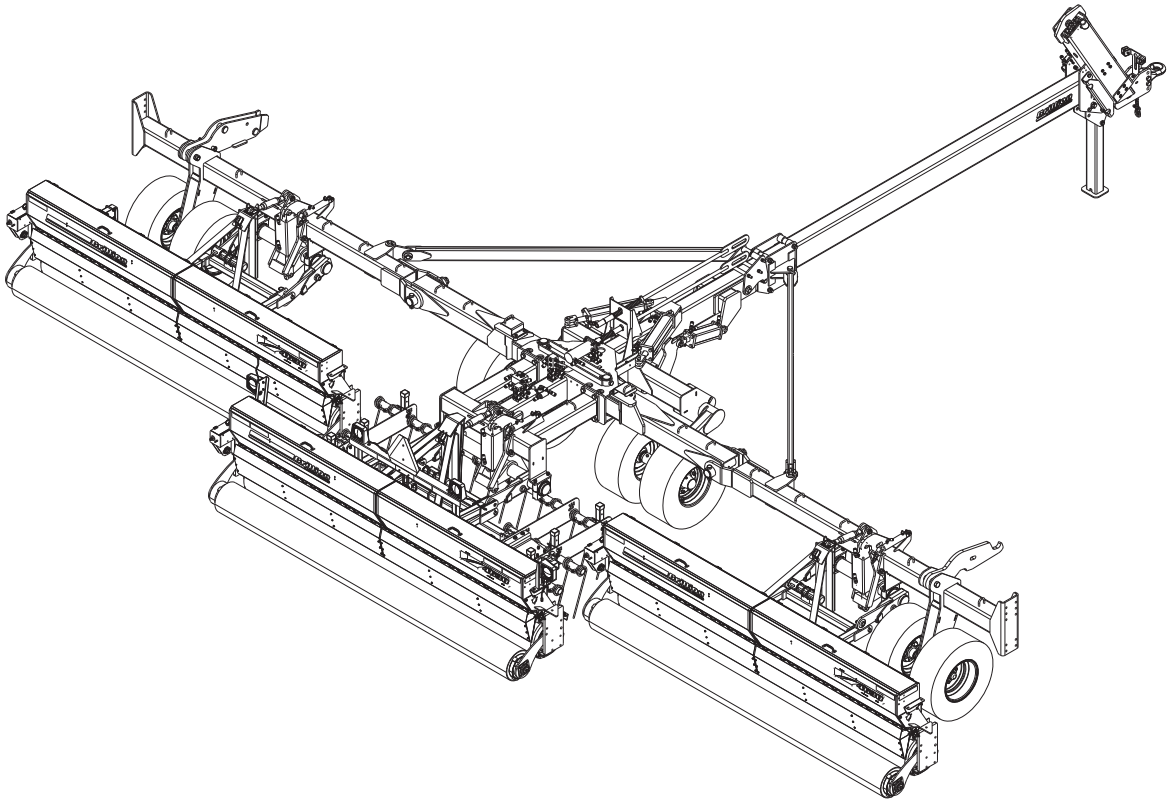
Model 4630-36
Folding Seeder
Operator's Manual



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Manuals for 4630-36 Folding Seeder

Manual Number	Manual Type
F-640	Operator's Manual
F-641	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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2 Assembly

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Chapter 1

Safety Information

Introduction

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

DANGER

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

Description of Unit

The 4630-36 Folding Seeder folds forward for narrow transport width and seeds 36 feet per pass with a variety of Brillion Sure Stand or Landscape Seeders. Three 12 foot seeders make up this three-into-one design allowing each seeder to operate completely independently of each other. The individual frame-mounted three-point hitches raise and lower the seeders without changing the position of the mainframe allowing the operator to raise the seeders at the end of the field effortlessly for turning. The tractor mounted controller allows the operator to control clutch engagement, view planted acreage, and monitor seed shaft rotation along with minimum seed box levels.

Using this Manual

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

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

Owner Assistance

If customer service or repairs are needed, contact your Brillion dealer. They have trained personnel, parts and service equipment specially designed for Brillion products. Your implement's parts should only be replaced with Brillion parts. 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.

MODEL NUMBER

SERIAL NUMBER

DATE OF PURCHASE

Refer to the ID plate as shown. **See Figure 1-1..**

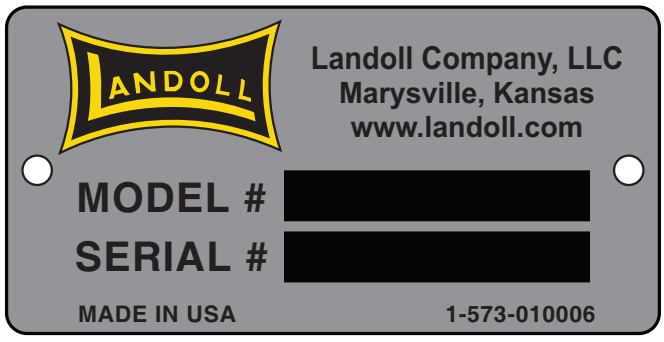


Figure 1-1: ID Plate

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 this 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 Neodymiun Mangets. Read all the warnings before operating the machine.

⚠ WARNING

1. **Neodymiun 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 a tractor heavier than the implement.
- Use caution when towing behind articulated steering tractors; fast or sharp turns may cause the implement to shift sideways.
- Keep clear of overhead power lines and other obstructions when transporting. Know the transport height and width of your implement. **See Figures 5-1 and 5-2.**

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 implement when attaching or detaching implement unless both are blocked from moving.
- Before applying pressure to the hydraulic system, be sure all connections are tight and that hydraulic hoses are not damaged.
- Block implement so it will not roll when unhitched from the tractor.
- Relieve pressure in hydraulic circuit before uncoupling hydraulic hoses from tractor.

NOTE

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

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

Maintenance Safety

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

Protective Equipment

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

Tire Safety

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

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

Chemical Safety

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

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

Prepare for Emergencies

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

High Pressure Fluid Safety

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

Any fluid injected into the skin must be surgically removed within a few hours or gangrene may result.

Avoid the hazard by relieving pressure before disconnecting hydraulic lines.

NOTE

Relieve hydraulic pressure by shifting the control valve lever to float.

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

Safety Chain

Use the safety chain to help control drawn machinery should it separate from the tractor drawbar.

- Use a chain with a strength rating equal to or greater than the gross weight of towed machinery, which is 21,100 pounds minimum in accordance with ASAE S338.2 specifications. If two or more implements are pulled in tandem, a larger chain may be required. Chain capacity must be greater than the TOTAL weight of all towed implements.
- A second chain should be used between each implement.
- Attach the chain to the tractor drawbar support or specified anchor location. 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.**
- Replace the chain if any links or end fittings are broken, stretched or damaged.
- Do not use a safety chain for towing.

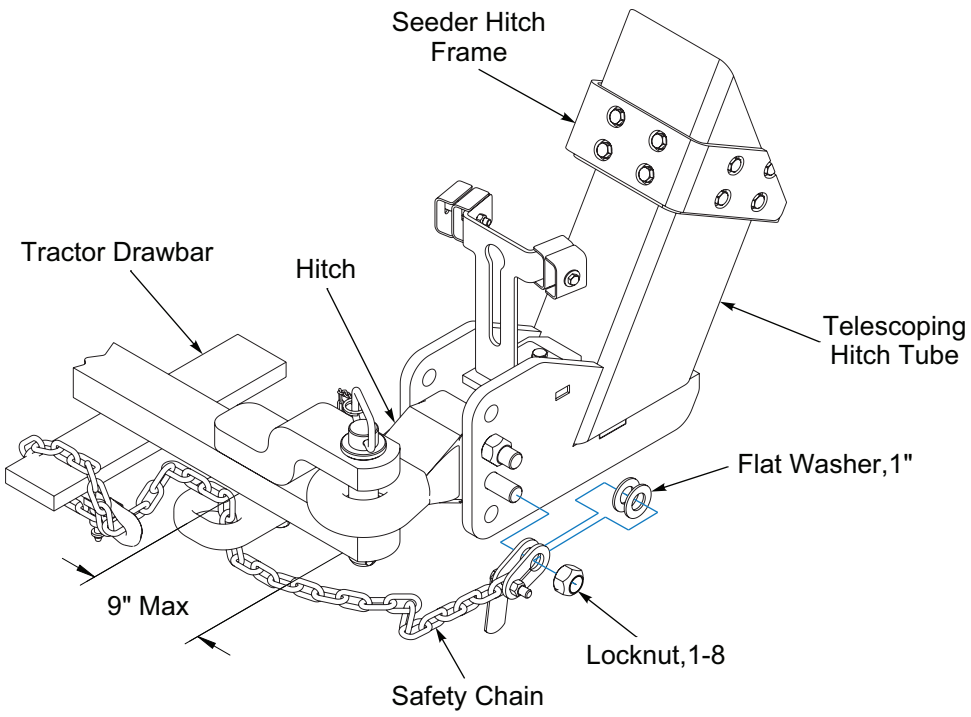
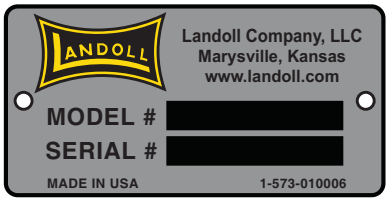


Figure 1-2: Safety Chain

Decals



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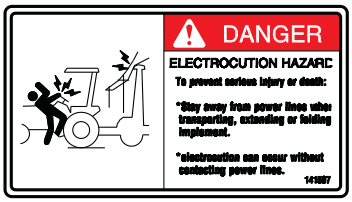

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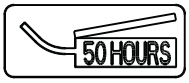

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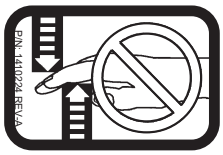

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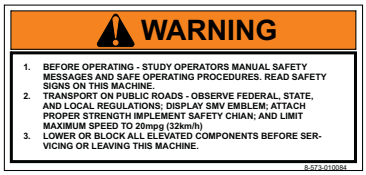

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Figure 1-3: Decals

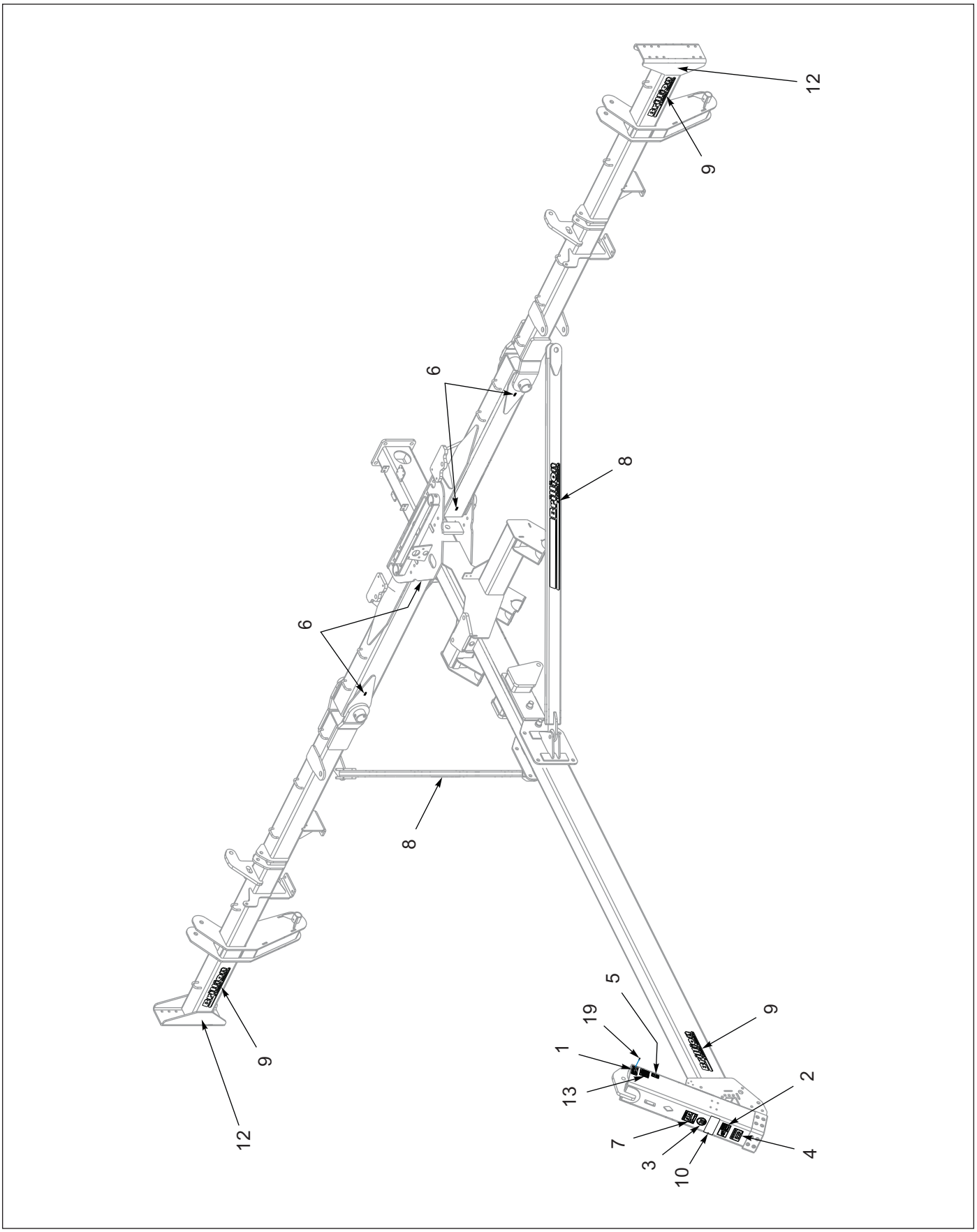


Figure 1-4: Decal Placement (1 of 2)

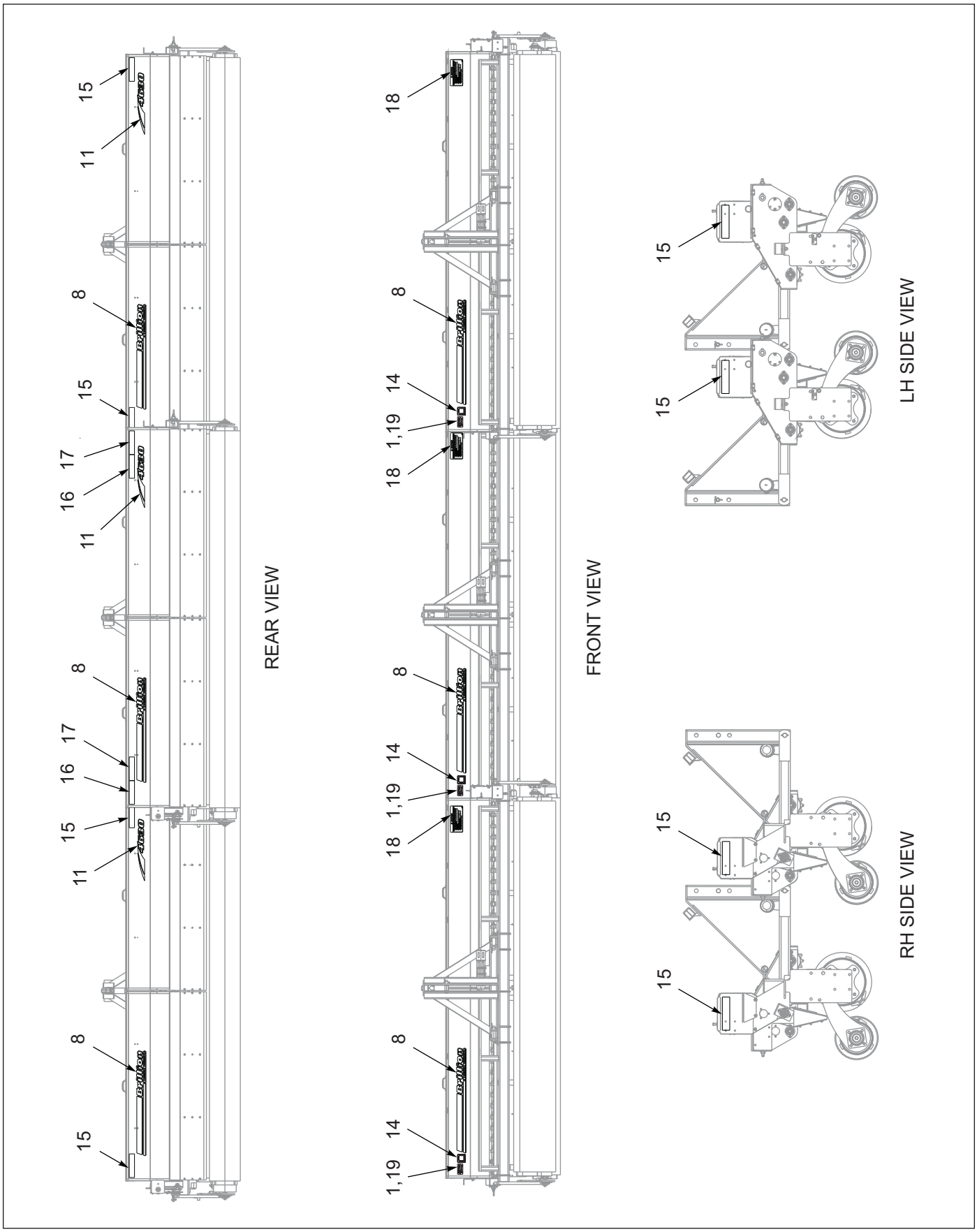


Figure 1-5: Decal Placement (2 of 2)

Table provided for general use.

NOTES:

Chapter 2

Assembly

⚠ CAUTION

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

⚠ WARNING

Do not attempt to lift heavy parts (such as the Frame, Rockshaft, and Pull Hitch) manually. Use a hoist or a fork lift to move these parts into position.

⚠ CAUTION

Secure the Seeder Hitch to a tractor and unfold the wings of the hitch when attaching seeder unit(s). This will provide stability and ease attachment of the seeder unit(s).

NOTE

Refer to the repair Parts Manual F-641 for identification of parts and for the approximate relationship of the parts in assembly.

To ensure alignment of assemblies, leave the nuts loose until completion of final assembly. Use lock washers or flat washers as specified. Spread 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 valves. Note the different torque requirements for Bolts with Locknuts. **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.

The 4630-36 Folding Seeder comes assembled. Depending on the seeder model chosen, the three assembled seeder units and seeder attachments need to be assembled onto the Folding Seeder Hitch.

- Prepare tractor for operation. **See “Tractor Preparation” on page 3-2.**
- Prepare Folding Seeder. **See “Folding Seeder Preparation” on page 3-2.**
- Attach Folding Seeder to tractor. **“Attaching Folding Seeder To Tractor” on page 3-2**

Hydraulic System

NOTE

It is good practice to purge the Hydraulic System before installing the Seeder Units onto the Folding Seeder Hitch to ensure that the circuits are functioning properly.

4630-36 hydraulic system consists of 3 separate circuits with an Optional Row Marker Circuit.

Lift Circuit – Blue

- Folding Seeder raised requires approximately **3.2 gallons hydraulic oil**
- Folding Seeder lowered requires approximately **2.7 gallons hydraulic oil**

Fold/Unfold Circuit – Yellow

- Folding Seeder Folded requires approximately **2.8 gallon hydraulic oil**
- Folding Seeder Unfolded requires approximately **3.2 gallons hydraulic oil**

Seeder Unit Lifts Circuit – Black

- Seeder Units raised requires approximately **1.9 gallons hydraulic oil**
- Seeder Units lowered requires approximately **2.1 gallons hydraulic oil**

Optional Row Marker Circuit – Red

- Row Markers raised requires approximately **1.7 gallons hydraulic oil**
- Row Markers lowered requires approximately **1.6 gallons hydraulic oil**

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**

Seeder Unit 3-PT Hitch Installation

1. Support the Seeder Unit with a hoist or by similar means capable of supporting its weight without tipping.
2. Center a Seeder 3-PT Hitch Assembly in relationship with the each Seeder Units Center Seed Box Support Bracket. Attach the 3-PT Hitch Assembly to each Seeder Frame Tube with 5/8-11 U-Bolts, Lock Washers and Nuts. **See Figure 2-1.**

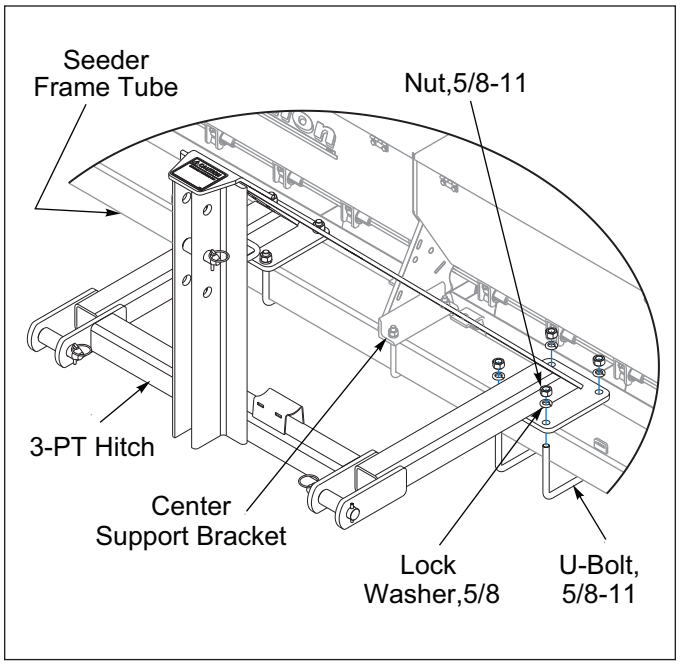


Figure 2-1: 3-PT Seeder Hitch Installation

Brillion Elite Mini Installation

IMPORTANT

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 Harnesses do not require a specific Sensor connection points. Each Sensor is identified in the Monitor by its own signal.

Refer to Brillion Elite Mini Monitor Single or Double Box Sensor Schematic. **See Figures 2-3 and 2-4.**

WARNING

High Power Magnet in 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.

Folding Seeder Hitch

1. Orient the Main Harness so that the single 6-Pin connector is to the front and the three 6-Pin connectors are to the rear of the Seeder Hitch. Route the Main Harness inside the Seeder Hitch Tube.
2. Install Brillion Elite Mini Monitor on tractor.
3. If not already installed, install Smart Clutch Relay into Elite Mini Tractor Harness 3-Pin Connectors.
4. Connect the Elite Mini Tractor Harness 14-Pin Connector to Brillion Elite Mini Monitor, 3-Pin Power Plug to the 12 Volt Tractor Convenience Outlet and 6-Pin Connector to the Main Harness. 4-Pin Connector is not used at this time.

Seeder Units

1. Lay out the Seeder Harnesses on the front of each Seeder section ensuring that the Electric Clutch 2-Pin Connector is on the left side.
2. On the Center Seeder only, remove Clutch. Install Actuator Assembly onto the Quill Shaft outer diameter, secure with Actuator Assembly Set Screw. Reinstall Clutch. **See Figure 2-5.** 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 2-6.** Connect Ground Speed Smart Shaft Sensor to the Center Seeder Harness.
3. RH and LH Seeders do not have a Ground Speed Smart Shaft Sensor, seal each Seeder Harness Connector with a 3-Pin Shroud and Cavity Plugs to protect the Seeder Harness from the environment.
4. On the RH side of each Seeder Unit a Sensor Mount is mounted on two seed Cups. 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 pre-assembled Magnet Collar/Magnet Wheel Assembly on the Seed Shaft. **See Figures 2-7 and 2-8.** Connect the Smart Seed Shaft Sensor to each Seeder Harness.
5. If equipped with Rear Brome Seed Box, verify that the pre-assembled Smart Shaft Sensor is positioned 1/8" Max away from the Magnet Mount Assembly and connect the Smart Shaft Sensor to each Seeder Harness. **See Figure 2-9.** If not equipped with a Rear Brome Seed Box, seal the Seeder Harness Connector with 3-Pin Shroud and Cavity Plugs to protect the Seeder Harness from the environment.
6. If Large Capacity Landscape Seeder is equipped with a Rear Seed Box verify that the pre-assembled Smart Shaft Sensor is positioned 1/8" Max away from the Magnet Mount Assembly and connect the Smart Shaft Sensor to each Seeder Harness. **See Figure 2-10.** If not equipped with a Rear Seed Box, seal the Seeder Harness Connector with 3-Pin Shroud and Cavity Plugs to protect the Seeder Harness from the environment.
7. Each Seeder Section has a Bin Level Sensor Bracket on the inside at either end. 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. **See Figures 2-11, 2-12, and 2-13.** If more adjustment is needed, the Bin Level Sensor Brackets can also be raised or lowered to the desired seed level. 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 2-2.** Inside the Seed Box, add enough slack to the Bin Level Sensor Cord to allow for future adjustment of the sensor. Secure Bin Level Sensor Cord by tightening the Cord Grip Compression Nut. Connect both Bin Level Sensors to each Seeder Harness.

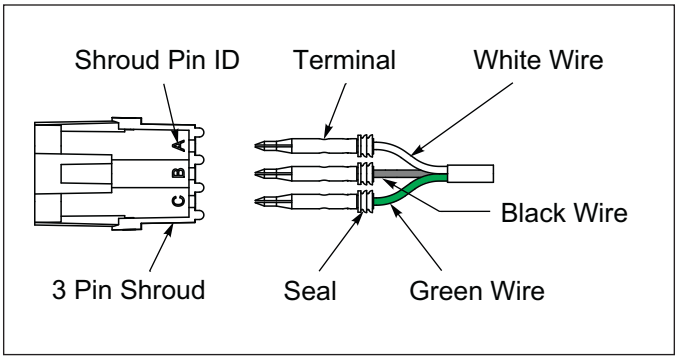


Figure 2-2: Bin Level Sensor Bracket Wire Detail

8. Attach Seeder Units to Folding Seeder Hitch. **See “Attaching Seeder Units” on page 2-16.**
9. Connect 72" Extension Harness to the Center Seeder and Main Harness.
10. Connect a 240" Extensions Harness to the RH and LH Seeder Harnesses and connect both 240" Extension Harnesses to the Main Harness.
11. Bundle and secure all Harnesses along the Seeder Unit Frames and Folding Seeder Hitch Frame with Tie Wraps
12. Program Bin Level Sensors and Smart Shaft Sensors if not already pre-programmed.

Brillion Elite Mini Monitor - Single Seed Box Sensor Schematic

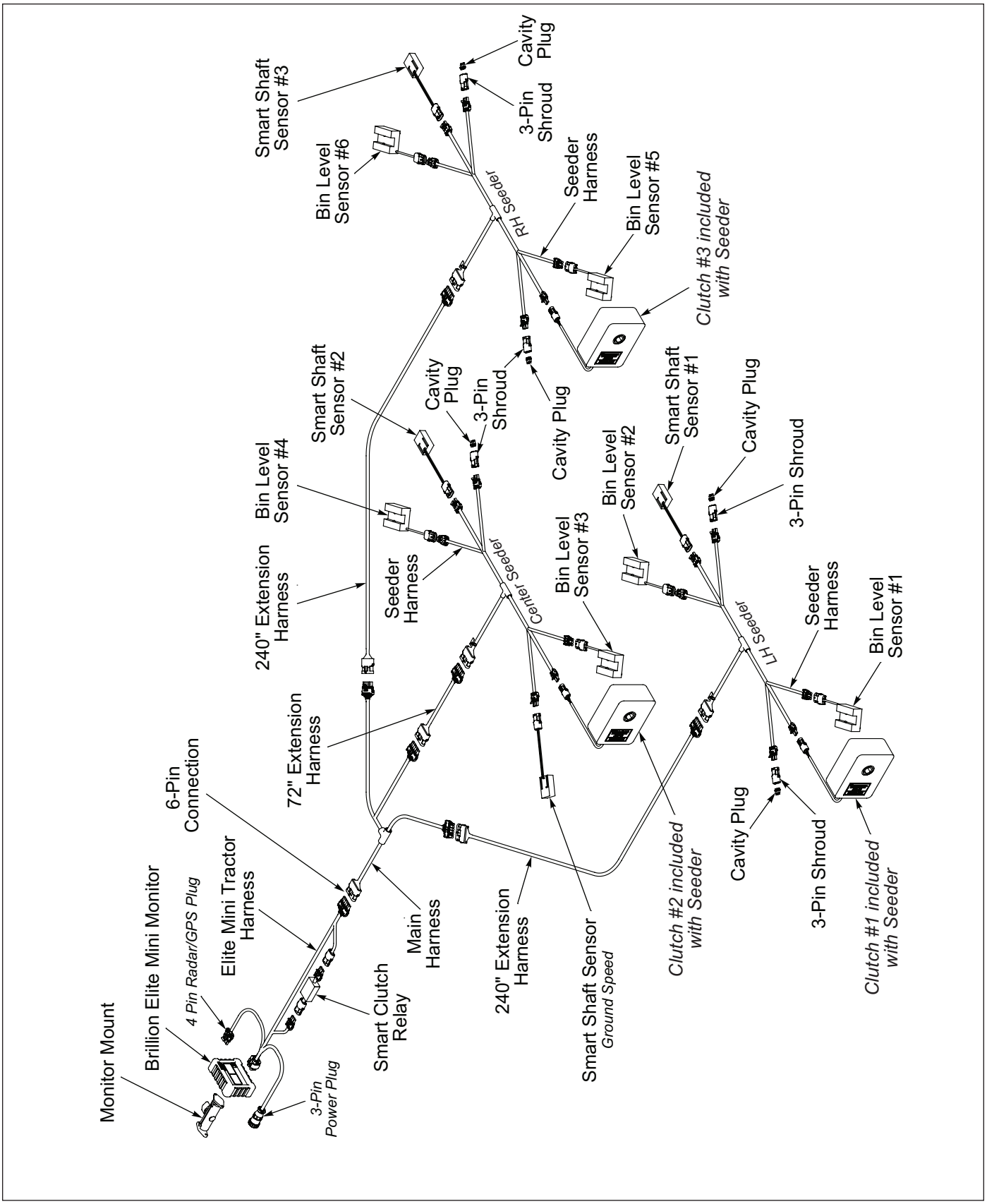


Figure 2-3: Brillion Elite Mini Monitor - Single Seed Box Sensor Schematic

Brillion Elite Mini Monitor - Double Seed Box Sensor Schematic

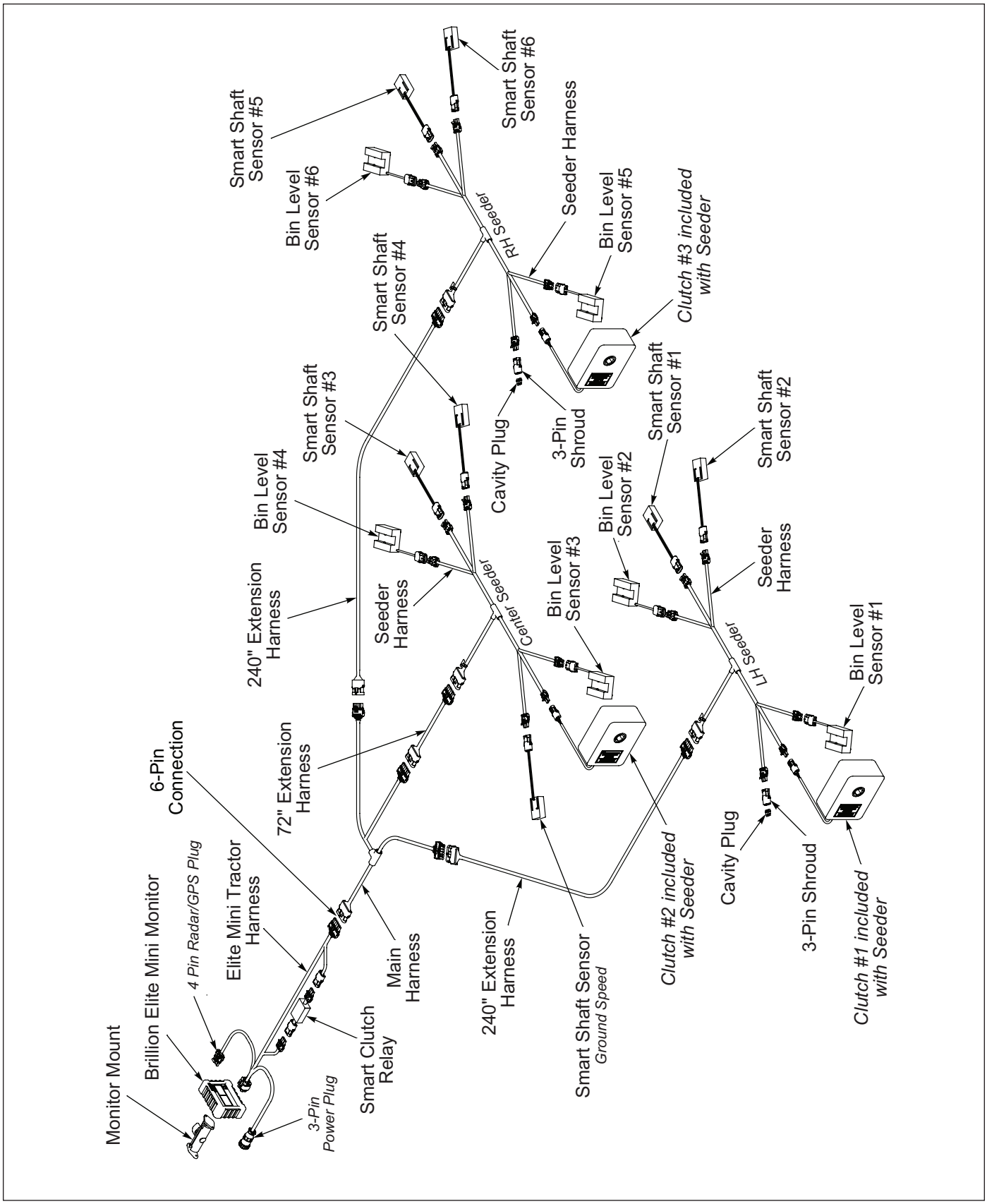


Figure 2-4: Brillion Elite Mini Monitor - Double Seed Box Sensor Schematic

Brillion Elite Mini Monitor - Ground Speed

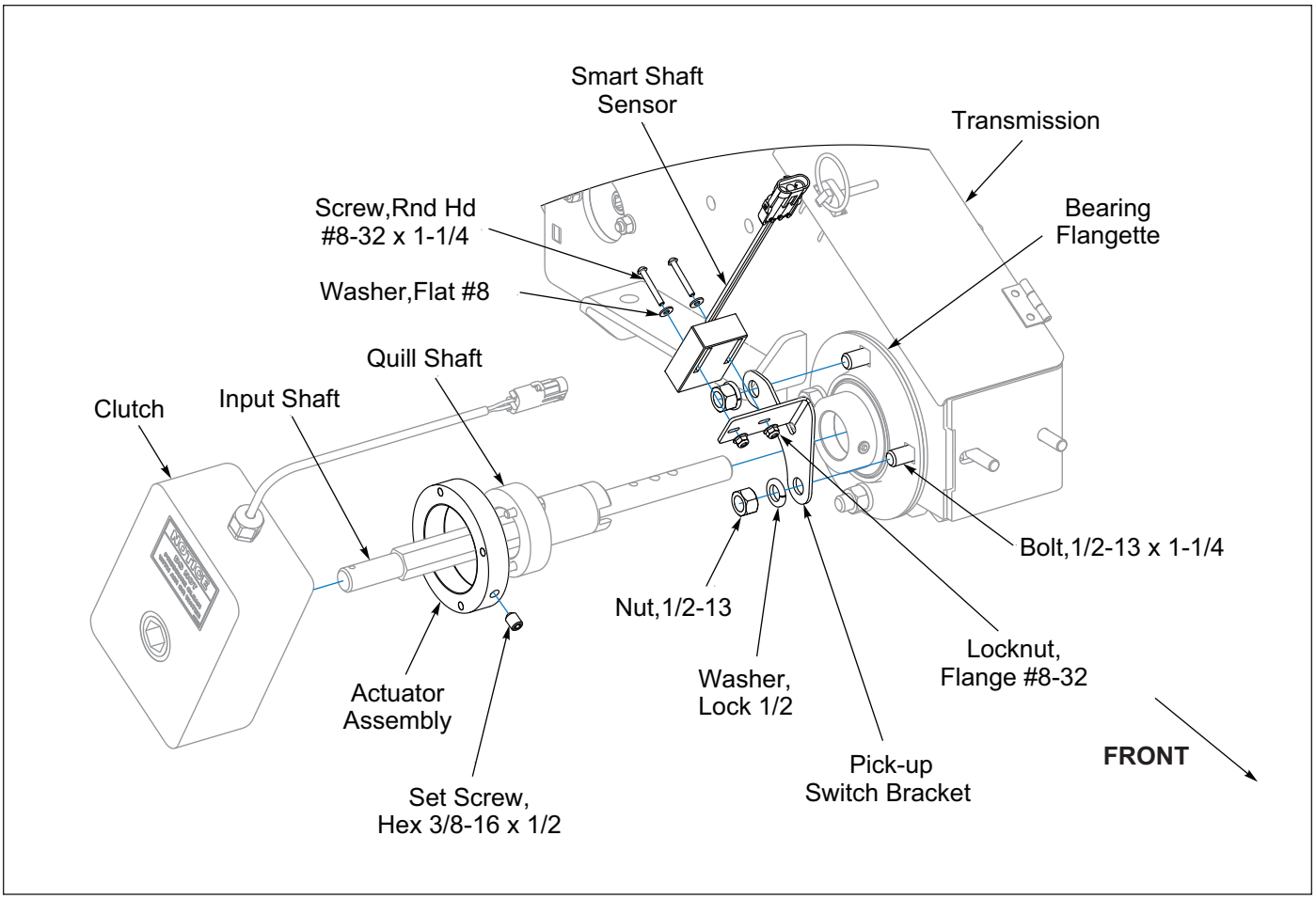


Figure 2-5: Brillion Elite Mini Monitor - Ground Speed

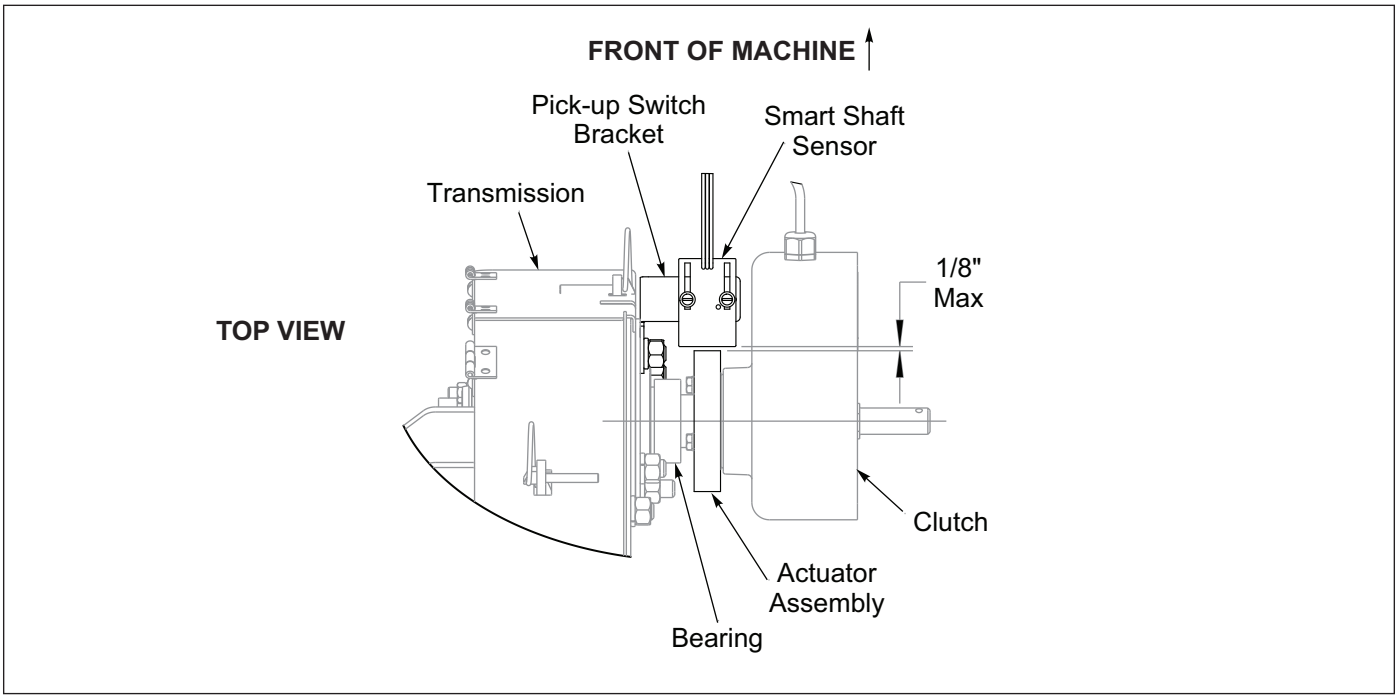


Figure 2-6: Brillion Elite Mini Monitor - Ground Speed Detail

Brillion Elite Mini Monitor - Front Small Meter Seed Box Seed Shaft Sensor

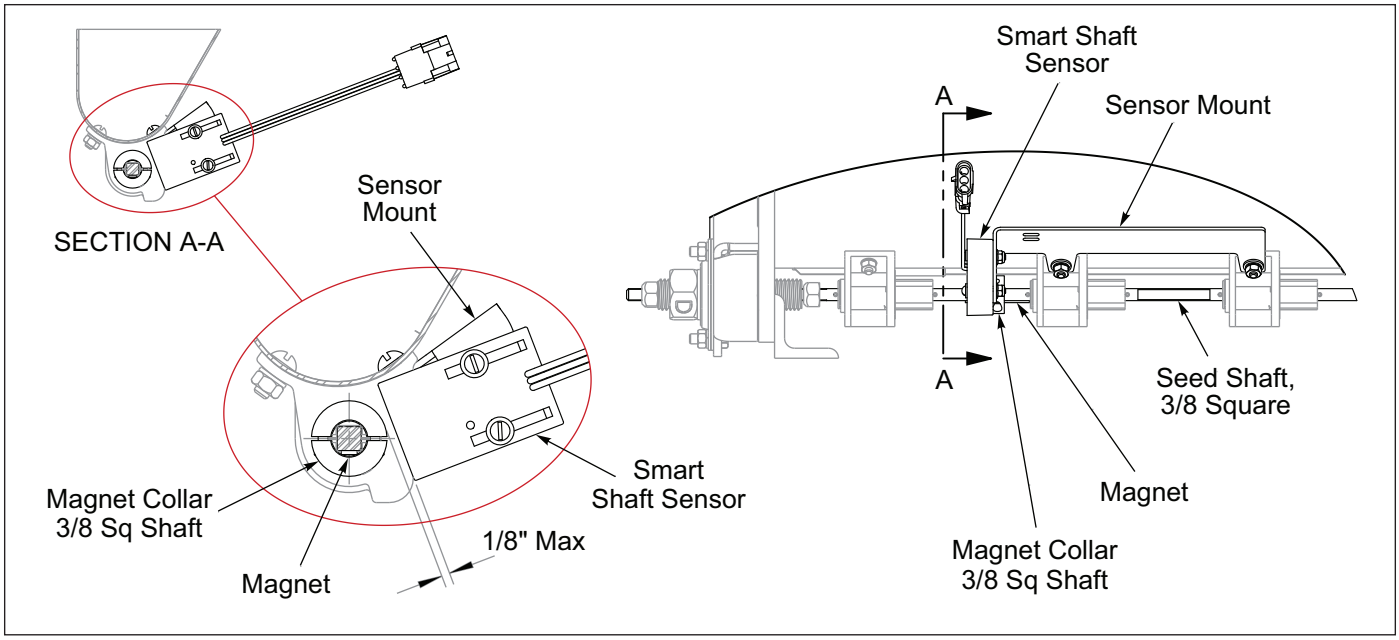


Figure 2-7: Brillion Elite Mini Monitor - Front Small Meter Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Front Large Meter Seed Box Seed Shaft Sensor

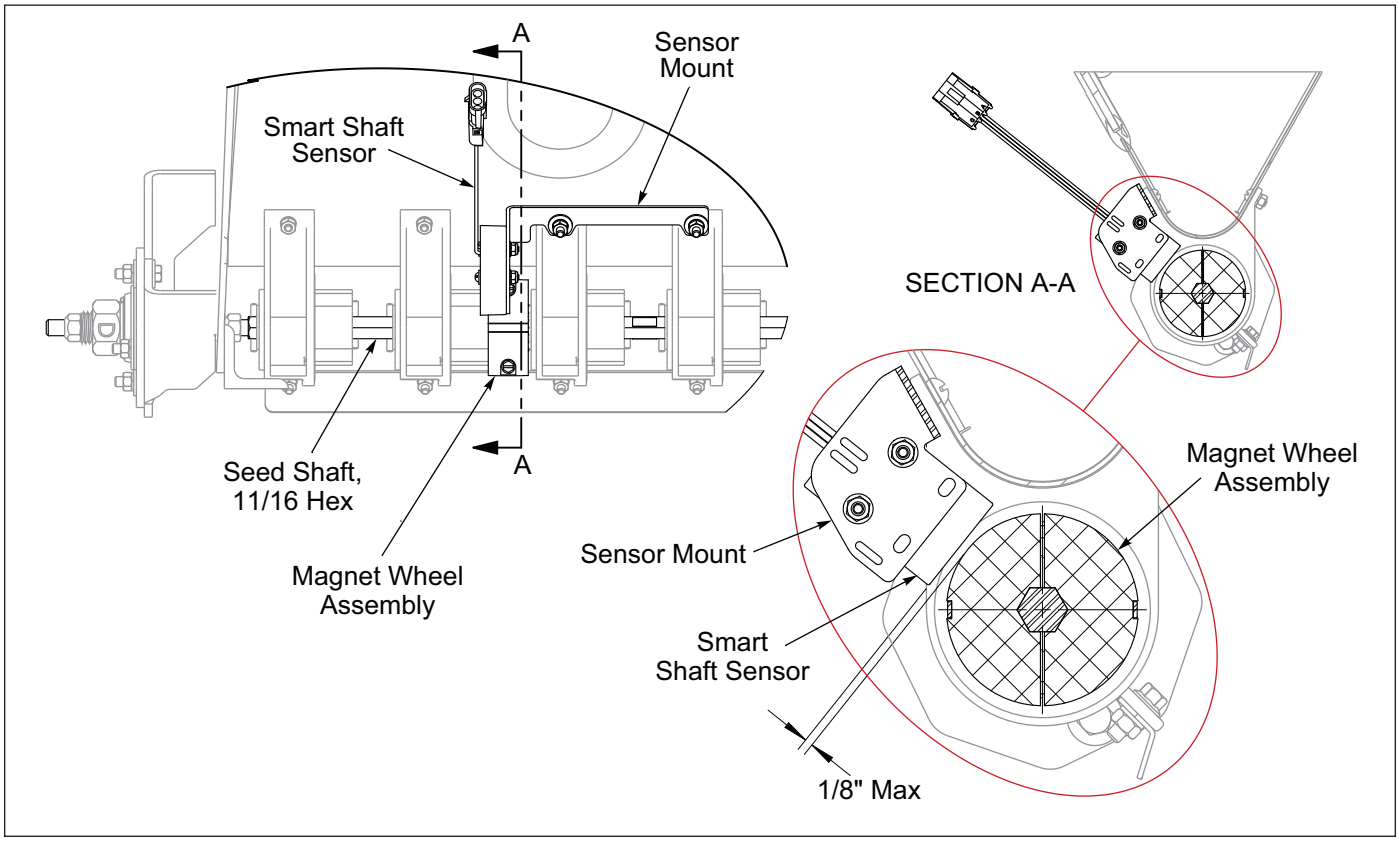


Figure 2-8: Brillion Elite Mini Monitor - Front Large Meter Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Rear Brome Seed Box Seed Shaft Sensor

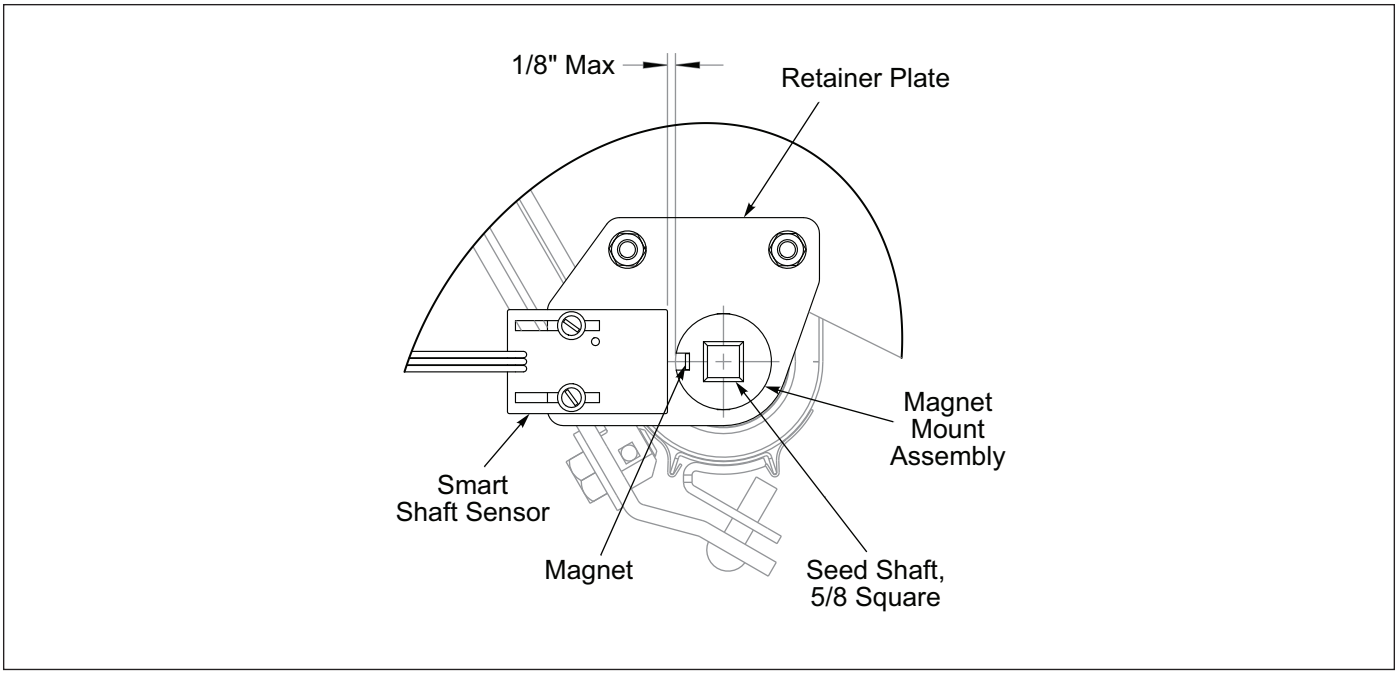


Figure 2-9: Brillion Elite Mini Monitor - Rear Brome Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Rear Small Meter Seed Box Seed Shaft Sensor

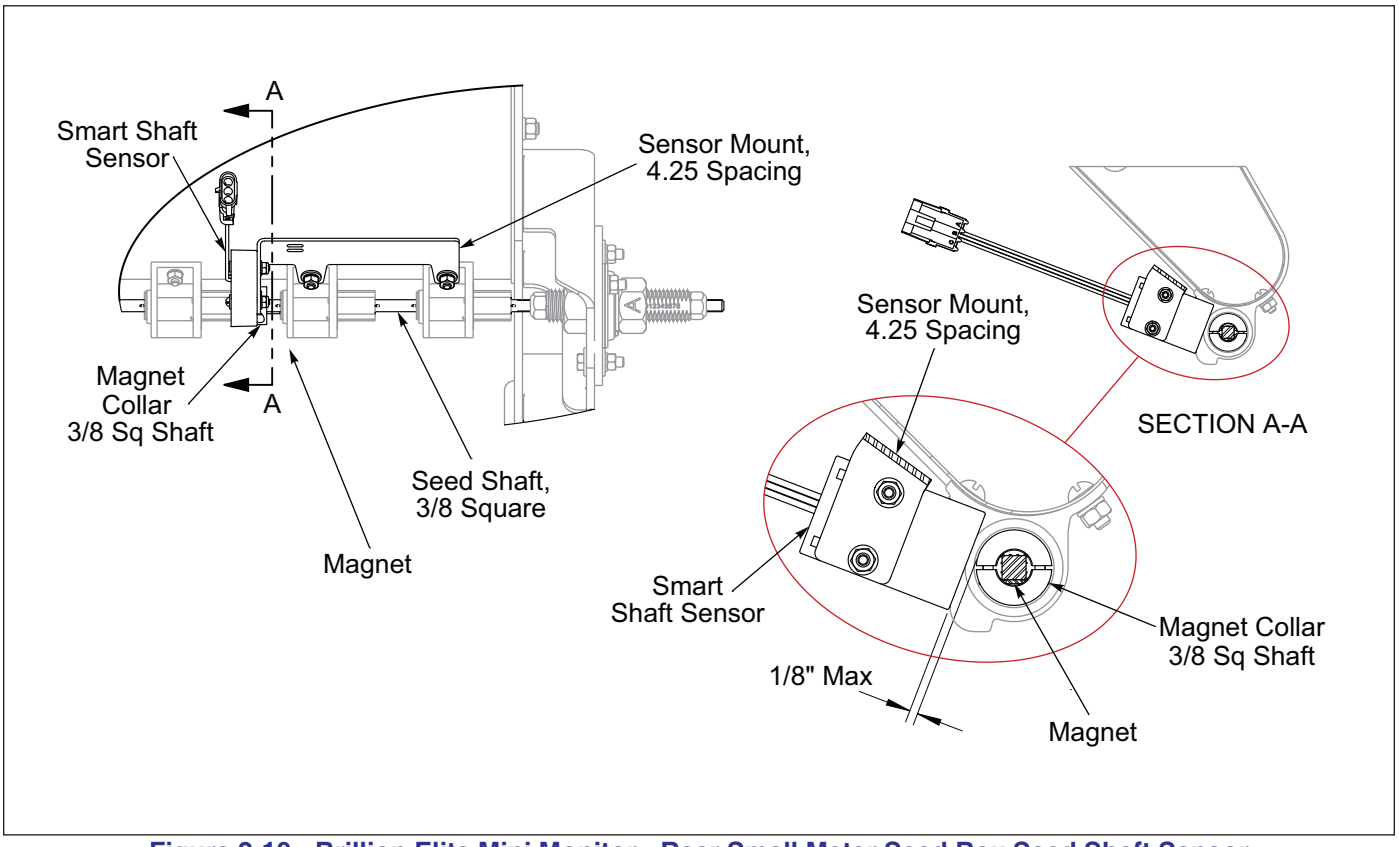


Figure 2-10: Brillion Elite Mini Monitor - Rear Small Meter Seed Box Seed Shaft Sensor

Brillion Elite Mini Monitor - Small Seed Box Front Box Bin Level Sensor

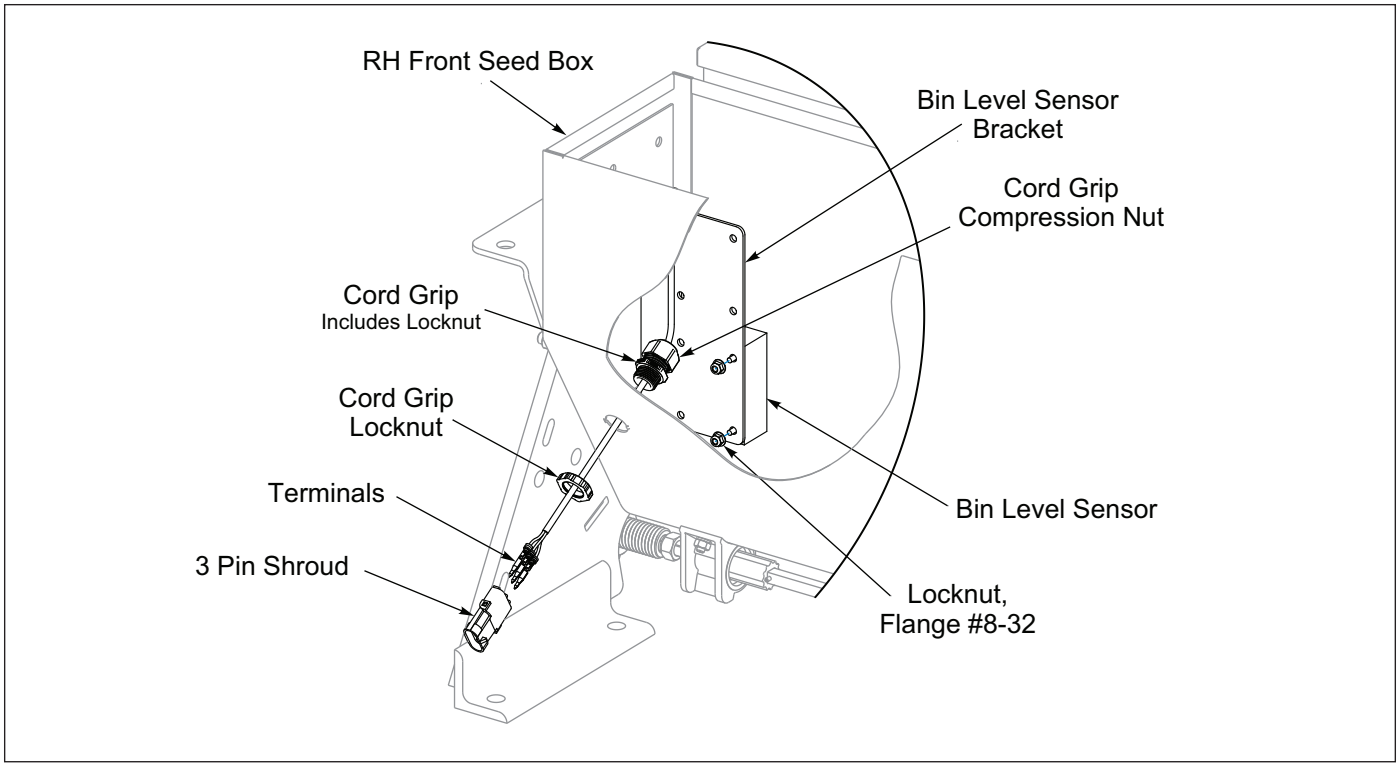


Figure 2-11: Brillion Elite Mini Monitor - Small Seed Box Front Box Bin Level Sensor

Brillion Elite Mini Monitor - Mid Size Seed Box Bin Level Sensor

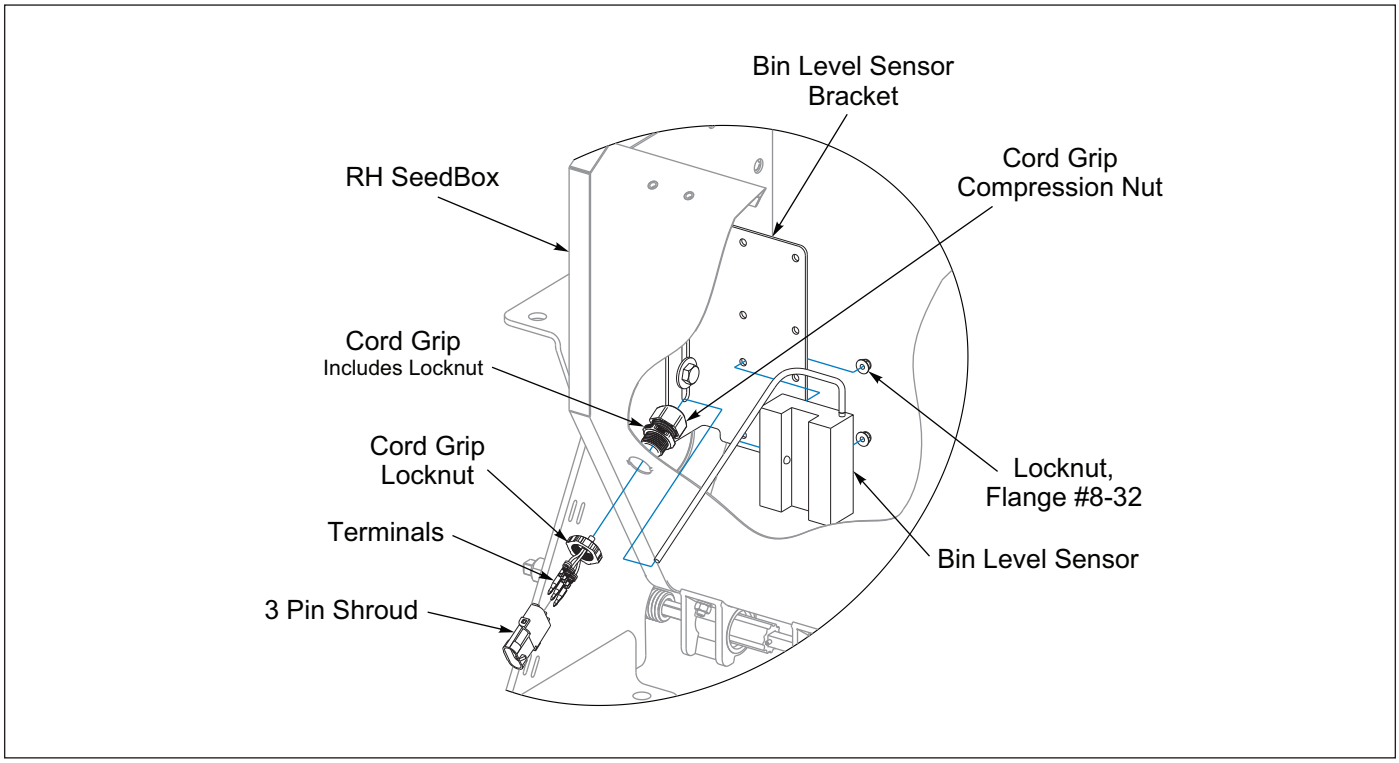


Figure 2-12: Brillion Elite Mini Monitor - Mid Size Seed Box Bin Level Sensor

Brillion Elite Mini Monitor - Large Seed Box Bin Level Sensor

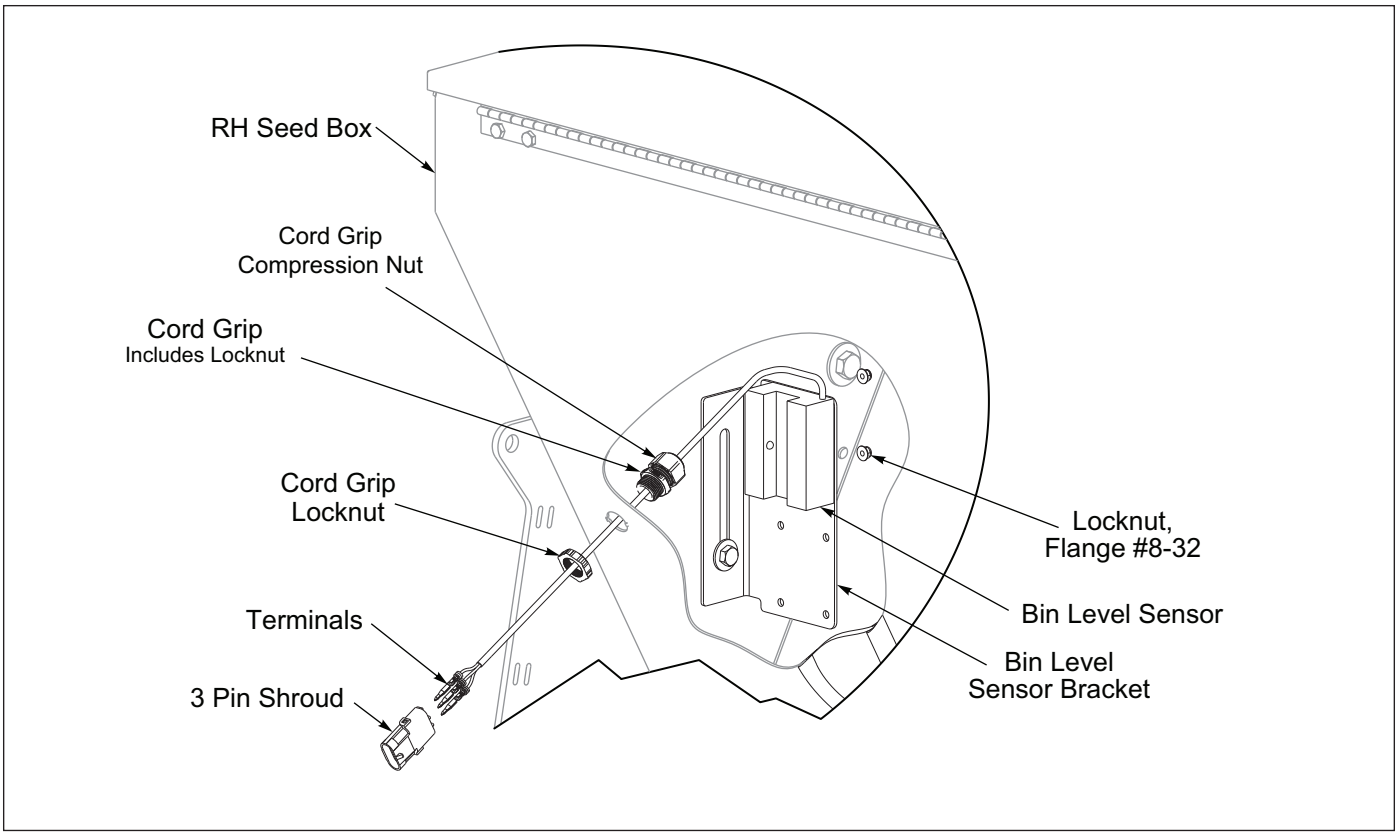


Figure 2-13: Brillion Elite Mini Monitor - Large Seed Box Bin Level Sensor

Console w/Clutch - Seed Shaft Sensors

Mount Console with Clutch Control on Tractor. **See Figure 2-14.**

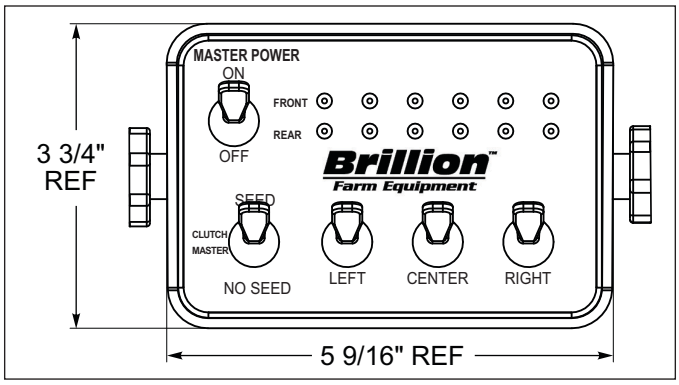


Figure 2-14: Console with Clutch Control

See Figures 2-17 or and 2-18 for Seed Box Sensor Schematic.

1. Route Console Harness with 24-Pin Connector to the Main Sensor Harness which is pre-assembled inside the seeder hitch.
2. Attach 3-Pin Power Plug to tractor.
3. Secure console harness with tie wraps
4. If additional seeder parts information is needed. **See Page 6-3** for individual seeder model manuals.
5. Connect the Center Seeder Harness to the Main Harness plug labeled “Center Seeder Harness”.
6. Route Center Seeder Harness along front frame of center 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.
8. Connect plug labeled “Left Front Seed Shaft Sensor” to the left front Seed Shaft Sensor.
9. If you have a double box seeder connect the plug labeled “Left Rear Seed Shaft Sensor” to the left rear Seed Shaft Sensor. Otherwise, seal the plug end using a 3-Pin Tower and Cavity Plugs to protect it from the environment.
10. Connect the Right Seeder Harness to the Main Harness plug labeled “Right Seeder Harness”.
11. Route Right Seeder Harness along front frame of right seeder. Ensure plug labeled Electric Clutch Power is on the left side.
12. On left side connect plug labeled “Electric Clutch Power” to the Electric Clutch lead.
13. Connect plug labeled “Left Front Seed Shaft Sensor” to the left front Seed Shaft Sensor.
14. If you have a double box seeder connect the plug labeled “Left Rear Seed Shaft Sensor” to the left rear Seed Shaft Sensor. Otherwise, seal the plug end using a 3-Pin Tower and Cavity Plugs to protect it from the environment.
15. Repeat steps 10-14 for the Left Side Seeder.
16. After installing the center seeder LED warning lights, connect the Ag Harness to the front and the Light Module to the rear of the Main Harness.
17. Secure all harnesses and wires with cable tie and tie wraps.

Console w/Clutch - Seed Shaft Sensor Mounting Dimension

Check pre-assembled Seed Shaft Sensor and Bracket so the center line of Magnet Wheel and Sensor are horizontally and vertically aligned with a maximum 1/8" between Magnet Wheel and Sensor. Make necessary adjustments and tighten hardware.

NOTE

Depending on the seeding rate it may be necessary to move sensor left or right in bracket slot to ensure magnet is within sensor range, since magnet moves with seed shaft when adjusting seed rate.

Alignment of the Seed Shaft Sensor and Magnet Wheel is critical. Improper alignment will cause the sensor to work erratically or not at all.

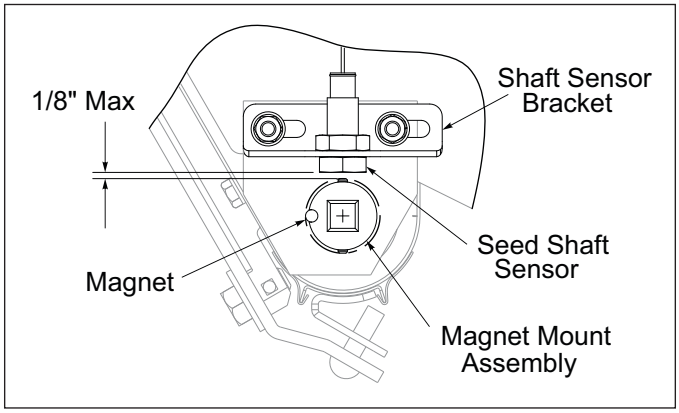


Figure 2-15: Brome Box

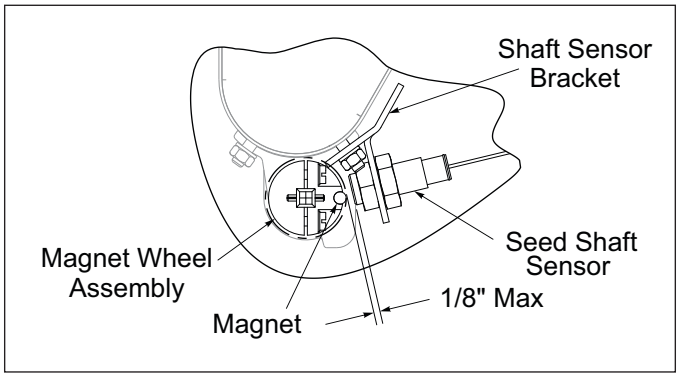


Figure 2-16: Seed Meter

Console w/Clutch - Single Box Sensor Schematic

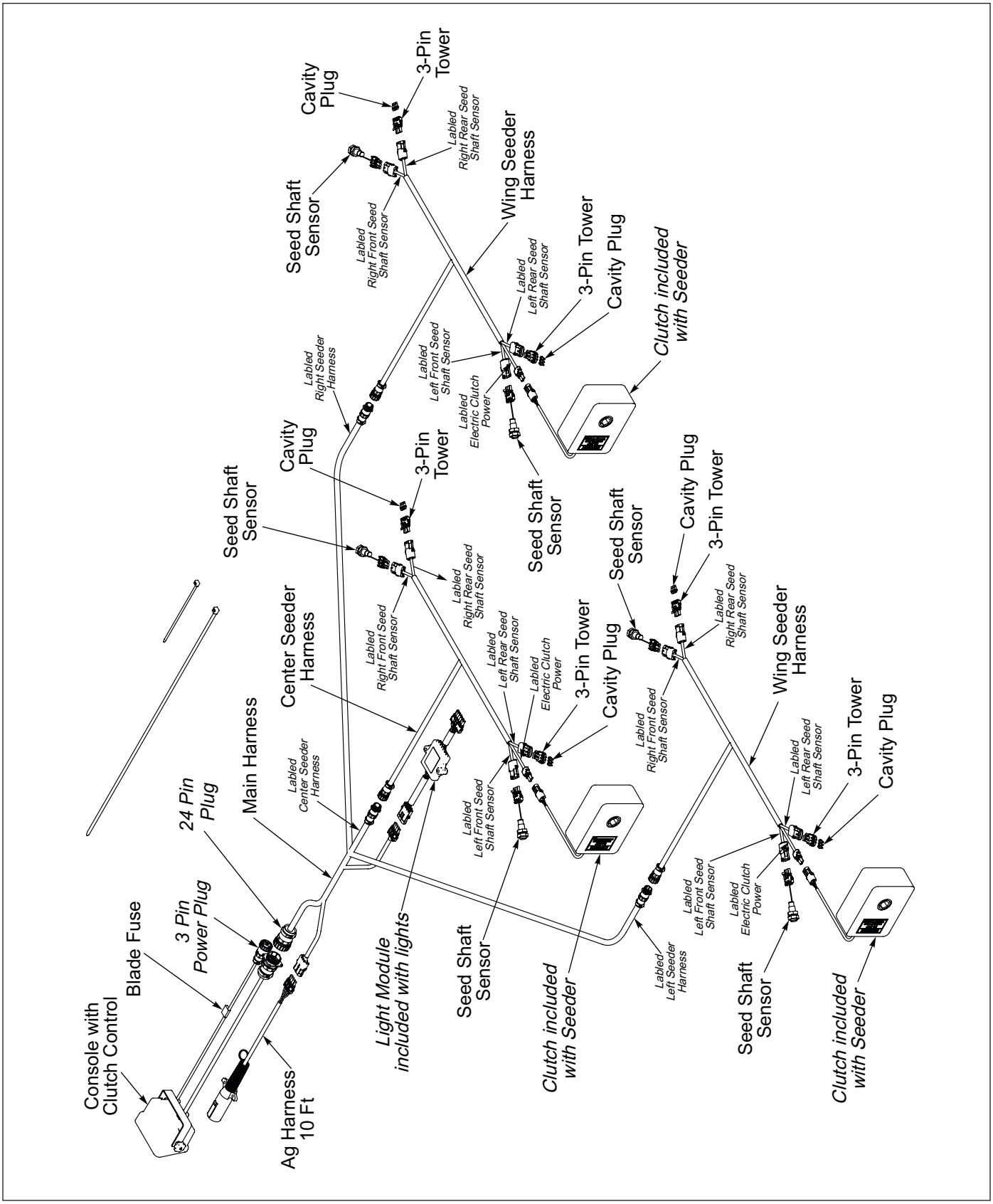


Figure 2-17: Console w/Clutch - Single Box Sensor Schematic

Console w/Clutch - Double Box Sensor Schematic

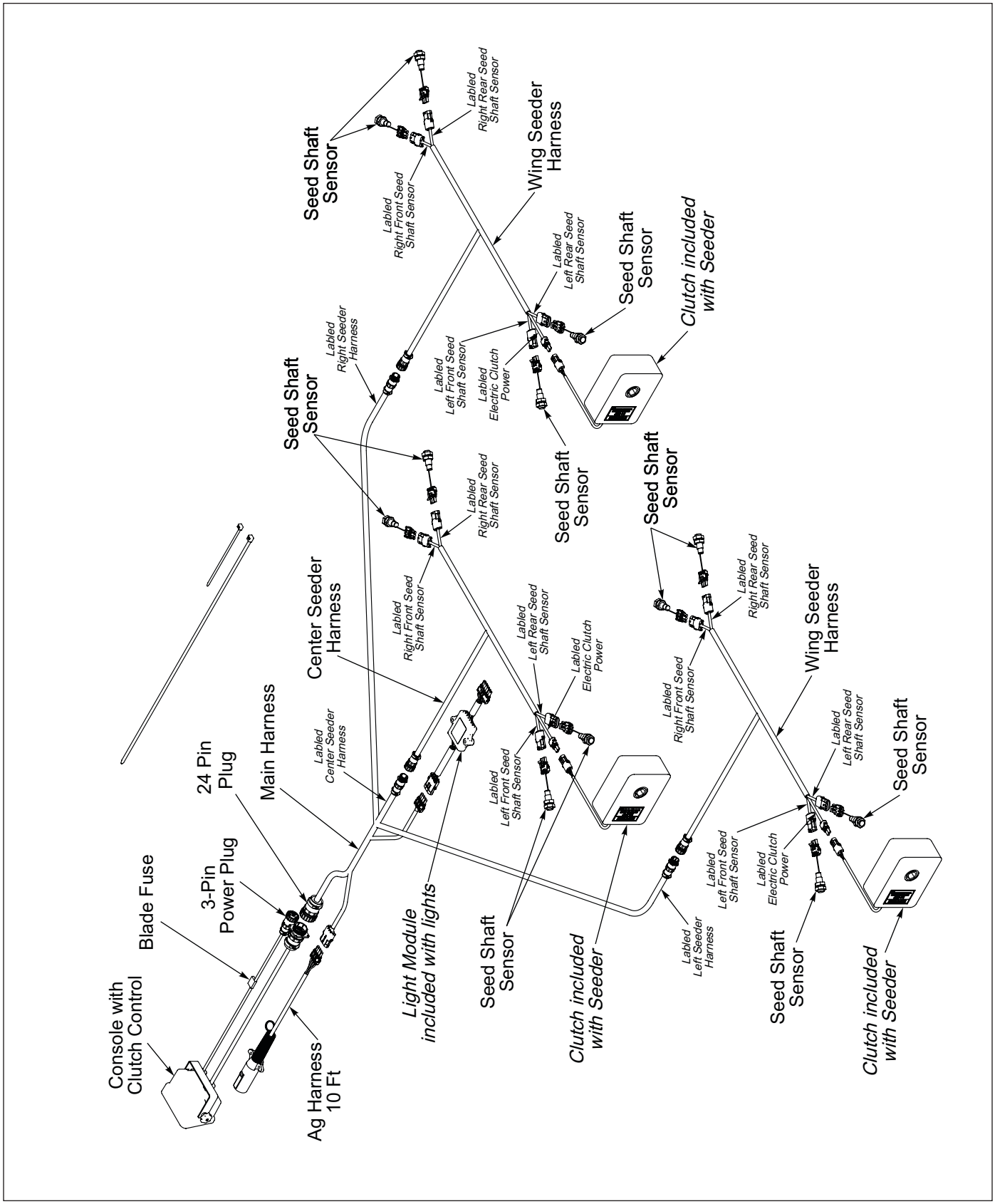


Figure 2-18: Console w/Clutch - Double Box Sensor Schematic

Center Seeder Unit Warning Lamp Installation

1. Install Warning Lamps to the Center Seeder Unit, per Seeder Model Operators Manual, except do not connect the 7-Pin Harness to the Light Module.
2. A 400" (33.3FT) Extension Harness is factory installed in the Folding Seeder Hitch Frame Tube. At the front of the Folding Seeder by the Telescoping Hitch, connect the 7-Pin Harness from the Seeder Warning Lamp Box Assembly to the 400" (33.3FT) extension Harness.
3. After the Center Seeder is attached to the Folding Seeder Hitch, connect the extension Harness to the Light Module.
4. Bundle and secure all Harnesses along the Folding Seeder Hitch Frame with Tie Wraps.

Warning Lamp Installation, 12FT Seeder

NOTE

Refer to your individual seeder model Operator's Manual to determine your setup. ***The following instructions are for the Sure Stand Seeder SSBP12.***

1. Attach both Red Lamps to the ends of the Light Bar with 1/4-20 x 1-1/4 Bolts and Locknuts. **See Figure 2-2.**
2. Attach longer Light Bracket to the Transmission located on the left side of the Seeder, with 3/8-16 x 1-1/4 Bolts, Lock Washers and Nuts.
3. Attach an Amber Lamp to the upper portion of the longer Light Bracket with 1/4-20 x 1-1/4 Bolts and Locknuts.
4. On the right side of the Seeder attach the shorter Light Bracket to the Angle Bracket with 1/2-13 x 1-1/4 Bolts, Lock Washers and Nuts.
5. Attach an Amber Lamp to the upper portion of the Light Bracket with 1/4-20 x 1-1/4 Bolts and Locknuts.
6. Attach the Light Module to the Module Bracket with 1/4-20 x 1-1/2 Bolts and Locknuts. **See Figure 2-1.**
7. Lay out the Lamp Harness, noting that the connectors marked with Green Tape is Right Side and Yellow Tape is Left Side.
8. Connect the Lamp Harness into the Light Module, route the plugs with Green Tape along the front right side of the Frame Tube. Route the 3 prong cord up the Light Bar and plug into the Red Lamp. Continue routing the 2 prong cord along the front Frame Tube, up the outer Light Bracket and plug into the Amber Lamp.
9. Repeat for the Left Side (Yellow Tape).
10. Connect the 7-Pin Harness into the Light Module, then route the Harness along the 3-PT Hitch.
11. Bundle and secure excess cord to the Module Bracket with tie wraps. Secure cords along Frame and 3-PT Hitch using Adhesive Mounts and tie wraps

NOTE

If equipped with Electrical Clutch, install, route and secure Electric Clutch Harness with the Warning 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.

1. 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.
2. 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 3-PT Hitch or Drawbar Hose Holder. Allow enough Harness length to reach Tractor Socket and roll or fold up excess and secure to Drawbar Hydraulic Hoses or 3-PT Hitch.

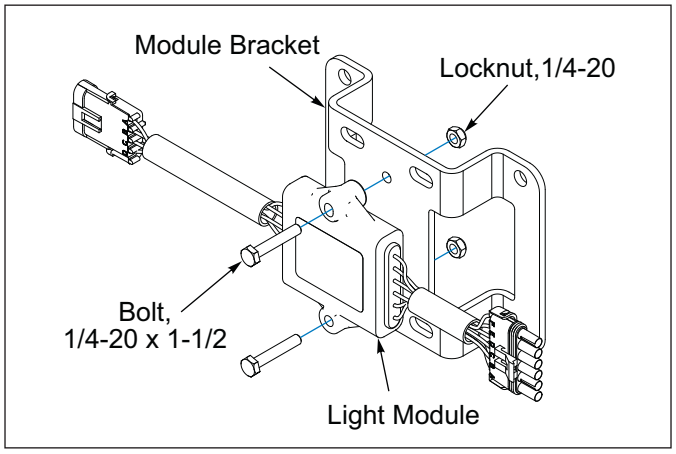


Figure 2-1: Light Module and Bracket, SSBP12

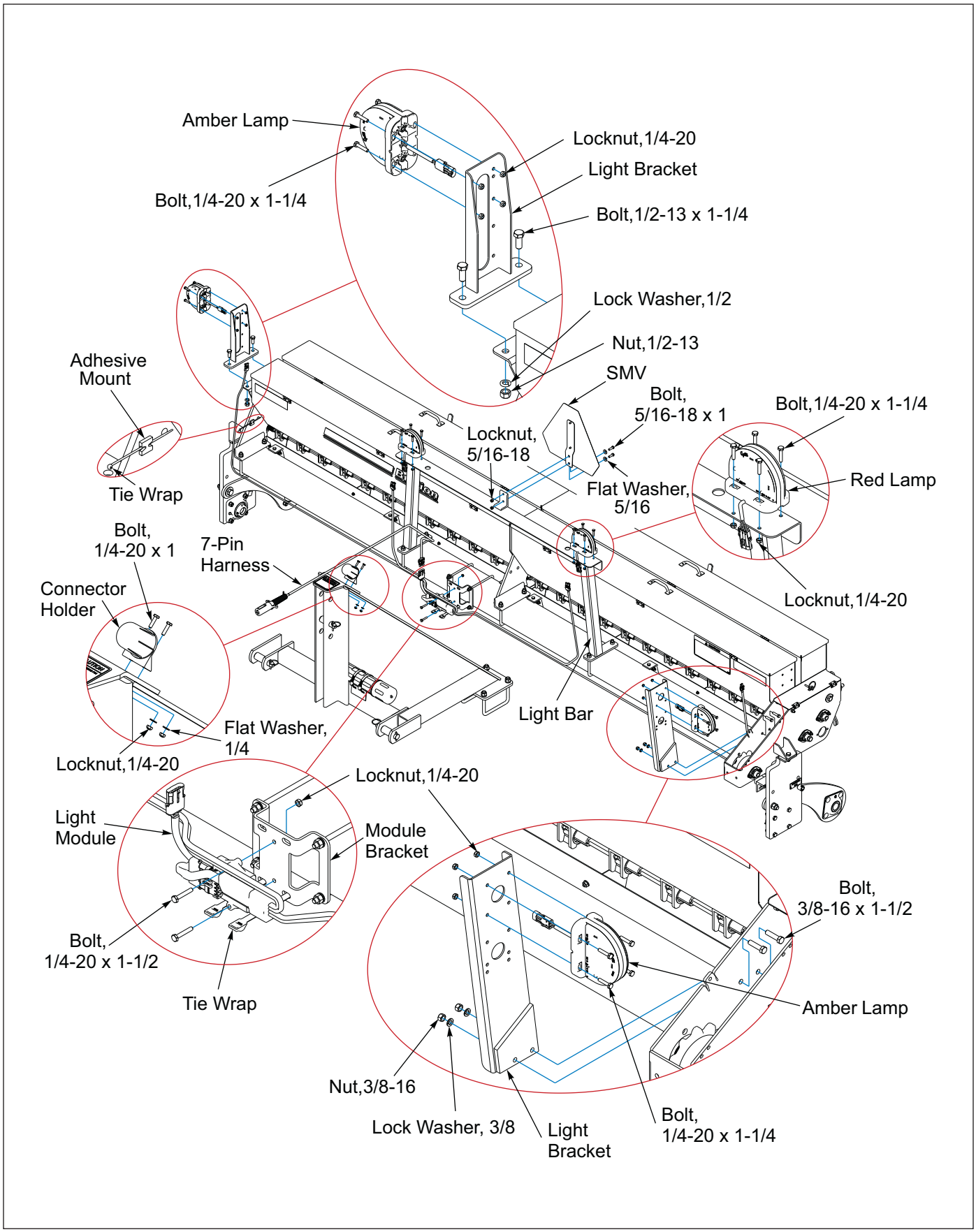


Figure 2-2: Warning Lamp Installation, 12FT, SSBP12

Attaching Seeder Units

1. Attach Folding Seeder to Tractor. **See "Attaching Folding Seeder To Tractor" on page 3-2.**
2. Remove Telescoping Hitch Transport Lock Pin and place in storage location. **See Figure 2-19.**

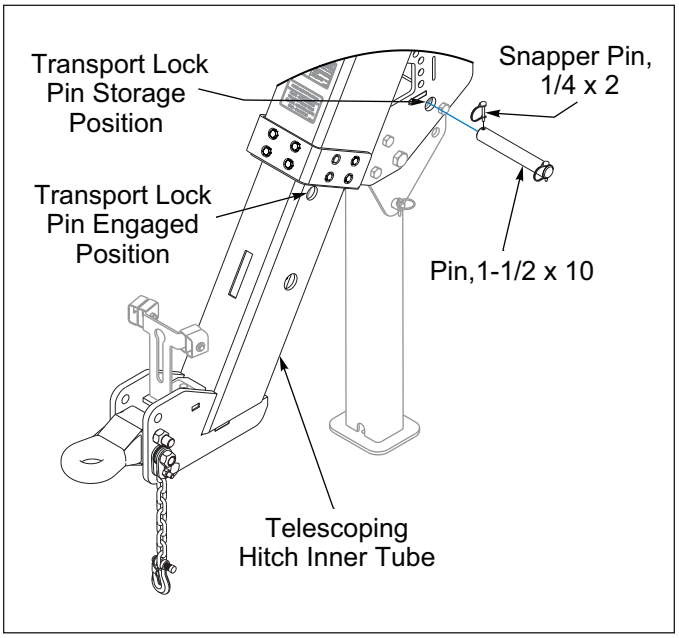


Figure 2-19: Telescoping Hitch Transport Lock Stored

3. Remove Wing Fold Lock Transport Lock Pin and place in storage location. **See Figure 2-20.**

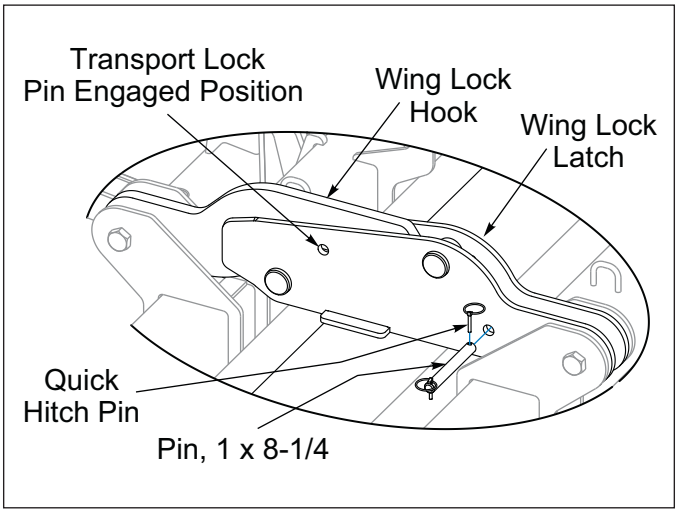


Figure 2-20: Wing Fold Lock Transport Lock Stored

4. Fully raise the Seeder Units so that the Hydraulic Transport Locks are free. **See Figure 3-11.**
5. Fully raise the Folding Seeder to relieve pressure on the Folding Seeder Rockshaft Hydraulic Transport Lock. **See Figure 3-12.**
6. Completely lower the Folding Seeder to the ground and completely lower (retract) the Telescoping Hitch.
7. Slowly unfold the Folding Seeder until the Wing Cylinders are fully extended and the Seeder Units Rockshaft Lift Cylinder Hydraulic Transport Locks are fully unlocked.
8. Slowly raise the Telescoping Hitch until the visual reference slot in the Wear Pad is centered in the diamond shaped hole at the front of the Telescoping Tube. The Folding seeder should be parallel to the ground. **See Figure 2-21.** The Transport Lock Cylinder will extend and the Wing Brace Lock will have engaged.

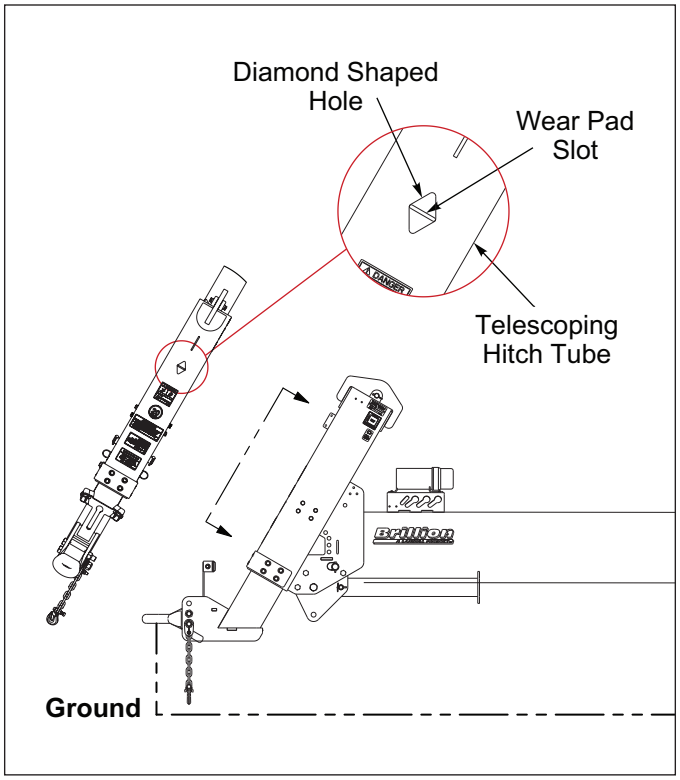


Figure 2-21: Telescoping Hitch Alignment

9. Completely extend the Seeder Units Lift Cylinders so the Lift Links are down.
10. Attach each Folding Seeder Lift Link to the Seeder Unit's 3-PT Hitch Lower Point with a 1-1/8 x 5-3/4 Pin Assembly and 1/4 x 1-1/4 Lynch Pin.
11. Adjust the Top Links pin to pin center distance to 19 inches. **See Figure 2-24.**
12. Adjust Seeder Units to allow the Top Link to be assembled between the Seeder Units 3-PT Hitch and the Folding Seeder Lugs, located on the Rear Seeder Mount and RH and LH Folding Seeder Wings.
13. Attach the Top Link to the Folding Seeder Lugs with 1 X 5-1/8 Pins, Flat Washers and 1/4 x 1-1/4 Lynch Pins. **See Figure 2-25.**
14. Attach the other end of the Top Link to the Seeder Unit's 3-PT Hitch Mast top hole with 1 x 4-1/2 Clevis Pin and 1/4 x 1-1/4 Lynch Pin.

NOTE

Steps 15 and 16, it may be necessary to raise the Seeder Units to remove Shipping Bolt and Parking Pin.

15. On the RH side of each Seeder Unit, remove the 5/8-16 Shipping Bolt that secures the Seeder Units Rear Roller during shipping. **See Figure 2-22.**

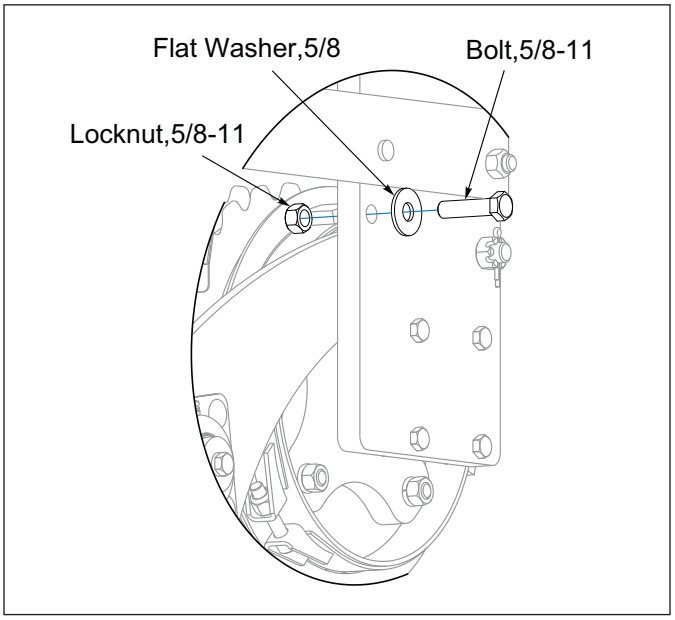


Figure 2-22: Shipping Bolt

16. On the LH side of each Seeder Unit, disengage the Parking Pin that is locking the Rear Roller down. **See Figure 2-23.**

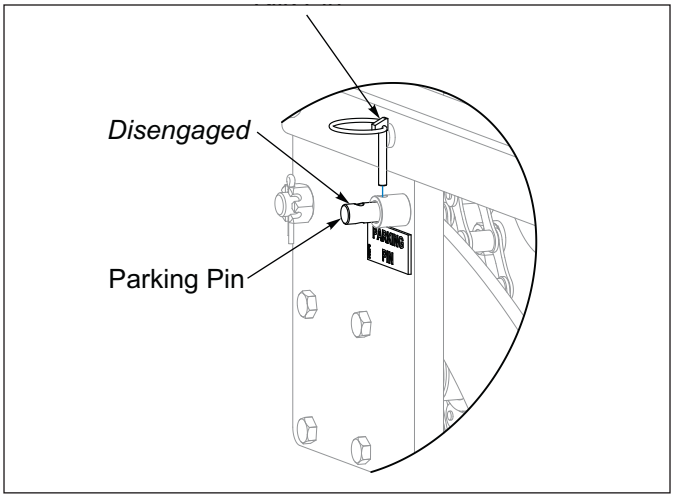


Figure 2-23: Parking Pin Disengaged

17. Level the Seeder Units. **"Leveling the Folding Seeder and Seeder Units" on page 3-10.**

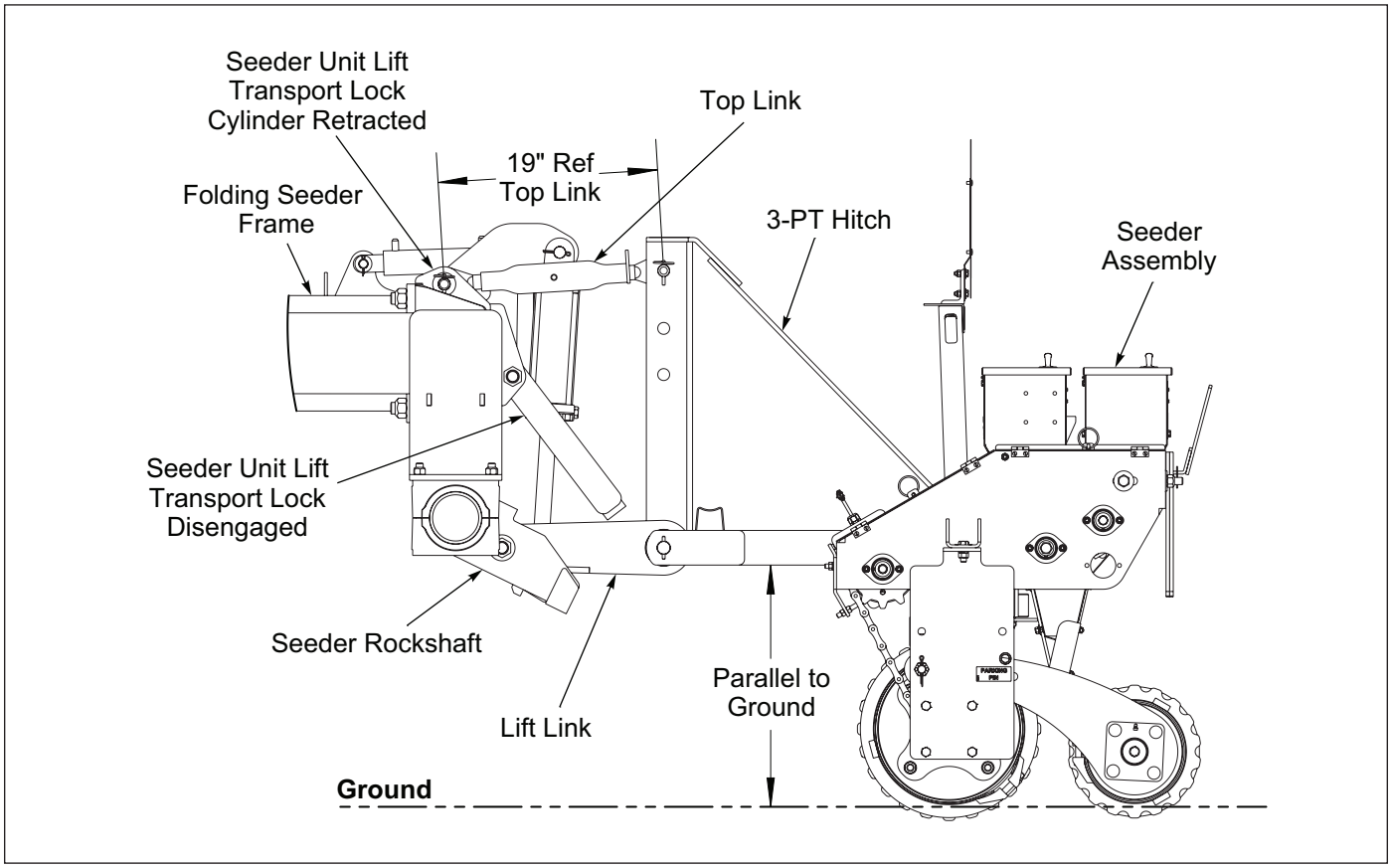


Figure 2-24: Leveling the Seeder Unit

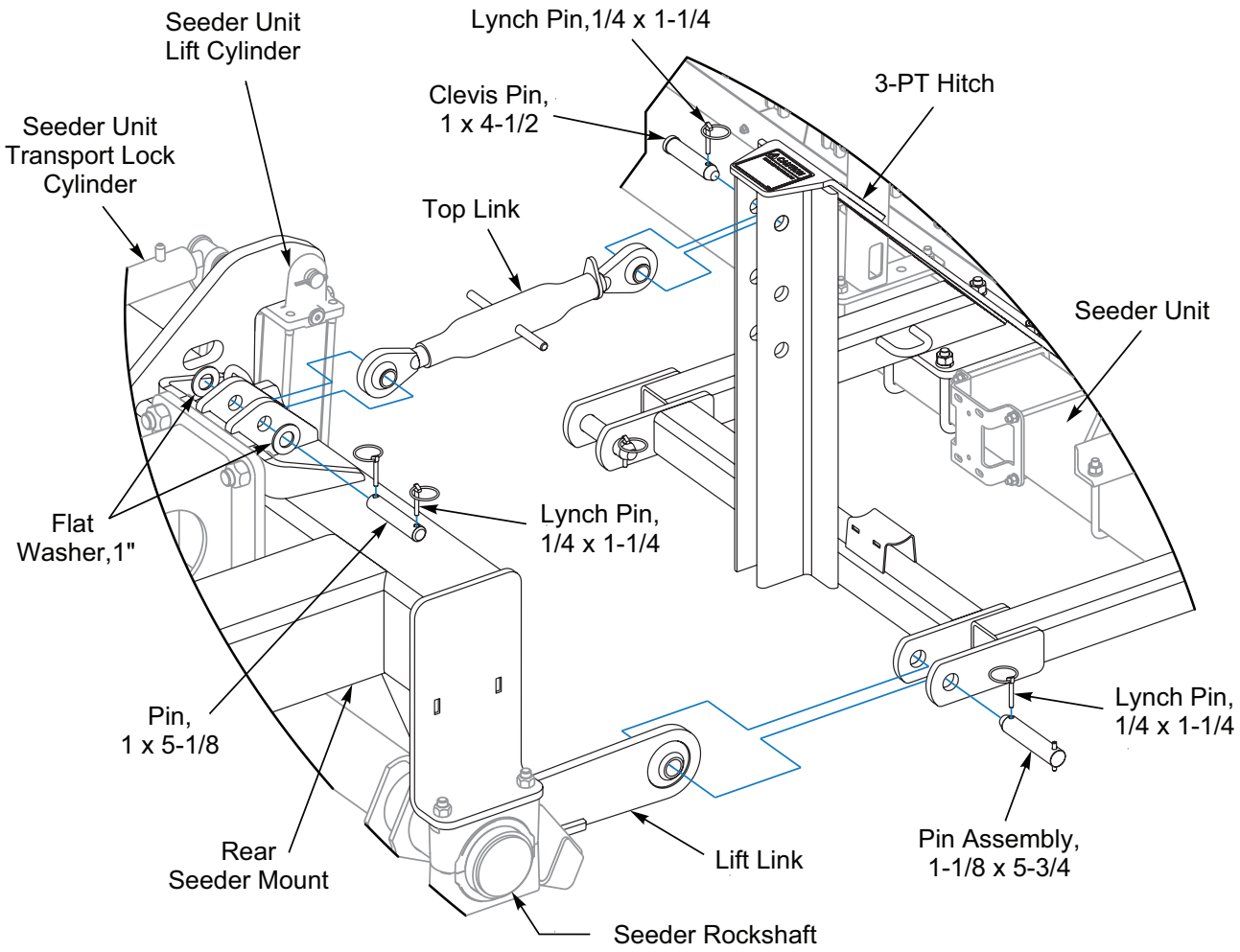


Figure 2-25: Attach the Seeder Assembly with Top Link

Table provided for general use.

NOTES:

Center Harrow Installation

1. Raise Seeder Unit.
2. Position Harrow Assembly in front of the Center Seeder Unit. **See Figure 2-27.**
3. Support Harrow and assemble Harrow onto the Seeder Front Frame Tube with 5/8-11 U-Bolts and Locknuts. **Do Not** tighten hardware at this time.
4. Assemble the Harrow Link Tube single hole end to Harrow Link Mount bottom hole with 1 x 4-1/2 Clevis Pin and 1/4 x 1-1/4 Lynch Pin. **See Figure 2-26.**
5. Center Harrow Link Tube between the Seeder 3-PT Hitch Mast. Secure Harrow Link Tube's Top Hole to Seeder 3-PT Hitch Mast center hole with 1 x 4-1/2 Clevis Pin and 1/4 x 1-1/4 Lynch Pin.
6. Double check Harrow mounting dimensions. Tighten Harrow mounting Hardware.

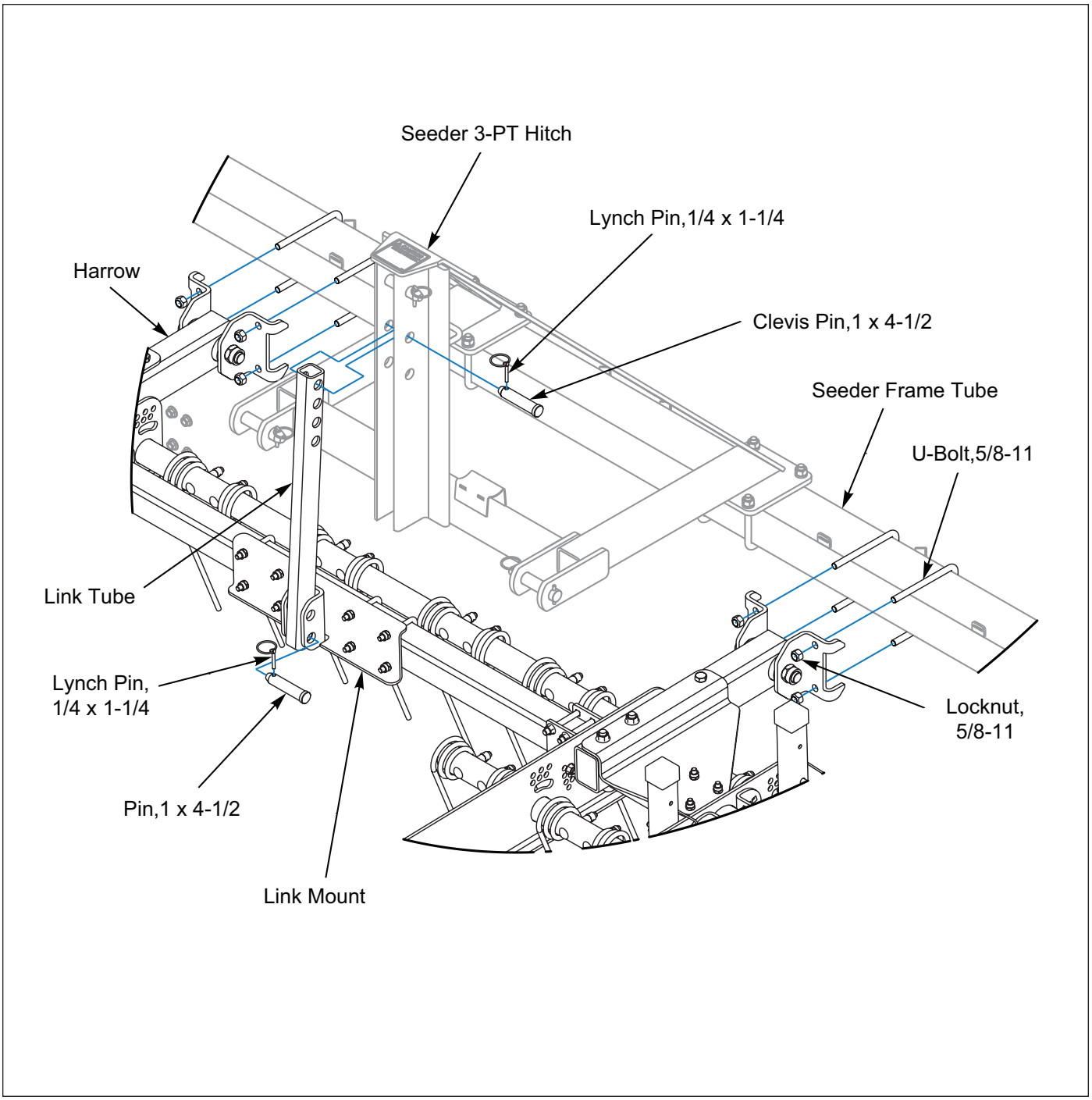


Figure 2-26: Center Harrow Installation

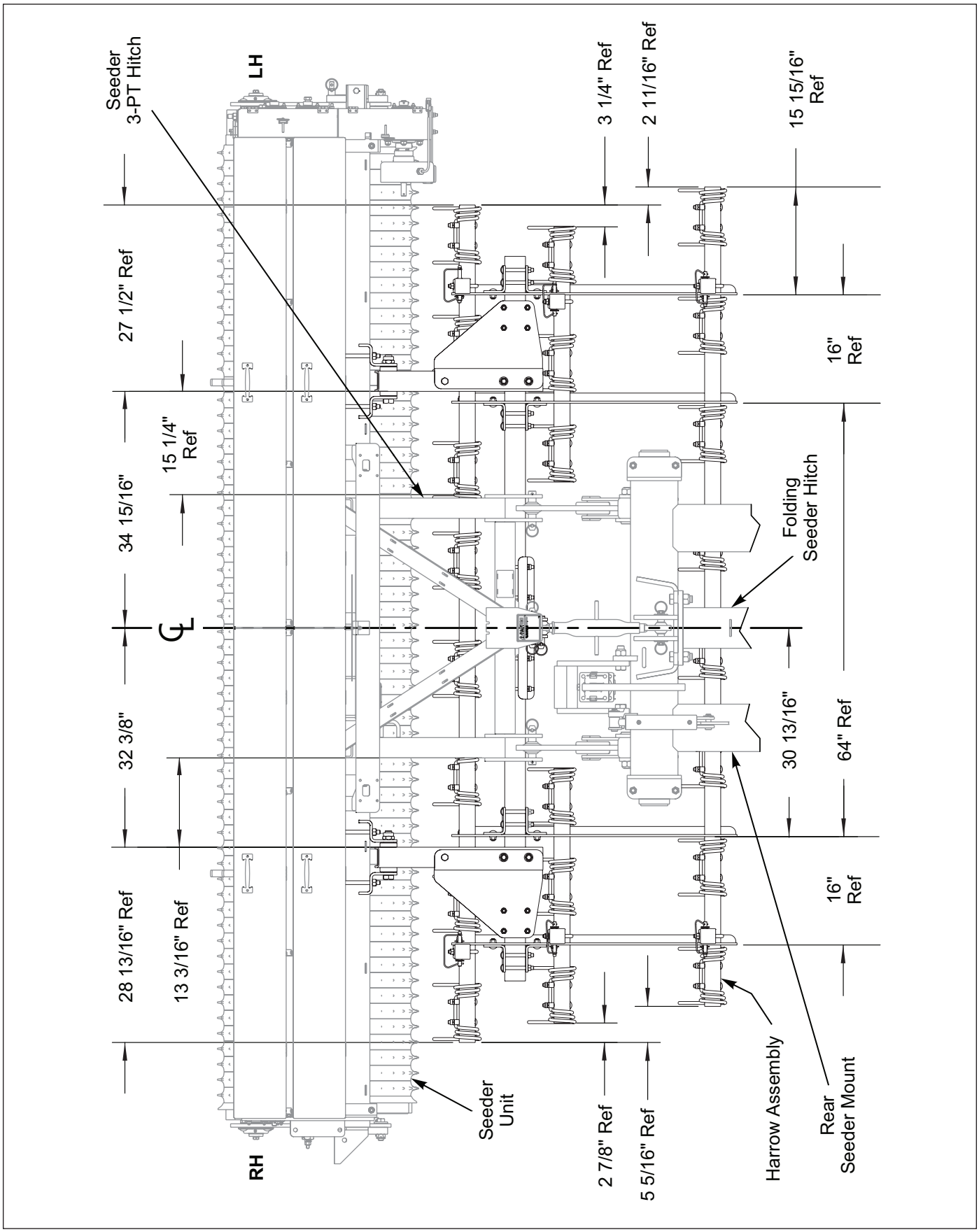


Figure 2-27: Center Harrow Installation Dimensions

Wing Harrow Installation

RH and LH Harrow Assemblies are mounted on the Seeder Unit's Frame Tube and 3-PT Hitch, behind the Wing Wheel and Tire Assemblies.

1. Set the Track Remover Mount Weldment on top of the Seeder Unit Frame Tube and attach with 1/2-13 x 6-1/2 U-Bolts, Lock Washers, and Nuts. **Do Not** Tighten at this time. **See Figure 2-29.**
2. Place the Track Remover Mount against the Seeder 3-PT Hitch and attach with 1/2-13 U-Bolts x 3-1/2, Lock Washers and Nuts.
3. Tighten all mounting hardware.
4. Measurement from the Track Remover Mount to the Seeder Unit's Frame Tube should be 10-3/4". If not reposition. **See Figure 2-30.**
5. The RH and LH Wing Harrows height can be adjusted by raising or lowering the Harrow in the Track Remover Mount. A good starting point is the Harrow assembled in the 3rd hole from the bottom of the Track Remover Mount. **See Figure 2-28.**

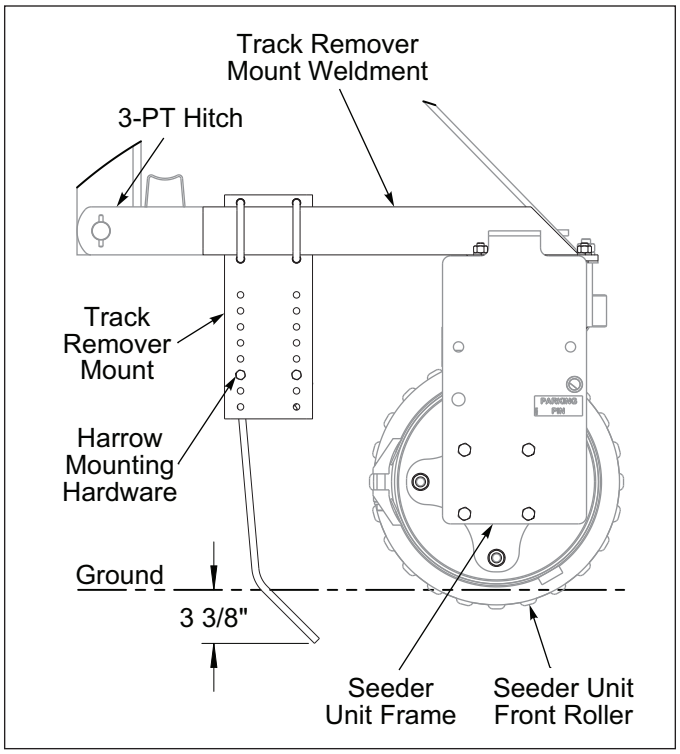


Figure 2-28: Wing Harrow Height Adjustment

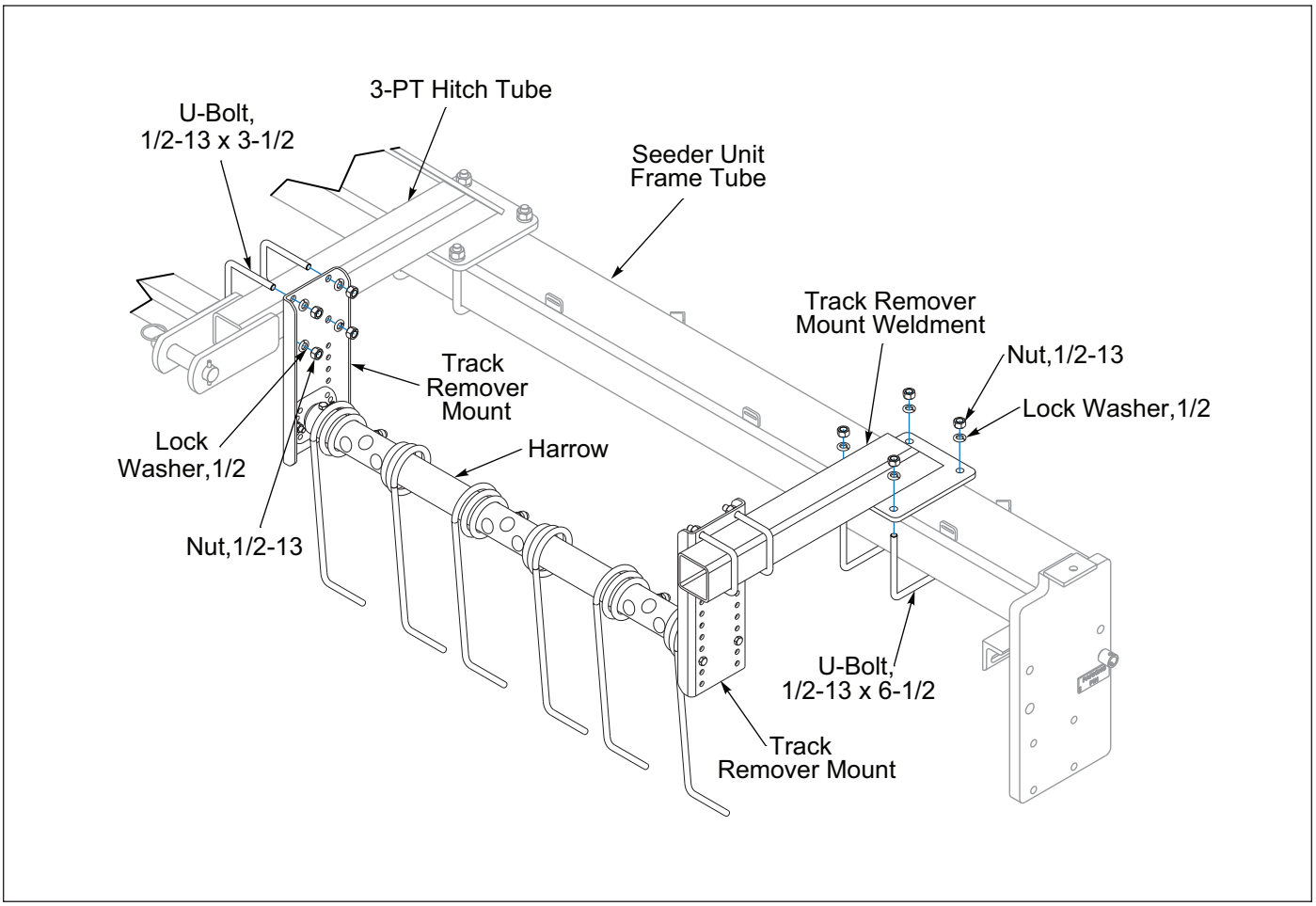


Figure 2-29: Wing Harrow Installation

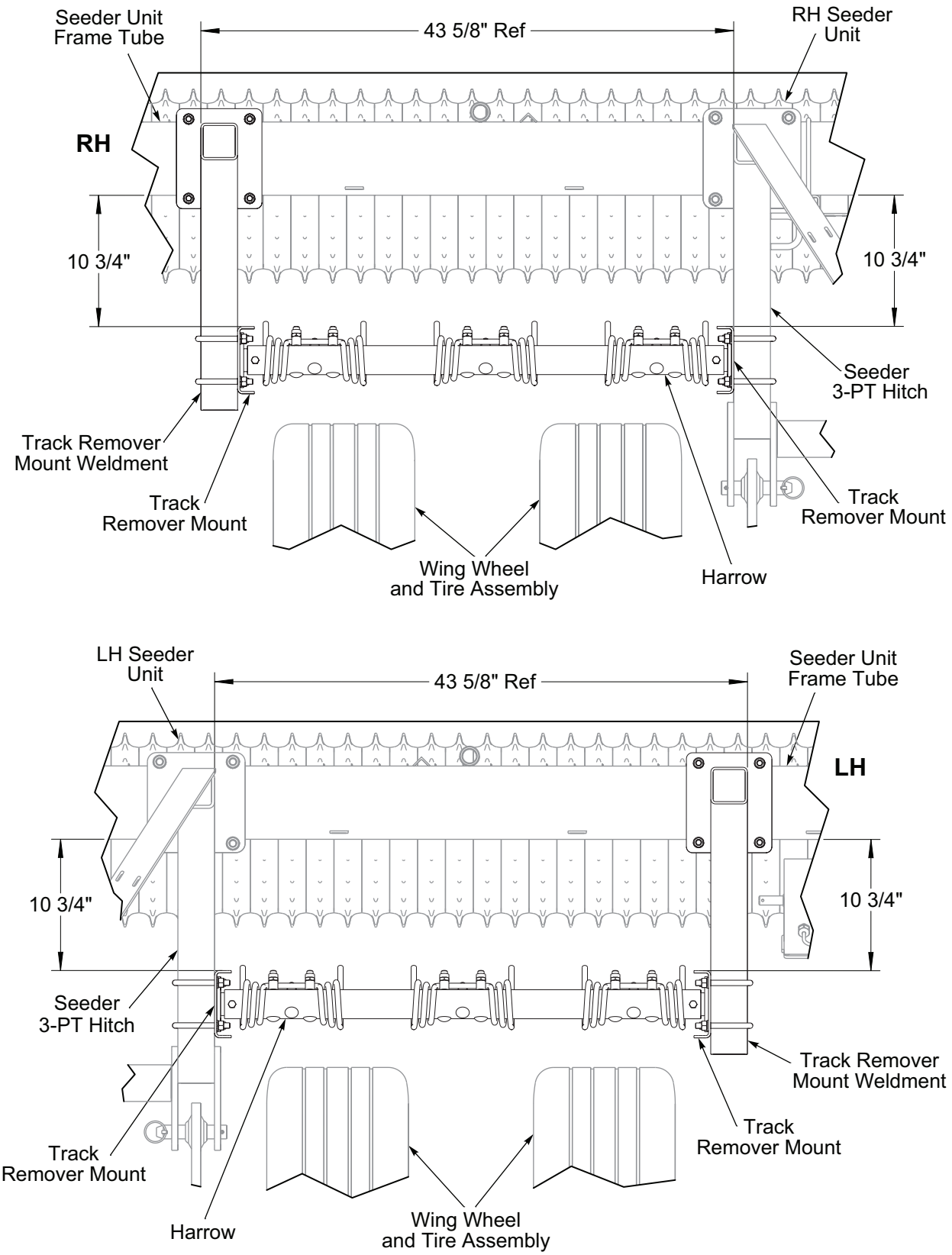


Figure 2-30: Wing Harrow Installation Dimensions

Hydraulic Function

1. Once the Folding Seeder has been assembled, purge the Hydraulic System to ensure that the circuits are functioning properly. **See "Hydraulic System" on page 3-3 to 3-5.**

Row Marker Installation – Optional

Row Markers may be factory installed on the Folding Seeder Wing Frame Tube. Due to shipping height requirements, RH and LH Disc Blades that are Assembled onto the Spindle may be removed. Install RH and LH Disc Blade Assembly to their appropriate the Extension Tube with 1/2-13 X 3-1/2 Carriage bolts, Flat Washer, Lock Washer and Nuts. **See Figure 2-33.**

Row Marker Kit 171633 Installation

1. Install Row Marker Mount to the end of each Wing Frame with 5/8-11 x 2 Bolts and Locknuts. **See Figure 2-32.**
2. Attach Support Mount to the back of each Wing Frame with 5/8-11 U-Bolts and Locknuts. Do not tighten at this time.
3. Assemble Marker Support to Support Mount with 1/2-13 U-Bolts Lock Washers and Nuts. Do not tighten at this time.
4. Position Marker Support side to side and up and down distance. Tighten all U-Bolt Hardware. **See Figure 2-31.**

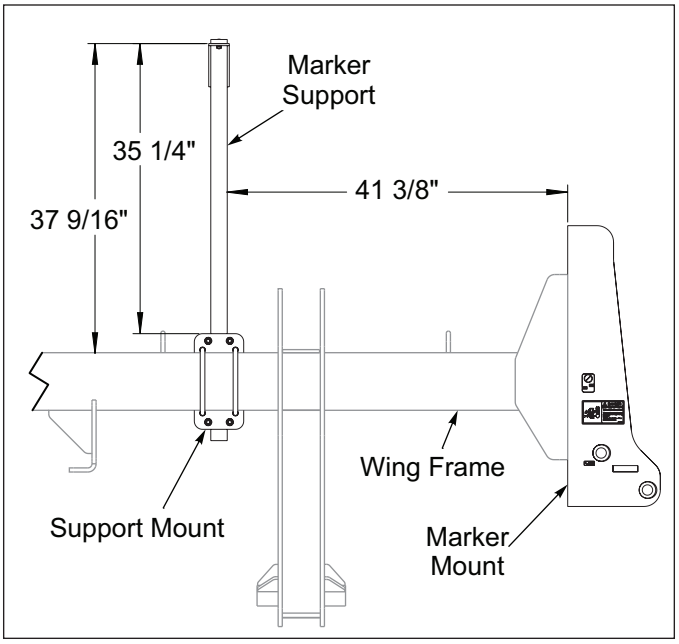


Figure 2-31: Marker Support Positioning

5. Assemble Rubber Brace Cushion to each Marker Support with 5/16-18 x 1 Carriage Bolts, Lock Washers and Nuts.
6. Install grease fittings into Row Marker First Arms and Row Marker Middle Arms.
7. Assemble Row Marker First Arm to Marker Mount with 1-1/4 x 9-1/2 Pin and 1/4 x 2 Cotter Pins.
8. Place a 1-1/4 Flat Washer on each side of the base end of 2-1/2 x 20 Cylinder and assemble Cylinder to Marker Mount with 1-1/4 x 9-1/2 Pin and 1/4 x 2 Cotter Pins.
9. Assemble Row Marker Middle Arm to Marker Mount by aligning the bushings and inserting 1-1/4 x 12-1/4 Pin. Place 1-1/4 Flat Washer on each side and secure with 1/4 x 2 Cotter Pins.
10. Place 1-1/4 Flat Washers on each side of the Row Marker Middle Arm Slot and install Rod End of 2-1/2 x 20 Cylinder to the Row Marker Middle Arm Slot with Washer Pin and 1/4 x 2 Cotter Pin.
11. Thread 5/8-11 Jam Nut onto External Thread Yoke. Assemble External and Internal Yokes together. Attach Internal Thread Yoke onto Row Marker First Arm Lug with 5/8 x 1-3/4 Clevis Pin and 5/32 x 1-1/4 Cotter Pin.
12. Assemble Rubber Spacer on the Row Marker Outer Arm Rest with 3/8-16 x 1-1/2 Bolts, Flat Washers and Locknuts. **See Figure 2-33.**
13. Attach Row Marker Outer Arm to Row Marker Middle Arm with 7/8 x 11 Pin and 1/4 x 1-1/4 Cotter Pin.
14. Assemble Extension Tube with holes up to Row Marker Outer Arm with 1/2-13 U-Bolt, Lock Washers and Nuts.
15. Place Row Marker Link between the Row Marker Outer Arm Lugs. Secure with 5/8-11 x 3-1/2 Bolt and Locknut.
16. Place Chain Cover over Chain with about 3 links of chain exposed on each end. Attach one end of the Chain to the External Thread Yoke by removing the Pin and Cotter Pin and re-inserting the Pin into the Yoke and Chain Link secure with Cotter Pin.
17. Place the other end of the Chain between the Row Marker Links. Secure with 3/8-16 x 2-1/2 Bolt, Flat Washers, 5/8 x 1-7/8 Bushing and Locknut.
18. Place Spindle on the bottom of the Extension Tube and attach with 1/2-13 x 3-1/2 Carriage Bolts,1/2 x 1-3/8 x 3/16 Washers, Lock Washers and Nuts.
19. Assemble Disc Blade and Retainer to Spindle with 1/2-20 x 1 Bolts and Lock Washers.
20. Assemble Depth Band to Disc Blade with 5/16-18 x 1 Bolts and Locknuts.

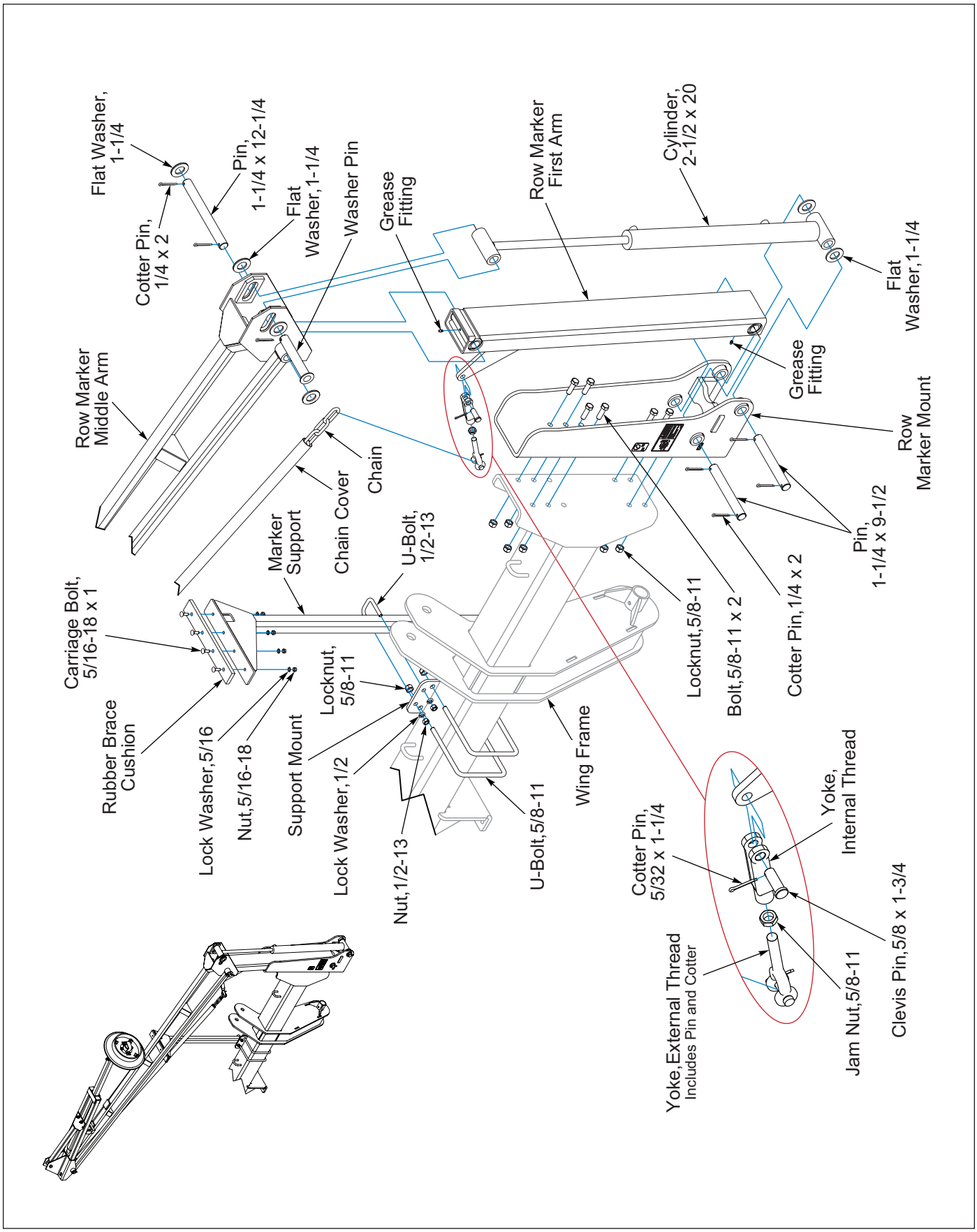


Figure 2-32: Row Marker Assembly (1 of 2)

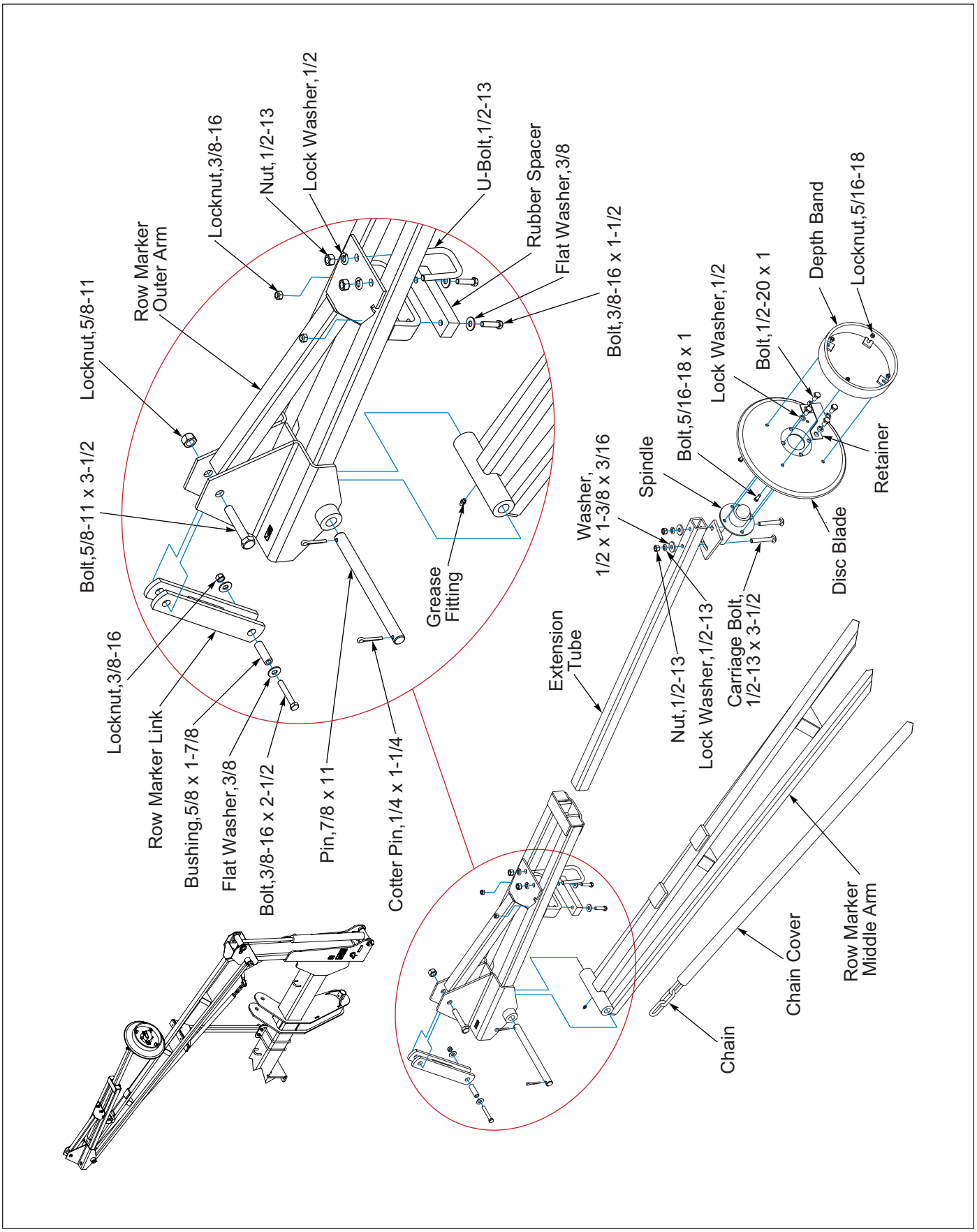


Figure 2-33: Row Marker Assembly (2 of 2)

Row Marker Hydraulic Installation

1. Attach Valve Mount to the back of the Folding Seeder Hitch Frame with 1/2-13 x 1-3/4 Bolts and Locknuts. **See Figure 2-36.**
2. Install Row Marker Sequence Valve Fittings that are included with valve, if not already installed. Attach Marker Sequence Valve to Valve Mount with 3/8-16 x 1 Bolts and Lock Washers.
3. Route through the Folding Seeder Hitch Frame Tube, the 3/8 x 312 Hose Assemblies with the 90 degree hose ends to the front and the straight hose ends to the rear. Attach straight hose ends to the Marker Sequence Valve ports A1 and B1. **See Figure 2-37.**
4. Install fittings into 2-1/2 x 20 Hydraulic Cylinders.
5. Connect Hydraulic Cylinder to the Marker Sequence Valve with Hoses as follows: **See Figure 2-35.** Wrap both RH and both LH Hoses near the Row Marker Hinge Pin area with Black 26 inch Hose Wrap.
   - RH Cylinder Rod Port to R1 Valve Port Hose Assembly, 3/8 x 277
   - RH Cylinder Base Port to C1 Valve Port Hose Assembly, 3/8 x 258
   - LH Cylinder Rod Port to R2 Valve Port Hose Assembly, 3/8 x 267
   - LH Cylinder Base Port to C2 Valve Port Hose Assembly, 3/8 x 248
6. At the front of the Folding Seeder Hitch, pull the 3/8 x 312 Hose Assemblies 90 degree hose ends out of the RH side opening, enough to install the straight bulkhead fitting with the Jam Nut to the outside. **See Figure 2-34.** Remove each Bulkhead Fitting Jam Nut and insert the Bulkheads into the top two holes of the Folding Seeder Hitch Frame Plate. Secure Bulkhead with removed Jam Nut.
7. Install Elbow Fittings onto Bulkheads. Attach 3/8 x 90 Hose Assemblies to Elbow Fittings. Secure Hoses to Hitch with Clamp, 3/8-16 x 3 Bolt, Flat Washer and Locknut.
8. Install a Male Coupler on the end of each hose. Wrap both hoses together near the couplers with Red Hose Wrap.
9. Secure all Hoses to the Folding Seeder Hitch Frame with Tie Wraps.

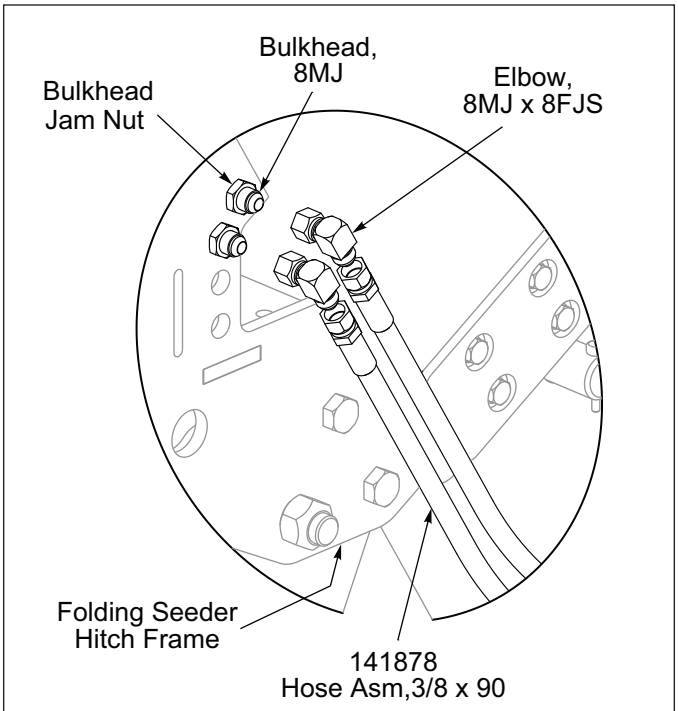


Figure 2-34: Marker Bulkhead

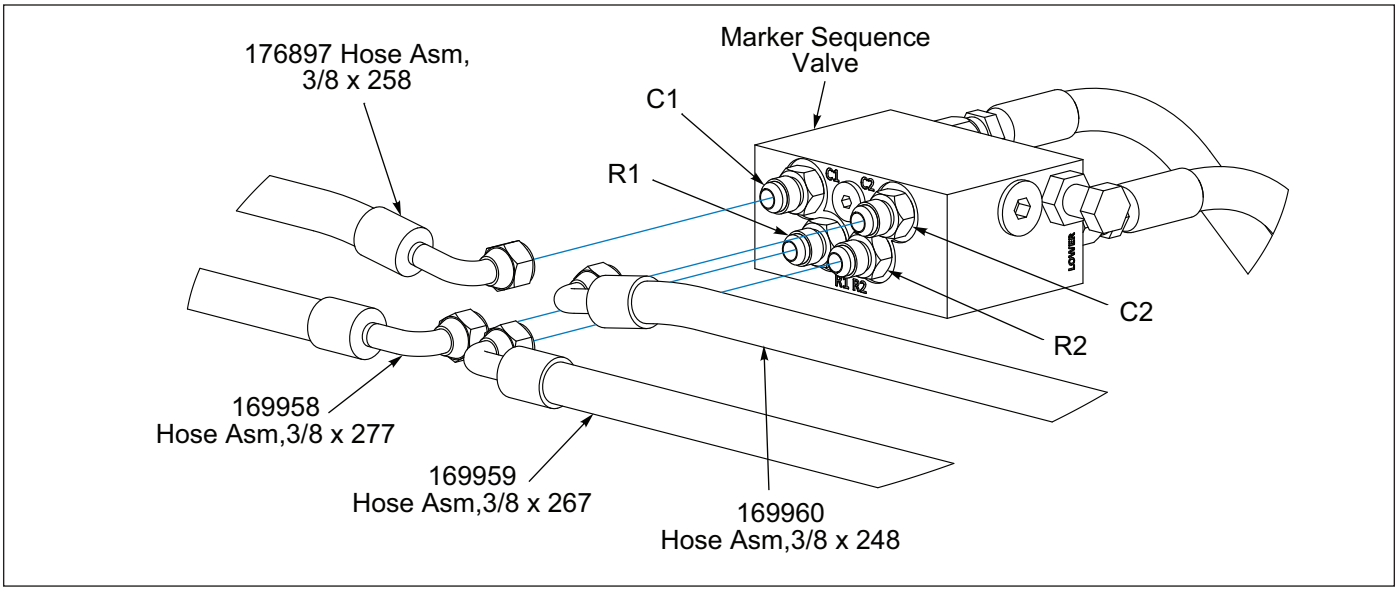


Figure 2-35: Marker Sequence Valve

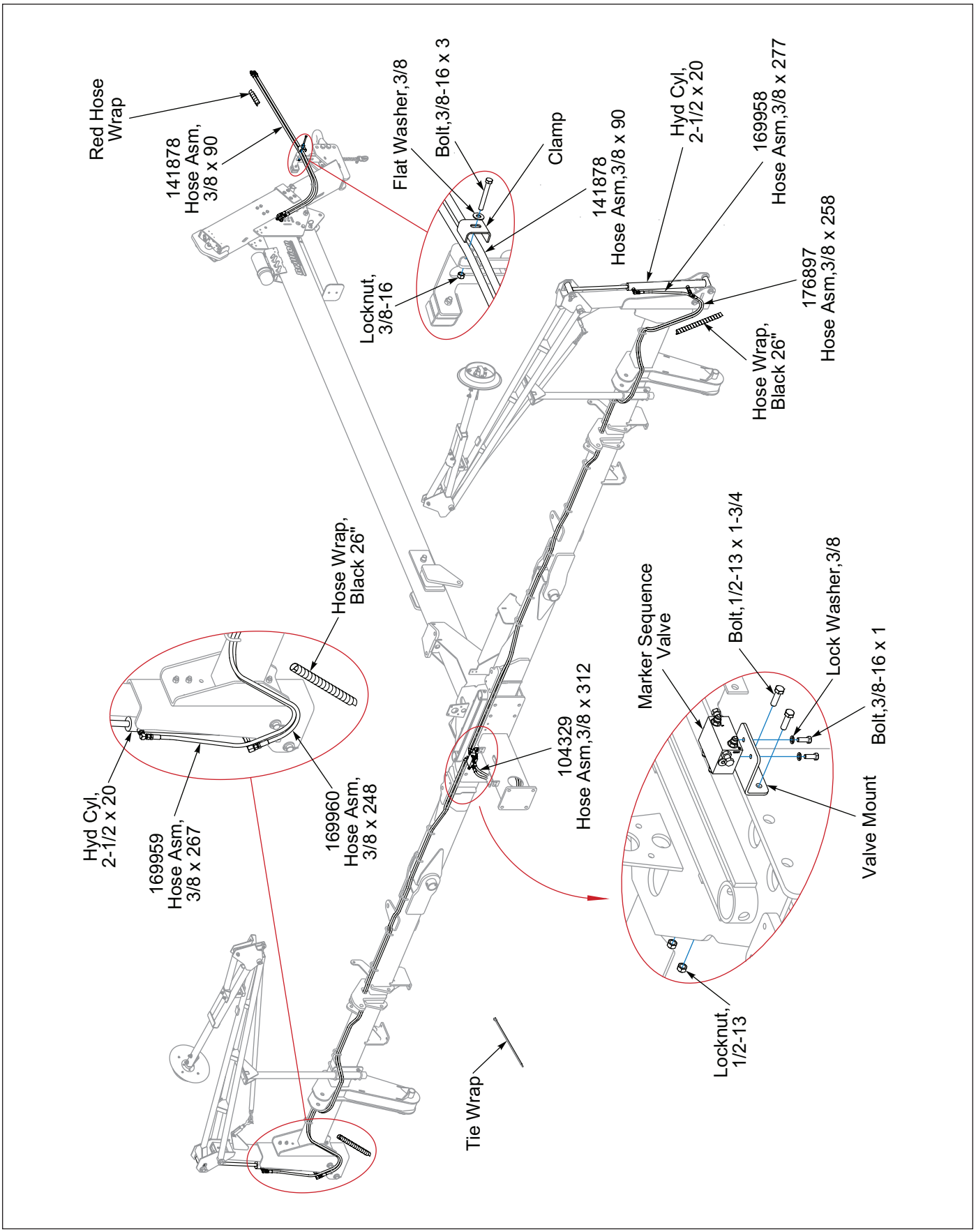


Figure 2-36: Row Marker Hydraulic Layout

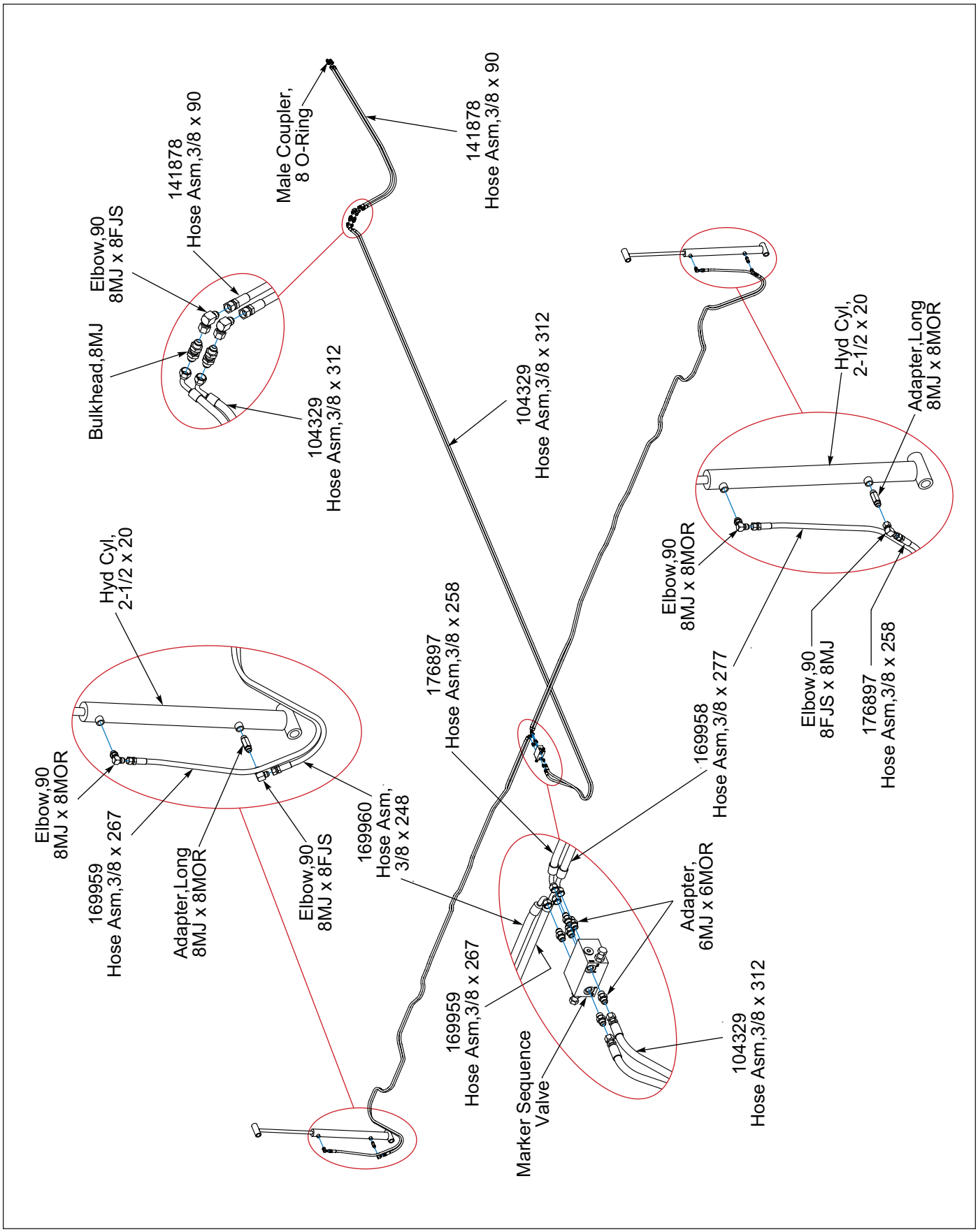


Figure 2-37: Row Marker Hydraulic Schematic

Purge the Row Marker System

The Row Marker System should be purged of air before field operation.

IMPORTANT

The Row Markers should never be folded/unfolded with the Folding Seeder in folded or in transport position.

Only one Row Marker will be activated at a time. Reverse the tractor hydraulic lever to raise the active Row Marker. Slowly engage the Row Marker Circuit again and the opposite Row Marker will be activated. Reverse the tractor hydraulic lever again to raise the active Row Marker. The Row Marker fold/unfold process will repeat itself in that manner.

1. Check to make sure that the tractor hydraulic reservoir is full of the manufacturer's recommended hydraulic oil before attempting to unfold/fold the Row Markers.
2. Purge the Row Markers Circuit by unpinning both Cylinder Rod Ends from each Row Marker Middle Arm. If marker is **folded**, be sure to secure Marker Arm before unpinning Cylinder. Position the Cylinder Rod Ends so the rods can extend and retract without interfering with anything during its travel. Slowly, engage the tractor hydraulics fully extending and retracting each Row Marker Cylinder several times until both Row Marker Cylinders have a smooth, positive and immediate response, all the air is purged from the system.
3. Re-connect the Row Marker Cylinder Rod Ends to the Row Marker Middle Arm.
4. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

Optional Row Marker Circuit hydraulic oil approximate requirement:

Row Marker raised = **1.7 gallons**

Row Marker lowered = **1.6 gallons**

Scraper Kit Installation – Optional

Install Scraper Kits to Seeder Unit, per Seeder Model Operators Manual.

Chapter 3

Operation

DANGER

Never allow anyone to ride on the 4630-36 Folding Seeder at any time. Allowing a person to ride on the machine can inflict serious personal injury or death to that person.

WARNING

All hydraulically adjusted 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

Keep all bystanders away from the machine when folding/unfolding or transporting.

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 machine.

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 4630-36 Folding Seeder is designed to be pulled by tractor equipped with a Double Lip or Clevis Type Hitch. If your tractor is not equipped as such, you need to purchase the Hitch from your local tractor dealer.

Before attaching the Folding Seeder, prepare the tractor as follows:

1. Inflate the tractor tires and add ballast according to the tractors operator's manual.
2. Lock the tractor drawbar in the center position.
3. Folding Seeder Ring Hitch is a CAT 4. It is important to use the proper hitch pin size. **See Table 3-1.**

DRAWBAR CAT	Min Pin Size	Max PTO HP
4	2" (50mm)	402 (300 Kw)

Table 3-1: Hitch Pin Size

Folding Seeder Preparation

1. Prior to operating the 4630-36 Folding Seeder, inspect the machine thoroughly for good operating condition.
2. Replace worn or missing parts.
3. When the machine is new, check the bolt tightness after a few hours of operation. Tighten any loose nuts or bolts. Check the lift and wheel lug bolts daily.
4. Check the Lift and Wing Wheel Tire Inflation. Inflate Lift Tires equally to avoid side draft. Follow the tire manufacturer's recommended pressures listed on the sidewall of the tire.
5. Lubricate the machine. **See "Individual Seeder Maintenance" on Page 5-6.**
6. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged.

Attaching Folding Seeder To Tractor

1. Make sure the tractor drawbar is rated and adjusted properly for the weight of the Folding Seeder**. Refer to Tractor Operator's Manual.**
2. On a level surface, measure from the ground to the top side of the tractor drawbar. Adjust the Folding Seeder Ring Hitch to match the drawbar height of the tractor. **See Figure 3-1.** This will allow the Folding Seeder Telescoping Hitch to operate through its most efficient range and level throughout the field during operation.
   - Drawbar height 18" or lower, use lower 2 holes
   - Drawbar height 20" use middle 2 holes
   - Drawbar height 22" or greater, use top 2 holes

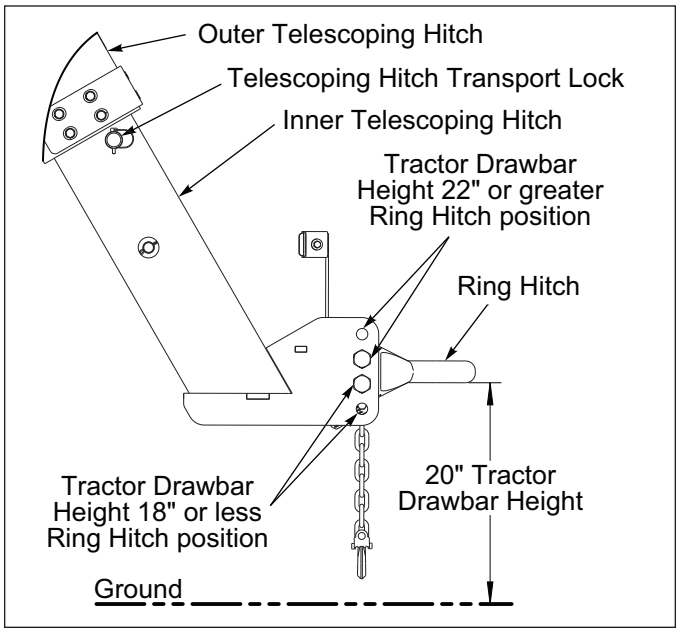


Figure 3-1: Hitch Position

3. Carefully back the tractor into position. Attach the hydraulic hoses to the tractor, raise the machine completely and remove Folding Seeder Telescoping Hitch Transport Lock Pin and place it in its storage position. **See Figure 3-2.** Slowly extend or retract the Telescoping Hitch until the Ring Hitch is in line with the tractor Clevis Hitch.

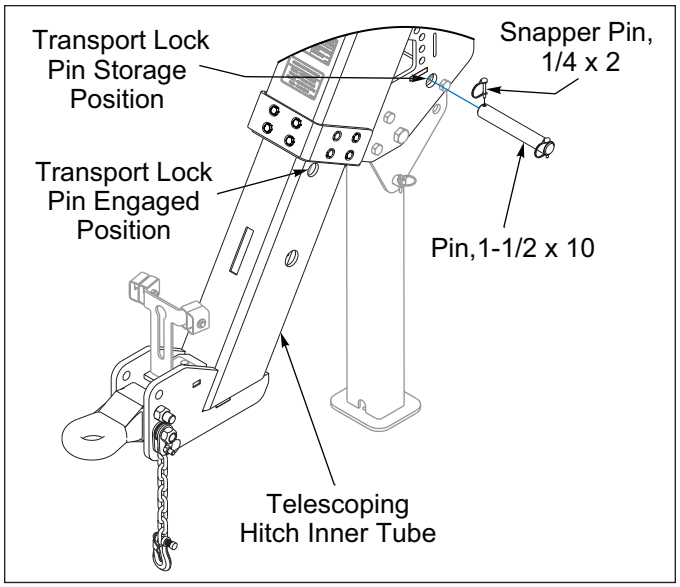


Figure 3-2: Telescoping Hitch Transport Lock Stored

4. Back the tractor into final position, and install CAT 4 Hitch Pin.
5. Connect Brillion Elite Mini Monitor System to tractor.
6. Connect 7-Pin Light Plug to tractor 7-Pin 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. Attach the Safety Chain to an anchor on the tractor drawbar sufficient enough to pull the Folding Seeder. **See Figure 1-2.**
8. Fully extend the Telescoping Hitch and install the Transport Lock Pin in the Telescoping Hitch Inner Tube. **See Figure 3-3.**
9. Rotate the Parking Jack Stand into storage position and pin in place. **See Figure 3-4.**

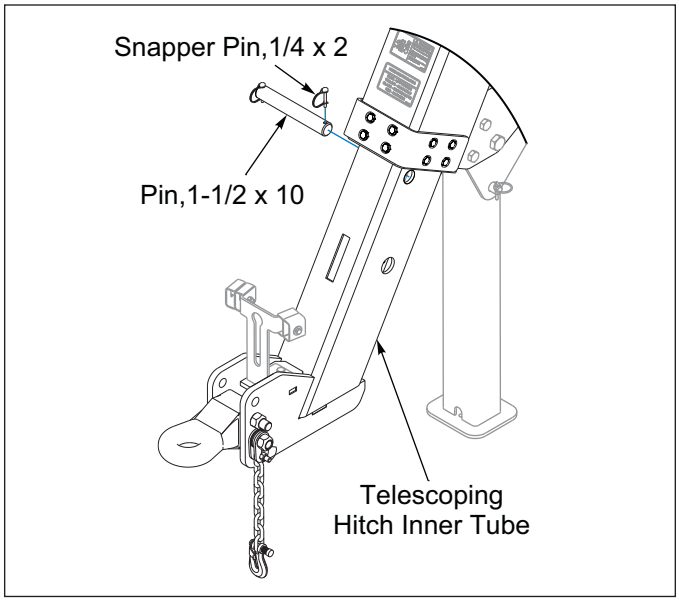


Figure 3-3: Telescoping Hitch Transport Lock Engaged

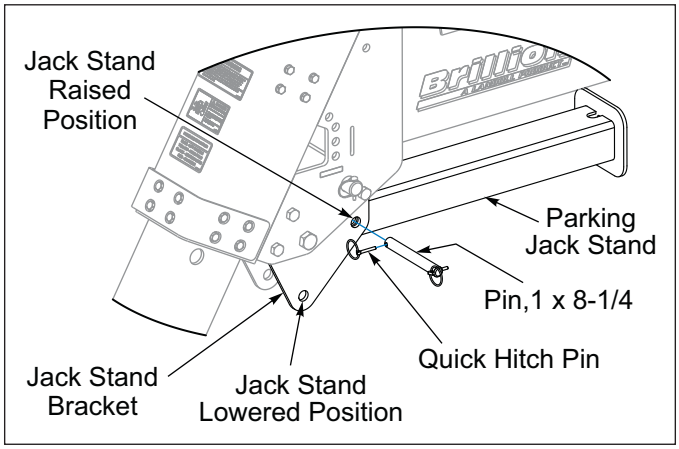


Figure 3-4: Parking Jack Stand Storage

Hydraulic System

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 3-5.) Keep all components (cylinders, hoses, fittings, etc.) in good repair.

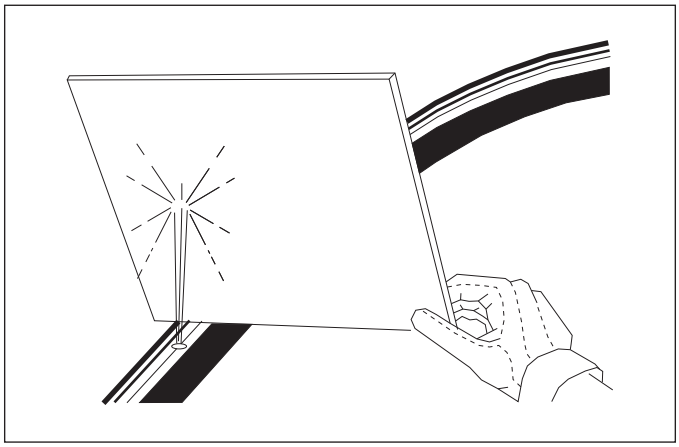


Figure 3-5: Hydraulic Leak Detection

The Folding Seeder Hydraulic System Hoses are color coded to aid in identifying the Hydraulic Circuits. An Identification Decal can be found on the Telescoping Drawbar Outer Tube. **See Figure 3-6.**

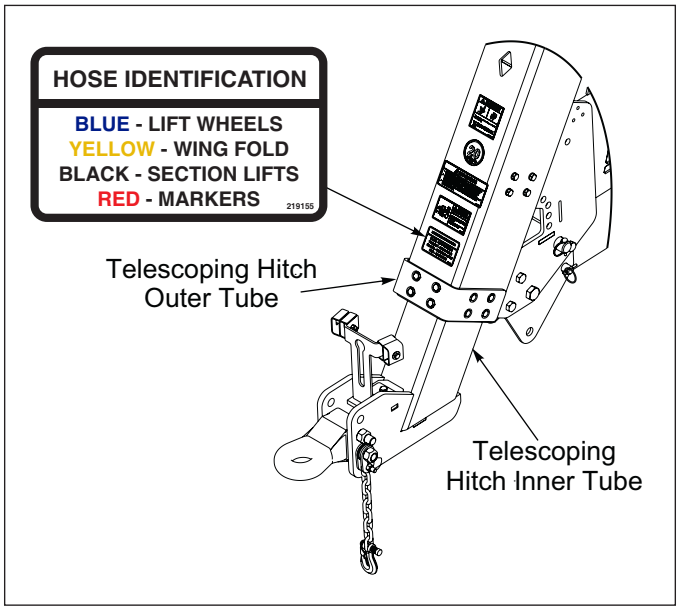


Figure 3-6: Hose Identification Decal

Hydraulic Lift System

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

- The Folding Seeder Rockshaft Lift Cylinders, Telescoping Hitch Cylinder and Rockshaft Lift Transport Lock Cylinder are on the same circuit.
- Before transporting the Folding Seeder make sure that the Rockshaft Lift Cylinders are fully extended and Telescoping Hitch Cylinder is fully extended for maximum transport height.
- Completely retract (lower) the Telescoping Hitch Cylinder when Folding/Unfolding for clearance of the Wing Fold Lock. This only lowers the front of the Folding Seeder.
- Folding Seeder must be leveled to the ground from front-to-rear before seeding. Extend (raise) the Telescoping Hitch Cylinder until reference slot in the wear pad is centered in the diamond shaped hole, the Folding Seeder should be parallel to the ground. **See "Leveling the Folding Seeder and Seeder Units" on Page 3-10.**

NOTE

If the Telescoping Hitch is raised past the centered position in the diamond shaped hole, fully lower (retract) the Telescoping Hitch again and re-raise the Telescoping Hitch. This will ensure that the Wing Brace Locks are fully engaged before seeding.

IMPORTANT

The Folding Seeder Rockshaft Lift Hydraulic Transport Lock engages when the Folding Seeder is folded and fully raised. Before attempting to adjust, service, or work beneath the raised Folding Seeder, verify that all the Transport Locks are engaged. See "Operation of Transport Locks" on Page 3-6.

1. The hydraulic system is factory filled with hydraulic oil. It is good practice to purge the Hydraulic System of air before transporting and field operation to ensure that the circuits are functioning properly. Carefully hitch the Folding Seeder to the tractor and connect the hydraulic lift hoses.
2. Check to make sure that the tractor hydraulic reservoir is full of the manufacturer's recommended hydraulic oil.
3. Remove the Telescoping Hitch Transport Lock Pin and locate to Storage Position. **See Figures 3-7 and 3-8.**
4. Slowly raise the machine until all lift cylinders are fully extended. Lower and raise the unit to verify that all cylinders are working throughout the stroke. Fully extend the lift cylinders and continue to hold the lever until all cylinder rod movement stops. Raise/Lower machine 5 times to purge air from the system.
5. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.
6. Re-install Telescoping Hitch Transport Lock Pin. **See Figures 3-9 and 3-10.**

Lift Circuit hydraulic oil approximate requirement:

Machine raised = **3.2 gallons**

Machine lowered = **2.7 gallons**

Hydraulic Fold System

The Folding Seeder is equipped with Hydraulic Cylinders to Fold and Unfold the Seeder from transport to seeding position for a narrow transport. A combination of both the Lift and Fold Hydraulic Systems will be used to Fold/Unfold the Folding Seeder.

- The Folding Seeder Fold Cylinders and Seeder Units Lift Transport Lock Cylinders are on the same circuit.
- Carefully attach the Folding Seeder to a tractor drawbar. **See "Attaching Folding Seeder To Tractor" on Page 3-2.**
- Clean all Hydraulic Couplings and attach to tractor remotes.
- Be sure the Fold System is fully charged with Hydraulic oil before attempting to fold/unfold the Folding Seeder.
- Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

Unfolding:

1. Remove Telescoping Hitch Transport Lock Pin and place in storage location. **See Figure 3-7.**
2. Remove Wing Fold Lock Transport Lock Pin and place in storage location. **See Figure 3-8.**
3. Fully raise the Seeder Units so that the Hydraulic Transport Locks are free. **See Figure 3-11.**
4. Fully raise the Folding Seeder to relieve pressure on the Folding Seeder Rockshaft Hydraulic Transport Lock. **See Figure 3-12.**
5. Rotate the Parking Jack Stand into storage position and pin in place. **See Figure 3-4.**
6. Completely lower the Folding Seeder Rockshaft to the ground and completely lower (retract) the Telescoping Hitch.
7. Slowly unfold the Folding Seeder until the Wing Cylinders are fully extended and the Seeder Units Lift Hydraulic Transport Locks are fully unlocked.
8. Slowly raise the Telescoping Hitch until the visual reference slot in the Wear Pad is centered in the diamond shaped hole at the front of the Telescoping Hitch Tube. The Folding Seeder should be parallel to

the ground. **See "Leveling the Folding Seeder and Seeder Units" on Page 3-10.** The Transport Lock Cylinder will extend and the Wing Brace Lock will have engaged.

9. Completely lower the Seeder Units to the ground.

NOTE

If the Telescoping Hitch is raised past the centered position in the diamond shaped hole, fully lower (retract) the Telescoping Hitch again and re-raise the Telescoping Hitch. This will ensure that the Wing Brace Locks are fully engaged before seeding.

Folding:

1. Completely raise the Seeder Units.
2. Fully lower the Folding Seeder and then fully lower (retract) the Telescoping Hitch. The Wing Brace Locks will move to release the Tongue Braces.
3. Slowly begin folding the Seeder Wings inward. The Seeder Units Lift Hydraulic Transport Locks will engage first. Continue folding the Wings until the Wing Fold Lock is engaged over the top of the Folding Seeder Main Tube. **See Figure 3-11.**
4. Fully raise the Folding Seeder.
5. Fully raise (extend) the Telescoping Hitch. Watch to ensure the Wing Fold Lock has been fully engaged as the Telescoping Hitch begins to raise. The Folding Seeder Rockshaft Hydraulic Transport Lock should be engaged. **See Figure 3-12.**
6. Install Telescoping Hitch Transport Lock Pin. **See Figure 3-9.**
7. Install Wing Fold Lock Transport Lock Pin. This Transport Lock Pin ensures that the Wing Fold Lock does not come apart while transporting. **See Figure 3-10.**

Fold Circuit hydraulic oil approximate requirement:

Machine Folded = **2.8 gallons**

Machine Unfolded = **3.2 gallons**

Hydraulic Seeder Unit Lift System

The Folding Seeder is equipped with a Seeder Unit Hydraulic Lift System to raise and lower the Seeder Units from transport to seeding. Seeder Unit Hydraulic Transport Locks are part of the Fold System.

- The Folding Seeder three Seeder Units Lift Cylinders are on the same circuit. Seeder Unit Hydraulic Transport Locks are on the Fold Circuit.
- Before transporting the Folding Seeder make sure that all three Seeder Units Lift Cylinders are completely retracted, Seeder units are fully raised, and Hydraulic Transport Locks on the Fold System are engaged.
- Before seeding make sure the Seeder Unit Hydraulic Transport Locks on the Fold Circuit are disengaged. Ensure that all three Seeder Units Lift Cylinders are fully extended, and Seeder Units are completely lowered and parallel to the ground. **See "Leveling the Folding Seeder and Seeder Units" on Page 3-10.**

1. Check to make sure that the tractor hydraulic reservoir is full of the manufacturer's recommended hydraulic oil.
2. Folding Seeder must be unfolded and Seeder Units Hydraulic Transport Locks disengaged.
3. Slowly lower the Seeder Units until all Seeder Unit Lift Cylinders are fully extended. Lower and raise the Seeder Units to verify that all cylinders are working throughout the stroke. Fully extend the cylinders and continue to hold the lever until all cylinder rod movement stops. Raise/Lower machine 5 times to purge air from the system.
4. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

Seeder Units Lift Circuit hydraulic oil approximate requirement:

Seeder Units raised = **1.9 gallons**

Seeder Units lowered = **2.1 gallons**

General Operation

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

Operation of Transport Locks

Transport Lock Pins and Hydraulic Transport Locks are provided to secure the Folding Seeder in a raised and folded position. Do not rely totally on hydraulics when working beneath raised equipment, always make sure that Transport Locks are engaged.

Road to Field:

1. Remove Telescoping Hitch Transport Lock Pin and place in storage location. **See Figure 3-7.**

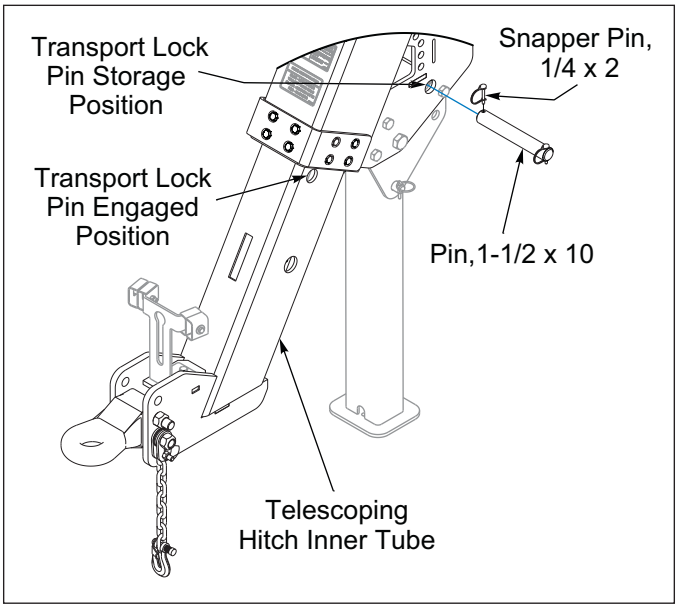


Figure 3-7: Telescoping Hitch Transport Lock Stored

2. Remove Wing Fold Lock Transport Lock Pin and place in storage location. **See Figure 3-8.**

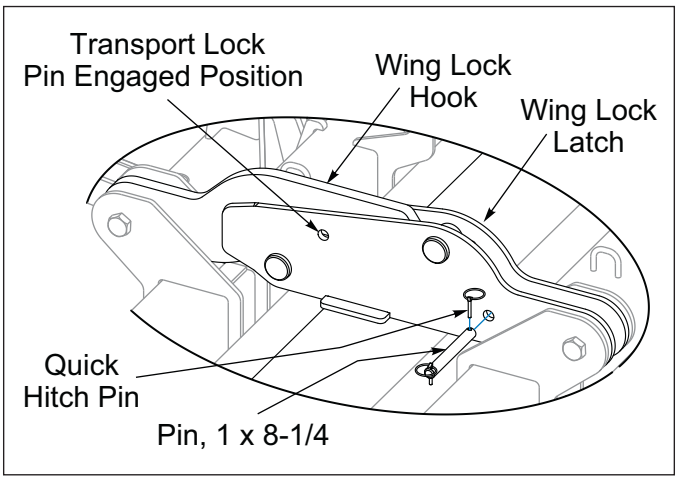


Figure 3-8: Wing Fold Lock Transport Lock Stored

3. Fully raise the Seeder Units so that the Hydraulic Transport Locks are free. **See Figure 3-11.**
4. Fully raise the Folding Seeder to relieve pressure on the Folding Seeder Rockshaft Hydraulic Transport Lock. **See Figure 3-12.**
5. Completely lower the Folding Seeder Rockshaft to the ground and completely lower (retract) the Telescoping Hitch.
6. Slowly unfold the Folding Seeder until the Wing Cylinders are fully extended and the Seeder Units Lift Hydraulic Transport Locks are fully unlocked.
7. Slowly raise the Telescoping Hitch until the visual reference slot in the Wear Pad is centered in the diamond shaped hole at the front of the Telescoping Hitch Tube, the Folding Seeder should be parallel to the ground. **See "Leveling the Folding Seeder and Seeder Units" on Page 3-10.** The Transport Lock Cylinder will extend and the Wing Brace Lock will have engaged.
8. Completely lower Seeder Units to the ground.

NOTE

If the Telescoping Hitch is raised past the centered position in the diamond shaped hole, fully lower the Telescoping Hitch again and re-raise the Telescoping Hitch. This will ensure that the Wing Brace Locks are fully engaged before seeding.

Field to Road:

1. Completely raise the Seeder Units.
2. Fully lower the Folding Seeder and then fully lower (retract) the Telescoping Hitch. The Wing Brace Locks will move to release the Tongue Braces.
3. Slowly begin folding the Seeder Wings inward. The Seeder Units Lift Hydraulic Transport Locks will engage first. Continue folding the Wings until the Wing Fold Lock is engaged over the top of the Folding Seeder Main Tube. **See Figure 3-11.**
4. Fully raise the Folding Seeder.
5. Fully raise (extend) the Telescoping Hitch. Watch to ensure the Wing Fold Lock has been fully engaged as the Telescoping Hitch begins to raise. The Folding Seeder Rockshaft Hydraulic Transport Lock should be engaged. **See Figure 3-12.**
6. Install Telescoping Hitch Transport Lock Pin. **See Figure 3-9.**
7. Install Wing Fold Lock Transport Lock Pin. This Transport Lock Pin ensures that the Wing Fold Lock does not come apart while transporting. **See Figure 3-10.**

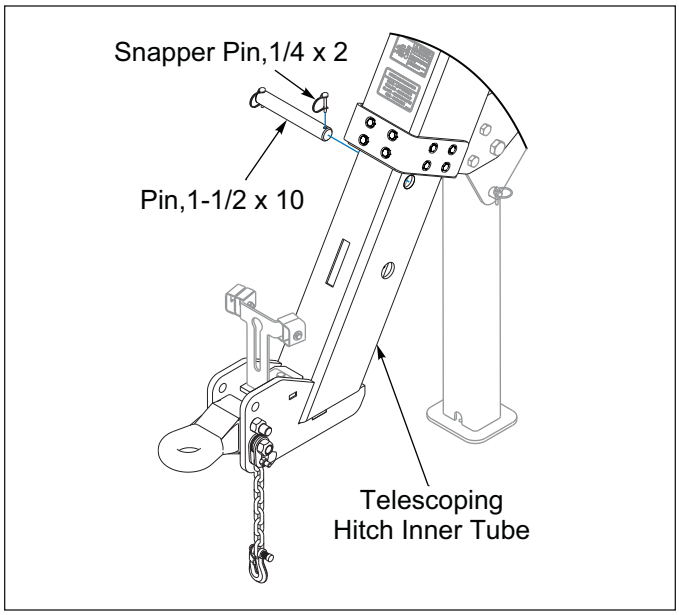


Figure 3-9: Telescoping Hitch Transport Lock Engaged

8. Install Wing Fold Lock Transport Lock Pin. This Transport Lock Pin ensures that the Wing Fold Lock does not come apart while transporting. **See Figure 3-10.**

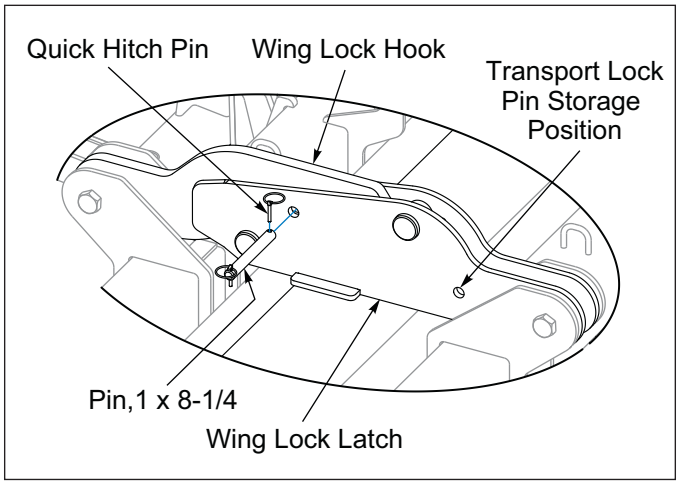


Figure 3-10: Wing Fold Lock Transport Lock Engaged

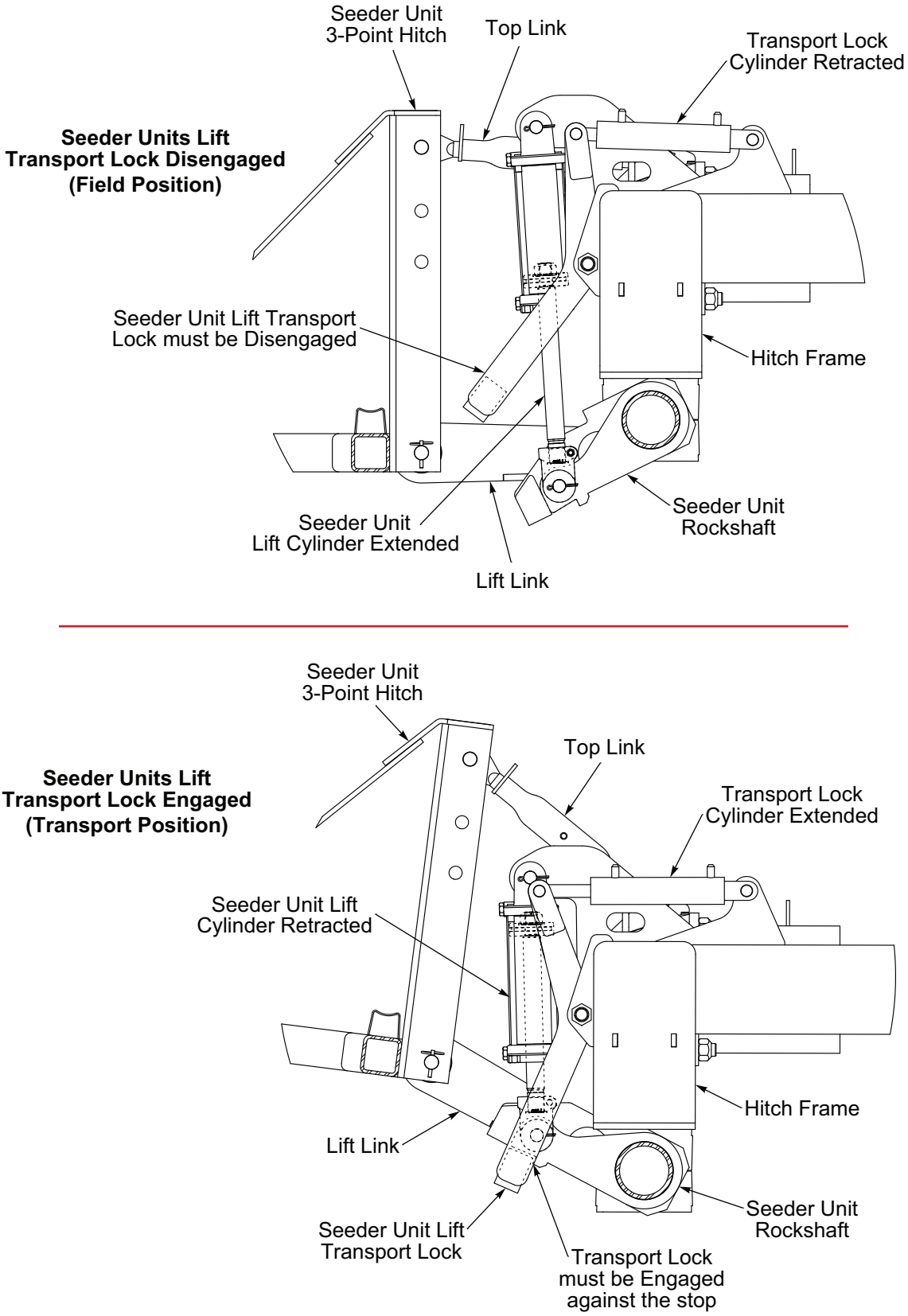


Figure 3-11: Seeder Units Lift Hydraulic Transport Lock

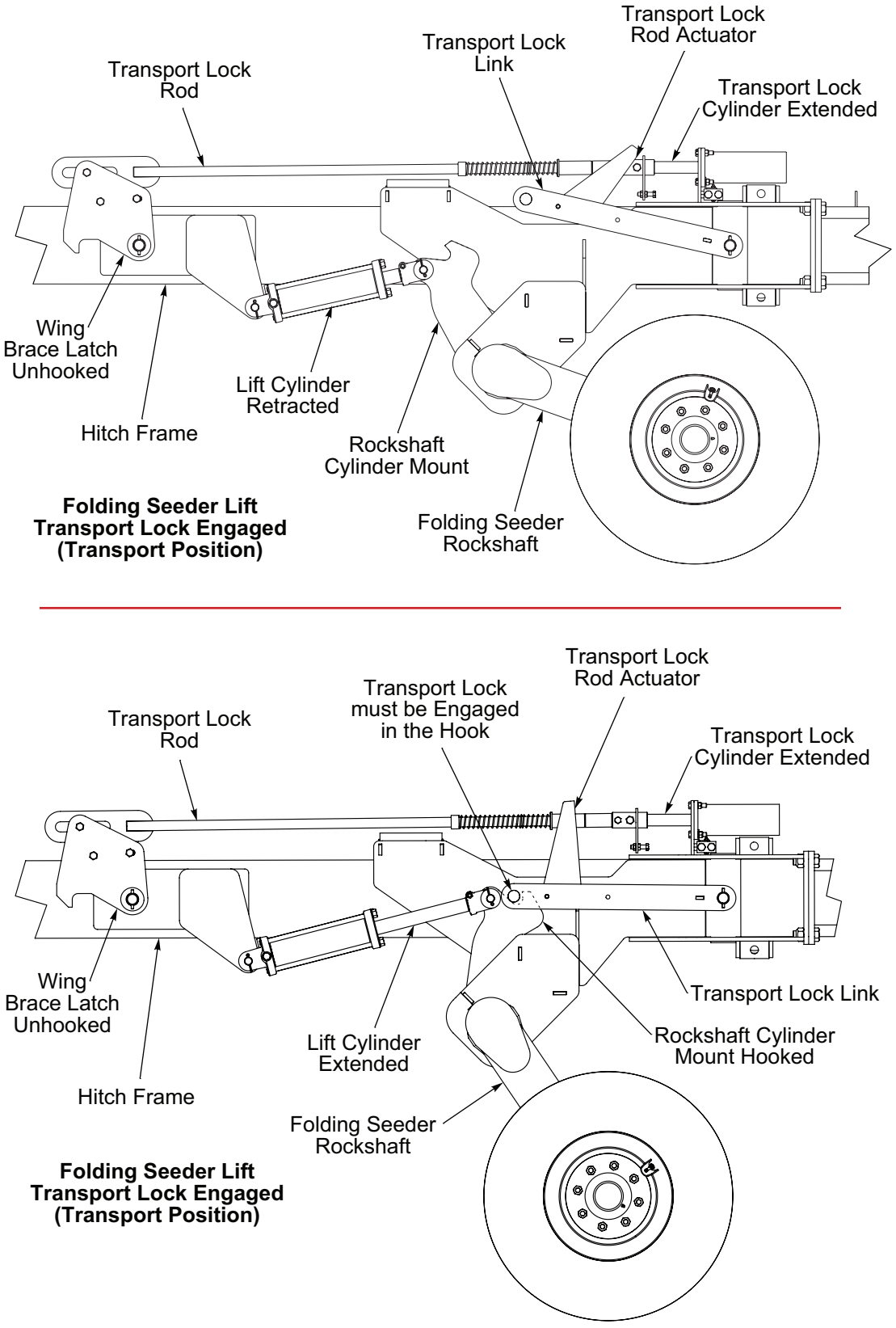


Figure 3-12: Folding Seeder Rockshaft Hydraulic Transport Lock

Leveling the Folding Seeder and Seeder Units

1. Make sure the Ring Hitch is adjusted for the proper tractor drawbar height. **See Figure 3-1.**
2. Lower and unfold the Folding Seeder. When unfolding the Folding Seeder, the Telescoping Hitch is lowered (retracted) to its lowest point to allow the Wing Fold Transport Locks to unhook and clear. All Transport Locks should be disengaged.
3. The Folding Seeder must be leveled parallel to the ground before seeding. Use the Diamond Shaped Hole at the front of the Telescoping Hitch Tube as a guide to level the Folding Seeder for seeding. **See Figure 3-14.** The Wear Pad Slot (inside the hitch tube) will be visible from the tractor seat as it slides by the diamond shaped hole. When the reference slot in the Wear Pad is centered in the diamond shaped hole, the Folding Seeder should be parallel to the ground. Do not insert any objects in the diamond shaped hole as the Wear Pad slides over this hole and could damage the Telescoping Hitch.
4. Visually check that the Folding Seeder is level. If not adjust accordingly.
5. Lower the Seeder Unit's 3-PT Lift. Adjust each Seeder Unit's 3-PT Top Link until the Seeder Unit is parallel to the ground. **See Figure 3-13.**

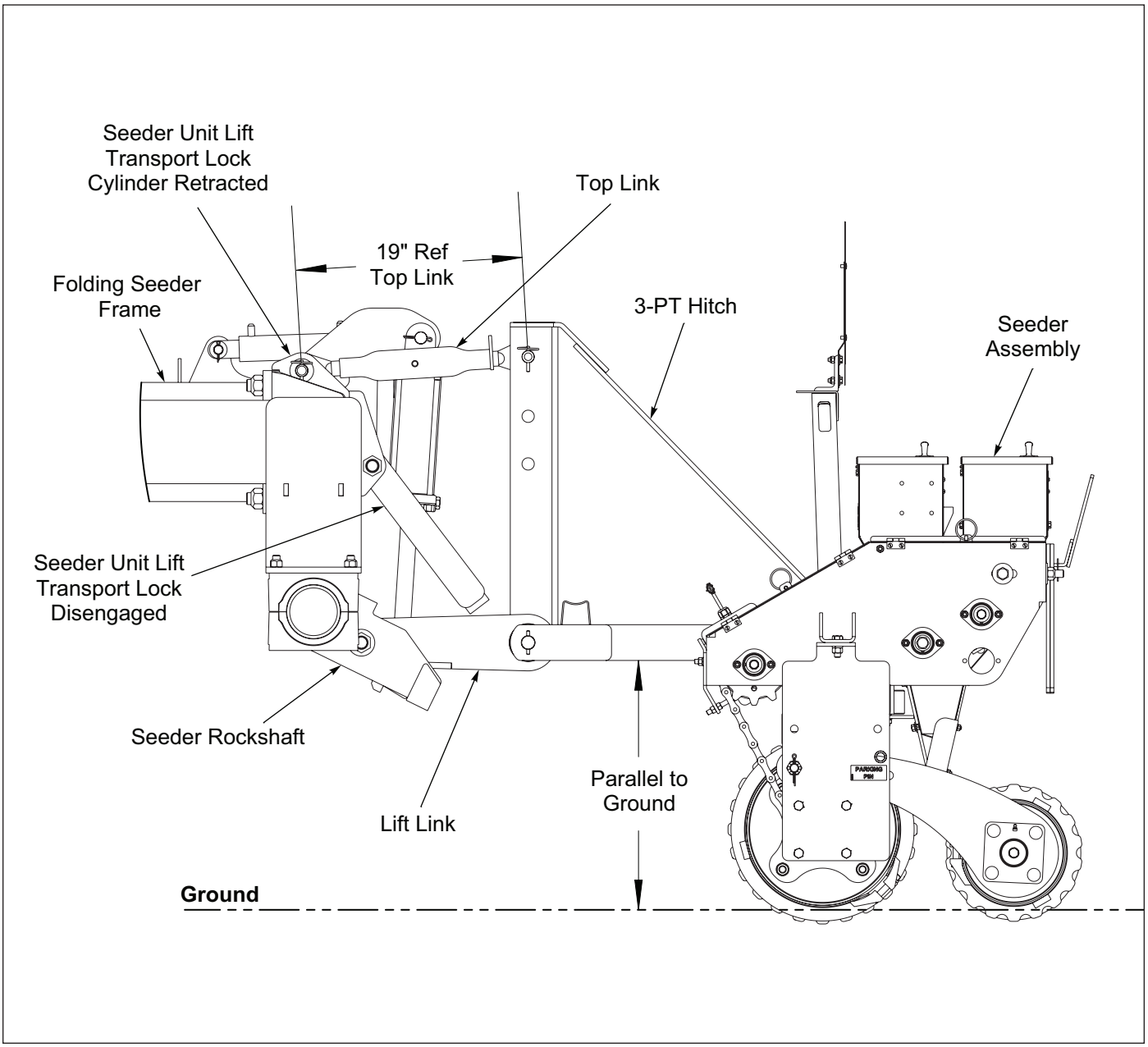


Figure 3-13: Leveling the Seeder Unit

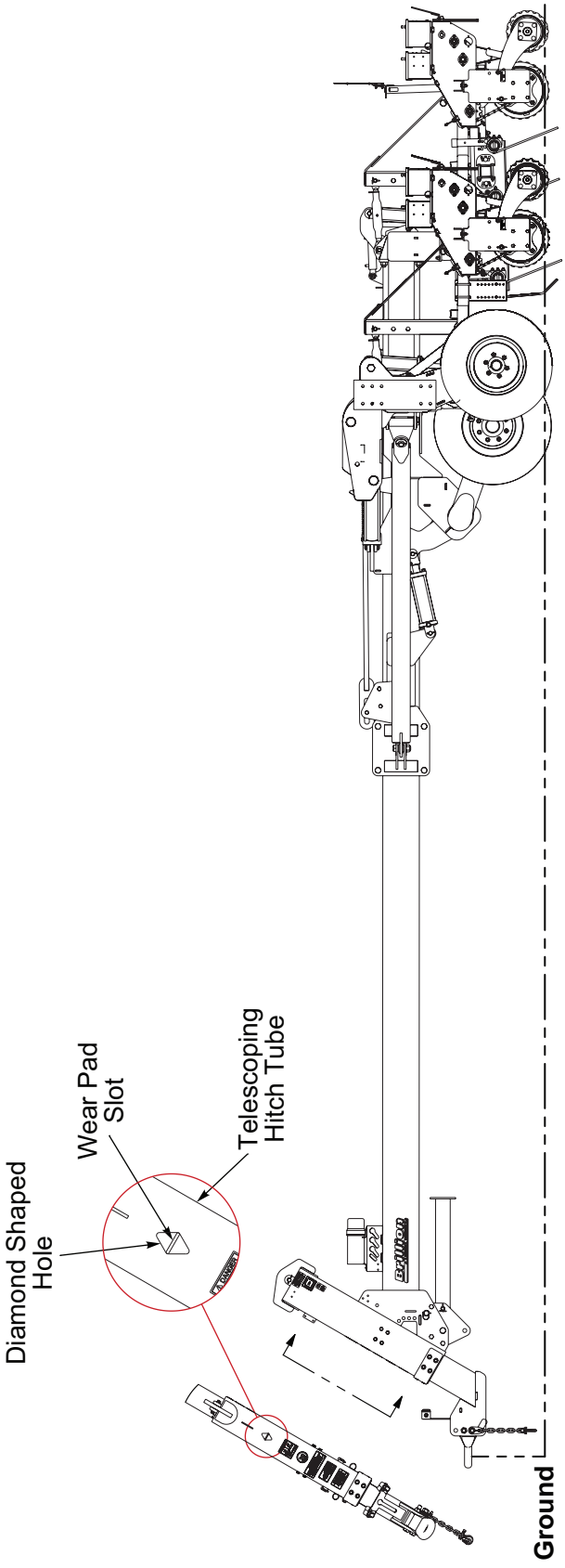


Figure 3-14: Leveling the Folding Seeder

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 all or individual clutches.

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

IMPORTANT

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 Harnesses do not require a specific Sensor 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 end of each 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 RH side of each Seeder Unit is a Smart Shaft Sensor that is installed on a Sensor Mount that is attached to the mounting hardware of two seed cups. The Smart Shaft Sensor is activated by a High Powered Magnet that is placed on the Seed Shaft and is kept in place with a Collar. As the seed shaft rotates the Smart Shaft Sensor detects the magnet. When no signal is detected for pre-defined seconds, an alarm will be indicated on the Brillion Elite Mini Monitor. **Note: If shaft sensor stall alarm occurs, be aware that the affected seeder has not been planting for pre-defined seconds.**
- Brillion Elite Mini Monitor provides users the ability to toggle the seeder clutches on or off.
- Brillion Elite Mini Monitor will also 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 the Seeder Main Harness. **See Figures 2-3 and 2-4.** The 6-Pin Connection may be plugged/unplugged at the front of the Folding Seeder Hitch when hooking/unhooking the Folding 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 4-8.**

Seed Shaft Monitor with Clutch Control

(Used on models before the Brillion Elite Mini Monitor)

Basic Operation:

During normal operation the monitor LED for each shaft will not be illuminated. The shaft sensor will be activated by a magnet attached to the shaft being monitored. The shaft sensors are standard Loup shaft sensors, 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 all shafts return to a fully functional condition. The LED for other shafts will indicate a second fault but the alarm will not sound unless all shafts are functional after the INITIAL alarm.

NOTE

If shaft sensor stall alarm occurs, be aware that the affected seed box has not been planting for 20 seconds.

(See "Troubleshooting" on Page 5-8.)

The Clutch Master toggle switch allows you to go from SEED to No SEED operations or you can control individual clutches by toggling the appropriate switch. **See Figure 3-15.**

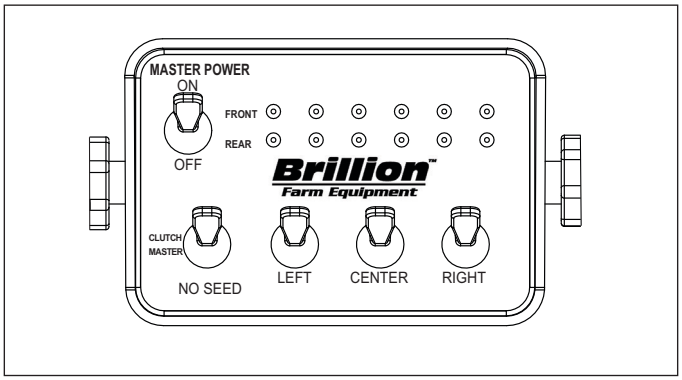


Figure 3-15: Seed Shaft Monitor with Clutch Control

Coil Tine Harrows

The Folding Seeder is equipped with Coil Tine Harrows to remove the ridges caused by the tire tracks before the Seeder Units. In general the Coil Tine Harrow mounts to the Seeder Unit's Frame Tube and 3-PT Hitch.

The Coil Tine Harrow Coil Tines angle may be adjusted for a steeper more aggressive tine angle or for a flatter less aggressive tine angle.

- Use a steeper tine angle for clean or minimal residue conditions.
- Use a flatter tine angle to allow for heavier residue to clear.

Center Seeder Unit's Coil Tine Harrow Angle Adjustment

1. Adjust the pitch of each row of Coil Tines by removing the Harrow Spring Clip Pin from all of Harrow Angle Adjustment Tubes and rotate all the tubes to the same desired angle. **See Figure 3-16.**
2. Align each Angle Adjustment Tube Hole with the appropriate Gang Bar Plate Hole and insert a Harrow Adjustment Spring Pin. All of the Harrow Adjustment Tubes should be at the same pitch.

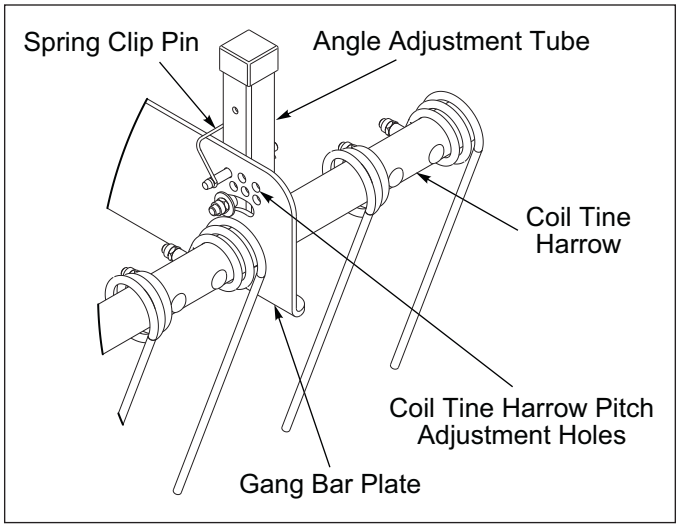


Figure 3-16: Center Harrow Pitch Adjustment

RH and LH Wing Seeder Unit's Coil Tine Harrow Adjustment

1. Adjust the Coil Tine Harrow Pitch by removing the Harrow Mount Bracket 3/8-16 x 1-1/4 Bolts, Lock Washers and Nuts and rotating the Harrow Mount Brackets to the desired angle. **See Figure 3-17.**

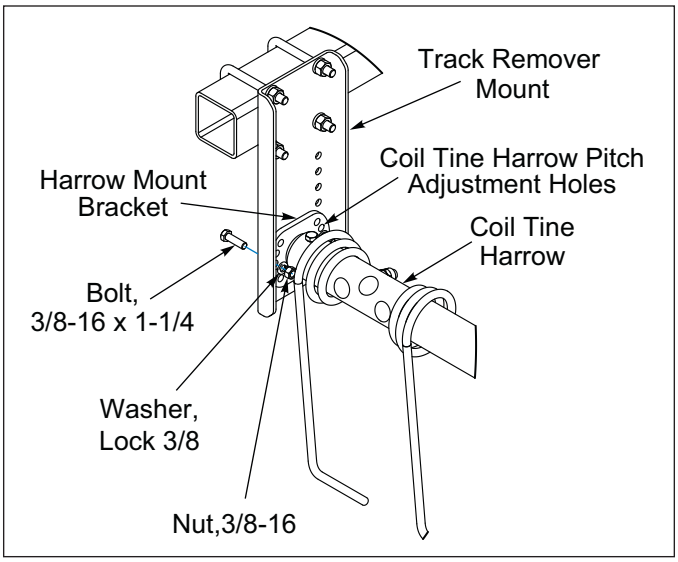


Figure 3-17: RH & LH Harrow Pitch Adjustment

2. Align the holes in the Harrow Mount Bracket with the holes in the Track Remover Mount and install hardware.
3. The height of the Wing Coil Tine Harrows can also be adjusted by raising or lowering the Harrow Mount Bracket in the Track Remover Mount. **See Figure 3-18.**

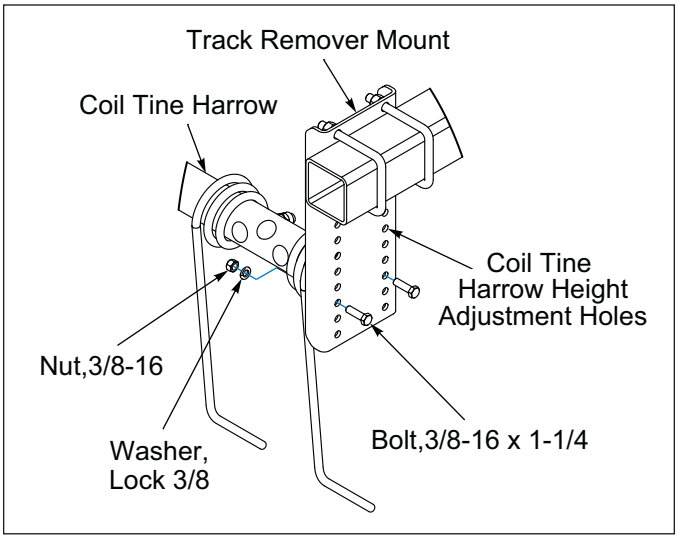


Figure 3-18: RH & LH Harrow Height Adjustment

Optional Row Markers

Folding Seeder may be equipped with Optional Row Markers which requires a fourth tractor remote.

IMPORTANT

Never attempt to Fold/Unfold the Row Markers with the Folding Seeder in folded or in transport position.

1. Unfold the Folding Seeder so that it is in seeding position. The Row Markers should never be folded/unfolded with the Folding Seeder in folded or in transport position.
2. With both Row Markers in the raised position, slowly engage the Row Marker Circuit. Only one Row Marker will be activated. Reverse the tractor hydraulic lever to raise the active Row Marker.
3. Slowly engage the Row Marker Circuit again and the opposite Row Marker will be activated.
4. Reverse the tractor hydraulic lever again to raise the active Row Marker.
5. The Row Marker fold/unfold process will repeat itself in that manner.
6. Check to make sure that the tractor hydraulic reservoir is full of the manufacturer's recommended hydraulic oil before attempting to unfold/fold the Row Markers.
7. If a hydraulic component is removed, repaired or replaced the hydraulic system must be purged of air before unfolding/folding the Row Markers.
8. Purge the Row Markers Circuit by unpinning both Cylinder Rod Ends from each Row Marker Middle Arm. Position the cylinder rod ends so the rods can extend and retract without interfering with anything during its travel. Slowly, engage the tractor hydraulics fully extending and retracting each Row Marker Cylinder several times until both Row Marker Cylinders have a smooth, positive and immediate response, all the air is purged from the system.
9. Re-connect the Row Marker Cylinder Rod Ends to the Row Marker Middle Arm.
10. Do not loosen any hoses or fittings. Recheck tractor reservoir to make sure it is within operating limits.

Optional Row Marker Circuit hydraulic oil approximate requirement:

Row Marker raised = **1.7 gallons**

Row Marker lowered = **1.6 gallons**

Optional Row Marker Disc Blade Adjustment

Row Marker Disc Blades can be adjusted to vary the mark that is left in the field. **See Figure 3-20.**

Disc Blade Angle Adjustment

The Row Marker Disc Blade angle can be adjusted to leave a wider or narrower cut. The steeper the angle the wider the cut will be.

1. Loosen the Disc Blade Hub and Spindle Weldment Hardware that attaches the Hub and Spindle Weldment to the Row Marker Extension Tube.
2. Rotate the Row Marker Disc Blade Assembly to the desired angle and retighten Disc Blade Hub and Spindle Weldment Hardware.

Disc Blade Marking Width Adjustment

The Row Marker Disc Blade marking width can be adjusted.

1. Loosen the U-bolt that secures each Row Marker Extension Tube to each Outer Row Marker Arm. Slide the Row Marker Extension Tube in or out to the desired position.
2. Re-tighten U-Bolts, Lock Washers and Nuts.
3. Pull the Folding Seeder a short distance to verify the adjustment.

Disc Blade configured to push or pull soil

The Row Marker Disc Blade can be configured to push or pull soil towards the Seeder Units.

1. To change the direction of the Row Marker Disc Blade, remove the four 1/2-20 x 1 Bolts and Lock Washers that attach the Disc Blade and Dust Cap Retainer to the Disc Blade Hub and Spindle Weldment. Set the Disc Blade with the Depth Band a side. The Depth Band does not move. **See Figure 3-19.**

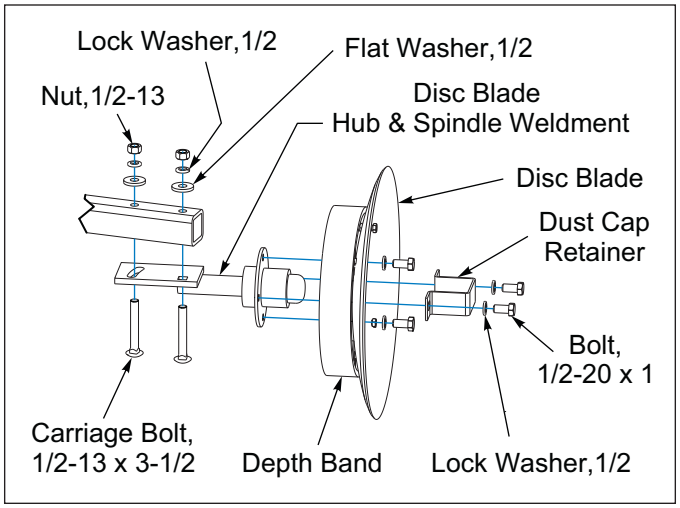


Figure 3-19: Row Marker Disc Blade Assembly

2. Remove the RH and LH Row Marker Hub and Spindle Weldments from the bottom of the RH and LH Row Marker Extension Tubes.
3. Swap the RH and LH Row Marker Hub and Spindle Weldments and attach the Row Marker Hub and Spindle Weldment onto the bottom of the RH and LH Row Marker Extension Tubes with the 1/2-13 x 3-1/2 Carriage Bolts, Flat Washers, Lock Washers and Nuts.
4. Orient the Disc Blade with the depth band in the opposite direction. Attach Disc Blade and Dust Cap Retainer with four 1/2-20 x 1 Bolts and Lock Washers.

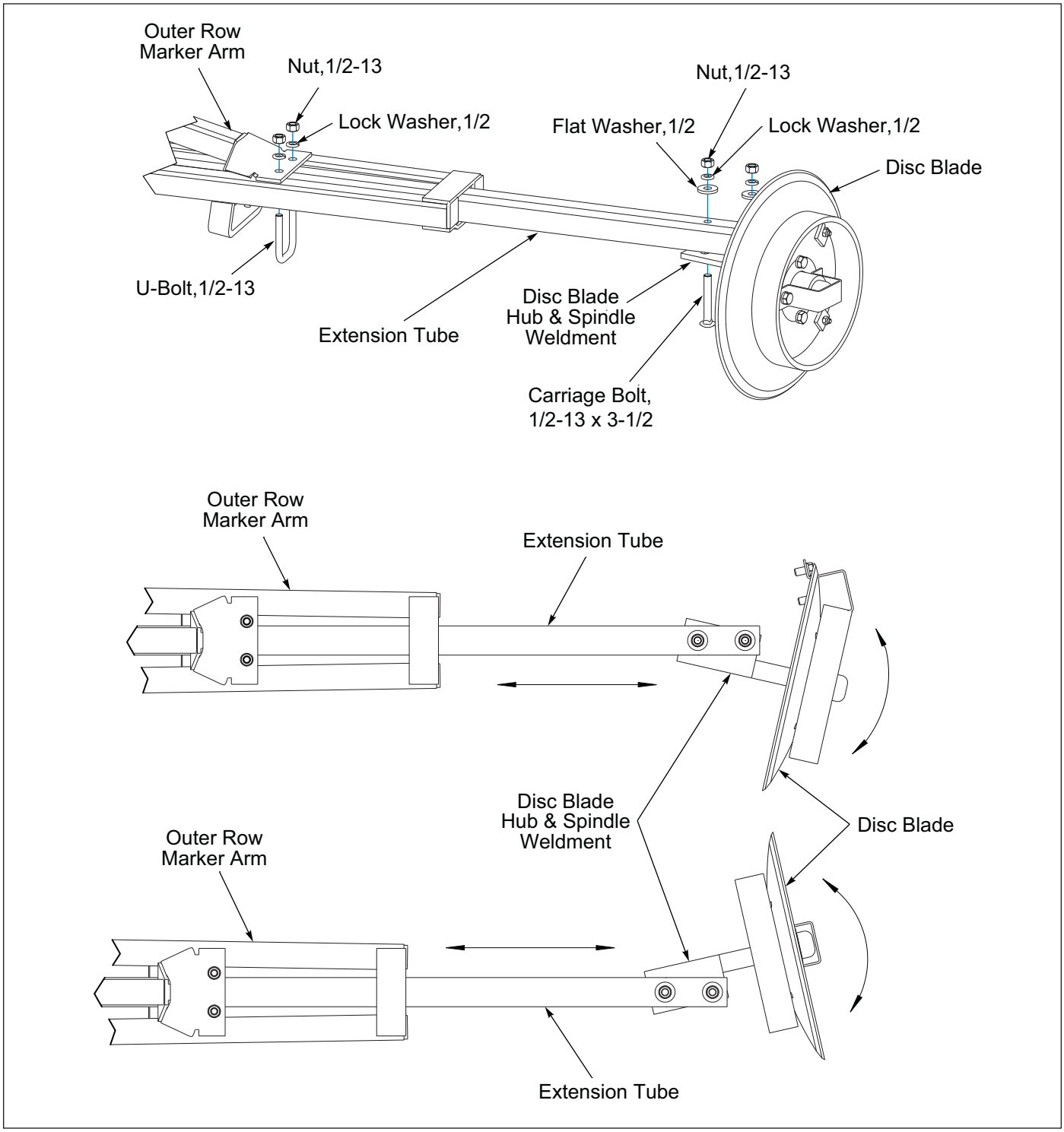


Figure 3-20: Row Marker Assembly Adjustments

Seeder Unit Removal

WARNING

Do not attempt to lift heavy parts (such as the frame, seeder units, etc.) manually. Use a hoist or a fork lift to move these parts into position.

Each Seeder Unit can be removed from the Folding Seeder to be used as a stand-alone Seeder.

1. Attach Folding Seeder to a tractor. **See "Attaching Folding Seeder To Tractor" on Page 3-2.**
2. Lower and Unfold the Folding Seeder to provide stability and ease detaching the Seeder Unit. **See "Hydraulic Fold System" on Page 3-4. (Unfolding)**
3. On the LH side of the Seeder Unit, engage the Parking Pin to lock the Rear Roller down. **See Figure 3-21.**

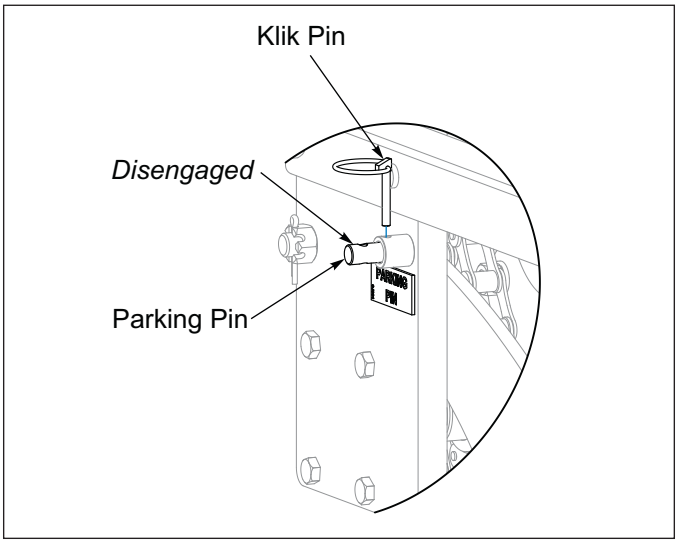


Figure 3-21: Parking Pin Engaged

4. Remove the Seeder Unit's Harrow.
5. Disconnect the individual Seeder Unit's Electrical from the Folding Seeder.
6. Remove the Top Link from the Seeder Unit's 3-PT Hitch.
7. Detach the Folding Seeder Lift Link from the Seeder Unit's 3-PT Hitch Lower Point.
8. Refer to the Seeder Unit's Operators Manual for attaching the individual seeder to the tractor.

Transporting the Folding Seeder

1. Check and follow all federal, state, and local requirements before transporting the Folding Seeder.
2. The Folding Seeder should be transported only by tractor required for field operation. The implement weight should not exceed more than 1.5 times the tractor weight. Unless noted on the implement, maximum transport speed is 20 mph for the implement and designated on the Speed Identification Symbol (SIS) located on the front of the implement.
3. Always fully fold wings prior to transport.

CAUTION

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

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, markers, harrow attachments, etc. may reduce the implements 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 Folding Seeder:
   a. 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 or folding implement. Electrocution can occur without direct contact.

   b. Check to see that the tractor drawbar is rated to carry the weight of the Folding Seeder. **Refer to Tractor Operator's Manual.**
   c. Use a locking style hitch pin that properly fits the holes in the tractor drawbar and implement hitch.
   d. Attach safety chain.
   e. Check all tires for proper inflation and that lug nuts are properly torqued.
   f. Clean all Hydraulic Couplings and attach to tractor remotes.
   g. Connect Brillion Elite Mini Monitor System to tractor.
   h. Connect the Safety Warning Lights 7-Pin Plug into tractor 7-Pin outlet, routing cord by avoiding pinch points.
   i. Fully raise the Seeder Unit's and fold Folding Seeder. Fully raise the Folding Seeder Rockshaft and Telescoping Hitch.
   j. Make sure Telescoping Hitch and Wing Fold Lock Transport Lock Pins are installed and the Rockshaft and Seeder Unit Lift Hydraulic Transport Locks are engaged. Do Not depend solely on implement hydraulics for transport. **See Figures 3-22 and 3-23.**

WARNING

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

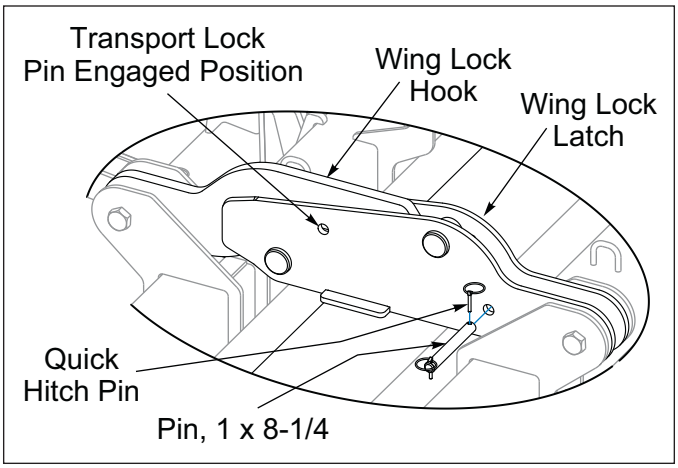


Figure 3-22: Wing Fold Lock Transport Lock Stored

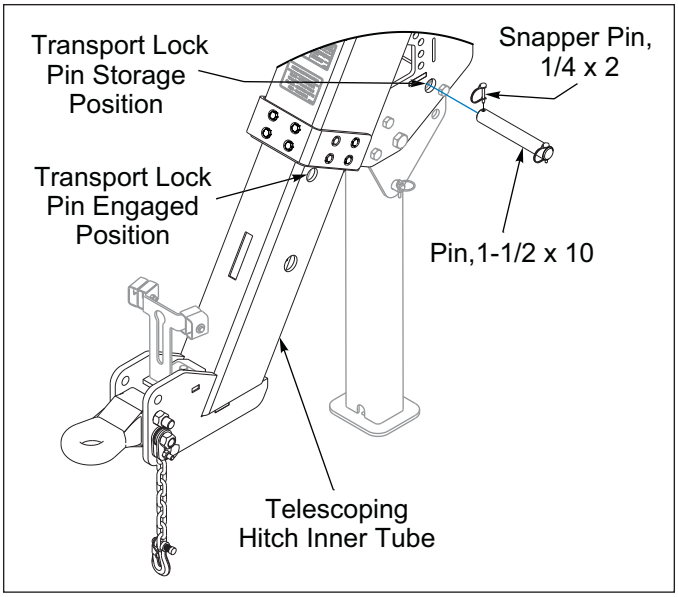


Figure 3-23: Telescoping Hitch Transport Lock Stored

   k. Raise the implement Parking Jack Stand.
   l. Transport during daylight hours whenever possible. Always use flashing warning lights, except where such use is prohibited by law. Make sure warning lights, SMV emblem, reflectors and safety decals are clearly visible and functioning properly. Remove any obstructions such as dirt, mud, stalks or residue that restricts view before transporting. **See Figure 3-24.**

Figure 3-24: SMV Sign & SIS Decal

Table provided for general use.

NOTES:

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.

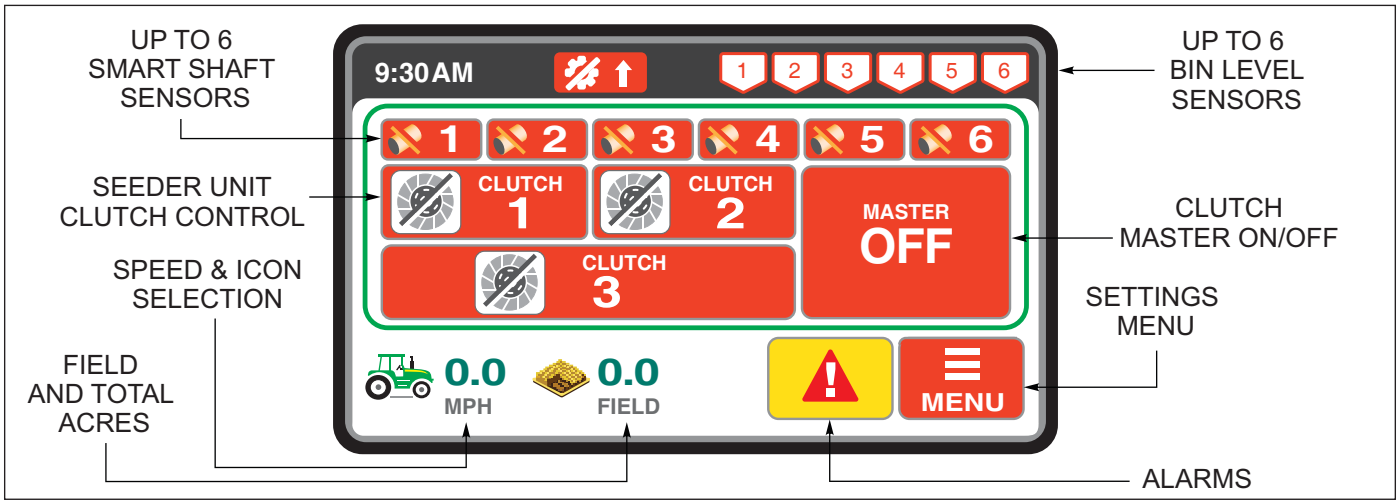
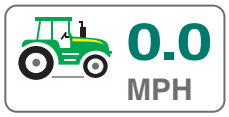


Figure 4-1: Main Screen Display

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.

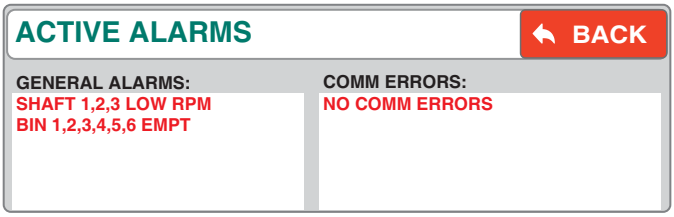


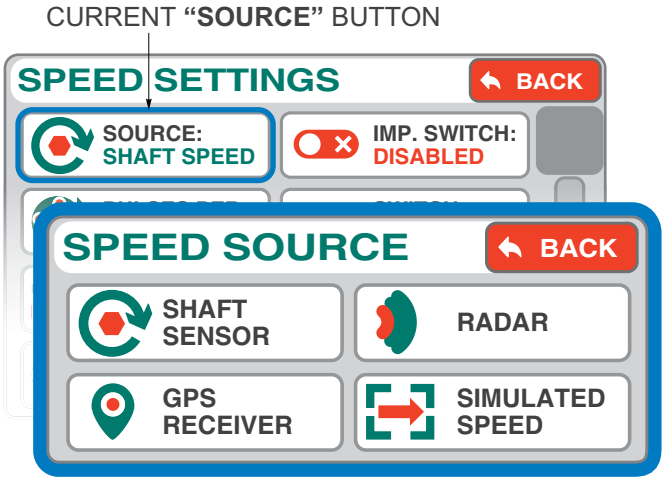
Figure 4-2: Settings Menu Display

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 Center Seed Unit 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.

Speed Source Displays

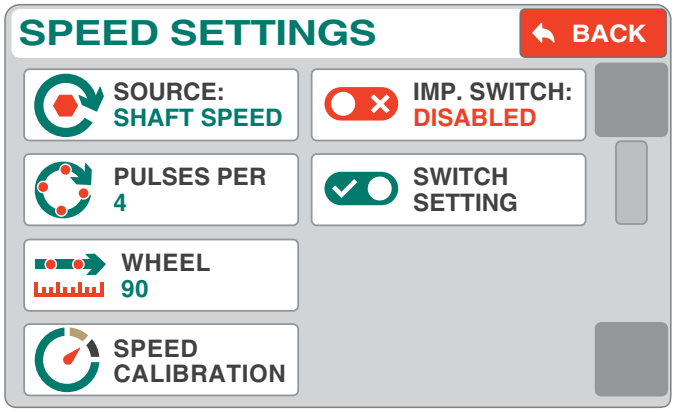


Figure 4-3: Source: Shaft Sensor Speed Display

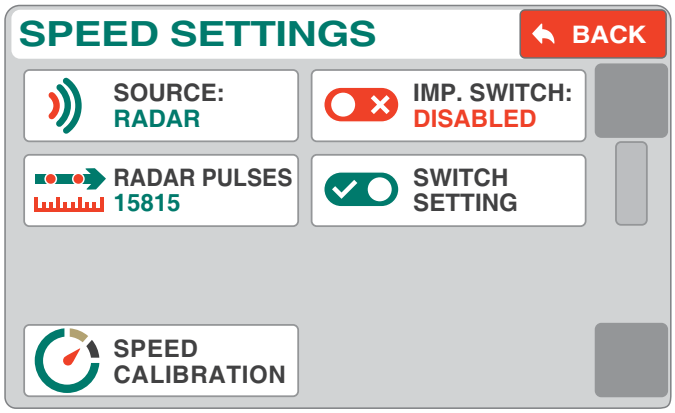


Figure 4-4: Source: Radar Speed Display

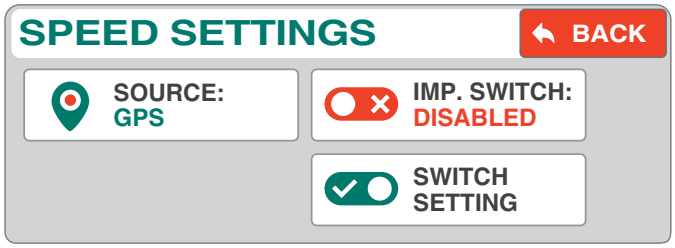


Figure 4-5: Source: GPS Receiver Display

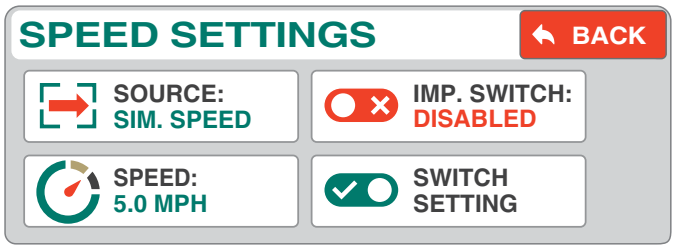


Figure 4-6: Source: Simulated Speed Display

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.

The Default number is 90. **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
SSBP12	232
SSP112	232
SSP2121	232
SLP12	1256
SLP2121	464
SLP3121	232

Figure 4-7: Pulse Number for Specific Seeder Model

Radar Pulses Per 400FT

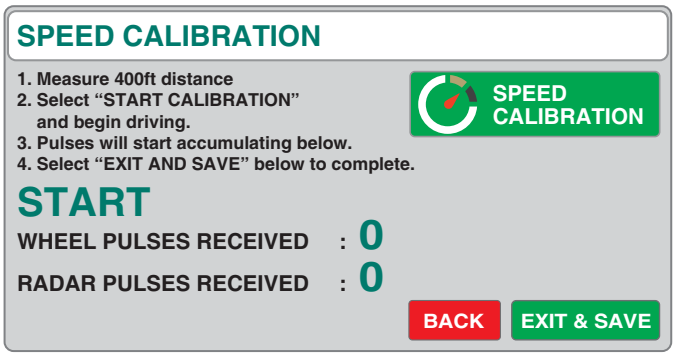
This is the ground speed calibration number for a radar speed sensor. See **"Speed Calibration"** for calibration instructions.

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.



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.

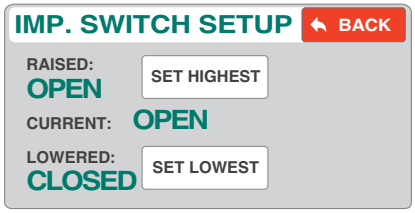
Implement Switch

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 4630-36 Folding 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.

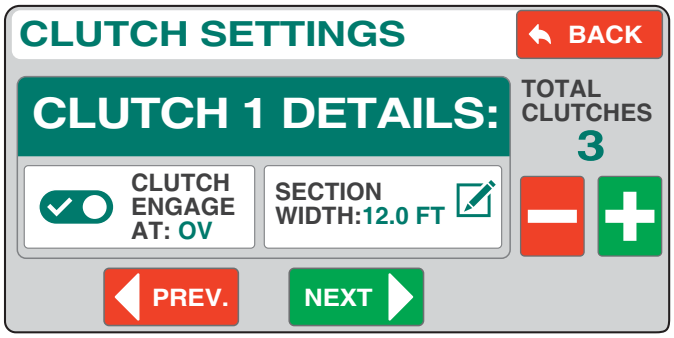


The Implement Switch Setup toggles between **"Open"** or **"Closed"**.

Select icon **"Set Highest"** or **"Set Lowest"** to **"Open"** the Implement Switch, the other will automatically **"Close"**.

Settings Menu - Clutch Setting

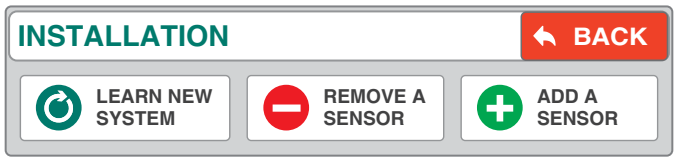
The 4630-36 Folding Seeder has a Clutch on each Seeder Unit that will be controlled by the Brillion Elite Mini Monitor. Each Clutch must be set.



1. Set **"Total Clutches"** to 3 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: 12.0 Feet
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 Single and Double Seed Box Schematic for Sensor Locations. **See Figure 2-3 and 2-4.**

   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 installed only on Center Seeder Unit Clutch Shaft.
   - **"Plug In Sensor - Clutch Box"** Clutch Smart Relay installed in the Elite Mini Tractor Harness
   - **"Plug In Sensor - Shaft 1-6"** Smart Shaft Sensors up to six sensors installed on the Seeder Units Seed Shaft.
   - **"Plug In Sensor - Bin 1-6"** Bin Level Sensors up to six sensors installed inside Seeder Unit Front Seed Box.
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.

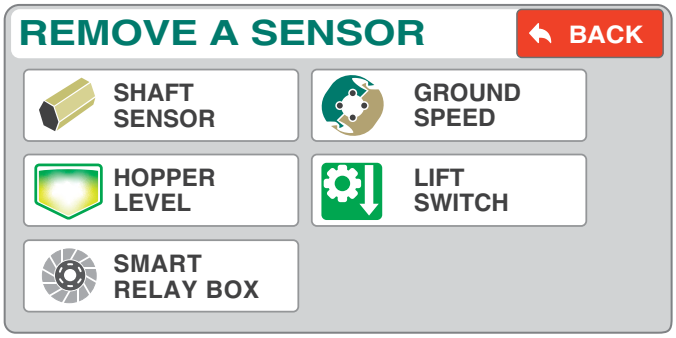
   

4. When you've reached the end of the list of sensors, you will be prompted with **"Manual Learn Complete"**. Push "**Ok**" to finish.

Remove A Sensor

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

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

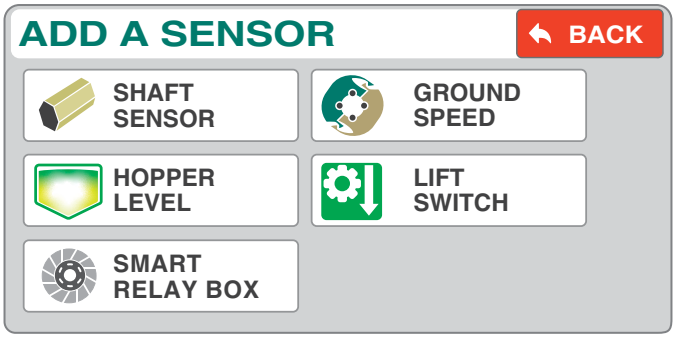


2. Use the **Left and Right Arrows** to navigate to the sensor number you wish to remove.
3. Select the **"Remove A Sensor"** button to complete the removal.

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

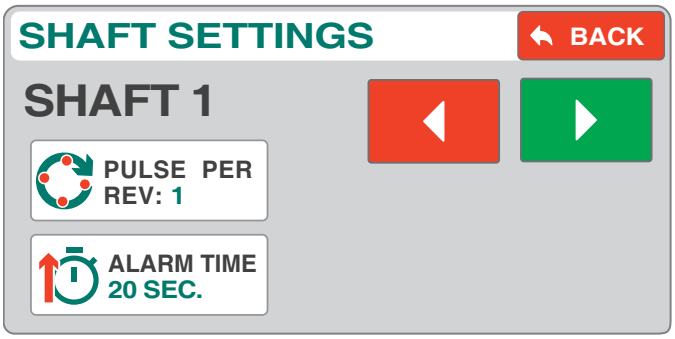
Seed Shaft Settings

4630-36 Folding 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.

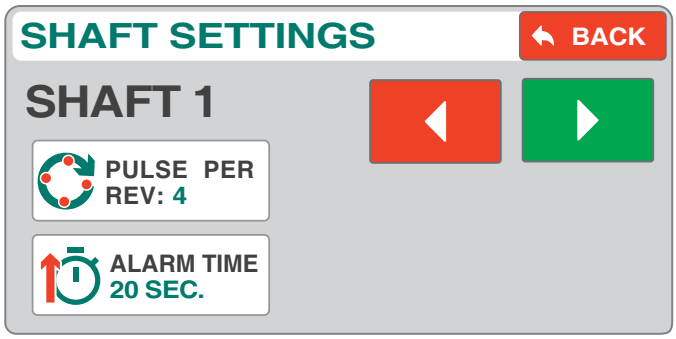


Ground Speed

4630-36 Folding Seeder has one Smart Shaft Sensor located on the Center Seeder Unit Clutch Shaft that indicates ground speed. The Smart Shaft Sensor/Ground Speed must be set.

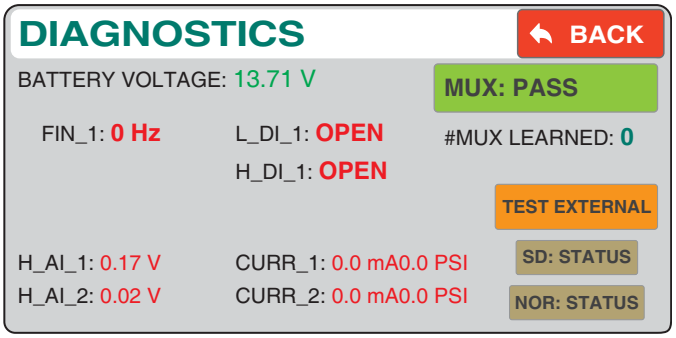
- Pulse per Rev: 4
- Alarm Time: 20 Sec.

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



Settings Menu - Diagnostics

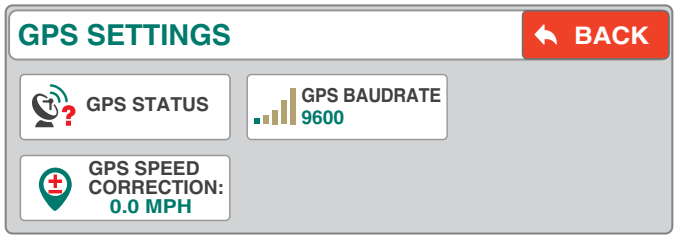
The Diagnostics screen can help in identifying issues with sensors, harnessing or other items. Status reports for Battery Voltage, Sensors Learned, MUX Communication speed and GPS Communication speed are displayed. Contact Loup Electronics if you need technical support.



Settings Menu - GPS Settings

GPS SETTINGS

"GPS Settings" defines any Baudrate, Speed Corrections or the current GPS Status.



GPS Status

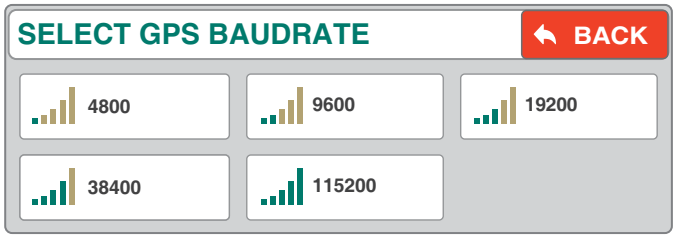
GPS STATUS

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

GPS BAUDRATE
9600

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



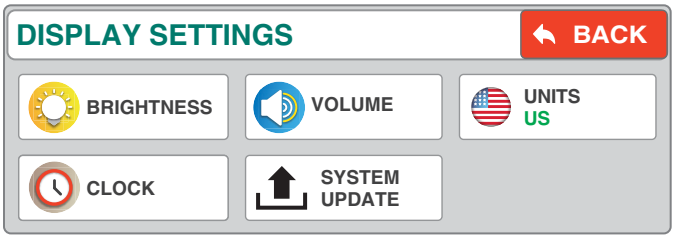
GPS Speed Correction

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

GPS SPEED
CORRECTION:
0.0 MPH

Settings Menu - Display Settings

DISPLAY SETTINGS



Brightness

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

BRIGHTNESS

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.

VOLUME

Units

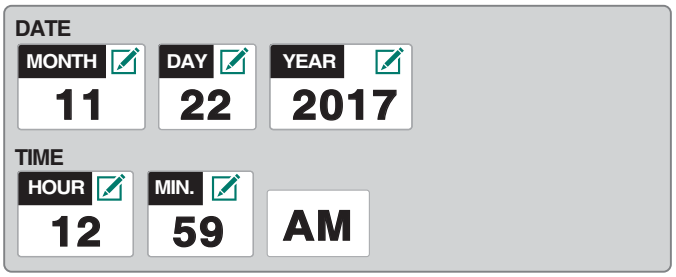
Toggles between US (feet) or Metric (meters) units.

UNITS
US

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.

CLOCK



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 soft ware 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% to as received condition torque. Bolt head identification marks indicate grade and may vary from manufacturer to manufacturer. Thick nuts must be used on grade 8 capscrews. Use value in [ ] if using prevailing torque nuts

TORQUE SPECIFIED IN FOOT POUNDS

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

METRIC:

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

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

Hydraulic Fitting Torque Specifications

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

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

TORQUE SPECIFIED IN FOOT POUNDS

PARKER® BRAND FITTINGS

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

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

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	----------	----------

Valve Torque Values		
Part Number	**Description**	**Torque (Ft-Lbs)**
175159	Relief	24-26
171000	Shutoff	19-21

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

Rockshaft recommended Tire Size:

12.5L-15FI - Ply Rating F

Tire Inflation Pressure: 90 PSI

When Re-installing 5/8-18 Wheel Nuts tighten to 50 Ft-Lbs. using the sequence in **See Figure 5-2.** Then tighten to full torque to 130-150 Ft-Lbs.

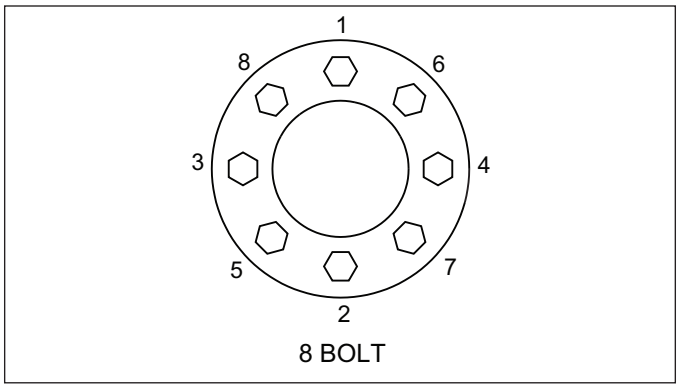


Figure 5-1: Tightening Sequence - 8 Bolt

Wings recommended Tire Size:

IF 280/70R15

Tire Inflation Pressure: 64 PSI

When Re-installing 9/16-18 Wheel Nuts tighten to 50 Ft-Lbs. using the sequence in **See Figure 5-2.** Then tighten to full torque to 90-100 Ft-Lbs.

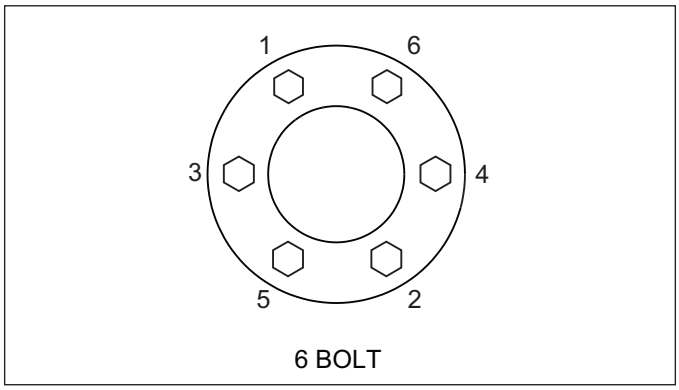


Figure 5-2: Tightening Sequence - 6 Bolt

Wheel Hub Bearing Maintenance

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

1. Place the Frame on blocks or stands sufficient to lift the Tire clear of the ground.
2. Remove the Tire.
3. Remove the Hub Cap, Cotter Pin, Slotted Nut and Washer.
4. Remove the Hub. Clean and inspect the Bearings and Hub Cavity. Replace any worn or defective parts.
5. Repack the Bearings using a high-quality Wheel Bearing Grease.
6. 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 Seal(s) 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, Washer and Slotted Nut.
9. Tighten the Slotted Nut while rotating the Hub until there is a slight resistance to wheel rotation. Then back the Slotted Nut off one notch, until the wheel rotates freely without the end play.
10. Install a new Cotter Pin and replace the Hub Cap.

Lubrication Maintenance

The Folding Seeder is equipped with maintenance free bearings in the Lift Rockshaft and the individual Seeder Units Lift Rockshaft. These require no lubrication. **See Figure 5-3 add 5-4.**

- Oil Seeder Units Roller Chains periodically
- All Seeders have Greaseable Bearings on the ends of the Front and Rear Rollers and should be greased every 20 hrs.
- Grease Folding Seeder Wing Inner Frame Hinge Points every 50 Hours.
- Grease Folding Seeder Rockshaft and Wing Wheel Hubs every 50 Hours.
- Optional Row Markers, grease First and Middle Row Marker Hinge Points every 50 Hours.
- 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.

The seeder should be lubricated after initial setup and prior to field operations. When lubricating the Seeder Hitch, SAE multi-purpose EP grease, or EP grease with 3-5% molybdenum sulfide is recommended. Wipe soil from fittings before greasing. Replace any lost or broken fittings immediately.

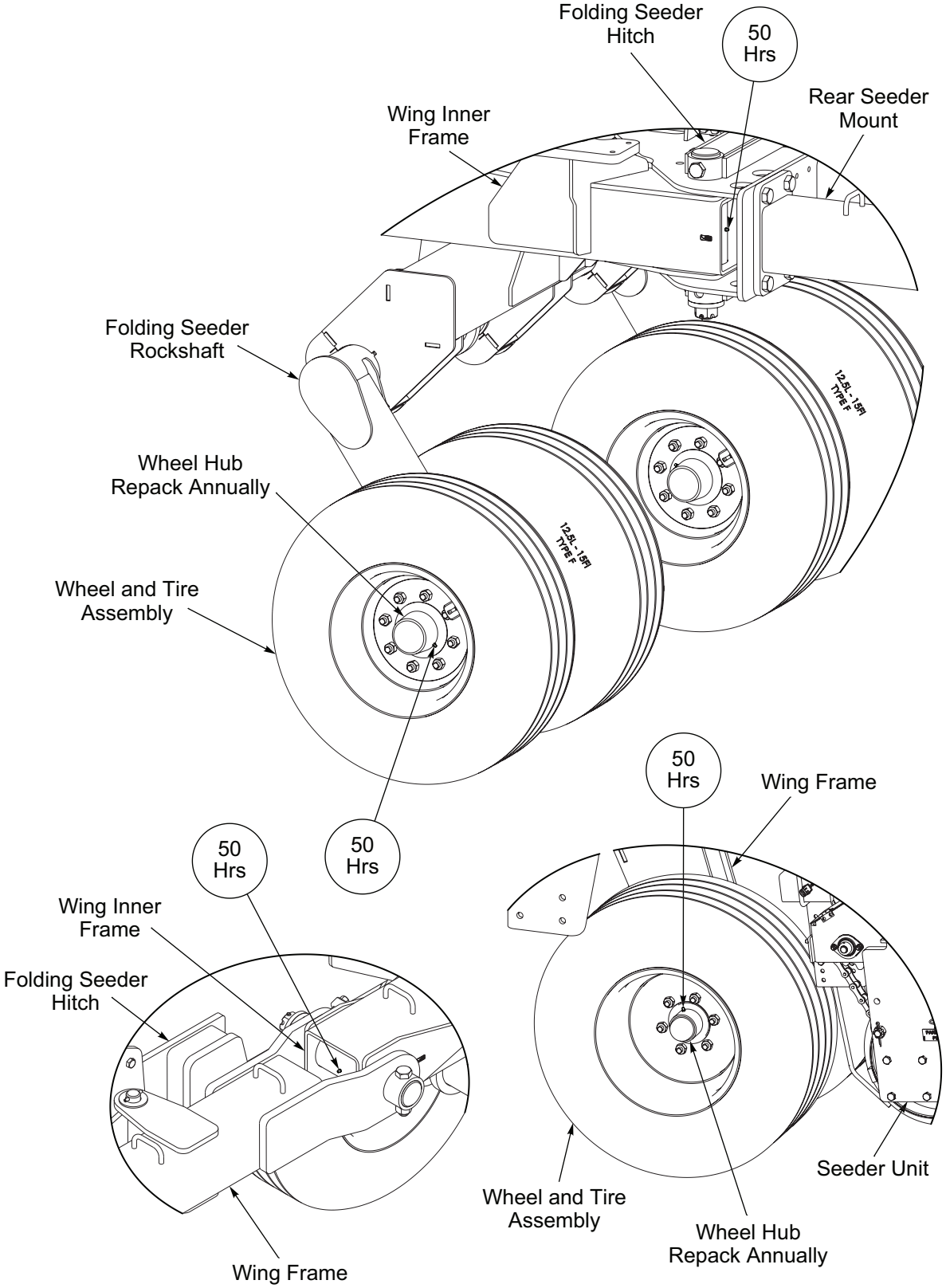


Figure 5-3: Lubrication Points (1 of 2)

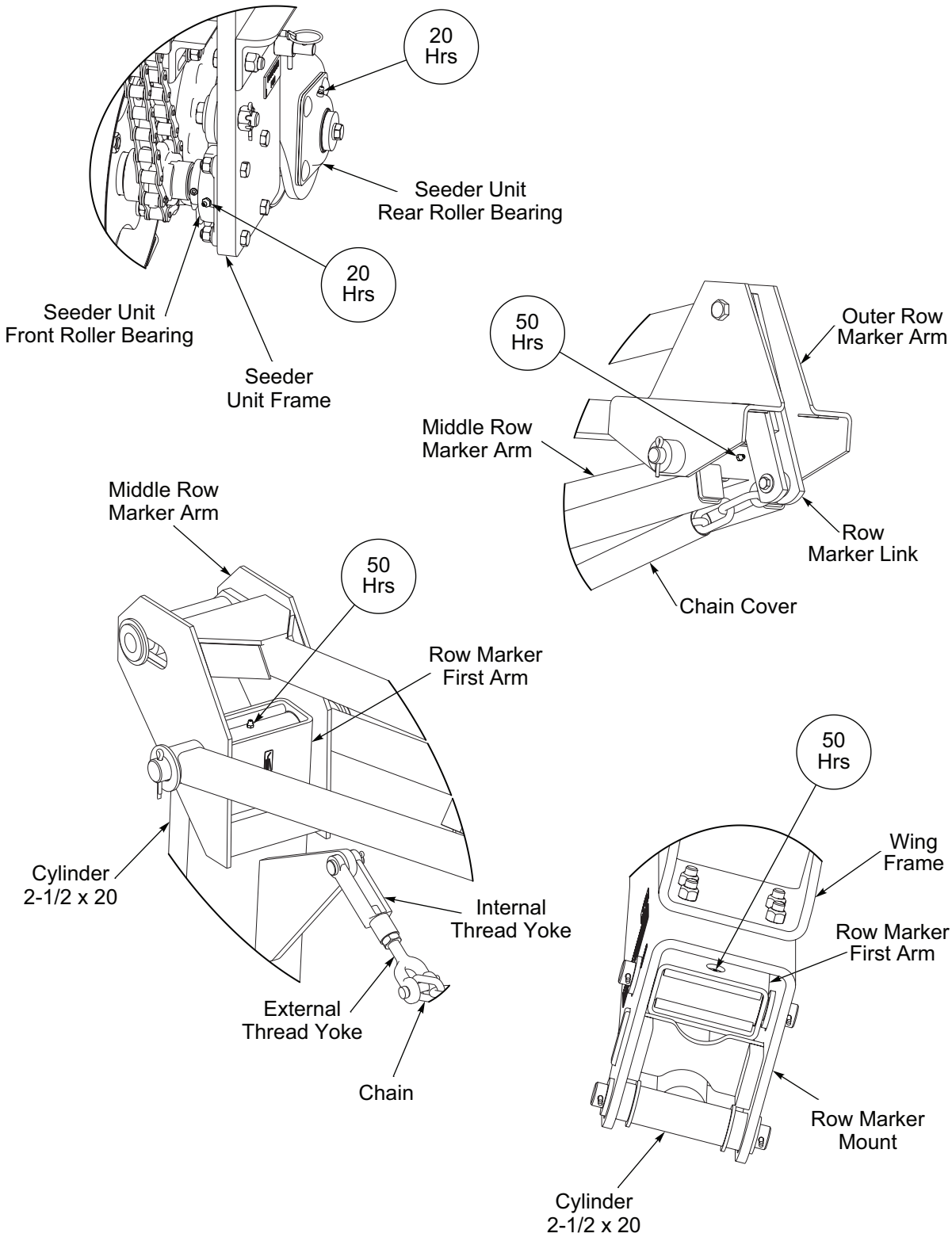


Figure 5-4: Lubrication Points (2 of 2)

Hydraulic Maintenance

IMPORTANT

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

WARNING

Escaping fluid under pressure can be nearly invisible and have enough force to penetrate the skin causing serious injury. Use a piece of cardboard, rather than 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 when the machine is raised and folded.
2. If a Hydraulic Cylinder or Valve 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. Before servicing any hydraulic component, lower the machine 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 **"Operation of Transport Locks" on Page 3-6.** See **"Hydraulic System" on Page 3-3** on how to purge the hydraulic systems.

Hose Identification

1. The hydraulic hoses are color coded to help identify and match the attaching hoses on the Seeder. An identification decal is placed on the front of the hitch to help identify the hoses. **See Figure 5-5.**
2. For the Seeder, hoses will be identified as follows:

   Blue - Lift Wheels

   Yellow - Wing Fold

   Black - Section Lifts

   Red - Auxiliary (Optional Row Markers)

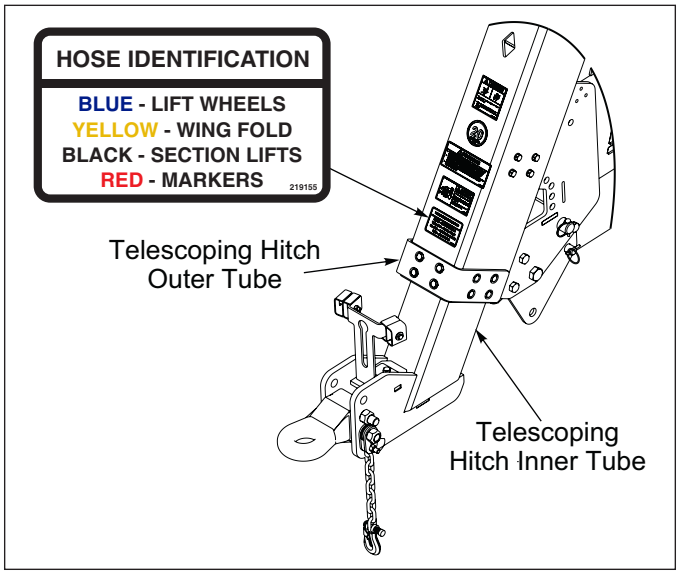


Figure 5-5: Hose Identification Decal

Individual Seeder Maintenance

Refer to your individual seeder model Operator's Manual for individual seeder maintenance not covered in this manual:

- **Front and Rear Roller Adjustment**
- **Chain Tension**
- **Seed Meter Adjustment**
- **Agitator (Brome) Box Slide Adjustment and Service Tip**

LED Warning Lamps

NOTE

Refer to your individual seeder model Operator's Manual to determine your setup. The following instructions are for the Sure Stand Seeder SSBP12.

When plugging in the Lamp 7-Pin Warning Lamp Connector:

1. Make sure the Tractor has a good clean Receptacle, free of dirt and corrosion.
1. 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.
2. 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.

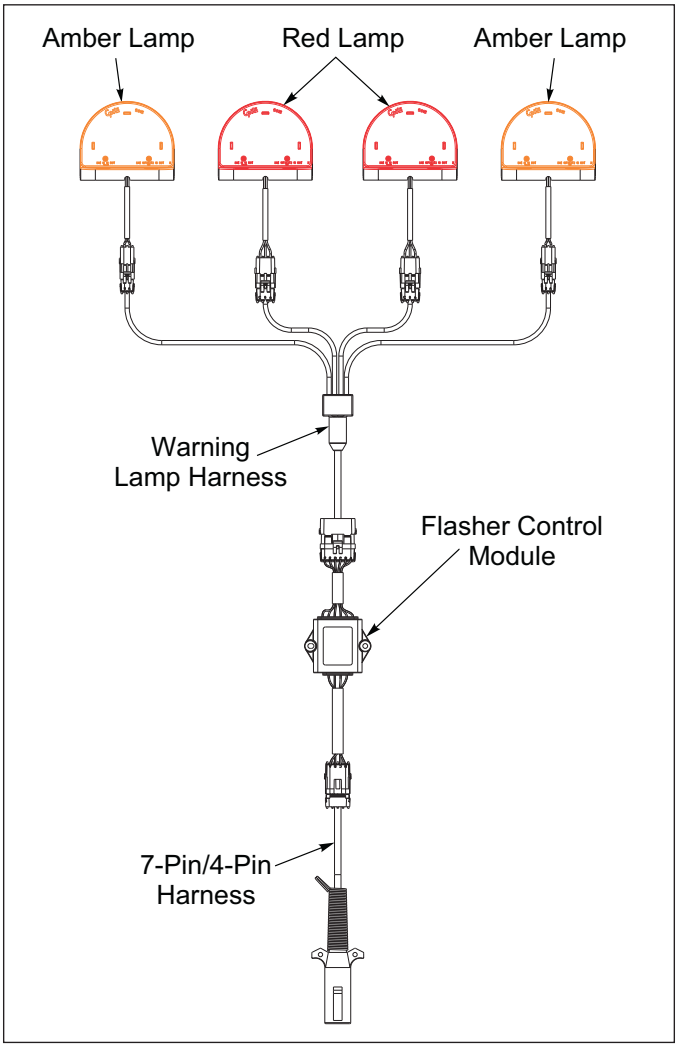


Figure 5-1: LED Warning Lamps

Storage

1. The service life of the Folding 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 seeds out of Seed Meters and Agitators.
   - Inspect the machine for worn or defective parts. Replace as needed.
   - Repaint all areas where the original paint 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 state in **"Lubrication Maintenance" on Page 5-3**.
2. Protect the Folding Seeder from the weather by storing it in a shed or under a tarpaulin. The tires should rest on boards, or some other object, to keep them out of the soil.
3. Store the Folding Seeder folded and fully raised with Hydraulic Transport Lock engaged and Transport Lock Pins installed to prevent settling. **See "Operation of Transport Locks" on Page 3-6.**
4. Relieve Hydraulic Pressure after Transport Locks are installed. Block Rockshaft Wheels before unhitching from tractor.

Troubleshooting

For any questions concerning operation or maintenance of the seeders, refer to the operator's and parts manuals as designated in **"Available Seed Options" on Page 6-3.**

PROBLEM	PROBABLE CAUSE	SOLUTION
Power LED does not illuminate	Power fuse blown due to system fault	Inspect wire harness for damage or shorts Replace 15 Amp fuse
	Power fuse blown due to tractor fault	Check the power source is 12 Volts DC
	Polarity reversed at power lead connection	Swap power leads to correct terminal
	Monitor console fault	Replace or repair console
All indicator LEDs do not illuminate	Harness disconnected at hitch, extension or sensors	Check all connections
	Harness fuse blown	Inspect wire harness for damage or shorts Replace 15 Amp fuse
One indicator never illuminates	Sensor not connected	Check sensor lead
	Harness damaged	Check continuity of harness
	Sensor failed	Swap sensor from another seed box and test
No indicator ever extinguishes	Shafts are not turning	Check seeder drive system
	Sensors not correctly installed	Check 1/8 inch gap at sensors
One indicator never extinguishes	Shaft is not turning	Check section drive system
	Seed shaft sensor out of magnet range	Check for 1/8 inch gap at sensors

Chapter 6

General Reference and Specifications

Model Specifications

Product Attributes	SSBP-36	SSP-136
Description	(3) SSBP-12 Agricultural Seeders	(3) SSP-112 Agricultural Seeders
Approximate Weight (Empty)	18,440 lbs. (8,364 kg)	18,100 lbs. (8,210 kg)
Working Width	36 ft. (10.97 m)	36 ft. (10.97 m)
Transport Width	13 ft. 6 in. (4.1 m)	13 ft. 6 in. (4.1 m)
Transport Height	11 ft. (3.4 m)	11 ft. (3.4 m)
Overall Length	30ft. w/o Seeders, 34ft. w/Seeders	30ft. w/o Seeders, 34ft. w/Seeders
Hitch	Cast Single Lip Cat. IV	Cast Single Lip Cat. IV
Wheels - Center Section	8 Bolt Hubs with 2 7/8 in. (73.1 mm) Slip In Spindles	8 Bolt Hubs with 2 7/8 in. (73.1 mm) Slip In Spindles
Wheels - Wings	6 Bolt Hubs with 2 in. (50.8 mm) Spindles	6 Bolt Hubs with 2 in. (50.8 mm) Spindles
Tires - Center Section	(4) 12.5L x 15, (GY-FI) Load F	(4) 12.5L x 15, (GY-FI) Load F
Tires - Wings	(4) 11 L x 15, 12 Ply	(4) 11 L x 15, 12 Ply
Hydraulic Circuits Required	3 (+1 for Row Marker Kit)	3 (+1 for Row Marker Kit)
Seed Box	All Steel Construction	All Steel Construction
Seed Box Capacity	15.75 Bushels (555.0 l) Front / 15.75 Bushels (555.0 l) Rear	27 Bushels (951.5 l)
Seed Metering	Standard Micro-Meter Front / Blade Agitator Rear	Standard Micro-Meter
Seed Metering Drive	Independent Electric Seeder Clutches	Independent Electric Seeder Clutches
Pulverizer Rollers	Gray Cast Iron with Notched Profile	Gray Cast Iron with Notched Profile
Front Roller (Fixed)	14.5 in. (368.3 mm) Diameter	14.5 in. (368.3 mm) Diameter
Rear Roller (Independently Floating)	10.25 in. (260.4 mm) Diameter	10.25 in. (260.4 mm) Diameter
Blade Agitator for Rear Seed Box	Standard (Factory Installed)	N/A
Cage Agitator for Rear Seed Box	Standard	N/A
Brush Agitator for Rear Seed Box	Optional	N/A
Front Seed Box Divider Kit	Standard	N/A
Rear Roller Assembly w/Turfmaker Sprockets	Optional	Optional
Folding Row Marker Kit	Optional	Optional
Wheel Track Removers - Wings	Standard	Standard
Coil Tine Track Remover Kit - Center Section	Standard	Standard
Front Roller Scraper Kit for One Seeder	Optional	Optional
Electronic Acre Meter Kit	Standard	Standard
Seed Shaft Monitor Kit	Standard	Standard
LED Safety Warning Lights & SMV Emblem	Standard	Standard
Safety Chain Kit	Standard	Standard
Powder Coat Paint, Red	Standard	Standard
Horsepower Requirements	Minimum of 200 HP (149.1 kW)	Minimum of 200 HP (149.1 kW)
Recommended Operating Speed	4.5 to 6.0 MPH (7.2 to 9.7 km/h) Dependent on Conditions	4.5 to 6.0 MPH (7.2 to 9.7 km/h) Dependent on Conditions

Specifications subject to change with or without notice.

Figure 6-1: Model Specifications (1 of 2)

Product Attributes	SSP-2361
Description	(3) SSP-2121 Agricultural Seeders
Approximate Weight (Empty)	20,366 lbs. (9,238 kg)
Working Width	36 ft. (10.97 m)
Transport Width	13 ft. 6 in. (4.1 m)
Transport Height	11 ft. (3.4 m)
Overall Length	30ft. w/o Seeders, 34ft. w/Seeders
Hitch	Cast Single Lip Cat. IV
Wheels - Center Section	8 Bolt Hubs with 2 7/8 in. (73.1 mm) Slip In Spindles
Wheels - Wings	6 Bolt Hubs with 2 in. (50.8 mm) Spindles
Tires - Center Section	(4) 12.5L x 15, (GY-Fl) Load F
Tires - Wings	(4) 11 L x 15, 12 Ply
Hydraulic Circuits Required	3 (+1 for Row Marker Kit)
Seed Box	All Steel Construction
Seed Box Capacity	69 Bushels (2,431.5 l)
Seed Metering	High Capacity Micro-Meter
Seed Metering Drive	Independent Electric Seeder Clutches
Pulverizer Rollers	Gray Cast Iron with Notched Profile
Front Roller (Fixed)	14.5 in. (368.3 mm) Diameter
Rear Roller (Independently Floating)	10.25 in. (260.4 mm) Diameter
Blade Agitator for Rear Seed Box	N/A
Cage Agitator for Rear Seed Box	N/A
Brush Agitator for Rear Seed Box	N/A
Front Seed Box Divider Kit	N/A
Rear Roller Assembly w/Turfmaker Sprockets	Optional
Folding Row Marker Kit	Optional
Wheel Track Removers - Wings	Standard
Coil Tine Track Remover Kit - Center Section	Standard
Front Roller Scraper Kit for One Seeder	Optional
Electronic Acre Meter Kit	Standard
Seed Shaft Monitor Kit	Standard
LED Safety Warning Lights & SMV Emblem	Standard
Safety Chain Kit	Standard
Powder Coat Paint, Red	Standard
Horsepower Requirements	Minimum of 200 HP (149.1 kW)
Recommended Operating Speed	4.5 to 6.0 MPH (7.2 to 9.7 km/h) Dependent on Conditions

Specifications subject to change with or without notice.

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

AVAILABLE SEEDER OPTIONS			
MODEL#	**SEEDER OPTION**	**SEEDER OPTION MANUALS**	**MANUAL#**
SSBP-36	(3) SSBP-12 Agricultural Seeders	Sure Stand Seeder Operator's Manual Sure Stand Seeder Parts Manual	1P480 1P481
SSP-136	(3) SSP-112 Agricultural Seeders	Alfalfa Seeder Medium Capacity Sure Stand Operator's Manual Alfalfa Seeder Medium Capacity Sure Stand Parts Manual	9K713 9K712
SSP-2361	(3) SSP-2121 Agricultural Seeders	High Capacity Sure Stand Seeder Operator's Manual High Capacity Sure Stand Seeder Parts Manual	1P126 1P125
SLP-2361	(3) SLP-2121 Turfmaker II Seeders	Turfmaker II Grass Seeder Operator's Manual Turfmaker II Grass Seeder Parts Manual	9K998 9K997
SLPB-2361	(3) SLPB-2121 Turfmaker II Seeders	Turfmaker II Grass Seeder Operator's Manual Turfmaker II Grass Seeder Parts Manual	9K998 9K997
SLP-3361	(3) SLP-3131 Turfmaker III Seeders	Turfmaker III Grass Seeder Operator's Manual Turfmaker III Grass Seeder Parts Manual	1P124 1P123

Specifications are subject to change without prior notification.

Table 6-1: Available Seed Options

TIRE INFLATION			
TIRE SIZE	**MANUFACTURER**	**PLY/LOAD RATING**	**INFLATION PRESSURE (psi) (max.)**
12.5L x 15 - FI Ply F	Goodyear	F Load 6000 lbs. @ 20mph	90 psi
11L x 15 - FI	Goodyear	12 Ply/3860 lbs.	52 psi

Table 6-2: Tire Inflation

Table provided for general use.

NOTES:

Document Control Revision Log:

Date	Form #	Improvement(s): Description and Comments
05/2013	F-640-0513	Initial Release
12/2013	F-640-1213	
06/2015	F-640-0615	
03/2021	F-640-0321	Added More Detailed Specifications
02/2022	F-640-0222	ECN 46900, 47187, 47696, 47707 - Add Brillion Elite Mini Monitor by Loup ECN 47474 - Add QR Code Decals Add High Powered Magnet Warning Add Brillion Elite Mini Monitor Manual Chapter

Equipment from Landoll Company, LLC is built to exacting standards ensured by ISO 9001 registration at all Landoll manufacturing facilities.

Model 4630-36
Folding Seeder
Operator's Manual

Re-Order Part Number F-640

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