11-22 Sprocket to new position and replace Roll Pin.
5. Add 4 Pitch Roller Chain with Connector Link to Drive Chain. If required, Offset Connector Link can be ordered separately. See Parts Manual 9K997.
6. Adjust Chain Tension. **See Figures 5-4 and 5-5.**

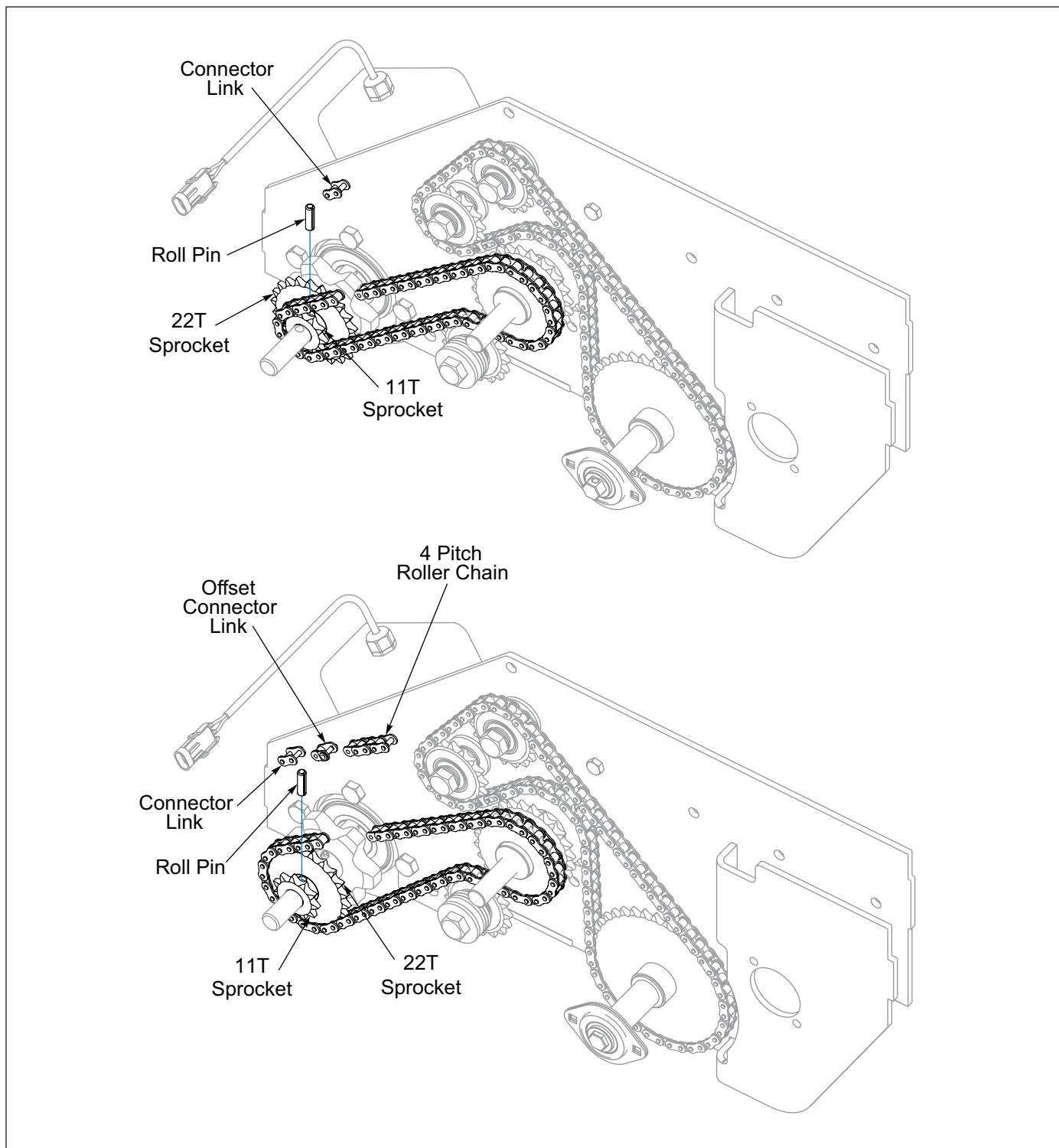


Figure 3-16: Drive Chain Set for 11 & 22 Tooth Seed Rate (After 01/2020)

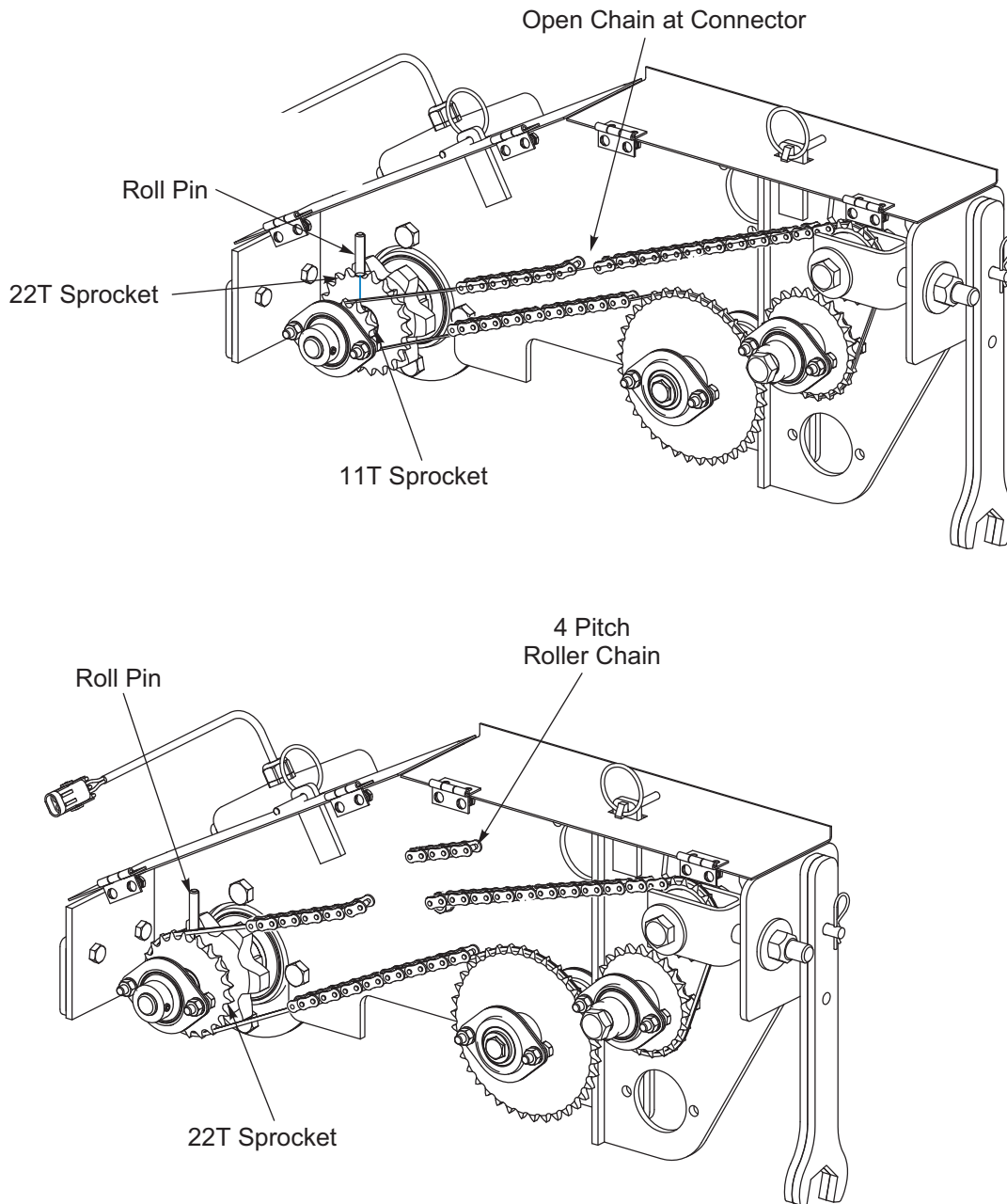


Figure 3-17: Drive Chain Set for 11 & 22 Tooth Seed Rate (Before 01/2020)

Loup Acre Meter - Optional (After 05/15/2012)

IMPORTANT

Acre Meter is dust and splash resistant, under no circumstances should this unit be submerged in any conductive, corrosive, or flammable liquid. At no time use high pressure water or air to clean it, as this can damage the unit.

Settings for Loup Acre Meters

The battery operated acre counter operates in one of two modes.

1. In sleep mode, the display is blank and the counter is accumulating acres. Sleep mode will be entered if a button is not pressed for 20 seconds.
2. In entry mode, the display is on, and the operator can enter values. To get into entry mode, press the ***/FUNC** button. If you continue to press the ***/FUNC** button, the acre counter will cycle through the functions that it can perform. The LEDs above the display indicate which function is selected.

The available functions are: Field Acres, Total Acres, Pulses per 400 ft, Width, Password and Low Battery. **See Figure 3-18.**

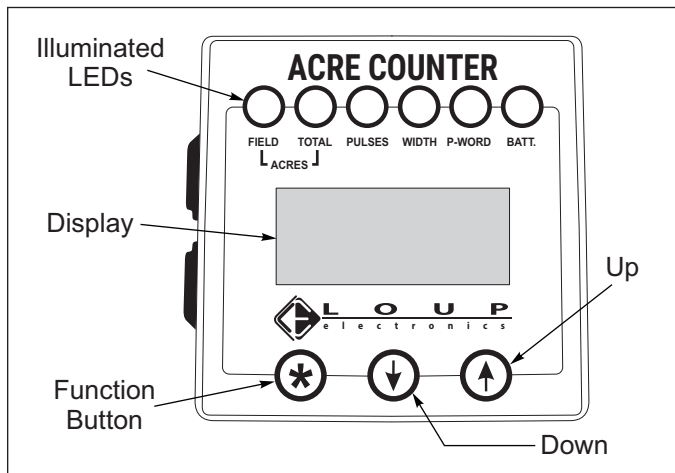


Figure 3-18: Acre Meter

Field Acres

Press the ***/FUNC** button until the “**FIELD**” LED is lit. The digits indicate the acres covered since the field acre counter was cleared.

To clear the field acre count, press the **UP** and **DOWN** buttons simultaneously for two seconds. If a password has been entered, you will not be able to clear the total acre count. Field acres will count in tenths of an acre up to 9999.9 acres.

Total Acres

Press the ***/FUNC** button until the “**TOTAL**” LED is lit. The digits indicate the acres covered since the total acre counter was cleared.

To clear the total acre count, press and hold the **UP** and **DOWN** buttons for two seconds. If a password has been entered, you will not be able to clear the total acre count.

Total acres will count from .1 to 99999 acres.

Pulses Per 400 Feet

Press the ***/FUNC** button until the “**PULSES**” LED is lit. The number in the display indicates how many pulses are generated for every 400 feet driven. There are two methods to enter the pulses per 400 feet:

1. If you know the number, select it using the **UP** and **DOWN** buttons. When you press the ***/FUNC** button, the Acre Counter will accept the number in the display as the new pulses per 400 feet. **See Table 3-3.**
2. If you do not know the pulses per 400 feet, press and hold the **UP** and **DOWN** buttons until the “0000” appears in the display. The “**PULSES**” LED will blink. The acre counter is now counting shaft rotations. Enter the cab, lower seeder, engage Clutch, and drive 400 feet. Press the ***/FUNC** button to wake up the acre counter. The “**PULSES**” LED will light. The number displayed is the pulses per 400 feet. Press the ***/FUNC** button to accept the setting.

If a password is set, you will not be able to adjust the pulses.

Width

Press the ***/FUNC** button until the “**WIDTH**” LED is lit. The number displayed is the length of your implement in feet.

To adjust the width, press the **UP** and **DOWN** buttons. If a password has been entered, you will not be able to adjust the width.

The length can be adjusted from .1 to 99.9 feet, in tenths of a foot.

Password

The password function allows you to protect the total acre count, pulses per 400 feet, and width settings with a password. This stops anyone from accidentally changing those settings. When the acre counter is shipped, the password is disabled. You can modify the pulses per 400 feet and implement width at any time.

Press the ***/FUNC** button until the “**PASS**” LED is lit. The digits will display the word “**Ent**” or “**dis**”.

If the display shows “dis”: The password is disabled. The total acre count, pulses/400 feet, width, and password settings can be adjusted using the **UP** and **DOWN** buttons. The password can also be changed using the **UP** and **DOWN** buttons.

If the display shows “Ent”: You must enter your password using the **UP** and **DOWN** buttons. When your password is displayed, press the ***/FUNC** button to test the password. If the password is correct, you will be able to change the acre counter settings. The password will be viewable until the acre counter enters sleep mode. When the acre counter is in entry mode again, you will have to re-enter the password to change settings.

If the password is not correct, you will not be able to change the acre counter settings. When the “**PASS**” function is selected again, “**Ent**” will appear in the display.

Changing the Password

Select a new password using the **UP** and **DOWN** buttons. Press the ***/FUNC** button until the word “**SET**” appears in the display. Release the ***/FUNC** button. The number in the display is your new pass code. Make sure you record this number. Press and hold the ***/FUNC** button until the word “**dis**” appears in the display.

If the password is forgotten, it can be disabled by removing the batteries. The password is intended for rental units. It is recommended that a seal be affixed to the rear plate of the acre counter to determine if the settings have been tampered with. See “**Electric Clutch**” on Page 5-11.

Battery Replacement

The battery operated acre counter uses 3 AA batteries. The “**BATT**” LED will light when the batteries require replacement. Remove the acre counter from the implement and undo the 4 screws on the back of the case. See Figure 3-19. This will separate the housing from the rear plate. Replace the batteries with 3 high quality AA alkaline batteries.

See “**Acre Meter Troubleshooting**” on Page 5-11.

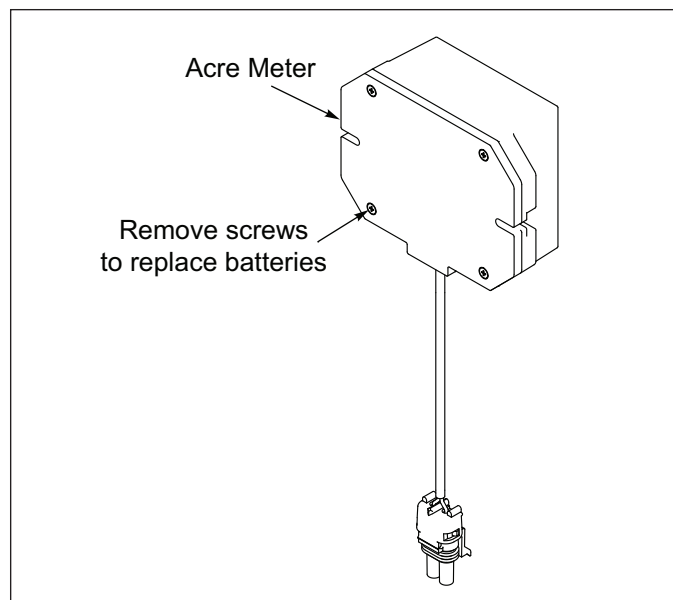


Figure 3-19: Battery Replacement

Loup Acre Meter - Optional (Before 05/15/2012)

Settings for Loup Acre Meters

- When the meter is set to “count” mode in pulses screen, meter will register only magnetic wheel revolutions.
- The meter must be in sleep mode (blank screen) to calculate acres or to count pulses.
- The count screen must have a value other than zero (0000) to scroll to other modes or screens.
- To reset the FIELD ACRES screen to zero (0000), press the **UP** and **DOWN** buttons simultaneously.

To Program Meter

1. Press the **Function (FUNC)** button to scroll to pulses screen.
2. Enter the number of pulses using the **UP** or **DOWN** buttons for the model listed in the chart. See Table 3-4.
3. Press **FUNC** to set the pulses. (If screen goes blank before you press **FUNC**, repeat steps 1 and 2).
4. Press **FUNC** to scroll to the width screen.
5. Enter the width of seeder using the **UP** or **DOWN** buttons for the model listed in the chart. See Table 3-4.
6. Press **FUNC** to set the width. (If screen goes blank before you press **FUNC**, repeat steps 4 and 5).
7. Press **FUNC** to scroll through the screens to check that the correct pulses and width have been entered.

To Enter Password

1. Press **FUNC** to scroll to password screen.
2. Pick a numeric password and enter it by using the **UP** or **DOWN** buttons, until your password is displayed.
3. Press **FUNC** to set password; screen will show “(set)”. Record number - it is required if you decide to disable password.
4. Let screen go blank - password is now entered.
5. Press **FUNC** to scroll to the password screen it will show (ent). If the screen does not show (ent), repeat steps 2, 3 and 4.

To Disable Password

1. Press **FUNC** to scroll to the password screen it will show (ent).
2. Use **UP** or **DOWN** button to enter password (number).
3. Press **FUNC** to scroll around to pass screen again. Number entered in step 2 will appear.
4. Press **UP** or **DOWN** button to enter 0.
5. Press **FUNC**; (dis) will appear. Password is now disabled.

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Table 3-3: Acre Meter Settings (After 05/15/2012)

MODEL				Pulses per 400 FT	Width (Feet)
SSPT604				22	5.0
SSP4	SS4			44	4.0
SSP5				44	5.0
SSP6				44	6.0
SSP8	SSBP8	SS8	SSB8	58	8.0
SSP10	SSBP10	SS10	SSB10	58	10.0
SSP12	SSBP12	SS12	SSB12	58	12.0
SSP16		SS16		45	16.0
SSP108	SS108			58	8.0
SSP110	SS110			58	10.0
SSP112	SS112			58	12.0
SSP208/2081	SS208/2081			58	8.0
SSP210/2101	SS210/2101			58	10.0
SSP212/2121	SS212/2121			58	12.0
SSP308/3081	SS308/3081			29	8.0
SSP310/3101	SS310/3101			29	10.0
SSP312/3121	SS312/3121			29	12.0
SLP8	SL8			314	8.0
SLP10	SL10			314	10.0
SLP12	SL12			314	12.0
SLP204/2041	SLPB204/2041			128	4.0
SLP206/2061	SLPB206/2061			128	6.0
SLP304/3041	SLPB304/3041			64	4.0
SLP306/3061	SLPB306/3061			64	6.0
LSP5				128	5.0
LSP6				128	6.0
LSS6				128	6.0
SLP208/2081	SLPB208/2081	SL208/2081	SLB208/2081	116	8.0
SLP210/2101	SLPB210/2101	SL210/2101	SLB210/2101	116	10.0
SLP212/2121	SLPB212/2121	SL212/2121	SLB212/2121	116	12.0
SLP308/3081	SLPB308/3081	SL308/3081	SLB308/3081	58	8.0
SLP310/3101	SLPB310/3101	SL310/3101	SLB310/3101	58	10.0
SLP312/3121	SLPB312/3121	SL312/3121	SLB312/3121	58	12.0
BOS4F1	BOS4S1	BOSB4F1	BOSB4S1	45	4.0
BOS6F1	BOS6S1	BOSB6F1	BOSB6S1	45	6.0
BPS6	BPSB6			51	6.0
GLP643	SSLP643			69	5.0
4620-24				45	24.0
4630-36				per Seeder	36.0
X19-27	XL28-36	XXL38-46		90	per Model
WFP23-37	WFP38-52			90	per Model

TABLE OF CONTENTS

Table 3-4: Acre Meter Settings (Prior to 05/15/2012)

MODEL				PULSES	WIDTH
SSP T604				293	5
SSP4		SS4		578	4
SSP5				578	5
SSP6		SS6		578	6
SSP8		SS8		764	8
SSP10		SS10		764	10
SSP12		SS12		764	12
SSP108		SS108		760	8
SSP110		SS110		760	10
SSP112		SS112		760	12
SSP208	SSP2081	SS208	SS2081	764	8
SSP210	SSP2101	SS210	SS2101	764	10
SSP212	SSP2121	SS212	SS2121	764	12
SSP308		SS308		382	8
SSP310		SS310		382	10
SSP312		SS312		382	12
SLP8		SL8		4147	8
SLP10		SL10		4147	10
SLP12		SL12		4147	12
SLP204	SLP2041			1690	4
SLP206	SLP2061			1690	6
SLP304	SLP3041			845	4
SLP306	SLP3061			845	6
LSP5				1690	5
LSP6				1690	6
LSS6				1690	6
SLP208	SLP2081	SL208	SL2081	1528	8
SLP210	SLP2101	SL210	SL2101	1528	10
SLP212	SLP2121	SL212	SL2121	1528	12
SLP308	SLP3081	SL308	SL3081	764	8
SLP310	SLP3101	SL310	SL3101	764	10
SLP312	SLP3121	SL312	SL3121	764	12
BOS4F1	BOS4S1	BOS6F1	BOS6S1	600	4
BOSB4F1	BOSB4S1	BOSB6F1	BOSB6S1	600	6
BPS6	BPSB6			679	6
GLP643		SSLP643		917	5

Transporting the Seeder

1. Check and follow all federal, state, and local requirements before transporting the Seeder.
2. The Seeder should be transported only by tractor required for field operation. The machine weight should not exceed more than 1.5 times the tractor weight. Maximum transport speed for the Seeder is 20 mph.



CAUTION

Excessive speed may result in loss of control of the tractor and machine, reduced braking ability, or failure of the machine tire or structure. Do not exceed the machines 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 machines.

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 machine load carrying capabilities.

5. A Safety Chain is provided with the implement to insure 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.
 - When unhitching from the tractor attach the hook end of the chain to a free link close to the hitch clevis for storage. This will keep the hook off the ground, reducing corrosion, and keep the hook functioning properly.
 - 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 height and width of the implement being towed. Markers, tanks, attachments, etc. can increase the height and width of the implement.



DANGER

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

- Check to see that the tractor hitch capacity is rated to carry the weight of the Seeder Hitch. **Refer to Tractor Operator's Manual.**
- Use provided pins that properly fits the Lift Arms or Quick Hitch and Implement Hitch.
- Clean all Hydraulic Couplings and attach to tractor remotes.
- Connect Basic Clutch Switch Box or Brillion Elite Mini Monitor System to tractor.
- Connect the Safety Warning Lights 7-Pin Plug into tractor 7-Pin outlet, routing cord by avoiding pinch points.
- Fully raise the Seeder Hydraulic Lift or 3-PT Hitch.
- Make sure Transport Locks are installed and secured with Clevis Pins and Hair Pin Cotter. **See "Transport Lock Engaged" on Page 3-5.**



WARNING

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

- Check all tires for proper inflation, and that lug nuts are properly torque. **See "Tires" on Page 5-3.**
- Verify that all warnings lights, SMV sign, reflectors, and safety decals are clearly visible and functioning properly.
- Transport during daylight hours whenever 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 3-20.**

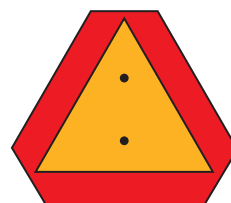


Figure 3-20: SMV Sign

Brillion Elite Mini Monitor

Overview

The Brillion Elite Mini Monitor is a full featured display designed to provide accurate information to the operator for Ground Speed and Acres Planted, Seeder Unit Clutch Control, Seed Shaft Rotation, and Bin Level. This Chapter will familiarize you with operation and technical information. All aspects and features are detailed but may not be applicable to your system configuration.

- **Ground Speed** (Implement mounted Ground Speed Sensor, Radar, GPS Speed or Simulated Speed)

- **Field Acres and Total Acres**
- **Clutch Control**
- **(Up to 6) Six Seed Shaft Rotation Sensors**
- **(Up to 6) Six Hopper Level Sensors**
- **Clutch Master On/Off Switch**

⚠ WARNING

High Power Magnet in use. See "High Power Magnet" on 1-2.

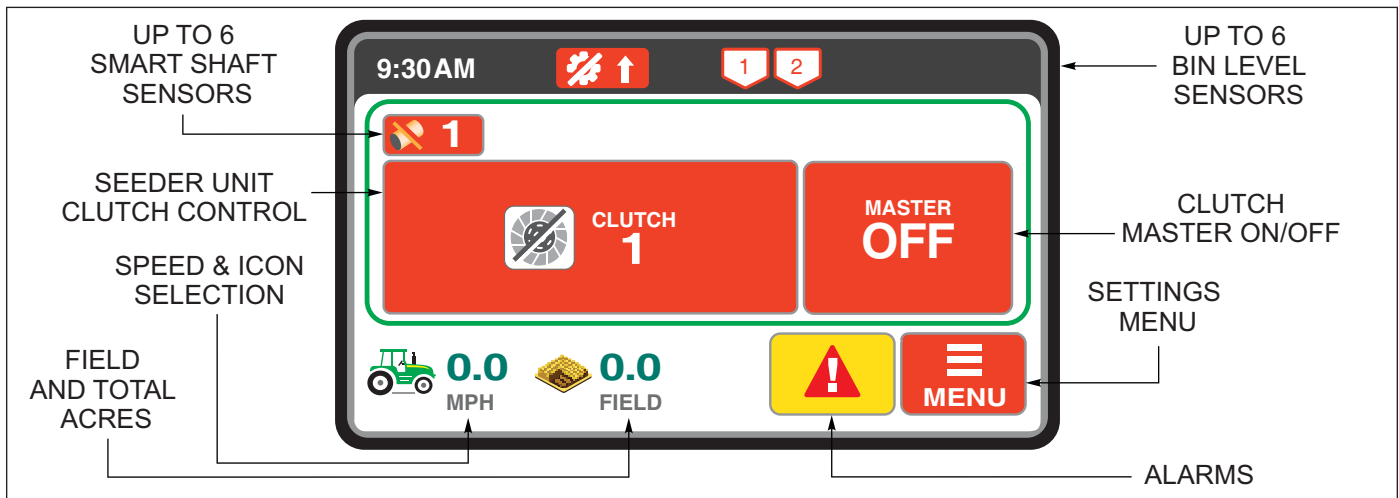


Figure 4-1: Main Screen Display (Landscape Seeder)

Main Screen Layout

Speed & Icon Selection

Implement Speed will display in lower left corner of the display. To change the tractor color, tap the tractor icon in the lower left corner to prompt a menu. From the pop-up, select the color.



Field & Total Acres

NOTE

Acres seeded accumulate only for the seeder sections that have the clutch engaged "ON/Green".



Touch **Field or Total Acres** to toggle between them.

Clear Field Acres: Touch and hold field numbers for 3 seconds. Field Acres Reset Screen will pop-up. Select "Yes Confirm".

Clear Total Acres: Touch and hold total numbers for 3 seconds. Total Acres Reset Screen will pop-up, select "Reset Total Acres". Warning Screen will pop-up, select

"Yes Confirm". Password Screen will pop-up. Enter 4-digit password.

Alarms

When an alarm is sounded a popup message will display the active alarm. You may choose to either clear that single alarm or clear all alarms to clear the popup and silence the display.



A flashing yellow button will display next to the Menu Button to signify alarm(s) that are currently active. Select the yellow alarm button to go to the Alarms Screen which will outline all current alarms active on the console. The flashing indicator will not disappear until all alarms have been resolved.

ACTIVE ALARMS
← BACK

GENERAL ALARMS: SHAFT 1 LOW RPM BIN 1,2 EMPTY	COMM ERRORS: NO COMM ERRORS
--	---------------------------------------



Figure 4-2: Settings Menu Display (Landscape Seeder)

Settings Menu - Speed Settings



Located by selecting “Menu” and “Speed Settings”, these settings control the type of speed input being used as well as calibrating the speed displayed on the main screen.

Speed Source

Change “Speed Source” by pressing the **Current “Source” Button**. Choose between Shaft Sensor, Radar, GPS Receiver, and Simulated Speed. Screen displays the new Source and options.

Source: Shaft Sensor Speed

Uses the Smart Shaft Sensor located on the Seeder Clutch Shaft to obtain ground speed.



Source: Radar Speed

Uses a tractor equipped with radar to obtain your source of ground speed.



Source: GPS Receiver Speed

Uses a GPS receiver for your source of ground speed.

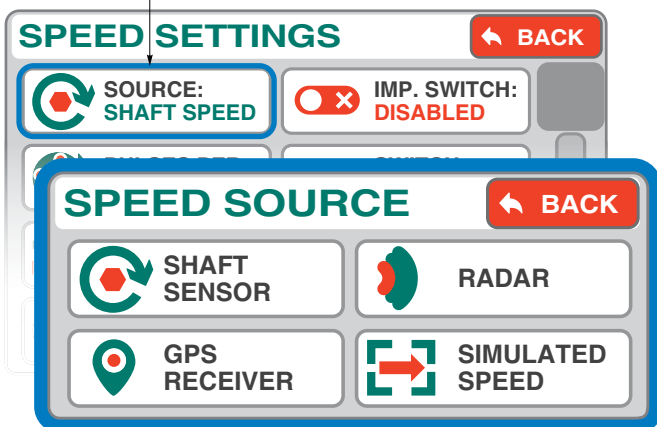


Source: Simulated Speed

Allows you to enter a static speed into the monitor without any other speed source. For use in more unique conditions such as a GPS/Radar failure, or other troubleshooting.



CURRENT “SOURCE” BUTTON



Speed Source Displays

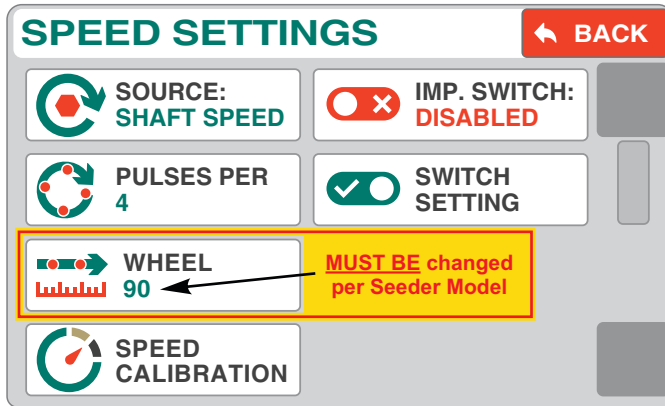


Figure 4-3: Source: Shaft Sensor Speed Display

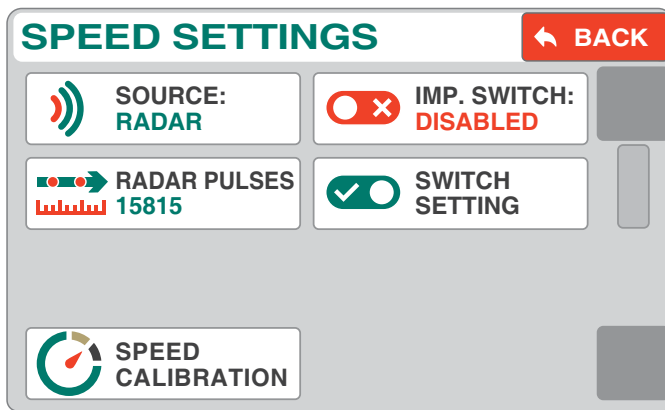


Figure 4-4: Source: Radar Speed Display

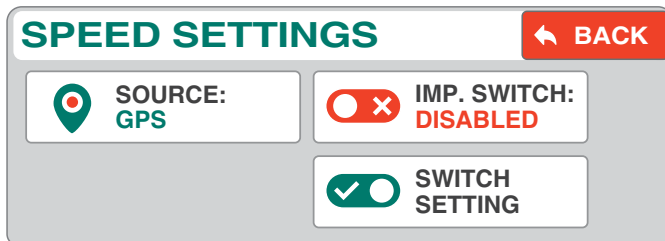


Figure 4-5: Source: GPS Receiver Display

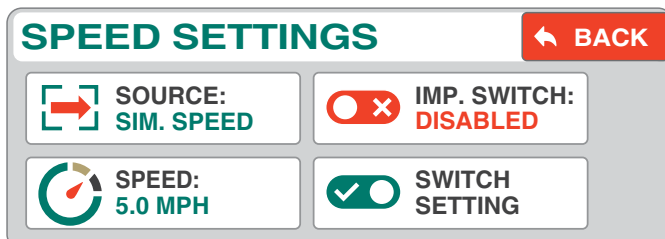


Figure 4-6: Source: Simulated Speed Display

Speed Source Icon Features

Pulses Per Revolution

Pulses Per Revolution are the number of magnets the implement mounted speed sensor sees in one revolution of the shaft being monitored. For Brillion Seeders this number is 4.



To change, enter a new number into the keypad and select "Exit & Save".

Wheel Pulses Per 400FT

This is the ground speed calibration number for a implement mounted speed sensor. See "Speed Calibration" for calibration instructions.



MUST BE changed per Seeder Model

The Default Number **MUST BE CHANGED** per specific seeder model. See Figure 4-7. To change, enter a new number into the keypad and select "Exit & Save". Increasing this number will cause the monitor to show a slower MPH, decreasing it causes the MPH to increase.

MODEL	PULSES PER 400FT
SL208/SLP208	464
SL210/SLP210	464
SL212/SLP212	464

Figure 4-7: Pulse Number for Specific Seeder Model

Radar Pulses Per 400FT

This is the ground speed calibration number for a radar speed sensor. See "Speed Calibration" for calibration instructions.



Speed (Simulated Speed)

Enter the static speed of your choice. The monitor will continually display this speed at all times until otherwise specified.



Speed Calibration

All new systems require a ground speed calibration to ensure accurate area totals and accurate ground speed readings. To complete the calibration, measure a course 400 long preferably on level ground with a start and finish point. The seeder must be in the down position throughout this procedure.



SPEED CALIBRATION

1. Measure 400ft distance
2. Select "START CALIBRATION" and begin driving.
3. Pulses will start accumulating below.
4. Select "EXIT AND SAVE" below to complete.

START

WHEEL PULSES RECEIVED : 0

RADAR PULSES RECEIVED : 0

SPEED CALIBRATION

BACK
EXIT & SAVE

NOTE

During the calibration the monitor is looking for the number of pulses produced from the seeder mounted sensor or in the case of radar, the number of radar pulses.

1. Select the "Start Calibration" button to begin.
2. As you drive the 400ft. distance, pulses for both Wheel Pulses and/or Radar Pulses will begin accumulating on-screen.
3. When you've reached the end of the 400ft. distance, select "EXIT & SAVE" to complete the calibration procedure. Depending on which "Speed Source" is selected, the monitor will store this value into either the "Wheel Pulses Per 400" or "Radar Pulses Per 400" area.

Implement Switch

The implement switch is used to tell the monitor if a Lift Sensor is being used to determine when the machine is raised or lowered. The Lift Sensor is used when shaft rotation cannot be used or a variable rate drive such as common on air seeders, is being used. The "Imp. Switch" button toggles between "Disabled" or "Enabled". **Set to "Disabled" for Brillion Landscape Seeder.**



When the Monitor learns a "Lift Switch Sensor" toggle the "Implement Switch" button to "Enabled".



Implement Switch Setup

Implement Switch Setup tells the monitor if the Implement Switch Lift Sensor is associated with the Implement Lift being raised or lowered.



IMP. SWITCH SETUP ← BACK

RAISED: OPEN SET HIGHEST

CURRENT: OPEN

LOWERED: CLOSED SET LOWEST

The Implement Switch Setup toggles between "Open" or "Closed". Select icon "Set Highest" or "Set Lowest" to "Open" the Implement Switch, the other will automatically "Close".

Settings Menu - Clutch Setting



The Landscape Seeder has a Clutch that is controlled by the Brillion Elite Mini Monitor. The Clutch must be set.

CLUTCH SETTINGS ← BACK

CLUTCH 1 DETAILS:

CLUTCH ENGAGE AT: 0V

SECTION WIDTH: 8.0 FT

TOTAL CLUTCHES

1

-
+

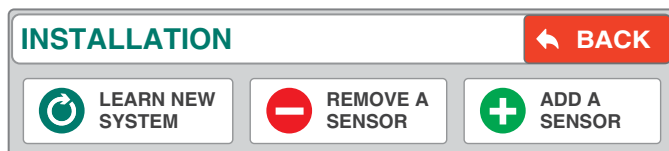
← PREV.
NEXT →

1. Set "Total Clutches" to 1 by pressing icon "-" or "+"
2. Set each "Clutch Details" as follows: to toggle between each Clutch Detail press icon **NEXT** or **PREV.**
 - Clutch engage at: 0 Volts (Toggles between 0 and 12 Volts)
 - Section Width: 8.0 Feet, 10 Feet, or 12 Feet **Set to Model Width**
3. Select "**BACK**" to get to the Setting Menu.

Settings Menu - Install Setup



Select “Install Setup” icon to Learn New System, Add A Sensor, or Remove A Sensor to your machine.



Learn New System

Select “Learn New System” if your monitor did not come pre-programmed or you wish to relearn all sensors.



1. Start by unplugging all sensors on the implement and then selecting “Learn New System”. A popup will warn you that all current sensors will be overwritten. Select “Yes, Learn New System”.
2. Refer to Brillion Elite Mini Monitor Electrical Schematic for Sensor Locations. See Figures 2-31 and 2-32.

The monitor will prompt “Plug In Sensor” (all sensors have a 3-Pin Connector with white, black and green wires) in the following order. The sensor being prompted will automatically be learned upon connecting the 3-Pin Connector.

- “Plug In Sensor - Speed” Ground Speed Smart Shaft Sensor is installed on the Seeder Clutch Shaft.
- “Plug In Sensor - Clutch Box” Clutch Smart Relay installed in the Elite Mini Tractor Harness
- “Plug In Sensor - Shaft 1-6” Up to six Seed Shaft Smart Shaft Sensors can be installed.
- “Plug In Sensor - Bin 1-6” Up to six Bin Level Sensors can be installed.

3. It is likely your system will not be configured for the maximum possible sensors or even certain types of sensors the Loup Elite is capable of.

Use the “Skip this Sensor” button to advance ahead one sensor at a time.



Use the “Skip this Type of Sensor” to advance to the next category of sensors.



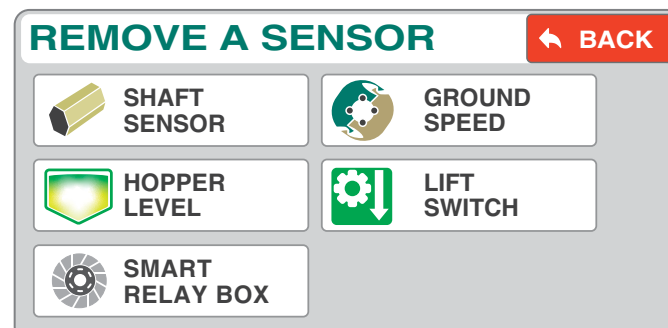
4. When you’ve reached the end of the list of sensors, you will be prompted with “Manual Learn Complete”. Push “OK” to finish.

Remove A Sensor

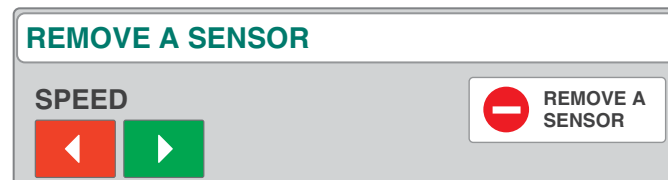
Select this option to remove a sensor from your existing system.



1. Select the type of sensor you wish to remove.



2. Use the **Left and Right Arrows** to navigate to the sensor number you wish to remove.
3. Select the “Remove A Sensor” button to complete the removal.

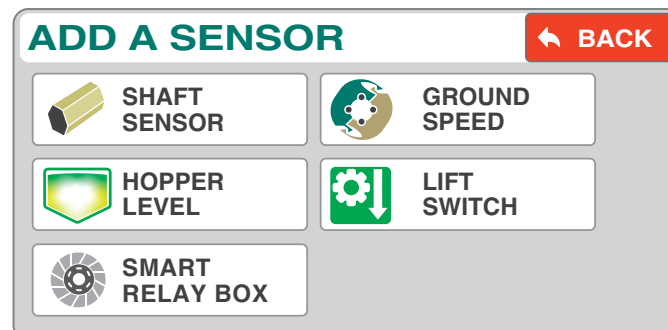


Add A Sensor

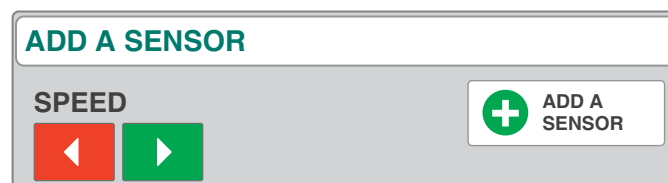
Select this option to add a new sensor to your existing system.



1. Select the type of sensor you wish to add.



2. Use the Left and Right arrow buttons to navigate to the sensor number you wish to add.
3. Select the “Add A Sensor” button to complete the sensor addition.



Settings Menu - Shaft Settings



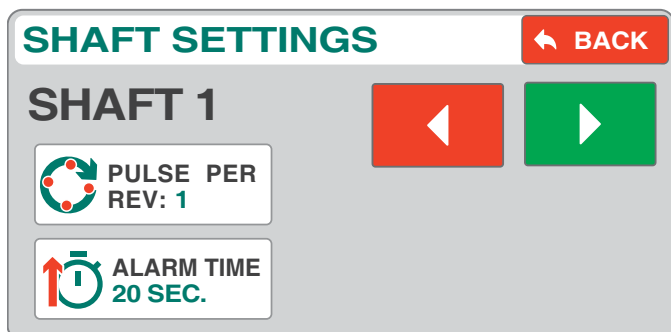
Seed Shaft Settings

The Seeder can have up to six Smart Shaft Sensors that indicate shaft rotation. Each Smart Shaft Sensor must be set.

- Pulse per Rev: 1
- Alarm Time: 20 Sec.

Toggle between each “**Shaft**” by pressing icon “<” or “>”. Select “**Back**” to get to the Settings Menu.

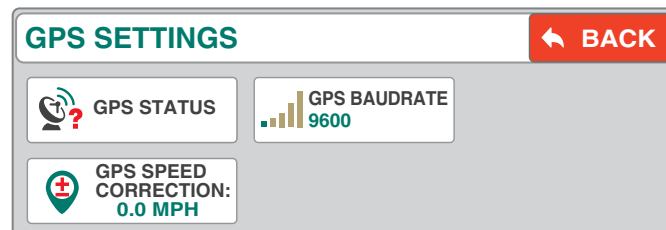
The 20 second Alarm Time is the estimated time it takes to turn around after each pass in the field without sounding the Alarm. This can be adjusted by the operator if more or less time is required before the Alarm Sounds.



Settings Menu - GPS Settings

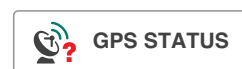


“**GPS Settings**” defines any Baudrate, Speed Corrections or the current GPS Status.



GPS Status

The GPS Status screen gives a diagnostics report of the current Latitude, Longitude, Number of Satellites connected and the Type/Quality of the GPS Fix. If the GPS Icon on the top of screen is Yellow or Red, check this status page to help identify GPS signal issues.



GPS Baudrate

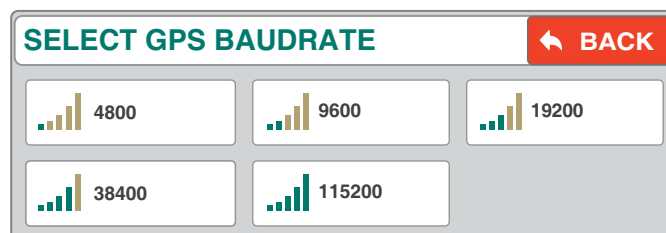
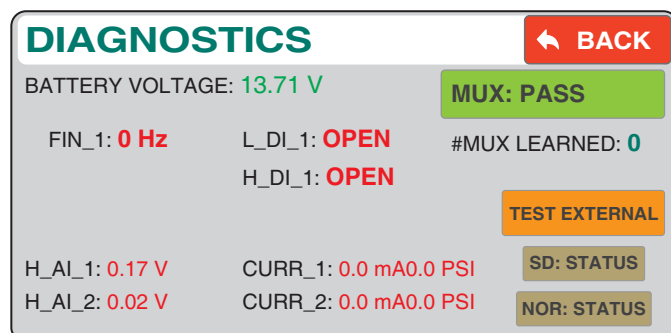
Sets the baudrate at which the console communicates with the GPS receiver you are using. Available speeds are **4800, 9600, 19200, 38400, and 115200.**



Settings Menu - Diagnostics

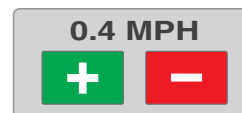


The Diagnostics screen can help in identifying issues with sensors, harnessing or other items. Status reports for Battery Voltage, Sensors Learned, MUX Communication speed and GPS Communication speed are displayed. Contact Loup Electronics if you need technical support.

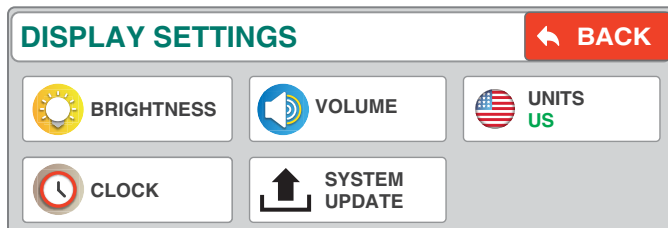


GPS Speed Correction

If your GPS is displaying an incorrect speed reading, use this screen to add the desired correction in MPH.



Settings Menu - Display Settings



Brightness

Use the Plus or Minus keys to increase or decrease the brightness of the screen or the keypad backlight.



Volume

Use the Plus or Minus keys to increase or decrease the volume to the desired level. An audible alarm will sound with each increment.



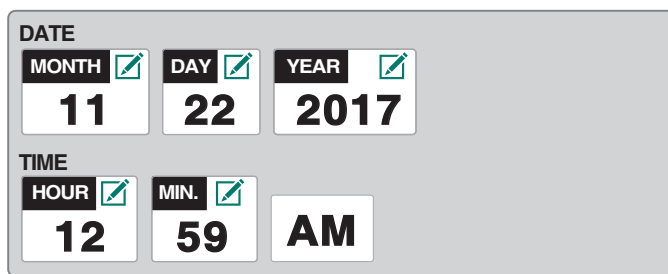
Units

Toggles between US (feet) or Metric (meters) units.



Clock (Date & Time)

To set the time, simply select the related buttons for Month, Day, Year, Hour and Minute and enter the appropriate value into each field. Lastly toggle the time between AM or PM and push “Save” to complete.



System Update

The system update screen is used to update to newer versions of software or reset to factory default settings.



Update App

The **Update App** button is used to perform a system update to newer version of software. To update follow the following steps:



1. On a Micro SD Card, create a folder titled “EliteUpdate” on the root level of the MicroSD Card. Within this folder place the update file from Loup Electronics, this should appear as a **.srec** file format.
2. Insert Micro SD Card into the Elite console and select the “**Update App**” button. From the popup window select the version you wish to update, newest software versions will appear at the top of the window.
3. Allow the application to load into the console and when finished, cycle power to the console. The update will finish installation upon startup.
4. Ensure the newest software is updated by selecting the “**MENU**” button and checking the “**APP VER**” number in the upper right corner.

Factory Reset

Selecting this will reset all settings back to Factory Default. All existing implements and sensors will be removed from memory and need to be reinstalled if choosing to reset the console.



Service And Technical Support

Contact: Loup Electronics Inc.
Address: 2960 N. 38th Street
Lincoln, NE 68504

Phone: 877-489-LOUP(5687)
402-464-7131

Fax: 402-464-7104

E-mail: info@loupelectronics.com

AFTER HOURS/WEEKEND SUPPORT
402-318-6415 OR 402-853-6249

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% (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. Use the Tightening Torque Table as a guide. **See page 5-1.**

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

8FT Seeder recommended Tire Size:

9.5L x 15, 8Ply Implement Rib Rating

Tire Inflation Pressure: 44 PSI

10FT and 12FT Seeder recommended Tire Size:

11L x 15, 12Ply Implement Rib Rating

Tire Inflation Pressure: 52 PSI

When Re-Installing 1/2-20 x 1 Wheel Bolts tighten to 50 Ft-Lbs. using the sequence in **Figure 5-1**. Then tighten to full torque of 80-85 Ft-Lbs.

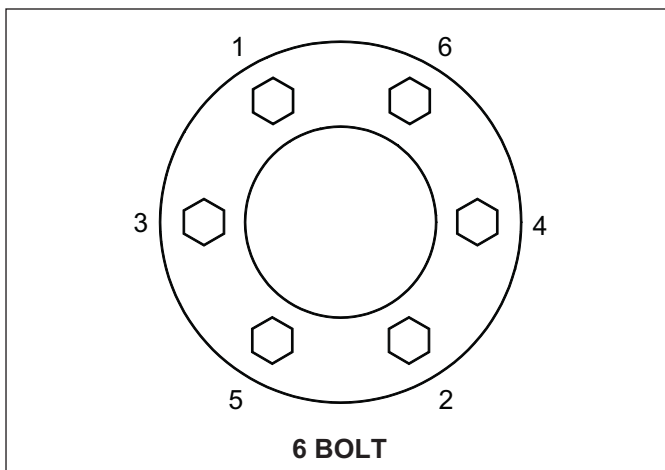


Figure 5-1: Tightening Sequence

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 and Slotted Nut.
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. Install the inner bearing into the hub and install the grease seal. Use a driver to install the seal, to avoid damaging the outer edge of the seal. Drive the seal squarely into the hub to avoid any seal distortion.

NOTE

The Single Lip Seals should point away from the Hub to keep contaminants out and allow grease to pass.

7. Slide the hub, bearing, and seal onto a clean spindle.
8. Install the Outer Bearing Cone 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. Install a new Cotter Pin and re-install the Hub Cap.

Lubrication Maintenance

- Oil Roller Chains periodically.
- Seeder has Greaseable Bearings on the ends of the Front and Rear Rollers and should be greased every 20 hrs. **See Figure 5-2.**
- Pull Type Seeders Wheel Arm pivot point should be greased every 4 hrs.
- Grease Wheels Hubs every 50 hrs.
- When the machine is not used for some time, exposed portions of the Hydraulic Cylinder Rods must be cleaned and covered with a thick coat of grease to prevent corrosion, which will damage the seal.

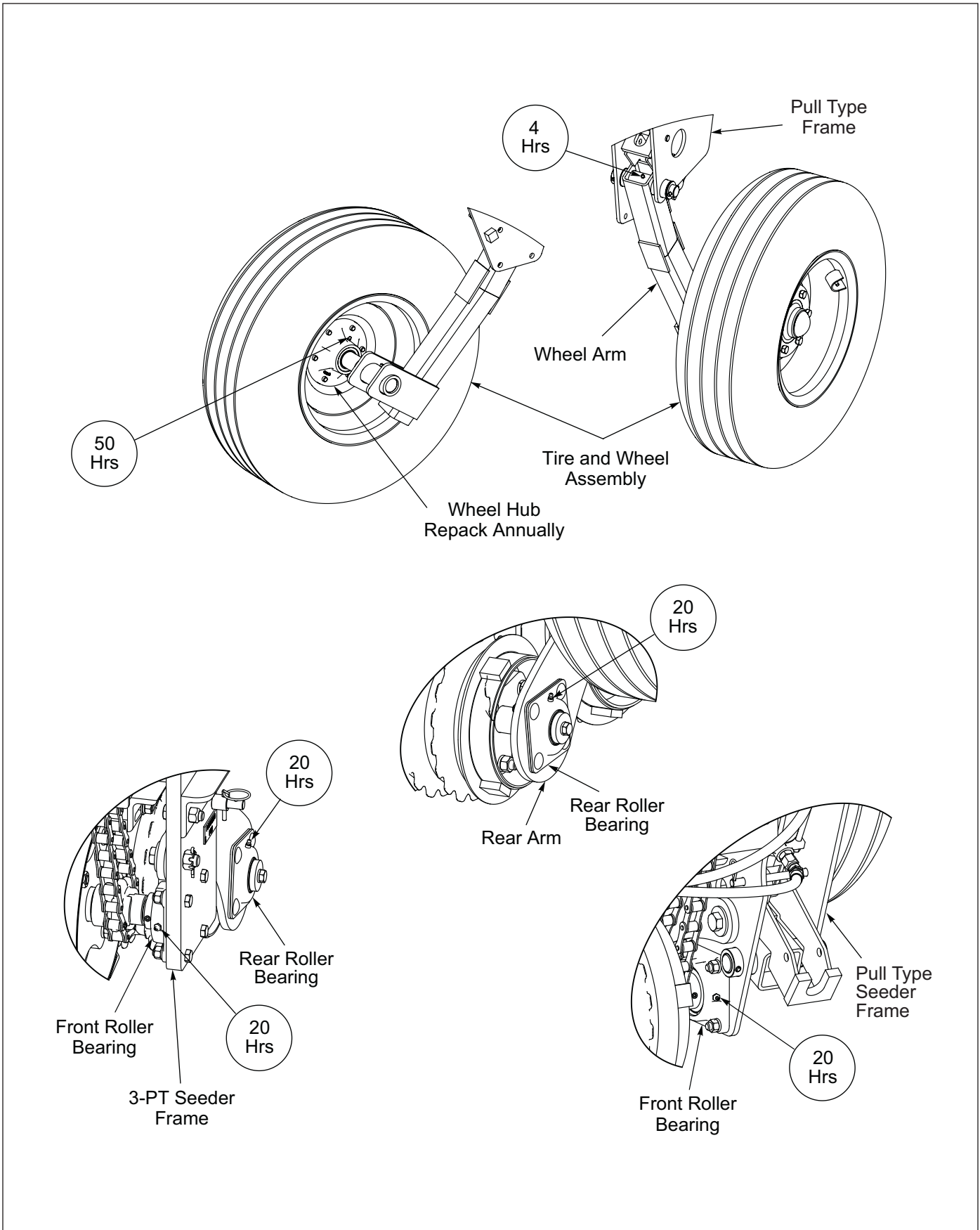


Figure 5-2: Lubrication Intervals

Hydraulic Maintenance

IMPORTANT

Lower the Drawbar Seeder 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 hands to search for suspected leaks. Wear protective gloves and safety glasses or goggles when working with Hydraulic System.

1. Check the tractor hydraulic fluid level per Tractor owner's manual and after any leakage. Check fluid level with the Hydraulic Cylinders in the extended position.
2. If a Hydraulic Cylinder leaks, disassemble the parts to determine the cause of the leak. Any time a Hydraulic 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. Transport Locks are provided to hold the implement in a raised position. Do not attempt to perform any service work under the implement without first installing the Transport Locks. **See Figure 3-6.** 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 "Hydraulic Lift System" on Page 3-7.**

Front and Rear Roller Adjustment

NOTE

Failure to position the Clamp Band Socket Head Bolt (Clamp Band open section) over the Roller Drum weld seam will cause Clamp Band to loosen and slide.

After an initial run of 5-10 hours, check the Front and Rear Roller Assemblies to ensure that the Wheels are tight to one another and that the Clamp Bands are tight. If not, slide the Roller Wheels tight together and adjust the

Roller Clamp Bands per **Roller Adjustment Procedure**. Tighten the Clamp Band Socket Head Bolt (Clamp Band open section) over Roller Drum weld seam to 75 Ft-Lbs. Thereafter check Front and Rear Roller Assemblies every 50-100 hours.

Roller Adjustment Procedure

1. Adjust the Front Roller Wheels first. Loosen Clamp Bands and slide the Roller Wheels snug against each other, centering the entire assembly under the Deflector.
2. Position the Clamp Band Socket Head Bolt (Clamp Band open section) over the weld seam on the Roller Drum. **See Figure 5-3.**
3. Slide the Clamp Band against the End Wheel on each end of the Roller and tighten the Clamp Band Bolt to 75 Ft-Lbs.
4. Adjust the Rear Roller Wheels in the same manner as you adjusted the Front Roller Wheels except, start at the center of the Rear Roller and align the peaks of the Rear Roller Wheels with the valleys of the Front Roller Wheels as best as possible. This will provide the best alignment of worn Roller Wheels and maximize seed germination.

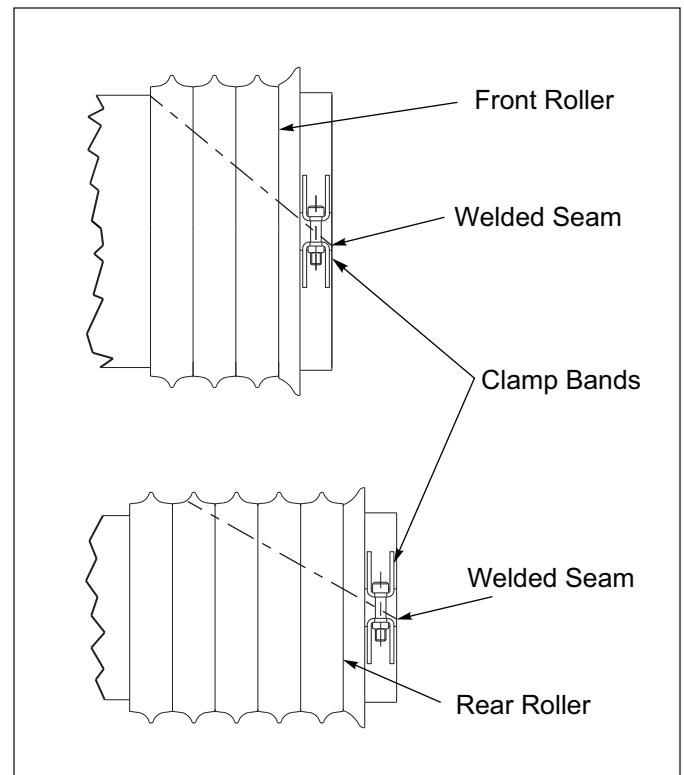


Figure 5-3: Roller Adjustment

Chain Tension

Transmission (After 01/2020)

Each #40 Drive Chain tension can be adjusted by loosening and adjusting their Tension Idler Sprockets to obtain about 1/8"-1/4" Slack. **See Figure 5-4.**

Adjust the #550 Drive Chain between the Front Roller and Transmission by adjusting the Nylatron Tension Idler to allow approximately 2" of Total Chain Deflection.

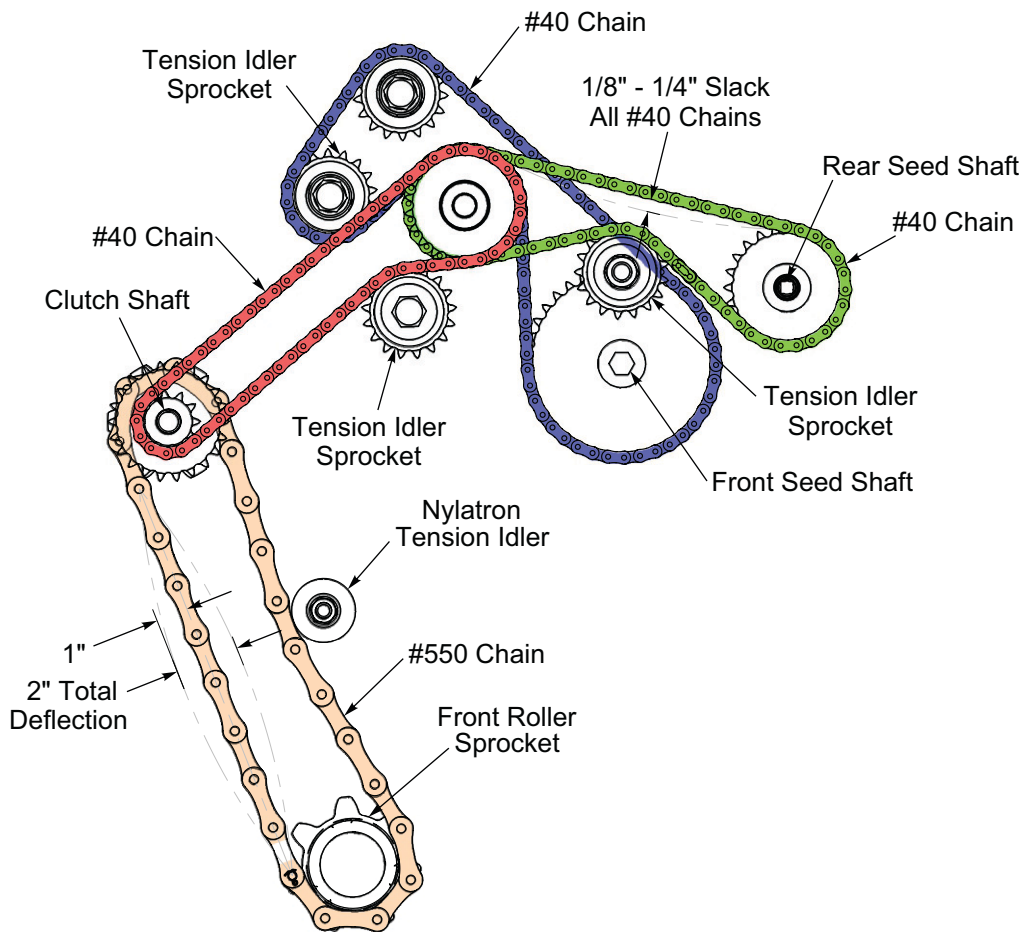


Figure 5-4: Transmission (After 01/2020)

Transmission (Before 01/2020)

To adjust the Transmission Chain, loosen the 5/8" Idler Sprocket Axle Bolt and adjust the Clevis Drawbolt Locknut to obtain about 1/8"-1/4" sag. Re-tighten the Idler Sprocket Axle Bolt. Be careful not to over-tighten this chain. **See Figure 5-5.**

Adjust the #550 Drive Chain between the Front Roller Sprocket and Transmission by adjusting the Nylatron Tension Idler to allow approximately 2" of Total Chain Deflection.

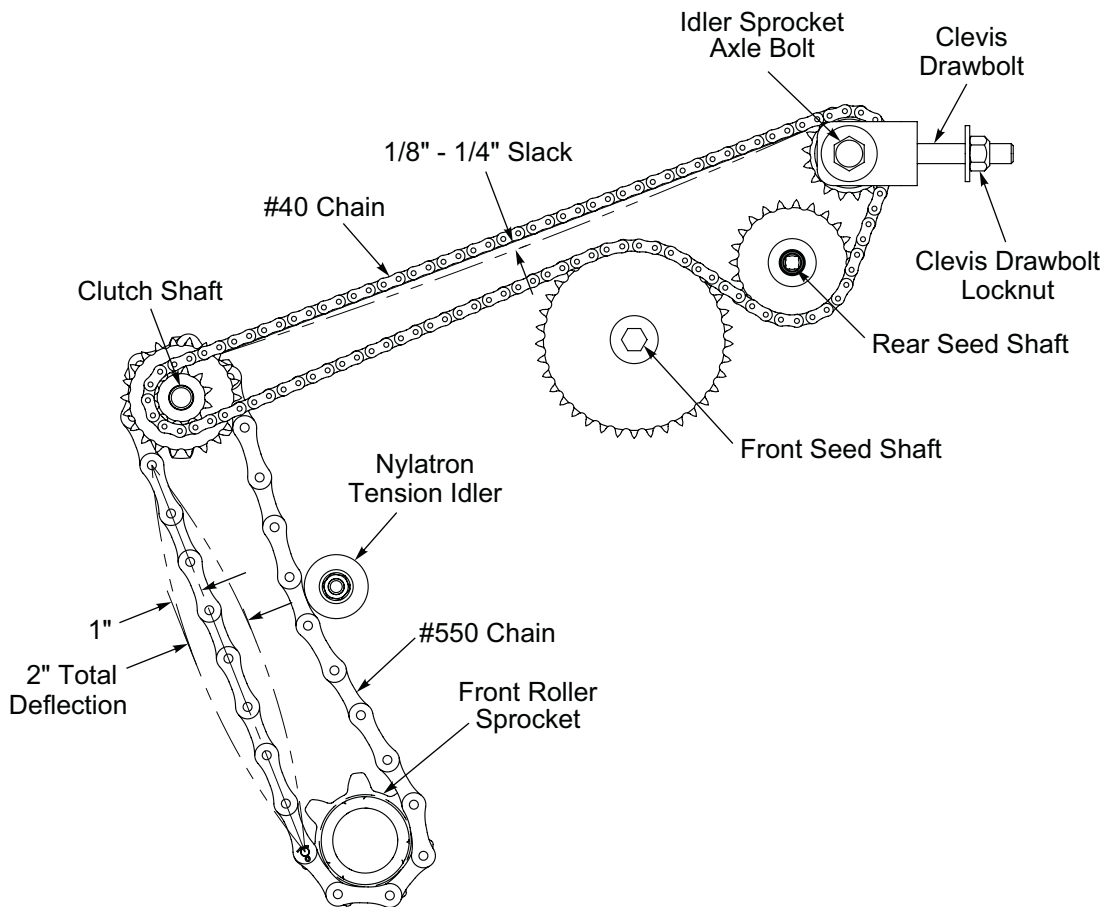


Figure 5-5: Transmission (Before 01/2020)

Seed Meter Adjustment

IMPORTANT

The Clutch must be disengaged when Seed Shafts are turned manually for Calibration.

IMPORTANT

All the Seed Meters **MUST BE CLOSED!** It may be necessary to individually adjust Seed Meter Cups.

All Seed Meters must be set the same to ensure uniform seeding. To check, set the Seed Rate Adjusting Nut to 0-A. The "A" on the Seed Rate Adjusting Nut is positioned over the "0" (the nut covers half of the "0") and snug against the Bearing. See Figures 5-6 and 5-7.

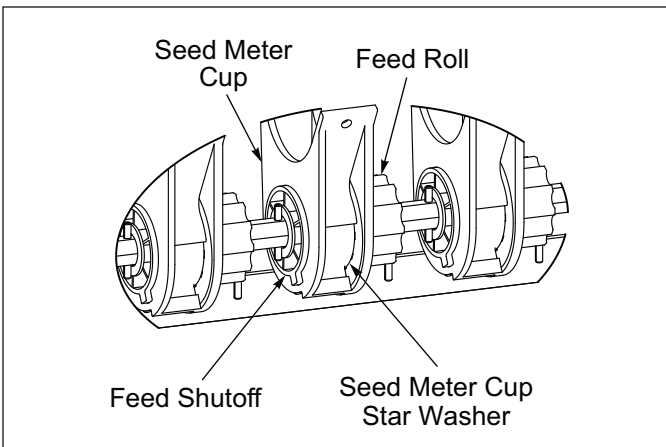


Figure 5-8: Seed Meter Feed Shutoff

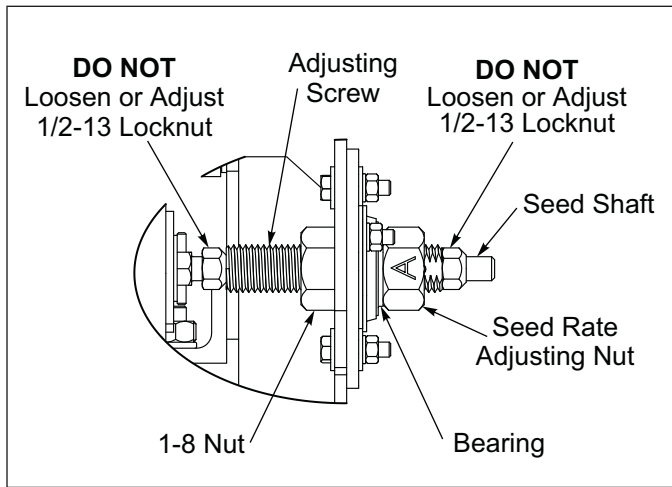


Figure 5-6: Front Seed Box Rate Adjuster

IMPORTANT

Ensure that the Seed Shaft can turn freely without any binding when the Seed Meters are open or closed after servicing. Seed Box with Large Seed Meters you may need to make adjustments to the Seed Meter Supports at each Seed Meter Cup. See Figure 5-9.

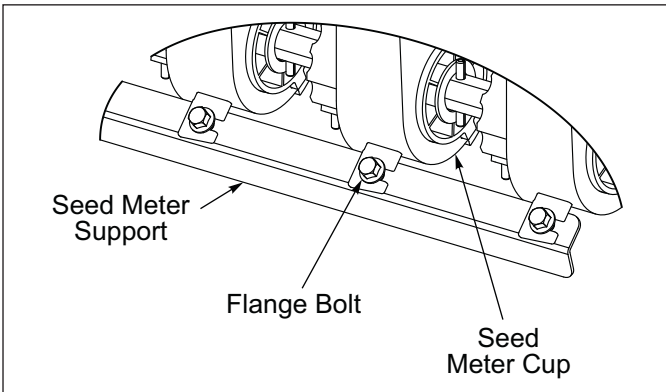


Figure 5-9: Seed Meter Supports

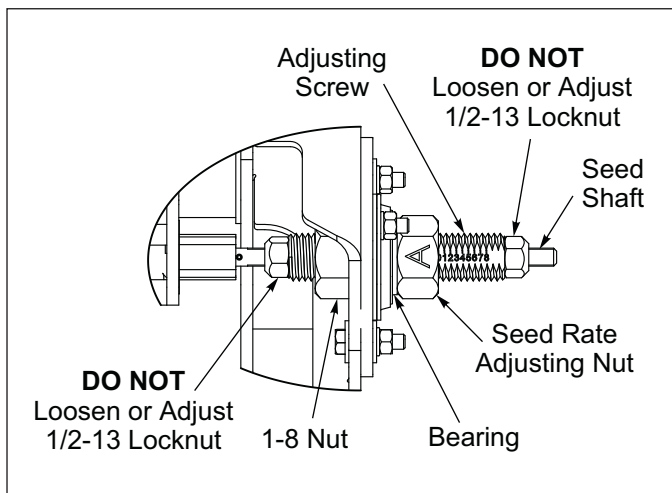


Figure 5-7: Rear Seed Box Rate Adjuster

All Seed Meters should be closed. Seed Meter Feed Shutoff against Seed Meter Cup Star Washer in Seed Meter Cup. See Figure 5-8. If not, there are three adjustments to make as needed.

1. 1/2-13 Locknuts on both ends of the Adjusting Screw are used to adjust all Seed Meters the same amount. See Figures 5-6 and 5-7. To adjust Seed Meters to be closed at "0A", loosen 1/2-13 Locknuts and set Adjusting Screw to "0A". Slide Seed Shaft to close all Seed Meters. Tighten 1/2-13 Locknuts against Adjusting Screw.
2. **Front Seed Box:** Adjusting the LH and RH Seed Shafts where they join changes Seed Meters on the left Seed Box in comparison with Seed Meters on the right Seed Box. Remove Seed Shaft Coupling that clamps the left and right Seed Shafts together. Turn RH Seed Shaft threading it in or out as needed to equalize Seed Meters. Re-Install Seed Shaft Coupling where the RH and LH Seed Shafts come together. See Figure 5-10.

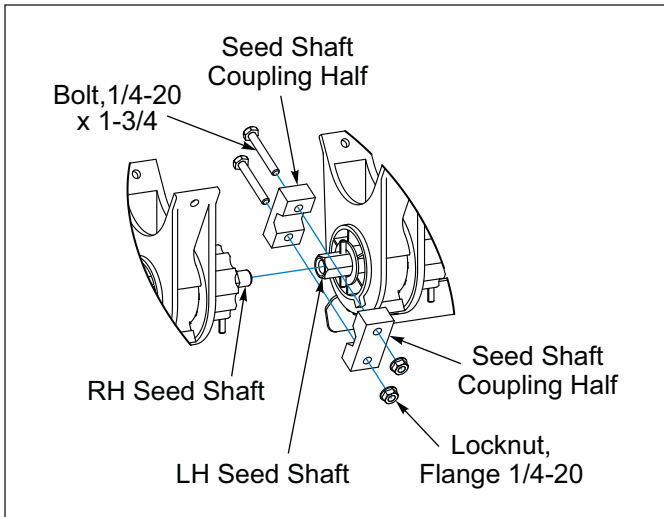


Figure 5-10: Front Box Seed Shaft Coupler

3. **Rear Seed Box:** Seed Box Feed Roll Coupling which joins the left and right Seed Shafts changes Seed Meters on the left Seed Box in comparison with Seed Meters on the right Seed Box. To adjust Feed Roll Coupling, loosen Jam Nuts and Set Screws on Coupling RH Seed Shaft is treaded into Coupling. Turn RH Seed Shaft threading it in or out as needed to equalize Seed Meters. Re-tighten Set Screws against flat side on Seed Shaft, re-tighten Jam Nuts. **See Figure 5-11.**

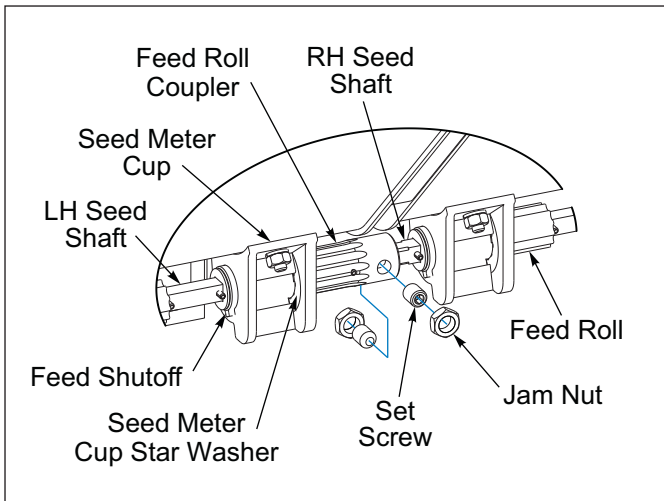


Figure 5-11: Rear Box Seed Shaft Couple

4. **Front Seed Box:** Individual Seed Meter Cups can be adjusted as required. Adjustments can be made by loosening the 1/4-20 x 5/8 Machine Screws that mount the Seed Meter Cup to the Seed Box and the 1/4-20 Nut that attaches the Seed Meter Support to the Seed Meter Cups. **See Figure 5-9.** Adjust the affected Seed Meter Cup so the Feed Shutoff is against the Seed Meter Cup Star Washer in the Seed Meter Cup (closed). Be sure the Feed Roll stays engaged in the Seed Meter Cup Star Washer. **See Figure 5-12.** Check for binding by turning Seed Shaft. After adjustments have been made seal the Seed Meter Cups to Seed Box with clear Silicone.

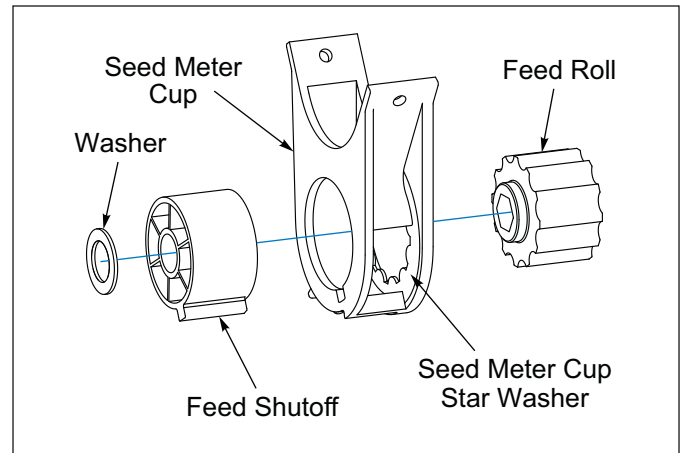


Figure 5-12: Large Seed Meter

5. **Rear Seed Box:** Individual Seed Meter Cups can be adjusted as required. Adjustments can be made by loosening the 1/4-20 x 5/8 Machine Screws that mount the Seed Meter Cup to the Seed Box. Adjust the affected Seed Meter Cup so the Feed Shutoff is against the Seed Meter Cup Star Washer in the Seed Meter Cup (closed). Be sure the Feed Roll stays engaged in the Seed Meter Cup Star Washer. **See Figure 5-13.**

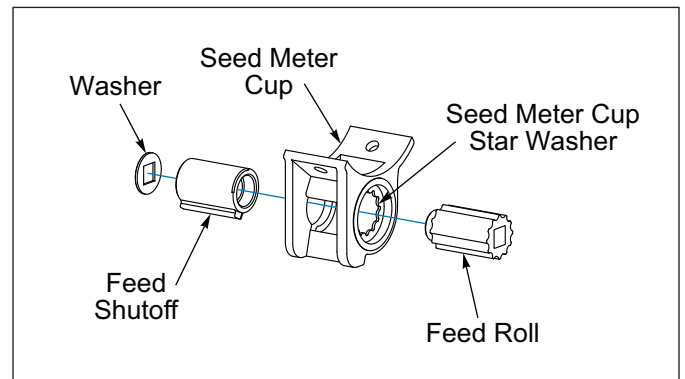


Figure 5-13: Small Seed Meter

Warning Lamps

When plugging in the 7-Pin Warning Lamp 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 it 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.

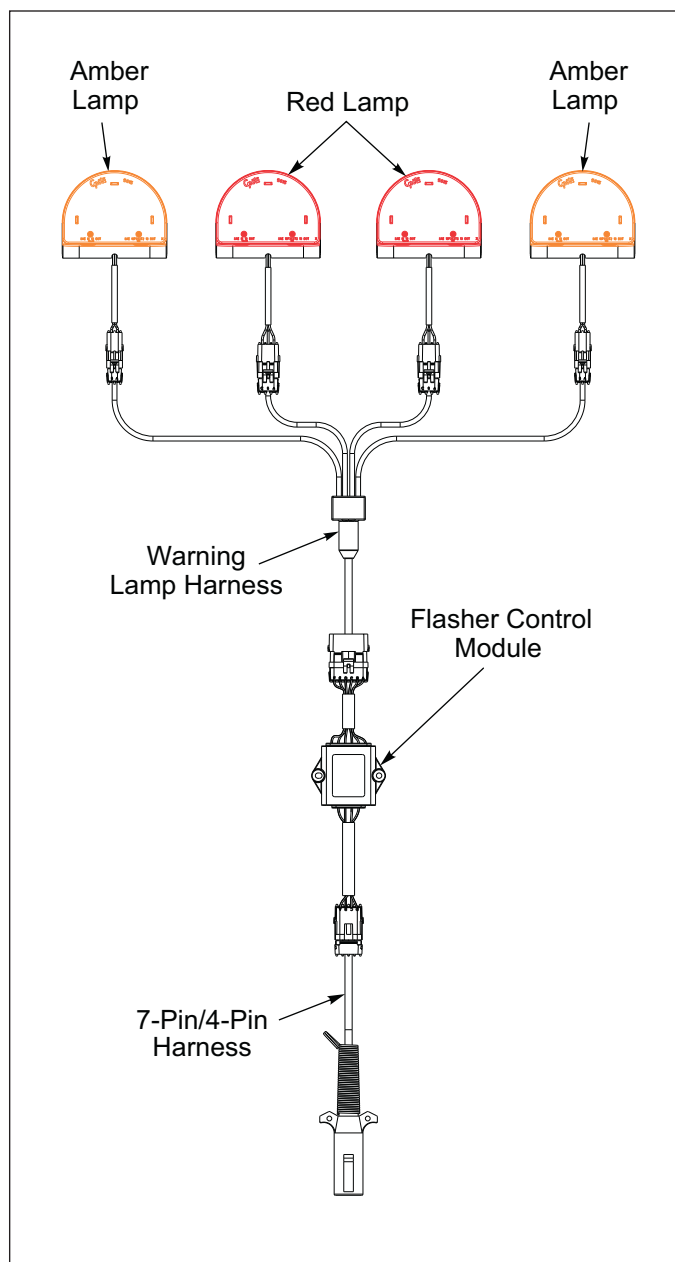


Figure 5-14: Warning Lamps

Scraper Adjustment

1. Check the Front Roller Assembly Wheels that they are tight to one another. **See "Front and Rear Roller Adjustment" on Page 5-5.**
2. Lower the implement onto level ground.
3. Verify that the Scrapers are centered as best as possible between the Roller Wheels and adjust if necessary. **See Figure 5-15.**

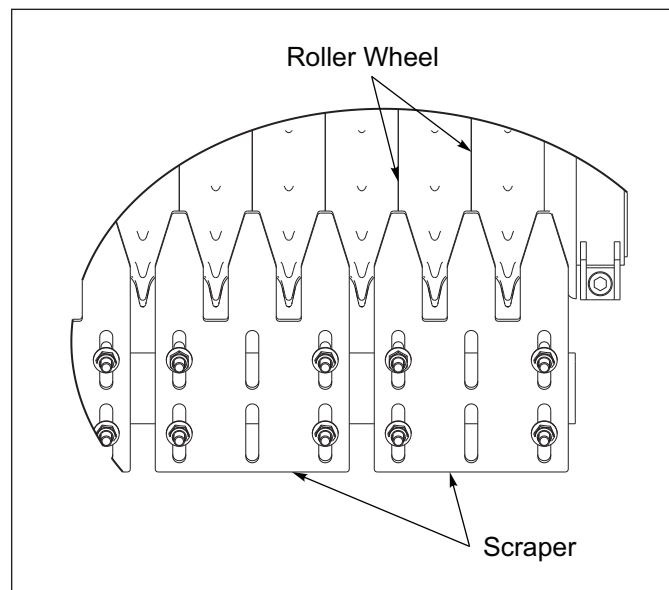


Figure 5-15: Scraper Alignment

4. Adjust the Scrapers as needed to achieve a 3/16" to 1/4" gap between the Scrapers and Roller Wheels. **See Figure 5-16.** Scrapers should be close enough to the Roller Wheels to be functional but without interference.

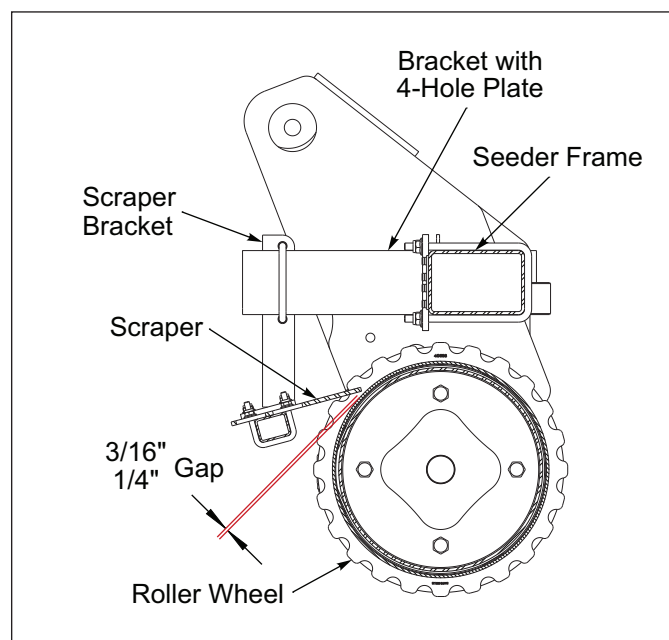


Figure 5-16: Scraper Dimensions

Electric Clutch

IMPORTANT

If your machine is equipped with an Electric Clutch at no time use high pressure water or air to clean it, as this can damage the unit.



Figure 5-17: High Pressure Warning

Acre Meter Troubleshooting

IMPORTANT

Acre Meter is dust and splash resistant, under no circumstances should this unit be submerged in any conductive, corrosive, or flammable liquid. At no time use high pressure water or air to clean it, as this can damage the unit. See Figure 5-17.

NOTE

The ground wire is for static discharge protection and has no effect on the ability of the sensor to function properly under normal conditions.

The battery operated Acre Meter uses 3 AA batteries. The Acre Meter will display “LObat” when the batteries require replacement. Remove the Acre Meter from the implement and then the 4 Screws on the back of the case. See Figure 5-18. Separate the housing from the rear plate. Replace with 3 quality AA batteries.

Acre Meter does not count pulses during calibration or does not count acres during operation.

1. Check the position of the Magnet Wheel Assembly and Pick-Up Switch against the set-up instructions in this manual. See “Acre Meter Kit, 5K275 - Optional” on Page 2-16.
2. Verify that the magnet in the Magnet Wheel Assembly has not come out.
3. Place the Acre Meter display in “Calibrate” mode by pressing the *(FUNC) key until the “P-WORD” indicator is lit and then press the up/down arrow keys until the display shows 0 and the LED is blinking. Break the connection between the display and the Pick-Up Switch and short between pins A and B on the display harness connector. You should see the display increment +1 with each contact of the connector terminals.

4. If step 3 works then wave a magnet in front of the Pick-Up Switch face with it re-connected to the display and see if the display increments up. If not, put an ohm meter or continuity tester on the contacts of the Pick-Up Switch Harness and place a magnet in front of the Pick-Up Switch face. The Pick-Up Switch should show continuity or near 0 ohms resistance.

Acre Meter cannot change the width or pulse count settings or clear the field and total acres.

1. Check to see if a password needs to be entered by pressing the *(FUNC) key until the “P-WORD” indicator LED is lit. If “dis” is displayed (password disabled) no password is set.
2. If “Ent” is displayed a password must be entered to change the settings or the password must be disabled as instructed in the setup section of this manual.

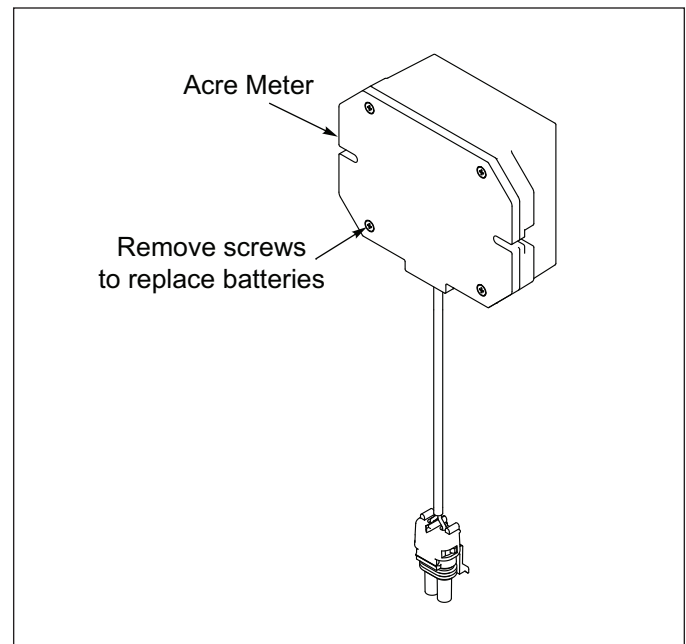


Figure 5-18: Battery Replacement

Storage

1. The service life of the Seeder will be extended by proper off-season storage practices. Prior to storing the unit, complete the following procedures:
 - Completely clean the unit, blow all seed out of Seed Meters.
 - 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 Maintenance” on Page 5-3.**
2. Store the unit in a shed or under a tarpaulin to protect it from the weather. The ground engaging components and Tires should rest on boards, or some other object, to keep them out of the soil.
3. **3-PT Hitch Models:** Raise Track Removers, insert Parking Pin and Lower unit. Chock or block Roller Wheels before unhitching from Tractor.
4. **Drawbar Models:** Raise the machine and engage Transport Locks. **See Figure 3-5.** Lower Drawbar Jack.
 - Relieve Hydraulic Pressure in hoses after Transport Locks are installed.
 - Block Transport Wheels before unhitching from Tractor.

Specifications

**Specifications subject to change with or without notice.*

Product Attributes	SL-2081	SLP-2081
Approximate Weight	2,438 lbs. (1,097 kg)	2,101 lbs. (945 kg)
Working Width	8 ft. 0 in. (2.4 m)	8 ft. 0 in. (2.4 m)
Transport Width	11 ft. 5 in. (3.43 m)	9 ft. 6 in. (2.85 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Cover	All Steel Construction with Cover
Seed Box Capacity - Meter Box	15 bu.	15 bu.
Seed Meters	High Capacity Meter	High Capacity Meter
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	9.5L x 15-8 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monitor Kit	Optional	Optional
Small Seed Box Kit	Optional	Optional
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-1: Model Specifications (1 of 6)

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Product Attributes	SLB-2081	SLPB-2081
Approximate Weight	2,621 lbs. (1,179 kg)	2,284 lbs. (1,028 kg)
Working Width	8 ft. 0 in. (2.4 m)	8 ft. 0 in. (2.4 m)
Transport Width	11 ft. 5 in. (3.43 m)	9 ft. 6 in. (2.85 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Cover	All Steel Construction with Cover
Seed Box Capacity - Meter Box	15 bu. / 6.1 bu.	15 bu. / 6.1 bu.
Seed Meters	High Capacity Meter / "Micro-Meter"	High Capacity Meter / "Micro-Meter"
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	9.5L x 15-8 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monitor Kit	Optional	Optional
Small Seed Box Kit	Standard	Standard
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-2: Model Specifications (2 of 6)

TABLE OF CONTENTS

Product Attributes	SL-2101	SLP-2101
Approximate Weight	2,840 lbs. (1,278 kg)	2,481 lbs. (1,116 kg)
Working Width	10 ft. 0 in. (3.0 m)	10 ft. 0 in. (3.0 m)
Transport Width	13 ft. 5 in. (4.03 m)	11 ft. 4 in. (3.4 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Cover	All Steel Construction with Cover
Seed Box Capacity - Meter Box	19 bu.	19 bu.
Seed Meters	High Capacity Meter	High Capacity Meter
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	11L x 15-12 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monitor Kit	Optional	Optional
Small Seed Box Kit	Optional	Optional
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-3: Model Specifications (3 of 6)

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Product Attributes	SLB-2101	SLPB-2101
Approximate Weight	3,063 lbs. (1,378 kg)	2,704 lbs. (1,217 kg)
Working Width	10 ft. 0 in. (3.0 m)	10 ft. 0 in. (3.0 m)
Transport Width	13 ft. 5 in. (4.03 m)	11 ft. 4 in. (3.4 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Cover	All Steel Construction with Cover
Seed Box Capacity - Meter Box	19 bu. / 7.6 bu.	19 bu. / 7.6 bu.
Seed Meters	High Capacity Meter / "Micro-Meter"	High Capacity Meter / "Micro-Meter"
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	11L x 15-12 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monitor Kit	Optional	Optional
Small Seed Box Kit	Standard	Standard
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-4: Model Specifications (4 of 6)

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Product Attributes	SL-2121	SLP-2121
Approximate Weight	3,259 lbs. (1,467 kg)	2,906 lbs. (1,308 kg)
Working Width	12 ft. 0 in. (3.6 m)	12 ft. 0 in. (3.6 m)
Transport Width	15 ft. 6 in. (4.65 m)	13 ft. 3 in. (3.98 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Cover	All Steel Construction with Cover
Seed Box Capacity - Meter Box	23 bu.	23 bu.
Seed Meters	High Capacity Meter	High Capacity Meter
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	11L x 15-12 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monitor Kit	Optional	Optional
Small Seed Box Kit	Optional	Optional
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-5: Model Specifications (5 of 6)

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Product Attributes	SLB-2121	SLPB-2121
Approximate Weight	3,503 lbs. (1,576 kg)	3,136 lbs. (1,411 kg)
Working Width	12 ft. 0 in. (3.6 m)	12 ft. 0 in. (3.6 m)
Transport Width	15 ft. 6 in. (4.65 m)	13 ft. 3 in. (3.98 m)
Transport Height	6 ft. 6 in. (2.0 m)	Tractor Dependent
Road Clearance	1 ft. 3 in. (0.4 m)	Tractor Dependent
Overall Height	5 ft. 3 in. (1.6 m)	4 ft. 5 in. (1.3 m)
Overall Length	11 ft. 9 in. (3.6 m)	7 ft. 1 in. (2.2 m)
Seed Box	All Steel Construction with Co er	All Steel Construction with Co er
Seed Box Capacity - Meter Box	23 bu. / 9.1 bu.	23 bu. / 9.1 bu.
Seed Meters	High Capacity Meter / "Micro-Meter"	High Capacity Meter / "Micro-Meter"
Seed Meter Drive	Ground Driven	Ground Driven
Seed Meter Spacing	4.25 in. (108 mm)	4.25 in. (108 mm)
Seed Delivery	Broadcast with Wind Deflector Tray	Broadcast with Wind Deflector Tray
Pulverizer Roller - Front	15.75 in. (400 mm) Gray Cast Iron	15.75 in. (400 mm) Gray Cast Iron
Pulverizer Roller - Rear	11.5 in. (292 mm) Gray Cast Iron	11.5 in. (292 mm) Gray Cast Iron
Pulverizer Axle Bearings	Greaseable	Greaseable
Pulverizer Axle Size - Front	12.75 in. (324 mm)	12.75 in. (324 mm)
Pulverizer Axle Size - Rear	8.625 in. (219 mm)	8.625 in. (219 mm)
Hitch	Pull-Type with Hydraulic Transport	Three-Point Hitch - Cat. 2 Free Link Cat. 2, 3N Quick Coupler Hitch
Hydraulic Equipment	Cylinders with Hoses to Hitch Point	N/A
Tire Size	11L x 15-12 Ply Implement Rib	N/A
S-Tine Wheel Track Remover	Optional	Optional
Coil Tine Wheel Track Remover	Optional	Optional
Front Roller Scraper Kit	Optional	Optional
Turfmaker Sprockets	Optional	Optional
Electronic Acre Meter	Optional	Optional
Seed Shaft Monior Kit	Optional	Optional
Small Seed Box Kit	Standard	Standard
Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	N/A
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	6 to 8 HP (4.5 to 6 kW) per ft.	6 to 8 HP (4.5 to 6 kW) per ft.
Recommended Operating Speed	3 to 6 MPH (5 to 10 km/h)	3 to 6 MPH (5 to 10 km/h)

Figure 6-6: Model Specifications (6 of 6)

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
03/2007	9K998	Initial Release
01/2020	9K998-0120	Updated Seed Boxes, Seed Box Calibration, Chain Tension Adjustment
06/2021	9K998-0621	ECN 47093 - Hub & Spindle Asm Update to 6 Bolt
05/2022	9K998-0522	ECN 46900, 47696 - Add Brillion Elite Mini Monitor by Loup ECN 47474 - Add QR Code Decal Add Seed Shaft Decal Changes to LED Installation *01/23/23 Changes to "Acre Meter Kit"
06/2023	9K998-2306	Added "Tube Mounted Scraper Kits" *Revision Format "Year/Month" ECN 49503 - Decal Change (Revised 11/2023)



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Turfmaker II
Models SL2081/SL2101/SL2121
SLP2081/SLP2101/SLP2121
SLB2081/SLB2101/SLB2121
SLPB2081/SLPB2101/SLPB2121

Operator's Manual

Re-Order Part Number 9K998

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