



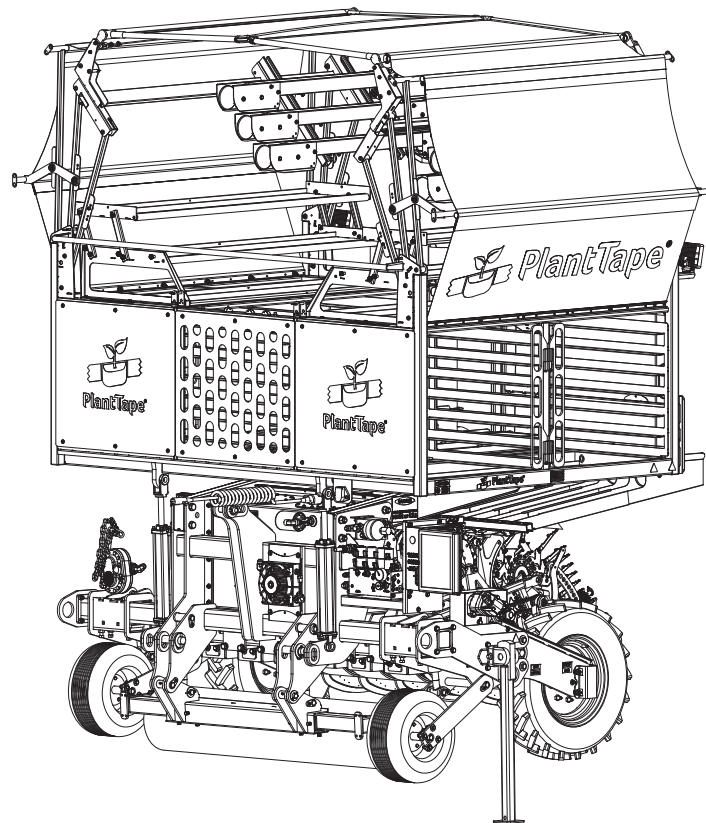
PlantTape®

automated transplanting system

TAPR002800

3-PT TRANSPLANTER

Owner's Manual



Plant Tape USA
1.888.272.6828
info@planttape.us

Plant Tape Europe
34.93.637.9892
info@planttape.com

P/N: DOC1289
Revision: 7
(07/13/2018)

Table of Contents

Table of Contents.....	1
Introduction	3
Safety Instructions	5
General Description	7
Machine Setup	23
•Tractor Requirements	23
Preparation For Shipping Or Transporting	27
Safety Leg Usage	29
Adjust Seed Line Spacing	31
Lift And Lockout Planter Modules	33
Adjust Bed Roller Width	35
Adjust Wheel Spacing	37
Adjust Lower Plant Path Channels	41
Adjust Wind Guard Pipes	43
Side Console Controls	45
•Side Console Button Pad	45
•Touchscreen	46
Enable/Disable Planter Modules.....	47
Adjust Front Wheel Height	49
Adjust Front Bed Roller Height	51
Set Planter Module Ground Pressure	53
•To Increase Planter Module Ground Pressure	54
•To Decrease Planter Module Ground Pressure	54
Screen Operation	55
Operator Platform Controls	65
Maintenance	67
•Maintenance Schedule	67
•Maintenance Operations	68
Optional Configurations And Components	73
Appendices	75
•Side Tarp Panel Lacing for Tow-Behind Planter Platform.....	75
•New Rigid Folding Roof Half.....	81
•IQAN-G11 Remote Diagnostics Electronic Control Systems.....	87

This Page Is Left Intentionally Blank

Introduction

Before starting the transplantation, it is necessary to read the instructions and recommendations of this manual. With it you will be able to reduce the danger of accidents, avoid damage to the machine due to incorrect use, and increase its performance and useful life.

The manual should be read by any person who carries out operational tasks (including preparation, repair of breakdowns in the field, and general care of the machine), maintenance (inspection and technical assistance) and transportation.

For your own safety and that of the machine, respect the technical safety instructions at all times. Plantape is not responsible for damages and failures caused by non-compliance with the instructions given in this manual.

CAUTION

This symbol is to warn readers about possible damage to equipment or data, or about potential problems in the outcome of what they are doing.

NOTICE

This symbol is to emphasize points or remind readers of something, or to indicate minor problems in the outcome of what they are doing.



Plantape reserves the right to modify illustrations, technical data and weights indicated in this manual if these modifications are considered to contribute to improvements in the quality of the planters.

This Page Is Left Intentionally Blank

Safety Instructions

General

- Read and understand all safety precautions and warnings before operating the equipment.
- Stay clear of moving parts and pinch points. Caution decals on the equipment indicate the location of pinch points. Replace damaged or missing caution decals immediately. There may exist pinch points not labeled, use caution and good judgement when servicing.
- Make sure no one is working on, underneath, or close to the machine before starting or beginning to move the machine. Never repair or maintain the machine while the engine is running.
- Never repair or service the equipment when it is hitched to a tractor with the motor running.
- Be aware of clearance issues when unfolding, towing and operating the equipment.
- Do not use the equipment for any unintended purpose.
- Do not modify or alter this machine from its original intended use.
- Always have a fire extinguisher on hand, and know how to use it. Inspect and service as recommended by extinguisher manufacturer.
- Know the controls and what they do.

Preparing to Operate

- Allow tractor engine and hydraulics to warm up after starting.
- Release the tractor parking brake before operating the machine.
- Check for proper operations of all controls and protective devices while moving slowly in an open area. Check the following:
 1. Tractor Engine throttle control.
 2. Other devices, such as lights, etc.

During Operation

- Do not allow riders on the machine or implements, only the machine operators.
- The operators must satisfy themselves that no one will be endangered before moving the machine.
- Be careful to avoid tipping when working on hills, banks, or slopes and when crossing ditches, ridges, or other obstructions.
- Stay a safe distance from the edge of cliffs, overhands, and slide areas.
- Carefully supervise inexperienced operators.
- Stay clear of all moving parts during operations.
- Stay out of fan area of machine while the machine is connected to the tractor.

After Operation

- Lock the tractor parking brake so the machine will not roll.
- If the machine must be parked on a steep slope, always block the rear tires in addition to setting the park brake.
- Stop the engine before leaving the tractor.
- Shut off engine and remove the ignition key.
- If the hydraulic oil is extremely hot, allow the tractor engine to idle until the fluid has reached an acceptable level before servicing.

Towing

- Use safety chains while towing.
- When moving equipment on public roads, use warning devices (flags, slow moving vehicle or SMV emblem, lights, etc.) which are approved for use by local government agencies.
- Keep these devices clean and in good working order.

Towing with Tractor

- Do not exceed 25 mph under straight, level road conditions. Reduce speed appropriately when cornering or on uneven ground to minimize the danger of rollover.
- Use warning devices (i.e. flags, S.M.V. emblem, lights, etc.) which are approved for use by your local government agencies when moving equipment on public roads. Keep these devices clean and in good working condition.
- Be sure hitches are properly stabilized before towing equipment.
- Be courteous and have consideration for other traffic using the road.

Unfolding

- Ensure there is clearance for the full height of the equipment when unfolding.

Transporting by Trailer

- Reduce speed when traveling on rough roads.
- Avoid heavily-traveled roads when moving equipment, if at all possible.
- Restrain tarps.
- Use approved tie-down points.

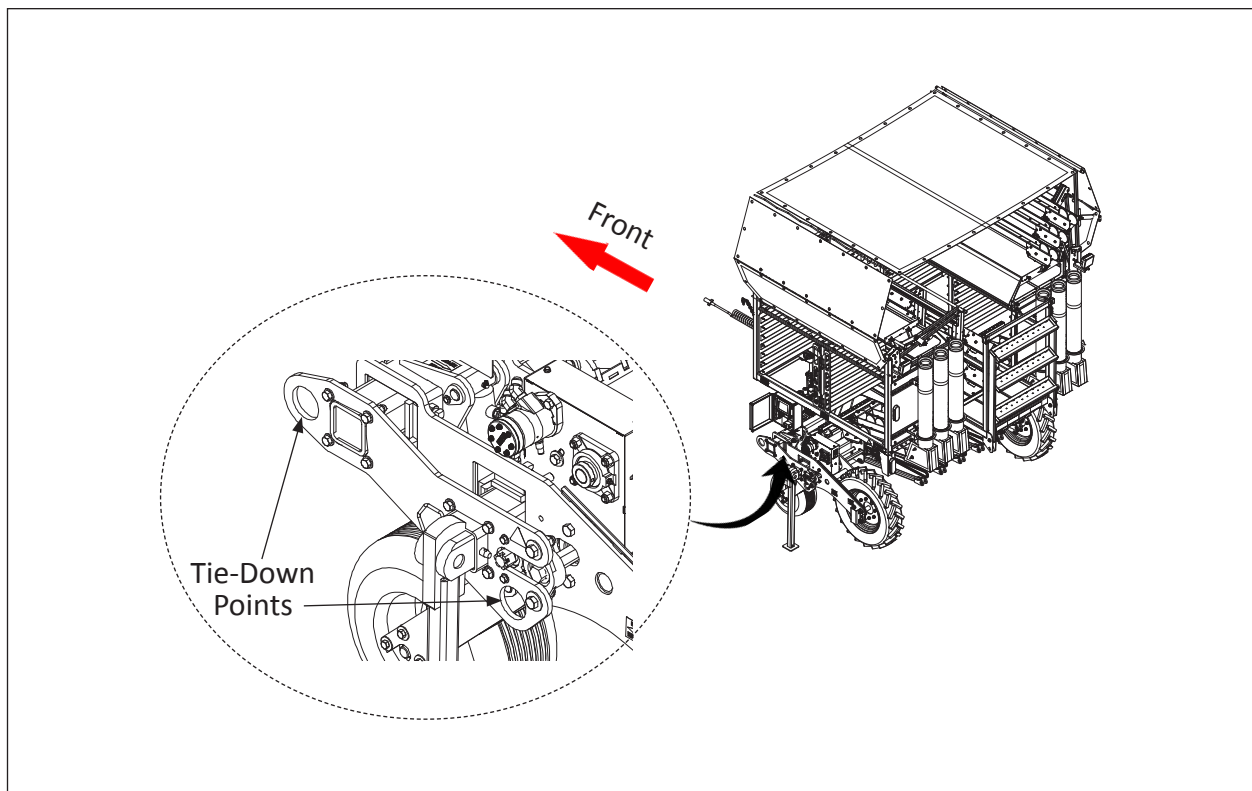


Fig. 1 Safety Instructions - Tie-Down Points

- Lower all cylinders or block to prevent sag.

General Description

General Dimension

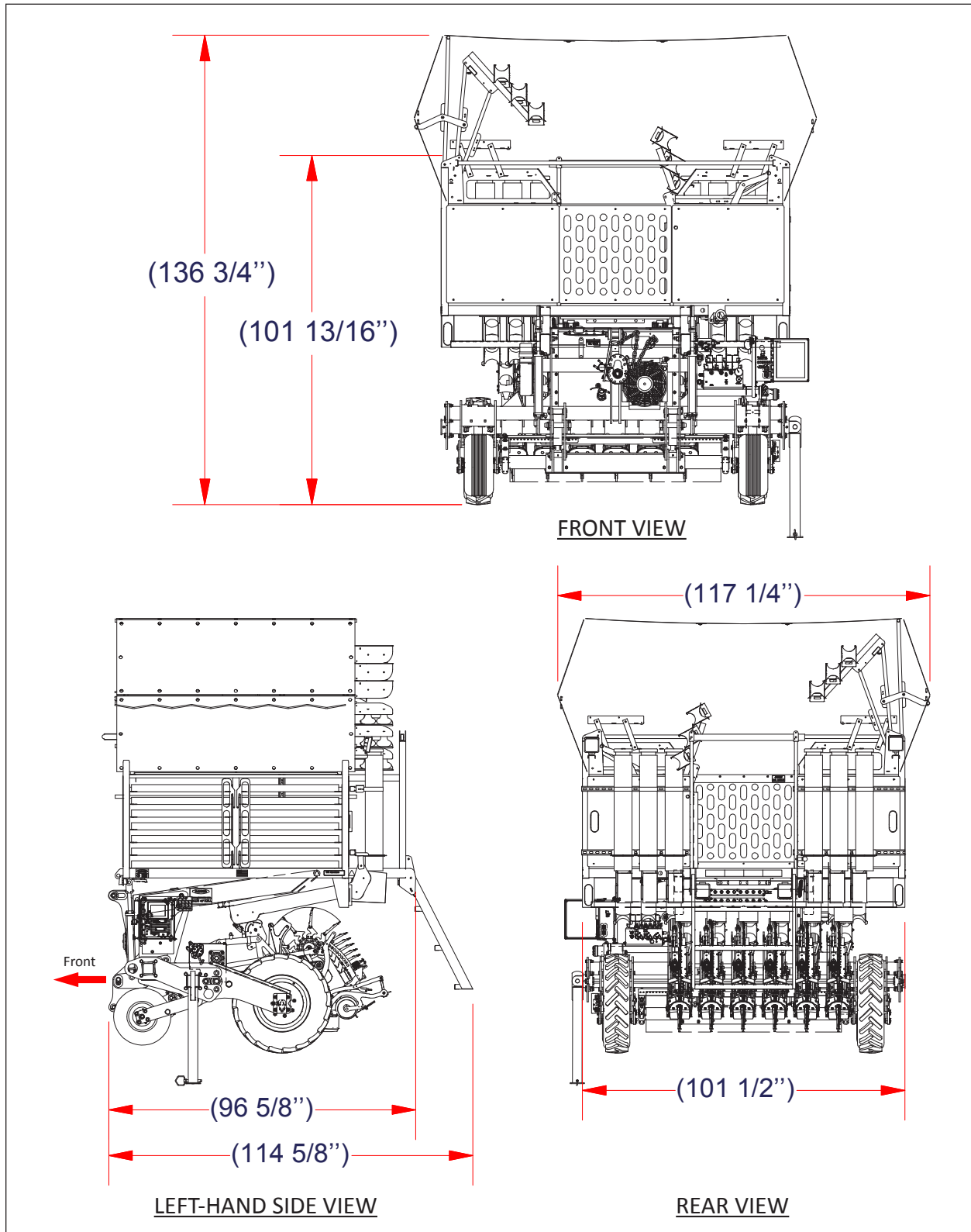


Fig. 2 General Dimension

Parts/Assembly Locations

- **Base Frame**

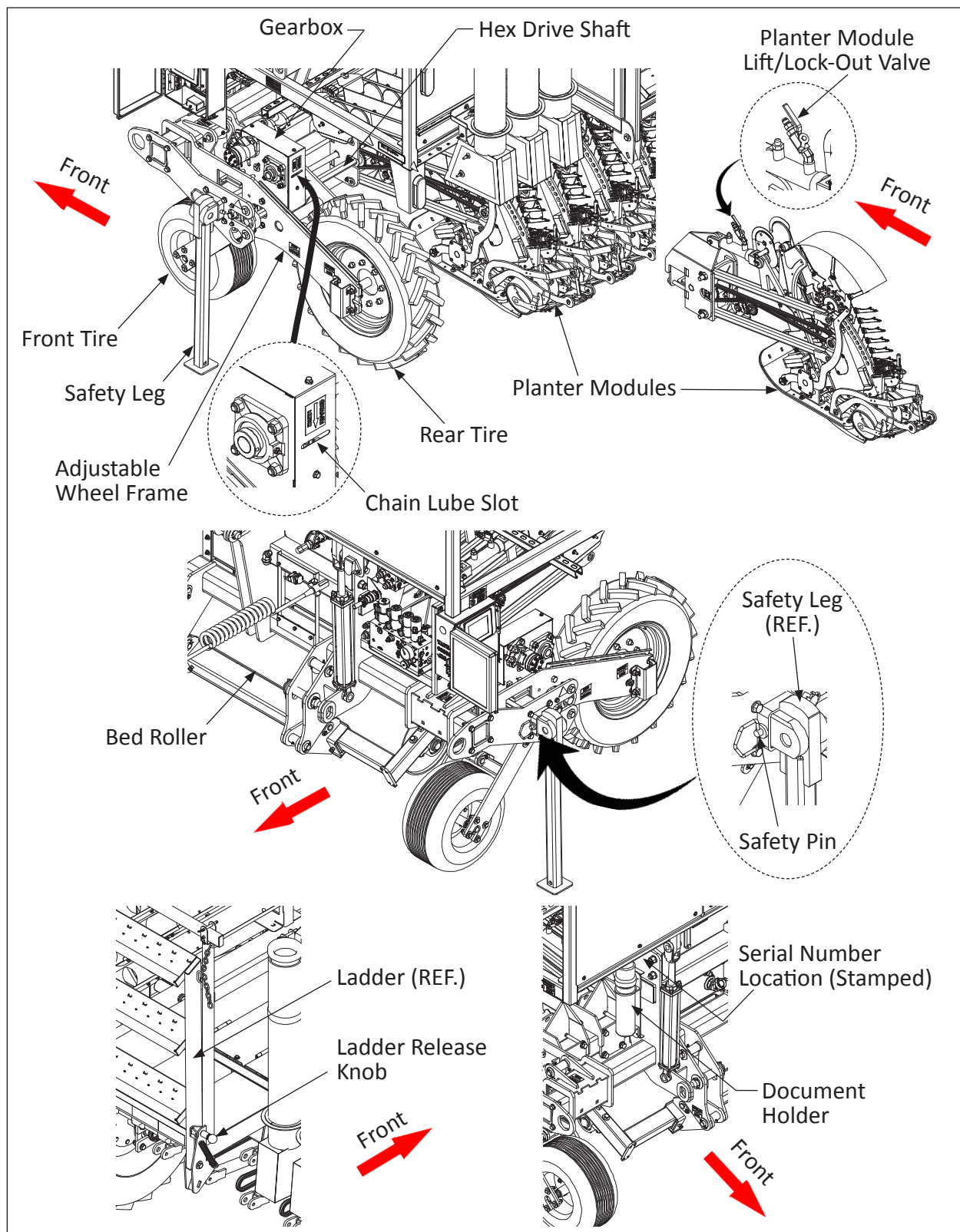


Fig. 3 Base Frame

General Description

- **Bed Roller**

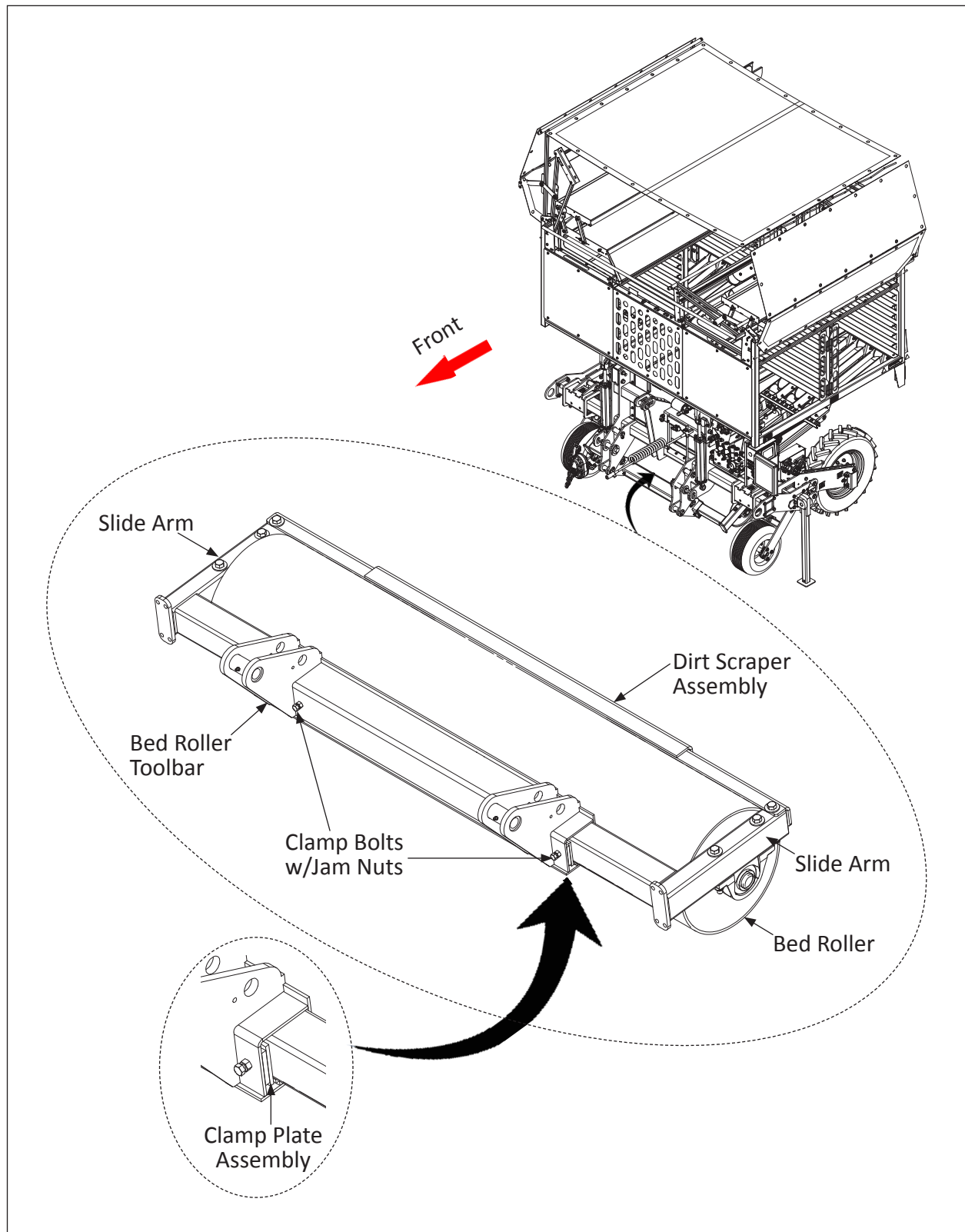


Fig. 4 Bed Roller

- **Controls**

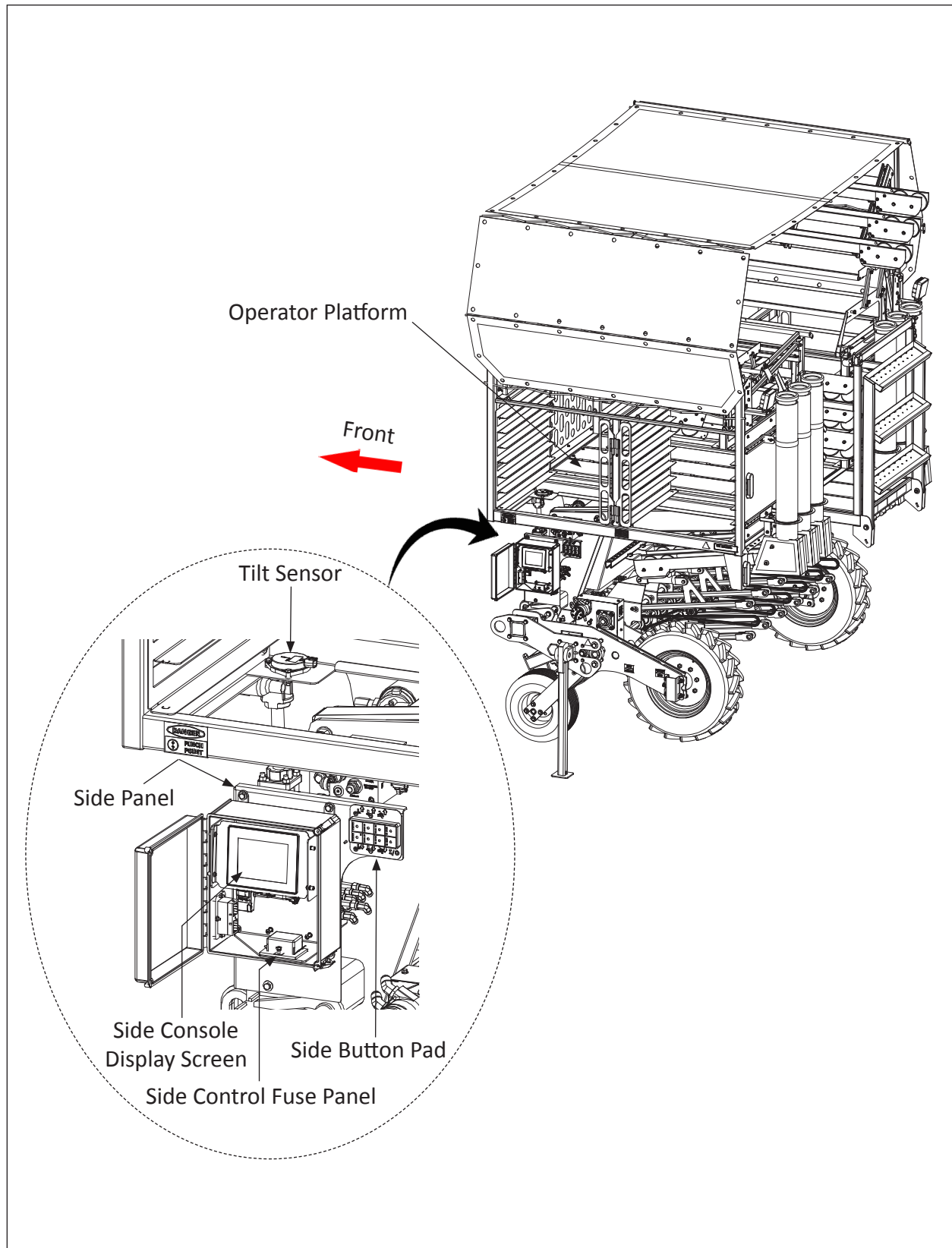


Fig. 5 Controls

- **Gearbox**

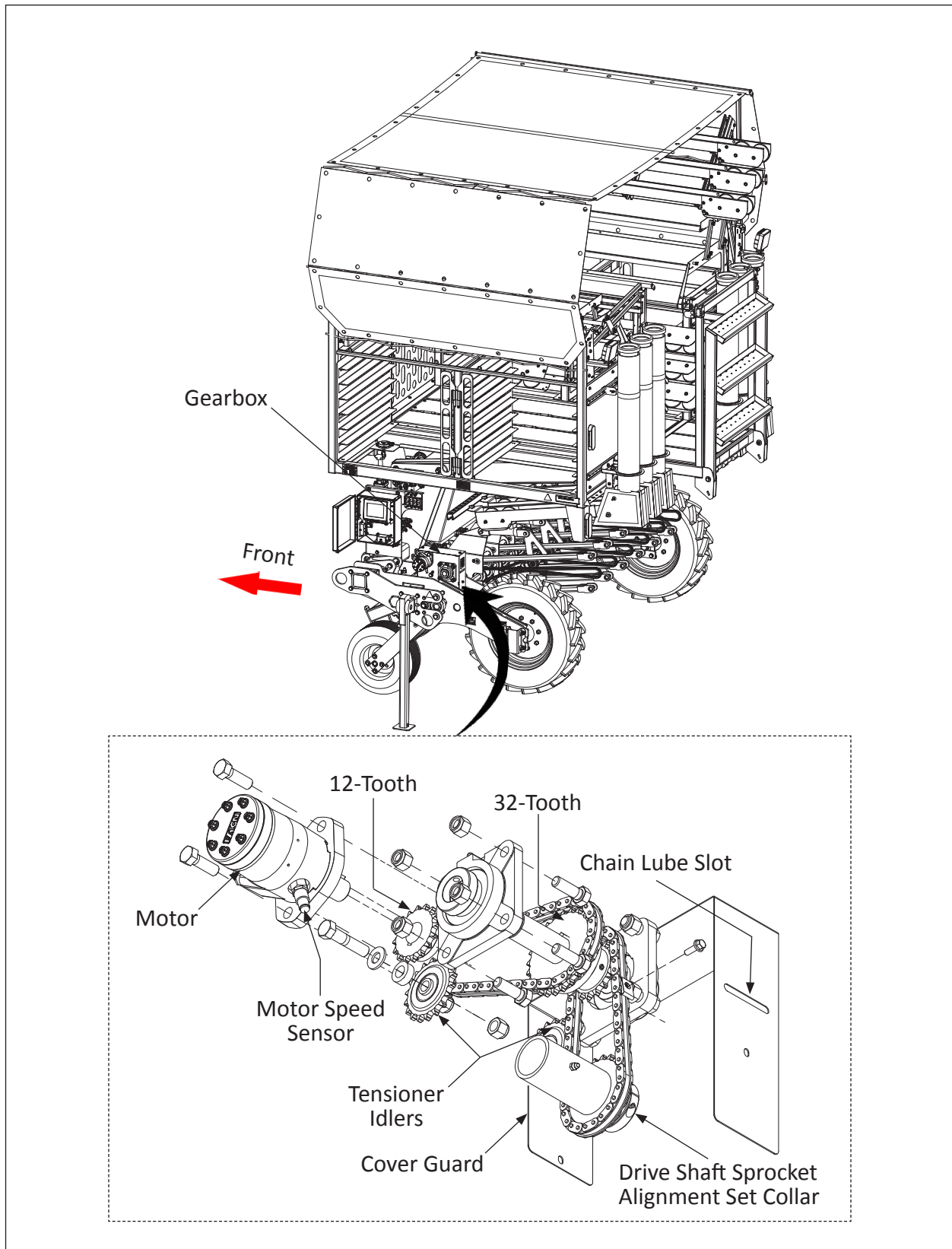


Fig. 6 Gearbox

- **Hydraulic Cooler**

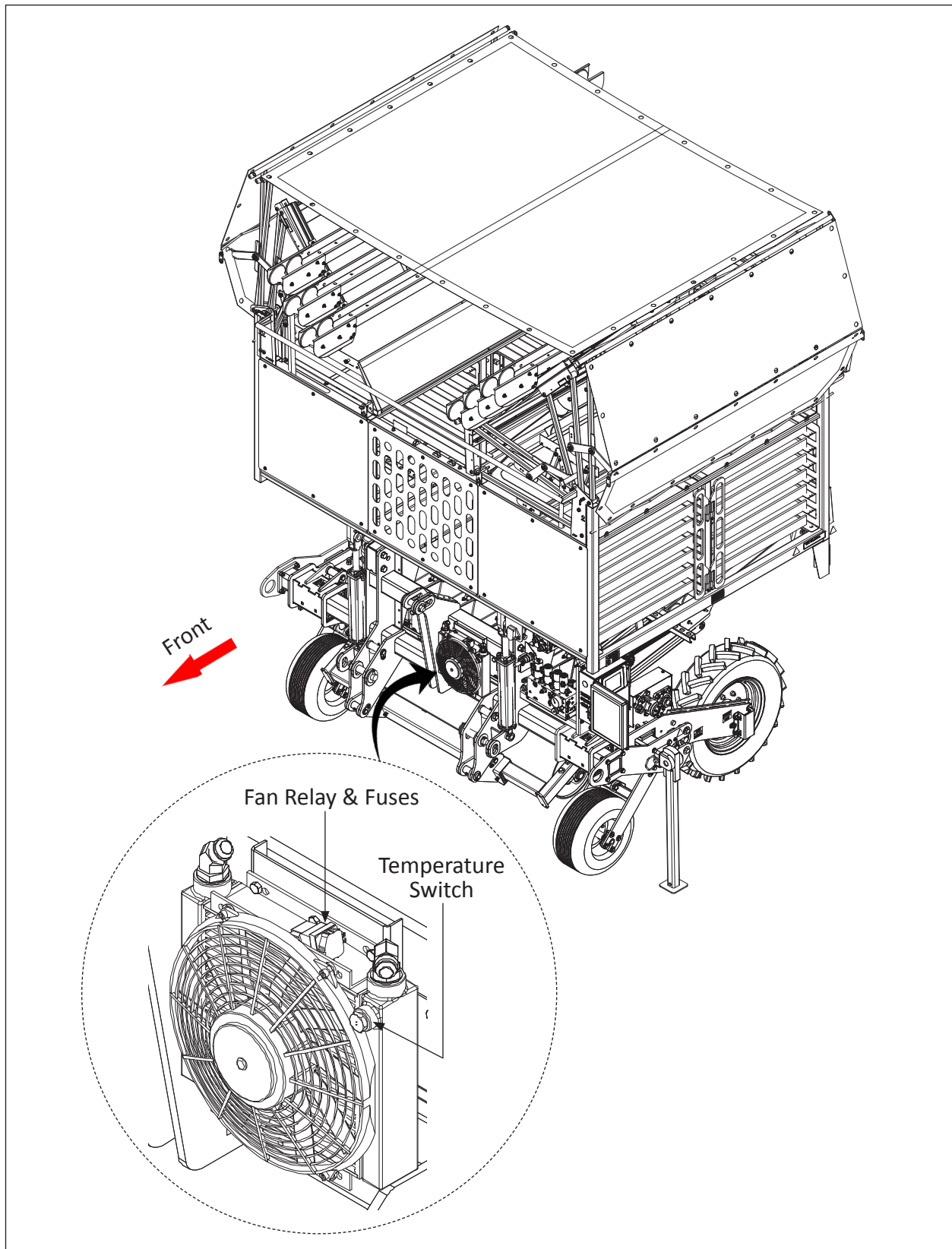


Fig. 7 Hydraulic Cooler

- Hydraulic Manifold (Main)

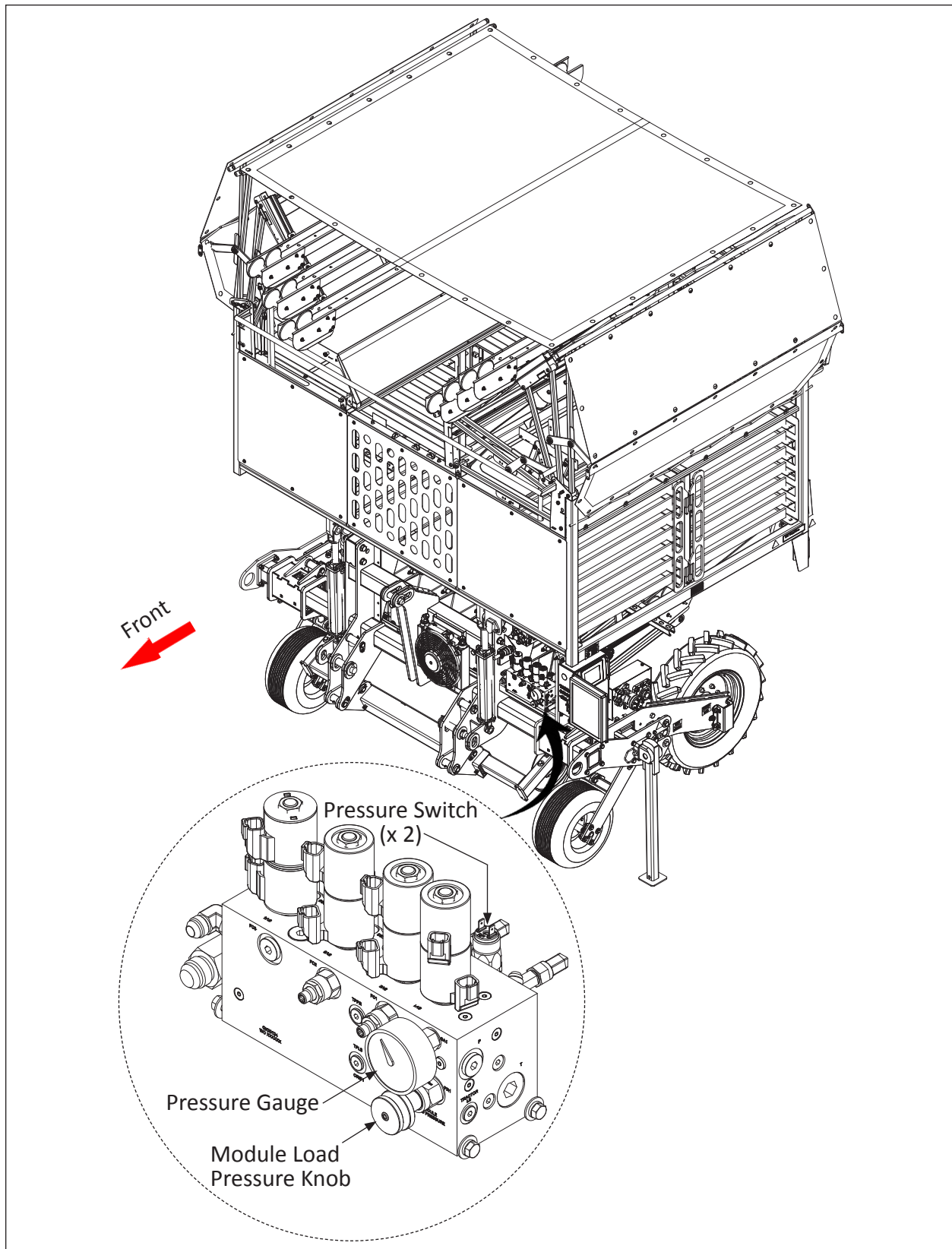


Fig. 8 Hydraulic Manifold (Main)

- **Hydraulic Manifold (Motor)**

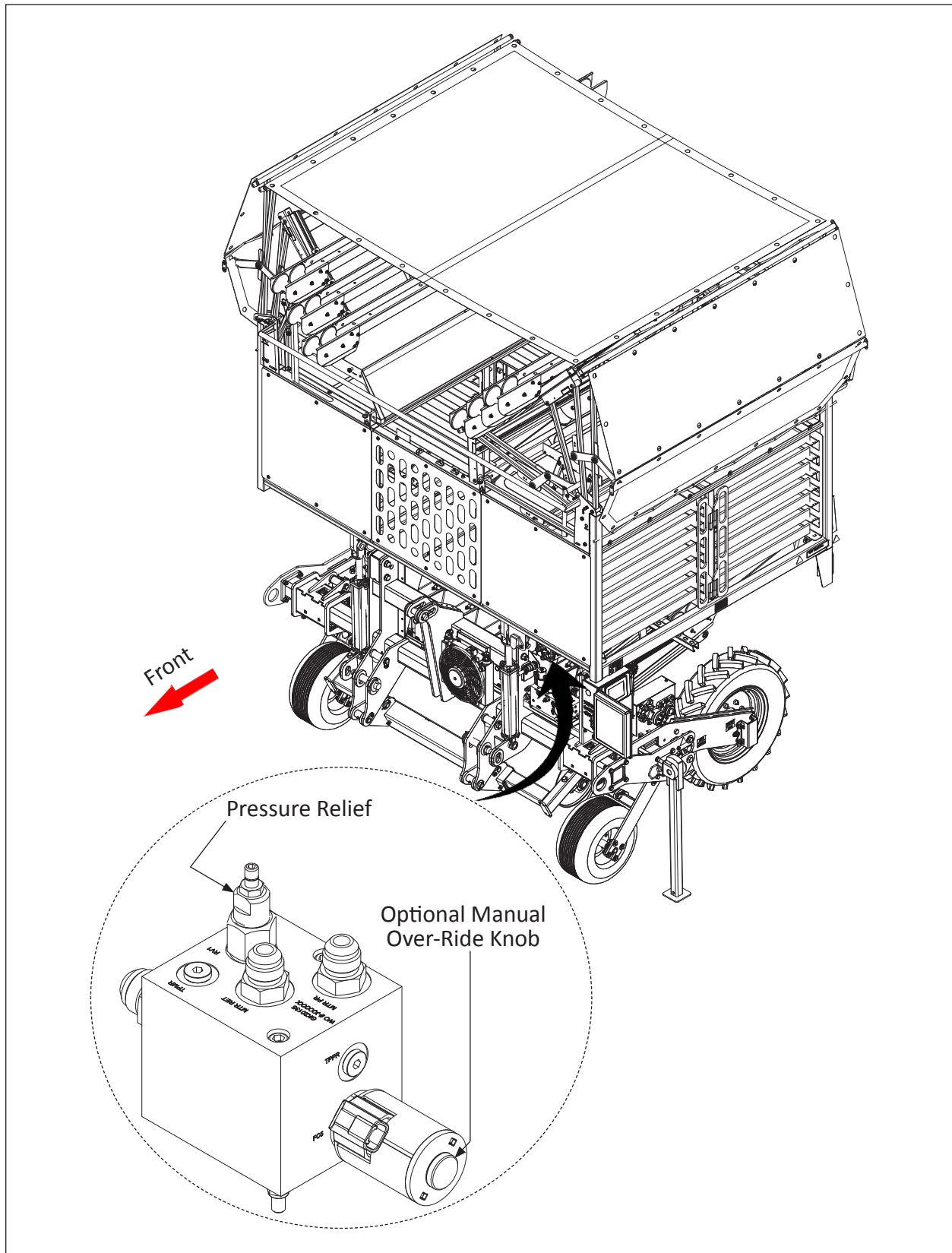


Fig. 9 Hydraulic Manifold (Motor)

General Description

- **Hydraulic Tank**

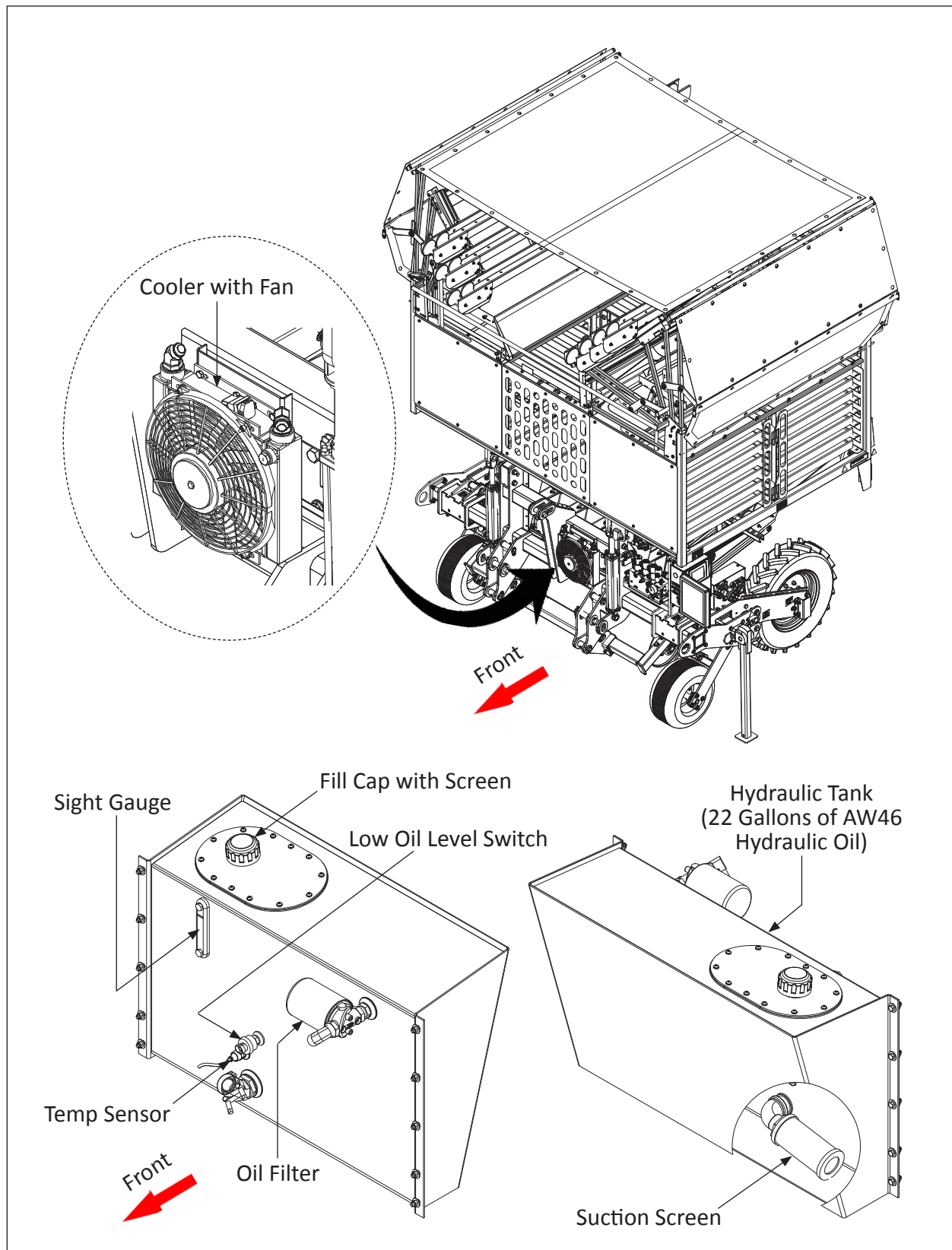


Fig. 10 Hydraulic Tank

- **Lights**

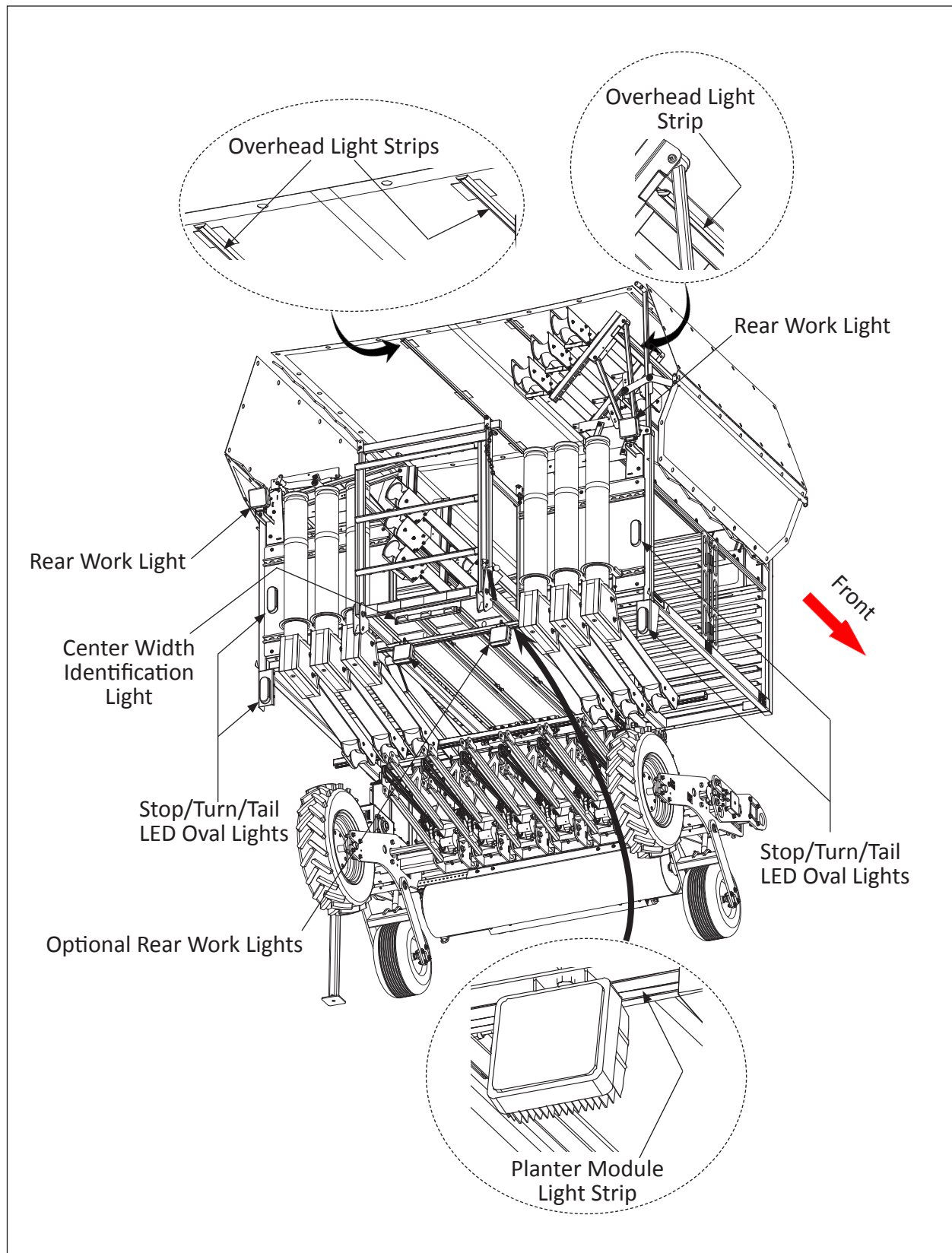


Fig. 11 Lights

General Description

- **Plant Path**

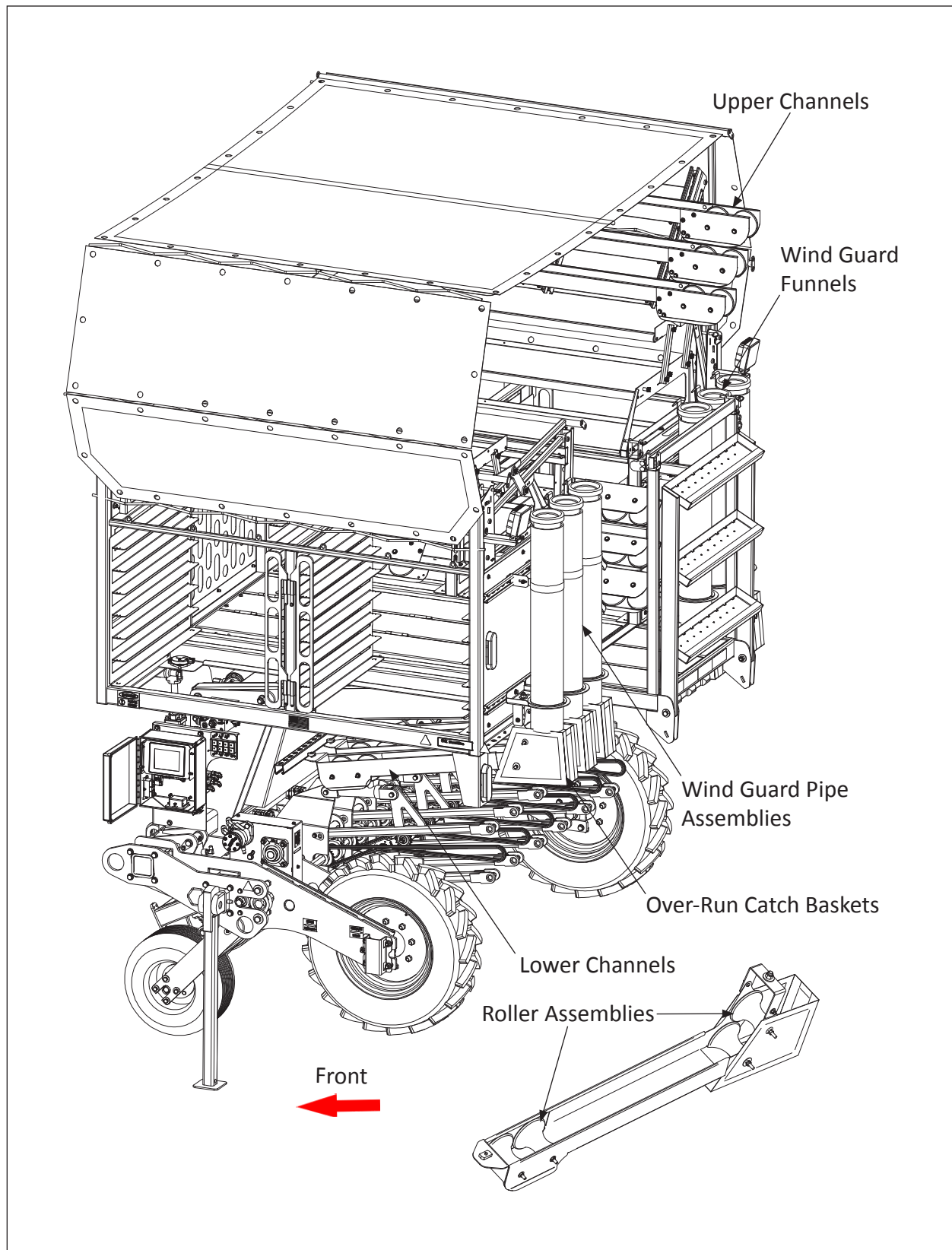


Fig. 12 Plant Path

-
- **Planter Module**

See included separate manual for details.

General Description

- **Platform**

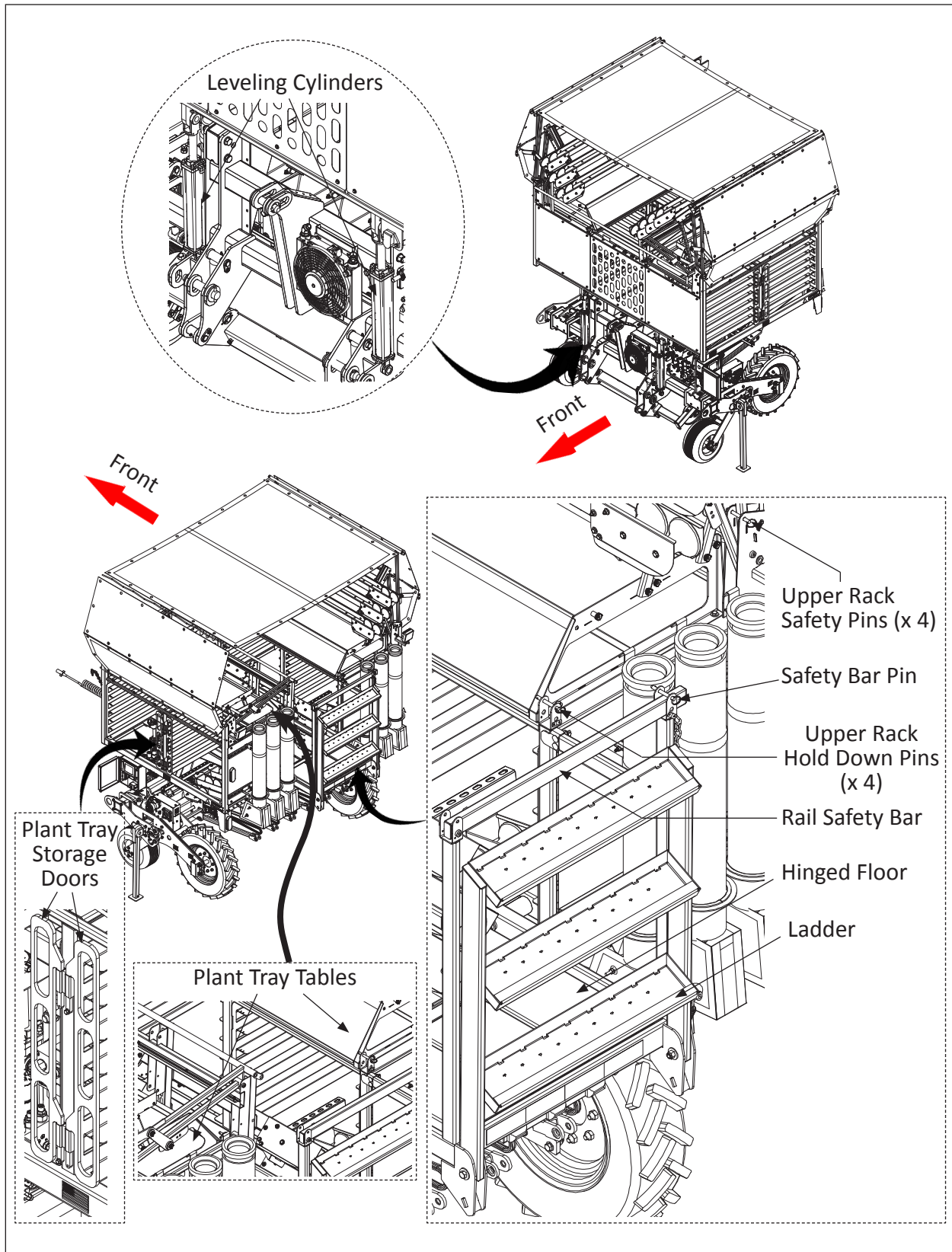


Fig. 13 Platform

- **Tarps (Refer to Appendix 1 & 2 for Details)**

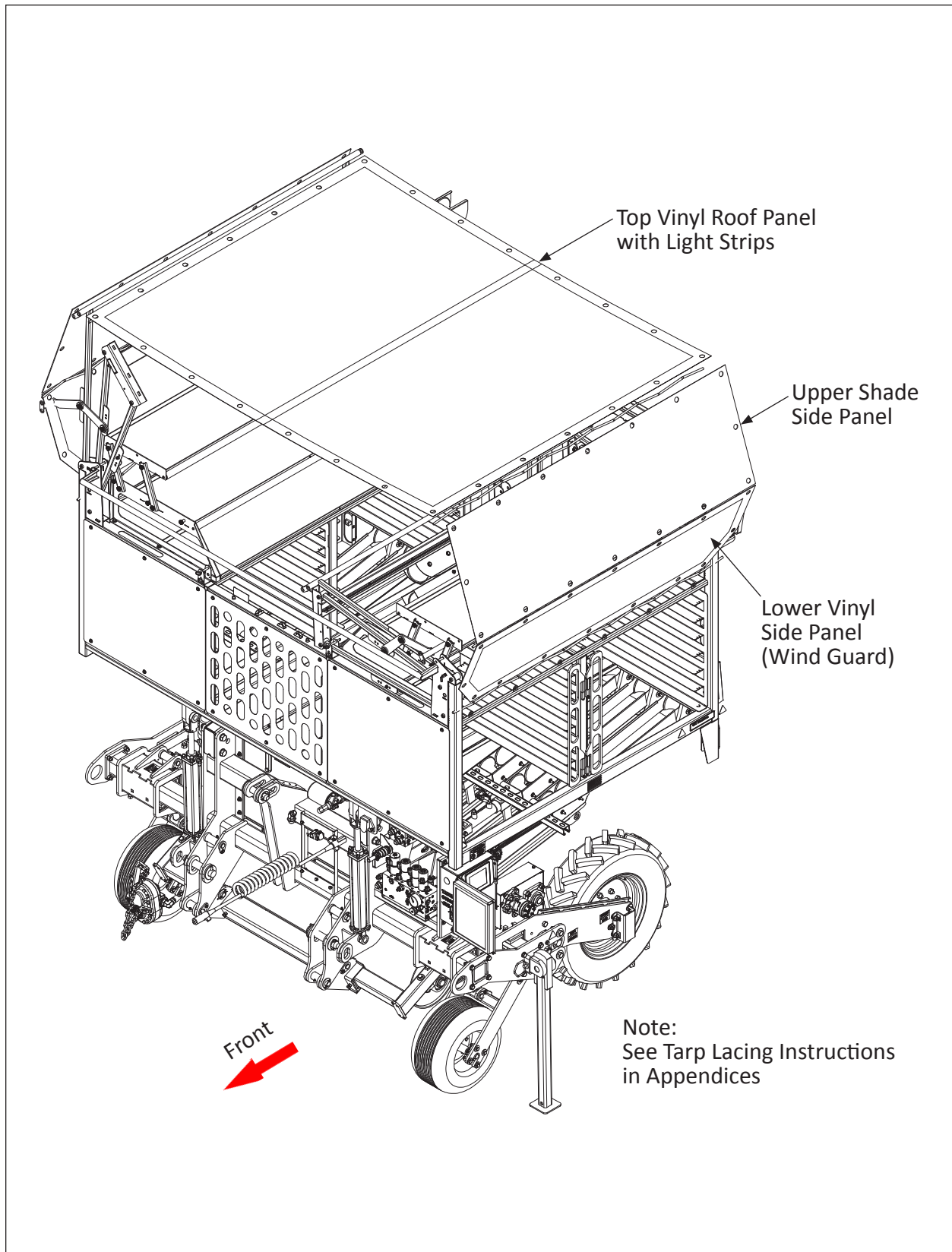


Fig. 14 Tarps

- **Tractor Connections**

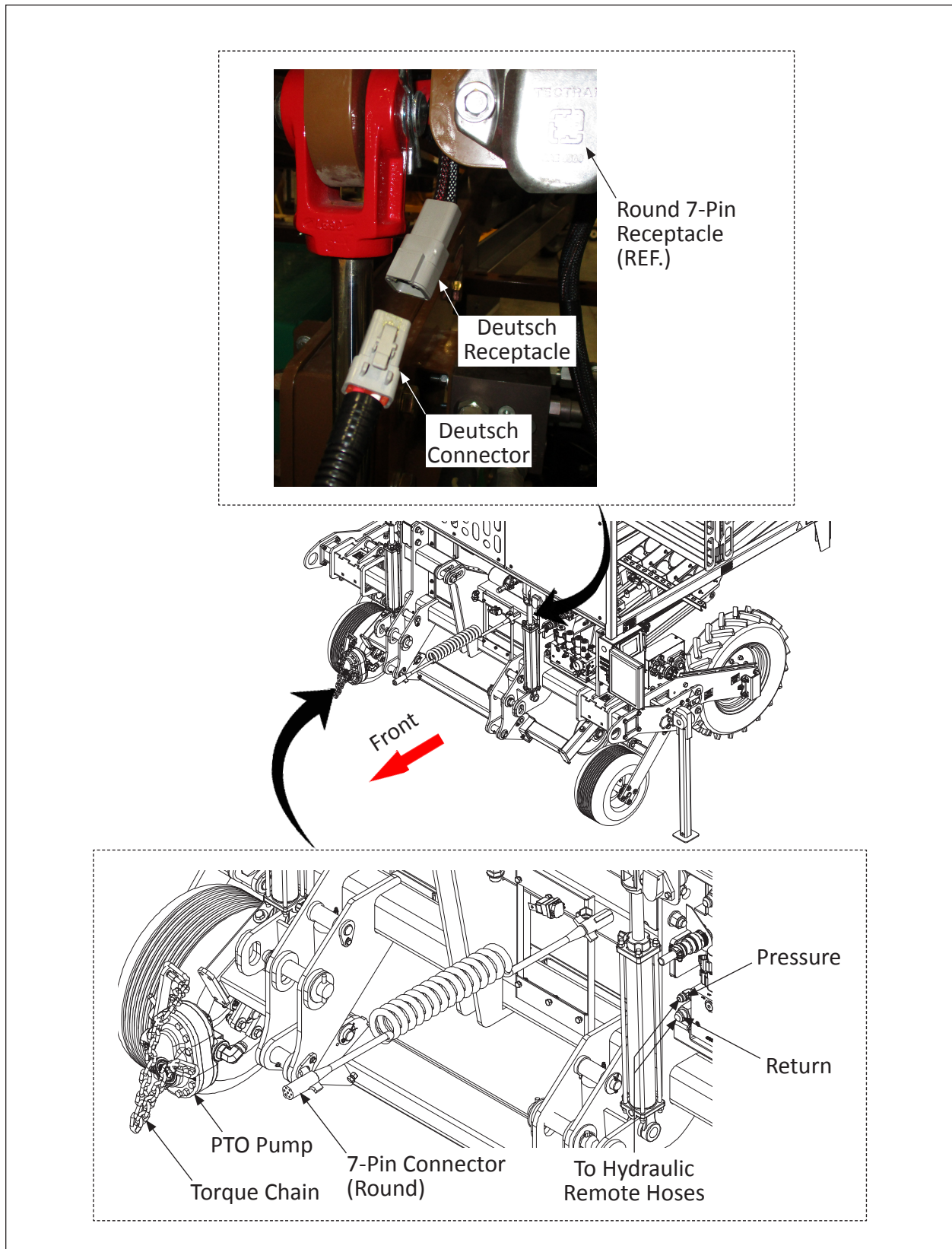


Fig. 15 Tractor Connections

This Page Is Left Intentionally Blank

Machine Setup

Tractor Requirement

Quick Requirements Table		
Machine Weight	Approximately 6000 lbs	
3-PT Category	III or IIIN (Category 3)	Quick hitch cannot be used
PTO Requirement	1000 rpm 1-3/8" 21 spline	600-800 rpm running speed
Electrical Requirements	7-Pin Connector (round)	30 amps max draw
Hydraulic Input	(1) Tractor Remote	Continuous 2-12gpm @2000psi

Fig. 16 Quick Requirement Table

- The machine may weigh in excess of 6000lbs, choose a tractor appropriately.
- Machine is fitted to a CAT III 3-PT, it will also accommodate a CAT III Narrow.
- Quick attach frames cannot be used with this machine.
- The Planter Requires (1) continuous flow Hydraulic remote connection.
 - The hydraulic flow should be limited to between 2-12gpm at 2000 psi.
 - The main Manifold has an internal bypass compensator. Bypass pressure is set between 200-300 psi.
 - An optional load sense kit is available, but not necessary.
 - A check valve is installed at the hydraulic manifold to prevent damage if connections are reversed. If hydraulic functions are not available, reverse the connections first when troubleshooting.
 - "Pressure" and "Tank" are labeled on the manifold as well as the optional "Load Sense".
 - The hydraulic manifold does not supply secondary filtering, please ensure that tractor hydraulic fluid is clean and in good condition to prevent damage or malfunction.
- PTO input is standard Type 2 1000 rpm 1-3/8" diameter 21 spline.
- PTO horsepower requirement is approximately 20hp max.
- Tractor PTO rpm should be maintained at 600-800 rpm during normal operation.

NOTICE

Consult Tractor manufacturer for safe operating speeds and emissions requirements.

- Contact PlantTape for 540 rpm PTO options, a change in pump may be necessary or planting speed will be limited.
- PTO can be operated at safe high idle speeds, excess rpm is not necessary.
- Excess PTO speed can create wasted energy, and unwanted heat. This can be identified by a visual and audible alarm on the side console, and a continuous operation of the hydraulic cooler fan.
- Electrical draw is approximately 30 amps max.

- The 7-pin electrical connector (round) matches ASABE S279 Standard and SAE J560 heavy vehicle standard. See Fig. 17 below for wiring identification.

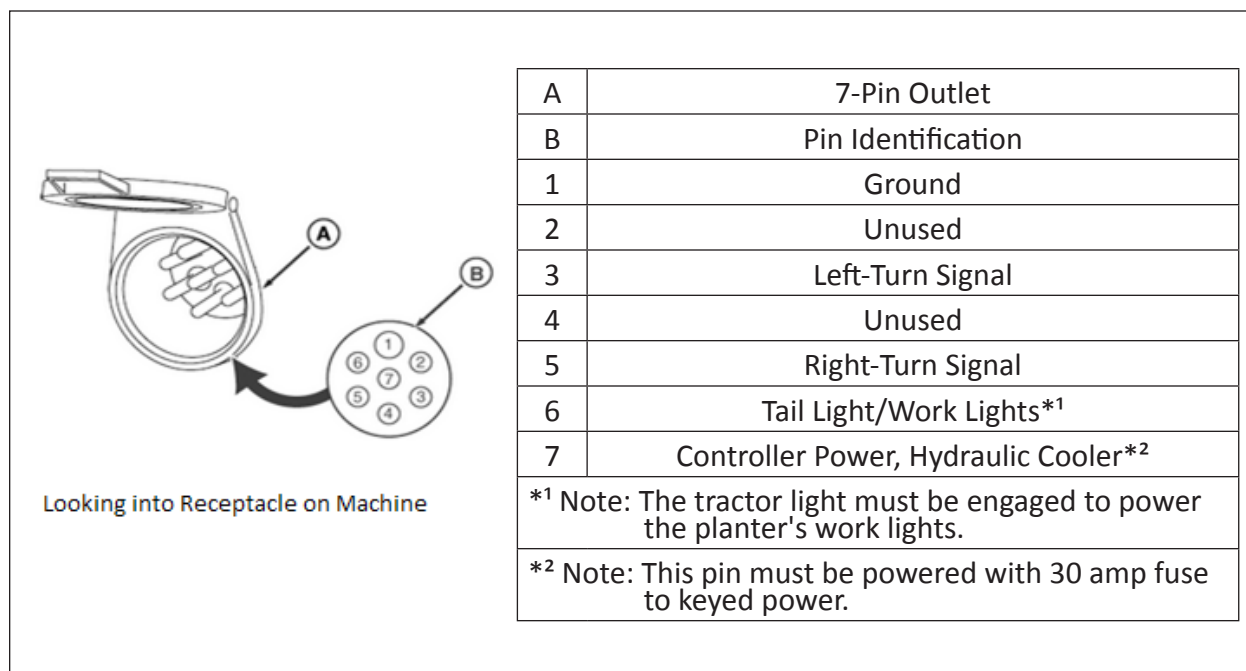


Fig. 17 7-Pin Connector Wiring Identification

- A cable for direct battery power is supplied with each planter. The red and black labeled ring terminals are to be connected to the tractor battery, and a Deutsch connector for the planter receptacle at the opposite end to the cable. See Fig. 18 below for wire details, and refer to Fig. 15 on page 21 for connection.



Fig. 18 Supplied Connection Wire

Machine Setup

- Connect 3-PT to tractor.
- Connect PTO pump to tractor PTO, and connect anti-rotation torque chain.
- Pull out ladder latch spring pin, and carefully lower ladder into place.

⚠ CAUTION

The ladder is heavy, make sure to support the weight as you unlatch and lower it, do not allow the ladder to drop.

⚠ CAUTION

The upper platform is fitted with a safety bar to close the ladder gap. It is necessary to ensure that this bar is lowered and pinned into place while the machine is in motion.

- Unlatch upper tray support one side at a time and allow roof and upper plant path channel racks to rise.

⚠ CAUTION

Take care to keep hands clear of folding links.

- Attach roof tarp and sidewall shades to frame, if needed, connect overhead lighting.
- Lift and push out stainless tray top level or optional top then middle tray.

⚠ CAUTION

Take care to keep hands clear of folding links.

- Connect the 7-pin round trailer connector to tractor plug and the 2-pin Deutsch connector of the supplied battery connection cable. The other end of this cable must be connected directly to the tractor battery terminals.
 - Check rear lights, work lights, and side console screen operation at this time.
 - Check horn operation at both buttons.
 - Platform work lights are connected to tractor work light circuit, and have an additional switch on the platform. Make sure both are on to test.
- With planter modules lifted off the ground, adjust the seed line spacing.
- Adjust the lower plant path channel to align front rollers over the planter module.
- Lift each wind guard pipe upper section and hook over slot/loop at rear of plant path upper channel.
- Adjust the rear wind guard pipes to line up with upper and lower plant path channel rollers as necessary.
- Lift and open side doors to load plant trays, then close for normal operation.
- Connect transplant tape, and route up into upper plant path channel between the two rollers.

NOTICE

Take care to orient and route the plant tape properly through all transitions to ensure smooth trouble-free operation.

NOTICE

Ensure that there are no loops or snags in plant tape as it feeds out of trays.

- Route plant tape to the rear, between the rear rollers and down through the wind guard extendable pipes into catch baskets.
- Route the plant tape between the rollers at the rear of the lower plant path channels from below and behind toward the center of the machine.
- Route the plant tape between the front rollers at the front of the lower plant path channel and down to the planter module.
- The plant tape can now be routed into the planter module (See planter module handbook).
- Lift machine and drive to field.
- Using the side console screen, adjust the plant spacing using the adjust menu.

NOTICE

Plant spacing on screen is not absolute, adjustment may be necessary to accommodate for field conditions or other factors. Test machine on small sections of field and adjust settings as necessary before planting entire field.

- Adjust front wheels using the side control button pad to set the planter slide plate level with the ground.
- Adjust the bed packing roller to the desired pressure to prepare planting bed as needed.
- The upper work platform can now be leveled for operator comfort.
 - The platform can be leveled manually, or the auto-level system can be turned on.

CAUTION

Leveling the platform will help limit potential interference of the front of the planter and the rear of the tractor cab.

- The planter module pressure can now be set, either to increase or decrease weight of the planter module.
- Adjustments should now be made for the planter module operation.

Preparation for Shipping or Transporting

Preparation for Shipping or Transporting

- Raise bed roller.
- Raise planter modules and lock out using $\frac{1}{4}$ turn valves at planter module lift cylinders.
- Level the platform using the front wheels lift located on the side console, and platform tilt controls, at the upper operator station.
- Remove all plant trays from storage racks and upper tables, close side doors and ensure they drop into their lower position.

NOTICE

For long trips at high speed, it is recommended that the overhead lights be disconnected and the roof tarp and side shades be removed. For short low speed trips, they may be strapped down to the platform and restrained from excess movement.

- Remove safety pins first.
- Lower the plant tray tables by carefully pulling toward the center of the machine. Take care to pull evenly to prevent binding. (The machine may be fitted with two fixed trays and one or two folding trays. Always pull the top level in first, then the middle level. This prevents interference with the upper plant path rack (take care to keep hands clear of folding links).
- Lower one side of the upper plant path and roof support frame at a time by removing the safety pins at front and back. Then pull down on the upper plant rack.

NOTICE

This may require multiple people. Take care not to bend the plant rack frame or roof support frame.

NOTICE

The rack should be pulled down evenly to prevent binding or bending of the elements.

CAUTION

Take care to keep hands clear of folding links.

- While holding the rack down, insert the front center aisle hold down pins on top of the tube to restrain them in the lowered position.

NOTICE

Re-insert the outside safety pins, do not leave them dangling by their tethers.

- Repeat for opposite side upper plant path rack.
- At this point, the roof tarp can be restrained or removed.

NOTICE

Do not allow roof to flap in transit.

-
- Pin the ladder platform safety rail down in position.
 - From the ground the ladder can now be lifted and latched in place if desired, or left down.
 - The machine can now be loaded with the tractor onto a trailer. Once in place the machine should be strapped down, at all four (4) corners at a minimum, including crossing straps. At this point, the tractor may be decoupled and removed.
 - If removing the tractor, use the torque limit chain to support the PTO pump from the top link slot.
 - Disconnect and store the 7-pin round power connector cord. Do not leave it to hang from the receptacle.

Safety Leg Usage

- Whenever the machine is lifted from the ground by the 3-PT for service, it must be supported by the safety legs.
- To use the legs, lift the machine using the tractor 3-PT, do not disconnect from the tractor.
- Remove both safety leg lock pins
- Pull out the safety leg, until the hinge element is exposed and the leg can rotate down 90 degrees.
- With the leg rotated down, push the hinge back into the tube until the pin hole lines up, and insert and lock the safety leg lock pins one (1) per side through the stainless slide tube again.
- Gently lower the tractor 3-PT, until the legs contact the ground and support a portion of the machine weight.

CAUTION

The safety legs are not meant to support the entire machine, but to protect against failure of the Tractor 3-PT.

This Page Is Left Intentionally Blank

Adjust Seed Line Spacing

Adjust Seed Line Spacing

- Adjust with the four (4) machine wheels on the ground.
- Ensure that stainless slide tube is clean and free of debris.
- Loosen four (4) planter module clamp bolts per planter module clamp, 3-4 turns should be sufficient.
- Once the clamps are loose, support the planter module.
- It may be necessary to loosen lower slide pad below the stainless steel tube.
- Insert in a module adjust wrench between the long ACME nut and clamp frame.

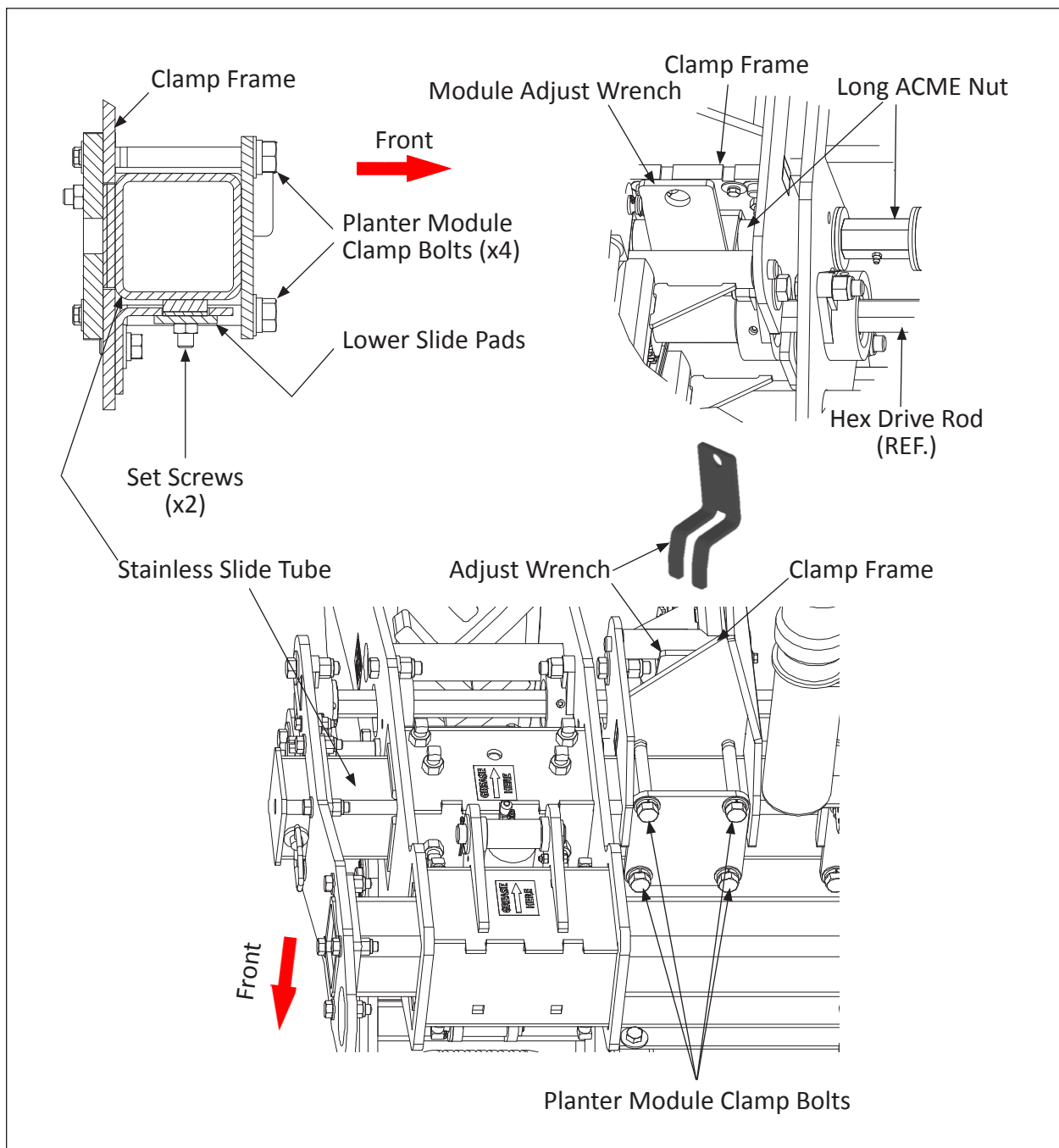


Fig. 19 Adjust Seed Line Spacing

NOTICE

Adjust each module individually.

- Rotate the 1-3/8" ACME rod end nut, while rocking the planter module to assist it to slide to the new position.

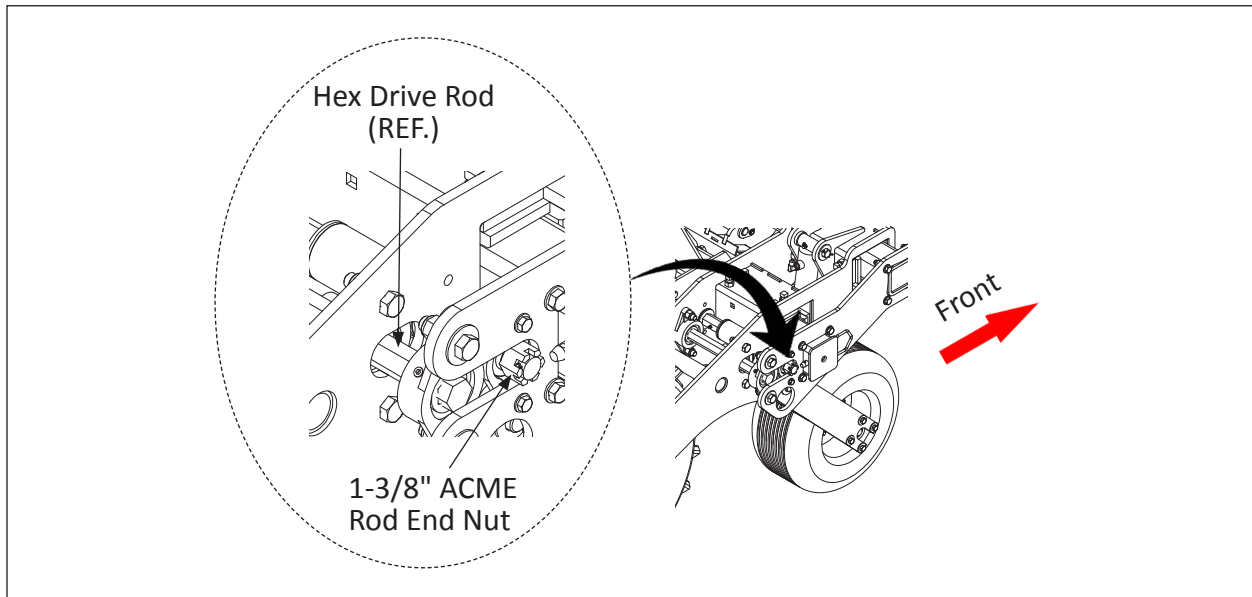


Fig. 20 Lift and Lockout Planter Module

NOTICE

The Acme adjuster thread should rotate easily. If not, check for alignment or obstruction issues, and correct first.

- Tighten the clamp bolts to pull the clamp into position against the slide tube.
- Tighten lower slide pads if necessary.
- Remove adjust wrench and store.
- The planter module clamp should be rigid to the frame now. If not, loosen the bolts and adjust the fit.

NOTICE

The hex drive shaft should still spin freely in the bearings. If not, adjust alignment of the drive shaft bearings and clamp.

Lift and Lockout Planter Modules

Lift and Lockout Planter Modules

- While powered by the tractor hydraulic remotes, lift all modules using the side console button pad.
- Close the ¼ turn lockout valves located at each module lift cylinder.
 - The valves can be closed to lock out individual modules, or lock all modules to secure in the up position for shipping purposes.

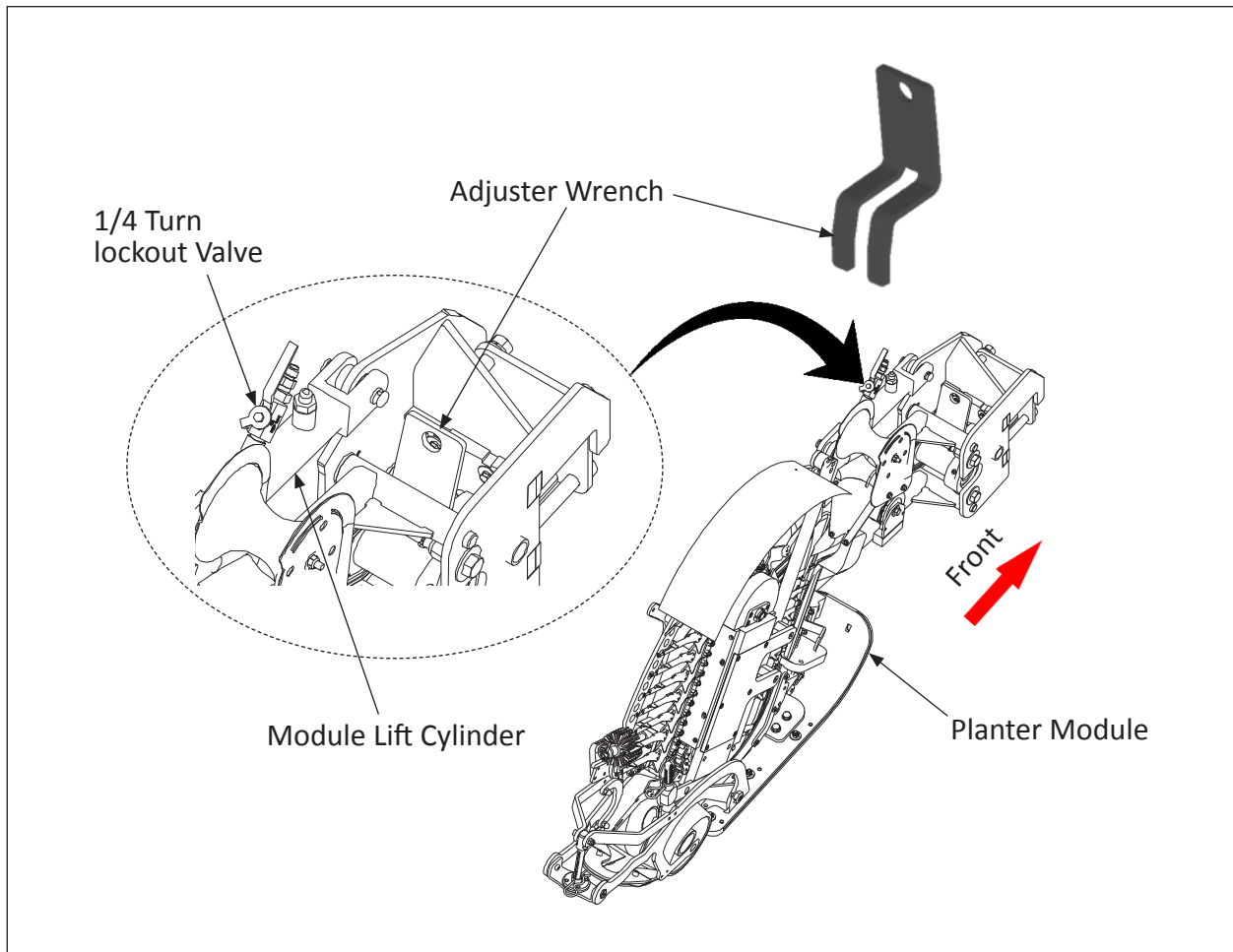


Fig. 21 Lift and Lockout Planter Module

This Page Is Left Intentionally Blank

Adjust Bed Roller Width

Adjust Bed Roller Width

- Bed Rollers are purchased separately from the machine.
- To adjust the roller mount frame, the bed roller must be removed and replaced.
- Typically a roller for 80" bed spacing is supplied, and this roller will work satisfactorily up to 84".
 - Roller width is specified at time of purchase. Rollers to support 60" to 80" bed spacing are available.
 - The roller mount frame is adjustable for 60"-84" row widths.
- Lift the machine using the tractor 3-PT and extend and lock the safety legs.
- Support the roller using blocks or jack stands. Take care to prevent it from rolling away when freed.

CAUTION

Take Care. Roller with bearings can weigh 250-300lbs depending on length.

- Unbolt the two (2) bolts holding the dirt scraper assembly to the roller mount frame and set aside.
- Unbolt the roller bearings and lower the roller, then set aside.
- Loosen the eight (8) clamping jam nuts and loosen the eight (8) clamping bolts 1-2 turns.
- The roller mount frame arms can now be slid in or out to accommodate the new roller width.
 - Make sure that both arms are at equal distance from centerline of the frame.
- Tighten the eight (8) clamp bolts and the eight (8) clamping jam nuts, and ensure that the arms are fully seated on all four (4) sides.

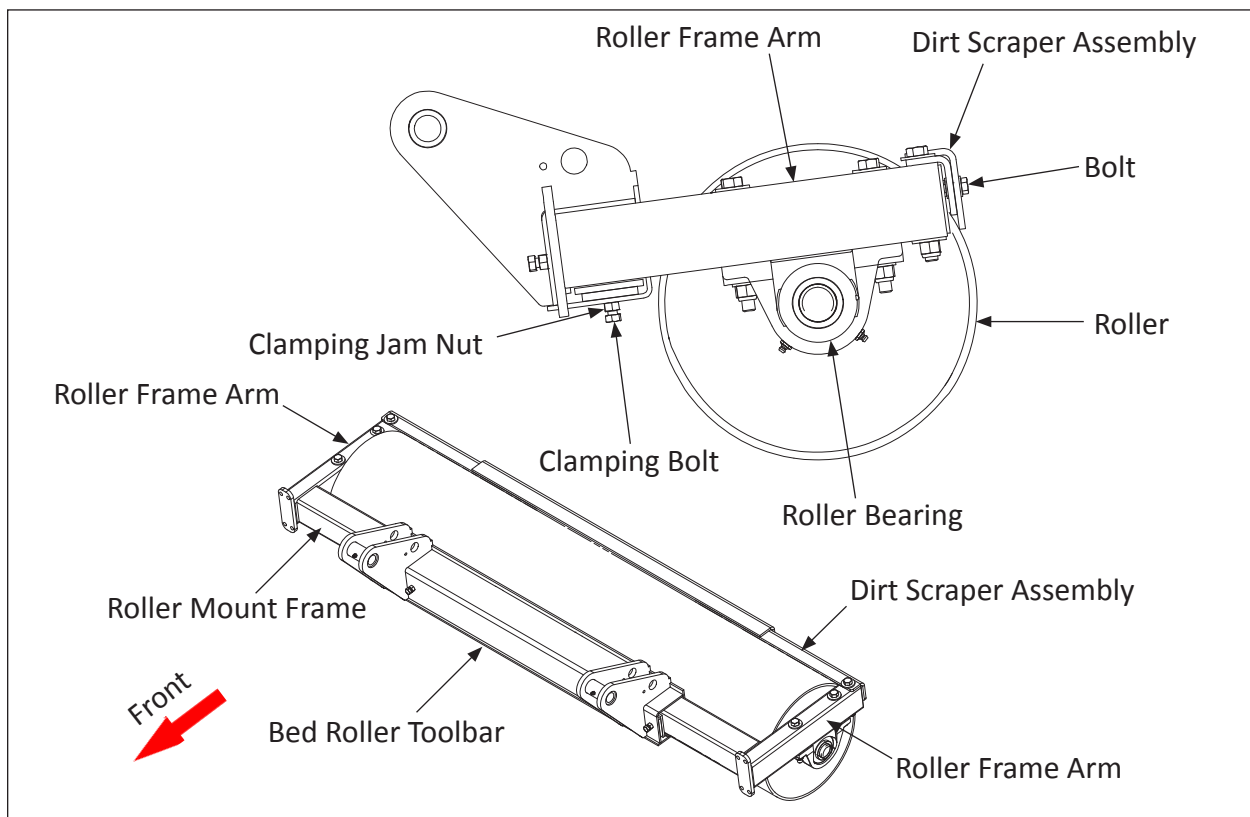


Fig. 22 Lift and Lockout Planter Module

-
- Install the new roller assembly with the existing bearings, centering it between the arms and tighten the set screws onto the roller shaft to keep it in position.

NOTICE

Roll the roller by hand to check bearing alignment and for wear. The roller should turn freely.

⚠ CAUTION

Take care to not get hands pinched between roller and roller frame.

- Unbolt the dirt scraper components and re-assemble at the correct width. Adjust each side equally.
- Bolt the dirt scraper in place and adjust to provide a minimum gap without rubbing the roller at any point, roll the roller by hand to check for high spots.

Adjust Wheel Spacing

Adjust Wheel Spacing

The Machine has adjustment to allow 60"-84" bed row spacing at the support wheels.

- Lift machine using tractor 3-PT and support with safety legs.
- Adjust the bed roller width before moving the wheels.
- Ensure that both slide bars are clean and free of debris.
- When moving the gearbox side wheel frame, you must loosen the set collars and maintain alignment of the hex shaft chain drive sprocket.

CAUTION

Take care to slide gearbox and set collar, and re-align them as the frame is moved, otherwise, the module drive train will not work and may be damaged.

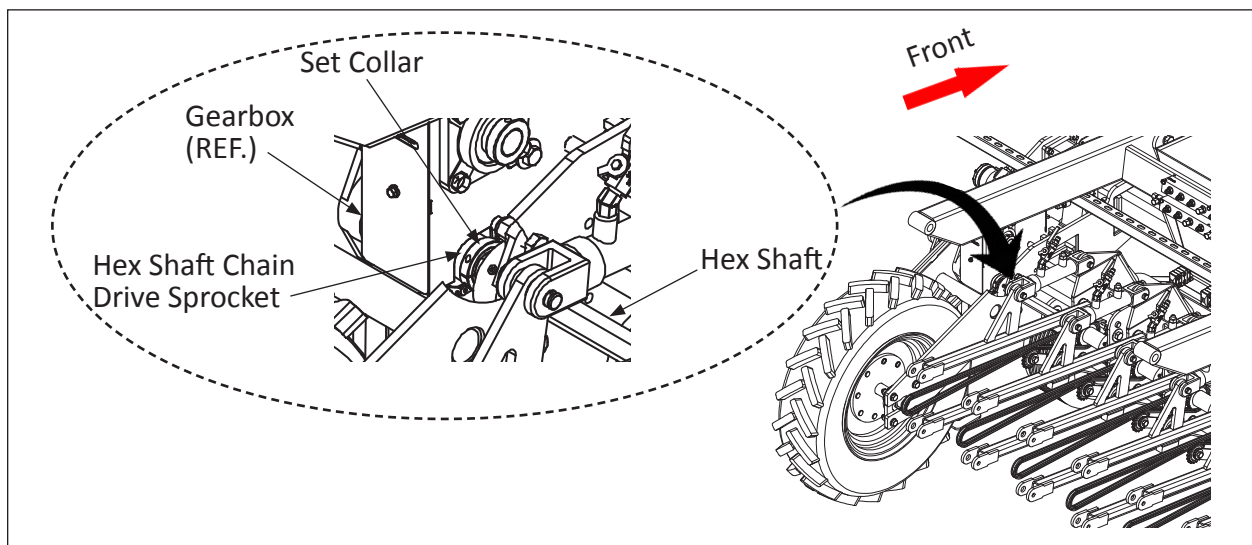


Fig. 23 Adjust Wheel Spacing (1)

- Loosen jam nuts and back out all square head wheel frame clamp bolts, sixteen (16) per wheel frame, 3-4 turns should be sufficient.

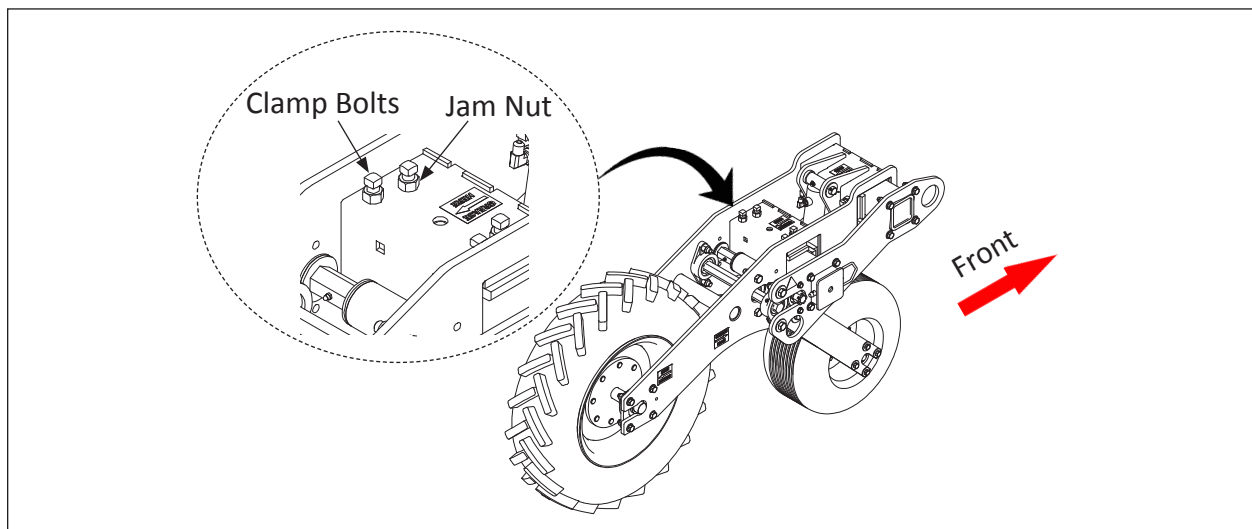


Fig. 24 Adjust Wheel Spacing (2)

- Using the grease fittings at the center of the clamp, add grease to allow easier movement and drive the clamps from the tube surface if necessary.

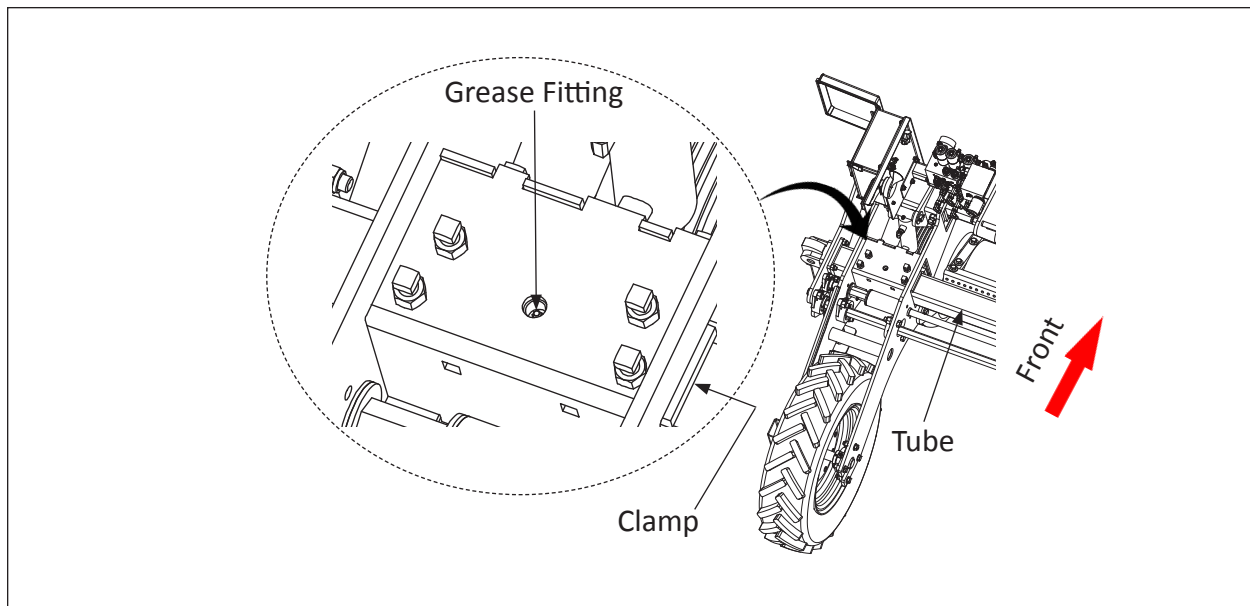


Fig. 25 Adjust Wheel Spacing (3)

- Once the clamps are loose, the frame will be supported by the clamp slide pucks.
- Insert in a 1-3/8" wrench between the long ACME nut and wheel frame.

NOTICE

Adjust each side individually.

- Rotate the 1-3/8" ACME rod end nut, while rocking the wheel frame to assist it to slide into the new position.

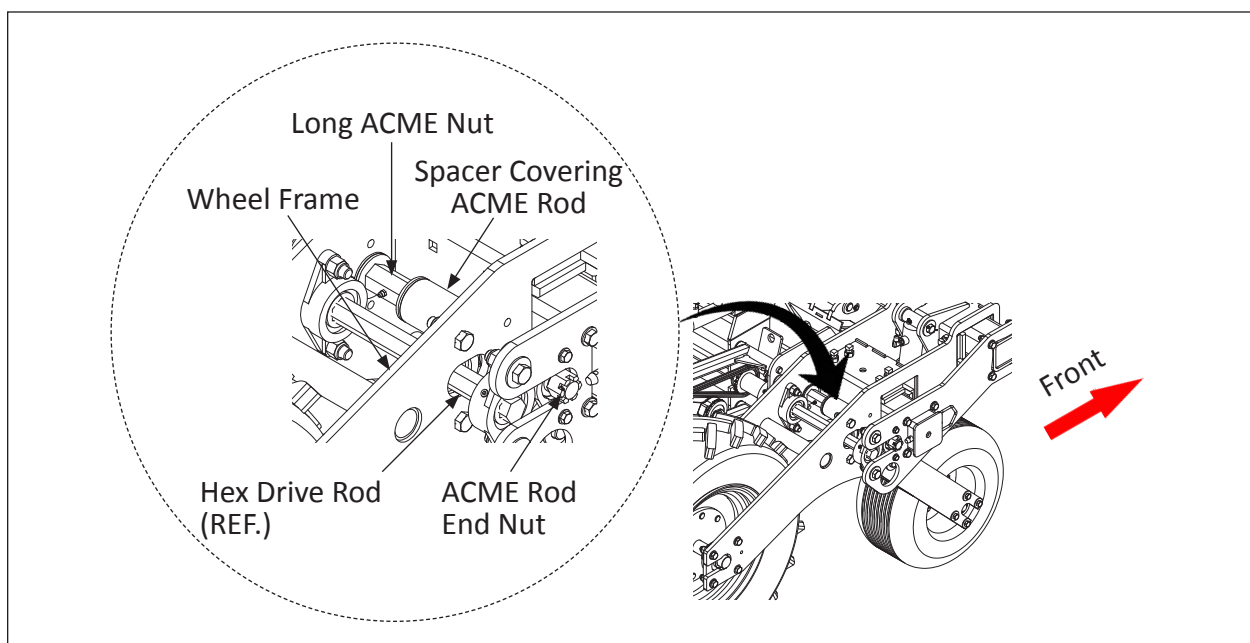


Fig. 26 Adjust Wheel Spacing (4)

Adjust Wheel Spacing

- Lightly tighten the clamp bolts to pull the wheel frame into position against the slide tubes.
- Once the wheel frames are both in their new position, remove the safety legs and lower the planter back down so that weight rests on the wheel frame and finish tightening the square head clamp bolts and lock them with the jam nuts.
- The wheel frame should be rigid to the frame now.
- If the wheel frame does not clamp completely, the eight (8) end bolts for the stainless steel slide tube can be loosened, and slots will allow the stainless slide tube to adjust forward to the wheel frame clamps. When complete, tighten the stainless slide tube bolts.

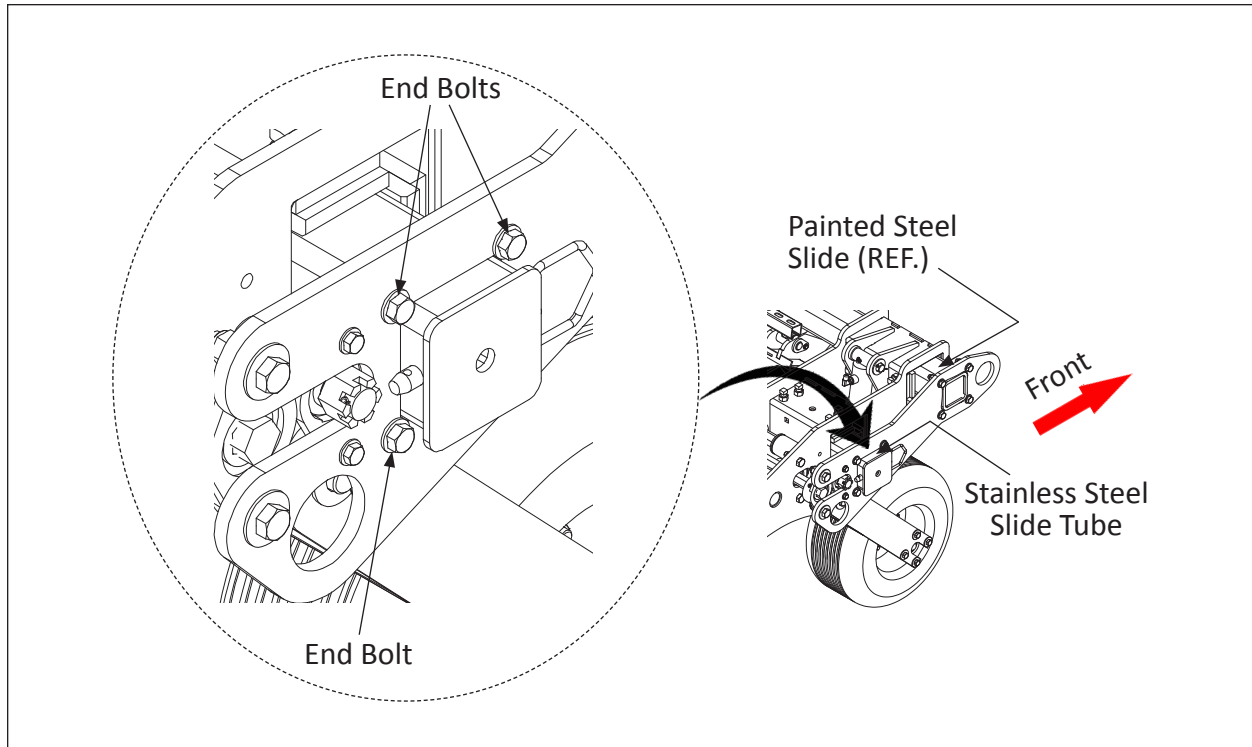


Fig. 27 Adjust Wheel Spacing (5)

- Once Wheel Frames are locked in place, clean off excess lubricant to prevent dirt accumulation on slide surfaces.

This Page Is Left Intentionally Blank

Adjust Lower Plant Path Channels

Adjust Lower Plant Path Channels

Adjust the lower plant path channels so that the plants exit the forward rollers and drop smoothly to the Planter inlet roller and guide.

- Loosen the forward clamp bolt, and slide the individual channels to their location.
- Loosen and align the wind guard pipe to minimize plant tape angular transitions.
- The lower channels can be extended by sliding the two halves together or apart as needed.
- The rear mounts (upper and lower clamp plates) can be adjusted side to side to compensate for extreme angles as necessary.

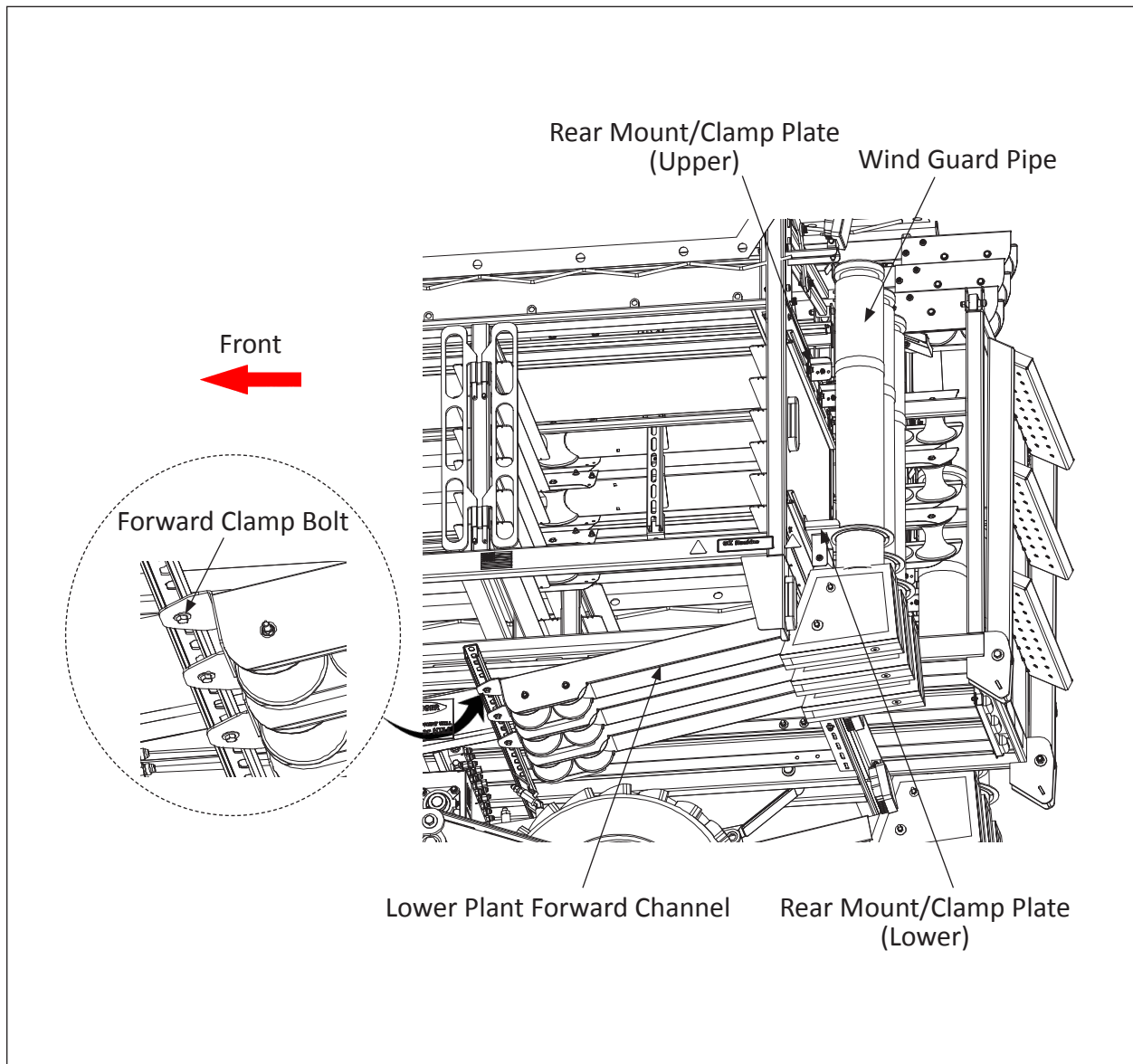


Fig. 28 Adjust Lower Plant Path Channels

This Page Is Left Intentionally Blank

Adjust Wind Guard Pipes

Adjust Wind Guard Pipes

Adjust the wind guard pipes to allow free flow of plants from upper plant path channel to lower plant path channel.

- With the upper plant rack raised, lift and hook the individual upper wind guard pipes to the plant path channels below the rollers.
- Loosen both the upper and lower clamp plates.
- Align the upper and lower pipes parallel.
- The lower plant path channel alignment can be adjusted to compensate if necessary.

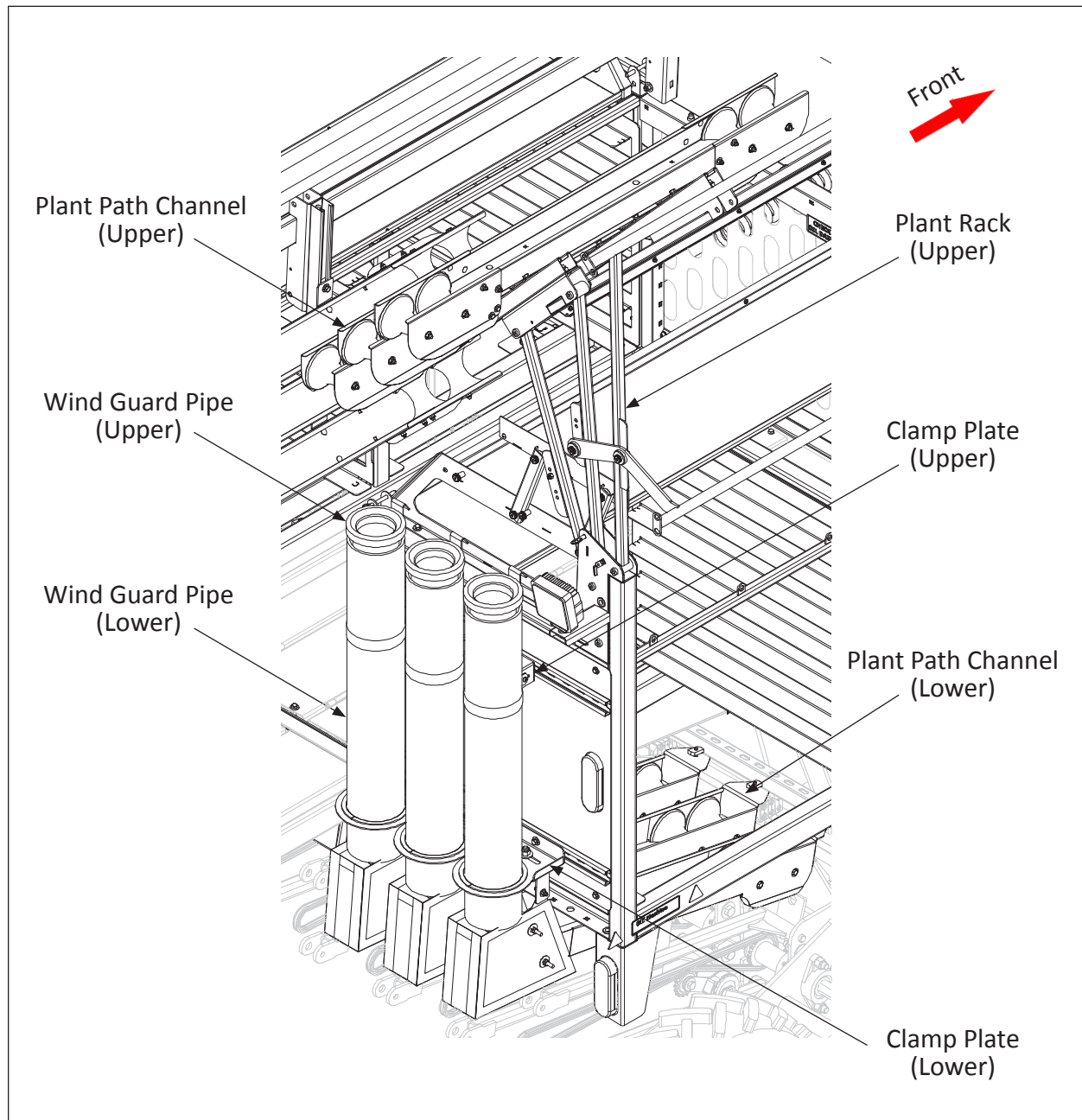


Fig. 29 Adjust Wind Guard Pipes

This Page Is Left Intentionally Blank

Side Console Controls

The side console, located above the left side front wheel of the machine, has an external 8-button pad, an enclosed touch screen, bluetooth module, and the fuse panel.

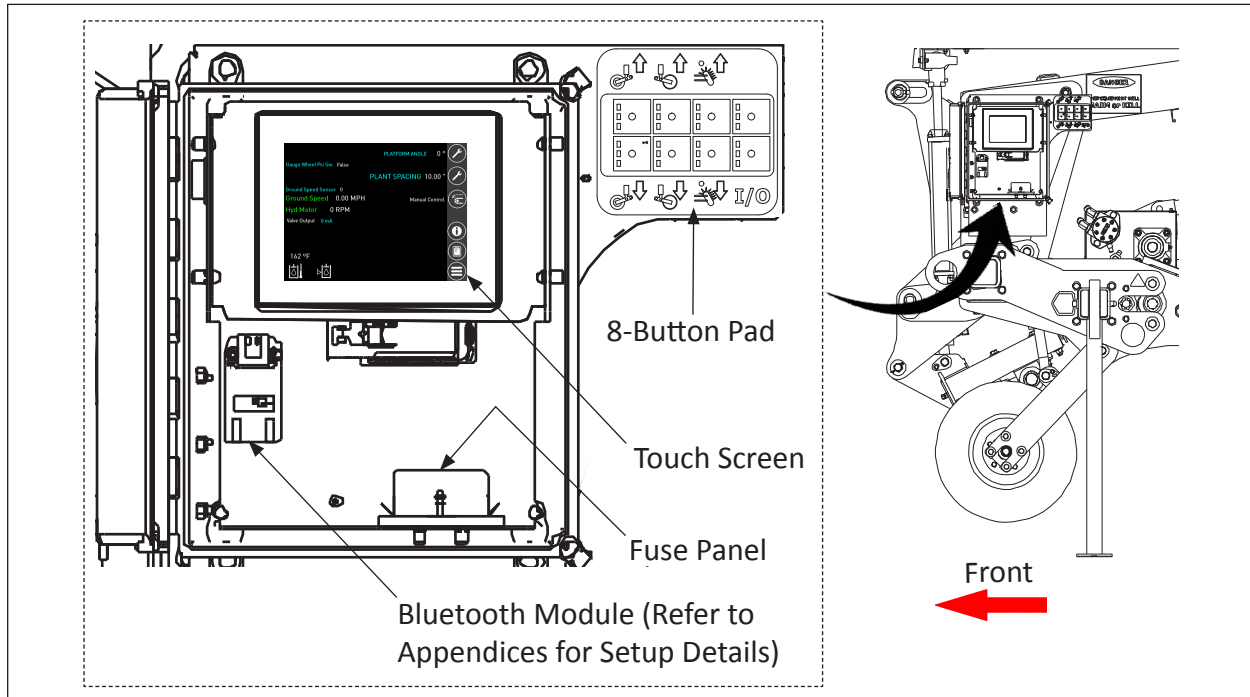


Fig. 30 Side Console Controls

Side Console Button Pad

The button pad has the following buttons: Front Wheel up and Down, Bed Roller Up and Down, Planter Module Up and Down, a Planter Module ON/OFF switch, and one unused button. The pictographs identify the operation.

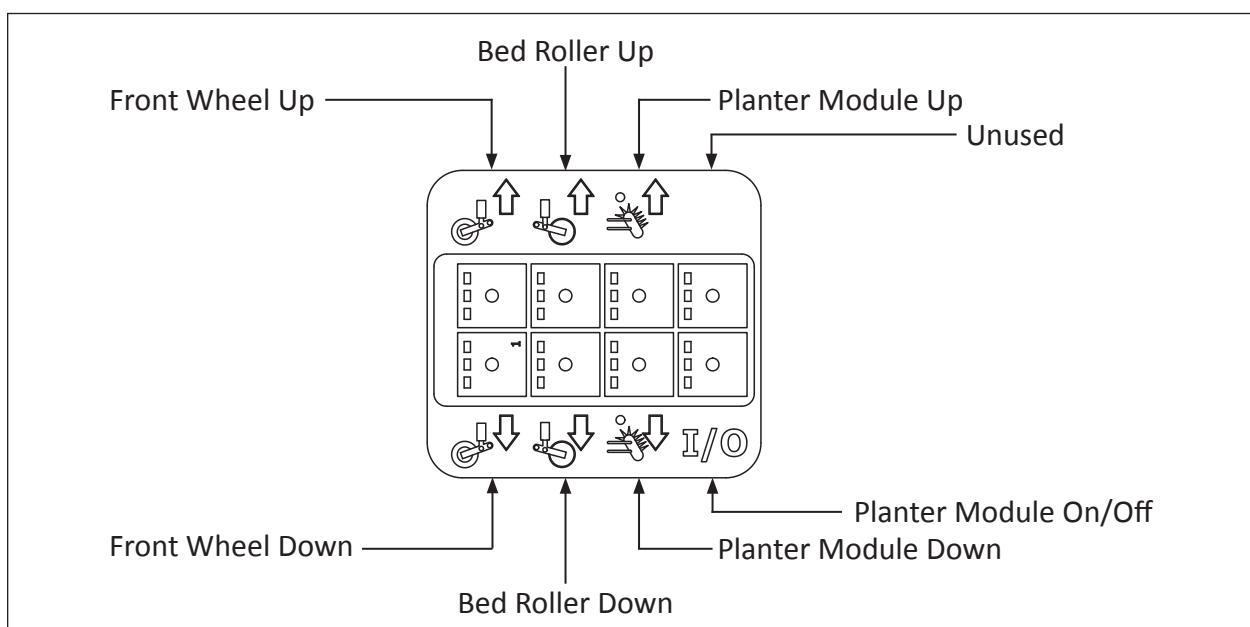


Fig. 31 Side Console Button Pad

Touchscreen

The touch screen allows adjustment of plant spacing as well as displays various sensor data, and allows maintenance personnel to adjust settings.

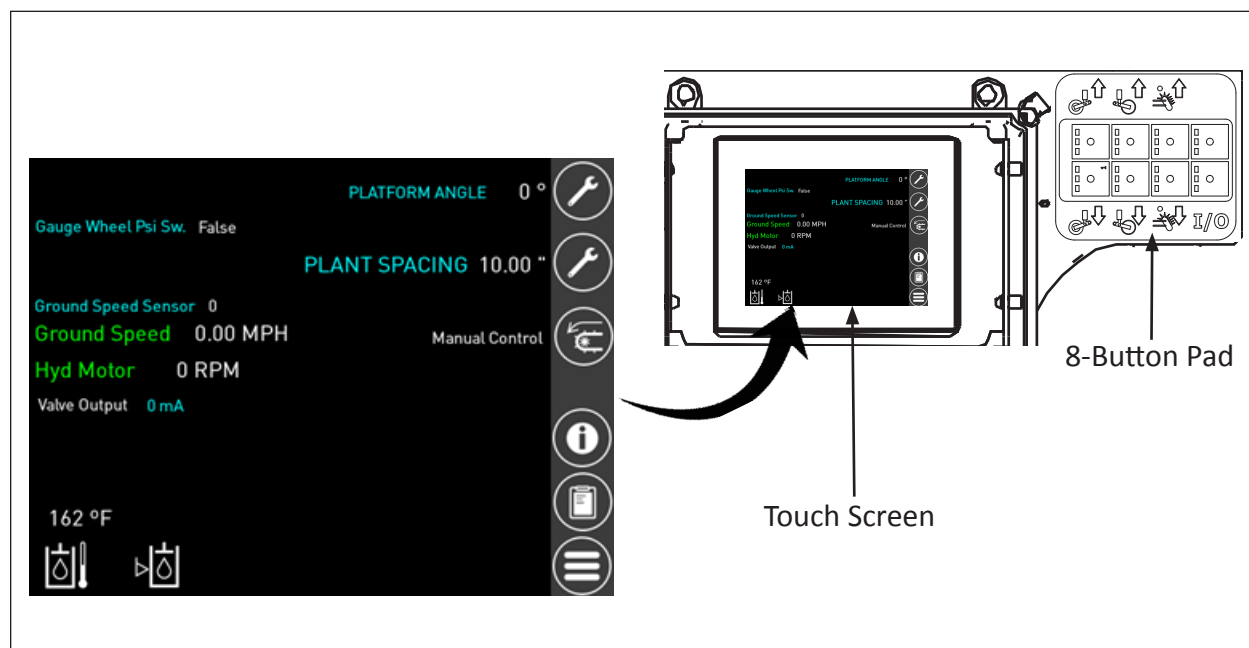


Fig. 32 Side Console Touchscreen

NOTICE

Keep the keypad free of debris.

Enable/Disable Planter Modules

Enable/Disable Planter Modules

To operate the planter modules, first activate them by using the Planter Module On/Off button.

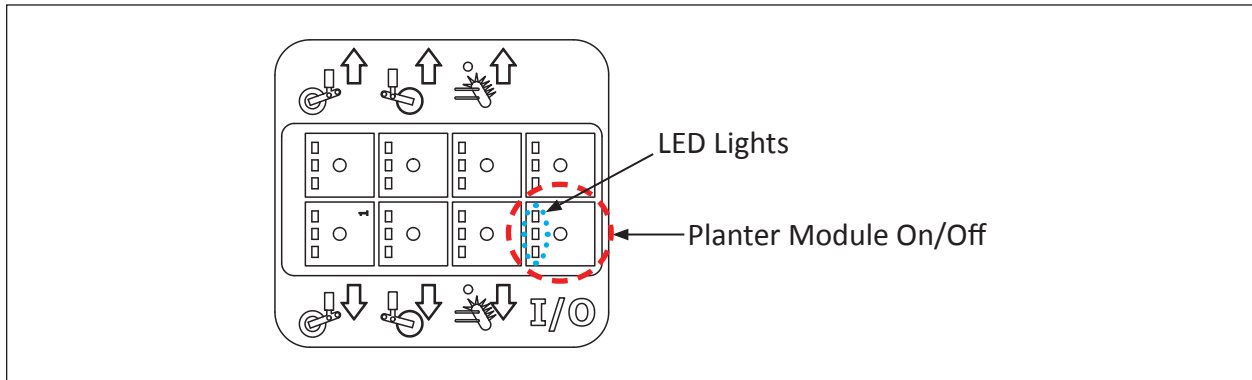


Fig. 33 Enable/Disable Planter Moduls_Planter Module On/Off Button

This will light up the center LED. For the planter modules to operate, the machine must sense that it is sitting on the ground. To do this, two pressure switches are used, which are located on the backside of the hydraulic manifold, and detect if there is pressure on either the front wheels, or bed roller.

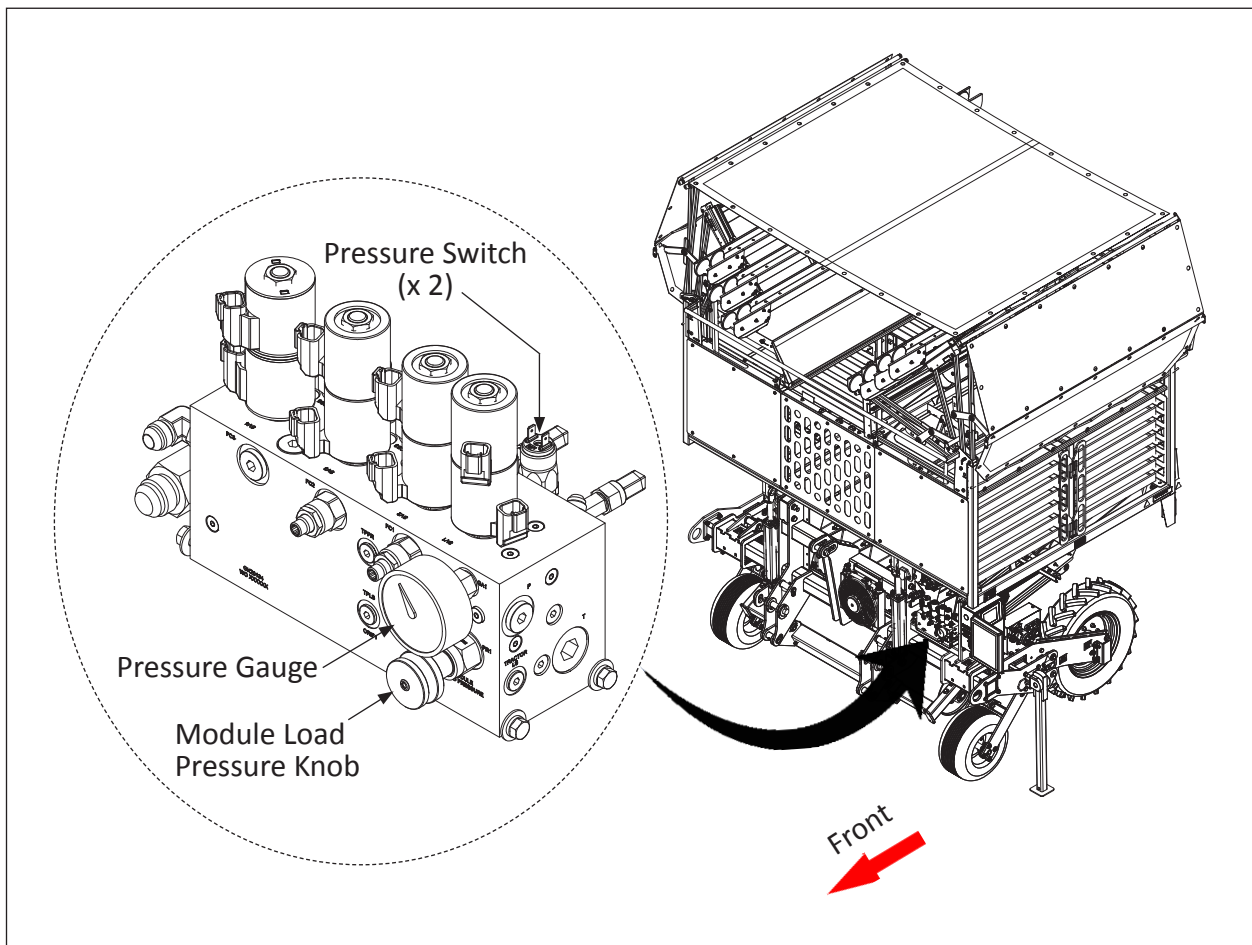


Fig. 34 Enable/Disable Planter Moduls_Pressure Switches

The machine does not differentiate between the sensors, they are wired in parallel.

The sensors are indicated on the screen as "Gauge Wheel Psi Sw". If one or both pressure switches read "True", all three LED's on the Planter Module On/Off button will light. If the machine is picked up with the button set to ON, the center light will stay lit, and the outer two lights will turn off until the machine is set on the ground again.

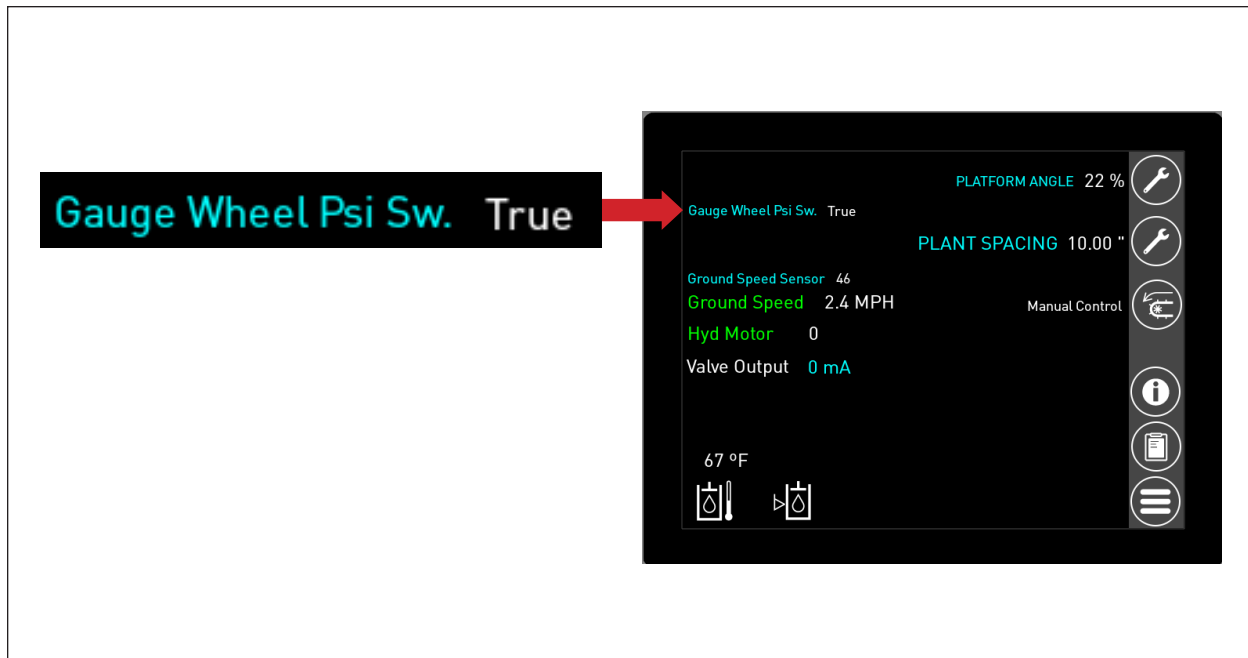


Fig. 35 Enable/Disable Planter Modules_Screen Indication

The pressure switches are adjusted at the factory, but can be adjusted in the field to increase or decrease sensitivity to the machine's weight. There is an adjustment screw located between the wires on each switch. The screws should be adjusted so that the [Gauge Wheel Psi Sw] reads "False" when both the ground roller and front gauge wheels are off of the ground, and that it turns to "True" when either of them supports the machine. Each pressure switch needs to be adjusted individually. To do this:

- Retract both the front wheels and the ground roller, and lift the machine from the ground slightly. Then lower the ground roller to support the weight of the machine. The [Gauge Wheel Psi Sw] should turn from "False" to "True" as the ground roller begins to support the machine. Adjust the ground roller pressure switch as needed to ensure this occurs.
- Retract both the front wheels and the ground roller, and lift the machine from the ground slightly. Then lower the front gauge wheels to support the weight of the machine. The [Gauge Wheel Psi Sw] should turn from "False" to "True" as the front gauge wheels begin to support the machine. Adjust the front gauge wheel pressure switch as needed to ensure this occurs.
- To ensure there are no false positives, retract both the front wheels and the ground roller, and lift the machine from the ground slightly. If everything was adjusted properly, the [Gauge Wheel Psi Sw] should turn from "True" to "False" as both the ground roller and front gauge wheels were lifted off of the ground.

Adjust Front Wheel Height

Adjust Front Wheel Height

The front wheels adjust up and down to change the angle of planter modules with the ground.

- Raise the bed roller before adjusting the front wheels.
- Start by leveling the planter module slide surface.
- Use the up and down arrows to adjust the toolbar until the desired planter module slide pad angle is achieved.

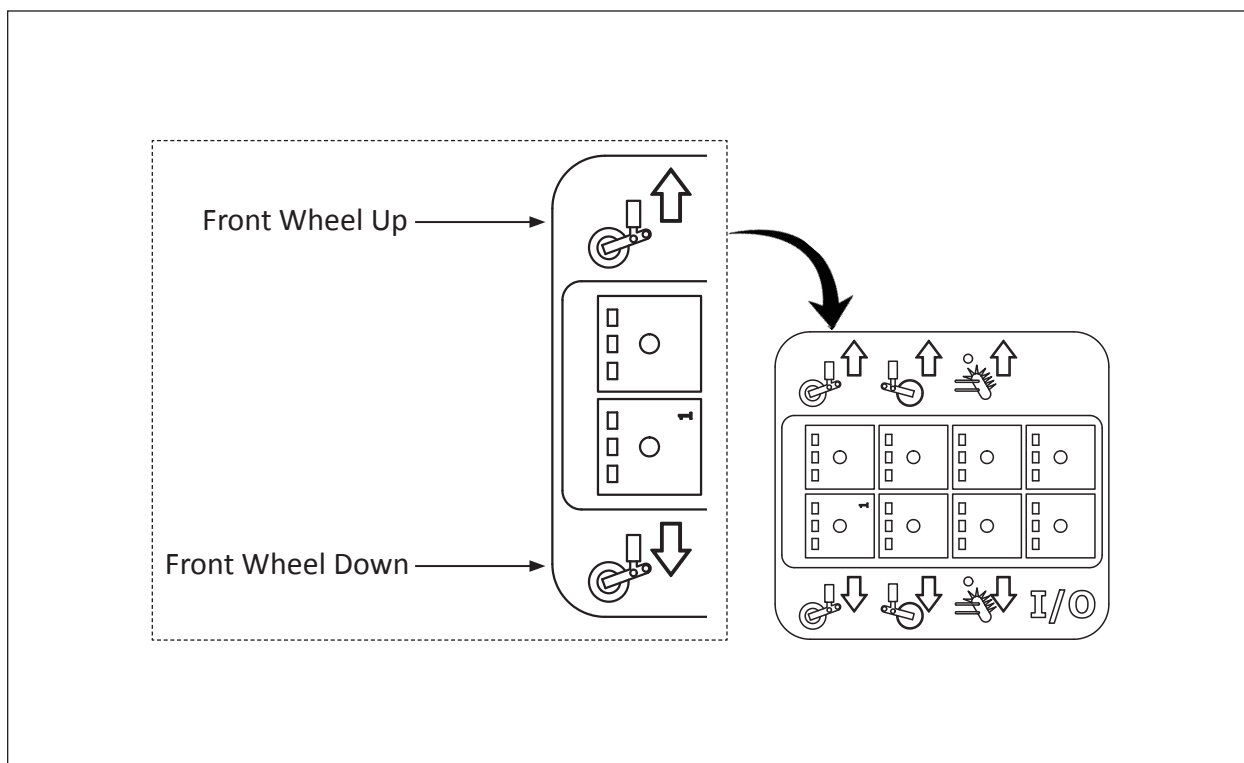


Fig. 36 Adjust Front Wheel Height

NOTICE

To operate the planter modules, there must be weight on either the front wheels or the bed roller. If neither is loaded, the machine will assume that it has been lifted and turn off module operation. (Manually operating the modules ignores this safety feature.)

This Page Is Left Intentionally Blank

Adjust Front Bed Roller Height

Adjust Front Bed Roller Height

Use the up and down arrows on the side controls button pad to set the bed roller for the appropriate planting surface finish.

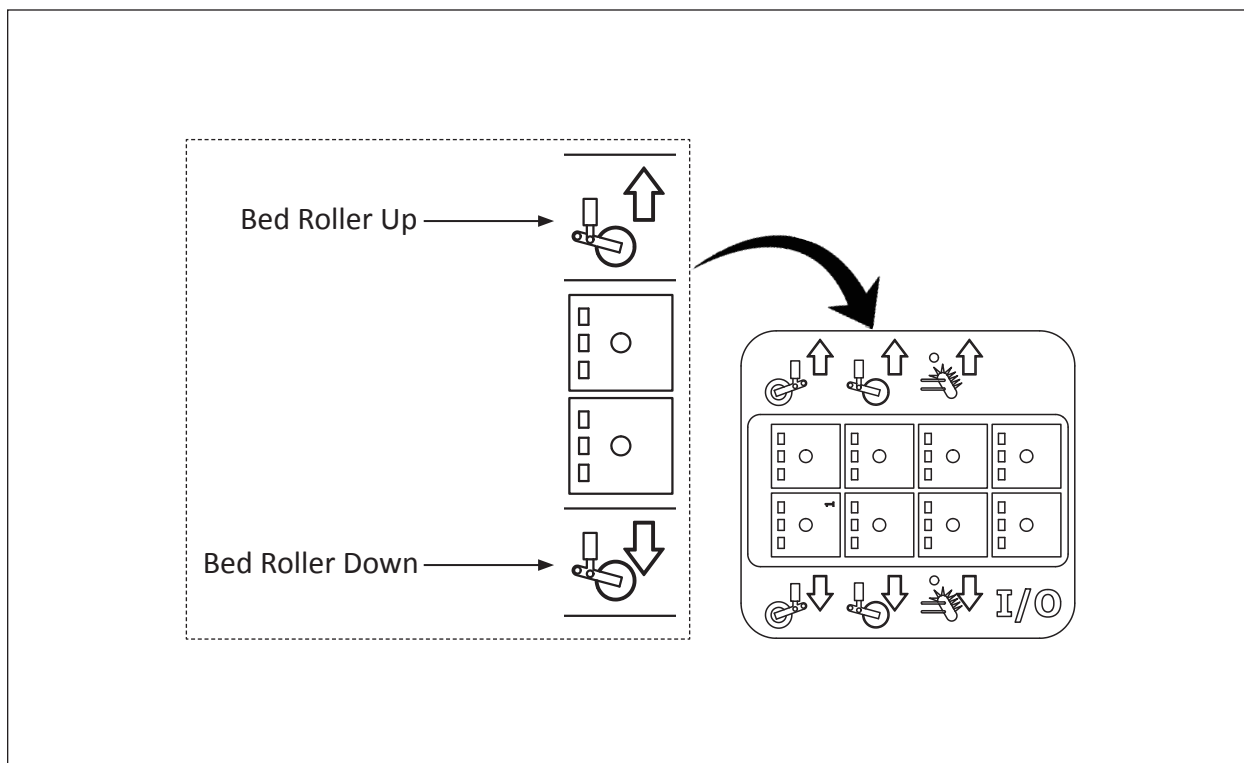


Fig. 37 Adjust Front Bed Roller Height

NOTICE

To operate the planter modules, there must be weight on either the front wheels or the bed roller. If neither is loaded, the machine will assume that it has been lifted and turn off module operation. (Manually operating the modules ignores this safety feature.)

This Page Is Left Intentionally Blank

Set Planter Module Ground Pressure

Set Planter Module Ground Pressure

The planter module cylinders are pressure limited by the hydraulic valve to less than system pressure. The pressure is adjusted using the pressure gauge and knob directly below it on the main hydraulic manifold. The main hydraulic manifold is located directly behind the side console enclosure. Pressure is limited for both up and down movements, in this way, the controls can be used to add or remove ground pressure from the planter modules. Pressure management can be either active or set statically one time. Active management by leaving the valve engaged is recommended.

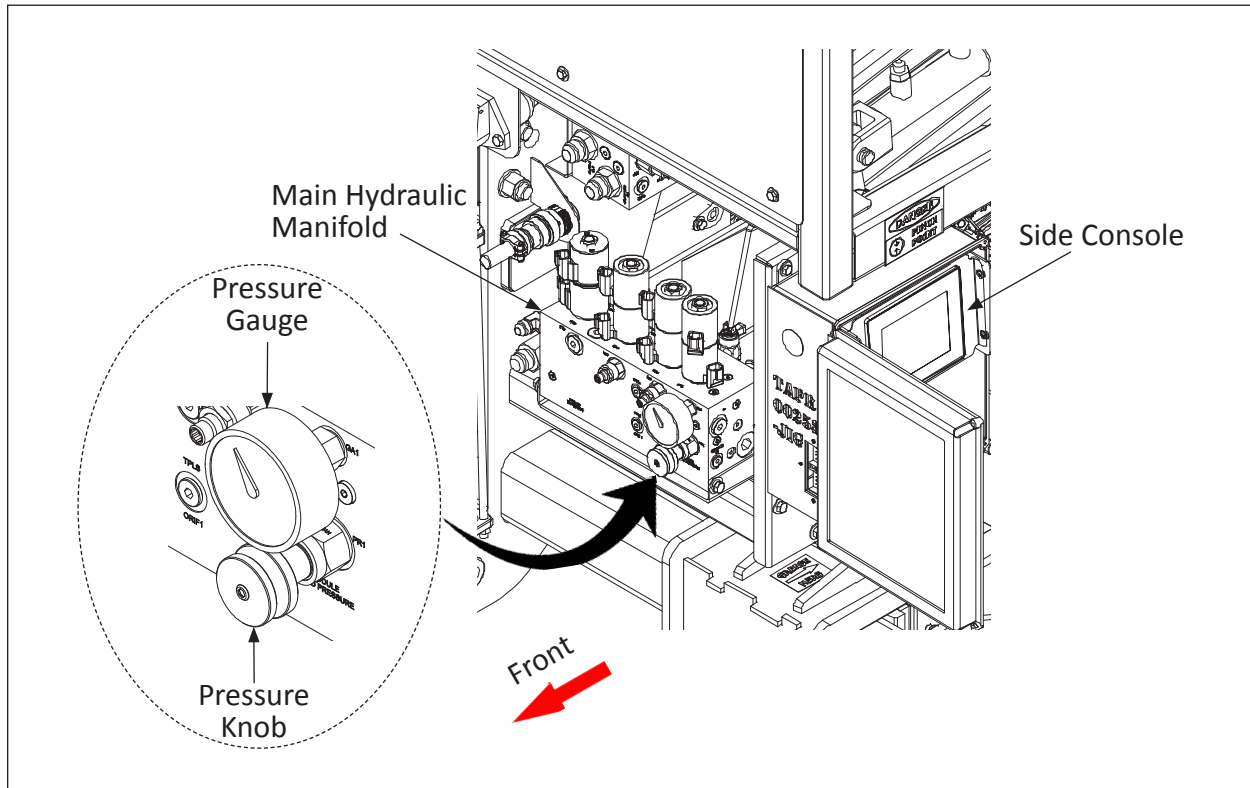


Fig. 38 Set Planter Module Ground Pressure

NOTICE

Due to differences in displacement between the rod and base ends of the cylinder and the weight of the planter module, the gauge pressure to lift the modules will need to be higher. This may require increasing the pressure adjustment, by adjusting the knob, to fully lift the planter modules.

CAUTION

Always return the pressure to zero on the gauge by adjusting the pressure knob before changing the directions of pressure (increasing or decreasing planter module ground pressure).

To Increase Planter Module Ground Pressure

Press the “Planter Module Down” button, an orange LED on the button should light, indicating that the cylinder is forcing the module down. Rotate the module cylinder pressure adjust knob to achieve the desired downward pressure. Pressing the button again locks the valve and the modules in place. For active pressure management, and to compensate for wheel lift or bed height changes, leave the valve active during operation.

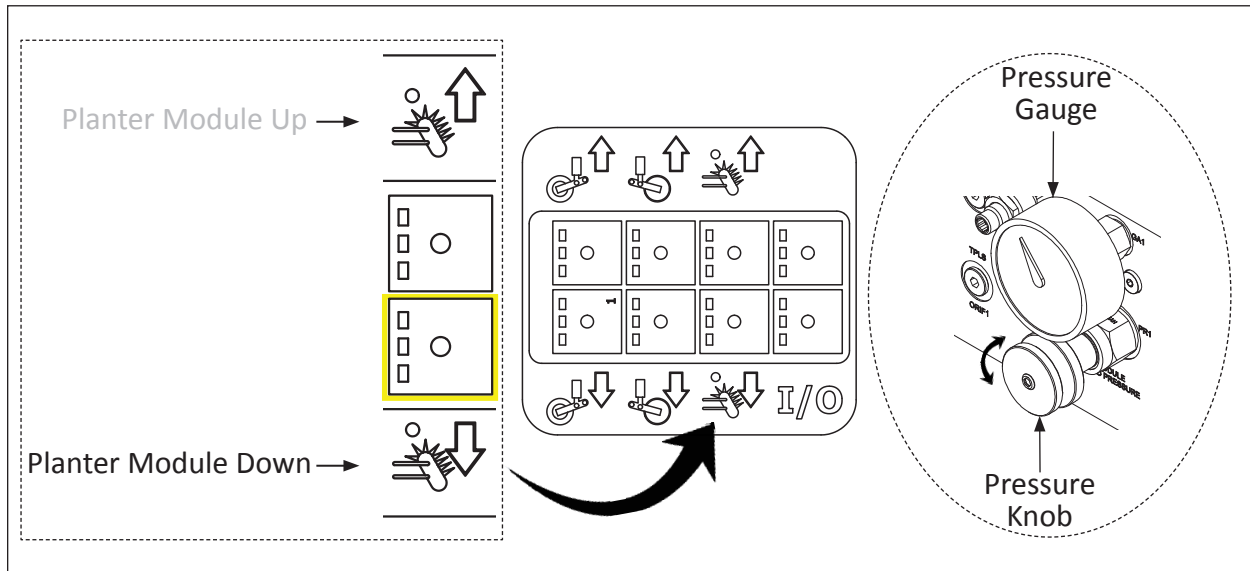


Fig. 39 Increasing Planter Module Ground Pressure

To decrease Planter Module ground pressure

Press the “Planter Module Up” button, an orange LED should light on the button, indicating that the module lift cylinder is lifting to reduce module weight. Rotate the module cylinder pressure adjust knob to increase or decrease lift support. Pressing the button again locks the valve and the modules in place. For active pressure management, and to compensate for wheel lift or bed height changes, leave the valve active during operation.

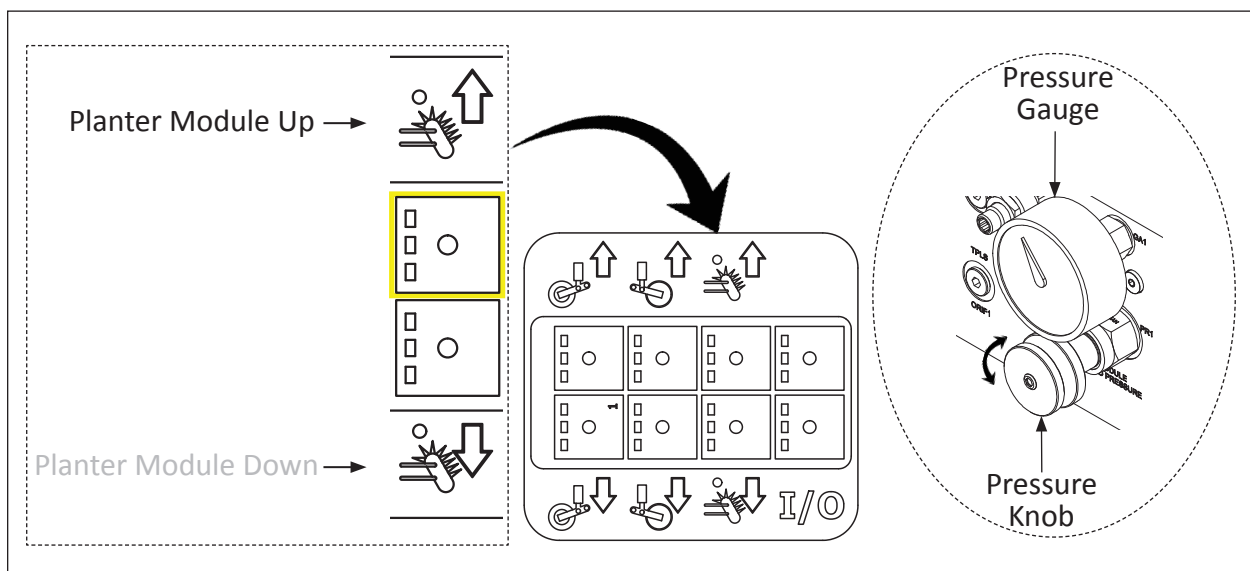


Fig. 40 Decreasing Planter Module Ground Pressure

Screen Operation

Main Screen

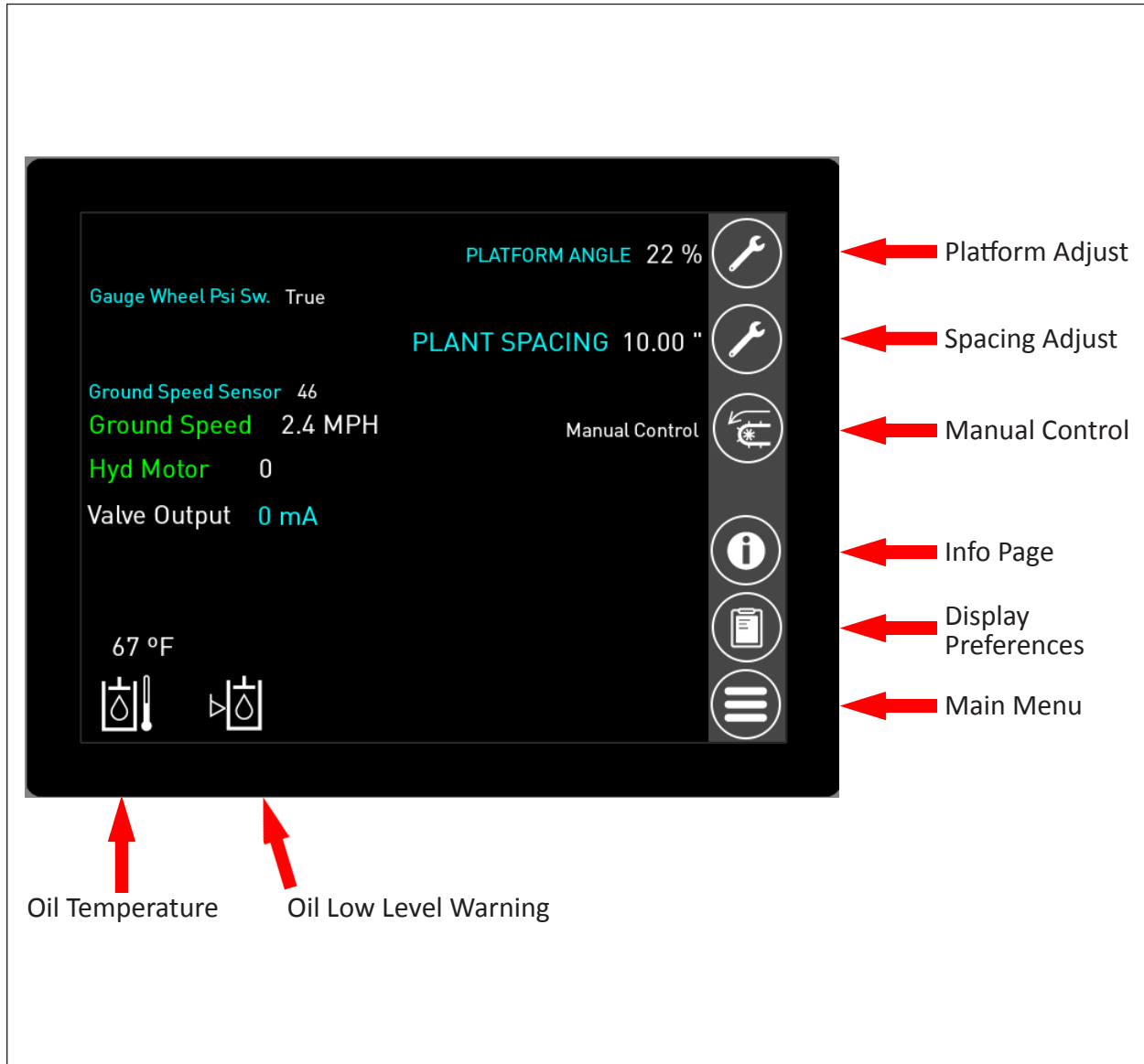
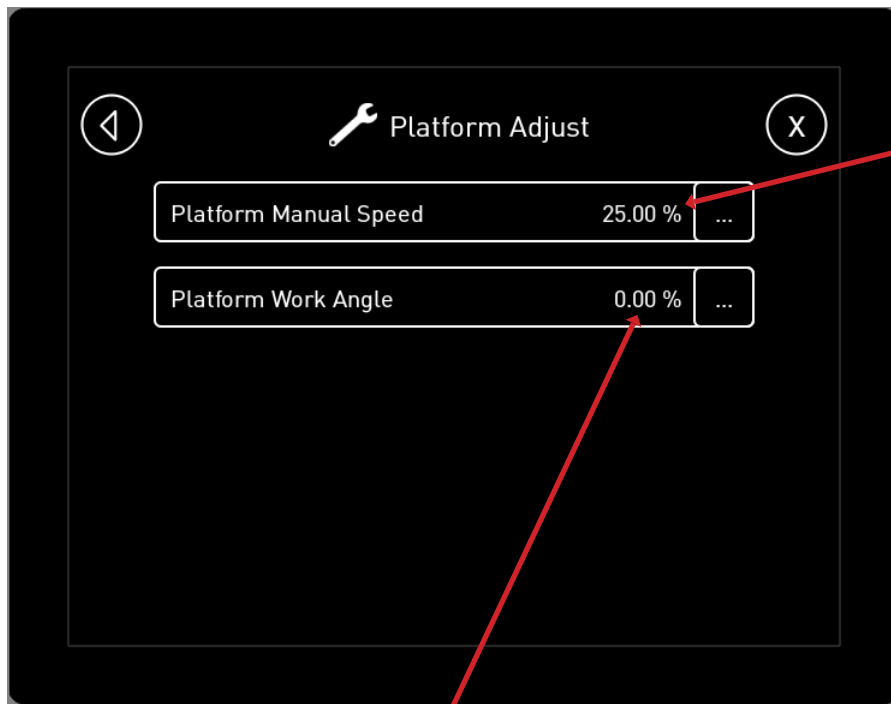


Fig. 41 Screen Operation - Main Screen

Platform Adjust Screen (FOR USE BY AUTHORIZED SERVICE PERSONNEL ONLY)

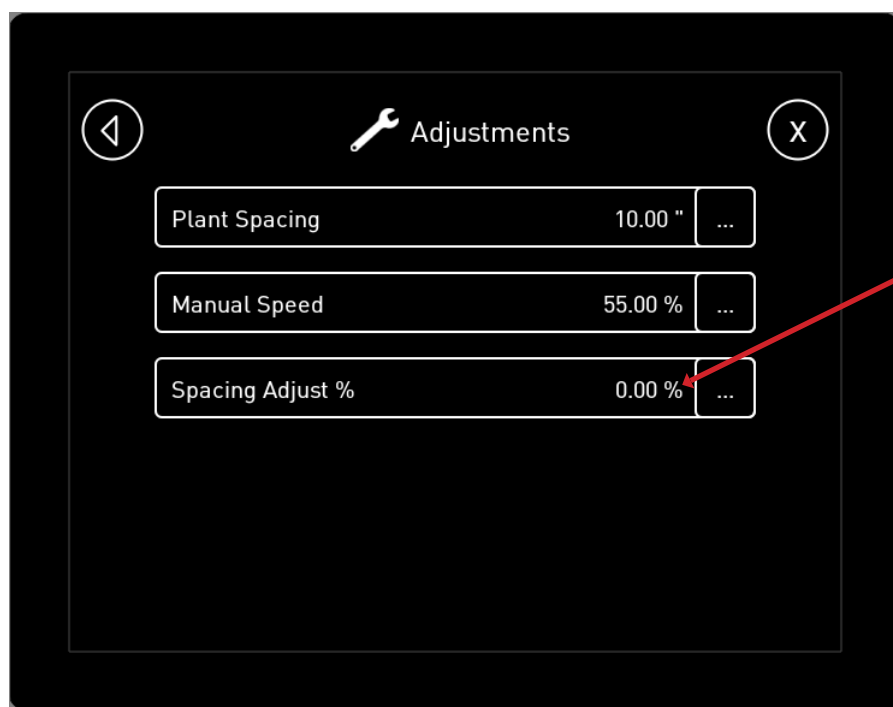


This parameter adjusts the speed of the platform leveling movement when using the Manual Platform Leveling feature. The speed can be adjusted between its lowest speed at 1% and its highest speed at 100%, the default speed setting is 25%. See page 63 for the Manual Platform Leveling switch location.




This parameter allows adjustment of the platform's angle when using the Auto Platform Leveling feature. This adjusts the angle the platform is held at, tilted forward or backward up to 30 degrees from horizontal (1% is approximately 1 degree of angle from horizontal). The platform tilt adjustment has a deadband of approximately +/-2 degrees. See page 63 for the Auto Platform Leveling switch location.

Fig. 42 Screen Operation - Platform Adjust

Spacing Adjust Screen (FOR USE BY AUTHORIZED SERVICE PERSONNEL ONLY)



To adjust the percentage of spacing, follow the steps below:

- Tap  button on the Main Screen.
- Tap  on the Main System Setting Screen.
- Tap  on the Adjust Screen.

Spacing Adjust is a correction factor to help calibrate the plant spacing entered on the display screen with the actual plant spacing in the ground.

Units are percentage of plant spacing. For example, if the plant spacing on screen is set to 10" and the plant spacing on the ground is measured to be 10.1", the spacing adjust should be set to "-1%" to correct for error.

This adjustment compensates for variance in tire sizes, and should only need infrequent adjustment. If corrections larger than 5% are needed, please contact PlantTape. To calibrate, we recommend you plant for 20-30 feet at 10" spacing at 2-4mph. Measure the distance between 10 plants, and divide by 10. This is the average plant spacing, use this number to determine the percentage error, and correct.

Here are some examples:

Plant Spacing on Screen	Average Plant Spacing on Ground	Spacing Adjust (%)
10"	9.5"	5%
10"	9.9"	1%
10"	10"	0%
10"	10.1"	-1%
10"	10.5"	-5%

Fig. 43 Screen Operation - Adjustments

Module Manual Drive Screen (FOR USE BY AUTHORIZED SERVICE PERSONNEL ONLY)

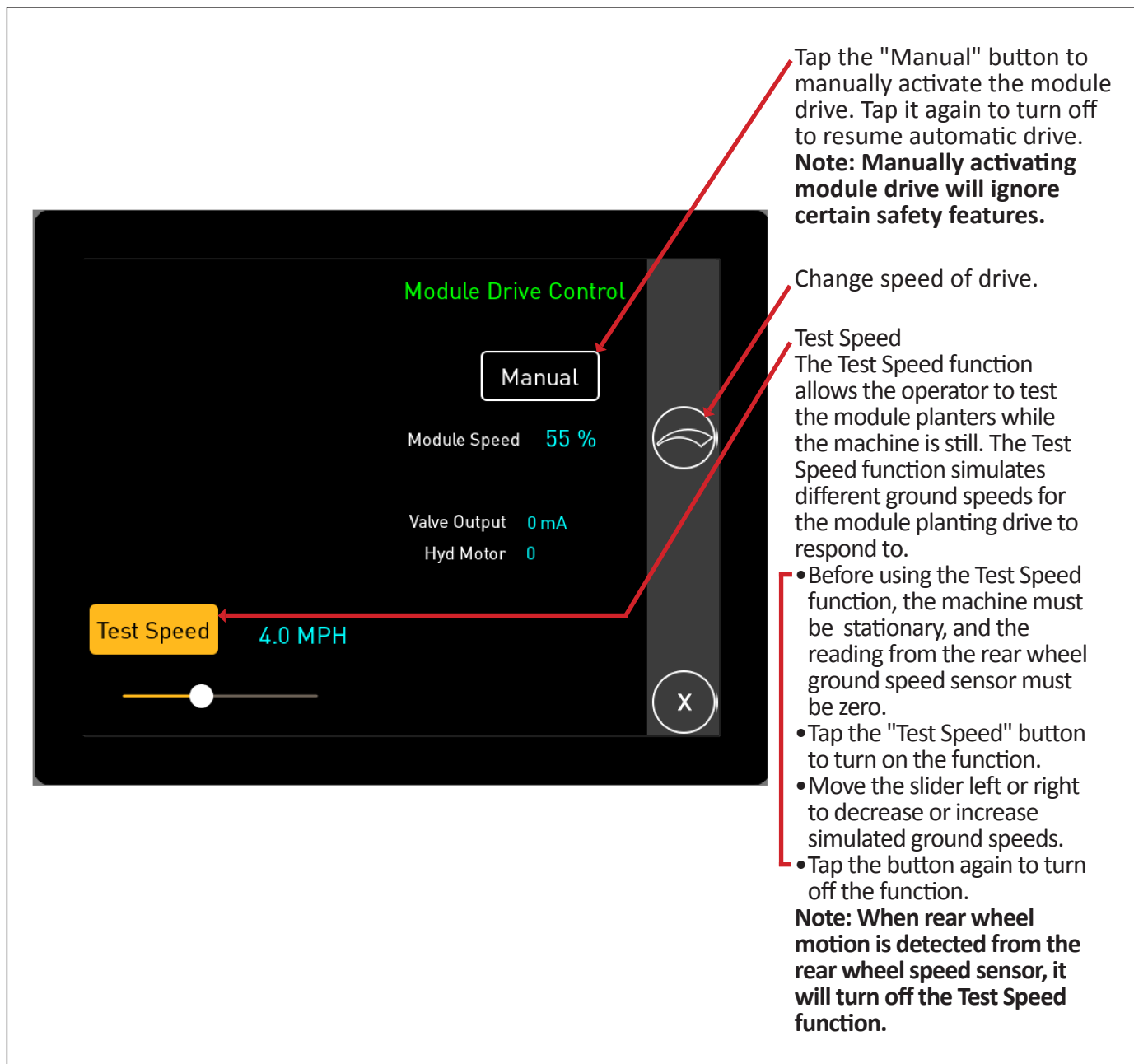


Fig. 44 Screen Operation - Manual Drive Control

Manual Speed Adjust Screen (FOR USE BY AUTHORIZED SERVICE PERSONNEL ONLY)



Fig. 45 Screen Operation - Manual Spacing Adjustments

Main System Setting Screen

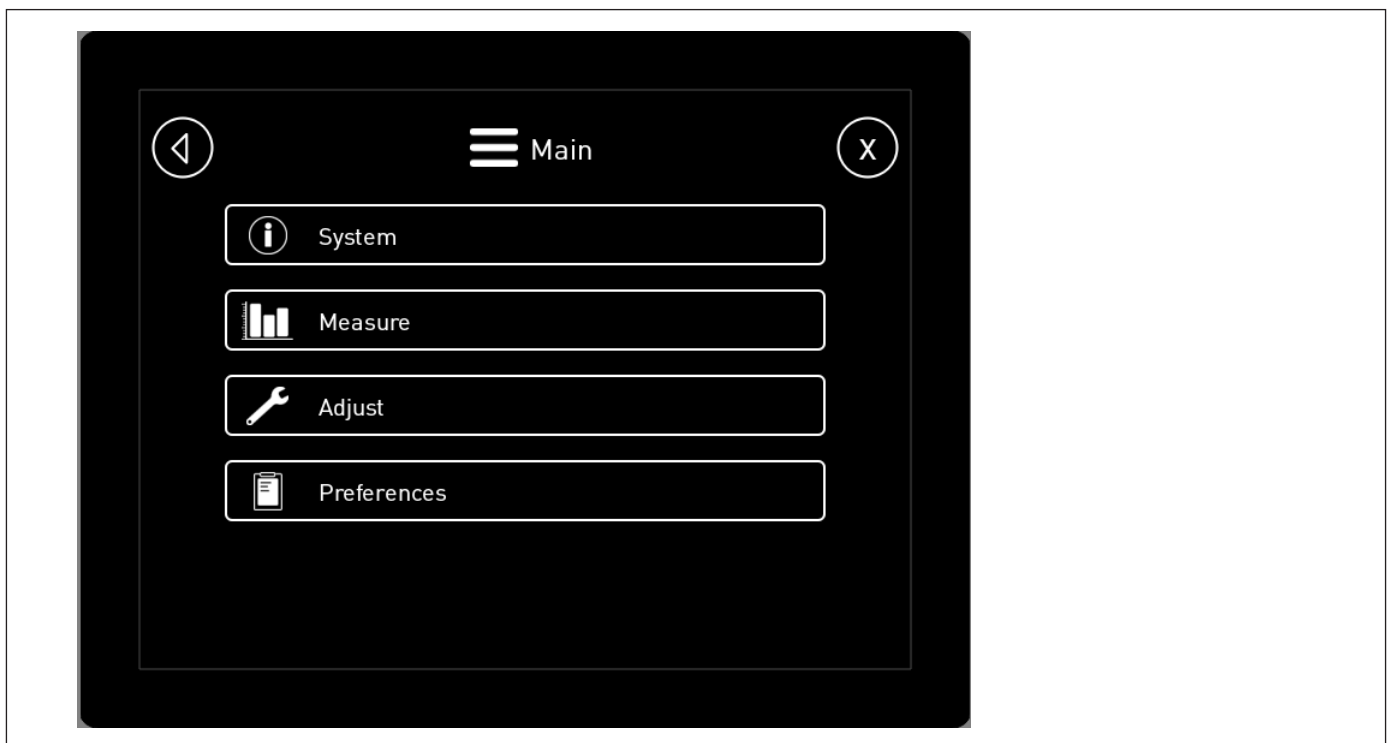


Fig. 46 Screen Operation - Main Menus

System Information Menu

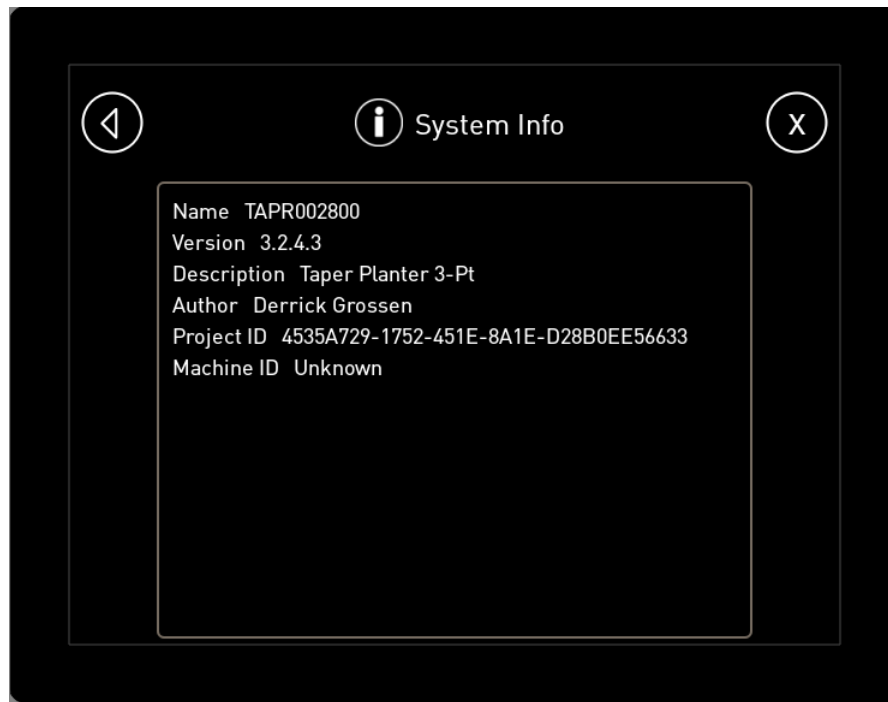


Fig. 47 Screen Operation - System Info

Information Screen

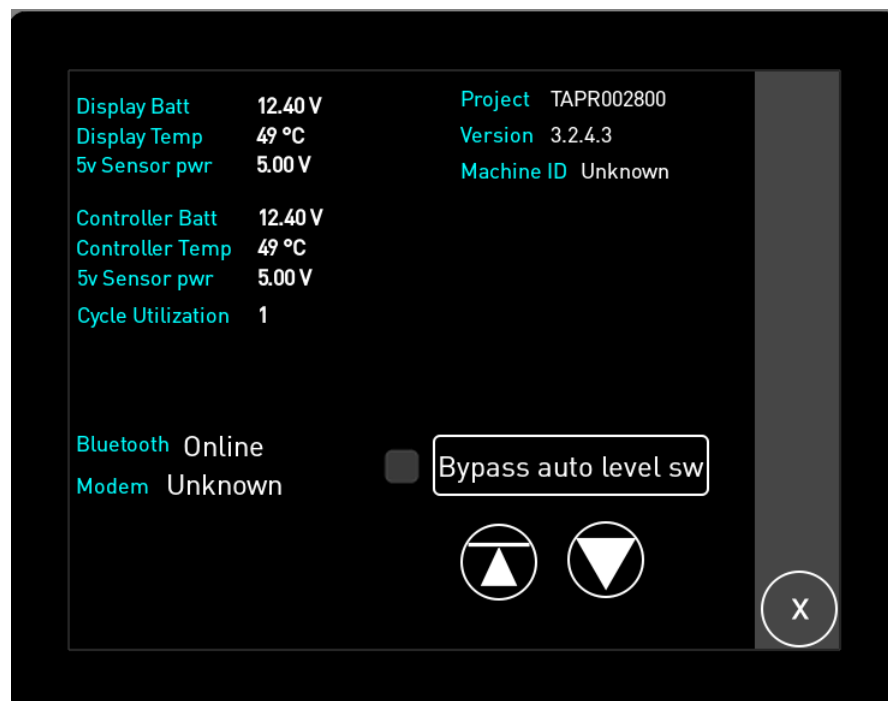


Fig. 48 Screen Operation - Information

Measure Screen



Fig. 49 Screen Operation - Measure

System Information Menu

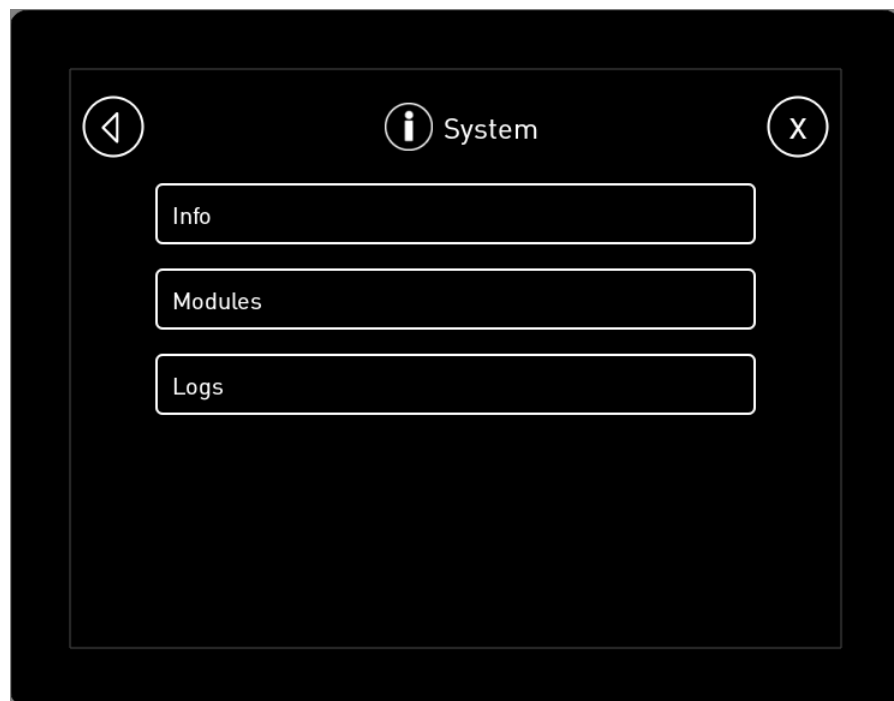


Fig. 50 Screen Operation - System

Measure Inputs, Outputs

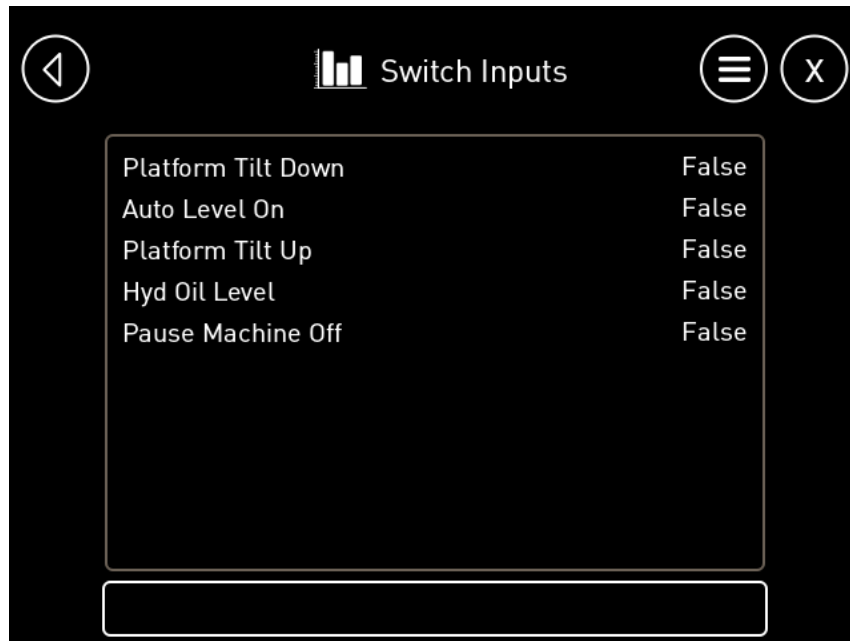


Fig. 51 Screen Operation - Switch Input

On this page, you can see if the switch signals are going to the controller. You can also see if the controller is sending out a signal to your valve. Here you can check if the keypad is working, sensors are reading, etc.

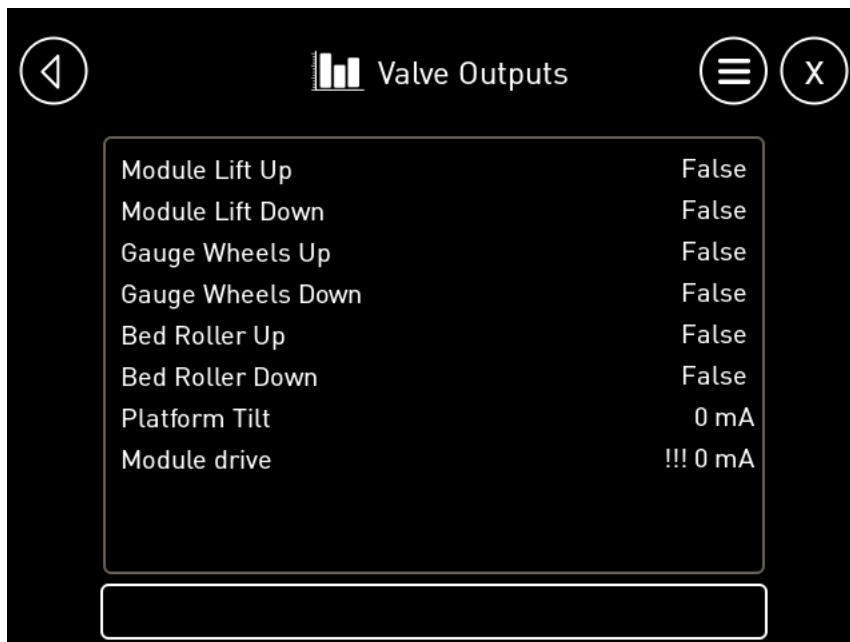


Fig. 52 Screen Operation - Value Output

Adjustments (FOR USE BY AUTHORIZED SERVICE PERSONNEL ONLY)

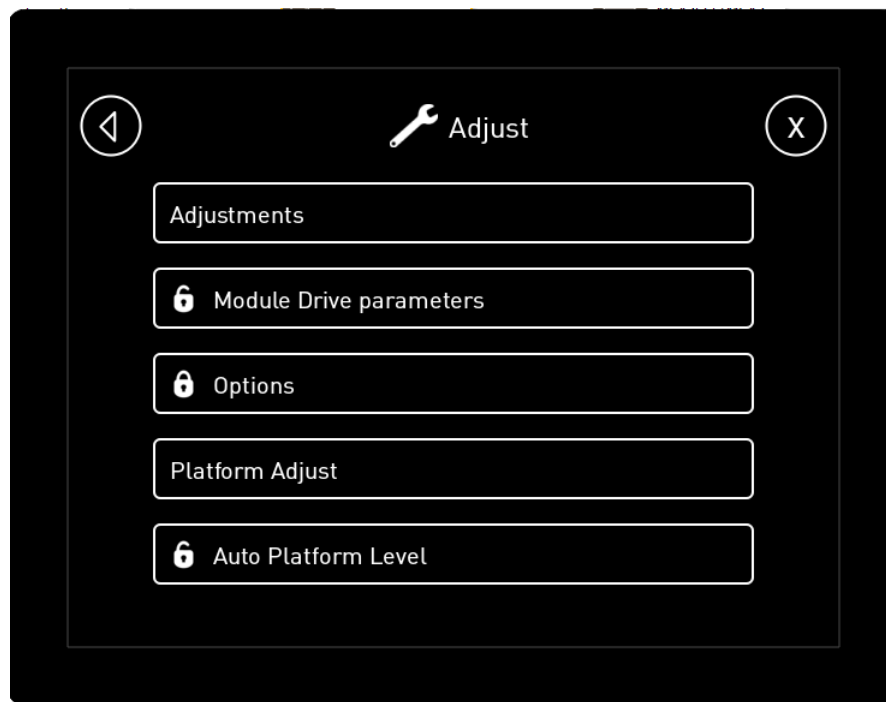


Fig. 53 Screen Operation - Adjust (1)

The Adjust page lets you change settings in the controller. Some selections are locked out. You will need a four-digit pin number to adjust items. For changes in menus that are locked, contact PlantTape.

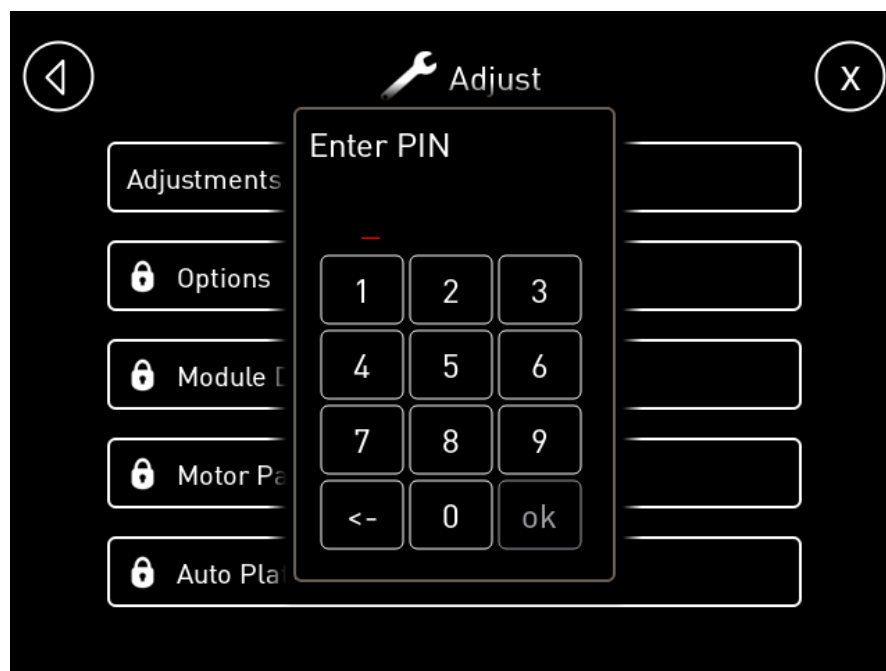


Fig. 54 Screen Operation - Adjust (2)

Date/Time and Display Preferences Screen

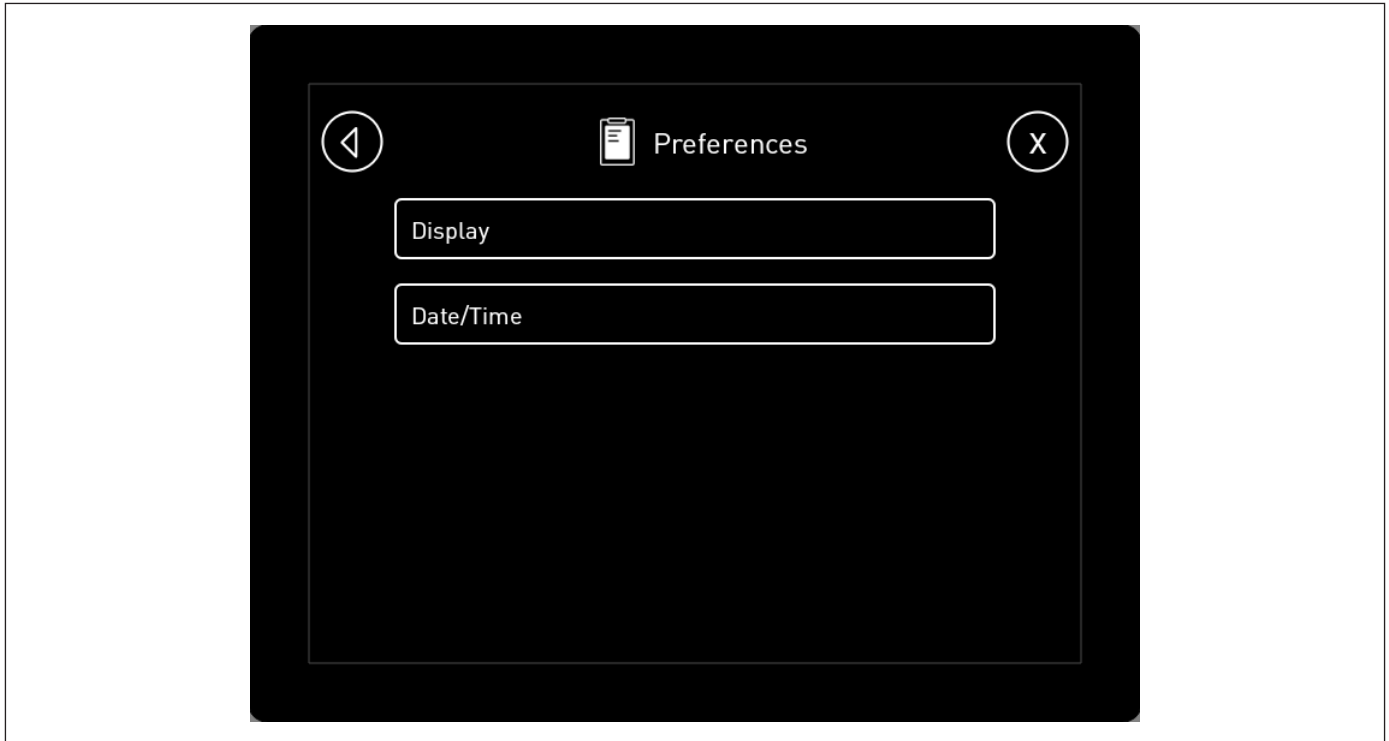


Fig. 55 Screen Operation - Preferences

Operator Platform Controls

Operator Platform Controls

The operator platform controls are located on the rail at the front edge of the upper platform.

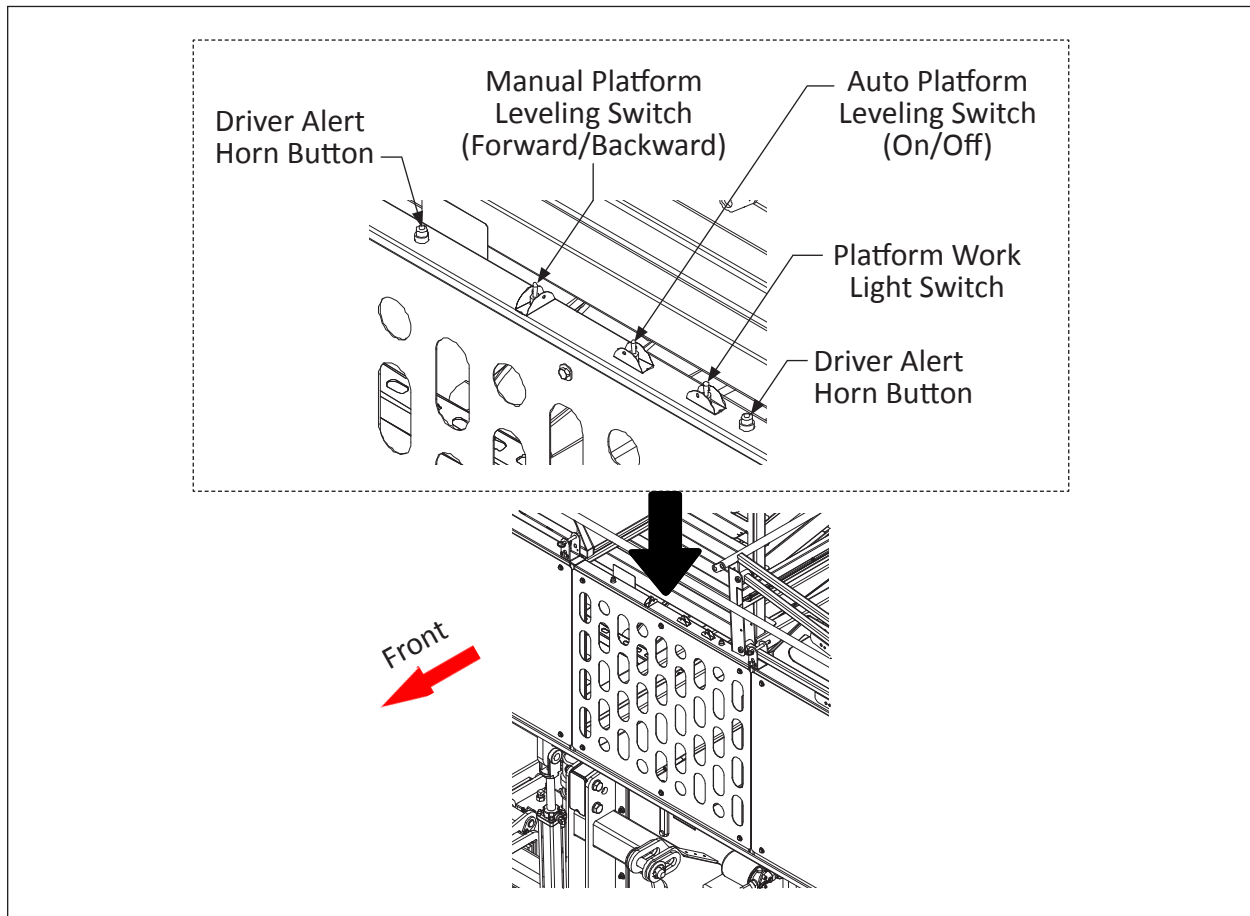


Fig. 56 Operator Platform Controls

The controls include:

Driver Alert Horn Buttons

Two rubber covered buttons, one on each side to assist in alerting the tractor driver to problems or required pauses in operation.

Light Switch

The platform work lights are powered by the tractor work light circuit. They can be switched on and off from inside the tractor cab. Using this toggle turns off the lights for cases where the tractor work lights are on, but having the platform lights on is undesirable. The tractor light circuit must be on for platform lights to be on.

Auto Platform Leveling Switch

This switch allows the computer controller to level the upper platform to horizontal using a sensor located under the plant racks.

Manual Platform Leveling Switch (Forward/Backward)

This switch allows manual control of the platform level cylinders when the “Auto Platform Leveling” is off.

This Page Is Left Intentionally Blank

Maintenance

Maintenance Schedule

Perform the following maintenance procedures on schedule to ensure the performance of your machine. We recommend recording all services. Always park equipment on stable and level ground before performing any maintenance.

Maintenance Schedule					
Maintenance Contents	Maintenance Time Intervals (Hours of Operation)				
	Before First Use	Every 10 Hours	Every 50 Hours	Every 500 Hours	Every 1000 Hours
Tighten wheel lug nuts, drive approximately 100 yards under no load, and then tighten.	•		•		
Check that all rear tires are properly inflated.* ¹	•	•			
Check hydraulic oil level.* ²		•			
Check tires for damage, excessive wear or noticeably low pressure.		•			
Visually inspect all hoses and wiring for damage or excessive wear. Replace as necessary.		•			
Wipe down controls with a damp cloth.		•			
Remove dirt and debris from machine. Use a low pressure hose if required. Do not wash down power unit. Do not pressure wash.		•			
Lubricate chains		•			
Check chain tension			•		
Check hydraulic oil quality.* ³			•		
Replace hydraulic oil filter.				•	
Grease lubricant points				•	
Replace hydraulic oil.					•
Replace hydraulic suction screen.* ⁴					•
Check the accumulator pressure (250-300 psi) approx. every 5 years.					

(Continued on the next page)

- *¹ **Note:** Always refer to the manufacturer's recommended inflation pressure on the side wall of each rear tire. Use a pressure gauge with at least 1 psi graduations. The front tires are solid foam.
- *² **Note:** Hydraulic oil level is checked using the sight gauge located on the front of the hydraulic oil tank. Oil level should be between the top and bottom marks on the sight gauge. Add oil if level is low. Never reuse old or contaminated hydraulic oil.
- *³ **Note:** Check hydraulic oil for water and debris. Visually check oil for a cloudy or milky consistency. Replace if required. Periodically drain a small amount of oil from the tank to remove settled water and debris and extend the life of your oil. Always check hydraulic oil level after draining.
- *⁴ **Note:** To access hydraulic suction screen, remove access plate from top of tank.

Fig. 57 Maintenance Schedule

Maintenance Operations

- Keep machine clean and free of debris.
 - Do not directly pressure wash electrical components or connections.
 - Wash down the machine to prevent accumulation of planting debris.
 - Keep excess lubricant cleaned off surfaces to prevent accumulation of dirt, and to reduce wear.
- Hydraulic cooler maintenance
 - Ensure machine is unpowered, and electrical plug to tractor is disconnected.
 - Fan is temperature controlled and may start at any time if machine is powered.
 - Clean debris from cooler surface, take care not to damage cooler fins.
 - The side console has a visual and audible alarm if the hydraulic oil temperature reaches a high temperature while in service, but it may be difficult to hear over ambient noise.

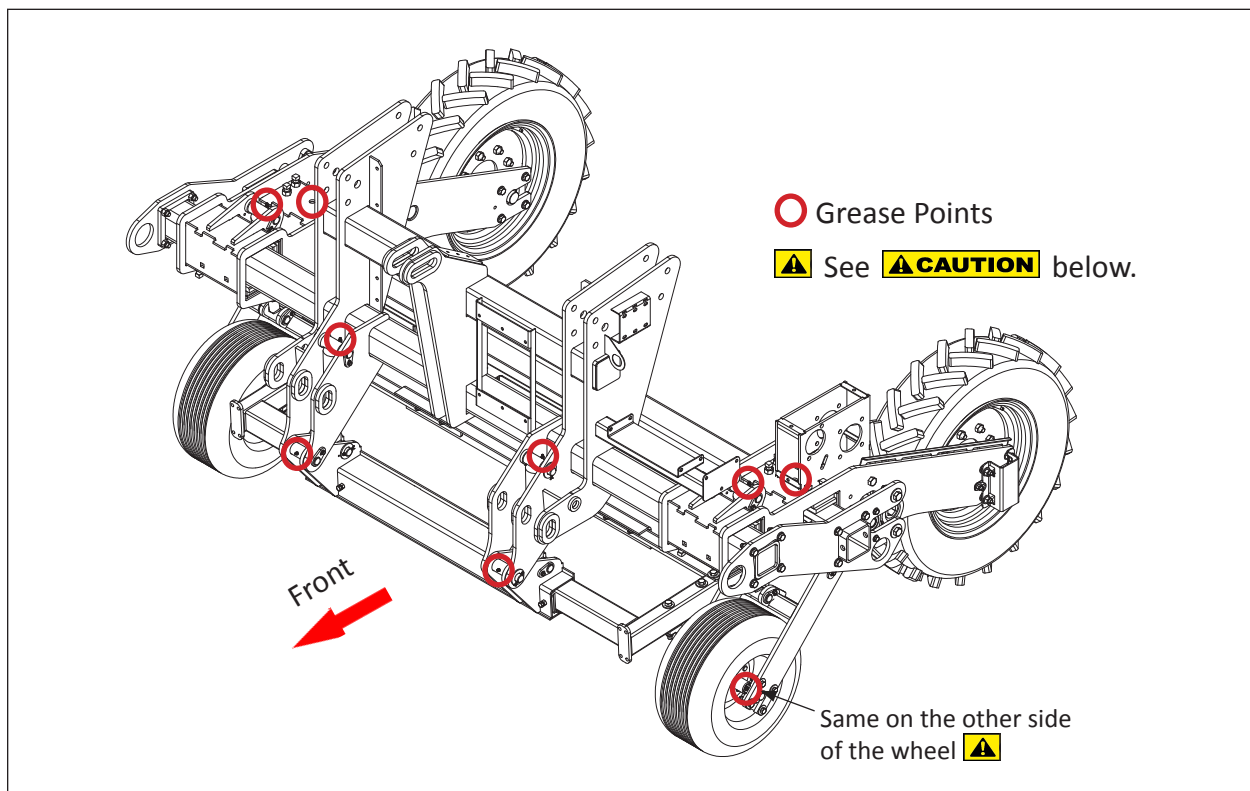


Fig. 58 Grease Points (1)

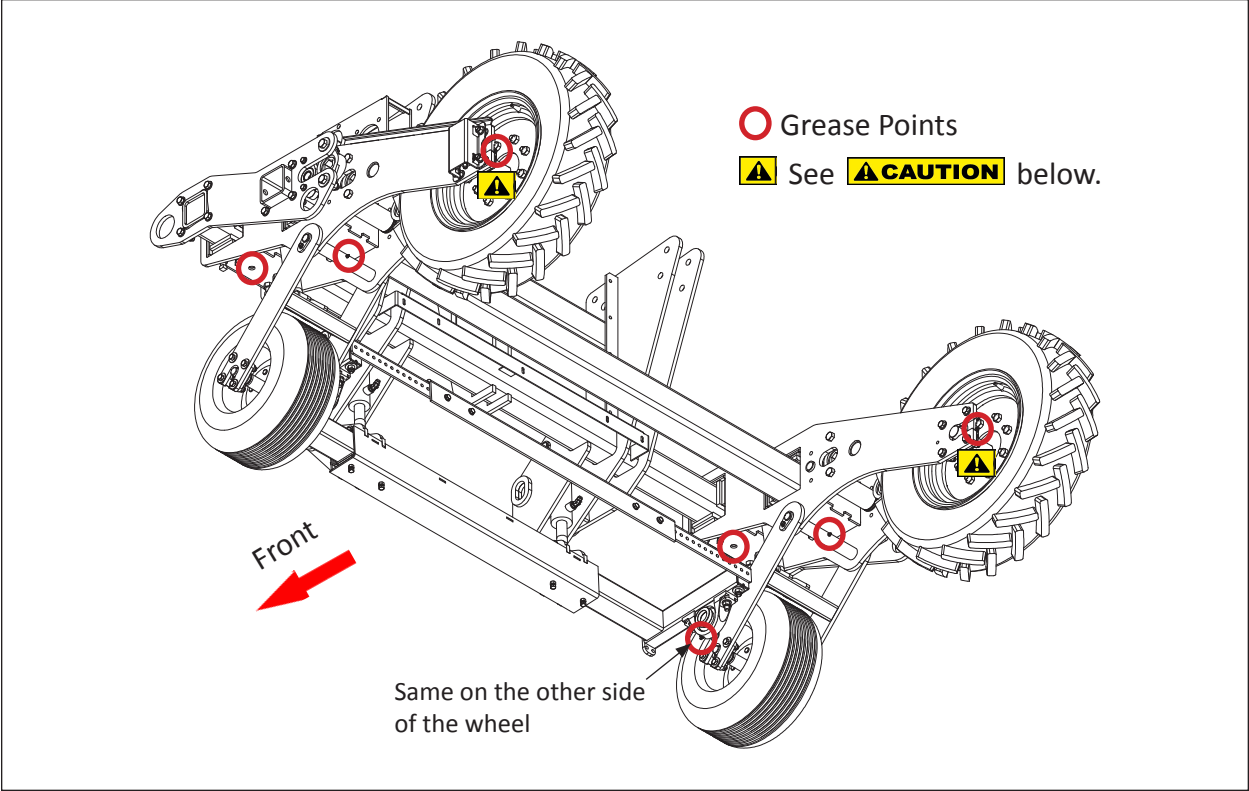


Fig. 59 Grease Points (2)

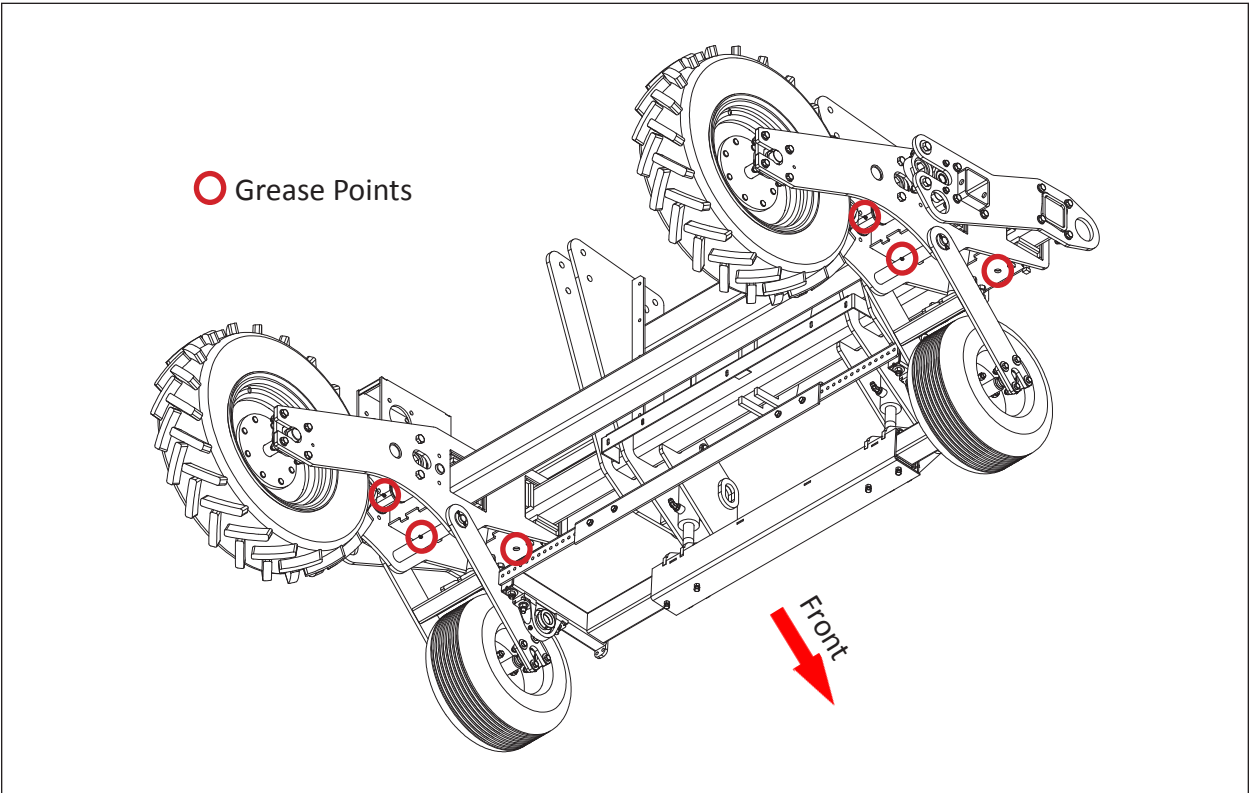


Fig. 60 Grease Points (3)

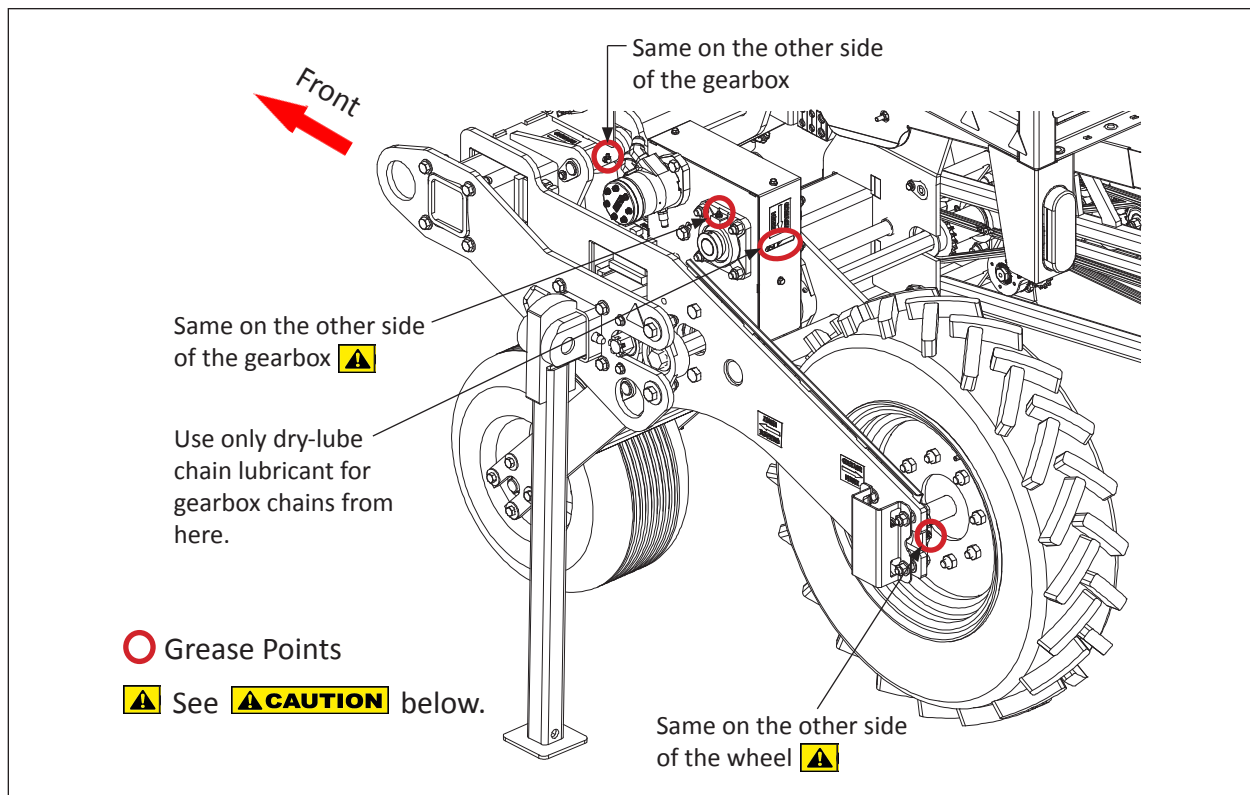


Fig. 61 Grease Points (4)

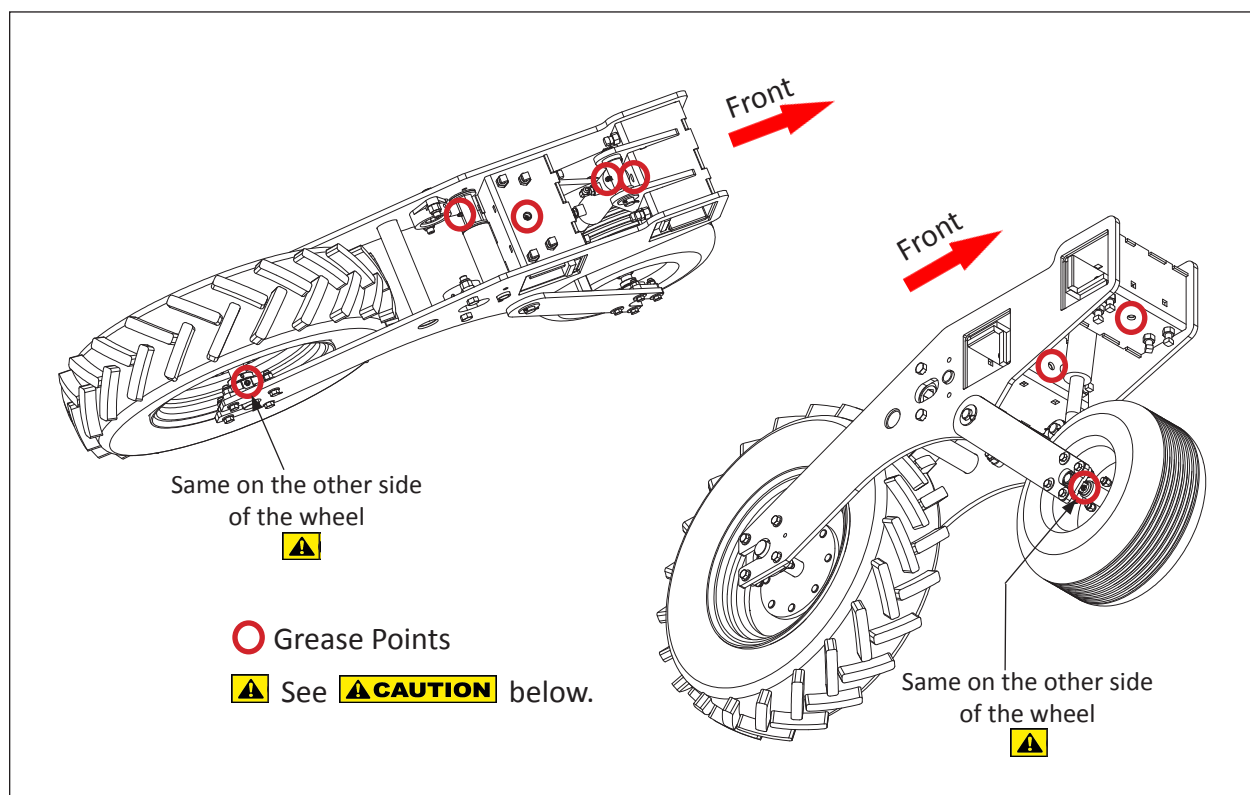


Fig. 62 Grease Points (5)

⚠ CAUTION

Take care not to add excessive grease in these points where the sealed bearings are located. The excessive grease will damage the bearing seals and lead to bearing failure.

- Hydraulic tank maintenance
 - Check oil level daily using sight glass on front of machine.
 - In addition, the side console has a visual and audible alarm when the fluid level in the tank is well below fill level, but it may be difficult to hear over ambient noise.
 - The upper platform floor is hinged at one side to allow access to the hydraulic tank fill port and service manhole. Take care not to allow debris to fall into tank when ports are open and exposed.
 - Maintain the hydraulic oil level near the fill line on the sight glass on the front of the tank.
 - The hydraulic tank filter should be changed according to the Maintenance Schedule.
 - Internal to the tank is a suction screen, which should be cleaned or replaced during complete oil changes according to the Maintenance Schedule.
- Grease points
 - Grease the various lube points per the Maintenance Schedule.
- Drive chains
 - Use only dry-lube chain lubricant approved for O-ring chains.
 - Lubricate gearbox chains daily through access slot at rear of cover.
 - Lubricate module drive chains daily or as needed.
 - Clean debris from chains frequently to reduce wear.
- Check chain tension
 - Check gearbox chain tension per the Maintenance Schedule, adjust the sprocket idlers as needed to maintain proper tension.
- Clean dirt from lube surfaces
 - Clean slide tubes after adjusting wheel frames or planter module clamps to prevent accumulation of dirt.
- Set pressure sensors for bed roller, and front legs
 - Both the front wheel lifts and bed roller lift cylinder circuits are fitted with pressure switches. If both the bed roller and wheels are lifted from the ground, the planter module drive will not drive unless manually activated. Each switch should be set individually so that when the weight of the machine is applied to either, the switches are triggered.
 - The switches are located at ports A2 and A3 on the main hydraulic manifold back face. There is an adjustment screw between the wire leads to increase or reduce the pressure setting.

This Page Is Left Intentionally Blank

Optional Configurations and Components

Optional Configurations and Components

The machine ships with six (6) planter module assemblies installed, an additional two (2) assemblies can be installed for a total of eight (8) planter modules. In addition to adding the planter modules to the bar, additional plant paths and tray tables will need to be installed. Contact PlantTape for a list of parts required.

The toolbar may also be configured with extension to allow planting two (2) lines each on four (4) 40" beds for a total of eight (8) plant lines. Contact PlantTape for a list of parts required.

Two lower rear work lights may be installed as the optional devices per operators' additional requests. Contact PlantTape for a list of parts required.

This Page Is Left Intentionally Blank

Appendix 1

Side Tarp Panel Lacing for Tow-Behind Tape Planter Platform

General Guide

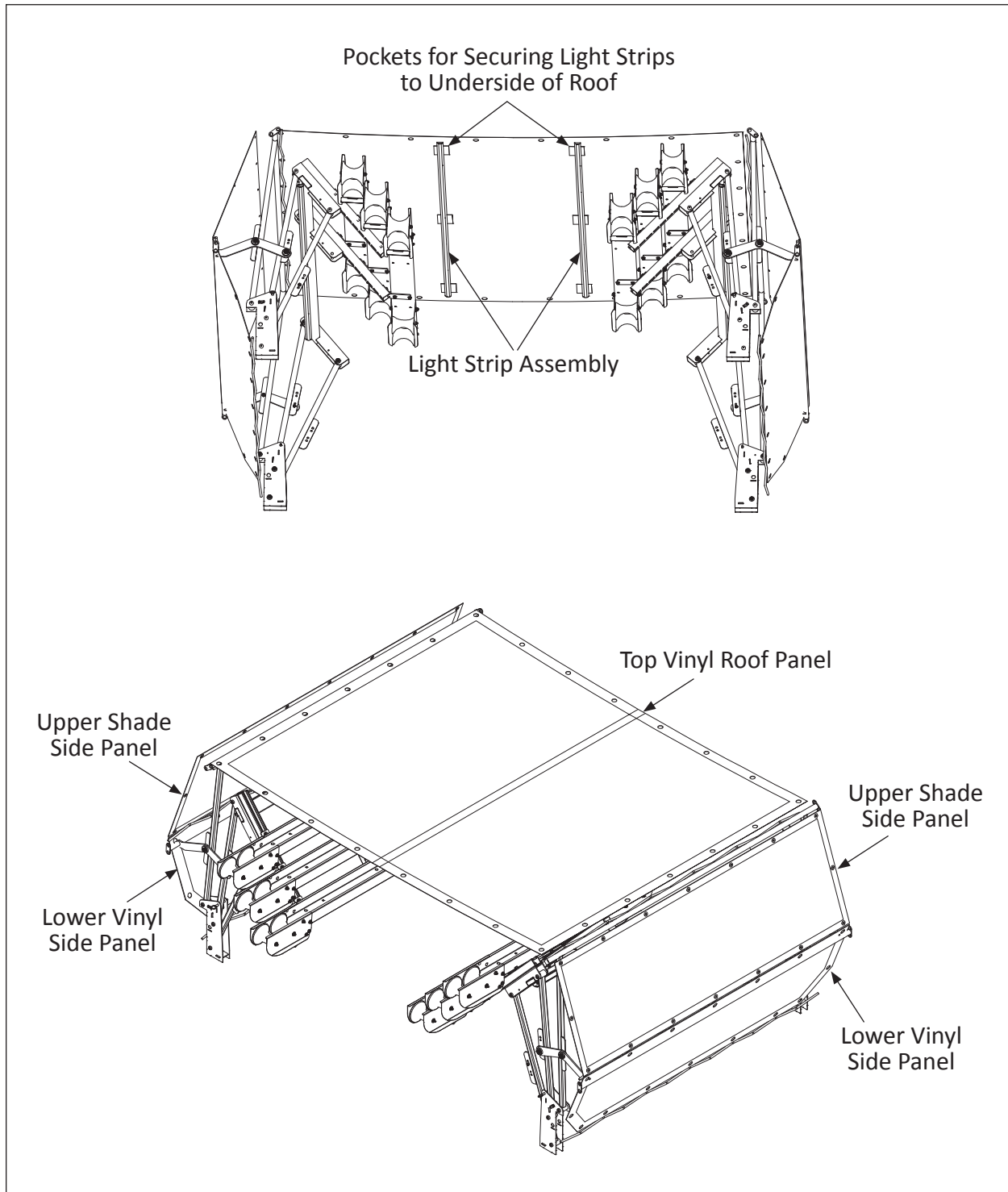


Fig. 1 General Guide

Top Bar Lacing

1. Lace the upper shade side panel to the top roof bar.

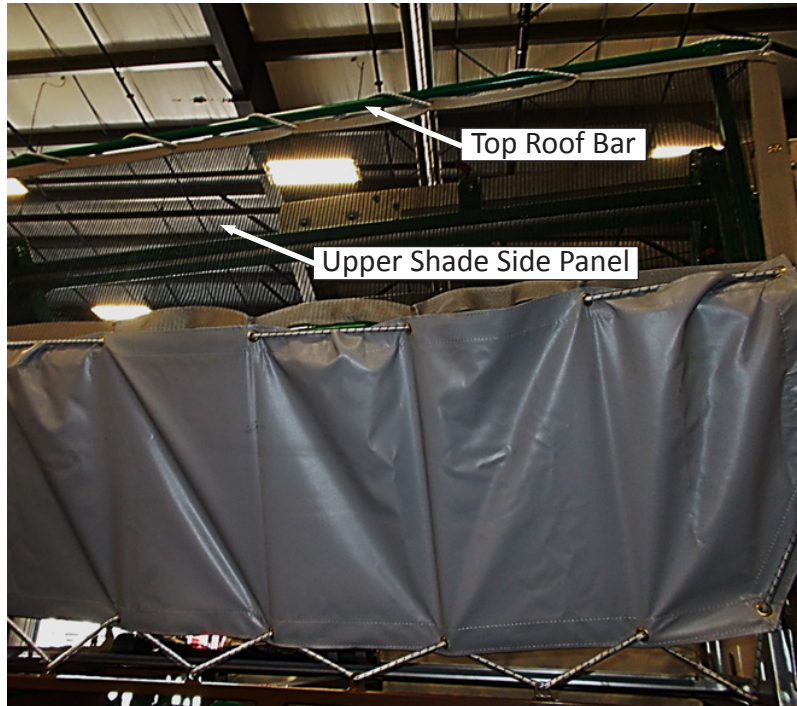


Fig. 2 Top Bar Lacing (1)

2. Secure at ends of the top bar using “bottom” eye.



Fig. 3 Top Bar Lacing (2)

3. When lacing the upper shade side panel to the top roof bar, tie hitch knots around the bar for each grommet lacing. This will help keep the panel from shifting along the bar.

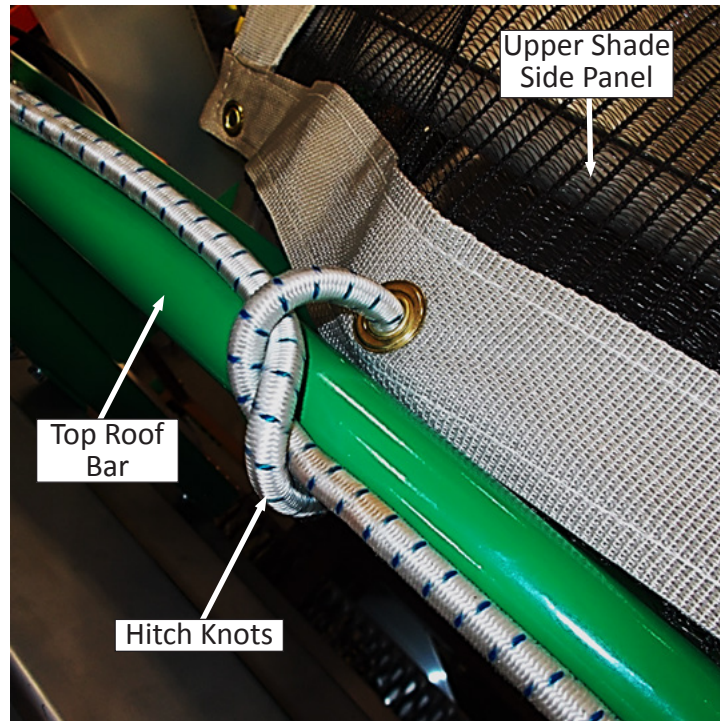


Fig. 4 Top Bar Lacing (3)

Perimeter Lacing

1. Line up top grommets of lower vinyl side panel with bottom grommets of upper shade side panel and lace together as shown. Lace vinyl bottom panel to tie-down points as shown.

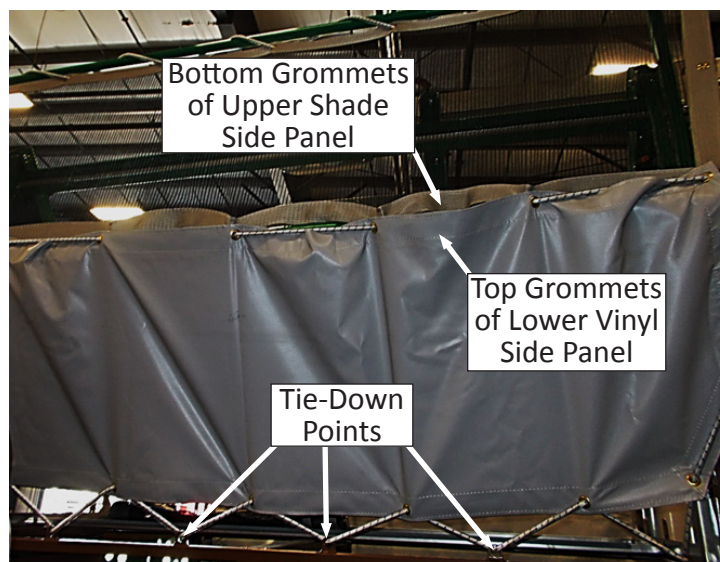


Fig. 5 Perimeter Lacing (1)

-
2. Use single piece of elastic rope through all of the lower vinyl side panel perimeter grommets (including lacing to upper shade side panel).

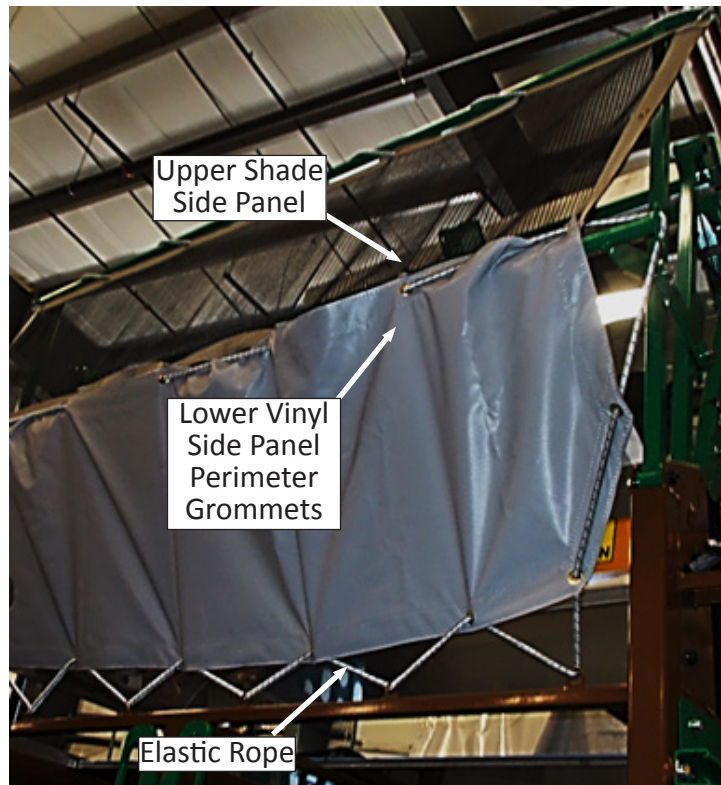


Fig. 6 Perimeter Lacing (2)

3. Lace perimeter rope through this set of eyes to keep lower vinyl side panel and upper shade side panel pulled toward edges

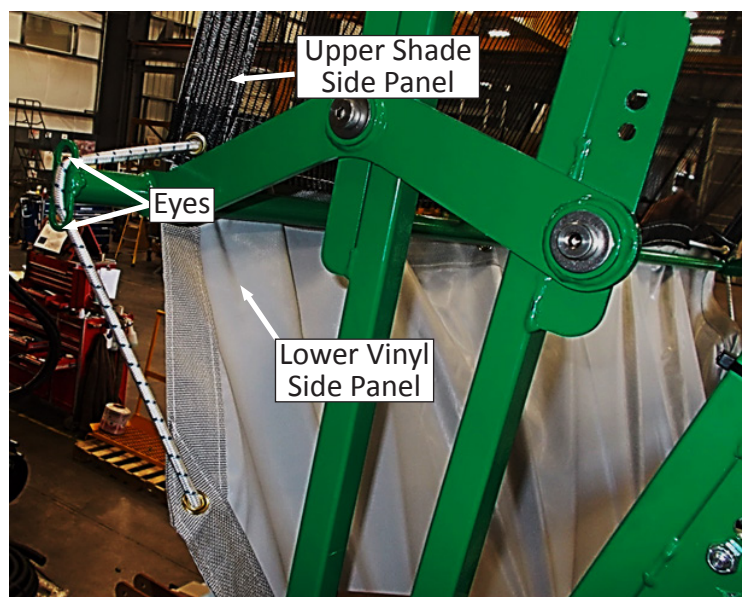


Fig. 7 Perimeter Lacing (3)

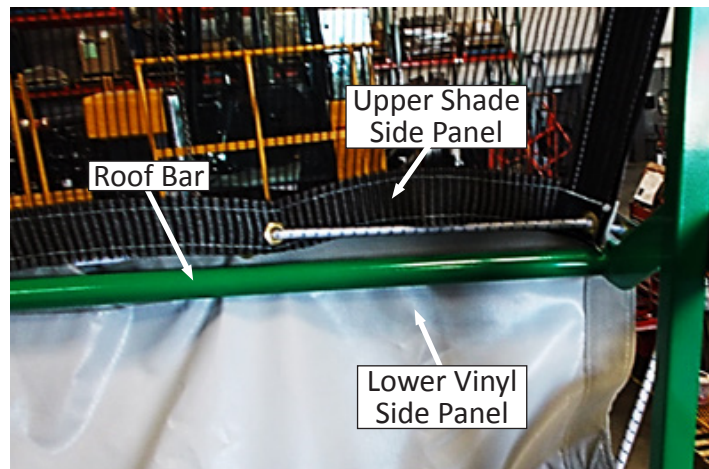


Fig. 8 Perimeter Lacing (4)

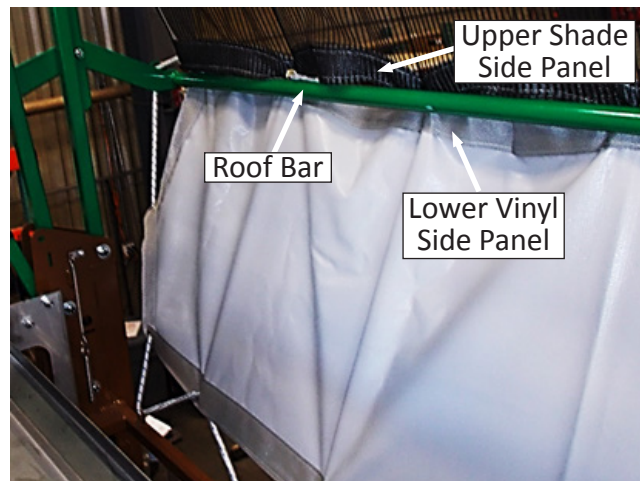


Fig. 9 Perimeter Lacing (5)

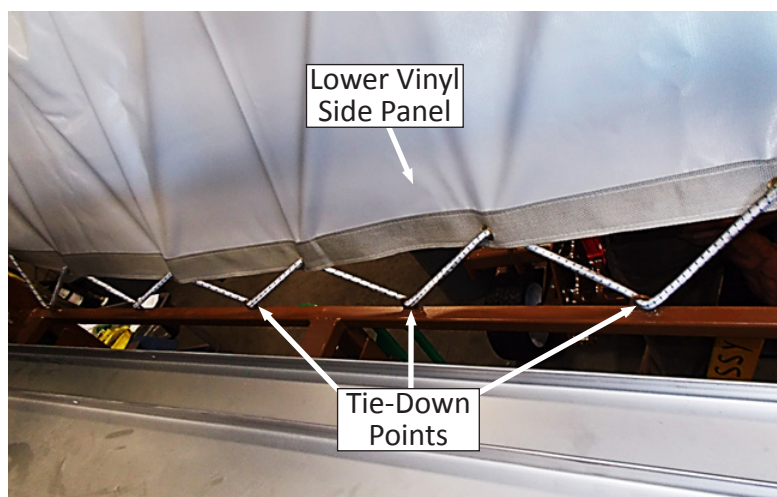


Fig. 10 Perimeter Lacing (6)

This Page Is Left Intentionally Blank

Appendix 2

New Rigid Folding Roof Half (First Used on Serial Number 18-144945-025)

General Parts Description

The newly-designed folding roof consists of two pieces of rigid roof half.

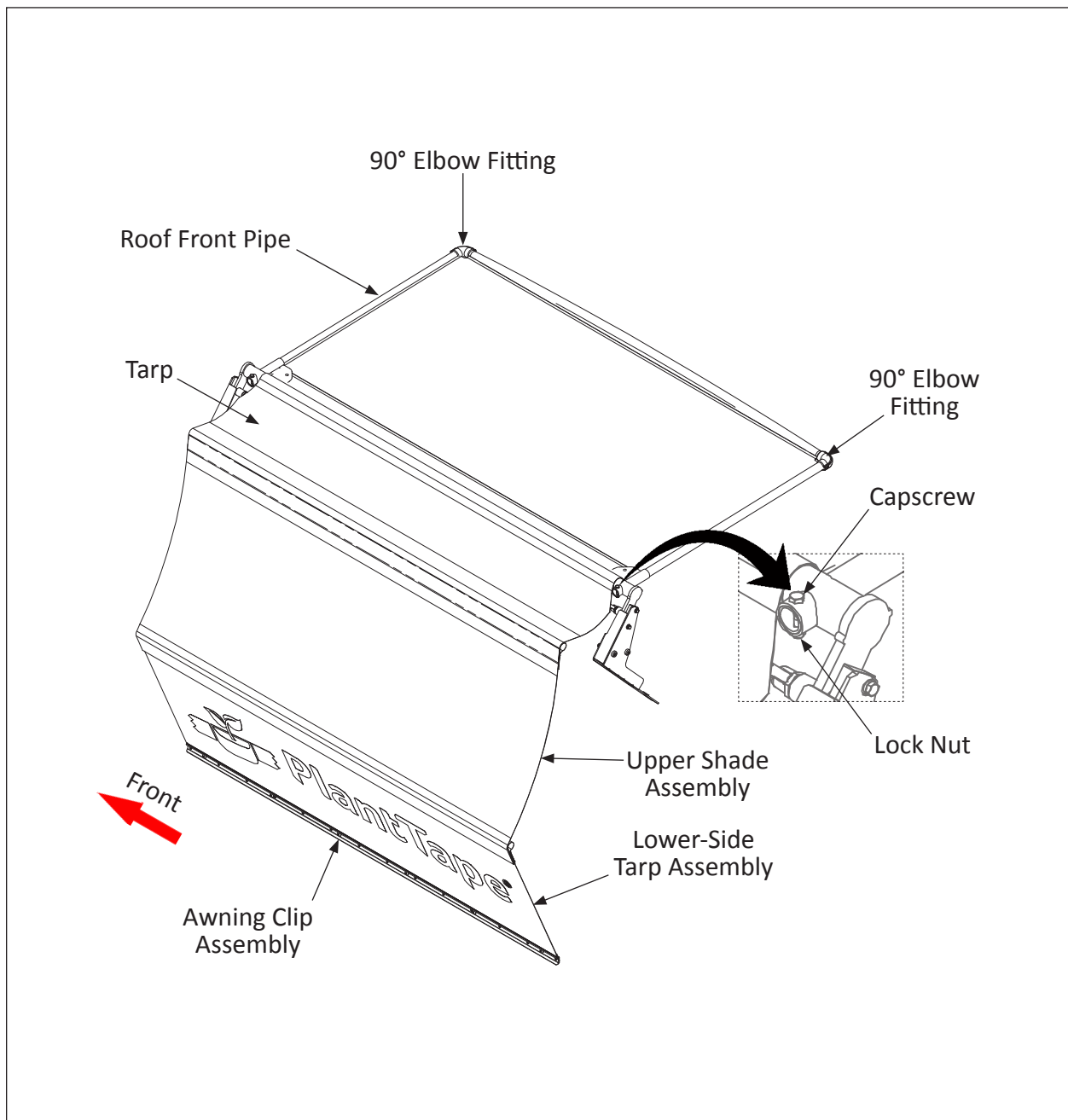


Fig. 11 New Rigid Folding Roof Half (1)

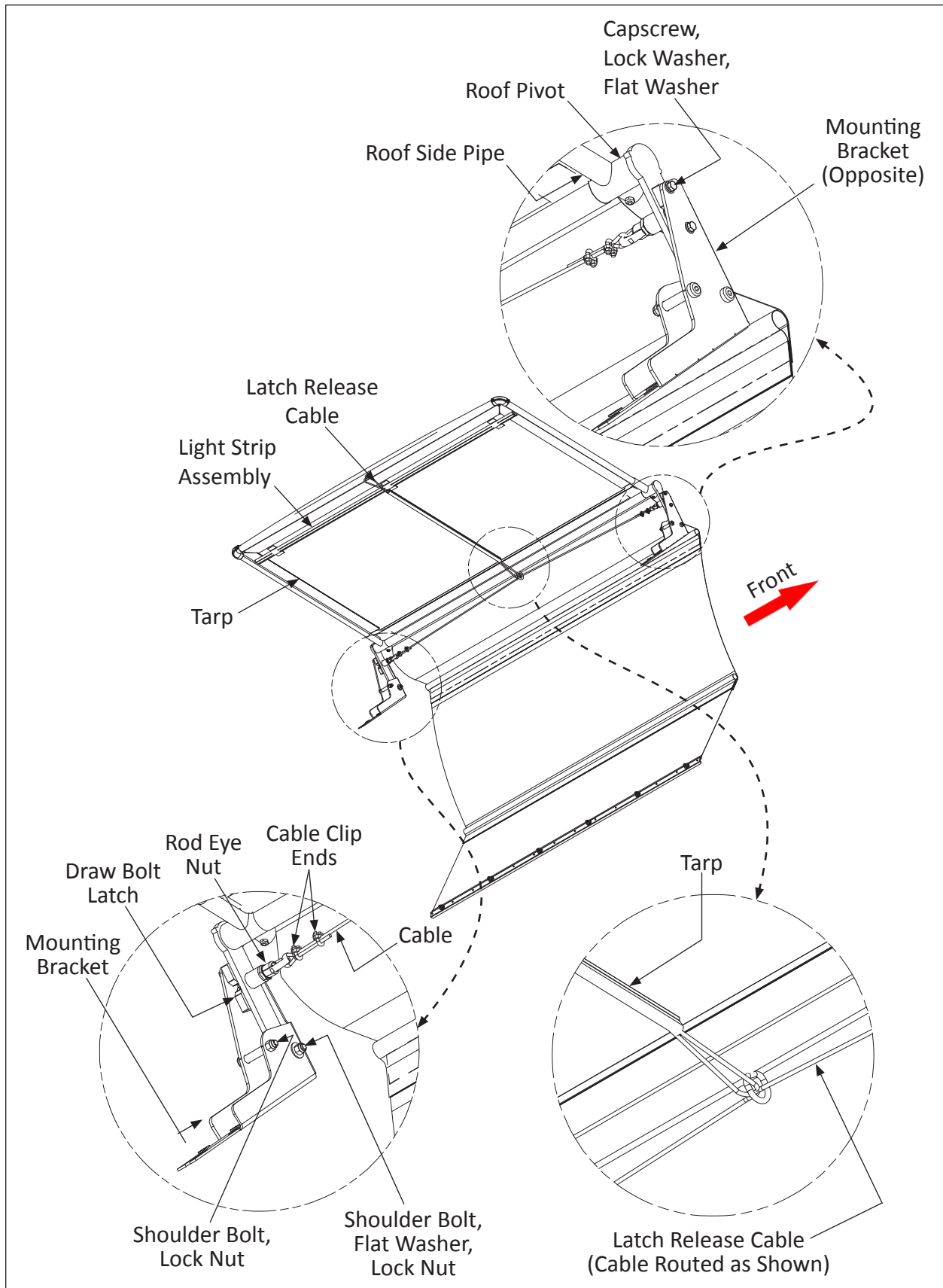


Fig. 12 New Rigid Folding Roof Half (2)

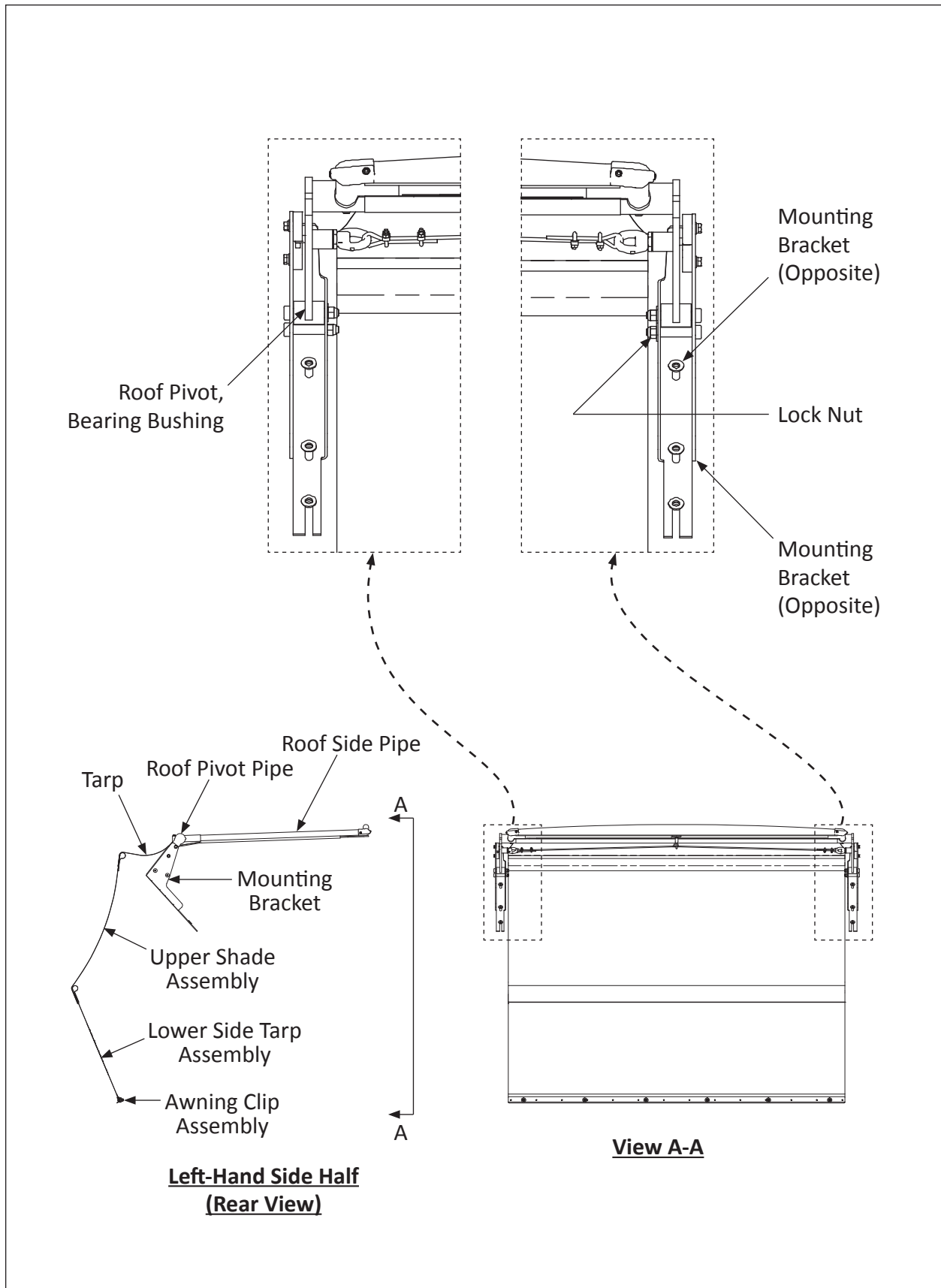
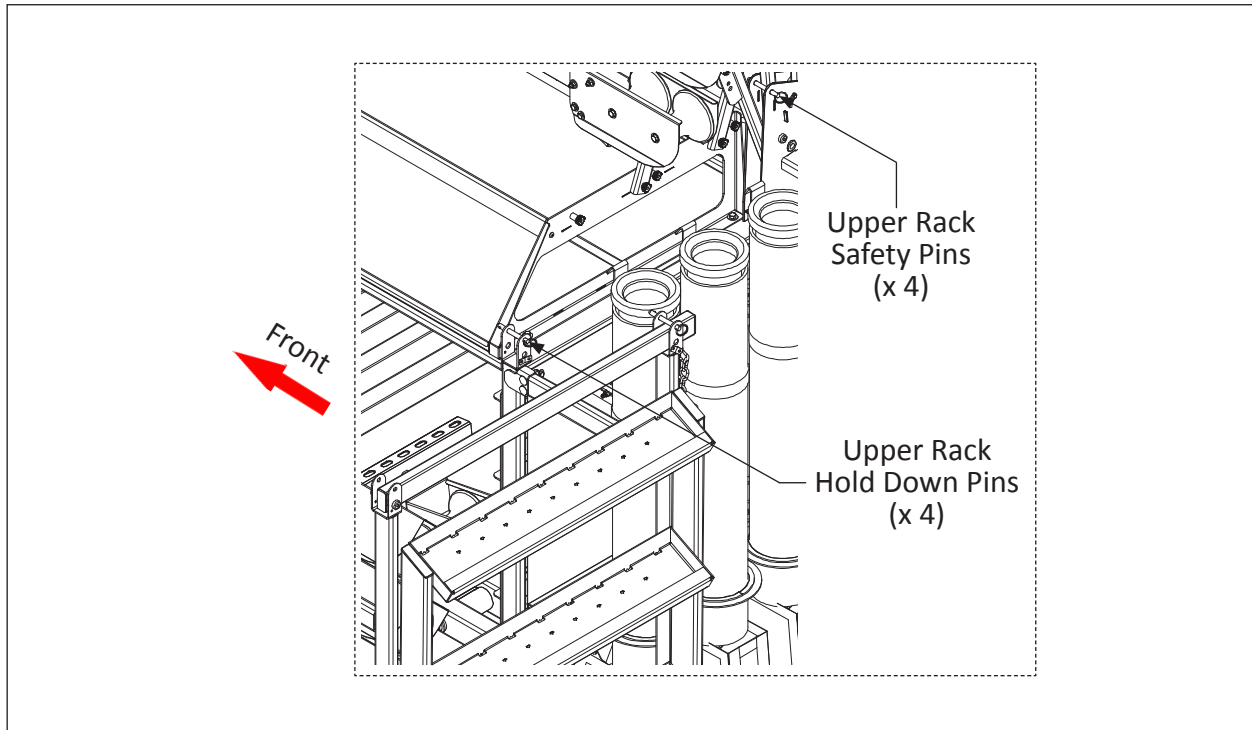


Fig. 13 New Rigid Folding Roof Half (3)

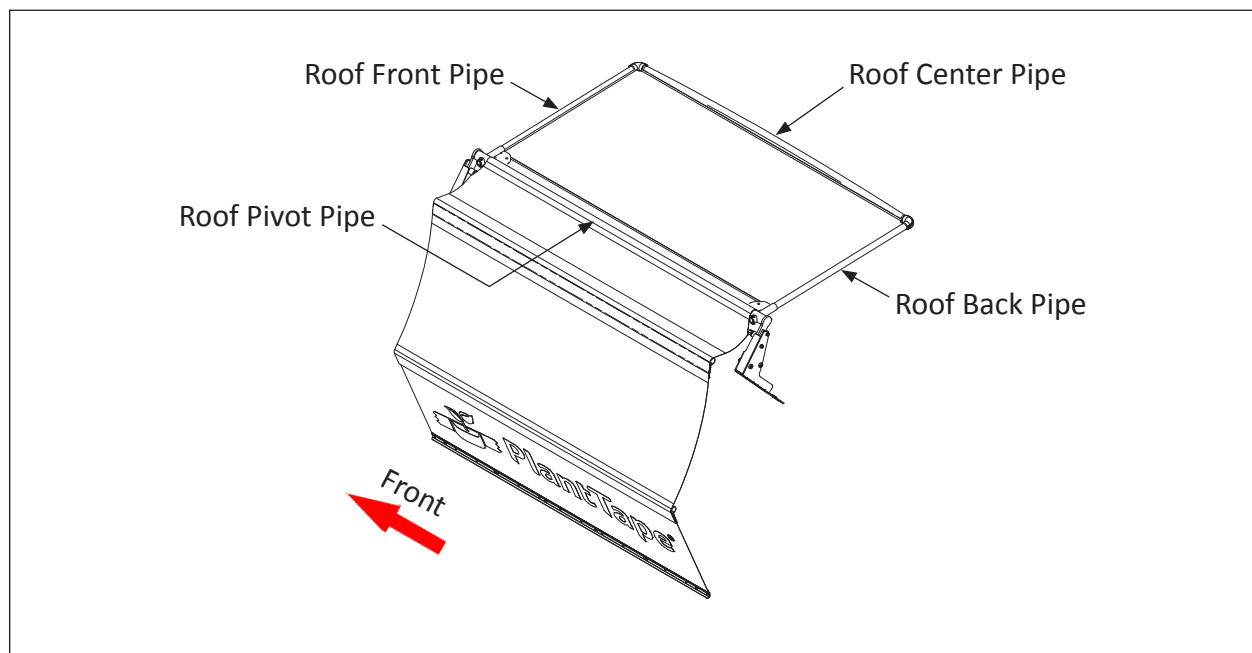
Operating Guide

1. To Open Up the Roof:

- Pull out upper rack safety pins and upper rack hold down pins from both sides of the machine to release the upper tray rack. Pin the upper plant tray rack in place with upper rack safety pins.

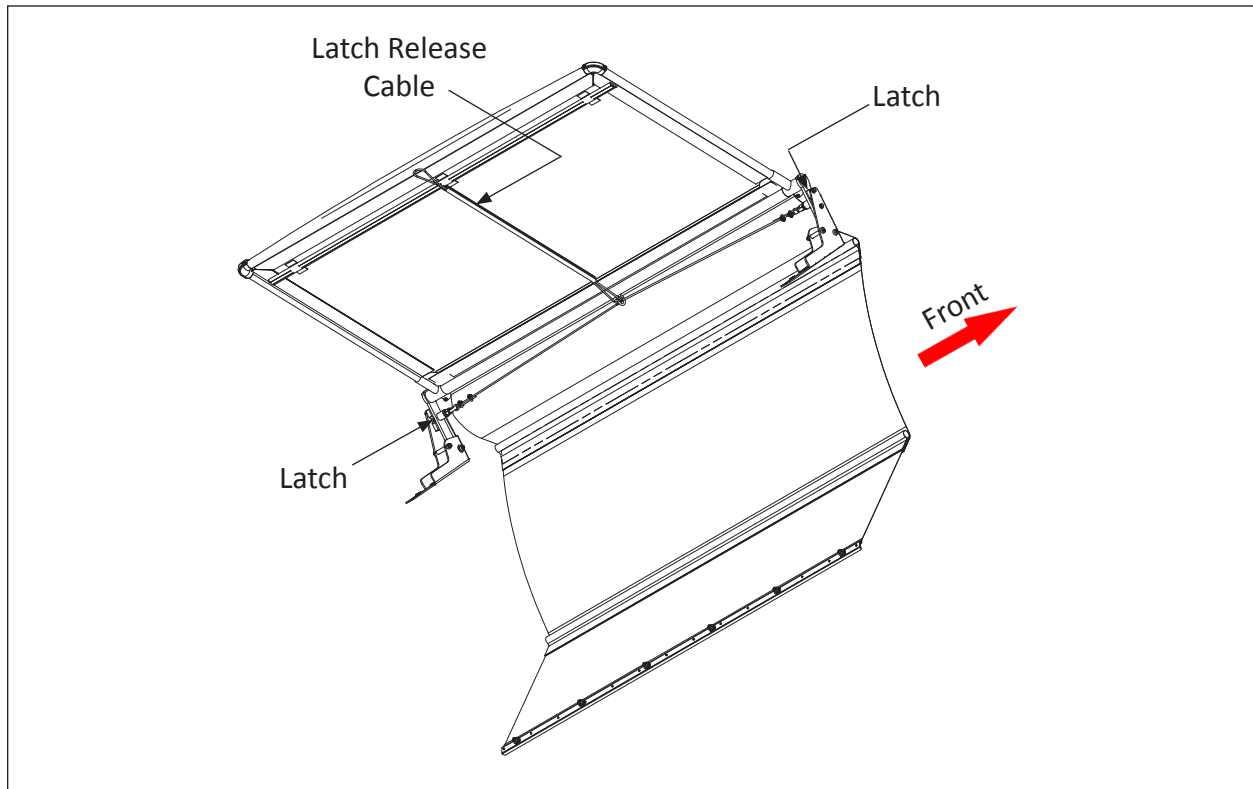


- Grasp roof center pipe and lift until both latches engage the latch pins.

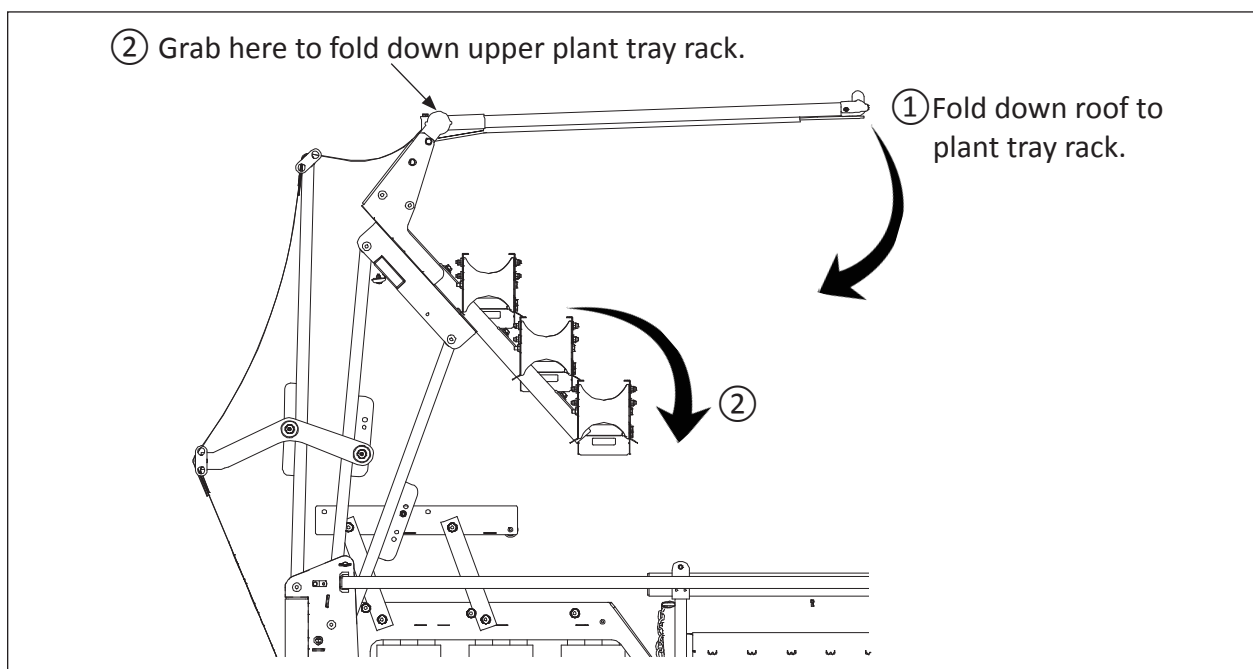


2. To Fold Down the Roof:

- Support the roof center pipe with one hand.
- Pull the latch release cable to release the latches at front and back.



- Fold down the roof sections in the order illustrated below. Put all safety pins mentioned on the previous page back on the original positions. Make sure that all roof sections are secured.



This Page Is Left Intentionally Blank

Appendix 3

IQAN-G11 Remote Diagnostics Electronic Control Systems

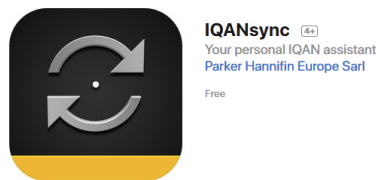
General Information

The IQAN-G11 installed on your machine is a Bluetooth® dongle that works with master modules in IQANdesign (4.00 or later) platform control systems. The IQAN-G11 is designed to transmit wireless diagnostic data from the IQAN system to a smartphone with IQANsync or a tablet with IQANrun.

The IQAN-G11 offers on-site short range or remote diagnostic access to machines using wireless communication and IQAN software tools. With an IQAN-G11 connected to the master module, it is easy to perform diagnostics on-site or remotely. Remotely connecting to the machine can speed up diagnostics and reduce travel costs for the initial diagnosis of a machine issue.

Software Installation

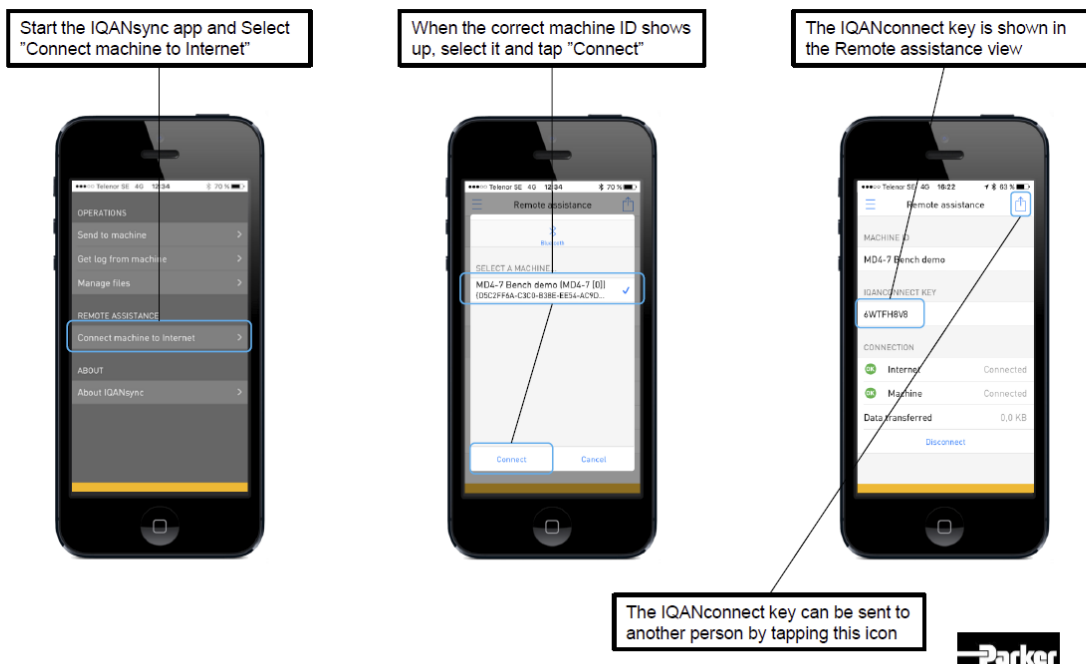
To install IQANsync to a smartphone, visit the Apple App Store or the Google Play store and search for the IQANsync app.



Connect Machine to Internet

Connect to internet as shown below, and contact GK Machine, Inc. for remote diagnostic procedures.

Remote assistance mode Connect machine to Internet



This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

This image shows a single sheet of white paper with horizontal ruling lines. The lines are evenly spaced and run across the width of the page. There are no margins, text, or other markings on the paper.

Plant Tape USA
1.888.272.6828
info@planttape.us

Plant Tape Europe
34.93.637.9892
info@planttape.com

P/N: DOC1289
Revision: 7
(07/13/2018)