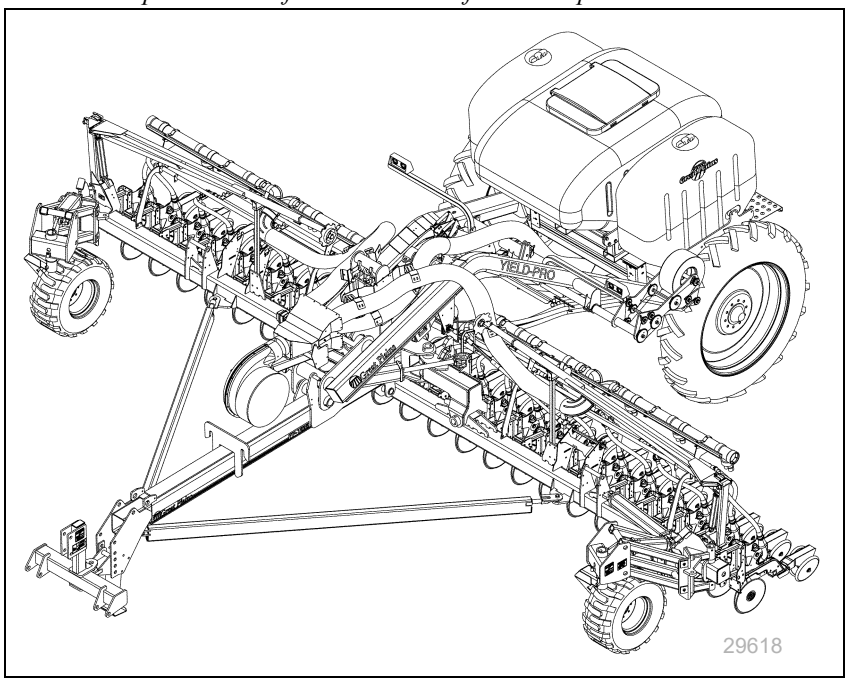
Table of Contents

Operator Manual

YP1225A & YP1625A
30- and 40-Foot 2-Section Yield-Pro® Planters
with Air-Pro® Seed Meters

Great Plains Manufacturing, Inc.
www.greatplainsmfg.com

Read the operator manual entirely. When you see this symbol, the subsequent instructions and warnings are serious - follow without exception. Your life and the lives of others depend on it!



Illustrations may show optional equipment not supplied with standard unit or may depict similar YP1225 or YP1625 models where a topic is identical.

ORIGINAL INSTRUCTIONS

EN

Printed 2023-05-04 401-625M

Table of Contents

Machine Identification

Record your machine details in the log below. If you replace this manual, be sure to transfer this information to the new manual.

If you or the dealer have added options not originally ordered with the machine, or removed options that were originally ordered, the weights and measurements are no longer accurate for your machine. Update the record by adding the machine weight and measurements with the option(s) weight and measurements.

Model Number	
Serial Number	
Machine Height	
Machine Length	
Machine Width	
Machine Weight	
Year of Construction	
Delivery Date	
First Operation	
Accessories	

Dealer Contact Information

Name: _____

Street: _____

City/State: _____

Telephone: _____

Email: _____

Dealer's Customer No.: _____

⚠WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov

Table of Contents

Important Safety Information

Look for Safety Symbol

The SAFETY ALERT SYMBOL indicates there is a potential hazard to personal safety involved and extra safety precaution must be taken. When you see this symbol, be alert and carefully read the message that follows it. In addition to design and configuration of equipment, hazard control and accident prevention are dependent upon the awareness, concern, prudence and proper training of personnel involved in the operation, transport, maintenance and storage of equipment.

Be Aware of Signal Words

Signal words designate a degree or level of hazard seriousness.

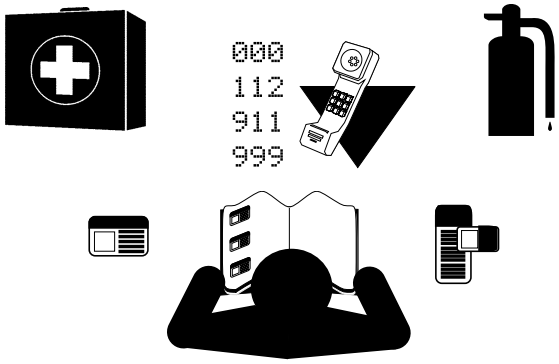
DANGER indicates an imminently hazardous situation which, if not avoided, will result in death or serious injury. This signal word is limited to the most extreme situations, typically for machine components that, for functional purposes, cannot be guarded.

WARNING indicates a potentially hazardous situation which, if not avoided, could result in death or serious injury, and includes hazards that are exposed when guards are removed. It may also be used to alert against unsafe practices.

CAUTION indicates a potentially hazardous situation which, if not avoided, may result in minor or moderate injury. It may also be used to alert against unsafe practices.

Prepare for Emergencies

- *Be prepared if a fire starts*
- *Keep a first aid kit and fire extinguisher handy.*
- *Keep emergency numbers for doctor, ambulance, hospital and fire department near phone.*



Be Familiar with Safety Decals

- *Read and understand "**Safety Decals**" on page 7, thoroughly.*
- *Read all instructions noted on the decals.*
- *Keep decals clean. Replace damaged, faded and illegible decals.*

PTO-Specific Hazards

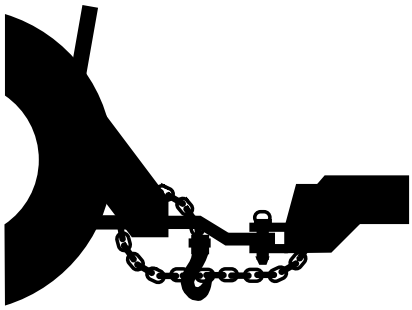
Applies only to optional PTO pump.
Even if you are experienced in PTO operations, review the "**Using PTO Safely**" topic on page 2 of the PTO manual. Topics in that manual dealing with PTO hazards include this PTO alert symbol and the standard alert symbol.

PTO hazards include:

- ***Entanglement:***
  resulting in abrasions, lacerations, crushing, dismemberment or death. Loose clothing, cuffs, frays, laces, coattails, drawstrings, hair or scarves are taken up by a PTO faster than you can react, and with overpowering torque.
- ***Flailing machinery:***
  resulting from an unsecured torque arm, resulting in serious injury or death.
- ***High pressure fluid sprays:***
  due to hydraulic hose failure, resulting from PTO shaft over-speed or damaged hoses.,

Use A Safety Chain (Hydraulic Hitch)

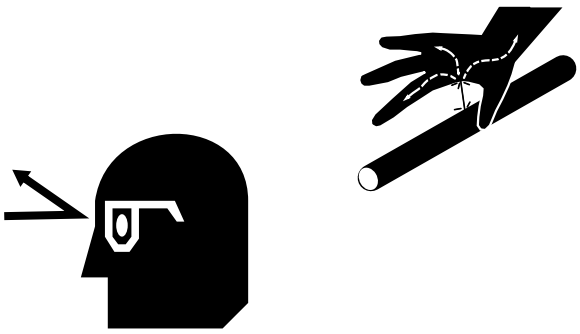
- *Use a safety chain to help control drawn machinery should it separate from tractor draw bar.*
- *Use a chain with a strength rating equal to or greater than the gross weight of towed machinery.*
- *Attach chain to tractor draw bar support or other specified anchor location. Allow only enough slack to permit turning.*
- *Replace chain if any links or end fittings are broken, stretched or damaged.*
- *Do not use safety chain for towing.*



Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury.

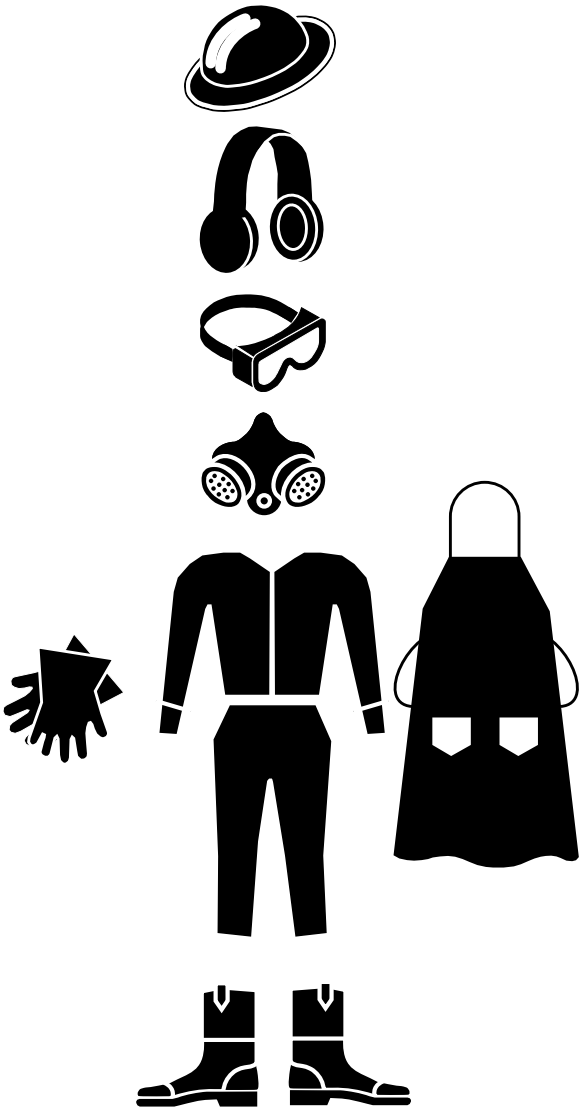
- *Avoid the hazard by relieving pressure before disconnecting hydraulic lines.*
- *Use a piece of paper or cardboard, NOT BODY PARTS, to check for suspected leaks.*
- *Wear protective gloves and safety glasses or goggles when working with hydraulic systems.*
- *If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.*



Wear Protective Equipment

Great Plains advises all users of chemical pesticides or herbicides to use the following personal safety equipment.

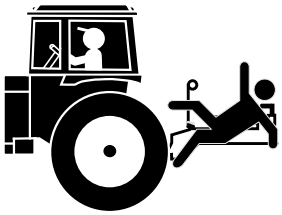
- *Waterproof, wide-brimmed hat*
- *Waterproof apron.*
- *Face shield, goggles or full face respirator.*
- *Goggles with side shields or a full face respirator is required if handling or applying dusts, wettable powders, or granules or if being exposed to spray mist.*
- *Cartridge-type respirator approved for pesticide vapors unless label specifies another type of respirator.*
- *Waterproof, unlined gloves. Neoprene gloves are recommended.*
- *Cloth coveralls/outer clothing changed daily; waterproof items if there is a chance of becoming wet with spray*
- *Waterproof boots or foot coverings*
- *Do not wear contaminated clothing. Wash protective clothing and equipment with soap and water after each use. Personal clothing must be laundered separately from household articles.*
- *Clothing contaminated with certain pesticides must be destroyed according to state and local regulations. Read chemical label for specific instructions.*
- *Wear clothing and equipment appropriate for the job. Avoid loose-fitting clothing.*
- *Prolonged exposure to loud noise can cause hearing impairment or loss. Wear suitable hearing protection such as earmuffs or earplugs.*
- *Avoid wearing entertainment headphones while operating machinery. Operating equipment safely requires the full attention of the operator.*



Handle Chemicals Properly

- ▲ *Read and follow chemical manufacturer's instructions.*
- ▲ *Wear protective clothing.*
- ▲ *Handle all chemicals with care.*
- ▲ *Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.*
- ▲ *Inhaling smoke from any type of chemical fire is a serious health hazard.*
- ▲ *Store or dispose of unused chemicals as specified by the chemical manufacturer.*
- ▲ *Before adding chemical to the tank, make sure tank is at least half full. Do not pour concentrate into an empty tank.*
- ▲ *Never leave fill hose attached to the sprayer after filling tank. Chemicals in tank can siphon out of tank and contaminate freshwater source.*
- ▲ *Immediately and thoroughly flush any area of the body that is contaminated by chemicals.*
- ▲ *Do not touch plumbing components with mouth or lips.*
- ▲ *If chemical is swallowed, carefully follow the chemical manufacturer's recommendations and consult with a doctor.*
- ▲ *If persons are exposed to a chemical in a way that could affect their health, consult a doctor immediately with the chemical label or container in hand. Any delay could cause serious illness or death.*
- ▲ *Dispose of empty chemical containers properly. By law rinsing of the used chemical container must be repeated three times. Puncture the container to prevent future use. An alternative is to jet-rinse or pressure rinse the container.*
- ▲ *After working with chemicals, wash hands and face before eating. Shower when application is completed for the day.*
- ▲ *Never wash out the tanks within 100 feet (30 m) of any freshwater source or in a car wash.*
- ▲ *Rinse out the tank. Apply rinse water on last field treated.*

Keep Riders Off Machinery



Riders obstruct the operator's view. Riders could be struck by foreign objects or thrown from the machine.

- ▲ *Never allow children to operate equipment.*
- ▲ *Keep all bystanders away from machine during operation.*

Use Safety Lights and Devices

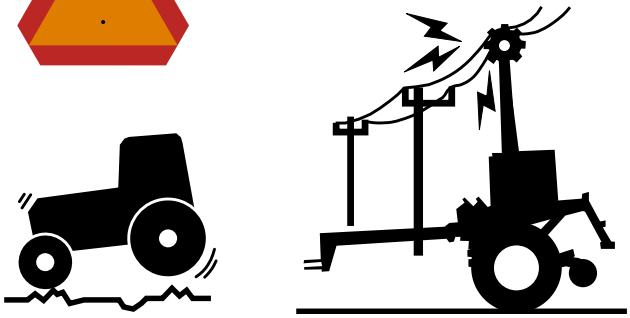
Slow-moving tractors and towed implements can create a hazard when driven on public roads. They are difficult to see, especially at night.

- ▲ *Use flashing warning lights and turn signals whenever driving on public roads.*
- ▲ *Use lights and devices provided with implement*

Transport Machinery Safely

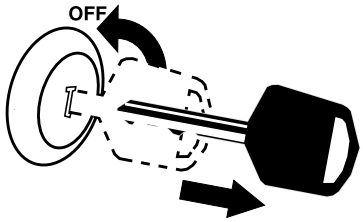
Maximum transport speed for implement is 20 mph (32 km/h). Some rough terrains require a slower speed. Sudden braking can cause a towed load to swerve and upset.

- ▲ *Do not exceed 20 mph (32 km/h). Never travel speeds which do not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.*
- ▲ *Comply with state and local laws.*
- ▲ *Do not tow an implement that, when fully loaded, weighs more than 1.5 times the weight of towing vehicle.*
- ▲ *Carry reflectors or flags to mark planter in case of breakdown on the road.*
- ▲ *Keep clear of overhead power lines and other obstructions when transporting. Refer to transport dimensions under "**Specifications and Capacities**" on page 132.*
- ▲ *Do not fold or unfold the planter while the tractor is moving.*



Shutdown and Storage

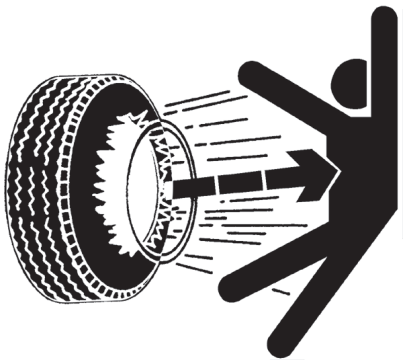
- ▲ *Lower planter, put tractor in park, turn off engine, and remove the key.*
- ▲ *Secure planter using blocks and supports provided.*
- ▲ *Detach and store planter in an area where children normally do not play.*



Tire Safety

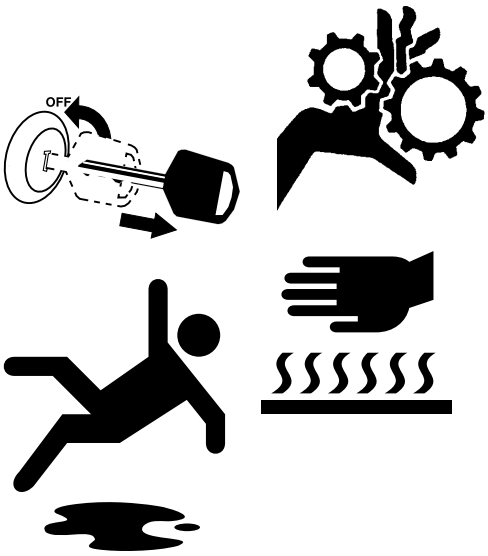
Tire changing can be dangerous and should be performed by trained personnel using correct tools and equipment.

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



Practice Safe Maintenance

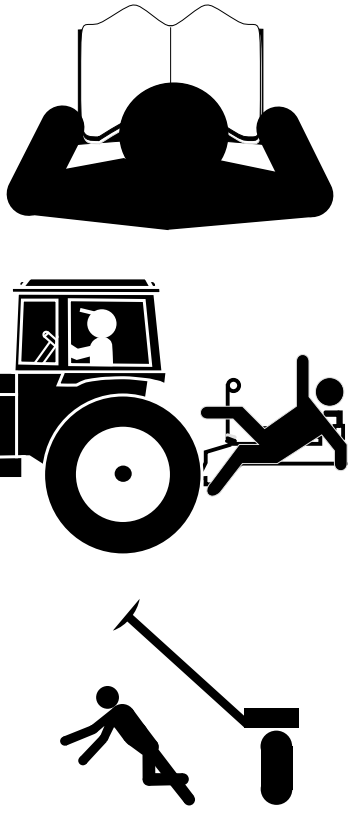
- *Understand procedure before doing work. Use proper tools and equipment. Refer to this manual for additional information.*
- *Work in a clean, dry area.*
- *Lower the planter, put tractor in park, turn off engine, and remove key before performing maintenance.*
- *Make sure all moving parts have stopped and all system pressure is relieved.*
- *Allow planter to cool completely.*
- *Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on planter.*
- *Inspect all parts. Make sure parts are in good condition and installed properly.*
- *Remove buildup of grease, oil or debris.*
- *Remove all tools and unused parts from planter before operation.*



Safety At All Times

Thoroughly read and understand the instructions in this manual before operation. Read all instructions noted on the safety decals.

- *Be familiar with all planter functions.*
- *Operate machinery from the driver's seat only.*
- *Do not leave planter unattended with tractor engine running.*
- *Do not dismount a moving tractor. Dismounting a moving tractor could cause serious injury or death.*
- *Do not stand between the tractor and planter during hitching.*
- *Keep hands, feet and clothing away from power-driven parts.*
- *Wear snug-fitting clothing to avoid entanglement with moving parts.*
- *Watch out for wires, trees, etc., when folding and raising planter. Make sure all persons are clear of working area.*



Safety Decals

Safety Reflectors and Decals

Your implement comes equipped with all lights, safety reflectors and decals in place. They were designed to help you safely operate your implement.

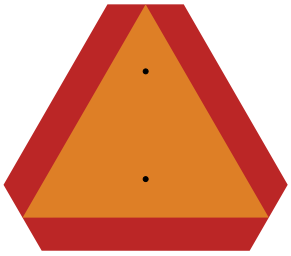
- *Read and follow decal directions.*
- *Keep lights in operating condition.*
- *Keep all safety decals clean and legible.*
- *Replace all damaged or missing decals. Order new decals from your Great Plains dealer. Refer to this section for proper decal placement.*
- *When ordering new parts or components, also request corresponding safety decals.*

To install new decals:

1. Clean the area on which the decal is to be placed.
2. Peel backing from decal. Press firmly on surface, being careful not to cause air bubbles under decal.

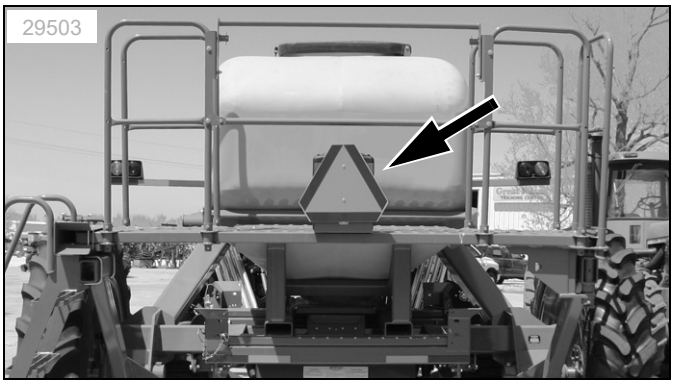
Slow Moving Vehicle Reflector

818-055C



On the back of the planter, walkboard center;
1 total

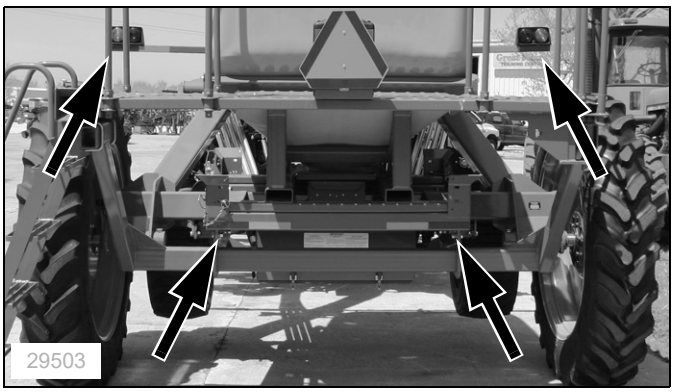
See “**Transporting**” on page 31.



Red Reflectors

838-266C

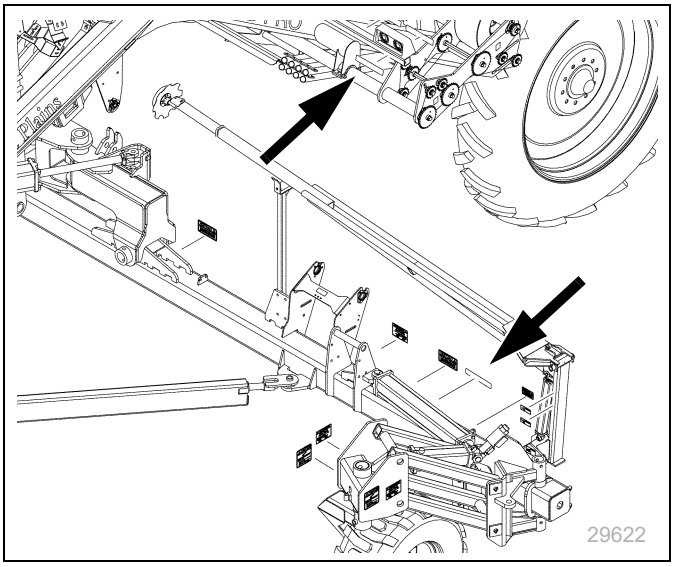
On the back of seed frame each end,
and on the rear face of each light mounting bar;
4 total



Amber Reflectors

838-265C

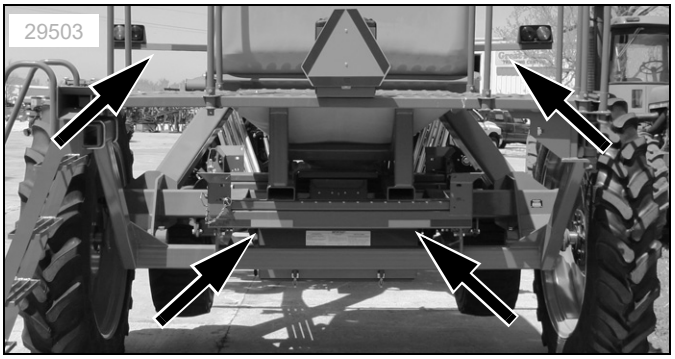
One each on rear face of wing tool bar at wing lock, one each on front face of light bars;
4 total



Daytime Reflectors

838-267C

On the back of seed frame, inside red reflectors, on the rear face of the light bar;
4 total

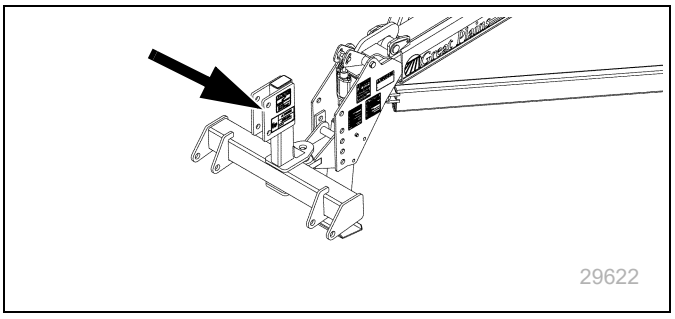


Danger: Crushing Hazard

818-590C

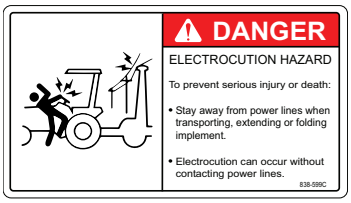
On the hitch, one total.

See “**Hitching Tractor to Planter**” on page 17.



Danger: Electrocution Hazard

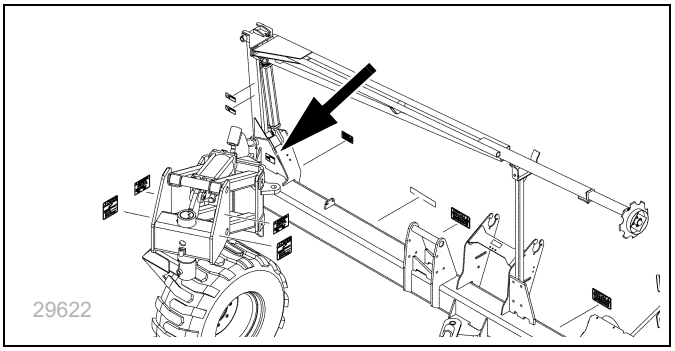
838-599C (Option)



Danger: Electrocution Hazard

On marker section each end, two total.

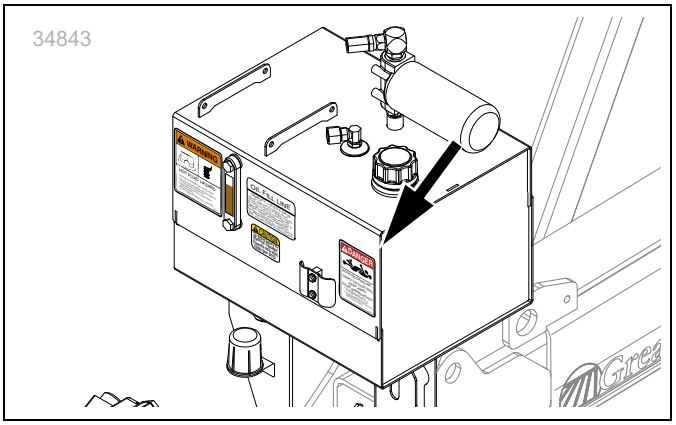
See “**Marker Operation**” on page 47.



Danger: Rotating Driveline

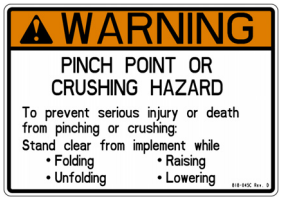
858-030C (Option)

On front face of hydraulic reservoir; one total

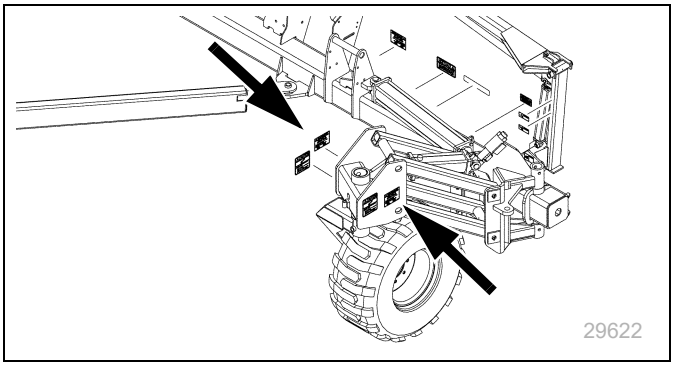


Warning: Pinch-Crush

818-045C



Above both tires, two total

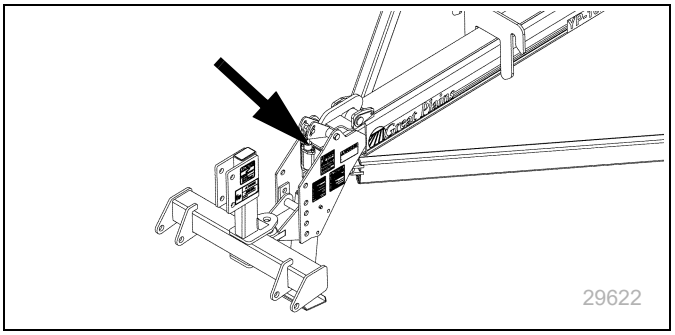


Warning: High Pressure Fluid Hazard

818-339C

On the tongue, one total

See “**Hydraulic Hose Hookup**” on page 17.

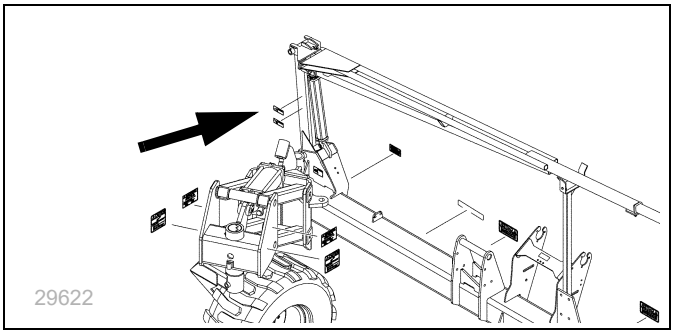


Warning: Overhead Hazard

818-580C (Option)

On marker section each end, two total

See “**Marker Operation**” on page 47.

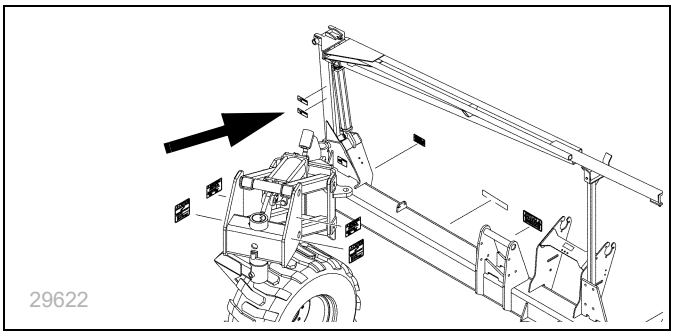


Warning: Pinch-Shear Hazard

818-579C (Option)

On marker section each end, two total

See “**Marker Operation**” on page 47.

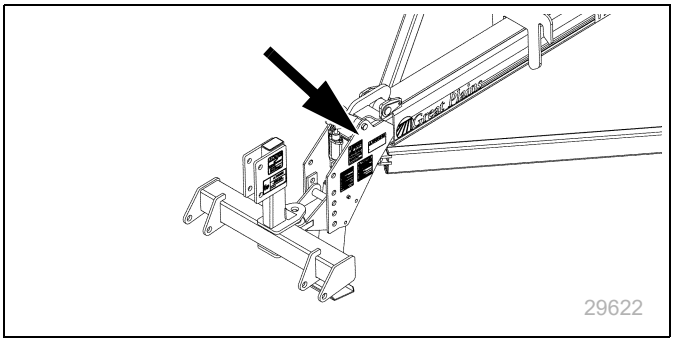


Warning: Excessive Speed

818-188C

On the tongue, one total

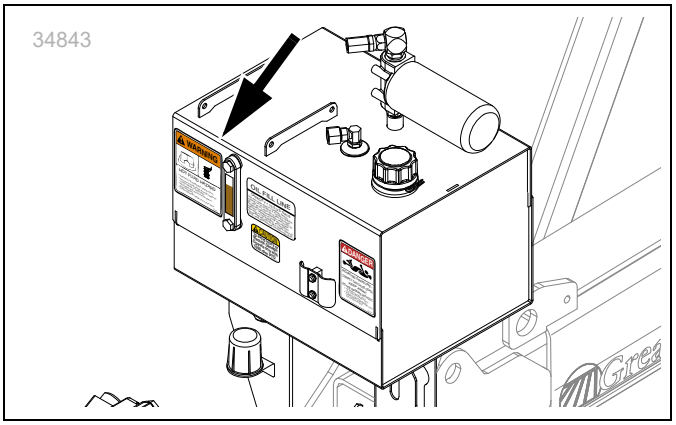
See “**Transporting**” on page 31.



Warning: Hot Fluid

858-004C (Option)

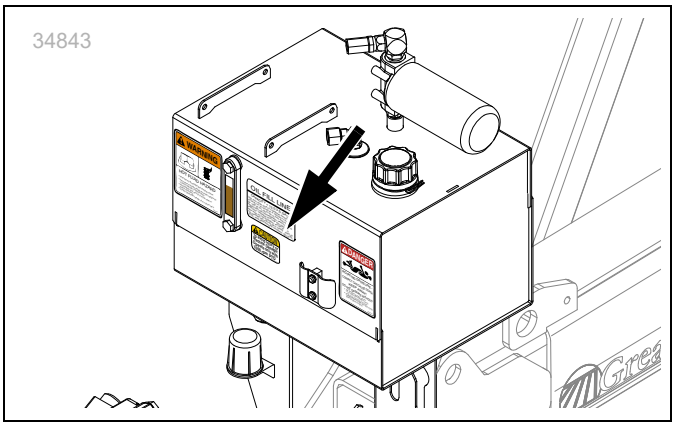
On front face of hydraulic reservoir; one total



Warning: 1000 rpm PTO

818-240C (Option)

On front face of hydraulic reservoir; one total

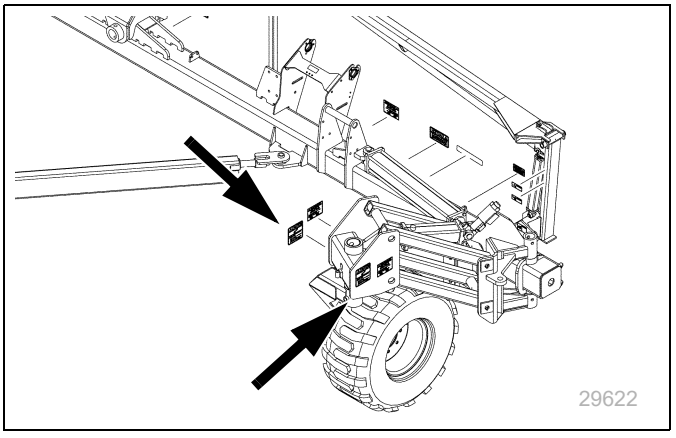


Caution: Tires Not A Step

818-398C

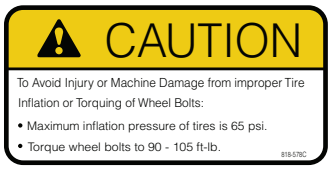
Above both tires, two total

In transport configuration, wing gauge wheels are off the ground and free to spin. In field configuration, at higher row unit down-forces, wing gauge wheels may have little or no ground traction.



Caution: Tire Pressure

818-578C

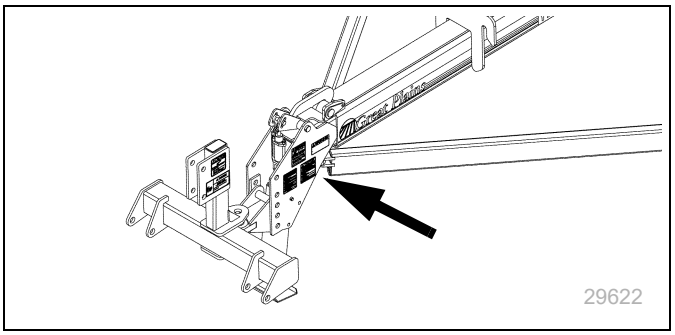


On hubcap side rim of each gauge wheel;
2 total

Caution: General

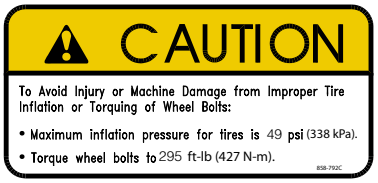
838-995C

On right side of hitch;
1 total



Warning: Tire Pressure

858-792C



On outside rim of each main transport wheel;
2 total

Introduction

Great Plains welcomes you to its growing family of new product owners. This planter has been designed with care and built by skilled workers using quality materials. Proper setup, maintenance, and safe operating practices will help you get years of satisfactory use.

Description of Unit

The 30- and 40-Foot 2-Section Yield-Pro® Planters are pull-type planting implements for use in conventional till, minimum-till, or light no-till conditions.

Yield-Pro® Planters have 25 Series, side-depth-control row-units and Air-Pro® seed meters. Optional unit-mounted coulters are suitable for light to moderate no-till conditions only. The planter folds for transport.

Intended Usage

Use the planter to seed production-agriculture crops only. Do not modify the planter for use with attachments other than Great Plains options and accessories specified for use with the planter.

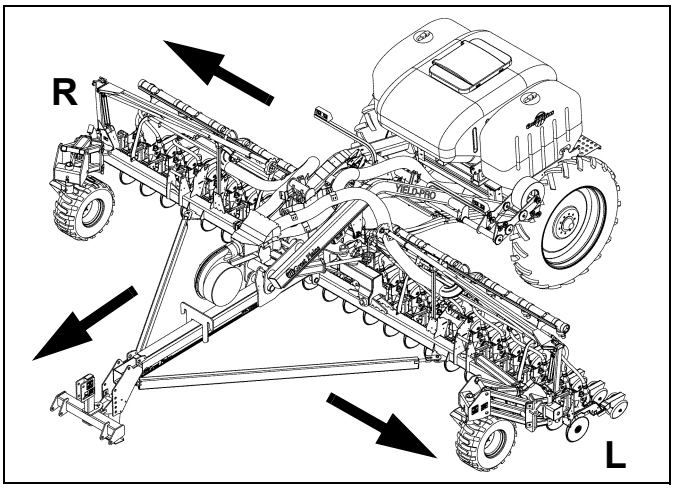


Figure 1 27281
Left/Right Convention

Covered Models

YP1225A-1230	30-Foot, 12-Row, 30 in.
YP1225A-16TR36	30-Foot, 16-Row (8 Twin), 36 in.
YP1225A-1820	30-Foot, 18-Row, 20 in.
YP1225A-2315	30-Foot, 23-Row, 15 in.
YP1225A-24TR	30-Foot, 24-Row, (12 Twin) 30 in.
YP1625A-1236	40-Foot, 12-Row, 36 in.
YP1625A-1630	40-Foot, 16-Row, 30 in.
YP1625A-1670	12-Meter, 16-Row, 70 cm
YP1625A-24TR36	40-Foot, 24-Row, 20 in.
YP1625A-2420	40-Foot, 24-Row (12 Twin), 36 in.
YP1625A-3115	40-Foot, 31-Row, 15 in.
YP1625A-32TR	40-Foot, 32-Row (16 Twin), 30 in.

Document Family

401-625M	Operator Manual (this manual)
401-625B	Seed Rate Manual
401-625P	Parts Manual
	DICKEY-john® IntelliAg® manuals:
11001-1662	Planter/Drill Control, User Level 1
11001-1501A	Planter/Drill Control, User Level 2&3
110011440	A1 & AI-100 10 in. Virtual Terminal
110011606	AI-120 12 in. Virtual Terminal
	DICKEY-john® Quick Start Guides
110011526	YP1225A-1230 12 Row 30 in.
110011591	YP1225A-1820 18 Row 20 in.
110011590	YP1225A-2315 23 Row 15 in.
110011592	YP1225A-24TR 24 Twin Row 30 in.
110011593	YP1225A-16TR36 16 Twin Row 30 in.
110011602	YP1625A-1236 12 Row 36 in.
110011527	YP1625A-1630 16 Row 30 in.
110011603	YP1625A-1670 16 Row 70 cm
110011601	YP1625A-2420 24 Row 20 in.
110011605	YP1625A-24TR36 24 Twin Row 36 in.
110011600	YP1625A-3115 31 Row 15 in.
110011604	YP1625A-32TR 32 Twin Row 30 in.

Using This Manual

This manual familiarizes you with safety, assembly, operation, adjustments, troubleshooting and maintenance. Read this manual and follow the recommendations to help ensure safe and efficient operation.

The information in this manual is current at printing. Some parts may change to assure top performance.

Definitions

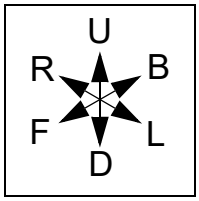
The following terms are used throughout this manual.

NOTICE

A crucial point of information related to the preceding topic. Read and follow the directions provided before continuing, to ensure safety, avoidance of machine damage, and to achieve desired field results.

🕮 Useful information related to the preceding topic.

Right-hand and *left-hand* as used in this manual are determined by facing the direction the machine will travel while in use unless otherwise stated. An orientation rose in some line art illustrations shows the directions of: Up, Back, Left, Down, Front, Right.



Owner Assistance

If you need customer service or repair parts, contact a Great Plains dealer. They have trained personnel, repair parts, and equipment specially designed for Great Plains products.

Refer to Figure 2

Your planter's parts were specially designed and should only be replaced with Great Plains parts. Always use the serial and model number when ordering parts from your Great Plains dealer. The serial-number plate is located on the rear face of the right axle.

Record your Planter model and serial number here for quick reference:

Model Number:_____

Serial Number: _____

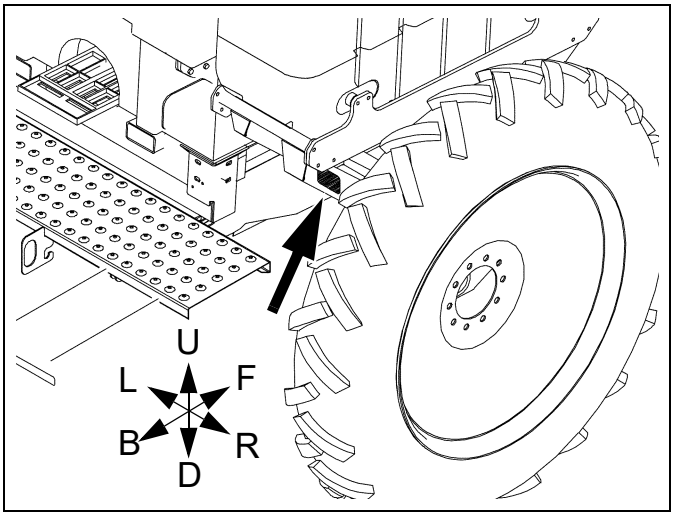


Figure 2 27284
Serial Number Plate

Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new YP1225A & YP1625A. If for any reason you do not understand any part of this manual or are otherwise dissatisfied, please take the following actions first:

1. Discuss the matter with your dealership service manager. Make sure they are aware of any problems so they can assist you.
2. If you are still unsatisfied, seek out the owner or general manager of the dealership.

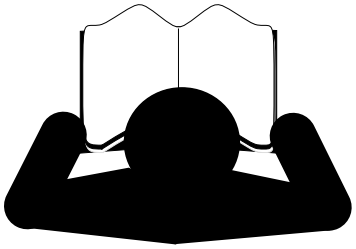
If your dealer is unable to resolve the problem or the issue is parts related, please contact:

Great Plains Service Department
1525 E. North St.
P.O. Box 5060
Salina, KS 67402-5060

Or go to www.greatplainsag.com and follow the contact information at the bottom of your screen for our service department.

Preparation and Setup

This section helps you prepare your tractor and planter for use. Before using the in the field, you must hitch the planter to a suitable tractor and level the planter.



Initial Setup

If the planter has just been delivered, or broken down for reshipment, these items need to be completed prior to first field use:

- "**Hydraulic Charge and Bleed**" on page 154, whicz0includes:
- "**Console Installation**" on page 154
- "**Level Planter**" on page 155, and
- "**Marker Setup**" on page 158.

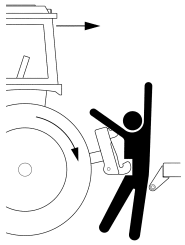
You may also need to install features, options and accessories that were not factory- or dealer-installed.

Pre-Planting Setup

The balance of this section covers items that need to be completed or checked prior to each field use of the planter.

1. Read and understand "**Important Safety Information**" on page 1.
2. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
3. Check that all zerks are in place and lubricated. See "**Lubrication**" on page 107.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See "**Safety Decals**" on page 7
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See "**Tire Inflation Chart**" on page 134.
6. If returning the planter to service from storage, remove any grease used to protect cylinder rods.

Hitching Tractor to Planter

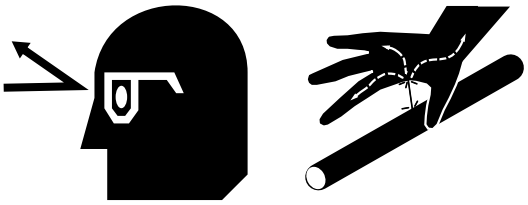


DANGER

Crushing Hazard:

Do not stand or place any part of your body between planter and moving tractor. You may be severely injured or killed by being crushed between the tractor and planter. Stop tractor engine and set park brake before attaching cables and hoses.

Hydraulic Hookup



WARNING

High Pressure Fluid Hazard:

Relieve pressure before disconnecting hydraulic lines. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. If an accident occurs, seek immediate medical attention from a physician familiar with this type of injury.

Hydraulic Hose Hookup

🕮 If a PTO pump is installed, no Black or Yellow hookups will be present.

Refer to Figure 3

Great Plains hydraulic hoses have color coded handle grips to help you hookup hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same color.

Current Style Color Coded Hose Handles

Color	Hydraulic Function
Gray	Fold/Marker
Blue	Lift/Tongue
Black	Fan
Yellow	Hydraulic Drive (Option)

To distinguish hoses on the same hydraulic circuit, refer to the symbol molded into the handle grip. Hoses with an extended-cylinder symbol feed cylinder base ends. Hoses with a retracted-cylinder symbol feed cylinder rod ends.

For hydraulic fan and drive motors, connect the hose under the retracted cylinder symbol to the pressure side of the motor. Connect the hose under the extended cylinder symbol to the return side of the motor.

The fan motor further requires hookup of a third line, which returns hydraulic fluid from the fan motor case.

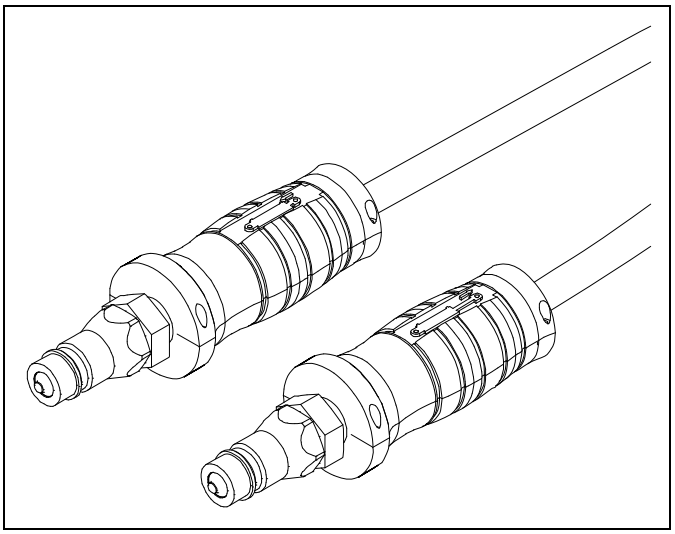


Figure 3 31733
Color Coded Hose Handles

Older Style Hoses with Color Ties

Refer to Figure 4

Great Plains hydraulic hoses are color coded. Hoses that go to the same remote valve are marked with the same color tie.

Color	Hydraulic Function
White	Fold/Marker
Blue	Lift/Tongue
Orange	Fan
Yellow	Hydraulic Drive (Option)

To distinguish hoses on the same hydraulic circuit, refer to plastic hose label. Hose under extended-cylinder symbol feeds cylinder base ends. Hose under retracted-cylinder symbol feeds cylinder rod ends.

Protecting Hydraulic Motor Seals

Low Pressure (Case) Drain Connection

7. Attach case drain hose to low pressure drain connection.
8. Connect low pressure return hose to low pressure return connector.
9. If the tractor has a limited number of remotes capable of continuous flow, use them for the hydraulic fan and optional hydraulic drive. (See "**Specifications and Capacities**" on page 132 for tractor requirements.)

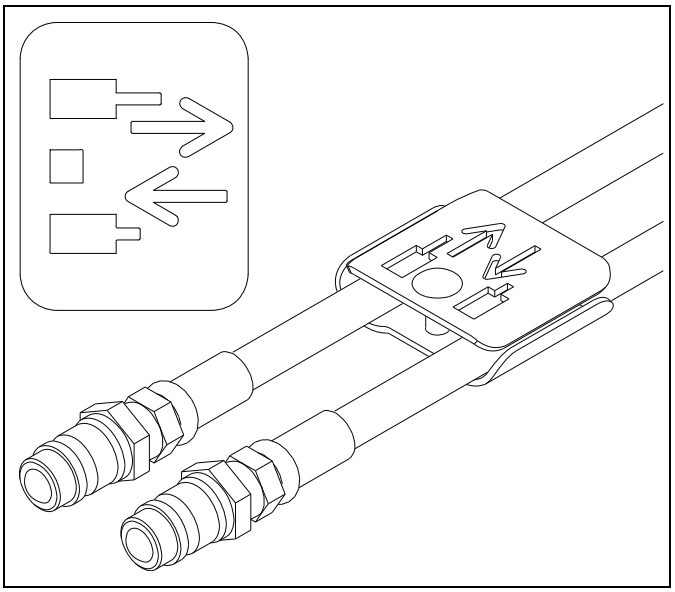


Figure 4 27270
Older Style Hoses w/Label

NOTICE

Motor Seal Damage Risk:
Case Drain Hose must be attached first, prior to inlet and return hoses being connected.

Case Drain Hose must be detached last, to prevent damage to the fan motor.

NOTICE

Hydraulic Motor Performance Risk:
DO NOT hook case drain line to a "power-beyond port".

3-Point Hitch

Refer to Figure 5

10. Connect your tractor 3-point to the planter 3-point hitch. If using quick hitch be sure planter locks into hitch securely.
11. Raise tractor 3-point just enough to relieve pressure off of the parking stand.
12. Store 3-point stands ①. There are two methods:

    a. Remove lower pins ②. Swing stand under hitch. Reinsert pin beneath stand at inner hole.

    b. Remove both pins. Invert stand. Re-pin.

⚠ CAUTION

Load Sway Hazard:
Adjust 3-point hitch arms and sway blocks to minimize any side-to-side sway to assure proper tracking in the field, and safe road travel.

13. Connect hydraulic hoses to tractor remotes. See "**Hydraulic Hose Hookup**" on page 17

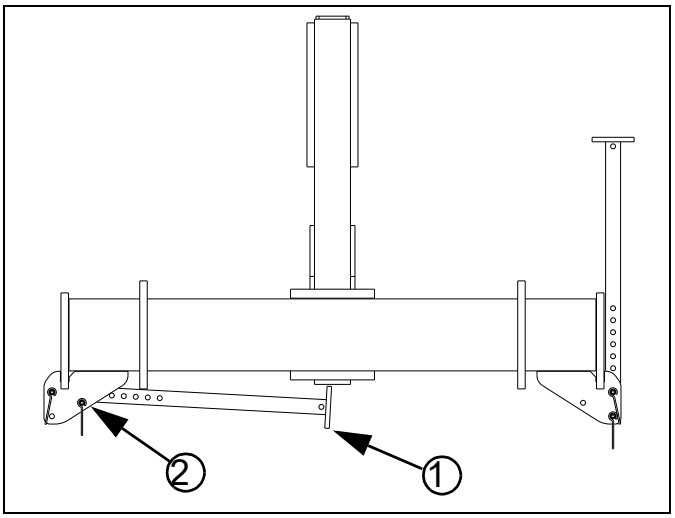


Figure 5 29732
3-Point Hitch Stands Stored

Hitching with Hydraulic Tongue (Option)

Refer to Figure 6 (showing bypass valve closed)

1. Move the tractor to near hitching position.
2. Connect the hydraulic hoses for the tongue circuit. This needs to be done before hitching in order to raise and lower the tongue. See "**Hydraulic Hose Hookup**" on page 17. Allow slack for hitch movements. Close the tongue cylinder bypass valve.
3. Make electrical connections for at least the planter monitor circuit (necessary to control planter hydraulic systems). See page 20.
4. Check that hitch local bypass valve ③ is closed.

Refer to Figure 7

5. Set the cab CFM (Clutch Folding Module) Lift/Hitch switch ② to Hitch.
6. Retract the Hitch/Lift circuit to set the tongue height to clear the draw-bar. Back the tractor into alignment and pin the draw-bar.

Local Float on Hydraulic Tongue

Refer to Figure 6

The hydraulic tongue must be in Float during planter moves.

If it is necessary to move the planter without first connecting it to a tractor that has a float-capable circuit for the hydraulic tongue, open the bypass valve ③ on the tongue cylinder. This provides local floating capability at the tongue.

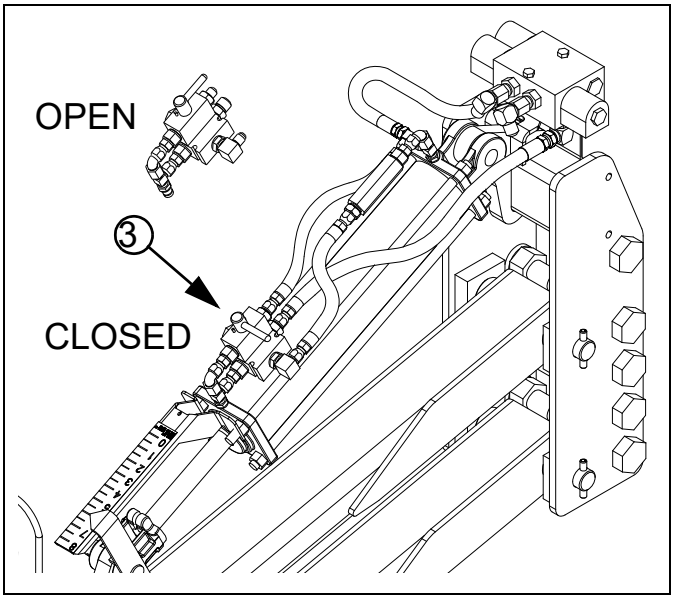


Figure 6 28477
Hitching with Hydraulic Tongue

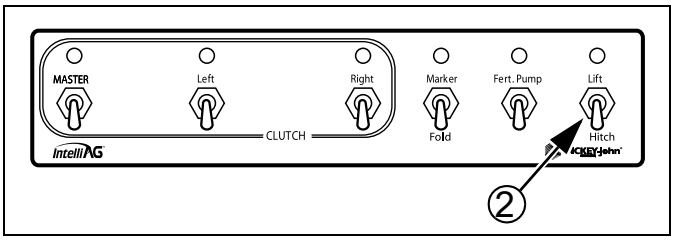


Figure 7 28483
CFM for Hydraulic Hitching

Raising/Lowering Tongue

In addition to hitching, tongue raising and lowering is required during fold and unfold to engage and disengage the wing locks.

With the standard 3-point hitch, the planter tongue is raised and lowered by raising and lowering the 3-point.

With the optional hydraulic tongue, the planter tongue is raised by extending the hitch cylinder, and lowered by retracting the hitch cylinder.

Hitching with Either Hitch

7. Set the initial tongue height, using 3 point or cylinder of hydraulic tongue. Distance ⓗ, measured at top of tongue tube is:
   46 inches (117 cm) above ground level for YP12, or
   42 inches (107 cm) above ground level for YP16.
   Additional planter leveling information is found on page 155.
8. Connect other hydraulic hoses to tractor remotes. See “**Hydraulic Hose Hookup**” on page 17

Electrical Hookup

Refer to Figure 9

Your planter is equipped with two standard systems requiring separate electrical connections. You may also have optional equipment requiring additional connections.

Make sure tractor is shut down with accessory power off before making connections.

These connections may be made in any order. The key requirement is that all connections be made prior to planter movement.

9. Plug the planter light cable ① to the tractor.
10. Connect monitor lead ② to monitor harness. (See page 154 for console installation.)
11. Connect any optional harnesses.

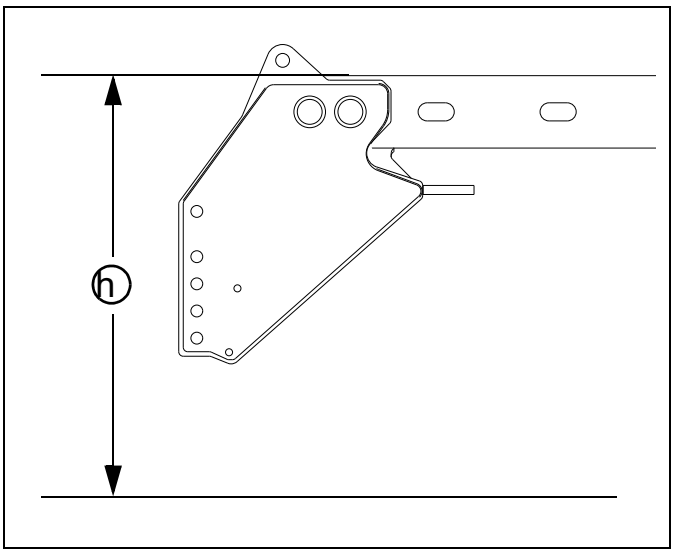


Figure 8 25316
Base Height

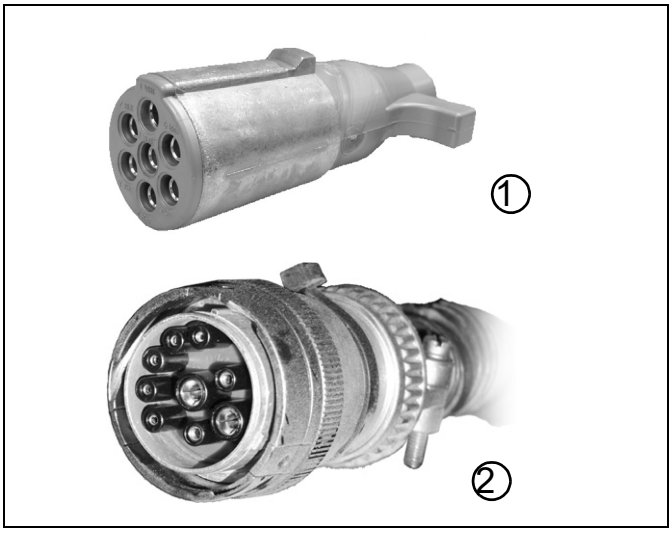


Figure 9 25236 25237
Connector Identification

Store Main Parking Stand

Refer to Figure 10

12. Remove the lower pin ⑤ holding the parking stand ⑦. Swing the parking stand back and up until it is above the rear hole ⑥. Place the holding pin in the rear hole and allow the parking stand to rest on it. This will be the transport position for the parking stand.
13. Adjust the top link of a 3-point long enough so the ball swivel does not bottom out when fully raised.
14. Secure hoses using hose post loops (not shown) so that hoses have ample slack for lifts and turns, but cannot get caught in tongue lock or ball swivel. Failure to do so could cause hose to be crushed requiring hose replacement.
15. If equipped with hydraulic hitch option, connect safety chain to a suitable anchor point on the tractor.

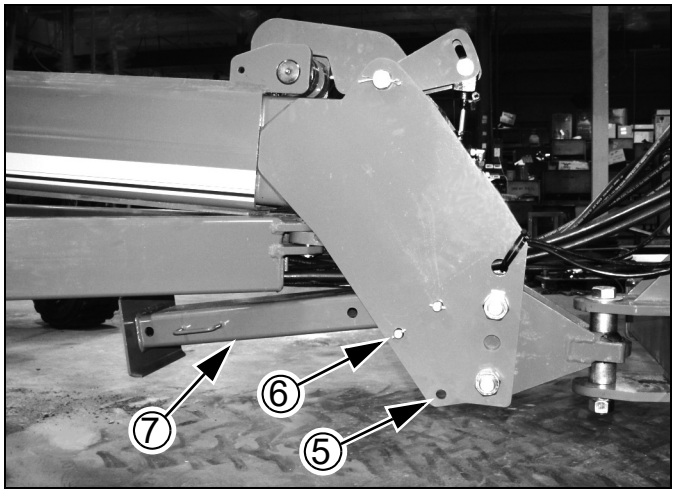


Figure 10 22813
Storing Parking Stand

Lock Up Fertilizer Drive

YP1225A serial number B1059E+

YP1625A serial number B1106F+

⚠ WARNING

Loss of Control and Sharp Object/Crushing Hazards:
Do not lift or lower wheel by spoke or rim; use handle only. Keep legs and feet out from under wheel. 90 pounds (41 kg) force is required to lift wheel. If you lose your grip before pinning, or after unpinning, the arm snaps down rapidly. The traction teeth and the force of the wheel impact can inflict serious injury.

The liquid fertilizer option uses a piston pump driven by a ground contact wheel. When not using the fertilizer drive, preserve the pump by locking up the ground wheel. On older models remove the chain.

🕮 Do not operate planter pump when not applying material.

Refer to Figure 11

For YP1225A and YP1625A planters:

16. Remove clevis pin from storage hole ④.
17. Release the lock arm ⑤, lift handle ⑦ to lift ground wheel up to position it in-between lock arm.
18. Secure with pin clevis ⑥ and cotter pin.

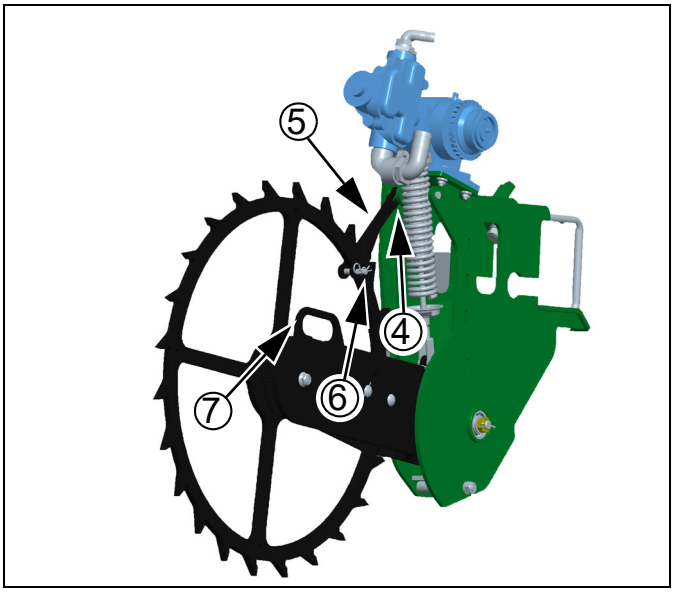


Figure 11 32364
Locked Up Fertilizer Drive

Operating Instructions

This section covers general operating procedures. Experience, machine familiarity and the following information will lead to efficient operation and good working habits. Always operate farm machinery with safety in mind.

Pre-Start Checklist

1. Carefully read "**Important Safety Information**" on page 1.
2. Lubricate planter as indicated under "**Lubrication**" on page 107.
3. Check all tires for proper inflation. See "**Tire Inflation Chart**" on page 134.
4. Check all bolts, pins and fasteners. Torque as shown in "**End of "Appendix A - Reference Information".**" on page 148.
5. Check planter for worn or damaged parts. Repair or replace parts before going to the field.
6. Check hydraulic hoses, fittings and cylinders for leaks. Repair or replace before going to the field.
7. Be sure hydraulic hoses are securely held out of the ball swivel area at hitch. Failure to do so could cause hoses to pinch requiring hose replacement.

Wing Lock Overview

Refer to Figure 12 and Figure 13

The YP1225A & YP1625A planters include four sets of locks for the frame and wings:

1. Transport hooks behind the wing pivots:
   These prevent the planter frame from fully lowering when folded. The planter frame is raised to allow the wings to clear the hooks. See page 23 and 29.
2. Wing locks at mid-tongue and inside wing casters:
   These prevent the planter from unfolding while in transport. The tongue (hitch) is raised to allow the hooks to clear the locks. See page 24 and 29.
3. Transport lock channels at wing caster cylinders:
   These lock channels prevent the frame from fully lowering during transport and maintenance. They are installed prior to folding, and removed after unfolding. See page 25 and 29.
4. Lift cylinder lock channels above frame pivots:
   These lock channels are only required during maintenance. However, if installed, they must be removed after unfolding. See page 25 and 91.

⚠ WARNING

High Pressure Fluid Hazard:
Check all hydraulic lines and fittings before applying pressure. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If an accident occurs, seek immediate medical attention from a physician familiar with this type of injury.

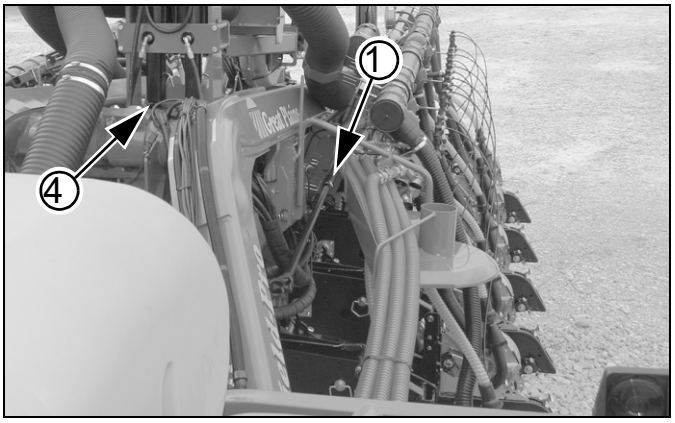


Figure 12 29734
Lift Locks and Transport Hook

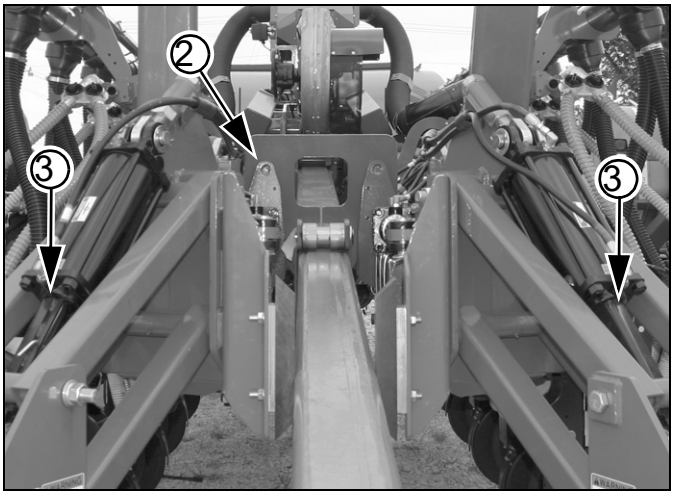


Figure 13 29735
Wing Lock and Transport Locks

Unfolding The Planter

The distance between the tractor and the seed structure decreases by about 10 ft. (3 m) during unfolding. Planter, tractor, or both will move during this operation.

⚠ WARNING

Crushing, Pinch-Point and Overhead Hazards:
To prevent serious injury or death:

- ▲ *Unfold only on hard level ground. Allow ample room.*
- ▲ *Allow no one on or near the planter during unfolding.*
- ▲ *Stay clear of the wing sweep arcs. The sweep arcs of the wings have numerous pinch and crush points in the mechanism. Coulters and row openers are sharp.*
- ▲ *Allow no one near planter during unfold. The seed structure usually moves forward during unfolding.*
- ▲ *Do not unfold with planter lowered.*
- ▲ *Unfold only with markers resting in transport cradles.*
- ▲ *Unfold only if hydraulics are bled free of air and fully charged with hydraulic oil.*

Prepare Hitched Tractor and Planter

1. Move planter to level ground.
2. If tractor movement is not desired, put tractor in Park and/or set parking brakes, or telescoping movement of planter may cause tractor to move backward.
3. On the CFM (Clutch Folding Module), set the following switches to OFF (down):
   MASTER switch ① and Fert.Pump ②.

Prepare Transport Hooks

Refer to Figure 15

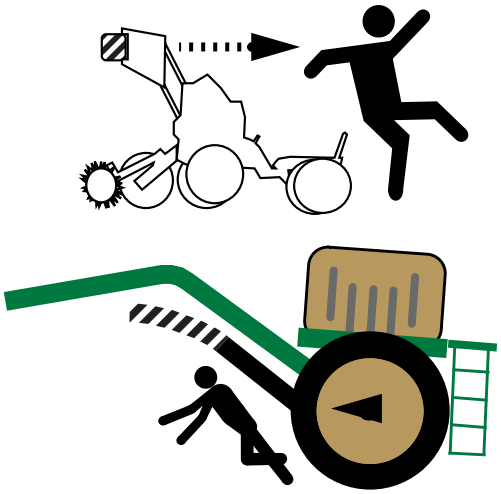
The transport hooks ⑤, behind/above wing pivots, prevent the frame from fully lowering when the planter is fully folded. To clear the hooks, the frame is fully raised.

Refer to Figure 14

4. Set CFM Lift/Hitch switch ③ to “Lift” to enable lift cylinder hydraulics.
5. Set CFM Marker/Fold switch ④ to “Fold” to enable fold cylinder hydraulics.
6. Activate lift hydraulics. Raise planter until lift hydraulics are fully raised. This raises the wing frames ⑥ above the hooks ⑤.

NOTICE

Planter Damage Risk:
Be sure planter’s lift hydraulics are fully raised before unfolding or frame and/or hook damage WILL occur.



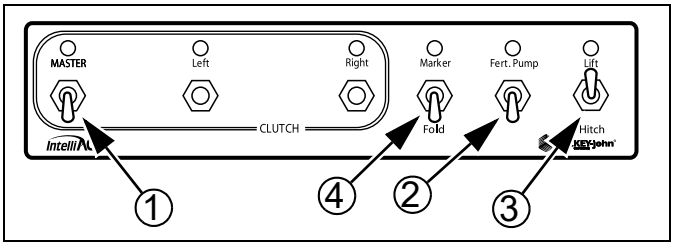


Figure 14
CFM for Unfold
28484

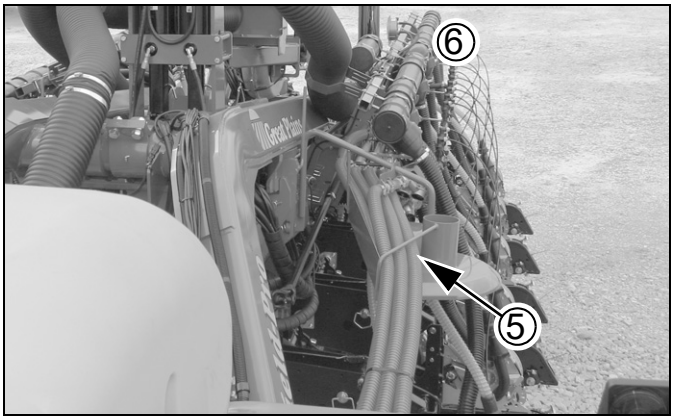


Figure 15
Transport Hook
29734

Release Wing Locks

Refer to Figure 17

A pair of inverted hooks ⑦ on the tongue tube engage locks ⑧ on each wing when the planter is folded.

Prior to unfolding, this lock system must be released by raising the tongue.

7. This step is slightly different depending on hitch type.

Release Wing Lock with 3-Point Hitch

a. Raise the 3-point hitch to disengage the wing lock. Continue at step 8.

Release Wing Lock with Hydraulic Hitch

Refer to Figure 16

a. Set CFM Lift/Hitch switch ⑥ to Hitch.

b. Raise hydraulic tongue to disengage wing lock.

Re-Phase Fold Cylinders

8. The fold system uses rephasing cylinders. It is necessary to rephase cylinders so wing gauge wheels run in their fully rotated positions in front of planter. To rephase fold cylinders:
   Move and hold lever for Marker/Fold in Fold direction (typically Extend) for 30 seconds. This causes wings to push against the tongue transport hooks ⑦.

Partially Unfold

Refer to Figure 17

9. Reverse fold circuit lever until wings clear transport hooks ⑦ by a few feet.

Lower Tongue

10. Lower 3-point hitch or hydraulic tongue to planting position. See page 20 and page 155 for correct hitch height and depth control settings. If hydraulic tongue, set CFM Lift/Hitch switch ⑥ to Lift.

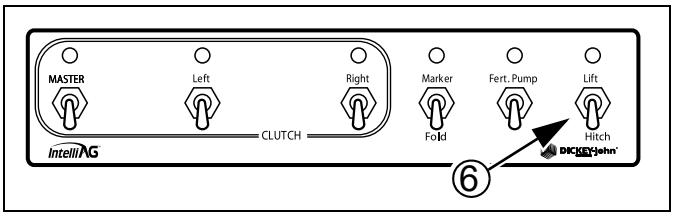


Figure 16
CFM: Wing Unlock
(Hydraulic Hitch Only)

28483

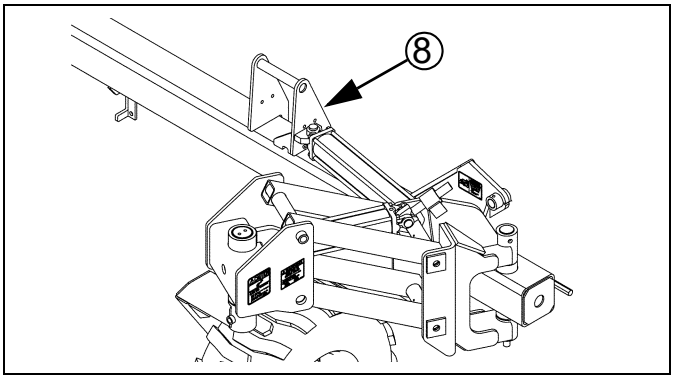


Figure 17
Wing Hook & Wing Lock

22815
27288

Fully Unfold

Refer to Figure 18

11. Unfold the planter fully to planting position. Unfolding is complete when the large roller bushing on top of the tongue is engaged by the tongue safety latch ⑨.

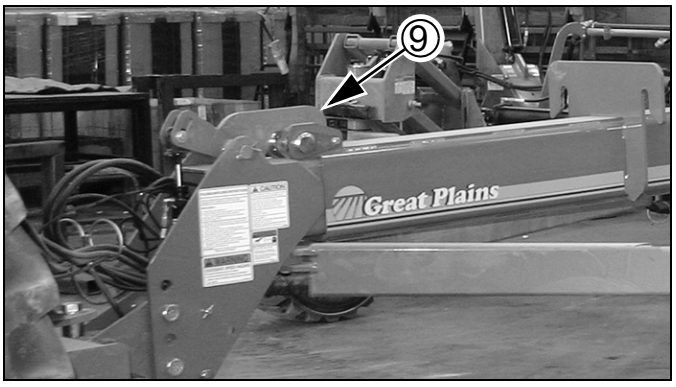


Figure 18 28488
Tongue Latch Engaged

NOTICE

Planter Damage Risk:
Failure to lower the tongue before unfolding WILL result in opener or seed delivery system damage. Press wheel assembly components can strike air system components near the air box manifold.

NOTICE

Planter Damage Risk:
Do not plant if the tongue latch is not fully down over the roller. Frame and opener damage is likely if the planter is operated with the latch open.

Remove and Store Transport Locks

The planter needs to still be in full lift to remove these locks.

Remove/Store Center Lift Locks

Refer to Figure 19

12. Remove lock channels ① from vertical cylinders above pivots.

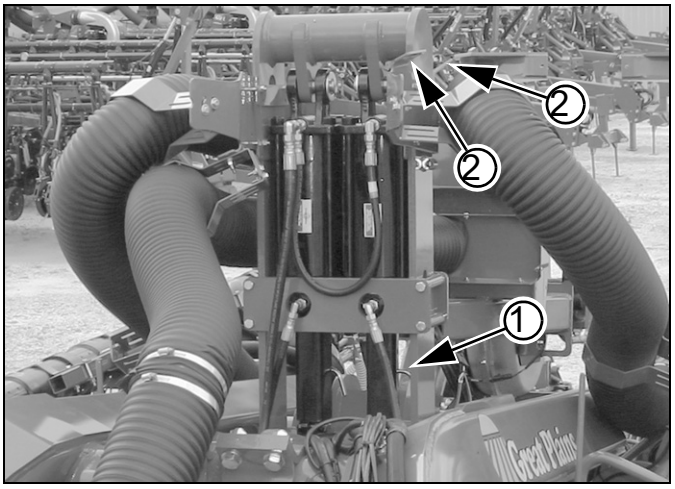


Figure 19 29738
Frame Lift Locks

Refer to Figure 19 and Figure 20

13. Store lock channels horizontally on tabs ② at top right side of lift cylinder weldment.

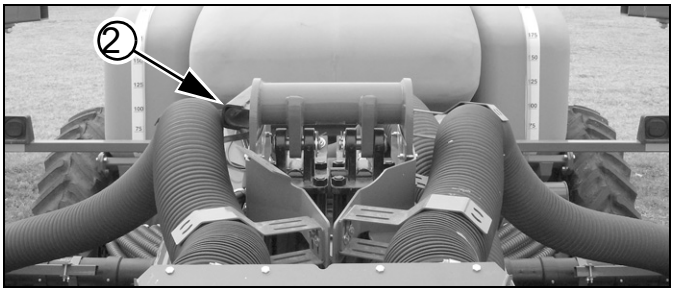


Figure 20 29736
Lift Cylinder Lock Stored

Remove/Store Caster Lift Locks

Refer to Figure 21

14. Remove transport lock channels ③ from lift cylinders located on gauge wheels.

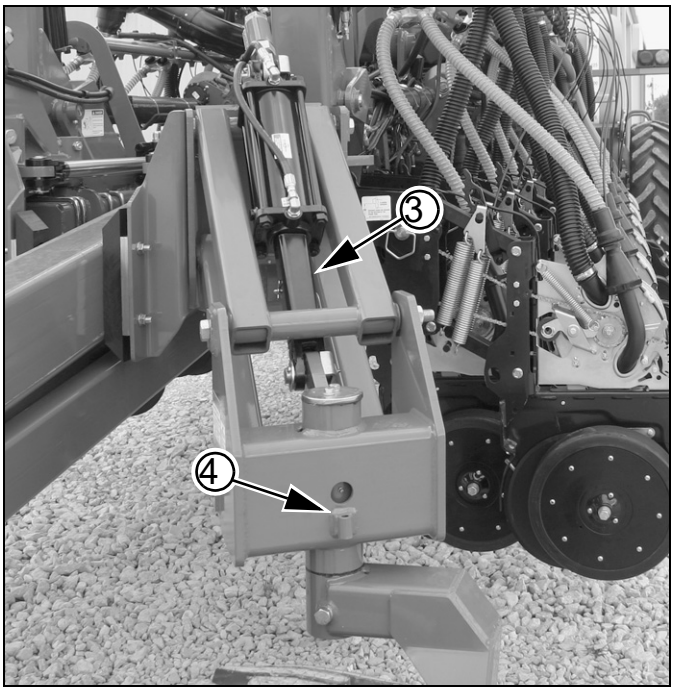


Figure 21 29737
Caster Lift Cylinder Lock

Refer to Figure 21 and Figure 22

15. Transfer lift cylinder transport lock channels ③ to their storage positions ④.

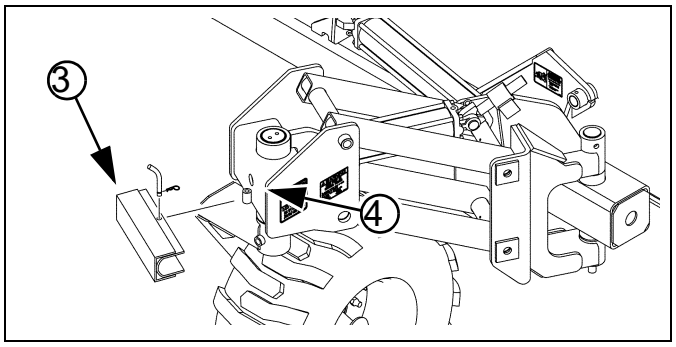


Figure 22 27290
Transport Cylinder Lock Storage

Unfold Closeout

16. As appropriate for the next planned activity, activate lift hydraulics and lower planter.
17. To disable fold hydraulics, and lock caster arms[a] in field position, set CFM Marker/Fold switch ⑤ to “Marker”.

📖 Set switch to “Marker” even if Markers are not installed. This switch position disables all fold solenoid valves.

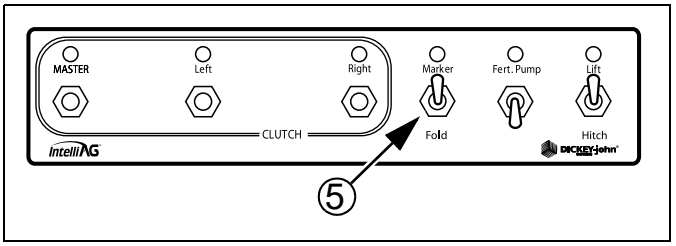


Figure 23 28485
CFM After Unfold

a. YP1125A s/n A1154K+ and YP1625A s/n A1172B+

Raising/Lowering Planter

The planter mainframe raises and lowers independently of the tongue.

- The planter may be fully raised at any time (and must be raised for folding).
- The planter may be lowered onto its transport lock channels at any time.
- The planter may be fully lowered, with lock channels removed, *only* when unfolded.

Refer to Figure 24

The CFM “CLUTCH” switch positions are not shown because they normally require no attention during lift or lower. Lifting the planter automatically disengages the entire drive system.

The “Fert.Pump” switch ① has no function on YP1225A & YP1625A planters as shipped by Great Plains because the optional fertilizer system for these planters uses a ground-drive pump that has no electrical control.

Leave or set the CFM Marker/Fold switch ② in “Marker” position to prevent unintended folding.

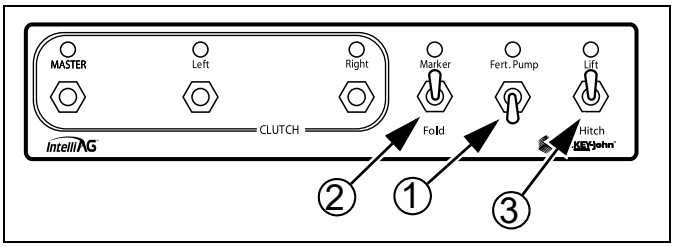


Figure 24 28485
CFM for Lift/Lower

If your planter has an aftermarket pumping system compatible with the IntelliAg® system, the “Fert.Pump” switch may require operator attention during lift/lower.

Raising Planter

The planter may be raised at any time.

1. Set the CFM “Lift/Hitch” switch ③ to Lift to enable the lift cylinder circuit.
2. Move the Lift/Hitch circuit lever to extend the lift cylinders.
3. Set the circuit to Neutral to hold the planter at lift. The switch ③ may be left in the “Lift” position.
4. Install lock channels if raising for transport, parking, storage, adjustments or maintenance.

Lowering Planter

If lock channels are installed, the planter may be lowered at any time. if lock channels are not installed, lower only when unfolded, such as for field turns.

Install lock channels (page 26) as appropriate for next activity.

1. Set the CFM “Lift/Hitch” switch ③ to Lift to enable the lift cylinder circuit.
2. Move the Lift/Hitch circuit lever to retract the lift cylinders until settled on lock channels or fully lowered to ground.
3. Set the lift circuit to Neutral for field operation. The switch ③ may be left in the “Lift” position.

⚠ CAUTION

Lowering Planter Hazard:
Use transport locks. A raised planter slowly lowers when held up solely by circuit neutral. Anyone beneath the row units could be trapped and injured. Rely on circuit neutral to hold the planter raised only for brief periods, such as field turns and during lock channel installation. Use lock channels at all other times.

📖 After every few hours of operation (or earlier, if uneven lift is observed), re-phase the lift circuit. At a lift operation, hold the circuit in Extend for 30 seconds.

⚠ DANGER

Crushing Hazard:
Keep all persons away from frame sections during lift and lower. Area under row units is particularly dangerous. Sharp coulter and opener blades descend with hundreds of pounds of down-force.

📖 Unless lock channels are installed, lower the planter only when fully unfolded. Lowering when folded is prevented by the transport locks.

Re-phasing Lift System

Over a period of normal use the cylinders may get out of phase. This will cause some planter sections to run higher than others. If this is the case, it will be necessary to rephase lift cylinders.

📖 Lift cylinders can only be re-phased when planter is unfolded.

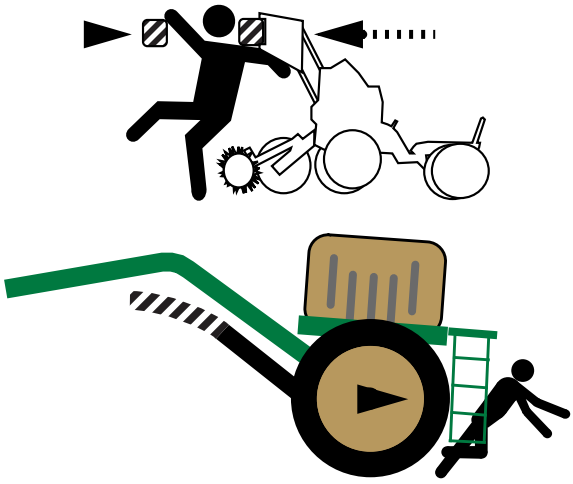
To re-phase cylinders:

1. Raise the implement completely and hold the hydraulic remote lever on for several seconds until all cylinders are fully extended. Do this every 8 to 10 times you raise planter out of ground.
2. When all cylinders are fully extended, momentarily reverse hydraulic remote lever to retract system $^{3}/_{8}$ inch to maintain levelness.

Folding the Planter

The planter must be raised for folding. The tongue is raised and lowered during the sequence.

The distance between the tractor and the seed structure increases by about 10 feet (3 m) during folding. Planter, tractor, or both will move during this operation.



⚠ WARNING

Pinch Point and Crushing Hazard:
To prevent serious injury or death:

- ▲ *Fold only with planter raised and lock channels installed.*
- ▲ *Fold only if hydraulics are bled free of air and fully charged with hydraulic oil.*
- ▲ *Stay away from frame sections when they are being raised or lowered.*
- ▲ *Keep away and keep others away when folding or unfolding planter.*
- ▲ *Fold markers onto cradles before folding planter.*

Shut off Fan and Hydraulic Drive

1. Set circuit levers for seed box fan and optional hydraulic meter drive to Neutral.

Set Tractor and Tongue

2. Raise and move planter to a level area.
3. If tractor movement during folding is not desired, put tractor in Park and/or set parking brake.
4. This step is slightly different depending on hitch type:

Prepare 3-Point Hitch for Fold

a. Fully lower 3-point hitch. Continue at step 5.

Prepare Hydraulic Hitch for Fold

Refer to Figure 25

a. Set CFM Lift/Hitch switch ① to “Hitch”.

b. Retract hitch cylinder to fully lower tongue.

Raise Planter

Refer to Figure 26

5. Set CFM Lift/Hitch switch ② to “Lift”.
6. Activate circuit lever to extend lift cylinders until planter is fully raised.
7. Set circuit to Neutral to hold at lift.
8. On hydraulic hitch, return switch ② to “Hitch”.
9. Put tractor in Park and/or set parking brake, and shut off tractor.

Install Lock Channels

Only wing (gauge wheel) lock cylinders need to be installed for transport. The center is adequately supported by the wing hooks and locks when folded.

For servicing, or to hold at lift when unfolded, also install center section lift locks (see page 91)

Refer to Figure 27

10. Remove lift cylinder transport lock channels from their storage positions.
11. Place transport lock channels on lift cylinders located on gauge wheels.

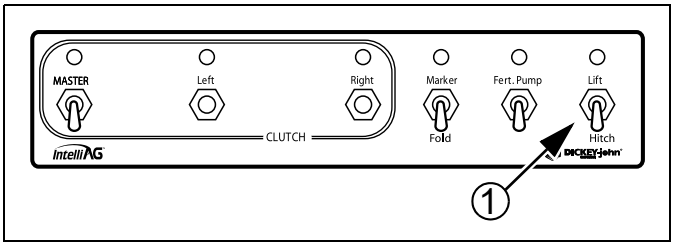


Figure 25 28487
CFM: Prepare Hitch for Fold

NOTICE

Equipment Damage Risk:
Tongue must be lowered at start of fold to ensure that press wheel assemblies remain clear of air system.

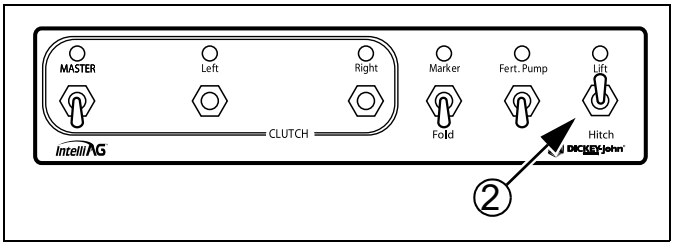


Figure 26 28484
CFM: Raise Planter

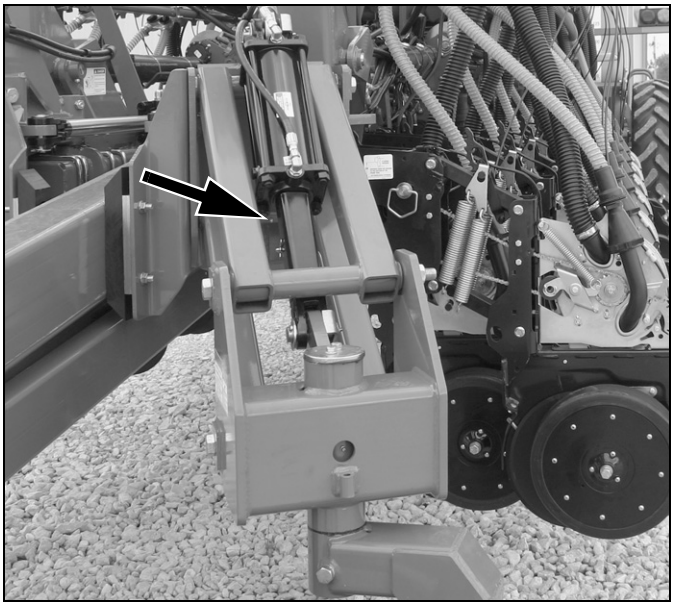


Figure 27 29737
Transport Cylinder Lock in Use

Activate Fold Solenoid Valves

Refer to Figure 28

12. Set CFM Marker/Fold switch ③ to “Fold”. This opens the solenoid valves for tongue lock, fold cylinders and caster arm[a] cylinders.

Begin Folding

13. Extend the fold cylinders and fold the planter until the wing tubes are within a few feet (a meter or so) of the tongue.

Raise Tongue

14. Raise 3-point hitch or hydraulic hitch until wing hooks ④ on tongue clear locks ⑤ on wings.

Complete Fold

15. Continue or resume folding until the wing locks contact lock plate (under hooks).
16. Set CFM Marker/Fold switch ③ to “Markers”.

🕮 When folded, set the “Marker/Fold” switch to “Marker”, whether Markers are installed or not. In this position, the switch disables all solenoid valves for fold, locking the fold system.

Lower Tongue

17. Lower 3-point hitch or hydraulic tongue until wing hooks rest on wing locks.

Re-phasing Fold System

Over a period of normal use, the cylinders may get out of phase. This is evident by wing gauge wheels not running in their fully rotated positions in front of the planter.

🕮 Planter must be folded to rephase fold system. See “**Re-Phase Fold Cylinders**” on page 24.

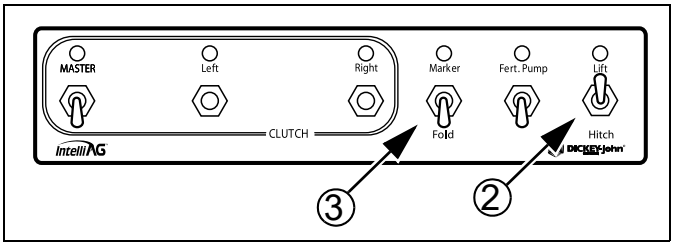
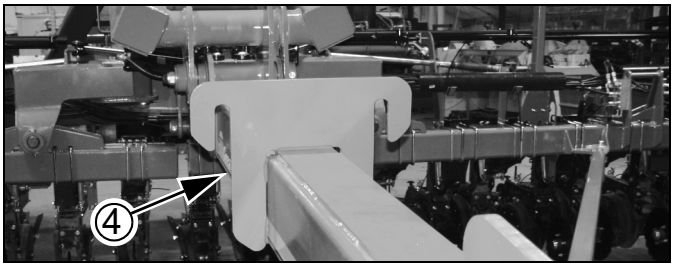


Figure 28 28484
CFM: Commence Fold



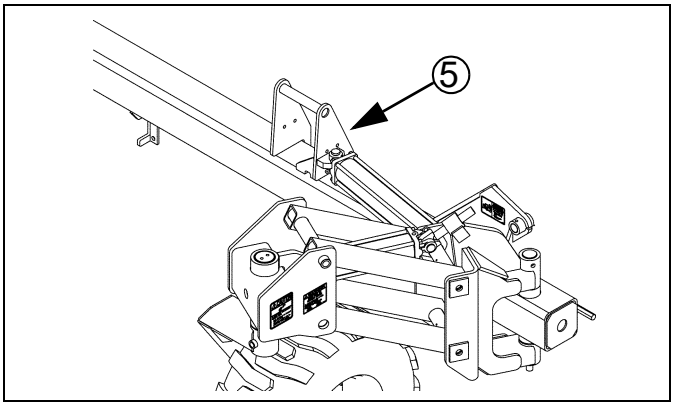


Figure 29 22815 27288
Wing Hook & Wing Lock

a. Feature on YP1225A s/n A1154K+ and YP1625A s/n A1172B+ planters.

Transporting

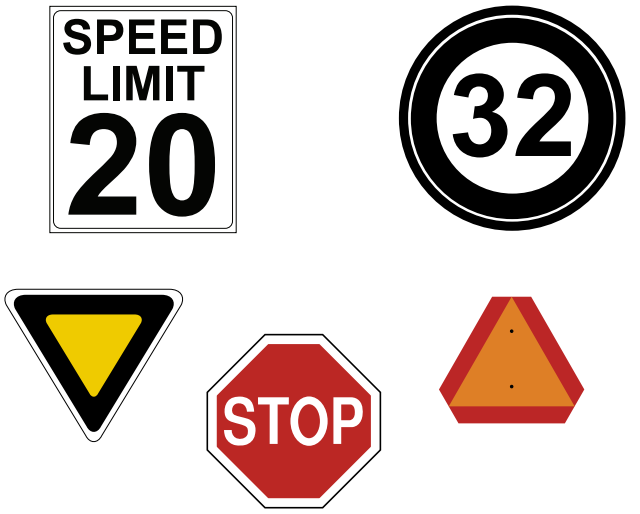
The tractor must weigh at least 2/3 (67%) of the planter plus any materials loaded. See table below for typical planter weights. Have your planter weighed if the tractor capability is not clearly above requirements.

Before transporting, follow and check these items:

- Set the tractor 3-point hitch control for depth control operation. If the 3-point hitch control is set for load control, the auto load control response may automatically adjust too high in some circumstances, causing the wing locks to disengage on the road.
- Empty seed box. Empty seed box before transporting if at all possible.
- The planter can be transported with a full box of grain, but the added weight increases stopping distance and decreases maneuverability.
- Transport planter only while in folded position. Refer to "**Folding the Planter**" on page 28 and make sure cylinder lock channels are in place.
- Warning lights. Always use warning lights when transporting the planter.
- Road rules. Comply with all national, regional, and local safety laws when traveling on public roads.
- Clearance. Remember that the planter is wider than the tractor. Allow safe clearance.
- Transporting with Markers. Always transport markers in the folded position. Make sure second marker section rests securely on transport carrier.

⚠ WARNING

Loss of Control Hazard:
Do not exceed 20 mph (32 km/h).
Use a tractor rated for the load.
Towing the planter at high speeds or with a vehicle that is not heavy enough could lead to loss of vehicle control, resulting in a serious road accident, injury and death.



Weights of Representative Planter Configurations	YP1225A-					YP1625A-
	-1230	-16TR36	-1820	-2315	-24TR	-1670
Base Planter Weight	15540 lb	16410 lb	16850 lb	17940 lb	18160 lb	7570 kg
Typical Empty Standard* Planter	16400 lb	17280 lb	17710 lb	18800 lb	19020 lb	7960 kg
Typical Full Standard* Planter	21650 lb	22530 lb	22960 lb	24050 lb	24270 lb	10340 kg
Typical Empty Maximum* Planter	18460 lb	19560 lb	20120 lb	21500 lb	21780 lb	9000 kg
Typical Full Maximum* Planter	28500 lb	29610 lb	30170 lb	31550 lb	31830 lb	13560 kg

Note: the weight of a specific planter can vary significantly.	YP1625A-					
	-1236	-1630	-2420	-24TR36	-3115	-32TR
Base Planter Weight	15800 lb	16670 lb	18420 lb	18420 lb	19940 lb	20160 lb
Typical Empty Standard* Planter	16660 lb	17530 lb	19280 lb	19280 lb	20810 lb	21030 lb
Typical Full Standard* Planter	21910 lb	22780 lb	24530 lb	24530 lb	26060 lb	26270 lb
Typical Empty Maximum* Planter	18720 lb	19830 lb	22050 lb	22050 lb	23990 lb	24270 lb
Typical Full Maximum* Planter	28770 lb	29880 lb	32100 lb	32100 lb	34040 lb	34320 lb

* Typical Standard configuration is: markers, 82 bushel hopper, no fertilizer, no coulters
Typical Maximum configuration is: markers, 82 bushel hopper, starter fertilizer system, UM coulters

Loading Materials

The YP1225A & YP1625A planters accept the Great Plains 82 bu. hopper,150 bu.[a] hopper, or bulk seed boxes that meet the Pioneer[b] PROBOX® specification.

Material Loading Overview

- With hoppers, seed is loaded from above, with the hopper already mounted on the planter.
- With a bulk seed box, seed is pre-loaded by the seed supplier, and the box is mounted on the planter already loaded.
- If the optional fertilizer system is installed, liquid fertilizer is normally pumped in from below via the quick-fill system, but may also be gravity-loaded from above with the tank caps removed.

⚠ CAUTION

Tipping and Overload Hazard:

Place or remove a hopper only when empty. A full hopper can weigh between 5000 and 10000 lbs (2700-4500 kg), which is above the lifting and balance capability of most tractors and farm forklifts.

Mounting a Hopper or Bulk Seed Box

These steps cover mounting a hopper or seed box on a planter that has no seed container. If a seed container needs to be removed first, see page 37.

1. Move the planter to an area of level ground and sufficient room to maneuver a tractor or fork-loader.
2. If changing between hopper and bulk seed box, use the Accessory Sensor Setup menu on the seed monitor console to disable the hopper sensor and avoid nuisance alarms. See DICKEY-john® Quick Start Guide.
3. Place tractor in park, shut off engine, and remove the key. If using the same tractor for container mounting, block the planter transport tires.

Refer to Figure 31

4. Remove the walkboard lock pin ①.

Refer to Figure 32

5. Swing walkboard ② all the way to the right.

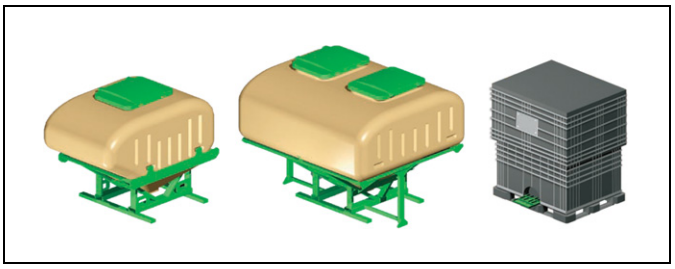


Figure 30 29486
82 bu. and 150 bu. Hoppers, and a Bulk Seed Box

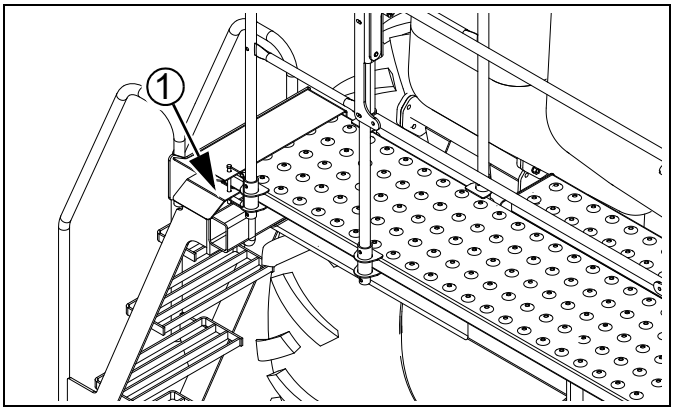


Figure 31 24010
Walkboard Lock Pin

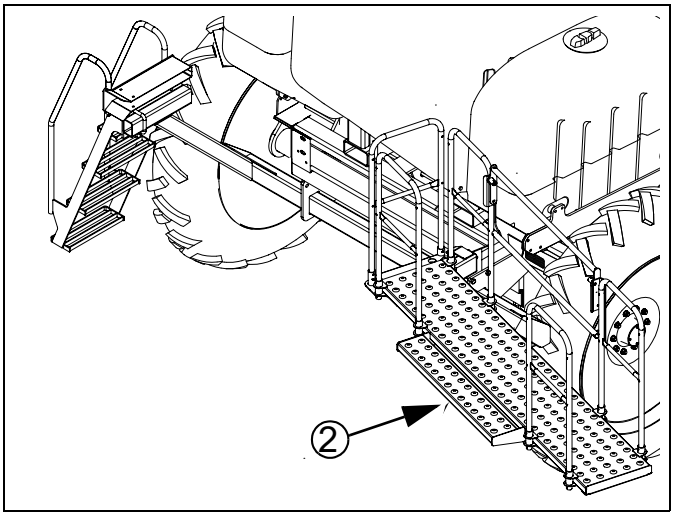


Figure 32 24005
Walkboard Open

a. The 150 bu. hopper is incompatible with on-board fertilizer tanks.

b. PROBOX® is a registered trademark of Pioneer Hi-Bred International, Inc.

Refer to Figure 33

6. Secure walkboard with keeper.

📖 If planter is lowered, walkboard will stay open by itself once fully opened. There is a keeper near the walkboard pivot that can hold the walkboard open in all conditions.

Refer to Figure 34

7. Remove pins ① at the corners of the airbox frame.

⚠CAUTION

Irritation and Chronic Exposure Hazard:
Wear gloves. DO NOT use hands or any part of your body to mix seed lubricant. Wear a respirator when transferring and mixing. Avoid breathing lubricant dust. Not an acute hazard. May cause mechanical eye or skin irritation in high concentrations. As with all mineral spills, minimize dusting during clean-up. Prolonged inhalation may cause lung injury. Product can become slippery when wet.

8. When using a bulk seed box,
new meters for the first time, or
at the start of each season,
measure out approximately 4 gallons (15 liters) of seed into a pail. Add $^{3}/_{8}$ cup (120 ml) of Ezee Glide Plus seed lubricant to the pail. Mix and pour into air box before mounting hopper.

NOTICE

Flow Inconsistency and Stoppage Risk:
*Ezee Glide Plus is mandatory for all seed, especially treated or inoculated seed. Failure to use this seed lubricant as recommended can cause inconsistent seed flow to meters, and clogging at meters. See "**Seed Lubricants**" on page 115.*

📖 On a new planter, the interior surfaces of the seed hoses are somewhat tacky until they are coated with seed lubricant. Before planting for the first time, and at the start of each season, add $^{1}/_{3}$ cup (80 ml) Ezee Glide Plus seed lubricant to bottom of airbox.

📖 The monitor system includes a level sensor located below hopper to warn when box is empty. This typically provides three to four acres (1.2 to 1.6 ha) of run time before rows start going empty.

9. At the airbox seed inlet, inspect the seals for wear and damage.

10. If mounting a seed box, add Ezee Glide Plus to the seed box at this time. It may be easier to add it while the box is still at ground level.

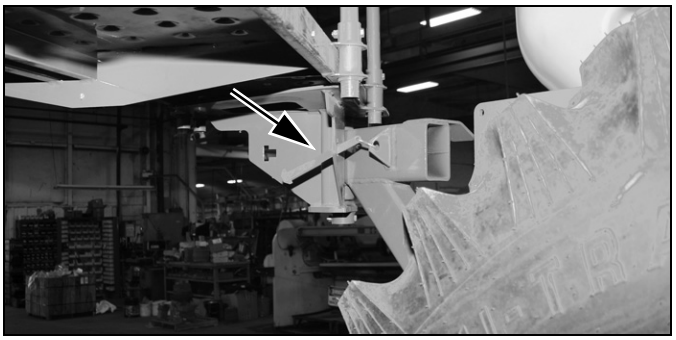


Figure 33 29485
Walkboard Keeper

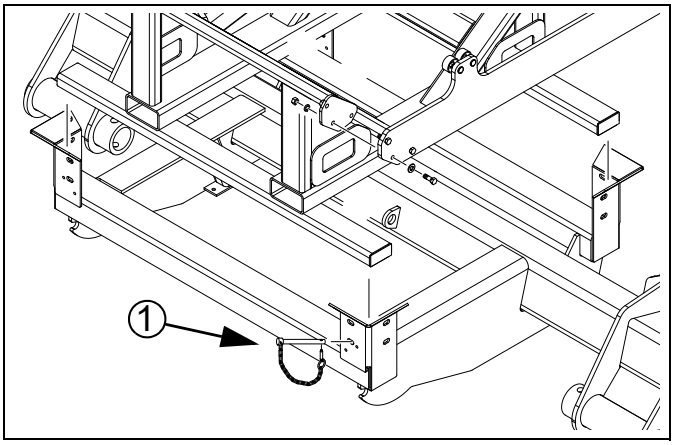


Figure 34 22749
Airbox Frame Corner Pin

CAUTION

Tipping and Overload Hazard:
Make sure your tractor or fork lift is rated for and configured to lift the hopper or bulk seed box. A full bulk seed box can weight over 2500 lbs. Do not let anyone stand under or in front of the elevated seed box.

Refer to Figure 35

11. Approach the hopper or seed box from the back (the side with the slide gate). Align the forks with the slots in the rear of the seed box or hopper and slowly drive forward until forks are completely under the seed box or hopper.

📖 Bulk hopper frame has two sets of lifting points. One set is for normal loading and is tubes. The other set is to allow picking it up from the side for placing in storage near a wall.

📖 It may be necessary to adjust the seal on top of air box to get full contact with the bottom of seed box or hoppers. This is a one-time adjustment.

Figure 35 25255
Approaching Hopper

Refer to Figure 36

12. Slowly lift the full seed box or empty hopper, and place it in the planter airbox frame.
13. Install the box retaining pins in frame corners.

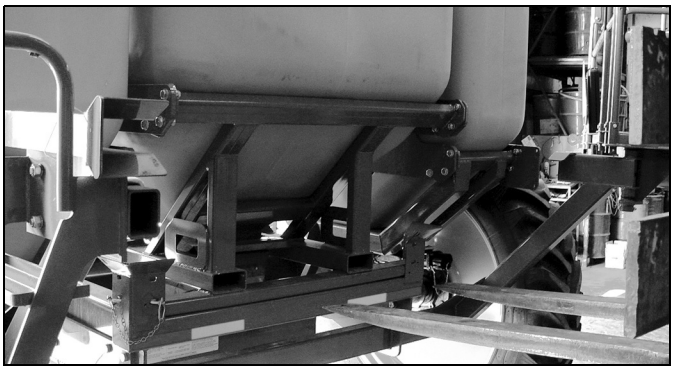


Figure 36 24037
Fork-Lifting Seed Box

Refer to Figure 37

14. Unless you are at the field to plant, close the slide gate ② at the base of the hopper.
15. Return the walkboard to the closed position and install the latching pin.
16. If installing an empty hopper for planting, load seed (and lubricant). Otherwise, skip to step 24 on page 36.

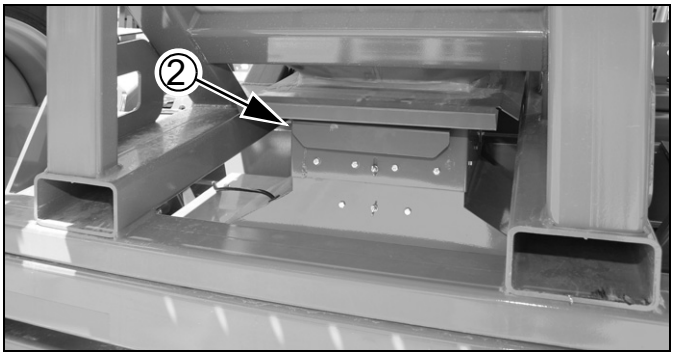


Figure 37 29495
Hopper Slide Gate Closed

Loading Hopper with Seed

Refer to Figure 38

17. At the top of the hopper, release the lid latch(es) ③. and open the lid(s):
18. Check that the strainer basket ④ is clean and in place.

⚠ CAUTION

Do not operate without a strainer:
It is an important safety feature that prevents accidental entry into the hopper. It also prevents larger foreign matter from clogging the air system.

19. Inspect the hopper itself to ensure that it contains only expected material.

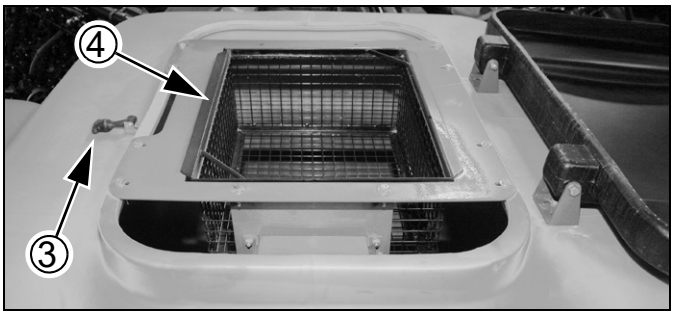


Figure 38 29487
Hopper Latch and Strainer

Refer to Figure 39

If using an auger to load seed, access to the top of the hopper is eased by swinging down the top section of the center walkboard railing.

20. At each end of the swing-down section, pull the cross pins ⑤ inward until the pins clear the holes ⑥. Swing the railing section in or out (it is easier to close if swung in).

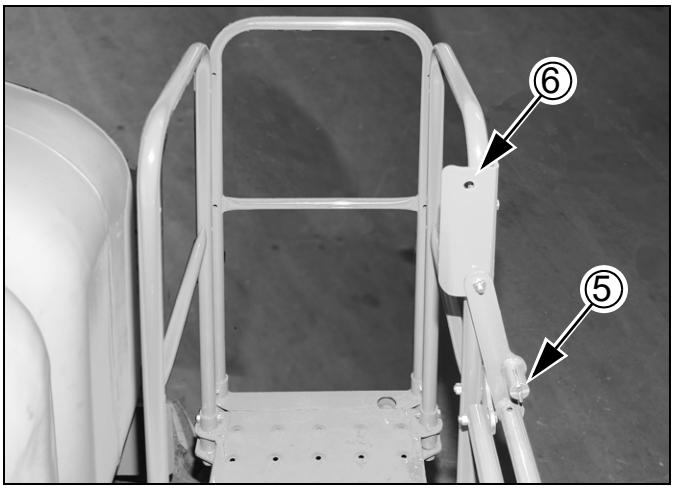


Figure 39 29488
Walkboard Railing

Using Auxiliary Hydraulic Circuit

The optional auxiliary hydraulic kit includes a manual valve that diverts the marker hydraulic circuit to a pair of quick-connect ports at the back of the seed cart.

Refer to Figure 40

A. Extend or fold any marker that is raised. Return the cab control for that circuit to “off”.
B. Close any shut-off valve on your auger, and connect the auger to the auxiliary quick-connect ports at the back of the seed cart.
C. At the auxiliary selector valve (near marker sequence valve on left wing), move the handle from “Marker” to “Auxiliary”.
D. With no seed present, open the auger shutoff valve, and operate the cab control to determine which setting (“extend” or “retract”) turns the auger in the correct direction for seed lift.

Figure 40 25323
Auxiliary Hydraulic Ports (Option)

E. Load seed. Shutoff cab circuit, then auger. Return Aux valve control handle to “Marker” position.

F. Disconnect auger hydraulic hoses at Aux ports.

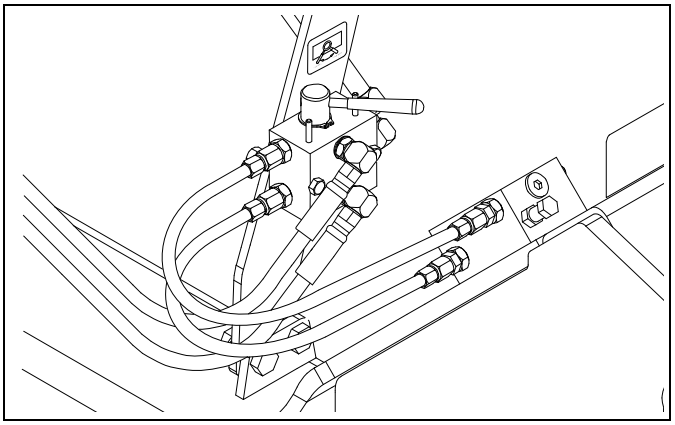


Figure 41 28492
Marker/Aux Valve Set to Aux.

Refer to Figure 42 and Figure 43

21. Load seed. Cross-check the expected amount against the indicator marks molded into the side of the hopper. The figures at right show the approximate capacity by fill depth.

22. Connect optional hopper level sensor to monitor harness.

    For planters equipped with optional 82 bu. or 150 bu. hoppers, an extra level sensor is included. Use Figure 42 or Figure 43, showing capacity, to place it at the level that suits your operation. The hopper sensor is in addition to the air box manifold level sensor.

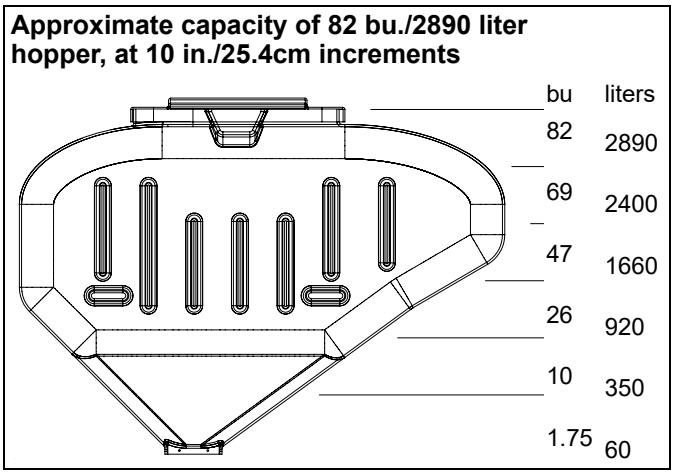


Figure 42 22958
82 bu. Bulk Hopper

23. Close and latch lid(s).

Seed Loading Close-Out

24. If at the planting field, open the slide gate.

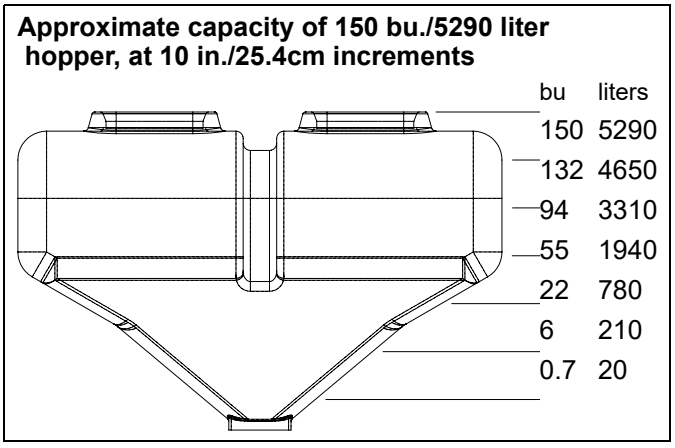


Figure 43 22958
150 bu. Bulk Hopper

Dismounting a Hopper or Seed Box

1. Move the planter to an area of level ground and sufficient room to maneuver a tractor or fork-loader.
2. Place tractor in park, shut off engine, and remove the key. If using the same tractor for container dismounting, block the planter transport tires.
3. Remove the walkboard lock pin (page 32).
4. Swing the walkboard completely open and secure with keeper (page 33).
5. For hoppers with optional level sensors, disconnect the sensor lead at the harness.

Refer to Figure 44

6. Remove pins at the corners of the airbox frame.
7. Close the slide gate at the base of the hopper or seed box.
8. Approach the hopper or seed box from the back.
9. Slowly lift the full seed box or empty hopper, and back it away from the planter airbox frame.
10. Return the walkboard to the closed position and install the latching pin.
11. If changing between hopper and bulk seed box, use the Accessory Sensor Setup menu on the seed monitor console to disable the hopper sensor and avoid nuisance alarms. See DICKEY-john® Quick Start Guide.
12. If not installing another seed container, cover the airbox inlet with plastic sheeting and secure with tape or bungees.

Figure 44 24036
Seed Box Pins

CAUTION

Tipping and Overload Hazard:
Verify that the hopper or box is empty, or calculate the weight. Use a tractor or fork lift rated and configured for the weight. A full seed box can weight over 2500 lbs. Do not attempt to dismount a full hopper. Do not let anyone stand under or in front of the elevated seed container.

Fertilizer Tanks (Option)

DANGER

Agricultural Chemical Hazards:
Observe safety precautions specified by material suppliers. Some chemicals can cause serious burns, lung damage and death. Avoid contact with skin or eyes. Avoid prolonged breathing of chemical fumes. Wear respirator and other protective equipment as required by chemical manufacturer.

NOTICE

Stratification and Plugging Risk:
Apply fertilizer soon after material loading. Clean out unused materials promptly.

Filling Tanks

Refer to Figure 45

1. Connect nurse-tank hose to quick-fill coupler located behind the right-hand tank. Lock hose in place with cam-lock levers.
2. Close valve going to the in-line filter located just before the pump.
3. Open valves at each tank and at quick-fill coupler.
4. Fill tanks, then close valve at quick-fill coupler, and disconnect the nurse tank hose.

📖 Always close valve at filter when filling or storing any liquid in tanks. Failure to do so may allow material to run out of manifold (boom) outlets causing contamination from spillage.

📖 Always fill fertilizer tanks to equal levels. If one tank fills more quickly, shut that tank valve off to raise the level in the other tank.

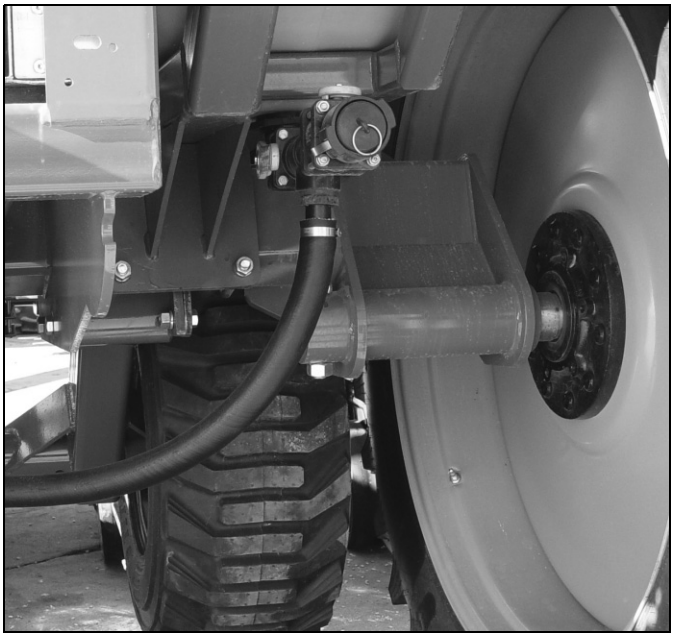


Figure 45 22844
Quick-Fill Coupler

Ground Drive Pump

This liquid fertilizer option uses a ground drive positive displacement pump. For pump operation and pump maintenance, refer to the pump manual, supplied in the liquid fertilizer option package. For fertilizer settings, see the Seed Rate manual.

Hydraulic Pump Fertilizer System

This option uses a centrifugal pump driven by a hydraulic motor under seed monitor control.

AccuShot Fertilizer System

This liquid fertilizer option uses the AccuShot System for application. For system operation, refer to the AccuShot manuals supplied in the AccuShot option package.

Manual Name	Part Numbers
AccuShot Operator Manual	115700-001
Accushot Quick Start Guide	115700-002

NOTICE

*This kit is factory install only. Planters cannot be fitted with AccuShot through your dealer.End of "**Fertilizer Tanks (Option)**"*

Field Setup Checklist

Use the following checklist as a guide to ensure the planter is properly setup before using.

To complete checklists, you may need to refer to the:
SRM: Seed Rate Manual (SRM),
PDC: DICKEY-john® Planter/Drill Control manuals, or
QSG: DICKEY-john® Quick Start Guide

ELECTRICAL	Page
☐ All connections made	20
☐ Check all lights	
☐ Power up monitor. Watch for diagnostics.	PDC
☐ Verify Material, Rate and “SPLIT AIR” Channel setup. Verify Channel setup for hydraulic drive (Option).	QSG PDC

HYDRAULIC	Page
☐ Tractor reservoir full	
☐ Marker/Aux valve to Marker (Option)	47
☐ All hydraulic circuits connected	18
☐ Fan direction and rpm	45
☐ Hydraulic drive connection[a] (Option)	42
☐ Raise tongue. Lift planter	20
☐ Begin unfold	23
☐ Re-phase fold system	24
☐ Lower tongue	24
☐ Unfold wings. Check for tongue lock.	25
☐ Re-phase lift cylinders	28
☐ Check marker operation	47
☐ Inspect for hydraulic leaks	2

a. Perform a “FILL DISK” operation via the seed monitor.

MECHANICAL	Page
☐ Tongue height preset on 3-point	20
☐ Set tractor 3-point hitch to “depth control” operation (and not load control)	48
☐ Side to side levelness at gauge wheels	155
☐ Toe-in of wing frames at pull-bars	156
☐ Tongue hook latch operation	25
☐ Marker extension and disk angle set	158

AIR SYSTEM	Page
☐ Manifold to PROBOX® or poly hopper seal.	33
☐ Y-splitters turned off for unused rows.	74
☐ Blank disks installed at unused rows.	75
☐ Air leaks (small leaks from PROBOX® are normal).	86
☐ Hose routings, no sags and no pinched hoses. (Check folded and field positions.)	
☐ Hoses fully connected to meters and locked.	
☐ Start fan. Turn on seed monitor active air control. Watch for split air vane movement or air pressure changes.	45 PDC
☐ Activate the “FILL METER” function of the monitor. Watch for air vane movement, or watch meter pressurization go to zero.	PDC
☐ On a new planter, pre-lubricate the air system with Ezee Glide Plus.	33
☐ Set the meter pressurization target to the recommended value for the crop.	PDC

ROW CLEANERS	Page
☐ Check for correct installation of row cleaners on all rows if equipped.	
☐ Check that row cleaners do not catch on hydraulic hoses.	
☐ Carefully watch when folding and unfolding planter the first time to ensure clearance of row cleaners.	

FERTILIZER	Page
☐ Set rate drive sprockets for correct rate. (Note fertilizer rate is population dependent.)	SRM
☐ Check for correct orifice plates.	SRM
☐ Check unused rows are correctly closed off.	SRM
☐ Fill system 1/2 full with water and check for leaks (run pump if possible).	SRM
☐ Disconnect drive chain if fertilizer is not used.	SRM
☐ Check all row unit lines are connected and discharge nozzles or tubes are clear.	SRM

METER DRIVE	Page
☐ Check all chains are lubricated, proper tension and move freely without kinks or tight spots (very important for even metering)	145
☐ Ground Drive only: Set range & transmission sprockets for desired rate.	SRM
☐ Check contact wheel gap.	53
☐ Check contact wheel tire pressure.	134
☐ Check action of contact wheel when raising and lowering, that it makes contact at ground height.	53
☐ Lubricate slider joints on drive shafts if not already done.	112
☐ Check operation of electric clutches for point rows.	41

ROW UNITS	
☐ Preset depth handles to 7 holes showing above “T”	68
☐ Preset down force springs to 1st notch (lightest) setting for most conditions, 2nd notch otherwise.	64
☐ Set all unit mounted coulters to $^{1}/_{4}$ in. (6 mm) above opener blade depth.	67
☐ Check coulter alignment to row.	
☐ Check closing wheel alignment.	79
☐ Set closing wheels to first notch (light).	79
☐ Check scraper gaps (option).	70
☐ Lock up splitter rows if needed.	76
☐ Check action and contact of side depth wheels.	69

SEED METERS	Page
☐ Ezee Glide Plus in seed.	33
☐ Correct seed disks installed for crop, seed size and cell count (and blank disks in unused rows)	73
☐ Inlet shutter set to chart value	72
☐ Check timing of meters in Twin Row corn.	SRM

Monitor Operation

For monitor operation in the field, refer to the DICKEY-john® Planter/Drill Control manuals supplied with this unit, and the Seed Rate manual.

The DICKEY-john® Planter/Drill Control manuals are supplied as two volumes, identified as User Level 1 and User Level 2/3, which correspond to access levels in the monitor menus.

User Level 1 includes items controlled by the tractor operator during planting.

User Level 2 is password-protected, and includes planter configuration settings, and some other setup items.

User Level 3 is for dealer and Great Plains use only.

Electric Clutch Operation

Refer to Figure 46, which depicts the left planter side on and the right side shut off.

Electric clutches allow for turning planting off while the planter is lowered. When the planter is raised, clutches are always[a] off, due to the lift switch.

A clutch for each drive shaft allows for independent control of each side of the planter. The clutches are controlled via the CFM “CLUTCH” switches.

For regular field operation, turn “MASTER” ①, “Left” ② and “Right” ③ clutch switches to the “ON” position. This activates the magnet on each clutch and allow clutch shafts to rotate.

To shut off planting on one or both sides to accommodate point row while planter is lowered, switch either to “OFF” position. Turning the MASTER switch off disengages both sides. If the planter has hydraulic meter drive, MASTER off also shuts down the drive motor.

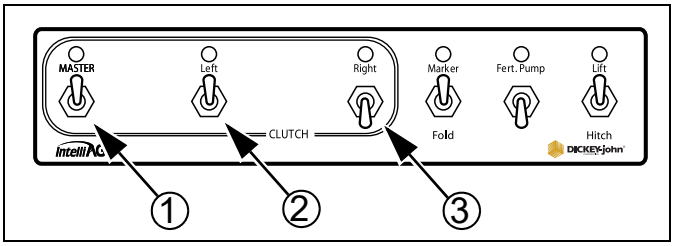


Figure 46 28490
CFM: Point Row

Electric Clutch Lockup

Refer to Figure 47

In case of electric clutch failure, electric clutches can be locked in the engaged mode using metric bolts stored in the brace plate above each clutch.

1. Remove rubber plugs ① from oil shield ② to gain access to bolts ③.
2. Align cutouts at bolt holes ④.
3. Insert M8-1.25 x 14 mm long metric bolts ③.

📖 Use only 14 mm length bolts as provided or machine damage can occur. Longer bolts will damage the clutch. Shorter bolts may not effect a lock-up.

4. If you observe half the hole obstructed by a metal disc ⑤, you are not at a cutout.
5. Replace oil shield plugs.

If the entire hole is obstructed by a metal disc ⑤, you are not at a cutout.

When at a cutout, the bolt will screw in with minimal resistance until the bolt head reaches the clutch face.

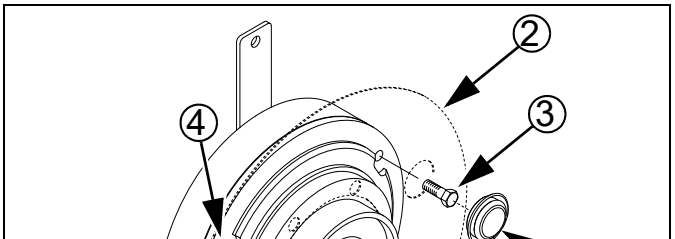


Figure 47 29329
Electric Clutch Lockup

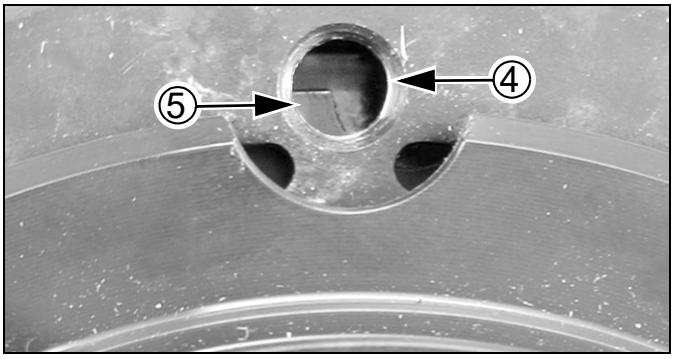


Figure 48 26168
Clutch Plate Nearly at Cutout

NOTICE

Clutch Slippage Risk:
Keep oil shield and oil shield plugs in place. Do not allow lubricant to enter the clutch when lubricating the planter.
If clutches slip, operate with clutch lock-up until overhaul or replacement of clutches.

a. On planters with hydraulic drive, the seed monitor overrides the lift switch during “FILL DISK” and “5 REV TEST” operations.

Swath Command™ Clutch Operation

The optional Swath Command™ system replaces the standard 3-section operator-controlled clutches with 12 sections of clutches under seed monitor control. If you have the standard clutches, see “**Electric Clutch Operation**” on page 41.

The Swath Command™ system automatically turns off rows when the row unit enters a non-planting area (as defined by a pre-loaded prescription), or if the row enters an area already logged as planted during prior passes.

Setup and operation of a factory-installed Swath Command™ system is covered in a separate manual: **Swath Command™ Section Control**, publication part number 403-857M.

Swath Command™ ordering information is found on page 117.

Figure 49 34006
Swath Command™ Components

Hydraulic Drive Operation (Option)

Refer to Figure 50

The hydraulic drive option replaces the standard contact wheel ground drive with a hydraulic motor ①, as the power source for meter rotation.

The drive requires a separate closed center hydraulic circuit capable of 4.5 gpm (17 lpm). A check valve ② at the motor prevents reverse operation, should the connections be reversed at the tractor, or the circuit lever reversed.

When the hydraulic circuit is active, a solenoid valve ③ controls flow to the motor, as the “Planter Channel” of the seed monitor. Refer to the DICKEY-john® Planter Drill Control manual, User Level 2/3.

When the planter is raised in normal field operations, the lift switch causes the seed monitor to shut off hydraulic flow to the motor. You can override this shutoff, and operate the drive while raised, using special seed monitor modes:

- In User Level 1, the “FILL DISK” operation runs the motor for one meter disk revolution.
- In User Level 2, the “5 REV TEST” operation runs the motor for five meter disk revolutions.

A filter ④ in the system requires periodic maintenance. See “**Hydraulic Drive Maintenance**” on page 102.

If there is no meter rotation when expected, the circuit lever or connections may be reversed. Also check for solenoid valve problems, such as a disconnected lead, and any seed monitor diagnostic messages.

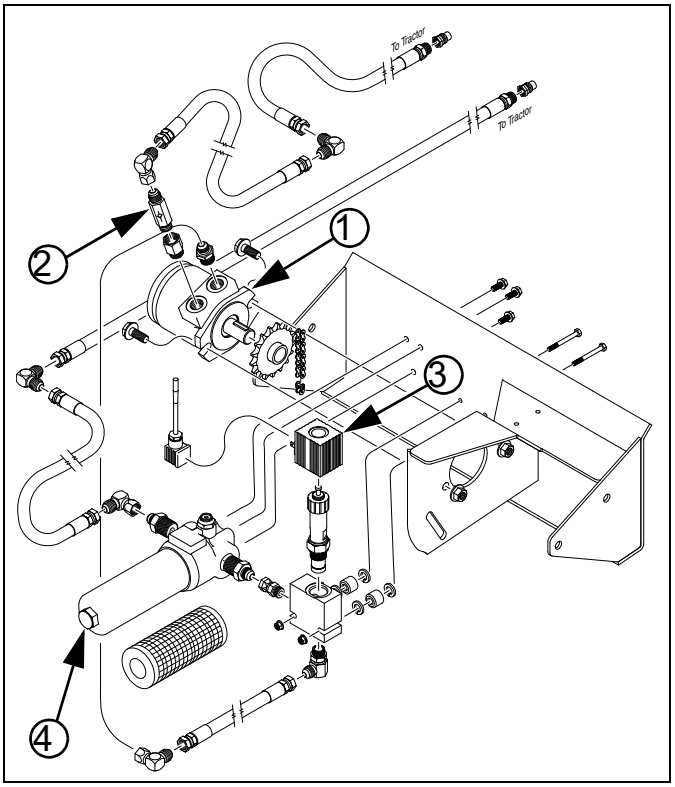


Figure 50 28475
Hydraulic Drive

Air System Operation

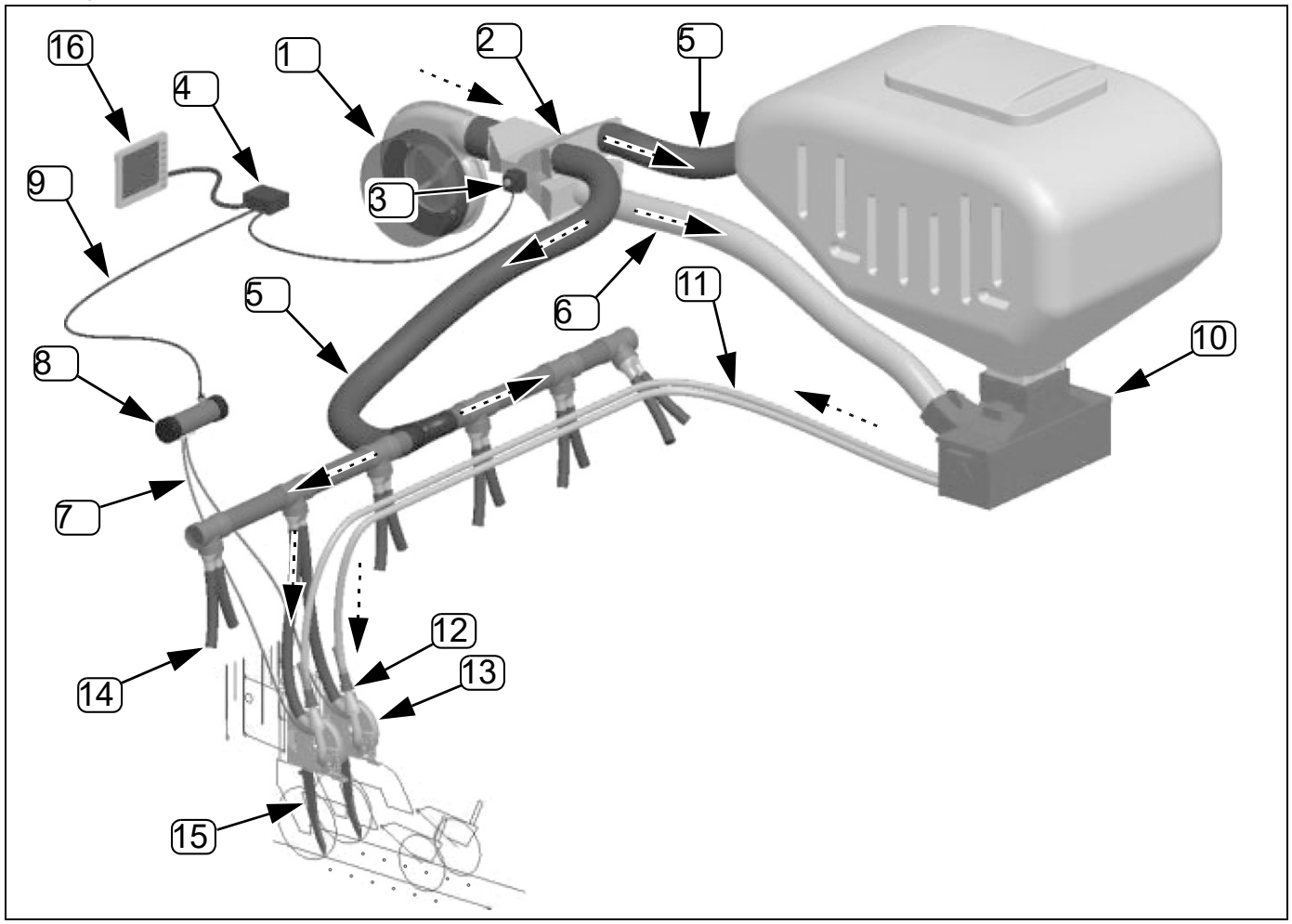


Figure 51
Yield-Pro® Air System for Air-Pro® Seed Metering

29595

Meter Pressurization System Elements (----▶ shows air direction)		
1 Hydraulic Fan	7 Pressure Sensor Lines	13 Air-Pro® Seed Meter
2 Split-Air Manifold	8 Pressure Sensor Chamber	14 Row Pressurizing Tubes
3 Servo-Controlled Vane	9 Feedback Signal Line	15 Row Unit Seed Tube
4 WSMT Servo Programming	10 Air Box & Seed Manifold	16 IntelliAg® Console
5 Priority Meter Pressurization Air	11 Seed Delivery Hose	
6 Excess Air to Air Box	12 Air Release Screen	

Air System Overview

The hydraulic fan (1) supplies air for both seed delivery and meter operation. Fan rpm is operator-adjusted (page 46) via the tractor's hydraulic flow control, and reported by the seed monitor system. The rest of the system is fully automatic.

At the split air manifold (2), a rotary actuator (3) operates a vane, under the control of software in the WSMT (4), which regulates the air diverted to the meter pressurization system (5).

There are console menus for adjustment of metering air, and manual fall-back modes.

Air not used for metering (typically just under half of it) flows to the air box (6) for bulk seed delivery. Air pressure in the seed delivery system is not presently reported. The meter pressurization air has priority, and can take all the air.

In the case of insufficient fan air, or significant seed delivery air leaks, seed flow may be irregular or stop.

Several rows have lines (7) to sample metering air pressure, which is measured in a sensor chamber (8). The sensor reading is fed back (9) to the WSMT for closed-loop pressure control. No operator adjustment is required for the metering air system.

Meter Pressurization is displayed by a mechanical gauge, and by sensors connected to the seed monitor system. As these sensors measure pressure at similar locations, they generally agree.

At the air box (10), air is mixed with seed from the bulk hopper or PROBOX®, and flows out air box manifold ports into primary seed hoses (11) to the rows. Y-tubes (not shown) may split primary hoses into secondary hoses to rows.

If seed delivery air flow is insufficient, the indication will be low seed rate alarms. If fan speed and direction are as recommended, check for air leaks in the seed delivery system.

An air release screen (12) above each Air-Pro® meter (13) vents the delivery air. The vent has two functions:

1. It releases delivery air while retaining the delivered seeds.
2. It is a passive control gate for bulk seed delivery.

📖 It takes about a minute to initially fill the meters.

When the meter inlet is filled, and seed fills the tube above the inlet, the screen becomes blocked by seed, shutting off air flow to that meter. As the meter consumes seed, the screen becomes exposed, air resumes flowing, carrying more seed from the air box manifold to the meter.

Separate pressurization tubes (14) provide the air to the meters that holds the seed in disk cells until released to the seed tubes (15).

A detector in each seed tube reports seed passage to the seed monitor system, which reports counts and rates on the console (16).

Several rows have pressure sensor ports for the meter pressurization system. Use of the special blank disk is particularly important when one of these rows is shut off. Running a normal disk with no seed causes the air system to overcompensate.

Fan Circuit Operation

See also “**Fan and Meter Pressurization Adjustment**” on page 54.

Refer to Figure 52

Three hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction ⑤, at recommended speeds, and without damage. See “**Hydraulic Hose Hookup**” on page 17.

1. Always connect the case drain line ① first.

   This line protects the outer shaft seal of the hydraulic motor. The case drain is a small line to the hitch, provisioned with a specialized low-seep flat-face case drain Quick Disconnect. Pressure spikes during motor operation, and pressure cycles due to temperature change are bled off by the case drain.

NOTICE

Motor Seal Damage Hazard:
Do not apply pressure to the case drain line. Do not change the special QD connector. A restricted or sealed case drain line will promptly result in motor seal damage.

2. Connect the motor return line ② second, to sump.

   The planter includes a $1^{1}/_{16}$ inch low back-pressure QD coupler set. Install the receptacle on a tractor sump port, and not at a normal remote return port. The unusual size aids in ensuring correct connection, so that the motor return line handles high volume at low back-pressure, ensuring full motor performance.

3. Connect the motor inlet line ③ to a tractor remote capable of the flow rates shown at “**Recommended Initial Fan Speeds**” on page 46.

4. The fan hydraulic circuit includes a check valve ④, which provides a relief path for oil at motor shutoff. The resulting low fan rpm provides strong indication reversed connection.

   Correct fan direction is shown at ⑤.If reversed fan is suspected, observe it during shutoff, as the direction of motion is easier to see at lower rpms as it slows to a stop (initial startup is virtually instantaneous, making observation at start difficult).

Fan speed is controlled by the tractor circuit (and not the seed monitor). Fan rpm is reported by the seed monitor console.

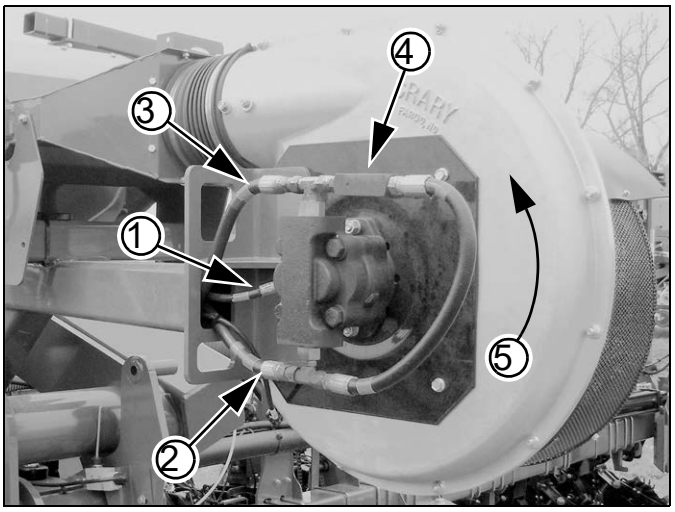


Figure 52 29596
Hydraulics at Fan

If the fan is connected in reverse, it may not run at all (due to no oil source at the return connection). If oil is present, oil bypass at the check valve ④ prevents the fan from reaching operating rpms. A reversed fan is incapable of providing sufficient air flow for planting.

Fan General Operating Information

Use tractor remote hydraulic valve flow control to set fan speed. Always start the fan with a low flow setting.

Monitor fan rpm with the seed monitor.

Gradually bring fan up to the recommended initial rpm. The split-air servo vane engages only above 50 rpm.

Do not run the fan over 3100 rpm (on model YP1225A), over 3500 rpm (on model YP1625A) or speeds under 2000 rpm.

At excessive rpm, too much air flow can cause:

- seed to plug the air box
- seed suspension in a bulk seed box
- unstable split air control
- oil heating
- slow lift times

If the rpm is too low, the split-air system may divert nearly all the air to the meter pressurization, leaving none for seed transport (or just enough to plug low spots in seed hoses).

The monitor console can report meter pressurization. There is also a Magnehelic® air pressure gauge. These two readings should not disagree by more than a few tenths of an inch.

📖 The Seed Rate manual provides initial values for meter pressurization. Normal readings are in the 0.8 inches to 4.0 inches H_2O range, and vary considerably with crop.

If at suggested fan rpm, desired pressure cannot be reached, chances are the fan is running backwards. If the rpm and meter pressurization readings are correct, but the meters are starved of seed, the fan may be running backwards and the meter pressurization system is taking all the air, leaving little or none for seed delivery. Reverse the inlet/return lines at the hitch.

If air system does not operate suitably with fan speeds between 2000 and 3500 rpm, “**Seed Delivery Troubleshooting**” on page 86.

📖 During “FILL METER”, all air is routed to the air box, and none to the meter pressurization system.

Steps for setting and adjusting the air system are found at “**Fan and Meter Pressurization Adjustment**” on page 54.

Recommended Initial Fan Speeds

	YP1225A	YP1625A
Bulk Seed Hopper*	2300 rpm	2700 rpm
PROBOX	2100 rpm	2500 rpm

* This assumes a 2007+ Great Plains hopper, or older hopper with the vent line update. For an older unvented hopper, use the rpms recommended for ProBox.

At operating speeds, typical oil flows are in the range:

Ground Drive Planters:

8-10 gpm (30-38 lpm) for YP1225A

10-12 gpm (38-45 lpm) for YP1625A

Hydraulic Drive Planters:

12-14 gpm (45-53 lpm) for YP1225A

14-16 gpm (53-61 lpm) for YP1625A

The figures above do not include oil for lift/lower or for marker operation.

NOTICE

Low Population Risk at Turns:

The figures above do not include oil for lift/lower or oil for marker operation. Aggressive lift/lower operations, and simultaneous lift/marker operations, can reduce fan rpm below that needed to pressurize meter disks. If seed falls out of pockets, low population bands will occur shortly after turns.

Unless the tractor has generous oil flow capacity, raise/fold markers before lift, and lift slowly. Watch manifold pressure and tune operations to keep it at planting levels in turns.

Marker Operation

DANGER

Electrocution Hazard:

Check for overhead lines before operating markers. If a marker contacts an electrical line, all metal parts of the planter and tractor can have lethal voltages present. There may be no indication of this condition until a person completes the circuit to ground. At higher voltages, electrocution can occur without direct contact.

Before operating markers, make sure they are properly bled as described in "**Bleeding Hydraulics**" on page 100.

For markers to operate, the marker hydraulic circuit must be enabled:

Refer to Figure 53

1. On the CFM switch panel, set the "Marker/Fold" switch ① to Marker. Leave this switch in "Marker" position for all field operations. It also acts to lock the folding system when in "Marker".

Refer to Figure 54

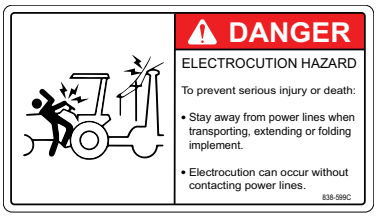
2. If the planter is equipped with an auxiliary hydraulic system, set the selector valve ② (found near the sequence valve ③ at the marker base on the left wing) to "Marker".

Dual markers are equipped with a sequence valve ③ to control lift sequence. Starting with both markers up, the sequence is:

1. Activate tractor hydraulic lever; right marker lowers while left marker stays up.
2. Reverse hydraulic lever; right marker raises while left marker stays up.
3. Activate hydraulic lever; left marker lowers while right marker stays up.
4. Reverse hydraulic lever; left marker raises while right marker stays up.
5. Pattern repeats.

Folding speed of dual markers is adjusted with adjustment screws on sequence valve body. Because excessive folding speed may damage markers, adjust markers to a safe folding speed according to "**Marker Adjustments**" on page 59.

📖 To get both markers in the lowered position at the same time, activate hydraulic lever to lower one marker. After marker is lowered, move lever to opposite position then quickly reverse lever and hold until other marker is lowered.



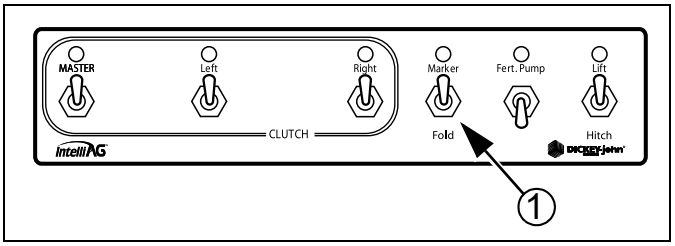


Figure 53 28491
CFM: Markers Enabled

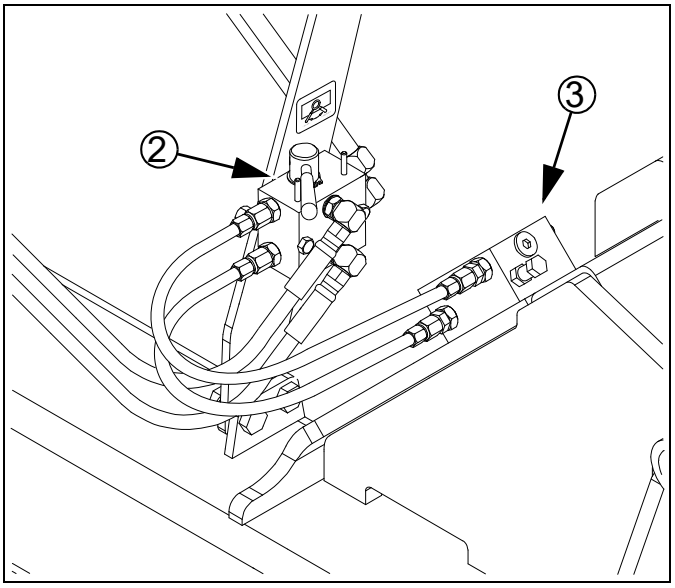


Figure 54 28493
Aux Valve Set to Markers

Field Operation

Perform all steps in "**Pre-Start Checklist**" on page 22 and "**Field Setup Checklist**" on page 39.

PDC: DICKEY-john® Planter/Drill Control manuals
SRM: Seed Rate manual

First Pass Operation Checklist	Page
1. Set planting rate.	52
2. Unfold marker on next-row side.	47
3. With tractor at high idle, set fan hydraulic circuit to low flow, engage circuit. Gradually adjust fan hydraulic flow to obtain recommended rpm.	45
4. Set or verify meter pressurization value.	SRM
5. Engage optional hydraulic seed drive via seed monitor.	PDC
6. In the CLUTCH cluster of the CFM, set all switches, including Master, to ON.	41
7. Pull forward, lower planter, and begin planting for a short distance.	
8. Stop. Assess: planting depth, skips or doubles (see sidebar and page 54), seed spacing (to verify population), press wheel operation and fertilizer application (if in use)	
9. Continue planting for at least 10 seconds (so that the seed monitor is reporting a stable population number). Verify that it is your desired rate.	
10. Make necessary adjustments	51

Sharp Field Turns Checklist	Page
1. Fold marker	47
2. Raise planter	27
3. Make turn	
4. Lower planter	27
5. Unfold marker on next-row side.	47
6. Resume planting.	

Suspending Planting Checklist	Page
1. Stop tractor	
2. Fan hydraulic circuit to Float or Neutral	45
3. Fold Marker	47
4. Raise planter	27

📖 Use Depth Control mode. If tractor 3-point hitch control is set for Load Control, hitch movement may cause changes in row unit depth resulting in uneven depth control.

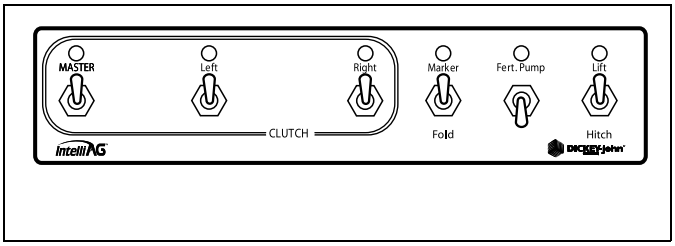


Figure 55 28491
CFM: Planting Configuration

Skip and Double Checks

A. Dig up seed (or plant shallow with press wheel tied up). Check seed spacing against charts.

B. With meters still charged with air, carefully inspect disks at several rows.

Inspect the arc from just after the top tuft brush to the bottom edge of the seed drop brush. Look for cells (seed pockets) having no seed, or more than one seed. You may need a flashlight to perform this inspection.

Ending Planting Checklist	Page
1. Suspend operations as above, then	
2. Fold planter	28
3. Install transport locks	29
4. Lights ON	-
5. Transport	31

Parking

For information on long-term storage, see “**Storage**” on page 50.

1. If equipped with fertilizer, flush system and secure pump against corrosion.
2. Fold planter. see “**Folding the Planter**” on page 28.

📖 Be sure to install cylinder lockup channels. Failure to do so may result in injury and/or damage to the planter.

3. Park planter on a level, solid area.
4. To prevent rolling, block tires securely.

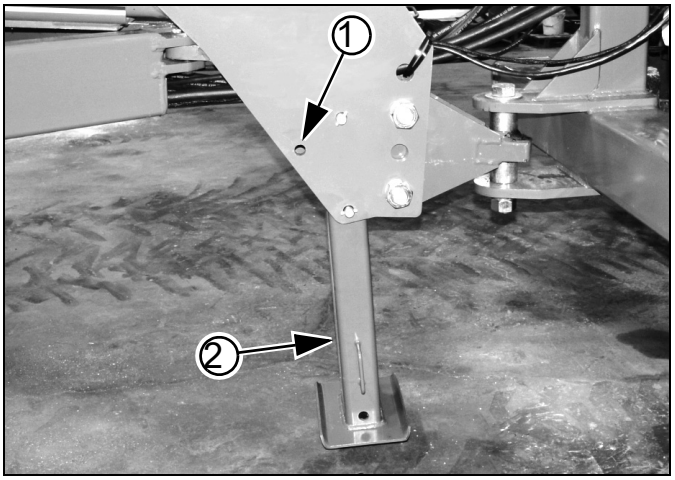
DANGER

Roll-Away Hazard:
DO NOT unhitch planter while on a steep slope. Always block tires when unhitching from tractor. There is not enough weight on parking stand(s) to anchor planter on a slope.

Refer to Figure 56

3 Point Hitch

5. Remove pin ① holding main parking stand ② in “UP” position. Swing stand down. Pin stand in parking position. If the ground is soft, place a board or plate under the stand.
6. Remove wire snap lock pin ③ from innermost hole on park stand mount, or remove both pins if stand ④ was inverted. Swing support stand from underneath crossbar weldment, or invert to foot down.
7. Secure 3-point prop stands by using two pins on each stand.
8. Lower tractor 3-point until planter is resting on parking stand.



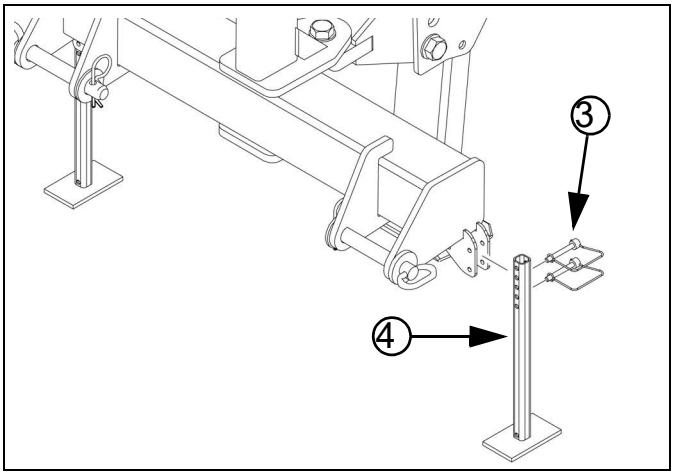


Figure 56 22814 27282
Jack and 3-Point Prop Stand

Hydraulic Tongue Hitch

9. Remove pin ① holding main parking stand ② in “UP” position. Swing stand down. Pin stand in parking position. If the ground is soft, place a board or plate under the stand.
10. Use tongue cylinder to lift planter high enough to fully swing down parking stand. Insert locking pin in parking stand.
11. Use tongue cylinder to lower planter onto parking stand. Pin parking stand.
12. Use tongue cylinder to lift tongue off tractor draw bar.

Either Hitch

13. Set all implement hydraulic circuits to Float to relieve pressure in lines.
14. Shut down hydraulics. Unplug hydraulic lines from tractor. Do not allow hose ends to rest on the ground.
15. Unplug planter light cable from tractor.
16. Unplug monitor harness from console.
17. 3-point: Unhook tractor from planter hitch.
18. Pull tractor away.

Storage

Store the planter where children do not play. If possible, store the planter inside for longer life.

1. Empty hopper (page 92).
2. Close the seed box or hopper door (page 93). Clean out the air system (page 93).
3. Remove hopper or seed box (page 37).
4. Cover and seal off the opening at the top of the air box. Leave clean-out door slightly ajar to allow any condensed moisture to drain off.
5. Remove seed disks from meters (this is primarily to relieve pressure on brushes). Clean disks of residue build-up (see Caution at right). Use mild soap, non-abrasive scrubbers, and hot or warm water. If using sealed storage, dry disks prior to storage.
6. Close seed inlet shutters at meters (to prevent pest entry to seed hoses). Thoroughly clean seed and seed treatment residue from seed meters. See "**Meter Clean-Out**" on page 94, for more information.
7. If your planter is equipped with an optional fertilizer tank, clean tank and application hoses. Be sure to follow chemical manufacturer's instructions when handling chemicals.
8. Thoroughly clean pump following instructions in the pump manual.
9. Unscrew caps on end of fertilizer booms and flush them out. Drain completely and replace caps.
10. Remove any dirt and debris that can hold moisture and cause corrosion.
11. Lubricate and adjust all roller chains.
12. Smear grease on exposed cylinder rods to prevent rust. Add a brightly-colored tag at the hitch as a reminder to de-grease the rods prior to next use (to avoid any risk that congealed grease might damage seals).
13. See "**Lubrication**" on page 107, for lubrication information.
14. Inspect planter for worn or damaged parts. Make repairs and service during off season.
15. Use spray paint to cover scratches, chips, and worn areas on the planter to protect the metal.
16. Cover planter with a tarp if stored outside.

- 🕮 Removing the seed box/hopper increases the life of the air box seals, which are otherwise apt to be permanently compressed if stored under load off-season.
- 🕮 Do not store optional bulk hopper outside on the ground. Raise it on blocks, securing it in place to prevent from falling over or blowing around by wind. Store inside if possible.

⚠CAUTION

Possible Chemical Hazard:

Seed disks will have talc and graphite residue, and may have residues of hazardous seed treatments. Do not wash disks where food is prepared, or where cookware or dinnerware is washed. Wear gloves when washing disks. Avoid spray. Although the disks are dishwasher-safe, do not wash them in an appliance also used for food cookware or dinnerware.

Storage: Fertilizer Option

The pump, strainer and manifold system require special attention prior to storage. See "**Fertilizer System Maintenance**" on page 105.

Adjustments

To get full performance from your Planter, you need an understanding of all component operations, and many provide adjustments for optimal field results.

Some of these are covered earlier in this manual.

Even if your planting conditions rarely change, some items need periodic adjustment due to normal wear.

Adjustment	Page	The Adjustment Affects
Tongue Height	20	Correct draft load to tractor
Frame Leveling	155	Planting consistency
Wing Alignment	156	Correct and consistent row tracking
Clutch Lock-Up	41	Temporary operation with a failed clutch
Air System	43	
Fan Speed	46	Optimal seed distribution
Meter Pressurization (values from SRM[a])	54	Consistent seed flow and disk singulation
Planting Rate		
Ground Drive Sprockets	52	Meter rpm (seed delivery to seed tube)
Ground Drive Contact Wheel	53	Consistent meter rpm
Hydraulic Drive	-	Refer to Planter Seed Rate manual
Marker Adjustments		
Marker Extension	158	Swath alignment
Disk Angle and Orientation	59	Visibility of mark
Marker Speed Adjustment	59	Reliable marker operation
Height Switch Adjustment	60	Correct off/on state of meter drive
Fertilizer Adjustments (Option)		
Fertilizer Rate	58	Refer to Planter Seed Rate manual
Fertilizer Relief Valve	SRM[a]	Refer to Planter Seed Rate manual
Fertilizer Orifice Selection	SRM[a]	Refer to Planter Seed Rate manual
Frame-Mounted Row Accessories (Options)		
Terra-Tine Row Cleaners	61	Row preparation
Coulters	62	Row pre-furrow depth and trash cutting
Vantage I Fertilizer Delivery	62	Fertilizer placement
25 Series Row Unit Adjustments		
Row Unit Down Pressure	64	Planting depth uniformity
Row Unit Lock-Up	74	Single/twin-row operation
Row Cleaner Adjustments (Option)	66	Row preparation
Coulter Adjustments (Option)	67	Row pre-furrow depth
Row-Unit Opener Adjustments	68	Seed depth, spacing, coverage
Side Depth Wheels	69	Seed depth
Adjusting Gauge Wheel Scrapers	70	Consistent seed furrow depth
Seed Meter Setup and Adjustment	71	Consistent seed population
Seed Firmer Adjustments (Option)	77	Seed-soil contact
Press Wheel Adjustment	79	Effective soil coverage
Monitor Adjustments	-	Refer to Seed Monitor manual

a. SRM: Seed Rate Manual (401-625B)

Setting Material Rates

Planting Rate

Adjusting the planting rate requires the following:

1. setting seed rate:

   For ground-drive planters:
   adjusting drive speed Range sprockets, and
   adjusting Transmission sprockets,

   For hydraulic drive planters, setting monitor and drive control channel,
2. preparing seed meters, including disks, shutters and meter pressurization,
3. checking tire pressure.
4. checking planting rate.

Ground Drive Planting Rate

NOTICE

Wing Rate Mismatch Risk:
There are separate left and right contact drives. Each drives one wing. Sprockets must be set identically on both side, per decals on each drive.

Refer to Figure 57 and Figure 58

📖 Contact wheels ① turn in opposite direction from main ground tires.

Drive Speed Range Sprockets

Select Range sprocket pairing for your seed and rate from the Seed Rate manual.

Loosen Range idler ② and remove chain ③. Remove retaining pins from shafts and install speed Range sprockets called for in chart. Additional sprockets are on storage towers behind the reversing drive plate.

NOTICE

Population Target and Wing Rate Risk:
Make sure the correct sprockets have been installed in the DRIVING and DRIVEN locations.

Reroute chain over sprockets and idlers as shown.

Transmission Sprockets

Select Transmission sprocket pairing for your seed and rate from the charts in the Seed Rate manual.

Loosen idler ④ and remove drive chain ⑤. Remove lynch pins from shafts. Install sprockets per chart.

Reroute drive chain over sprockets and idlers as shown.

Move idlers into chains for $^{1}/_{4}$ inch (6 mm) slack in the longest spans. Tighten idlers and reinstall lynch pins. Store and pin removed sprockets on storage towers.

NOTICE

Population Target Risk:
Tire pressure matters for both ground and hydraulic drive. Incorrect tire pressure causes incorrect ground speed readout. On ground drive, incorrect pressure causes incorrect or inconsistent seed metering.

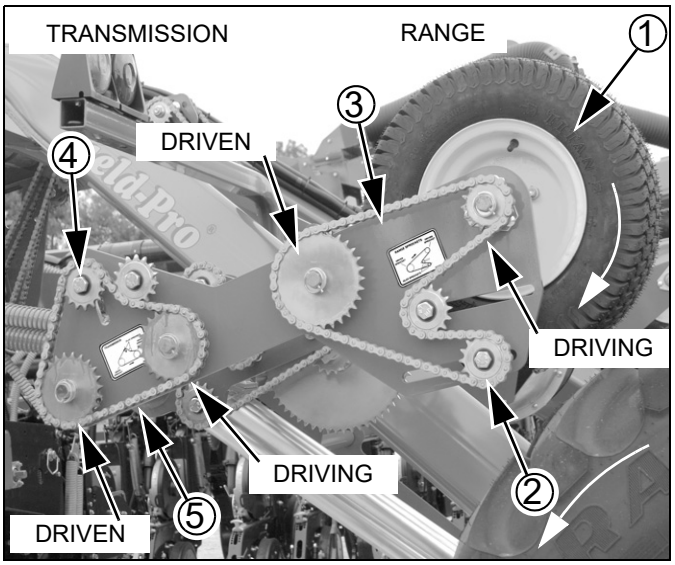


Figure 57 29745
Left Contact Drive

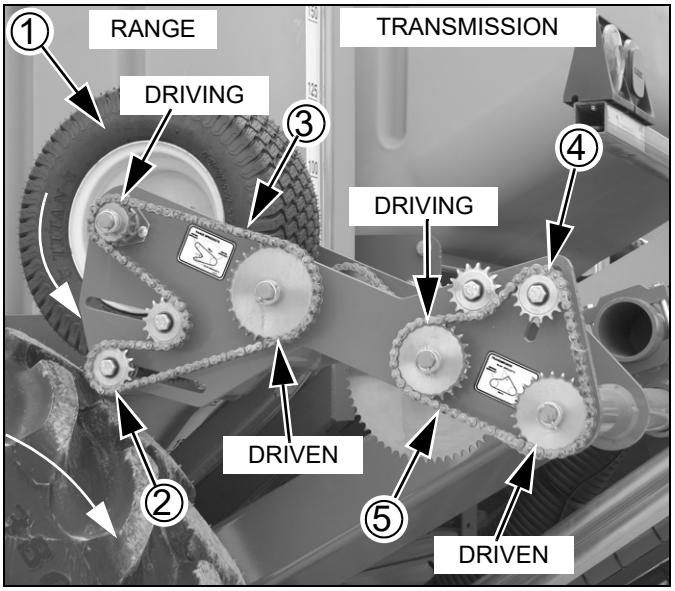


Figure 58 29746
Right Contact Drive

Contact Wheel Drive

Refer to Figure 59

You can adjust the down pressure the contact wheel exerts by adjusting the pressure on the spring.

- Dual contact drive has dual springs to set.
- Do not adjust spring so tight that it will bottom out when raised.

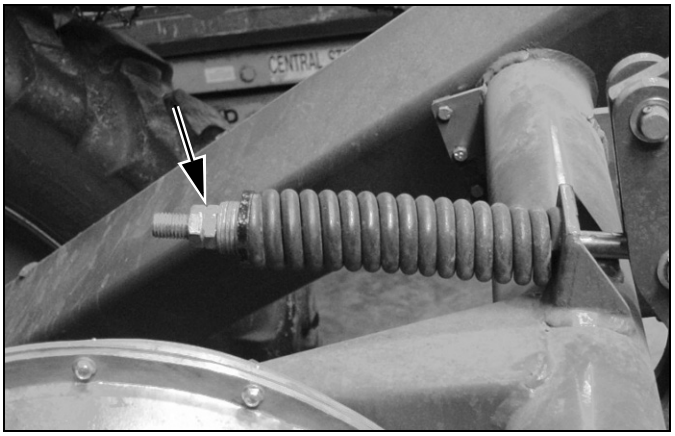


Figure 59 21973
Down Pressure Spring

Refer to Figure 60

Before adjusting spring, raise planter and adjust wheel travel to obtain $1^{3}/_{8}$ inch (3.8 cm) clearance above the main tire.

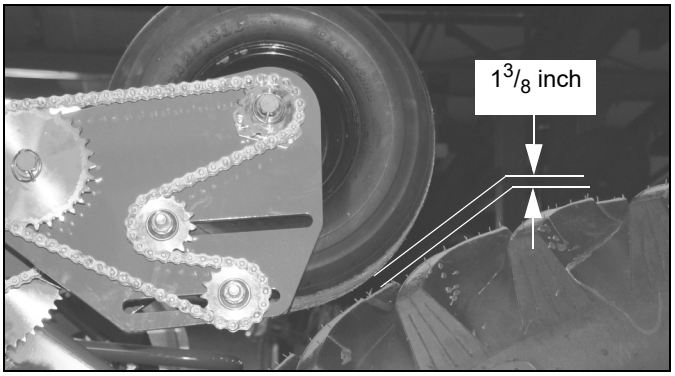


Figure 60 22500
Contact Drive Wheel

Refer to Figure 61

You can adjust the amount of travel for the contact wheel by loosing the jam nuts and lengthening or shortening the threaded rod.

- This adjustment controls the timing of the seed meter drive when raising and lowering the planter. Increasing the gap between the tires causes seed flow to start and stop with the planter at a lower height. Decreasing the gap will cause seed flow to start and stop at a higher position.
- Be sure to check for spring bottoming after making this adjustment.

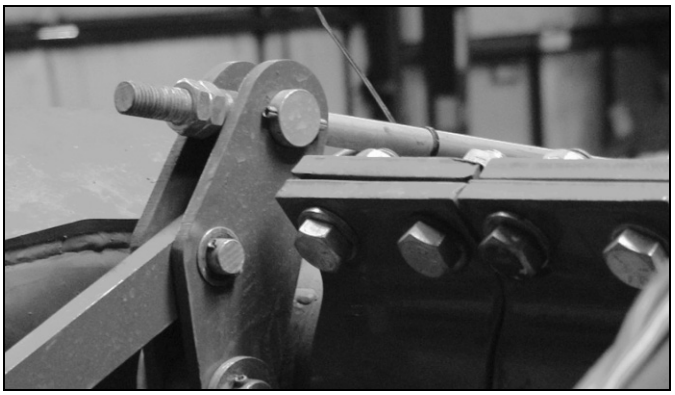


Figure 61 21972
Travel Adjustment

Fan and Meter Pressurization Adjustment

1. These steps presume that correct seed disks are installed (Seed Rate Charts), and the seed inlet shutters are set for the seed (page 71).
2. With fan off, check meter pressurization reported by seed monitor. Re-zero as needed (see Seed Monitor manual).
3. Determine recommended fan rpm based on your own notes in the Seed Rate Charts, or the table on page 46.
4. Determine the recommended meter pressurization based on your own notes or the published value in the Seed Rate Charts.
5. Start the fan. Gradually increase fan rpm using the tractor's hydraulic flow control for the circuit. Adjust to the developed or suggested value from step 3.
6. Check that at least a small amount of pressure is being sensed at the meters and meter pressurization is near suggested value.

   The meter pressurization system cannot reach full operating pressure when the hoses, meters and disks are completely empty. Low initial pressures are normal.
7. Perform a "FILL METER" operation for at least one minute (see DICKEY-john® Planter/Drill Control user level 1 manual).
8. Check for meter fill:
   With fan running, put the tractor in Park and set the brakes. Walk behind the wings, remove several rain covers, and check for seed in meters by looking through the clear disks. Rows to check are those with longer hoses or sharper hose bends.

   If a meter runs completely out of seed ("starved"), back-pressure to the air box manifold may prevent prompt refill. To fill a starved meter, close the seed inlet shutter for about 15 seconds, then restore it to the original setting.
9. Fill the disk pockets with seed:

   Hydraulic Drive: Run a "FILL DISK" operation.

   Ground Drive: See options at right.

   Fill Disk with Ground Drive:

   - With CFM clutch switches off, use a $^{7}/_{8}$ inch (23 mm) wrench to rotate the wing meter system drive shaft $1^{3}/_{8}$ turns (top forward).
   - Lower the planter and plant for a short distance. It takes a few feet before seed begins to drop from meters.
10. Check control air system pressure. With meters and disks filled, meter pressurization should be at target value.
11. Begin planting. Troubleshoot any obvious problems or alarms.

12. During the first pass, take note of the average populations reported on the seed monitor.

Typical Location:	Item:
Screen 1, first row above graphs	Average Overall Population

If the reported population varies from your intentions by a significant amount, it is imperative to perform a furrow check. For serious rate variances, for which the source of the problem and the solution are not quickly determined, see "**Population Troubleshooting Charts**" on page 82.

If population is only slightly low, the problem can be skips (periodic empty disk pockets). If slightly high, the problem can be doubles (periodic pockets with double seed). A meter pressurization adjustment may correct either condition (see step 14).

Small seeds, such as Milo, may be under-reported. Use the "**Alternate Skip/Double Check**" below to verify seed status at the disc pockets.

Furrow Check:

Expose several seeds in each of several rows, being careful not to disturb their relative positions. Measure and average the distance between seeds. Compare this to the predicted seed spacing for the population in the Seed Rate manual.

Any instances of no seed where expected may be a sign of "skips". Finding two seeds at the same spot is clear indication of "doubles"

13. Resume planting. During the next pass, note the following two readouts on the seed monitor:

Typical Location:	**Item:**
Screen 1, 2nd row above graphs	Minimum Row Population
Screen 1, 3rd row above graphs	Maximum Row Population

A small varying population deviation between rows is normal; however, if a row is consistently running lower or higher than the other rows, it could indicate a meter or seed sensor problem that needs attention. "**Population Troubleshooting Charts**" on page 82.

14. Skips:
If all else is correct, and the overall average population is running low (or there are gaps upon furrow check), the cause may be seeds falling out of disk pockets before delivery to the seed tube. Increase meter pressurization to correct this. You can adjust this with the planter in motion.

Insufficient meter pressurization, or unusually rough fields, can increase the incidence of empty pockets. Be sure to rule out other causes (such as skipping chains, meter starvation, incorrect meter disks) before adjusting meter pressurization to reduce apparent skips.

Press the "SPLIT AIR +" softkey on the seed monitor console. Wait 5 to 10 seconds for the system to update, while you continue planting. Continue making small increase adjustments until the reported population levels out at the target value.

The suggested increment of change is two presses of the "SPLIT AIR" softkey, at the factory default value for change increments.

15. Doubles:
If all else is correct, and the overall average population is running high (or there are double seeds upon furrow check), the cause may be two seeds in some disk pockets at delivery to the seed tube. Decrease meter pressurization to correct this. You can adjust this with the planter in motion.

Excess meter pressurization can increase the incidence of doubles. Be sure to rule out other causes (such as incorrect meter disks) before adjusting meter pressurization to reduce doubles.

Press the "SPLIT AIR -" softkey on the seed monitor console. Wait 5 to 10 seconds for the system to update, while you continue planting. Continue making small decrease adjustments until the reported population levels out at the target value.

Fine-Tuning Meter Pressurization

After several passes, if you are comfortable with the planter's operation, you can optimize meter pressurization. Do this during longer passes, so there are fewer distractions (and see sidebar regarding Milo).

16. Observe the current overall average population reported by the monitor.
17. Adjust the meter pressurization down, in discrete steps, waiting 5-10 seconds between adjustments, until skips occur (population begins falling below target). Note the pressure at which skips begin.
18. Restore pressure to the initial value at step 16.
19. Adjust the meter pressurization up, by periodic small increments, until doubles occur (actual population begins rising above target). Note the pressure at which doubles begin.

📖 If unable to adjust up to doubles (or skips happen instead), seed delivery is probably being starved of air. Increase fan rpm and repeat limit search.

20. Adjust meter pressurization to a value halfway between the limits established at step 17 and step 19. This is the ideal value for your crop, disk and population, providing equal margin against skips and doubles. Record this value for future use.

Alternate Skip/Double Check

Small seeds, particularly Milo, are less reliably sensed as skips or doubles by the seed tube sensors, and watching monitor population is unlikely to locate the pressure limits. This test can also be quicker for all seeds.

A. After planting a few passes with initial settings, remove the rain covers from several rows (use rows with a variety of seed hose lengths and routes).
B. Make a meter pressurization adjustment. Resume planting for a pass or less.
C. Stop planter motion but leave fan running.
D. Inspect the seed disks closely. Look for empty seed cells (skips) and cells with multiple seeds (doubles).
E. Repeat step B-step D until limits are established. Record limits. Reinstall rain covers. Plant with median settings.

Checking Planting Rate

Cautious practice includes checking seed delivery rate prior to planting.

Although the seed monitor can count most singulated seeds, it may not reliably count the smallest (such as Milo), it does not count individual volumetric seeds, and several factors can cause even large seed singulated reports to be inaccurate (such as incorrect speed calibration, Sensor Constant or Gear Ratio setup).

Methods of rate checking are described in detail in the Seed Rate Manual. The information on this page is an overview of the general process, which varies with the seed type and the planter meter drive type.

Before checking rate, make sure that the seed monitor is configured with an accurate Ground Speed Constant. As delivered, the monitor may have an inappropriate value pre-loaded.

The DICKEY-john® Quick Start Guide for your planter includes an initial value for this constant, but this value may not be optimal for your planter, and does not include any adjustment for tire wear over time.

For reliable monitor reports, at the start of each season, perform a “GROUND SPEED CALIBRATION” over a 400 foot/120 m course, as described in the DICKEY-john® IntelliAg® Planter/Drill Control Operator’s Manual. When completed and entered in the monitor, cross-check the reported implement speed against the tractor speedometer or other reference.

Checking Singulated Rate

A furrow check is the most accurate way to verify that you are seeding at your desired population value. This is done by planting for a short distance with one or two rows set to shallow depth and with press wheels tied up for no furrow closure. Seeds are counted in the furrow over a specific distance and the area rate is computed. Refer to the Seed Rate Manual for details.

The seed monitor will also be counting during the test, and comparing results provides confidence in the seed monitor display.

🕮 If the checked rate varies materially from the chart rate, or for hydraulic drive, from the programmed rate, it is likely that there is a seed flow problem or planter malfunction (such as contact drive tire slippage) or a configuration error that requires correction. Do not “calibrate” to correct unexpected variations in *singulated* rates.

Setting Fertilizer Rate

This page is an overview. For details on fertilizer rate setting, refer to the Seed Rate Manual, 401-625B.

DANGER

Possible Chemical Hazard:
Wear proper protective equipment as required by chemical manufacturer. Avoid breathing of chemical fumes. Wear respirator as required by chemical manufacturer. Seek medical assistance immediately if accident occurs. Some chemicals cause serious burns, lung damage, and death. Avoid contact with skin or eyes. Know what to do in case of an accident.

Fertilizer rate is controlled by pump rate (for the Great Plains ground drive pump). Consistent delivery across the planter is controlled by orifice size at row unit drop-line points.

Consistent system operation also requires a correctly adjust relief valve and a well-maintained strainer ahead of the pump. See "**Important Safety Information**" on page 1 and "**Important Safety Information**" on page 1.

Piston Pump

The liquid fertilizer option uses a piston pump. For pump operation and pump maintenance refer to the pump manual, supplied in the liquid fertilizer option package.

The pump is driven by a ground contact wheel ①, and fertilizer rate is independent of seed rate. Coarse fertilizer rate is set by a sprocket ② on the ground drive assembly. Fine rate is set by a dial ③ on the pump. For settings, see the Seed Rate manual.

- 🕮 Great Plains recommends checking with your local Agronomist, as soil conditions vary. Conditions in your area may need lesser or more amounts of fertilizer than represented in these charts. Do not exceed 12 gallons per acre (112 liters/ha) in any case.
- 🕮 Always disable the pump drive when not in use. Use ground contact wheel lock up if installed. On older models remove the chain. Do not operate planter pump when not applying material.

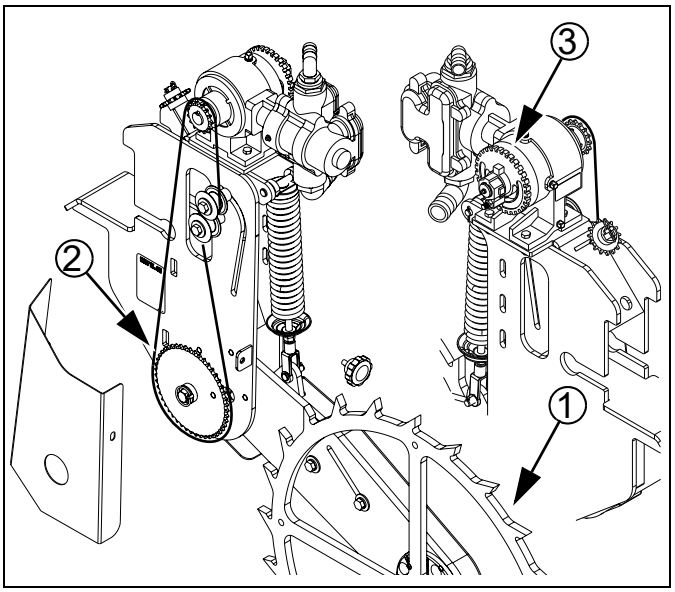


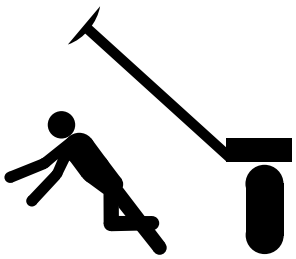
Figure 62 28494
Ground Drive Pump

Marker Adjustments

See also:
“**Marker Setup**” on page 158 and,
“**Marker Maintenance**” on page 101.

⚠ WARNING

Pinch, Crush and Sharp Object Hazards:
Never allow anyone near the planter when folding or unfolding the markers. You may be injured if caught or struck by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail.



Dual Marker Speed Adjustment

Refer to Figure 63

Adjust folding speed for dual markers with hex adjustment screws on sequence valve body. There is an adjustment screw for raising speed ① and one for lowering speed ②. You can identify adjustment screws by markings stamped in the valve body.

Turn adjustment screws clockwise to decrease folding speed and counterclockwise to increase folding speed. With tractor idling at normal operating speed, adjust marker folding to a safe speed. Excessive folding speed could damage markers and void the warranty.

After adjusting folding speed, tighten jam nuts on hex adjustment screws to hold settings.

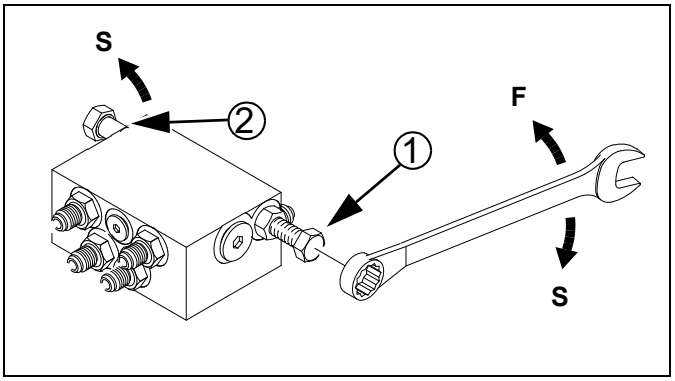


Figure 63 14048
Marker Extension Adjustment

Marker Disk Adjustment

⚠ CAUTION

Sharp Object Hazard:
Use caution when making adjustments in this area. Marker disks may be sharp.

Refer to Figure 64

To change angle of cut, and the width of the mark, loosen $^{3}/_{8}$-inch bolts ⑥ holding disk assembly.

For a wider mark (W), increase the angle of the marker with respect to the tube ⑤. For a narrower mark (N), reduce the angle.

You can also invert the disk blade on the hub to change the direction of throw.

Tighten bolts ⑥.

📖 The direction of travel (T) tends to drive the disk angle to Wide. If bolts are not tight enough, or loosen over time, the disk will slip into the Wide mark configuration.

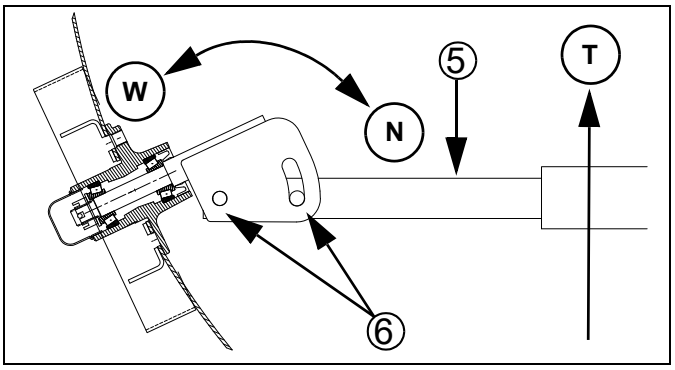


Figure 64 11757
Marker Disk Angle

Height Switch

The height switch ① informs the seed monitor about the lowered/raised status of the planter. On all planters, the monitor only counts seed when the planter is lowered and the Drive is activated. On hydraulic drive planters, the switch also enables or disables[a] hydraulic drive.

Refer to Figure 65

1. Loosen the bolts holding the height switch bracket ② and rotate the switch ① and bracket away from the frame pivot ③.
2. Lower the planter to the height at which seed delivery should begin.
3. Rotate the switch towards the frame pivot until the spring actuator ④ just touches the frame.
4. Rotate the switch in until it clicks. Tighten the bolts to secure it in place. Be sure frame tube will not crush switch when unit is fully loaded.

📖 It may be necessary to loosen the screws holding the switch and rotate the switch slightly on the bracket.

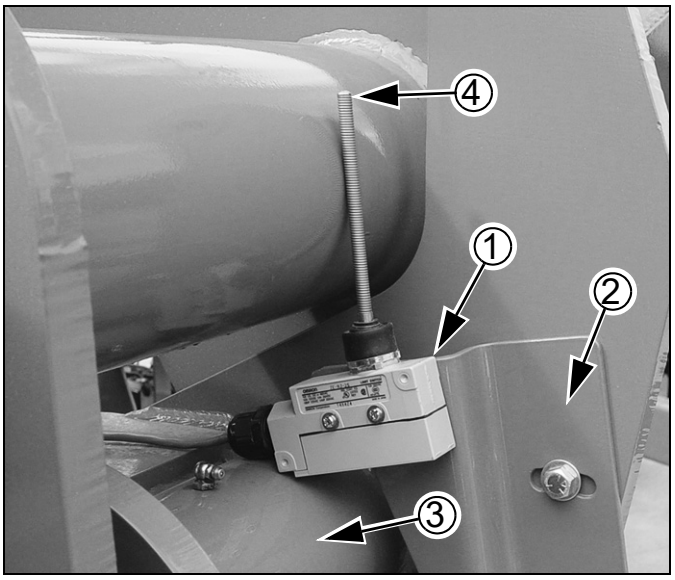


Figure 65 23398
Height Switch

a. When a hydraulic drive planter is raised, the switch state is ignored during “FILL DISK” and “5 REV TEST” operations.

Row Implement Adjustments

To get full performance from your planter, you need a good understanding of row cleaner, coulter, fertilizer, opener, meter, seed firmer, and press wheel operation.

Frame-Mounted Row Accessories

Terra-Tine™ Adjustment

Refer to Figure 66

📖 All adjustments must be made with the unit in the fully raised position.

NOTICE

Excess Wear Risk:
Check that the Terra-Tine Row Cleaner tines DO NOT touch the coulter blade or any other attachments. At least $^{3}/_{8}$ in. (13 mm) clearance is recommended. Tine contacts cause excess wear to all parts involved.

1. When the blade is out of the soil, adjust the lock collar height to set the height of tine fingers flush with the bottom of coulter blade.
2. Side-to-side alignment can be done by rotating the shank mount around the vertical shaft and tightening the square head set screw.

Refer to Figure 67

3. Fore-to-aft adjustment is accomplished by adding or removing the extension arm ① to place the Terra-Tine Row Cleaner to either side of the coulter hub depending on the desired position or clearance between other attachments. Testing has shown better performance behind the hub, but available space may dictate the mounting position.

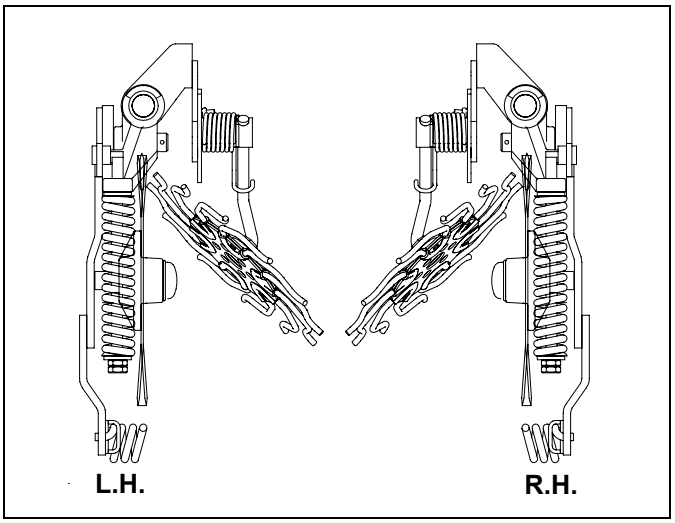


Figure 66
Terra-Tine in Front of Hub
13469

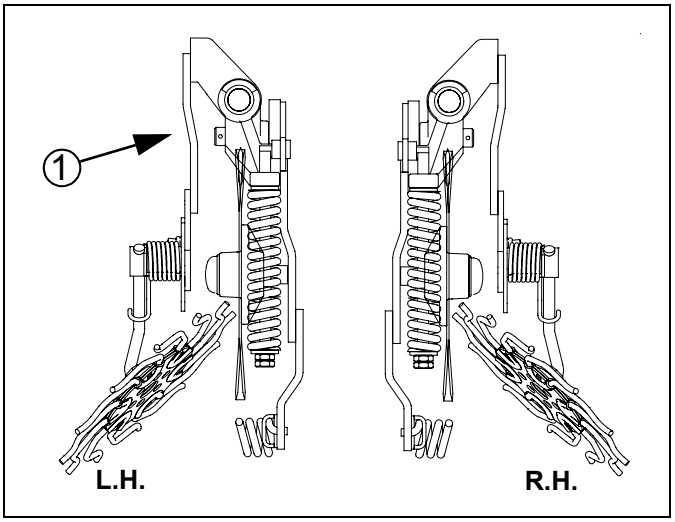


Figure 67
Terra-Tine Behind Hub
13469

Frame-Mounted Coulters

Refer to Figure 68

At the shaft ①, adjust the coulter depth for a running depth ② of 4 to $4^{3}/_{8}$ in. (10.2 to 11.4 cm) below ground level if off row, if on row as a no-till coulter operate at planting depth only ③. Refer to the Vantage I manual (204-376M) for further adjustments.

Do not adjust the spring ④ tension. It is factory pre-set.

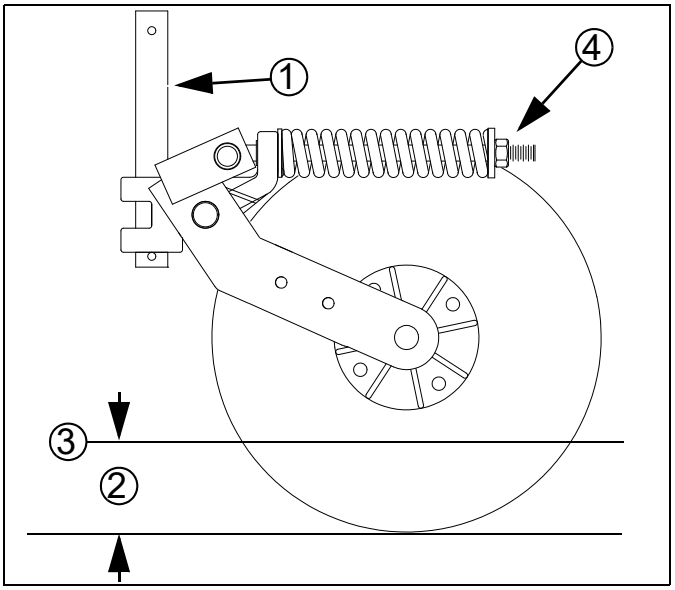


Figure 68 25392
Frame-Mount Coulter

Vantage I Applicator

Refer to Figure 69

At the back plate ⑤, adjust the tine height for a running depth ⑥ of 1 in. (2.5 cm) below ground level ③. Refer to the Vantage I manual (204-376M) for further adjustments.

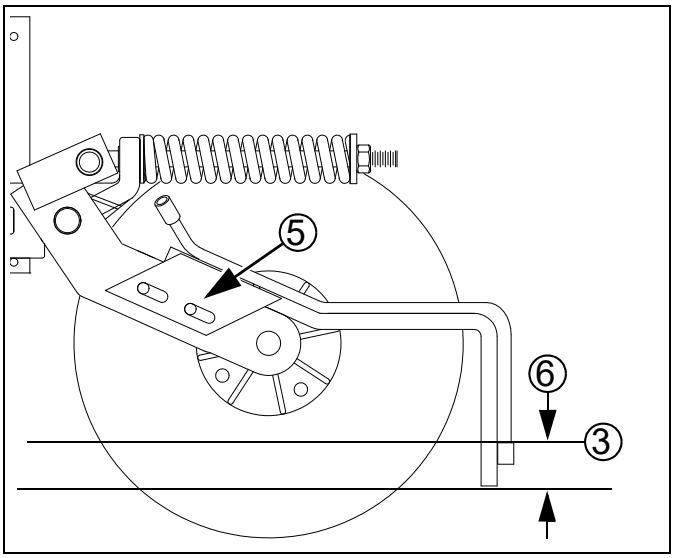


Figure 69 22951
Vantage I Applicator

25 Series Row-Unit Adjustments

Refer to Figure 70, which depicts a 25 Series row unit populated with most options supported on YP1225A & YP1625A (excepting scrapers and Seed-Lok®)

1. **Lock-Up Pin Storage Hole** (hole Standard)
   See "**Row Unit Shut-Off**" on page 74.
2. **Down-Pressure Cam** (Standard)
   Row units are mounted on parallel arms. This parallel-action mounting allows the row-unit to move up and down while staying horizontal. Springs add an adjustable force, set by the cam, to the row weight. See "**Row-Unit Down Pressure**" on page 64.
3. **Meter Pressurization Air Inlet** (Standard)
   Pressure-regulated air enters the meter here and holds seed in the disk pockets. See "**Fan and Meter Pressurization Adjustment**" on page 54.
4. **Seed Delivery Hose Inlet** (Standard)
   Air carrying the bulk seed is vented at the bottom of the air release cone. Gravity then carries the seed into the meter at the shutter ⑥. The hose is easily removed for inspection. There are no adjustments.
5. **Air-Pro® Seed Meter** (Standard, Choice of Disks)
   See "**Air-Pro® Meter Disk Installation**" on page 73.
6. **Seed Inlet Shutter** (Standard)
   This controls the level of bulk seed at the disk. There are four operating settings, plus fully open (clean-out) and fully closed (shut-off or storage). See "**Seed Inlet Shutter Adjustment**" on page 71.
7. **Side Gauge Wheel Depth** (Standard)
   The T-handle sets planting depth by controlling the height of the side gauge wheels relative to the opener discs. See "**Side Gauge Wheel Adjustments**" on page 69.
8. **Press Wheel Force, Angle, Stagger** (Standard)
   The press wheels close the furrow, gently pressing the soil over the seed to ensure good seed to soil contact for even emergence. See "**Press Wheel Adjustments**" on page 79.
9. **Row Unit Lock-Up Hole** (Hole Standard)
   Pins are standard on some models. With the row unit raised above level, the lock-up pin is inserted here. See "**Row Unit Shut-Off**" on page 74.
10. **Row Cleaner** (Option)
    Row cleaners clear trash from the row, to a depth set by an adjustment on the arms. See "**Unit-Mount Cleaner Adjustments**" on page 66.
11. **Unit-Mount Coulter** (Option)
    Coulters cut remaining trash and begin opening the seed furrow. Working depth is set by row depth and a mounting hole selection. See "**Unit-Mounted Coulter Adjustments**" on page 67.

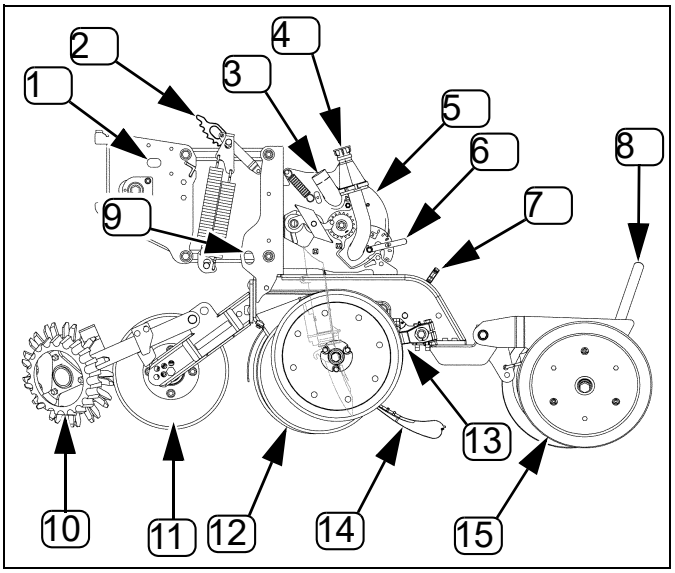


Figure 70 29600
25 Series Air-Pro® Row Unit

12. **Opener Discs** (Standard)
    Row-unit double disc openers create the seedbed furrow. They have adjustments for angle and spacing. See "**Row-Unit Opener Disc Adjustments**" on page 68.
13. **Scrapers** (Optional, not shown)
    Inside scrapers require no adjustment. For gauge wheel scrapers, see "**Adjusting Gauge Wheel Scrapers**" on page 70.
14. **Seed Firmers** (Seed Flap Standard, not shown)
    An optional seed firmer (Keeton® shown) minimizes seed bounce and improves soil contact. It may also deliver fertilizer. See "**Seed Firmer Adjustments**" on page 77.
15. **Press Wheel Type** (Choice)
    A variety of single and dual press wheel assemblies are available, some region-specific. Consult your Great Plains dealer.

Row-Unit Down Pressure

Row-unit springs provide the down pressure necessary for row-unit discs to open a seed trench. The springs allow the row-units to float down into depressions and up over obstructions. Springs also provide down force on coulters when using optional row mounted coulters.

You can adjust down pressure individually for each row-unit. This is useful for penetrating hard soil and planting in tire tracks. For best results always adjust tractor tires so they are not ahead of 30 in. or 70 cm rows.

Use only enough down pressure to cut the seed trench and maintain proper soil firming over seed. Excessive row-unit down force will lead to premature wear on row-unit components. Excessive down force will also cause uneven seed depth.

Refer to Figure 71 through Figure 73

To adjust down pressure, use $1^{1}/_{8}$ in. (29 mm) open end wrench or tool ① stored under the walkboard. Position wrench on nut ② and pull back and down. Move adjustment cam ③ to new setting. If using cast tool stored under the walkboard, be sure row unit is off the ground to fully relax springs.

Minimum and maximum settings are indicated by position of adjustment cam. Each notch on adjustment cam will increase the down pressure on the row-unit springs. Use the table below as a setting reference.

📖 Do not set all rows any higher than notch 4. Using settings above this on all rows will create uneven depth control and improper function.

Spring Down Pressure

Cam Notch	Pounds	Kilograms
zero (out of notch)	Lock-Up & Maintenance	
one	320	145
two	355	160
three	385	175
four	435	200
five	485	220
six	535	245
tip	Do Not Use	

Individual rows may be set higher if running in heavy tire tracks.

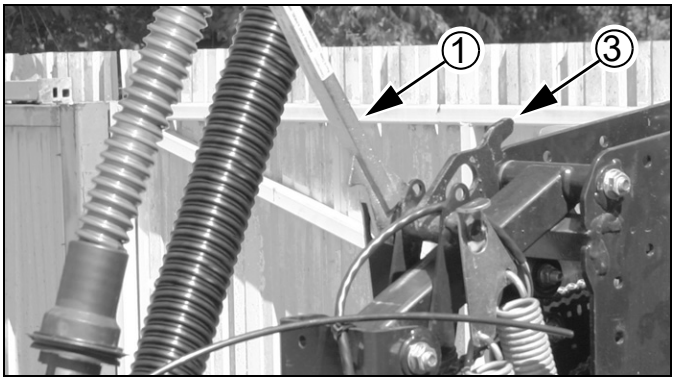


Figure 71 29605
Row Unit Cam Operation

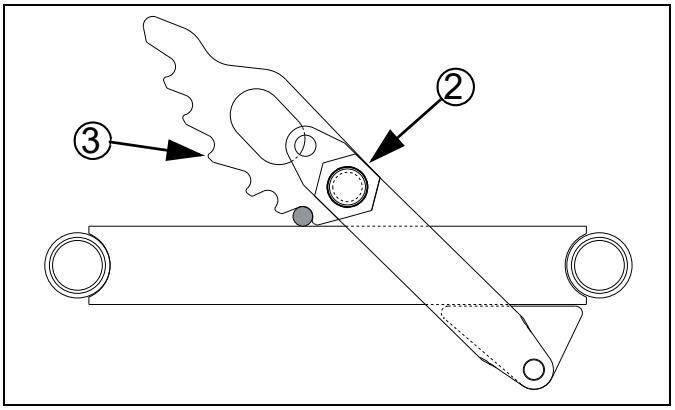


Figure 72 27065
Cam Minimum Setting (1)

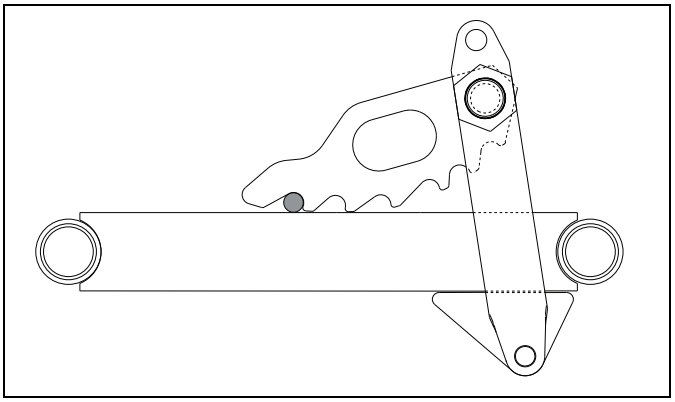


Figure 73 27065
Cam Maximum Setting (6)

Refer to Figure 74

The ideal amount of down-force causes the side gauge wheels to compress any loose surface soil, but not press a trench into subsoil.

To assess down-force, operate the planter for a short distance on typical ground (with or without seeding), and stop. Leave the planter lowered (row units in ground).

At several row units, inspect the furrow created by the opener discs, but prior to furrow closing by the press wheels.

🕮 Be sure to inspect rows both in and out of tire tracks.

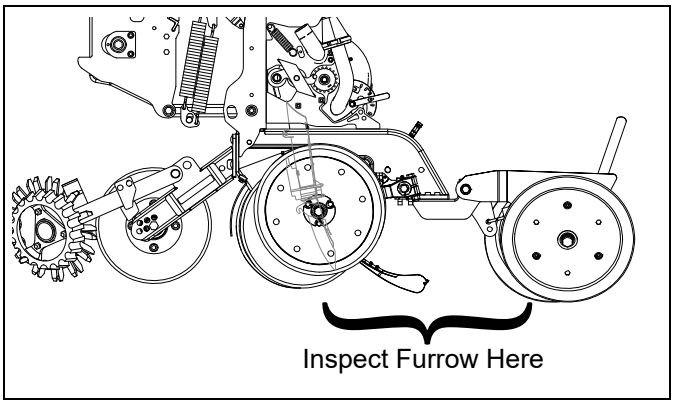


Figure 74: 25 Series: Checking Furrow 29600

Refer to Figure 75

1. If the side gauge wheels are leaving no tracks, or light tracks, increase down-force.
2. If the wheels are compressing trash and loose soil, and leaving clear tracks right at the top of the subsoil, down-force is probably correct and needs no adjustment.
3. If the wheels are creating a trench into the subsoil, down-force is too high and needs to be reduced.

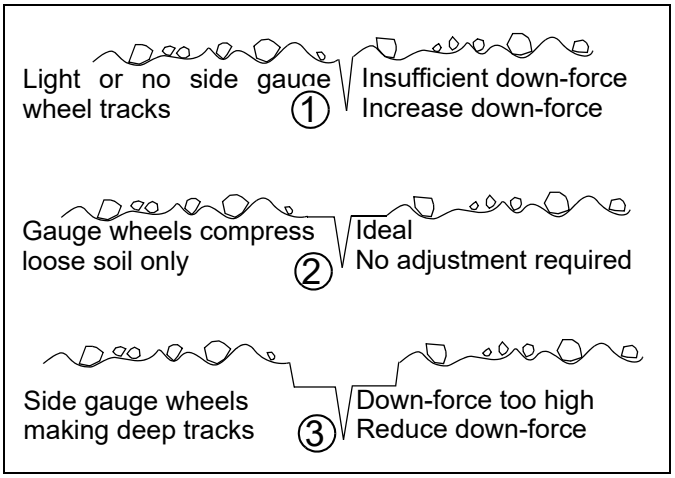


Figure 75: 25 Series: Assessing Down-force

Unit-Mount Cleaner Adjustments

Refer to Figure 76 and Figure 77

Optional Martin row cleaners are unit-mounted, using:
UMRC: Unit-Mount Row Cleaner (stand-alone), or
UMC-RC: Unit-Mount Coulter RC (on coulter bracket, with or without a coulter disc present).

There are two adjustments:

1. Wheel placement (forward or aft mounting hole, for more or less aggressive cleaning), and
2. Wheel height, adjusted by a stop. Cleaner arms float. The stop only sets the lowest position.

In UMRC mount, a pinned cross-tube ③ on the mount adjusts the depth. In UMC-RC (coulter) mount, a sliding down-stop block ⑥ adjusts how close to the ground the row cleaners operate.

The row cleaner needs to be adjusted for your conditions, crop changes, and as coulters and openers wear. Ideally, cleaners contact only the trash, and do not disturb the soil. If allowed to “dig”, row cleaners can reduce seed coverage.

Suggested initial depth is tine tips at ground level.

Make the adjustment with the planter raised. Install lift-assist cylinder locks. Also check bolt ⑤ tightness prior to each planting session, to avoid down-stop slippage.

To adjust the row cleaner:

1. Determine the height adjustment required. Measure from the lowest tine to the ground. Determine the desired new measurement.
2. Support most or all of the weight of the arm to prevent injury and ease the adjustment. Loosen bolts ⑤ on UMC-RC. Remove bent pin ② on UMRC.
3. Support arm at desired height.
4. UMRC: Slide adjustment tube ① until cross-tube ③ contacts arm at target height. Insert bent pin ② in whichever hole pair is most in alignment.
5. UMC-RC: Slide the down-stop ⑥ on the arm ④:
   - back toward the pivot for shallower cleaning, or
   - forward toward the tines for deeper cleaning.
   Tighten the bolts ⑤. Each possible hole pairing adjusts the tine height by about $^{3}/_{4}$ in. (19 mm).
6. Check the new height measurement.

Refer to Row Cleaner manual 204-085M-A for further information on use, adjustment and maintenance of row cleaners.

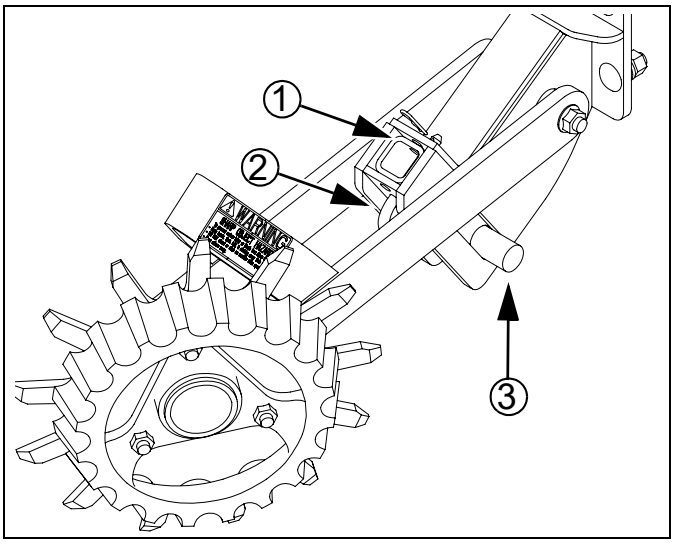


Figure 76 27308
UMRC: Cleaner Adjust

⚠CAUTION

Sharp Objects Hazard:
Wear hand protection when working in this area. Row cleaner tines, casting edges and coulter blades are sharp.

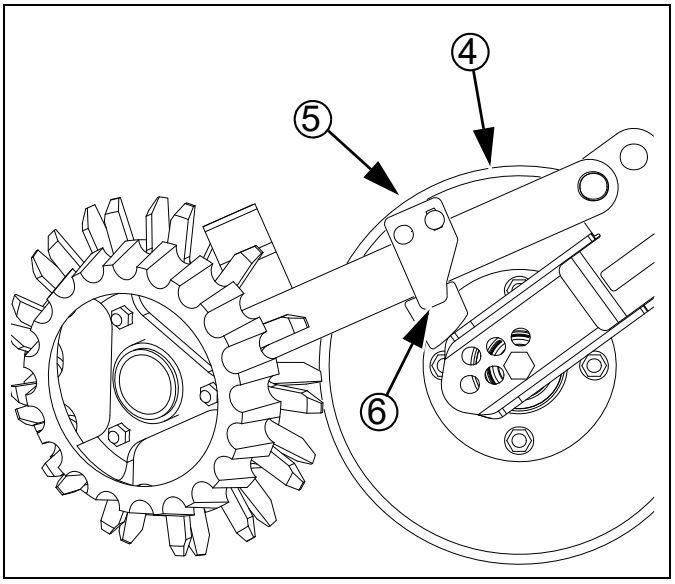


Figure 77 27343
UMC-RC: Row Cleaner Adjust

Unit-Mounted Coulter Adjustments

The ideal operating depth for coulters is $^{1}/_{4}$ in. (6 mm) above opener depth. Although they may have originally been set to this depth, coulter (and opener) blades wear with time, and may need adjusting.

Adjusting the coulter depth is accomplished by re-mounting the coulter blade in one of the six mounting holes arranged in a staggered pattern in the coulter bracket.

Refer to Figure 78 and Figure 79

Raise planter and install cylinder locks before working on coulters. Row unit may be fully lowered or locked up. Do not attempt to move blade when the current or new position causes it to contact the ground during adjustment. Be careful around the front end of row units. Row clear tines and coulter blades may be sharp.

To adjust coulter depth:

1. Dismount row cleaner (if present) to reduce risk of injury.
2. Determine the present opener and coulter depths.
3. Note which bracket hole the coulter is presently using.
4. Determine which new hole will position the coulter closer to the $^{1}/_{4}$ inch-above depth. See the table below. If none, don't move it.
5. Remove the $^{5}/_{8}$-11 x 4 in. bolt, lock washer and nut (⑦ in Figure 78).
6. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.

Hole Number	Depth of (new) coulter blade relative to (new) opener blades
②	1 in. (25 mm) above
③	$^{5}/_{8}$ in. (16 mm) above
⑤	$^{1}/_{4}$ in. (6 mm) above
①	0
④	$^{3}/_{8}$ in. (9.5 mm) below
⑥	$^{3}/_{4}$ in. (19 mm) below

7. Re-adjust openers, if installed.

If a worn coulter cannot be adjusted to satisfactory operating depth, replace coulter blade.

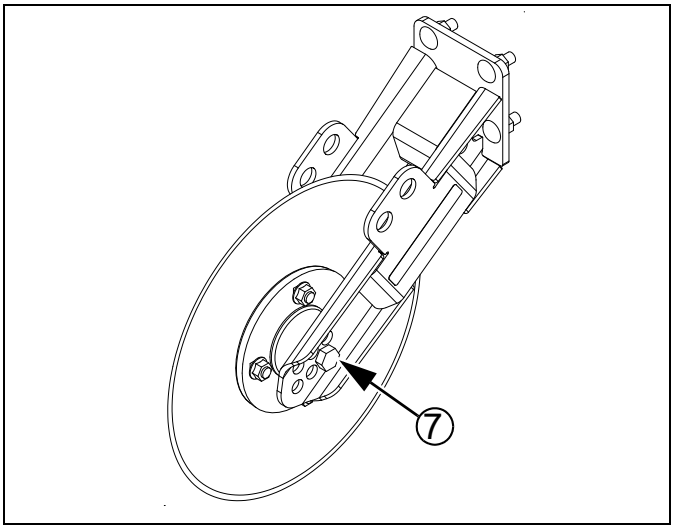


Figure 78 29124
25 Series Unit-Mounted Coulter

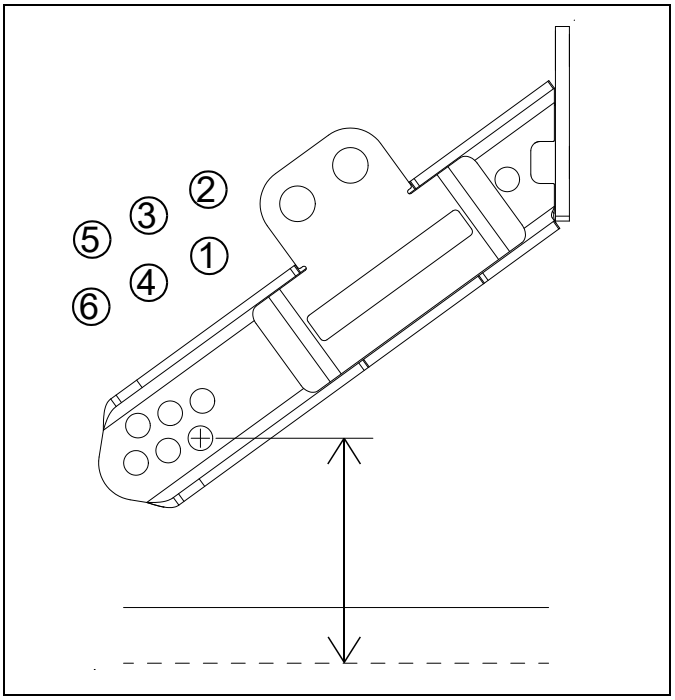


Figure 79 23288
Coulter Blade Mounting Holes

Row-Unit Opener Disc Adjustments

25 Series openers have three adjustments:

1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disc clearance

Setting Planting Depth

Refer to Figure 80

The “T” handle ① sets planting depth by limiting the how high the side depth gauge wheels ride relative to the opener discs. The position of the seed tube itself is fixed relative to the discs, and is not adjusted.

To adjust seed depth, pull the “T” handle ① up and back, move it forward or aft, and set it back in a different pair of holes in the scale.

- For shallower planting, move the “T” handle ① forward.
- For deeper planting, move the “T” handle ① back.

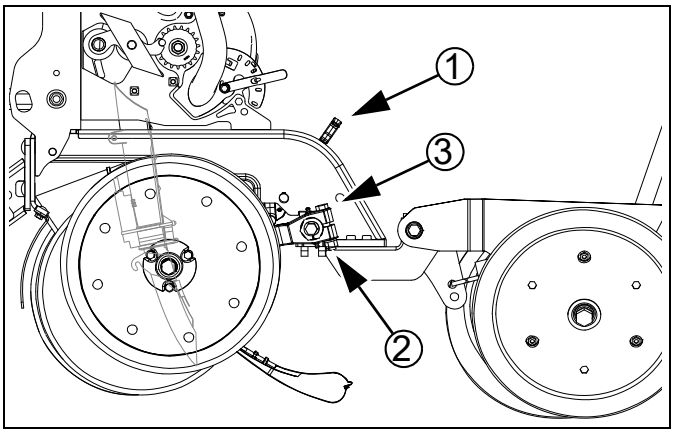


Figure 80 29600
Opener Adjustments

Opener Disc Contact Region

Refer to Figure 81

Opener disc angle and stagger is not adjustable, but disc-to-disc spacing is, and may need attention as discs experience normal wear. Spacers will need to be reset when blades are replaced.

The ideal spacing causes the blades to be in contact for about one inch ①. If you insert two pieces of paper between the blades, they should slide to within zero (touching) to $1^{3}/_{8}$ in. (3.8 cm) of each other. If touching, the gap between the blades should not be significantly greater than the thickness of two sheets of paper.

If the contact region is significantly larger or there is a large gap, it needs to be adjusted by moving one or more spacer washers.

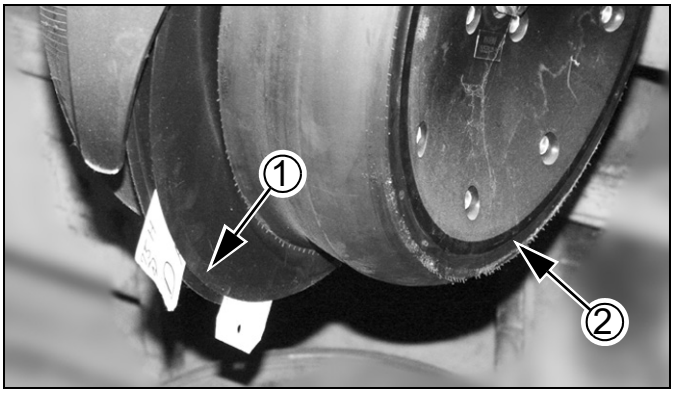


Figure 81 26127
Opener Disc Contact Region

Adjusting Disc Contact

Refer to Figure 81 and Figure 82

1. Raise the planter and install lift cylinder locks.
2. Remove the side gauge wheels ② on the row unit in need of adjustment.
3. Remove the bolt ③ retaining the opener disc ④ on one side. Carefully remove the disc. Do not lose the hub components and spacer washers ⑤, ⑥.
4. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside ⑤ to the outside ⑥ of the disc.
5. Reassemble and check disc contact.

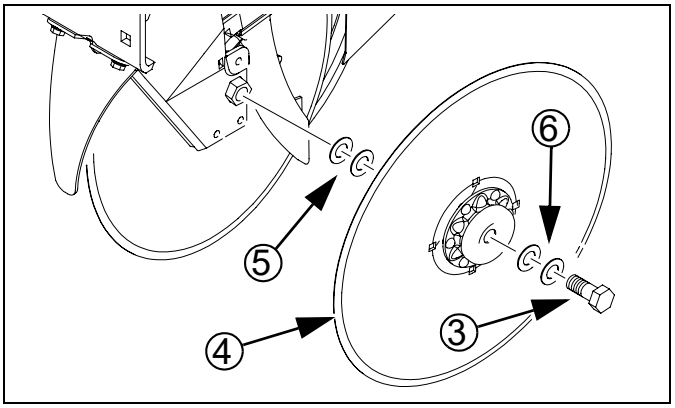


Figure 82 26128
Opener Disc Spacers

Side Gauge Wheel Adjustments

Refer to Figure 83

The side gauge wheels have two, interrelated adjustments:

- angle of side gauge wheel, and
- distance between side gauge wheels and discs.

Refer to Figure 84

Adjust side-gauge-wheel angle so wheels contact row-unit discs at the bottom of wheel at 2 in. planting depth and gaps open $^{3}/_{8}$ to $^{5}/_{8}$ in. (9.5 to 16 mm) at top. Check with row-units in soil so wheels are held up.

At the same time, keep side gauge wheels close to opener discs so openers do not plug with soil or trash. However, wheels should be out far enough so discs and wheels turn freely.

Refer to Figure 85

To adjust side gauge wheels:

1. Raise planter slightly removing weight from side gauge wheels.
2. Loosen hex-head bolt ①. Move wheel and arm out on o-ring bushing.
3. Loosen pivot bolt ②. Turn hex adjuster ③ so indicator notch ④ is at 5 o'clock to 7 o'clock.

🕮 Use this as the starting point for adjustment.

4. Move wheel arm in so side gauge wheel contacts row unit disc. Tighten hex-head bolt ① to clamp arm around bushing and shank.
5. Check wheel-to-disc contact at 2 in. (5 cm) planting depth. Lift wheel 2 in. (5 cm) and release. When let go, wheel should fall freely.

- *If wheel does not contact disc at bottom to area where blade leaves contact with soil*, move hex adjuster until wheel is angled for proper contact with disc.
- *If wheel does not fall freely*, loosen hex-head bolt ① and slide wheel arm out just until wheel and arm move freely. Tighten hex-head bolt ① per grade:

  $^{3}/_{8}$ in. Grade 5 bolt, 76 foot-pounds (105 N-m).

  $^{3}/_{8}$ in. Grade 8 bolt, 110 foot-pounds (150 N-m).

6. Keep turning hex adjuster and moving wheel arm until the wheel is adjusted properly. When satisfied, tighten pivot bolt ② to 110 foot-pounds.

🕮 Use "**End of "Appendix A - Reference Information".**" on page 148 for reference.

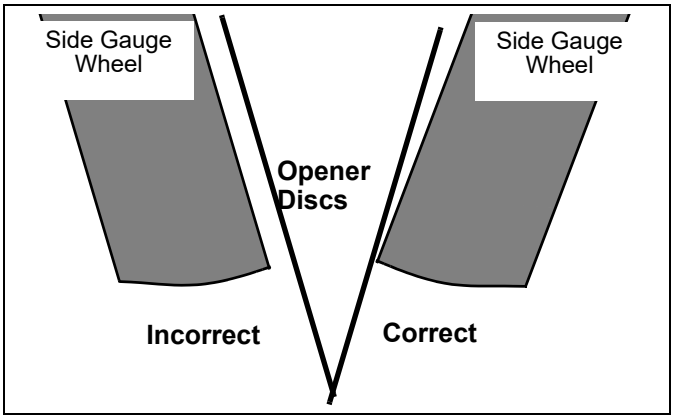


Figure 83
Disc/Gauge Wheel Alignment

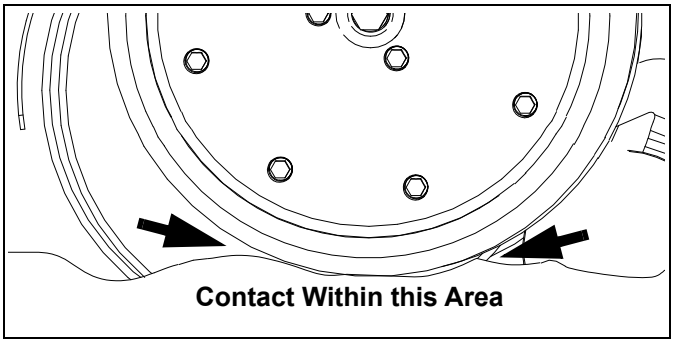


Figure 84 22531
Opener-Gauge Wheel Contact

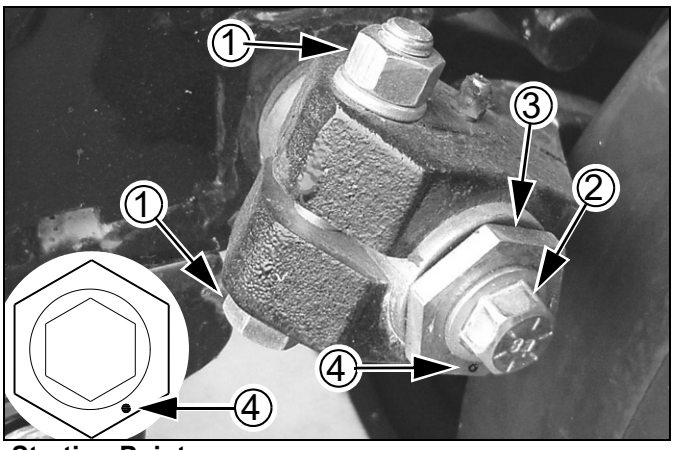


Figure 85 22524 22525
Disk/Gauge Wheel Adjustment

Adjusting Gauge Wheel Scrapers

Refer to Figure 86

Scrapers are optional, and may be useful in moist or sticky soils that tend to accumulate on gauge wheels and reduce intended planting depth.

To adjust scrapers:

1. Loosen nut ⑤.
2. Slide scraper ⑥ toward gauge wheel ⑦ until scraper touches tire.
3. Slide scraper ⑥ away from wheel ⑦ leaving a $^{1}/_{8}$ in. (3 mm) gap at ⑧.
4. Rotate scraper left and right around bolt, making sure it cannot touch tire if bumped in field. If it can touch tire, back scraper away from wheel until it cannot.
5. Center scraper angle on bolt ⑤ until gap ⑧ is constant.
6. Tighten nut ⑤.

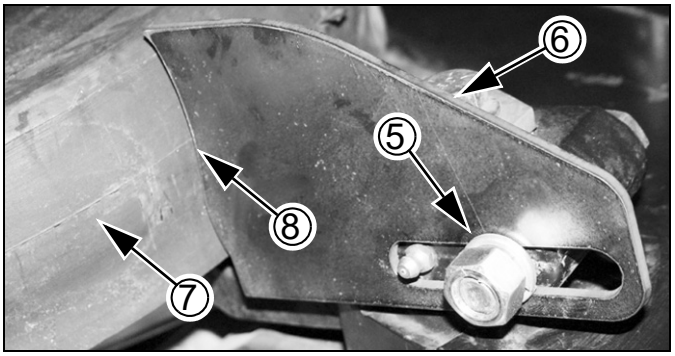


Figure 86 25273
Gauge Wheel Scraper Adjustment

Meter Adjustments

There are adjustments for seed inlet, and choice of disks. There are no other adjustments, in particular no brush adjustments, at the meter.

Meter Rain Cover

The rain cover keeps side winds from unseating seed in disk pockets. It also keeps precipitation, sunlight and field debris out of the meters.

Refer to Figure 87

To remove the rain cover, peel the flexible snap latches, at top ① and rear ②, away from the meter housing. Pivot the cover forward and down at tab ③ in slot.

When removing a cover, inspect it for damage and missing parts. If a cover does not have both latches, and an intact edge seal under the latches, the cover is apt to be lost during transport or field operations.

To replace a latch, temporarily remove the seal near the latch. Slide the replacement latch onto the cover lugs from the meter side, then snap the other end down over the lugs. Re-install the seal.

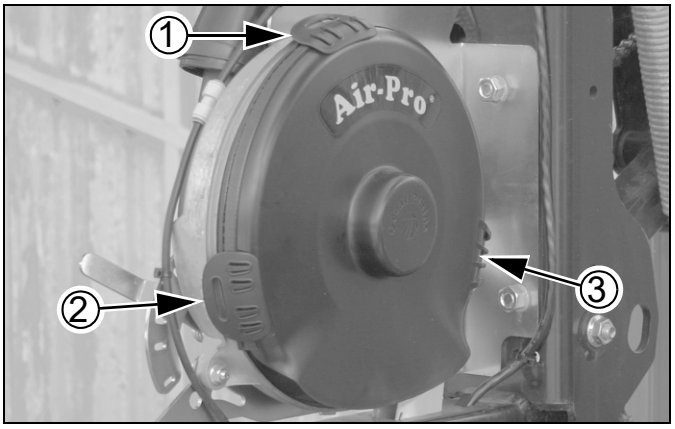


Figure 87 29606
Rain Cover Removal

Seed Inlet Shutter Adjustment

Refer to Figure 88 (showing the shutter at setting 3)

The seed inlet shutter regulates the volume of bulk seed presented to the seed disk. The operating settings vary with crop, seed size and treatments. The shutter also has settings for row shut-off (completely closed), and clean-out (wide open).

The Seed Rate Charts include suggested initial shutter settings. Refine these settings based on experience, and on inspection of the slope of the seed pool at the bottom of the seed disk.

The shutter is operated by a handle. Lift the handle away from the meter plate. Move the handle to half a setting higher than the new setting, then back to the new setting, and lower the pawl into that slot.

The table at right is a general summary of shutter settings.

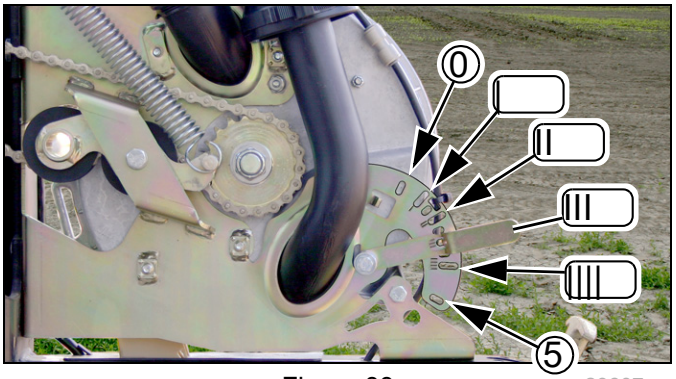


Figure 88 29607
Seed Inlet Shutter

Setting	Setting Typically Used For
Top (0)	Closed: Row Shut-Off, Meter Re-Fill
| (1)	Small seeds, such as Milo, with little or no treatments
|| (2)	Small treated seeds and edible beans (such as Soybeans)
||| (3)	Corn, round popcorn
|||| (4)	Large corn, or heavily treated corn
Bottom (5)	Wide Open: Clean-Out

Optimal Seed Pool Slopes

The optimal seed slope is one that results in the most consistent seeding, with minimal skips and doubles.

The column at right has photographs of pool slopes found to be optimal for representative seeds.

If the suggested initial shutter settings do not seem to be working for your seed, adjust the shutter to achieve specific reserve slope targets.

Refer to Figure 89

For medium size and smaller seeds that flow easily, the slope runs from just above the 8:00 (o'clock) position on the housing wall, forward and down to one or two seeds deep at the base of the rear strip brush ①.

Refer to Figure 90 and Figure 91

For medium size and larger, or heavily treated smaller seeds that flow less easily, the slope runs from at or slightly above the 8:30 (o'clock) position on the housing wall, forward and down to 3-6 seeds deep at the base of the rear strip brush ①.

In general, the seeds at the base of the strip brush need to be deep enough that no air escapes there, and so that just enough seeds are present to begin populating cells.

Keep the top left/rear end of the pool below the 9:00 o'clock position (meter horizontal center-line).

Meter Re-Fill

Once planting is underway with the seed pools set, it is infrequently possible for bridging at or above the inlet to starve the meter of seed.

A completely empty meter causes seed monitor "Row Failure" alarm, with a report of the row number[s] involved. Row numbers are counted from the left wing (outside row is row 1).

Stop, and put the tractor in Park. Leave the fan running. Locate the failed row, remove the rain cover, and verify that the meter is empty. Note the shutter setting. Temporarily open the shutter one of two notches wider. if the problem was inlet bridging, seed should flow into the meter immediately.

If inlet bridging is not the problem, little or no seed flows into the meter with the shutter open wider. In this case, the problem is further upstream in the seed flow, and may be bridging at the air release screen at the top of the meter. Close the shutter completely for about 15 seconds. This prevents meter pressurization air from opposing seed delivery air. The delivery air pressure usually collapses the bridge. Re-open the shutter and see if seed now fills the meter.

If no obvious foreign object was the cause of the bridging, the shutter setting may have been too small for the seed. Verify that this and other operating rows were at the correct initial shutter setting. If so, re-set the shutters to the next higher opening.

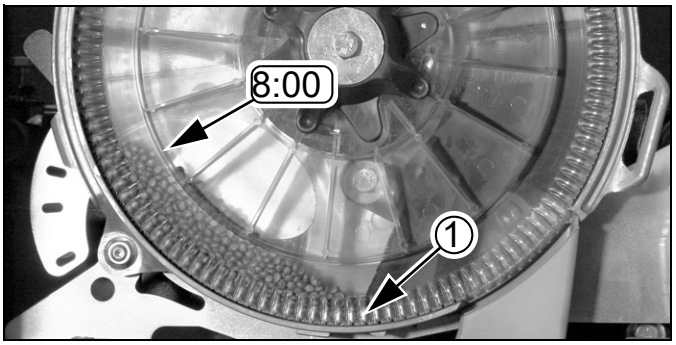


Figure 89 29602
Milo: Seed Inlet Shutter at: 1

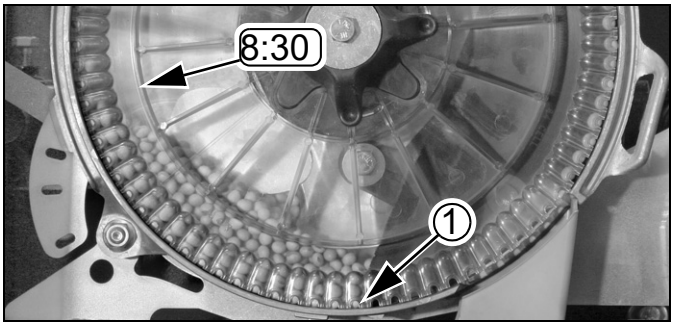


Figure 90 29604
Soybeans: Seed Inlet Shutter at: 2

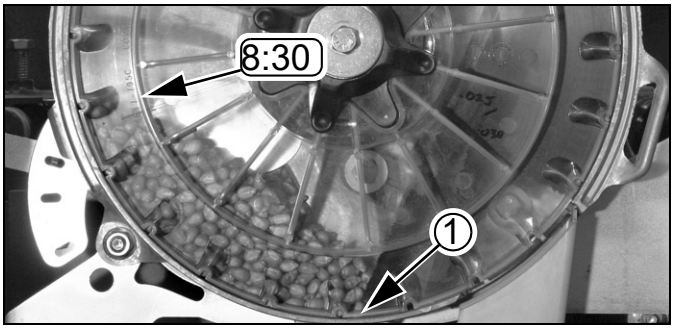


Figure 91 29603
Corn: Seed Inlet Shutter at: 3

NOTICE

Foreign Object Risk:
After clearing a bridge, or a delivery blockage upstream, check the seed pool at the meter for any debris that might have been the original cause. Remove such debris from the meter before planting. Don't run the risk of an object lodging in a seed pocket and causing on-going skips.

Air-Pro® Meter Disk Installation

1. Cross-check Seed Rate Chart data against part number/description molded into disks to be used.

NOTICE

Population Risk:
Use the same disk in all active rows.

2. Inspect disks to be installed. Do not install damaged or excessively worn disks. Either can cause irregular seeding. Chips and cracks accelerate brush wear.
3. Remove meter rain cover (page 71).

Refer to Figure 92 (depicting an empty meter)

4. Inspect meter (see page 96 for details).
5. Make sure clamp ① is aligned with seat ②.

Refer to Figure 93

6. With the seed pocket side facing the meter housing, place the new seed disk on the disk seat.
7. Rotate disk clamp ① clockwise 45° to clamp disk. Clamp seats into detents ③ in disk hub.

📖 On a new meter, or with new brushes installed, force the disk into the brushes to allow the disk clamp to rotate. This condition eases as the brush fibers are trained during initial rotations.

📖 With slightly used brushes, when a disk is first clamped, it is normal for the disk hub to be flat with the face of the disk seat only on the inlet (rear) side. The disk fully seats as it first turns. This condition eases as the brush fibers receive further use.

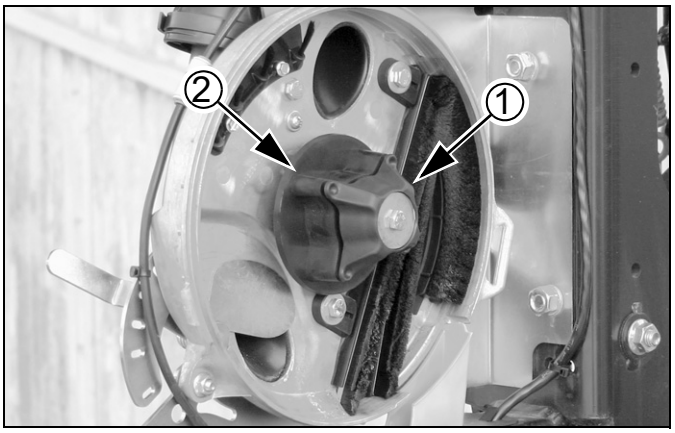


Figure 92 29608
Disk Removed From Meter

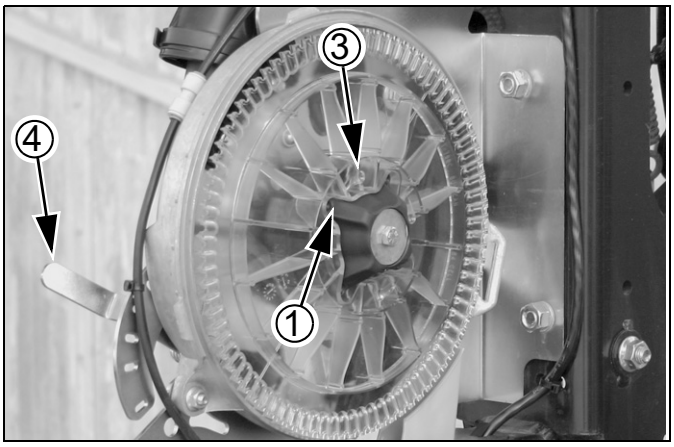


Figure 93 29611
Disk on Clamp and Seat

NOTICE

Brush Mis-Seating Risk:
Rotate disks forward shortly after disk installation. If planting is not anticipated within an hour or two of disk installation, rotate the drive system a few turns to ensure that meter brushes lean in the correct direction. Correct lean improves meter performance and reduces air consumption. This step is particularly important for new brushes.

Brush seating may be accomplished with or without seed present, and may be combined with “FILL DISK”. See step 9 on page 54.

8. Reset seed inlet shutter ④ to setting recommended by Seed Rate Chart, or to your own developed value.
9. On the seed monitor console, select the new Material, seed disk Cell Count, and target population.
10. Reinstall rain cover (page 71).

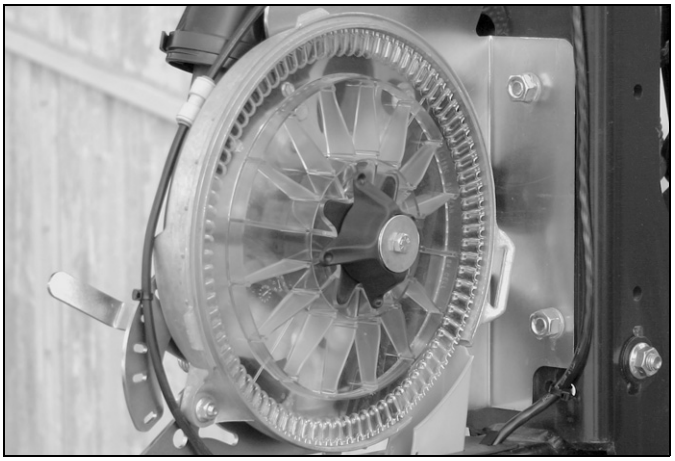


Figure 94 29614
Disk Clamped

Removing a Seed Disk

Refer to Figure 95

1. Remove rain cover. If seed is present, close shutter ④ to prevent more seed from entering meter. Attach funnel (page 94).
2. Hold seed disk in meter. Rotate disk clamp ① counterclockwise 45° to release disk.
3. Tilting top of disk toward meter, slowly remove disk, allowing seed to collect in funnel. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean disk seat (② in ***Figure 92*** page 73), so that new disks can seat fully. Inspect brushes for excess wear and damage. See "**Meter Brush Maintenance**" on page 96.
5. Inspect removed disks for excess wear and damage. Set aside any disks requiring replacement. Clean other removed disks and place in storage. See "**Seed Disk Maintenance**" on page 98.
6. Reinstall the rain cover (page 71).

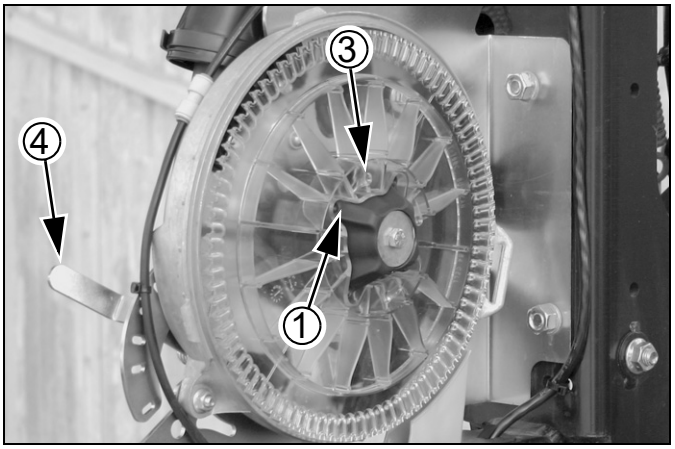


Figure 95 29611
Remove Disk

Row Unit Shut-Off

Skip-row operations, such as planting from every other row when switching from 30 inch twin-row to 30 inch single-row, requires shutting down unused rows.

Shutting off seeding at a row involves 4 to 7 steps:

1. Identify the rows to shut off.
2. Fully close seed inlet shutter (always done).
3. Replace seed disk with blank disk (always done).
4. Close seed flow to row at Y-tube (if present).
5. Lock up row unit to reduce wear (optional).
6. Reset marker extension (if used, page 158).
7. Reset monitor active row pattern and row spacing to avoid nuisance alarms (always done).

📖 Meter drive is not disabled on 25AP row units during shut-off.

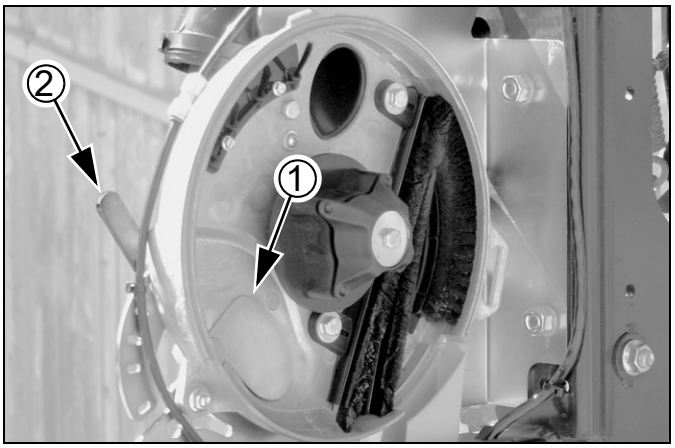


Figure 96 29609
Seed Inlet Shutter Closed

1. Identify Rows to Shut Off

On twin-row planters, openers are installed with short and long opener mounts. If locking up unused rows of a twin-row planter, shut off the front (short mount) rows.

On single-row planters with mid-length mounts, any rows may be locked up.

2. Close Seed Shutter

Refer to Figure 96 on page 74

Lift the handle ② away from the plate. Move it to the top position, and release the handle into the notch.

Closing the shutter ① prevents meter pressurization air from leaking into the bulk seed air system, resulting in lower pressures in adjacent rows, with risk of skips.

The shutter also stops seed flow from a row as soon as the meter is empty. Bulk seed flow to the row falls to nil as soon as the seed backs up to the air release vent at the top of the meter. If the row is served by a Y-tube, the Y-tube also needs to be shut off for the row (step 4).

3. Install Blank Disk

Refer to Figure 97

Clean out meter. See "**Meter Clean-Out**" on page 94. Remove seed disk and install blank disk. See "**Air-Pro® Meter Disk Installation**" on page 73.

Blank disks (part number 817-841C) are essential in row shut-off, both to maintain consistent meter back-pressure to meter pressurization and to prevent wear on a seed disk.

Blank disks are engineered to simulate a seed disk with seed in all pockets. Blanks are particularly important on the rows with lines to the pressure chamber.

4. Close Y-Tubes

Refer to Figure 98

If any shut-off rows are served by a Y-tube, close the valve for the branch to that row. Rotate the valve cap until the indicator/handle is perpendicular to the tubes.

Closing the Y-tube prevents seed from entering an unused hose, reducing waste and simplifying clean-out.

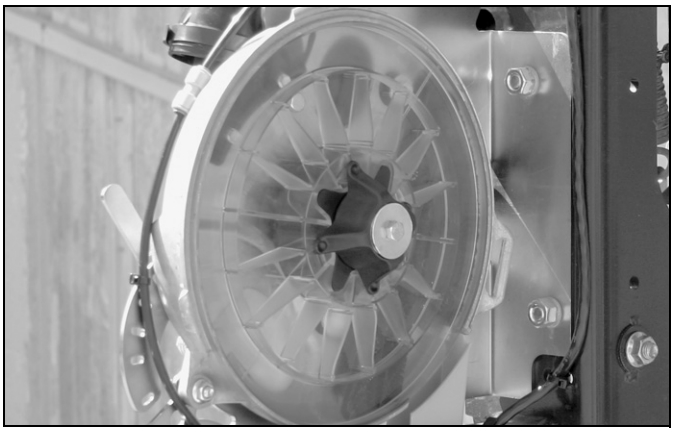


Figure 97 29610
Shutter Closed, Blank Disk Installed

NOTICE

Irregular Seeding Risk:
Always use a blank disk in a shut-off row. Operating with no disk, or with a seed disk but no seed, destabilizes the regulated airflow, particularly at rows with pressure sensor lines.

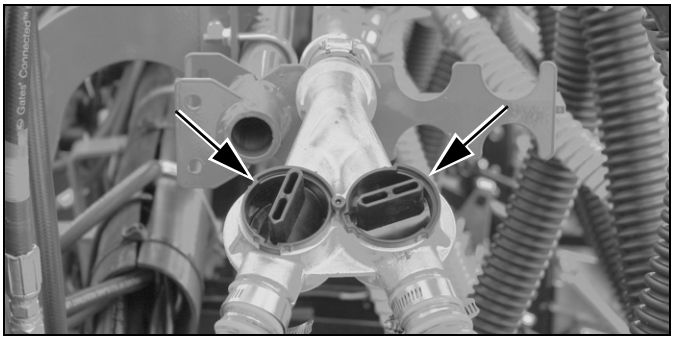


Figure 98 29758
Y-Tube Open and Closed

5. Lock-Up Row

NOTICE

Machine Damage Hazard:
Do not lock up the rear rows on a twin-row YP1225A or YP1625A planter. They will strike other machine components in folding, and be damaged.

Alternate twin-row units (the front units) can be pinned in the up position to accommodate single-row spacing.

Refer to Figure 99

The lock-up pins ① for each front row unit are located in a storage hole ② in the row unit mount. To lock up a unit, the unit must be raised, and the pin moved to the lock-up hole ③ in the row unit shank.

🕮 If you lose a pin, the replacement part number is 805-033C

1. Raise the planter. Although this adjustment can be made with the planter lowered, the springs will be in tension, and will require more effort. The extra force may also damage tools.
2. Install lift assist cylinder locks. Lower parking stands.
3. Set the down pressure spring cam to zero, per the instructions on page 64.
4. Raise the row unit high enough that the hole for the pin is above the lower parallel arm. This can be done in several ways, including:
   a. use a hoist at the rear of the shank ④
   b. use a jack under the shank extension ⑤

CAUTION

Crushing Hazard:
Use a jack or hoist. Raising a row unit on a block by lowering the planter is risky. The potential for hydraulic failure creates a safety hazard. Full lowering can damage components.

Refer to Figure 100

5. Remove the pin from the storage hole ② and insert and secure it in the lock-up hole ③.
6. Lower row unit until lock-up pin rests on lower parallel arm.

NOTICE

Certain Machine Damage:
Do not pin the row unit while it is in the lowered position. If the pin is inserted below the parallel arm, unit damage occurs as soon as planting begins.

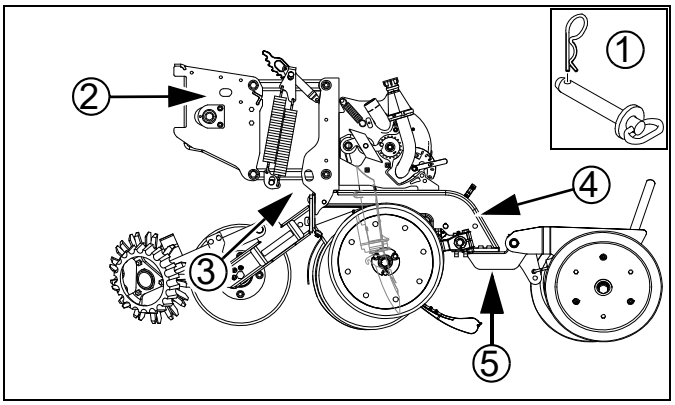


Figure 99 25269 29600
25AP Row Unit Lock-Up Pin

WARNING

Crushing and Sharp Object Hazards:
Do not attempt to lift a row unit by hand. The weight of the unit, plus the force of the springs (even at minimum) is too great (plus, a free hand is needed for pin insertion). Even with multiple people lifting, hand-lifting is unsafe - there are numerous sharp edges, and the row unit snaps down violently if a grip is lost.

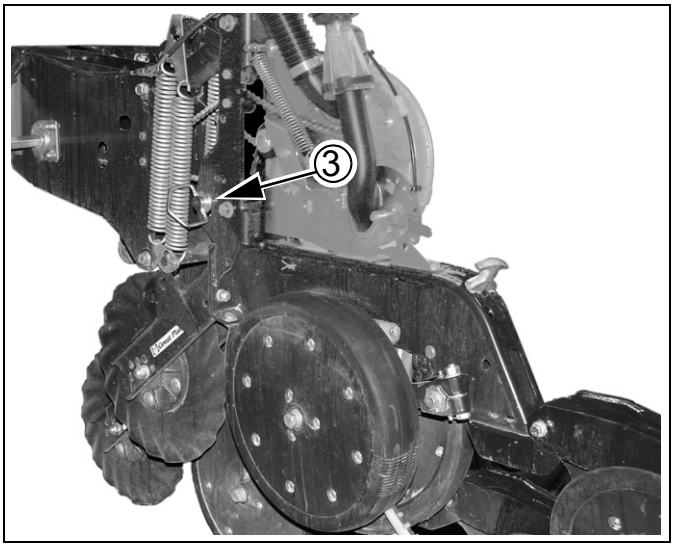


Figure 100 29756
25AP Row Unit Locked Up

Seed Firmer Adjustments

25 Series row units accept one of two optional firmers.

CAUTION

Sharp Objects Hazard:

Row unit disc blades may be sharp. Use caution when making adjustments. To adjust the Keeton® Firmer, lower the planter until the discs of the row units are resting on the ground.

Keeton® Seed Firmer Adjustment

The optional Keeton® Seed Firmer is an engineered polymer shape that slides down the seed trench. It traps seeds as they exit the seed tube and firms them into the bottom of the furrow.

Refer to Figure 101

The Firmer is provided with a preset tension which is recommended for using the first year. The tension screw ① can be tightened in subsequent years according to your needs. Firmers should provide just enough tension to push seeds to the bottom of the trench.

Measure the distance from the ground to the head of the tension screw. This distance should be 4 to $4^{3}/_{8}$ in. (10.2 to 11.4 cm). If not, loosen the bolts in the mounting bracket and select different holes until the proper measurement is attained.

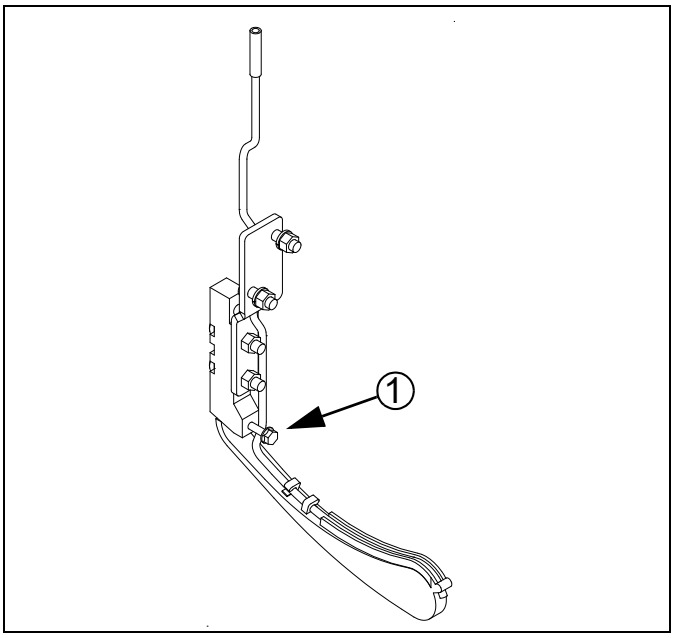


Figure 101 20327
Keeton® Seed Firmer

Seed-Lok® Seed Firmer Lock-Up

Optional Seed-Lok® firming wheels provide additional seed-to-soil contact. The wheels are spring loaded and do not require adjusting. In some wet and sticky conditions the wheels may accumulate soil. To avoid problems associated with this, you can lock-up the firmers.

Refer to Figure 102 (which depicts a row unit with discs, side depth wheels/arms and press wheels removed for illustrative purposes - removal is not necessary for lock/unlock)

To lock up Seed-Lok® wheels:

1. Raise planter. Insert lift assist cylinder locks.
2. Lift Seed-Lok® lock-up handle ① until lever stop ② is free to rotate.
3. Rotate lever stop to side/idle position ③. Release lock-up handle ①.
4. Push up on Seed-Lok® wheel ④ until wheel arm latches up ⑤.

To release a locked-up Seed-Lok®:

1. Insert a $^{1}/_{4}$ in. tool drive tip in the tool hole ⑥ of the handle ①. Alternatively, lift up on the wheel ④.
2. Rotate the handle clockwise (handle arm up) until the Seed-Lok® wheel releases at the latch point ⑤ and falls free.
3. While holding the handle up, rotate the raised portion of the lever stop ② under both sides ② of the handle at the arm end. Remove the tool.

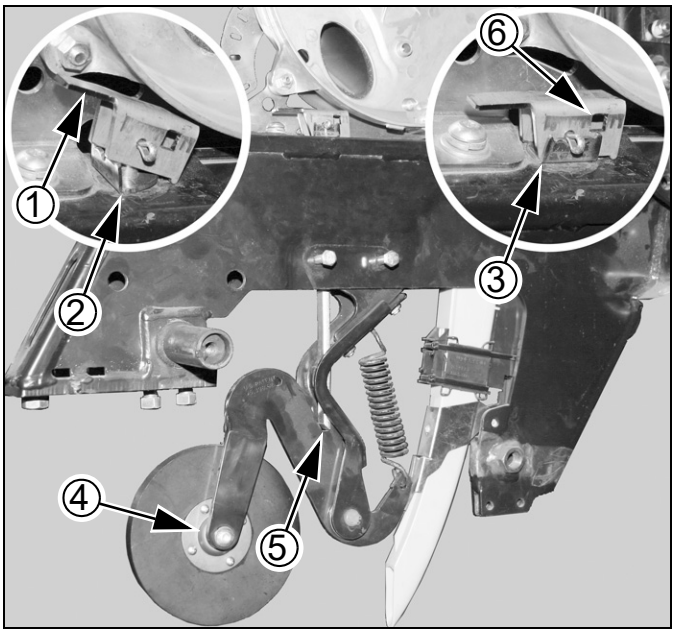


Figure 102 31543
Seed-Lok® Lock-Up

📖 Engage the lever stop under the handle ② when Seed-Lok® is in use. If left disengaged ③, a furrow obstruction could cause unintended lock-up.

Seed-Lok® Seed Firmer Lock-Up (older style)

Optional Seed-Lok® firming wheels provide additional seed-to-soil contact. The wheels are spring loaded and do not require adjusting. In some wet and sticky conditions the wheels may accumulate soil. To avoid problems associated with this, you can lock-up the firmers.

Refer to Figure 103

To lock up Seed-Lock wheels:

1. Raise planter. Insert lift assist cylinder locks.
2. Rotate Seed-Lok® lock-up handle ① 90° down on top of row unit body.
3. Push up on Seed-Lok® wheel ② until wheel arm latches up.

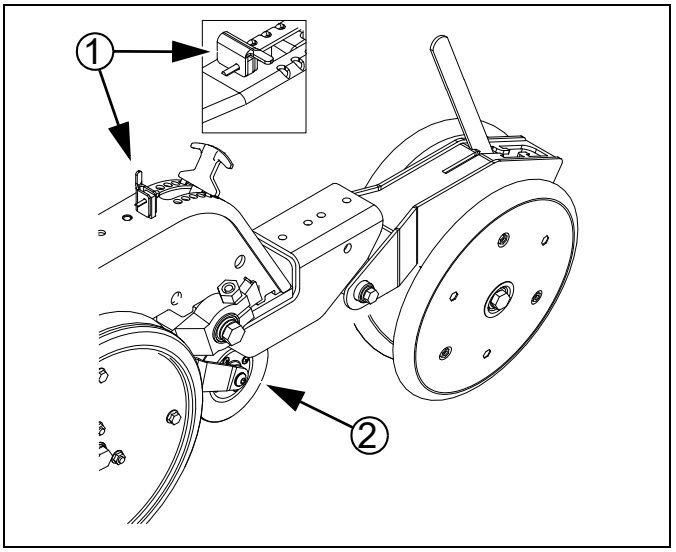


Figure 103 22909
Seed-Lok® Lock-Up

Press Wheel Adjustments

Attached to the rear of each row-unit is one of several press wheel options.

To provide consistent seed firming, the press wheels are free to move downward from their normal operating position. This system maintains pressing action even if the row-unit arm is lifted when the discs encounter obstructions.

Refer to Figure 104

Press wheels are attached to each row-unit body. The press wheels close the seed trench and gently press soil over seed.

An adjustable spring in the press wheel mechanism creates the down pressure needed to close the seed trench. The amount of force needed will vary with field conditions.

To adjust, move adjustment handle.

- For less down pressure, move handle forward toward planter.
- For more down pressure, move handle back away from planter.

📖 Increased press wheel spring force may require increased row-unit down force to maintain depth.

📖 The factory setting on the press wheel is staggered to achieve optimum residue flow.

Refer to Figure 105

To adjust press wheels from staggered to even, remove $^{5}/_{8}$ in. bolt ①, and lock washer ③. Reinstall spacer ④, press wheel ⑤ and hardware to the other hole location.

Press Wheel Centering

If one press wheel is running in the seed trench, or the wheels are not centered over the trench, the angle ⑦ of the press wheel assembly can be adjusted as follows:

Refer to Figure 106

1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
2. Raise planter and install lift assist cylinder locks. See "**Important Safety Information**" on page 1.
3. Loosen the $^{3}/_{8}$ inch hex-head bolts ⑧ and ⑨.
4. Turn the hex head cam ⓒ under the forward hex head jam bolt ⑨, and move the required amount.
5. Tighten both hex-head bolts ⑧ and ⑨.

If press wheel adjustments do not provide satisfactory furrow closing, your conditions may require alternate press wheels. A variety of wheel assemblies are available. Consult your Great Plains dealer.

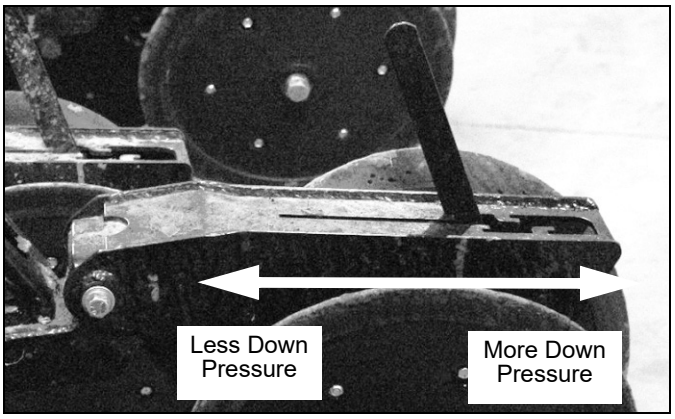


Figure 104 21948
Press Wheel Adjustment

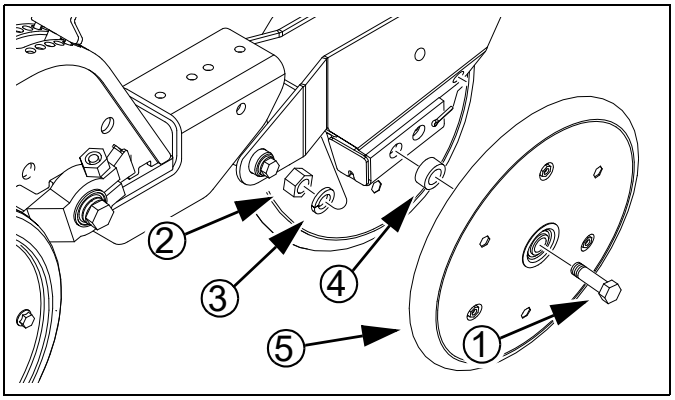


Figure 105 22907
Press Wheel Stagger

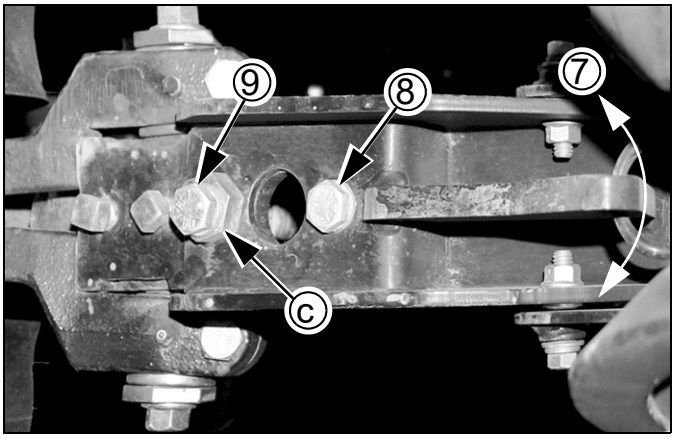


Figure 106 25277
Press Wheel Centering
(View from beneath opener)

📖 Do not loosen the two forward bolts.

Troubleshooting

Planting Rate Problems

When starting up with a new planter, a new crop or a new population it is important to physically double check what the monitor is reporting in the cab by digging seeds. This is to verify that you are set up correctly to plant the desired population. Do not rely solely on the population reported by the DICKEY-john® monitor.

Also during start up it is common to encounter alarms and readouts on the DICKEY-john® console that don't seem to make sense. It is critical to troubleshoot these alarms not only to make sure the planter drive is set properly to hit the target population, but also to fix incorrect entries in the DICKEY-john® monitor to eliminate nuisance alarms.

Before entering the troubleshooting charts to remedy a monitor or population problem, it is helpful to use the following flowchart to get a handle on what may be wrong. The basis for finding what is wrong comes from knowing exactly what the planter is actually doing in the soil. Always dig or observe seed on the ground when checking populations.

For seed monitor issues, see also the DICKEY-john® Planter/Drill Control User Manuals, "**TROUBLESHOOTING & ALARMS**" section.

Suggested Furrow Check:

Plant a short distance and dig seeds, or run with the closing wheels wired up to leave an open seed trench.

Based on seeds found, determine an average distance between seeds. Compare the distance between seeds to the seed spacing listed in the charts for your population. This is listed as "inches per seed".

1. Is the spacing on the ground correct?	No:	Check the ground drive transmission and range sprocket selections, or the population settings on a hydraulic drive unit. See also "**Population Too Low**" or "**Population Too High**" in the troubleshooting charts.
	Yes:	Go to step 2.
2. Is the reported population $^{3}/_{8}$ the actual or is the reported population too high by a factor of 2?	No:	Go to step 3.
	Yes:	An incorrect row spacing value entered in the seed monitor can cause this. Example: 15 inches instead of 30 inches. Correct the row spacing error on the DICKEY-john® console. The system can also be off by a large factor if incorrect range sprockets are installed. Check seed rate charts against range and transmission sprockets on the planter.
3. Is the population on the screen close to the target population?	No:	Check seed rate charts against transmission sprockets selected. See "**Population Too Low**" or "**Population Too High**" in the troubleshooting charts.
	Yes:	If slightly under, see "**Population Too Low**" if slightly over, see "**Population Too High**".

Seed Pool Troubleshooting

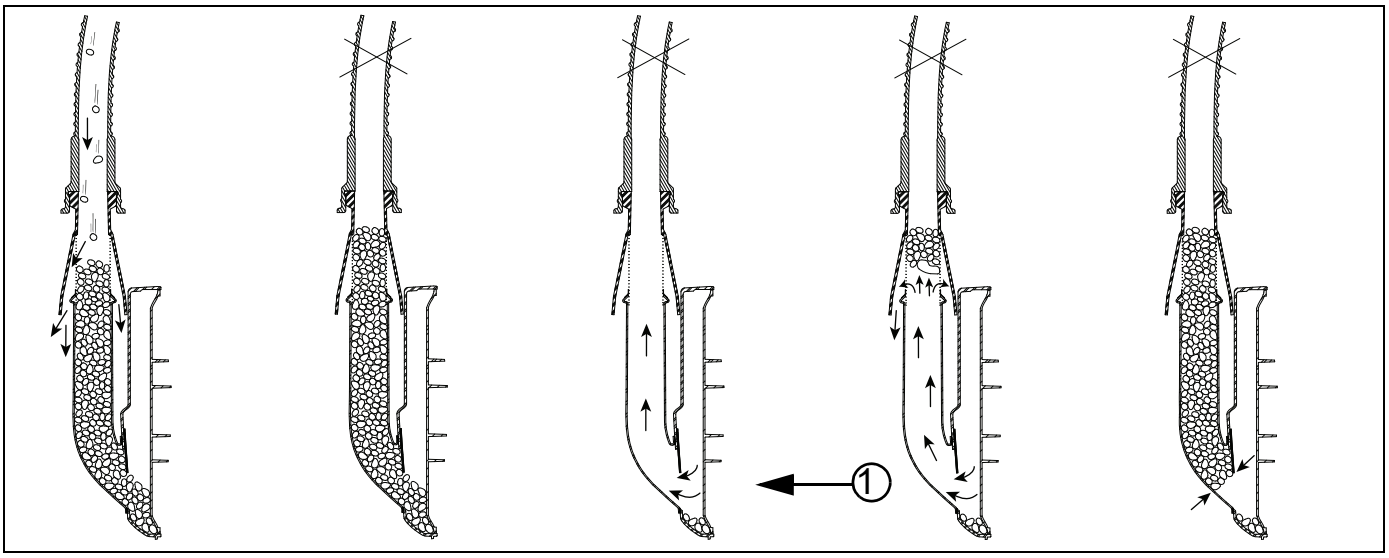


Figure 107 29743
Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions

Normal: Filling	Normal: Filled	Delivery Blockage or Back-flow Starvation	Bridging: Screen	Bridging: Shutter
Seed pool at shutter prevents back-flow of meter pressurization air, allowing seed to flow from delivery system, filling inlet to top of air release screen.	Once inlet is filled to top of air release screen, air flow from the delivery system is blocked. No further seed arrives until planting reduces the backlog at the inlet.	No seed arriving from manifold. Air back-flow ① is occurring. Causes may include: • low fan speed • seed hose blockage • no seed available • Y-tube closed • meter never primed	Oversize matter in seed has caused a bridge at the top of the inlet. Air back-flow ① is occurring. When the bridge is released, the seed pool will be insufficient to prevent back-flow.	A bridge at the shutter is blocking flow. Causes may include: • oversize seed • shutter setting too low • oversize matter in seed
Actions:	**Actions:**	**Actions:**	**Actions:**	**Actions:**
No action required. Continue Planting.	No action required. Continue Planting.	1. Correct cause of blockage. 2. Perform a one-row seed pool recovery (page 82). 3. Resume planting.	1. Close shutter. 2. Disconnect hose at meter. 3. Tap on screen cone and inspect. 4. Check seed pool for foreign matter. 5. Perform a one-row seed pool recovery (page 82). 6. Resume planting.	1. If shutter was at suggested opening, increase one notch. 2. Check seed pool for foreign matter. 3. Resume planting.

Seed Pool Recovery

When a meter has been starved of seed, back-flow of air through the open shutter reduces delivery air flow. This causes seed delivery to be slow. If you start or resume planting with an empty seed pool, the delivery flow may be too low to keep the meter supplied. The steps below quickly “prime” the meter by rebuilding the seed pool.

Refer to Figure 108 (which depicts a recovery after an incidence of bridging at air release screen)

1. Close the shutter ①. This stops the air back-flow.
2. Clear the bridge ② or blockage that caused the meter to run empty.
3. With the fan running, listen for seed ③ to fall into the inlet.
4. Wait for seed fall ④ to taper off and stop.
5. Open the shutter ⑤ to the operating setting.
6. Start or resume planting.

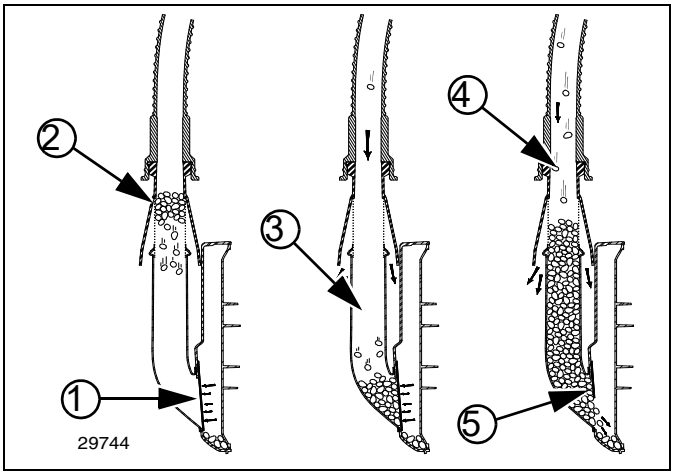


Figure 108 29744
Seed Pool Recovery

Population Troubleshooting Charts

Population Too Low

Problem	Cause	Solution
Overall Low Population	Incorrect seed rate	Check seed rate charts
	Ground Drive only: Incorrect Transmission sprockets or shafts used	Check Transmission sprocket tooth counts and Driver/Driven locations.
	Ground Drive only: Incorrect Range sprockets or shafts used	Check Range sprocket tooth counts and Driver/Driven locations.
	Empty pockets on disk (skips) due to insufficient air pressure.	Increase the controlled air to the meter. See “**Fan and Meter Pressurization Adjustment**” on page 54.
	Empty pockets on disk (skips) due to sticky seed treatments not allowing seed to rapidly fill the pockets.	Increase seed lubricant.
	Empty pockets on disk (skips) due to rough field conditions causing seeds to fall from the disks.	Decrease field speed or increase the air pressure in the meter.
	Empty pockets on disk (skips) due to seed pool too low, and seeds are not filling every pocket on the disk.	Open shutter one notch.
	Empty pockets on disk (skips) due to disk speed too high, and pockets are not filling.	Decrease field speed or change to a higher cell count disc.
	Empty pockets on disk (skips) due to singulation (4 tufted) brush too aggressive.	Check for matted, stuck together fibers. Wash, scrape clean, or replace as needed.
	Empty pockets on disk (skips) due to seed too big for pocket.	Select the correct disk for the seed size.
	Seeds are not falling from disk, and get carried past drop zone. Static electricity can cause small, lightweight seeds to cling to the pocket and not fall out.	The graphite component of Ezee Glide Plus addresses this issue. Increase the amount of Easy Glide Plus and/or more thoroughly mix the lubricant into the seed.

Population Too Low

Problem	Cause	Solution
Overall Low Population (cont.)	Air pressure too low, false information driving the DICKEY-john® software.	Compare the air pressure reported on the monitor console to the mechanical gage. If they do not match: • Inspect the $^{1}/_{4}$ inch sample lines from the row units up to the sensor chamber for leaks. • Make sure all non-planting rows have blank disks. • Re-zero the air pressure with the fan off.
	Low fan speed: meter starvation due to meter pressurization, leaving insufficient air for seed delivery	Increase fan speed.
	Leaking meters in split row: meter starvation due to meter pressurization leaving insufficient air for seed delivery	Install blank disks and close shutters on unused rows.
	Inadequate contact wheel spring pressure	Check for correct spring and gap setting, page 53.
	Air pressure in contact wheel incorrect	Check for correct tire air pressure, page 134.
	Excess field speed	Plant within speed ranges recommended in seed rate charts.
	Improper gap on speed sensor.	Check speed sensor on planter for $^{1}/_{16}$ inch to $^{1}/_{8}$ inch (1.6 to 3.2 mm) gap from wheel. Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.
	Incorrect speed sensor constant	Perform speed calibration per DICKEY-john® monitor manual.
Low Population, One Wing	Ground Drive only: LH and RH Range setup not matched.	Make sure LH and RH Range settings are identical, and that sprockets are on proper DRIVING/DRIVEN shafts.
	Ground Drive only: LH and RH Transmission setup not matched.	Make sure LH and RH Transmission settings are identical, and that sprockets are on proper DRIVING/DRIVEN shafts.
	Clutch slipping, due to contaminants in clutch, or wear	Lock-up clutch (page 41) until it can be overhauled or replaced
	Skipping chain from drive to wing	Check chain slack. Replace worn chain.

Population Too Low

Problem	Cause	Solution
Low Population, Single Row	Shutter opening too wide - interfering with meter pressurization	Adjust shutter to lower setting.
	Shutter opening too narrow - starving meter of seed (low seed pool)	Adjust shutter to higher setting.
	Y-tube partially or completely closed, reducing bulk flow to meter or causing bridging	Open Y-tube for row
	Meter starvation due to bridging at shutter	Readjust for shutter bridging (page 72). If seed is treated, increase seed lubricant.
	Meter starvation due to bridging above inlet, caused by low seed delivery air flow	Clear bridge (page 72). Check that seed delivery system is getting sufficient fan air, and that there are no other obstructions upstream.
	Meter starvation due to bridging above inlet, caused by high levels of seed treatment	Clear bridge (page 72). Increase seed lubricant.
	Skips due to low meter pressurization at one or several rows	Check shutter setting. Check for excess wear on seed drop brush. Check for loose or leaking pressure hose.
	Skips due to skipping chain	Check for worn chain, worn idlers, and low chain slack (page 103).
	Skips due to debris in disk pockets	Remove rain covers. Inspect and clean out disks.
	Row has blank disk installed	Replace with seeding disk.
	Seed sensor obscured	Clean out seed tube (see page 95).

Population Too High

Problem	Cause	Solution
Overall High Population	Incorrect seed rate	Check seed rate charts
	Ground Drive only: Incorrect Transmission sprockets or shafts used	Check Transmission sprocket tooth counts and Driver/Driven locations.
	Ground Drive only: Incorrect Range sprockets or shafts used	Check Range sprocket tooth counts and Driver/Driven locations.
	Two seeds per pocket on the disk (doubles), due to excess meter pressurization	Methodically decrease the controlled air to the meter. See “**Fan and Meter Pressurization Adjustment**” on page 54.
	Two seeds per pocket on the disk (doubles), due to pockets too large for the seed	Select a disk with smaller pockets.
	Air meter pressure too high due to pressure sensor not zeroed properly.	Re-zero the air pressure with the fan off. Make sure the displayed pressure reads 0.00.
	Air pressure too high, false information driving the DICKEY-john® software.	Compare the air pressure reported on the monitor console to the mechanical gage. If they do not match: • Inspect the $^{1}/_{4}$ in. sample lines from the row units up to the sensor chamber for leaks. • Make sure all non-planting rows have blank disks. • Re-zero the air pressure with the fan off.
	False alarms or actual seed rate errors due to monitor setup with incorrect row count, spacing or active rows	When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup.

Population Too High

Problem	Cause	Solution
Overall High Population (cont.)	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Improper gap on speed sensor.	Check speed sensor on planter for $^{1}/_{16}$ in. to $^{1}/_{8}$ in. (1.6 to 3.2 mm) gap from wheel. Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.
	Incorrect speed sensor constant	Perform speed calibration per DICKEY-john® monitor manual.
	Doubles due to incorrect disk for crop or seed size	Use recommended disk for crop and seed size.
	Sticky seeds: excess seed treatment	Increase seed lubricant.
High Population, One Wing	Ground Drive only: LH and RH Range setup not matched.	Make sure LH and RH Range settings are identical, and that sprockets are on proper DRIVING/DRIVEN shafts.
	Ground Drive only: LH and RH Transmission setup not matched.	Make sure LH and RH Transmission settings are identical, and that sprockets are on proper DRIVING/DRIVEN shafts.
High Population, Single Row	Excess meter pressurization causing doubles	Check shutter.
	Worn seed-drop brush and/or strip brushes allowing excess seed to pass	Replace worn brushes.
	Incorrect seed disk with higher cell count.	Install correct disk.

Population Related

Problem	Cause	Solution
Overall Population Alarms	False alarms or actual rate errors due to monitor setup with incorrect [active] row count or spacing	When troubleshooting population issues, always first rule out seed monitor setup. Review planter configuration and monitor setup.
	Incorrect cell count	Replace seed disks with correct disks, or reset rate for current disks (if within range).
	Improper gap on speed sensor.	Check speed sensor on planter for $^{1}/_{16}$ in. to $^{1}/_{8}$ in. (1.6 to 3.2 mm) gap from wheel. Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.
	Incorrect speed sensor constant	Perform speed calibration per DICKEY-john® monitor manual.
Low Population Bands Just After Turns	Insufficient oil to fan - meter pressures low - seeds falling from disks.	Perform end-of-pass marker and lift operations separately. If already performing separately, reduce marker speed, and/or list more gradually.
Mismatch Between Reported and Furrow Population	Small seeds (example milo) are not reliably sensed in the seed tube	Run with rain covers in place to minimize ambient light intrusion. Use the population adjustment factor in the DICKEY-john® monitor system to compensate for missed seeds. For example, change the DICKEY-john® Population Adjustment values from 100% to 130% or 140% as needed. Remember to set this back to 100% for large seeds.
	Seed tube sensor is not counting all seeds	Clean the seed tube of graphite and dust buildup with long narrow seed tube brush. Replace sensors that malfunction.
	Seeds / revolution value in the DICKEY-john® setup does not match the disk cell count.	Correct the value in a setup screen or install the correct cell count disc.

Population Related

Problem	Cause	Solution
Unable to adjust air pressure low enough.	Lower limit reached in DICKEY-john® software.	At User Level 2, reduce the controlled air lower limit in the software.
	Fan speed too high, vane rotated to maximum.	Reduce the fan speed.
Seed too shallow or scattered on ground from a single row	Bottom of seed tube damaged.	Replace seed tube. Avoid setting planter straight down. Use forward motion when lowering.
	Row not penetrating in tire tracks.	Increase down force on parallel arm springs.
	Opener depth too shallow.	Change side depth wheel setting.
Twin Rows were timed but became out of time.	Timing will change when a population change has been made.	Re-time meters from the population based timing chart.
	Chain has jumped.	Check sprockets and chain for excessive wear or rusty stuck links.
System is unable to automatically control air meter pressure.	Signal from air pressure sensor lost. (failed sensor or wiring)	Air pressure may be controlled manually, consult DICKEY-john® Planter/Drill Control manual, User Level 2/3.

Seed Delivery Troubleshooting

Problem	Cause	Solution
Single row doesn't fill or keep up with other rows.	Y tube is bent/angled off feed pipe.	Loosen pipe and spin so the bend is straight down and Y-tube is not pointing to front or rear of air pipe.
	Drop tube to meter is too long, causing seed to pool and plug hose or Y-tube.	Shorten hose (with planter raised, but row units lowered, to ensure hose is not too short).
Both rows on one meter outlet low or not keeping up with other rows.	Blockage in air slot in top of airbox.	Clear by using a long skinny tool and taking hose off through hose outlet. It may be necessary to take top off airbox or use side access doors to clear junk from slot.
	Bad hose routing between delivery hose and airbox on wing.	Correct hose routing.
Multiple rows fail for lack of seed.	Fan speed too high/too low.	Check/adjust fan speed.
	Out of seed.	Add seed.
Single or multiple hoses plugging just ahead of airbox.	Fan speed too high/too low.	Check/adjust fan speed.
	Possible air leak.	Check for air leak downstream between box and top of meter.
All rows fail.	Lack of seed.	Fan speed too high. Adjust fan speed.
		Extremely high populations may require slightly reduced field speed.

Seed Delivery Troubleshooting

Problem	Cause	Solution
1, 2, 3, or more outlets fail. **Outlets can be side-by-side or random. Plugging may also move from one outlet to another.**	Foreign matter in seed chamber in bottom of airbox.	Clean out seed chamber.
Little or no seed to a lot of rows with heavily treated seed.	Seed treatment sticky.	Add Ezee Glide Plus to seed to dry out seed treatment.
	Treatment mixed unevenly and plugging outlets.	Clean out seed. Re-mix.

General Troubleshooting

Problem	Cause	Solution
Population Alarms	See “**Population Troubleshooting Charts**” on page 82.	
Excess Seed Remaining	See “**Population Troubleshooting Charts**” on page 82.	
	Field size different.	After ruling out population problems, re-check geography.
	Excessive gaps between planter passes.	Adjust marker, page 59.
Seed Consumption Too High	See “**Population Troubleshooting Charts**” on page 82.	
	Field size different.	After ruling out population problems, re-check geography.
	Excessive overlap. Irregular shaped field.	Adjust marker, page 59.
Rows Not Planted	If not detected by seed monitor, check for plugged row-unit seed tube	Lift planter, expose bottom of seed tube and clean out.
Uneven seed spacing	See “**Population Troubleshooting Charts**” on page 82.	
	Hydraulic meter drive motor rpm too low for reliable control by proportional valve.	1. Increase field speed. 2. Use a seed wheel with lower cell count.
	Excessive field speed.	Reduce field speed.
	Unclean seed.	Use clean seed.
	Damaged seed tube	Inspect; repair or replace.
	Seed-Lok® plugging.	Lock up Seed-Lok®, page 77.
	Row-unit discs not turning.	See “**Row-unit discs not turning freely.**” in this Troubleshooting chart.
	Plugged row-unit seed tube.	Lift up planter, expose bottom of seed tube and clean out.
	Worn/rusted sprockets and/or chain idler or bearings.	Check and replace any worn/rusted sprockets or chain idlers.
	Lack of proper seed lubrication on seed.	See “**Seed Lubricants**” on page 115.

General Troubleshooting

Problem	Cause	Solution
Planter does not fold or unfold fully	Fold cylinders out of phase	Rephase cylinders, refer to page 30
	Air in lines	Bleed fold circuit, refer to page 100
Uneven seed depth	Excessive field speed.	Reduce field speed.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect coulter depth setting.	See coulter manual or set unit mounted coulter.
	Excessive or improper row unit down pressure spring setting.	See 25 series row-units, page 63.
	Damaged seed tubes.	Check seed tubes for damage.
	Seed-Lok® building up with dirt.	Lock up Seed-Lok®, page 77.
	Row-unit not penetrating low spots.	Adjust row-unit, see instructions beginning on page 63.
	Rough planting conditions.	Rework the field.
	Seed firmer not in place and set to correct tension.	See “**Seed Firmer Adjustments**” on page 77.
Press wheel or row-units plugging	Planting conditions too wet.	Wait until drier weather.
	Too much pressure on row-units.	Reduce down pressure on row-units.
	Coulters set too deep, bring up excess dirt and moisture.	Check coulter adjustment.
	Planter not set to run level from front to rear.	Check tongue height page 20
	Backed up with planter in the ground.	Clean out and check for damage.
	Failed disc bearings.	Replace disc bearings.
	Disc blades worn.	Replace disc blades.
	Scraper worn or damaged. Side depth wheels not set correctly.	Adjust side depth wheels page.
Row-unit discs not turning freely.	Row-unit plugged with dirt.	Clean row-unit.
	Planting conditions too wet.	Wait until drier weather.
	Incorrect side depth wheel adjustment	See “**Side Gauge Wheel Adjustments**” on page 69.
	Seed-Lok® is plugging row-unit.	Lock up Seed-Lok®, page 77.
	Failed disc bearings.	Replace disc bearings.
	Bent or twisted row-unit frame.	Replace row-unit frame.
	Partially plugged row-unit seed tube.	Lift up planter, expose bottom of seed tube and clean out.
Press wheels not compacting the soil as desired.	Incorrect spring handle setting	See “**Press Wheel Adjustments**” on page 79.
	Insufficient row unit down-force	See “**Row-Unit Down Pressure**” on page 64.
	Use of incorrectly shaped tire for your conditions.	Wedge shaped wheels work best on narrow spacings and in wet conditions. Round edge wheels work best in wider row spacings and drier conditions.
	Not level front to rear.	Check tongue height.

General Troubleshooting

Problem	Cause	Solution
Seed blowing out of bulk box door area	Fan too fast.	Slow down fan. If already at 3000 rpm, reset fan to 3800 rpm and use fan butterfly valve to reduce airflow.
	Seal from airbox to hopper damaged or not adjusted.	Inspect and adjust seal. Seal should be intact, and compress to about $^{3}/_{8}$ in. (13mm) under seed container.
Air lines plugging between air box and Y splitters	Fan too slow.	Speed up fan.
	Air leaks between air box manifold and splitters	Check for leaks and correct as needed.
	Improper hose routing, sags or kinks	With planter unfolded, hoses should for a gentle “S” shape through the holders, with no deep sags.
Air lines plugging between Y-tube and meter	Sag or kink in air hose.	Check air tube placement in tube mount weldment. If correct, shorten any hose that has stretched due to age.
	Meter is shut off but Y-tube is open.	Shut off Y-tube.
	Air tube assembly not positioned on correct tab.	Move assembly to properly position Y-tubes over row meters.
	Sag in air hose due to incorrect frame height	Raise or lower the tongue so center portion of frame is level with gauge wheel area.
Hydraulic marker functioning improperly, or not at all	Marker/Fold switch set to Fold.	CFM Switch must be set to “Marker”. Set tractor remote circuit to Neutral or Float before operating switch.
	Marker/Aux valve set to Aux	On a planter with optional Auxiliary Hydraulics, selector valve must be set to Marker for markers to function. Set tractor remote circuit to Neutral or Float before changing valve.
	Air or oil leaks in hose fittings or connections.	Check all hose fittings and connections for air or oil leaks.
	Low tractor hydraulic oil level.	Check tractor hydraulic oil level.
	Loose or missing bolts or fasteners.	Check all bolts and fasteners.
	Needle valve plugged.	Open needle valve, cycle markers slowly and reset needle valve, refer to page 59.
	Needle valve(s) in sequence valve plugged.	Open needle valves, cycle markers slowly and reset needle valves, refer to page 59.
Marker disk does not mark	Marker folding linkage does not have enough slack to allow marker disk to drop into field depressions.	Maximum down float should be limited by the slot at the rod end of the marker cylinder, refer to page 59.
		Reverse marker disk to pull or throw dirt.
Auxiliary Hydraulics Inoperative	Marker/Fold switch set to Fold	CFM Switch must be set to “Marker” for Aux to function. Set tractor remote circuit to Neutral or Float before switching.
	Marker/Aux valve set to Marker	Selector valve must be set to Aux. Set tractor remote circuit to Neutral or Float before changing valve.

Maintenance and Lubrication

Maintenance

Proper servicing and maintenance is the key to long implement life. With careful and systematic inspection, you can avoid costly maintenance, downtime, and repair.

Always turn off and remove the tractor key before making any adjustments or performing any maintenance.

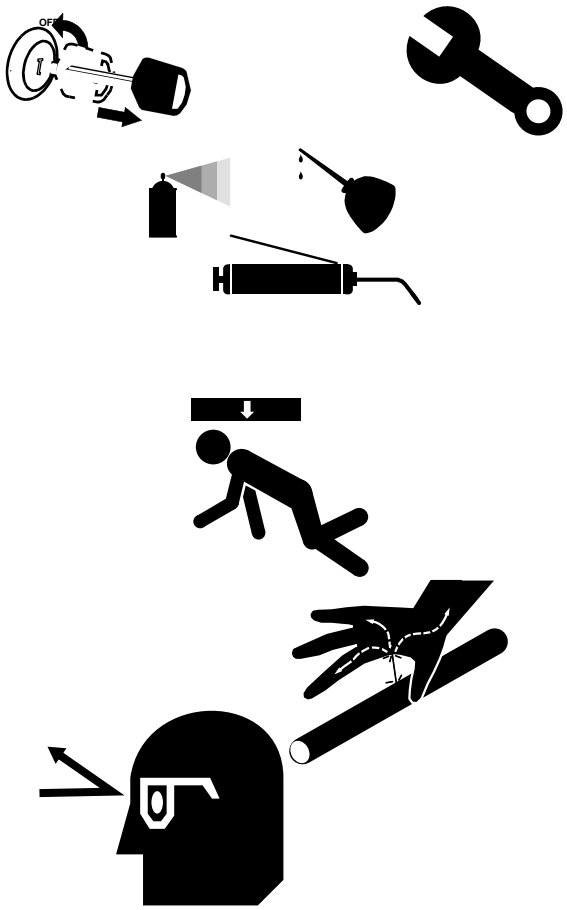
WARNING

Crushing Hazard:
Always have transport locks in place and frame sufficiently blocked up when working on implement. You may be severely injured or killed by being crushed under the falling implement.

WARNING

High Pressure Fluid Hazard:
Check all hydraulic lines and fittings before applying pressure. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. Fluid escaping from a very small hole can be almost invisible. Use paper or cardboard, not body parts, and wear heavy gloves to check for suspected leaks. If an accident occurs, seek immediate medical attention from a physician familiar with this type of injury.

1. After using your planter for several hours, check all bolts to be sure they are tight.
2. Remove excess slack from chains. Clean and use chain lube on all roller chains as needed.
3. Maintain proper air pressure in planter tires.
4. Keep disc scrapers properly adjusted.
5. Clean planter on a regular basis. Regular and thorough cleaning will lengthen equipment life and reduce maintenance and repair.
6. Lubricate areas listed under “**Lubrication**” on page 107.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.



Tongue Lift Cylinder Locks

Center lock channels are provided for use during service procedures with the planter partially or completely unfolded.

They are not necessary for normal transport operation. When the planter is fully folded, the center section is supported at lift by the wing locks on the tongue.

Install Center Lift Locks

Refer to Figure 109

1. Remove lock channels from storage locations.
2. Raise the unfolded planter.
3. Install lock channels on exposed cylinder rods.

Remove Center Lift Locks

Refer to Figure 110

1. Raise the unfolded planter, to allow removal of the lock channels.
2. Move the lock channels to their storage locations.

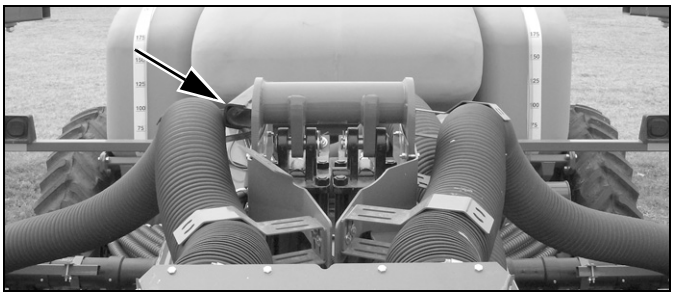


Figure 109 29736
Lift Cylinder Lock Storage

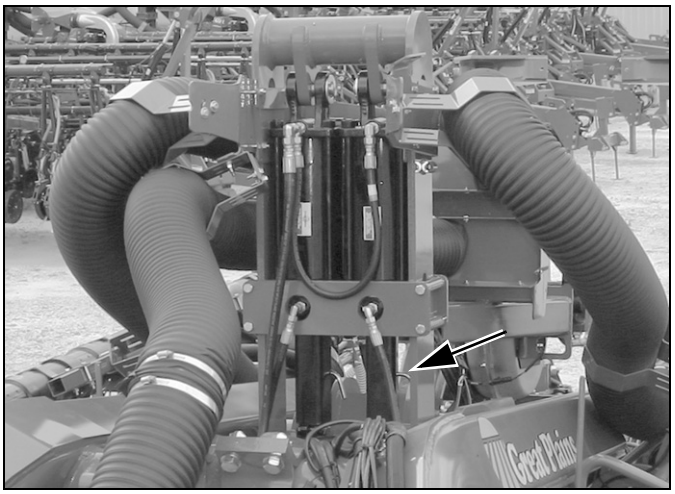


Figure 110 29738
Frame Lift Locks Installed

Material Clean-Out

When planting is completed, it is commonly the case that some seed remains. There may be seed in the hopper or bulk box, seed in the airbox, a small amount of seed in the hose lines, and seed in the meters. Some meters may be filled up to the air release vent (which prevents additional seed from reaching that meter).

A complete system clean-out is a 3 step process.

1. Empty airbox (and hopper, if desired).
2. Blow residual seed to meters.
3. Clean out meters with fan running.

⚠ CAUTION

Possible Dust and Chemical Fume Hazard:
Wear a respirator, and any other protective equipment specified by the seed and/or seed treatment supplier. Expect dust and fumes during hopper clean-out.

Hopper Clean-Out

Perform hopper clean-out with the fan off.

Refer to Figure 111

1. Close the slide gate ① at the base of the hopper.
2. Place a tarp under the seed cart.

Refer to Figure 112

3. Open the clean-out door on the bottom of the airbox. Seed in the airbox immediately falls onto the tarp.

🕮 If needed, additional access doors are provided.

4. Open the slide gate slowly. The remaining seed in the hopper falls onto the tarp. Use the slide gate to regulate the flow and, as needed, stop it while recovering seed from the tarp.
5. Rapidly open and close the slide gate to dislodge seed in the tracks. Tap on the sides of the hopper to dislodge residual seed.
6. Close slide gate.
   Close clean-out door.
7. Perform an air system clean-out to remove final amounts of residual seed from airbox, and all seed in meters.

⚠ WARNING

Entrapment and Rapid Suffocation Hazard:
Never enter a hopper for any reason.
Keep strainer in place at all times.

- ▲ *A hopper that is full or merely appears full can be an entrapment hazard. You can sink entirely into the grain, or into an oxygen-deficient void, and suffocate in a matter of seconds. Grain bridges and crusts are especially dangerous.*
- ▲ *When hazardous fumes are present, you can be quickly overcome even with the hopper lid open.*
- ▲ *Do not enter a hopper for material loading, material unloading, hopper cleaning or meter maintenance.*
- ▲ *Clean hopper by power washing from outside hopper top.*

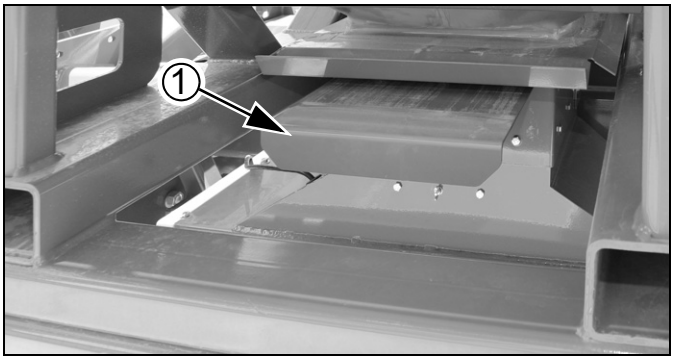


Figure 111 29495
Hopper Slide Gate Open

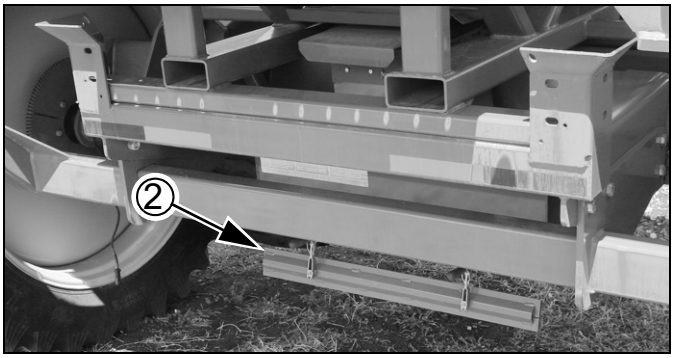


Figure 112 29494
Airbox Clean-Out Door Open

Air System Clean-Out

Refer to Figure 113

1. Shut off slide gate door at bottom of seed box or bulk hopper.
2. Place a pan or tarp under the airbox manifold to catch seed.

Refer to Figure 114

3. If the planter has Y-tubes, shut off the gates at all of the Y-tubes.

Refer to Figure 115

4. Open airbox clean-out door to empty seed from the manifold.

📖 If needed, additional access doors are provided.

5. Shut the clean-out door under manifold.
6. Turn on the air fan and let it run. Use the "SPLIT AIR -" softkey[a] to reduce the regulated air pressure to a low value, 1 in. H_2O or less - this diverts most of the air to the bulk seed delivery system.

   If most of the meters are shut off, reduce fan speed as necessary to obtain a low meter pressurization.
7. Start at one end of planter and perform a meter clean-out (page 94).
8. Open the Y-tube gate feeding that meter. Let the air blow seed out of the meter. Use the meter shutter to start and stop seed flow if using a small container.
9. Close the Y-tube gate and shutter for that meter.
10. Repeat procedure on the next meter in line. Continue with this procedure until you have reached the opposite end of the planter.
11. Final Check:
    During air system clean-out, it is common for a few seeds to dislodge and make their way to meters already cleaned. To avoid seed size causing problems for the next disk to be used, and to avoid crop mixing, make a pass along all the rows, opening and closing shutters, removing any stray seed.

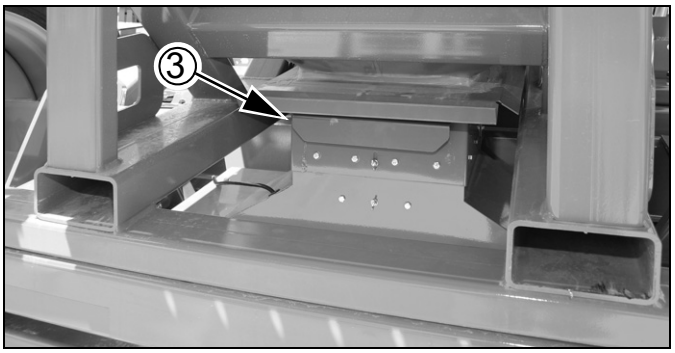


Figure 113 29495
Slide Gate Closed

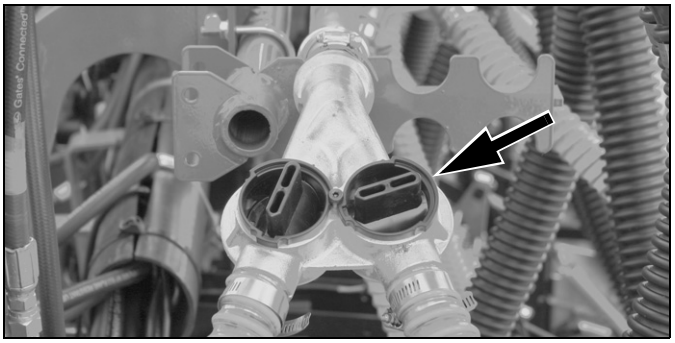


Figure 114 29758
Y-Tube Shut-Off

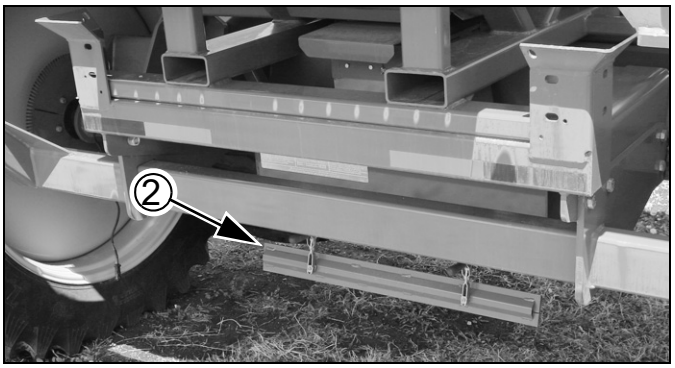


Figure 115 29494
Airbox Clean-Out Door Open

a. The "FILL METER" function can divert all the air to seed delivery, but only does so for a short period of time (~90 seconds).

Meter Clean-Out

When planting is completed, it is commonly the case that some seed remains. There may be seed in the hoppers, hose lines, and meters.

Refer to Figure 116

The planter includes an 817-811C container ① for meter clean-out, stored in a spring-loaded holder at the right rear of the air manifold. The container can hold all the seed in the meter and inlet (up to a closed slide gate).

The container can be converted into a true funnel for complete system clean-out.

📖 The hoppers are connected to the rows with clamped hose, and are not intended to be routinely unlatched and tipped for clean-out.

Funnel Conversion

Materials and tools needed:

- ② a length of $1^3/_8$ inch I.D. hose
- ③ a worm drive clamp with a working diameter of approximately $1^3/_8$ to $2^1/_4$ in.
- a hacksaw[a] with fine-toothed blade

Trim the sump ④ from the funnel. Slide the hose ② fully onto the funnel tip. Secure with clamp ③ (do not -over-tighten clamp, the funnel wall be crushed).

The choice of complete system clean-out process depends on whether you are using the 817-811C as a container or funnel.

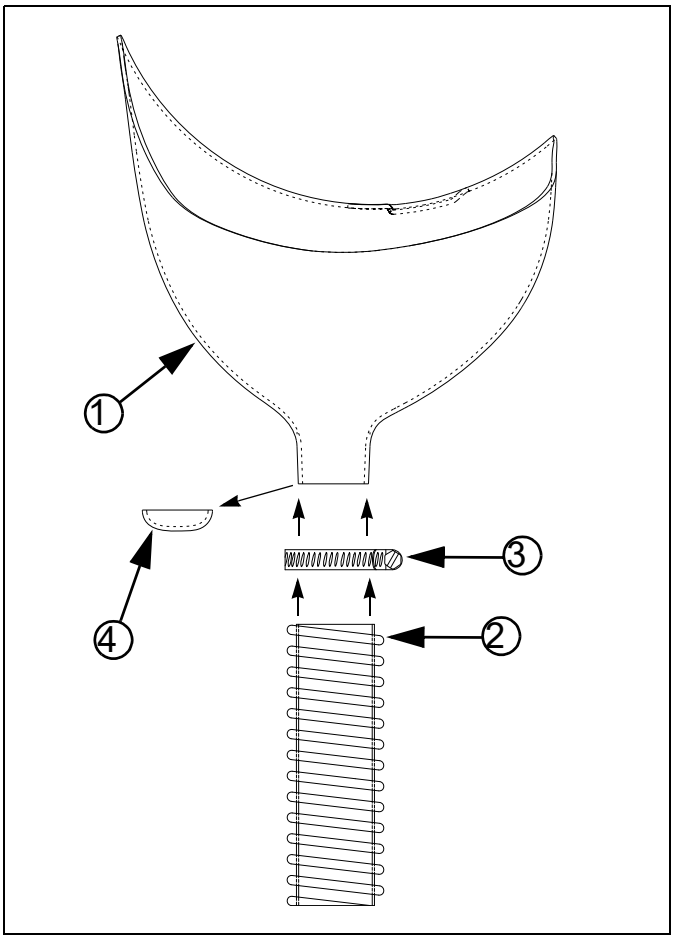


Figure 116 29988
Convert Container to Funnel

a. The funnel wall is thin ABS. Scissor-type pipe-cutting tools may fracture it. Rotary-type pipe cutting tools may slip off.

Refer to Figure 117

The 817-811C seed collection accessory (funnel ①) provided with the planter can be used in one of two ways:

- As provided, the 817-811C is a container that can hold the entire seed volume present from the meter up to a Y-tube (or two where the row hose connects to the wing tubes).
- The 817-811C can also be used as a true funnel. For this use, cut the end off the sump ②, and attach a hose or tube with $1^{3}/_{8}$ in. (3.8 cm) inside diameter.

The funnel may be attached to the housing of the seed meter, freeing your hands for other tasks during clean-out. Normal use of the funnel is:

1. Close the seed inlet shutter on the meter (page 71). This minimizes the seed volume at disk removal.
2. Remove the rain cover (page 71). The funnel cannot be snapped in place with the cover installed.
3. Align the left (rear) end of the funnel lip ③ with the top of the lower (rear) cover latch ear. Place the right (front) end of the funnel lip ④ between the meter housing and the seed tube.
4. Rotate the funnel forward until the slot at lip center engages a tab on the bottom center of the meter housing.
5. Remove the seed disk (page 74).
6. Slowly open the seed shutter (page 71) to empty the seed up to the Y-tube or wing tube.
7. If the air system is running (and Y-tube open), there may be more seed than the funnel can hold (as a container). Use the shutter to turn seed flow off, and empty funnel.

Refer to Figure 118

8. Clean seed from all brushes (shop vac recommended).
9. Inspect brushes (page 96).
10. Rotate funnel clockwise, remove and empty.
11. For imminent operations:
    Install next seed wheel or blank disk (page 75) for operations. Set inlet shutter for next seed (page 71).
12. For storage:
    Close seed inlet shutter. Leave disk out.
13. Reinstall rain cover (page 71).

Seed Tube Clean-Out

The seed sensor in the seed tube can be obscured by build-up of dust, dirt and seed treatments. This can cause false low population alarms.

The planter includes a seed tube brush (Great Plains part number 891-259C).

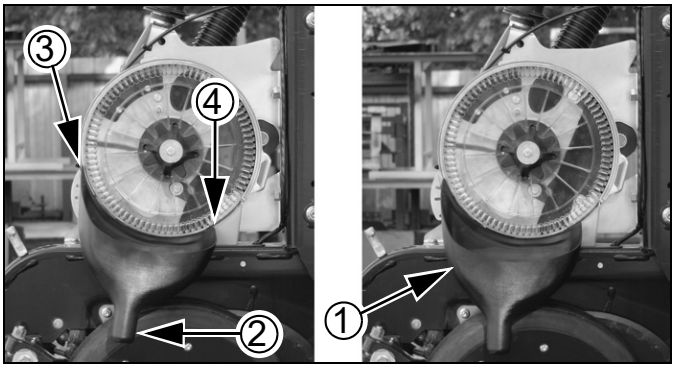


Figure 117 29612
Funnel Positioned and Engaged

Alternate Meter Clean-Out

To use a shop vacuum cleaner, with narrow hose nozzle, to clean out a meter:

- Close the seed shutter.
- Release the meter clamp, hold the disk against the meter.
- Tip the top of the disk away from the meter.
- Insert hose nozzle and remove seed.
- Open shutter to allow seeds in inlet and drop hose to flow to vac nozzle.

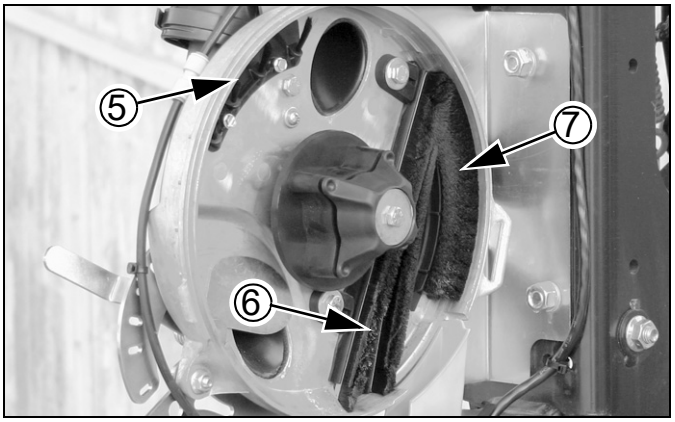


Figure 118 29608
Brush Inspection

If the seed meter is empty, remove the seed disc and insert the brush into the seed tube ④ from above. With the planter raised, you can also insert the brush from below, whether the meter is empty or not.

Meter Brush Maintenance

⚠ CAUTION

Possible Chemical Hazard:
Wear a respirator for brush cleaning. Brushes will have talc and graphite residue, and may have residues of hazardous seed treatments.

Refer to Figure 119

A HEPA vacuum cleaner is recommended for brush cleaning. Washing brushes is not recommended and may cause matting. Do not scrape them with sharp instruments.

The first indications of excess brush or damage wear are normally observed on the seed monitor or in air system operation.

- If the tufted brushes ⑤ are worn/damaged, the seed "double" rate rises, increasing population.

  Finding an occasional cracked seed "hung up" on a tuft fiber is not uncommon, and is not an indicator that brush maintenance is required. Merely remove the seed.
- If the strip brushes ⑥ are worn/damaged, air pressure regulation may become unstable, or require increasing fan speed over time.

  If you find you need to exceed recommended fan rpm ranges, the regulated air system may be taking too much air due to meter leakage.

  In severe cases, seed may leak past the strip brushes, causing spikes in population. If you frequently observe seed in between the strip brushes, one or both may need replacement.
- If the seed drop brush ⑦ is worn/damaged, its anti-static effect may fade, which can result in "skips" due to smaller seeds failing to release, and lower populations.

  If an obvious groove is worn in the drop brush, replace it.

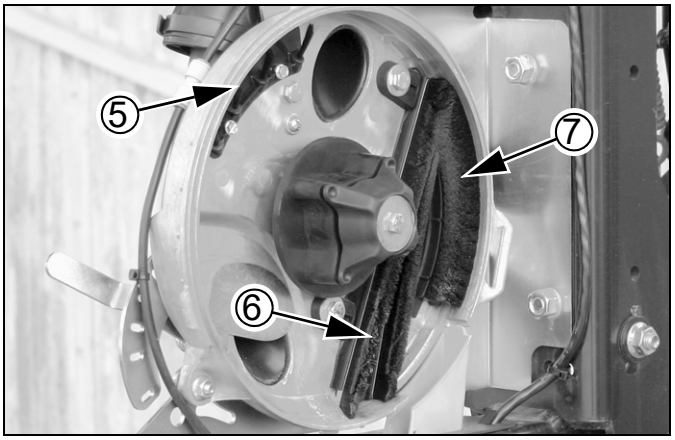


Figure 119 29608
Brushes

Meter Brush Replacement

Consult the Parts manual (401-625P) for current replacement part numbers.

Refer to Figure 120

Tufted Brush Replacement

1. Remove and save both 10-24 hex head cap screws (11) and Nylock nuts (not shown).
2. Remove the tufted brush assembly (12), and replace with new assembly.
3. Re-insert the 10-24 screws, and re-start the Nylock nuts. Carefully tighten each nut just until plate has no play under the screw heads.
4. Add a half turn to the nuts. Do not tighten fasteners to normal 10-24 torque, or the plate may fracture.

Strip Brush Replacement

📖 Do not loosen or remove any of the three $^{5}/_{16}$-18 cap screws (15) retaining the brush holder.

1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps (13). Turn each snap clockwise to release brush holder (14).
2. Prepare to catch drop brush (16) (which will fall lose). Slide brush holder left and up to free front edge from under washer (17). Remove brush holder.
3. Remove used strip brushes from the holder by sliding them downward out of the grooves.

Refer to Figure 121

4. Insert replacement strip brushes into grooves at holder bottom so that notched ends (18) are at the bottom.

Refer to Figure 120

5. Check strip brush positioning with a trial re-insertion of the brush holder. The ends of the long brush must fit snugly into meter housing grooves at top (19) and lower rear (20). The bottom end of the short brush must fit snugly in the lower front housing groove (20). If any significant force is require to re-seat the brush holder, a strip brush is likely too high or too low.
6. Relax the position of the brush holder, re-position the drop brush (see below), and re-seat the brush holder.
7. Starting with the bottom snap, swing snaps (13) back into engagement.

Seed Drop Brush Replacement

Refer to Figure 120

1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps (13). Turn each snap clockwise to release brush holder (14).
2. Prepare to catch drop brush (16) (which will fall lose). Slide brush holder left and up. Remove drop brush.
3. Position new drop brush so that it is flat against back of meter housing, and under ridges on leading edge of brush holder.
4. Slide holder forward/down to engage drop brush. Swing lower, then upper snap into engagement.

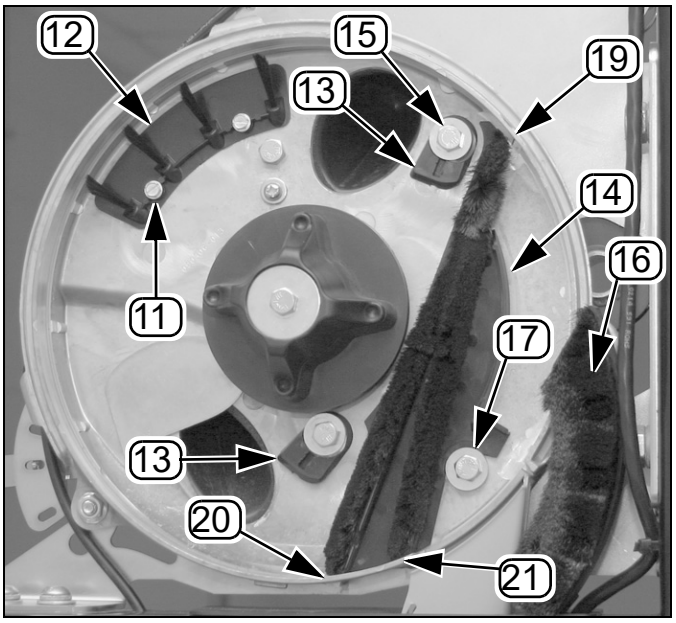


Figure 120 29719
Brush Replacement

Figure 121 29720
Strip Brush Notches

Seed Disk Maintenance

Refer to Figure 122

When removing seed disks, inspect them for wear and damage. If there is any seed dust or treatment build-up in the cell pockets ①, or along the raised wiper ridges ②, clean the disks and reinspect.

Replace disks for conditions including:

- Chips at circumference ③. These will leak air.
- Chips at edges or in sculpted surfaces of cell pockets ①. These can leak air and/or adversely affect singulation.
- Cracks over 2 inches (5 cm) long in the working face ④ of the disk, or any cracks in support webs or to an edge.
- Warping - if any part of the disk does not press firmly on the seed drop brushes (page 73) in operation, replace the disk.
- Wear - if a wiper ridge is worn away, replace the disk. If the seed pockets are worn through, or the air ports ⑤ have enlarged, replace the disk.

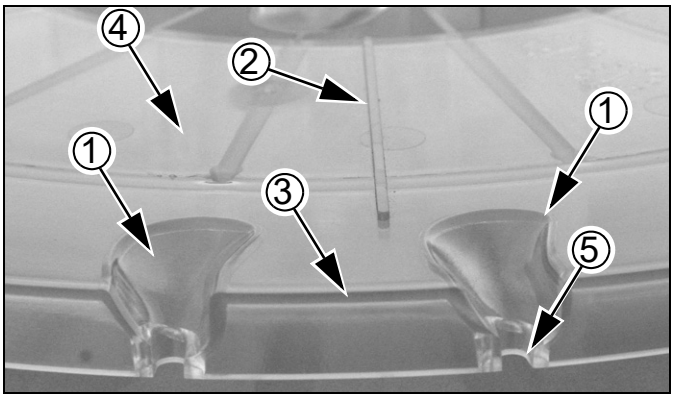


Figure 122 29613
Disk Seed Cells and Wiper

Cleaning and Storing Seed Disks

CAUTION

Possible Chemical Hazard:
Wear gloves when washing disks. Avoid spray. Do not wash disks where food is prepared, or where cookware or dinnerware is washed. Seed disks will have talc and graphite residue, and may have residues of hazardous seed treatments. Although the disks are dishwasher-safe, do not wash them in an appliance also used for food preparation or food serving items.

Use warm or hot water, mild soap, and a sponge or soft brush to remove build-up.

If disks are washed, allow them to dry completely prior to storage.

Retain original shipping cartons for disk storage. Otherwise, store them on edge (and not leaning), or stacked horizontally on a spindle, to eliminate any risk of warps. Any seed residue on disks may attract pests. Fully enclose dry disks to prevent rodent damage.

Air Box Residue Clean-Out

Planting in extremely dusty conditions, particularly dusty and humid conditions, or otherwise sticky soils, can lead to air residue build-up inside the airbox. This residue can cause seed delivery blockages.

Refer to Figure 123 and Figure 124 (Figure 123 depicts a partially and a completely plugged agitation port, and build-up in the RH plenum chamber)

Whenever opening the airbox clean-out door ①, inspect the agitation ports ②. If any are partially or completely blocked, follow the clean-out instructions on this page.

Seasonally, remove the inspection ports on each of the airbox, and inspect plenum chambers 1 (LH) and 16 (RH). If any build-up is observed, follow the more comprehensive inspection steps and clean-out instructions on this page.

1. Spot the planter at a suitable location for clean-out and follow the parking instructions (page 49).
2. If seed is loaded, close the slide gate for the hopper or bulk seed box (page 92).
3. Set out a tarp for recovery of any expected seed still in the airbox. Open the airbox clean-out door ①.
4. Remove the inspection port covers from each end of the airbox (not shown in figures).
5. Use an indelible marker to identify the hoses on seed hose ports ④ 1 through 16. Disconnect the clamps and hoses.

🕮 Further disassembly of the airbox is not recommended, as joints are sealed with silicone adhesive, and would need to be cleaned and resealed.

6. Inspect the agitation ports ②. Break up any build-up. Use a hooked tool or wire to pull smaller fragments down through the ports. For larger fragments, reach in through the inspection ports or vacuum them out via those ports.
7. Inspect the entire plenum area ③ for build-up. Break up any deposits. Vacuum them out through the inspection ports.
8. From the seed hose ports ④, inspect the seed air ports ⑤. Break up any deposits. Vacuum out from clean-out door.
9. With all ports and doors still open, operate the planter fan to blow up any remaining loose residues.
10. Reconnect the seed hoses. Reinstall the inspection port doors. Close the clean-out door.

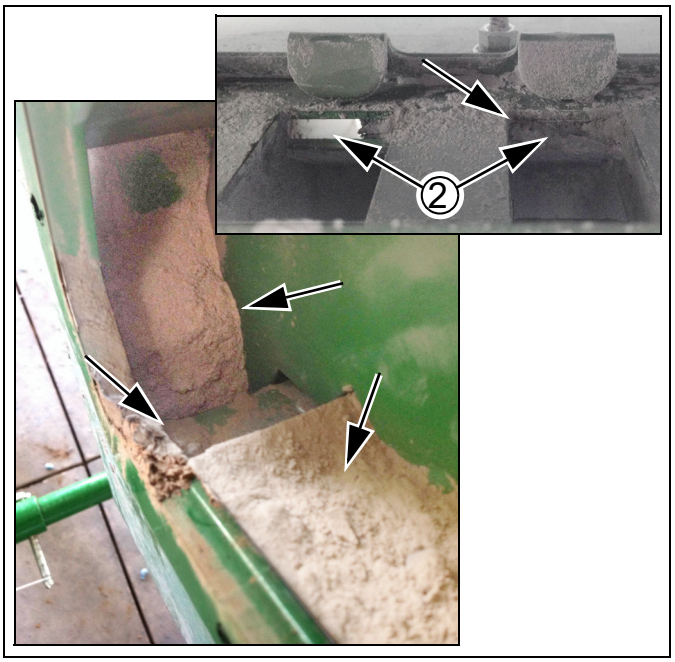


Figure 123
Residue in Air Box Plenum
36443
36442

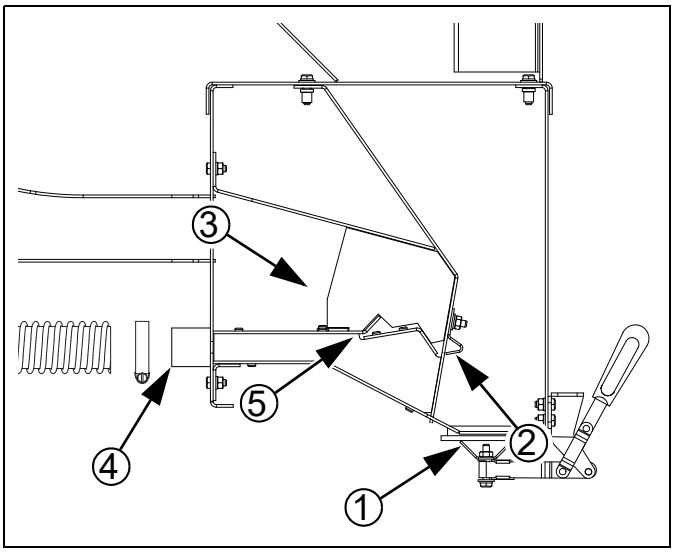


Figure 124
Airbox Section View LH
36441

🕮 Flushing the airbox with water is not recommended. If done, operate the fan for an extended period to completely remove any moisture prior to storage or field operations.

Bleeding Hydraulics

⚠ WARNING

High Pressure Fluid Hazard:
Relieve pressure before disconnecting hydraulic lines. Wear protective gloves and safety glasses or goggles when working with hydraulic systems. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. Use a piece of paper or cardboard, NOT BODY PARTS, to check for leaks. If an accident occurs, seek immediate medical attention from a physician familiar with this type of injury.

Only trained personnel should work on system hydraulics!

Bleeding Lift Hydraulics

Normally the lift hydraulics are bled at the factory before shipping and bleeding should not be required other than to raise fully and hold lever on for one minute or until all cylinders extend fully.

Bleeding Fold Cylinder Hydraulics

Normally the fold hydraulics are bled at the factory before shipping and bleeding should not be required other than to fold fully and hold lever on for one minute or until all cylinders reach the end of their stroke.

NOTICE

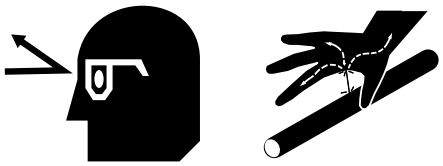
Machine Damage Risk:
Do not fold or unfold without first raising planter *completely.*

If the fold and hold procedure does not clear the problem, perform the following steps:

1. Raise and unfold the planter.
2. Un-pin all fold cylinders (two at center, one each gauge wheel).

Refer to Figure 125

3. Locate the re-phase port on each cylinder. This is a raised blind weldment on one end of the cylinder tube. This is the rod end on gauge wheel fold cylinders, and the base end on center fold cylinders.
4. Support the cylinder with the re-phase port facing up, and that end of the cylinder elevated.
5. Fully extend all cylinders at low flow. Hold circuit for one minute.
6. Fully retract all cylinders at low flow. Hold circuit for one minute.
7. Set circuit to neutral and re-pin all cylinders.



JIC Torque Chart

Size	Foot-Pounds	N-m
$^{7}/_{16}$-20	11-12	15-16
$^{3}/_{8}$-20	15-16	20-22
$^{9}/_{16}$-18	18-20	24-28
$^{3}/_{4}$-16	38-42	52-58
$^{7}/_{8}$-14	57-62	77-85
$^{11}/_{16}$-12	79-87	108-119

NOTICE

Over-Torque Leak Risk:
JIC (Joint Industry Conference 37° Flare) fittings do not require high torque. Excess torque causes leaks. JIC and ORB (O-Ring Boss) fittings do not require sealant.

NOTICE

System Contamination Risk:
Always use liquid pipe sealant when adding or replacing NPT (National Pipe Thread, tapered thread) pipe-thread fittings. To avoid cracking hydraulic fittings from over tightening, and to keep tape fragments from clogging filters, do not use plastic sealant tape.

🕮 Bleed only at JIC and NPT fittings. Never attempt to bleed a QD (Quick Disconnect) fitting. Avoid bleeding at ORB fittings.

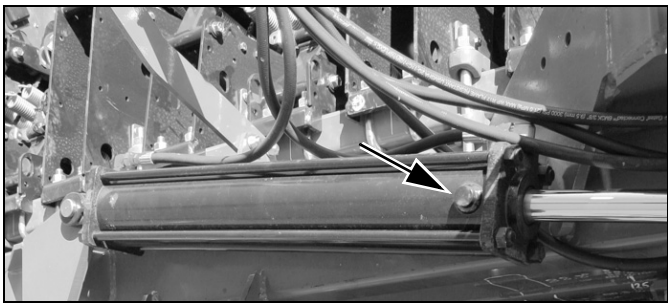


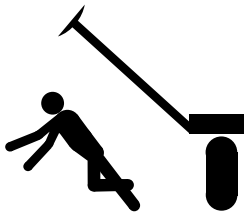
Figure 125 29502
Cylinder Re-Phase Port

Bleeding Marker Hydraulics

To fold properly, the marker hydraulics must be free of air. If the markers fold in jerky, uneven motions, follow these steps.

Check that tractor hydraulic reservoir is full.

1. Set the solenoid to marker operation.
2. With both markers lowered into field position, loosen hydraulic-hose JIC fittings at rod and base ends of marker cylinders. If applicable, loosen fittings on back side of sequence valve.
3. With tractor idling, activate tractor hydraulic valve until oil seeps out around a loosened fitting. Tighten that fitting.
4. Reactivate tractor hydraulic valve until oil seeps out around another loosened fitting. Tighten that fitting. Repeat process until all loosened fittings have been bled and tightened.



CAUTION

Crushing and Sharp Object Hazard:
Never allow anyone near the planter when folding or unfolding the markers. You may be injured if hit by a folding or unfolding marker. Markers may fall quickly and unexpectedly if the hydraulics fail.

Marker Maintenance

Refer to Figure 126

The marker arm is attached to the marker body with a $^{3}/_{8}$-13 x $2^{3}/_{8}$ in. Grade 5 shear bolt. If shear bolt breaks, replace it with a Great Plains part 802-130C or equivalent.

🕮 Replacing shear bolt with a lower grade can result in nuisance shears.

NOTICE

Equipment Damage Risk:
Replacing shear bolt with a higher grade bolt can result in marker damage. Replacing the shear bolt with a lower grade can result in nuisance shears.

🕮 If an identical Grade 5 bolt is not immediately available, temporarily substitute a a metric M12 x 1.5 6.4 mm length Class 8.8 bolt and nut.

If grease seal cap for marker-disk-hub bearings is damaged or missing, disassemble and clean hub. Repack with grease and install new seal or grease cap.

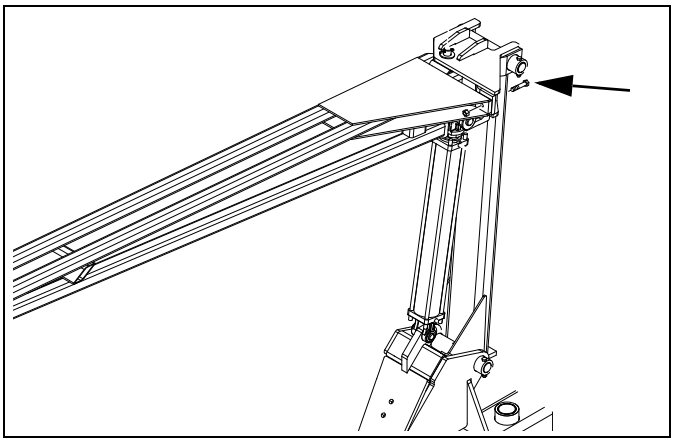


Figure 126 24408
Marker Shear Bolt

Hydraulic Drive Maintenance

As with any hydraulic system, contamination is the most common cause of performance problems and pre-mature wear. *Make a special effort to properly clean quick couplers prior to attaching the hoses to tractor.*

Filter: All fluid is filtered through the high pressure filter (p/n 18574) and it provides protection to the hydraulic components of your drive if properly maintained. It is equipped with a pop-out indicator to alert that the replaceable element is clogged, and should be changed immediately if this situation occurs. Normal service life of the element will vary based on the precautions that you take to minimize contamination at the couplers and routine service of the tractor filtration.

To change the element:

Refer to Figure 127

1. Un-screw lower canister from filter, catching and disposing of used fluid.
2. Remove and discard element.
3. Install new element (p/n 19856)
4. Clean canister threads and lube o-ring with hydraulic fluid, then re-install.

Refer to Figure 128

5. Re-set pop-out indicator if necessary.

It is a good idea to keep a filter element on hand, and Great Plains recommends changing filters annually, if not more often.

- Between planting seasons, store cab console inside in a relatively stable and dry environment.
- Avoid direct spray from high pressure washers on the motor encoder and the external controller box. These units are sealed from normal moisture, but high pressure could inject water into the housing.
- Keep electrical connects free from dirt and grease. It's a good idea to occasionally spray the terminals with contact cleaner to ensure proper connection.

Figure 127 22736
Hydraulic Filter

Figure 128 22737
Hydraulic Filter Indicator

Chain Maintenance

Inspect and lubricate chains regularly. The slack of new chains tends to increase during the first few hours of operation due to seating.

See also “**Chain Routing**” on page 145.

Chain Slack

Check slack at fixed idlers within the first 8 hours of operation and tighten idlers as necessary. Check slack at spring-operated idlers seasonally.

Refer to Figure 129, which, for clarity, greatly exaggerates slack, and omits the idlers.

1. Measure the span ① for allowable slack:
   Locate the longest span of each chain (usually the span which does not run through the idlers).
2. Determine the ideal slack:
   Long chains (over 36 in./91 cm):
   $^1/_4$ in./ft. (2.1 cm per meter)
   Vertical short chains:
   $^1/_4$ in./ft (2.1 cm/m)
   Horizontal short chains:
   $^3/_8$ in./ft (4.2 cm/m).
3. Measure the current slack ②:
   Acting at a right angle to the chain span at the center of the span, deflect the chain in both directions. The slack is the distance of the movement.
4. Adjust the idlers for ideal slack.

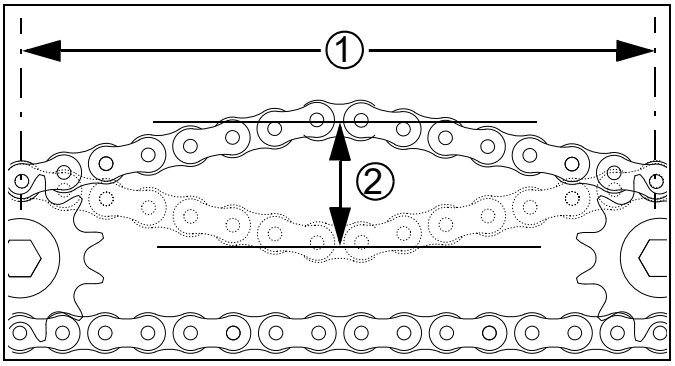


Figure 129 27264
Measuring Chain Slack

Chain Clips

Whenever mounting a chain, make sure the clip at the removable link is oriented to minimize snags.

Refer to Figure 130 (arrow shows chain direction)

Install clip with open end facing away from direction of chain travel (shown by gray or striped arrows in chain routing diagrams).

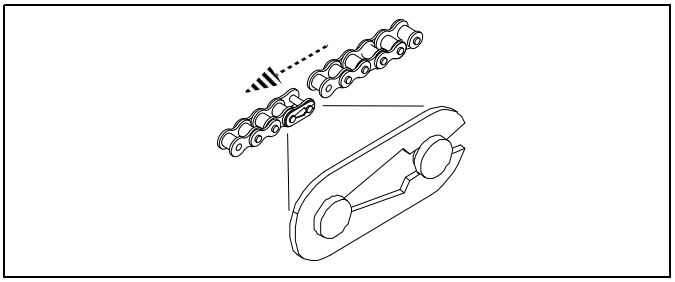


Figure 130 26482
Chain Clip Orientation

Meter Drive Chain

Refer to Figure 131 (which depicts planter raised)

When performing periodic lubrication, check chain condition. Replace chain if any frozen kinks are not corrected by lubrication.

When performing seasonal checks, lower planter to put chain at minimum idler spring tension.

Check that idler spring length ③, measured from outside of pin to outside of pin, is not shorter than:
7.0 in. (17.8 cm)

Lift spring off idler assembly ④. Check that idler assembly pivots freely. Re-attach spring.

Check chain clip orientation. Check chain routing at shank idler(s) ⑤ (see page 147).

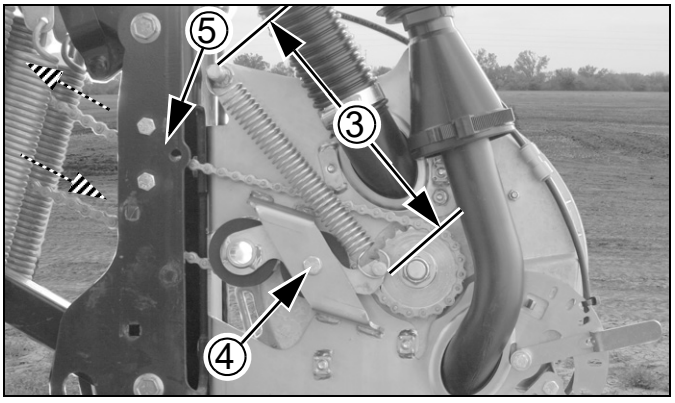


Figure 131 29616
25AP Meter Drive Chain

Disc Spreaders and Scrapers

Refer to Figure 132

1. Remove side gauge wheels from arms to access row-unit discs and scrapers.
2. With the unit raised, check blade spreader ① for wear. Replace spreader if it is $^{3}/_{8}$ in. (13 mm) wide or narrower. To replace, remove disc blade ②, drive out roll pins ③, and install new spreader.
3. When reinstalling disc blades, put two shim washers ④ between bearing and shank on each blade. Tighten bolts.

🕮 You may need fewer inside shim washers on worn discs.

4. Check that outside disc scrapers ⑤ are formed to disc blades to help remove any mud. Bend and twist scrapers to fit blades as necessary. After every 200 acres (80 hectares) of operation, check outside scrapers for proper adjustment and wear. Replace outside scrapers as necessary.

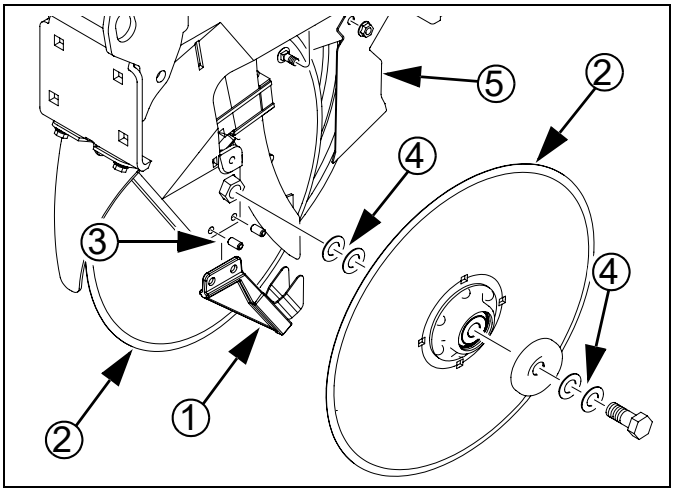


Figure 132 22839
Spreaders and Scrapers

🕮 It is normal for the blade spreader to have some looseness in the holder and between the blades. Some looseness is required for proper operation.

25 Series Row-Unit Side Wheels

Figure 133

1. Lift opener side wheel off the ground. Move tire in and out to check for end play. Check for roughness in bearing by rotating wheel. If bearings are rough, inspect and replace if necessary.
2. The side wheels are preset at the factory. However, because of normal wear it may become necessary to make adjustments so the wheel remains close to the disc. Loosen clamp bolt [10] and slide arm [11] inward to take up gap between side wheel and disc blade. If more adjustment is needed, continue at step 3.
3. Remove bolt [12] and wheel [13]. Remove shims [14] from the inside of wheel and place them on the outside of wheel [15]. Always place removed shims from the inside to the outside. When installed, wheel should turn freely and not hit the arm at the curve. Do not add any more shims than necessary.
4. Disassemble side gauge wheel arm [11] from unit. Remove bushing [16] from sleeve [17] and check for wear. If necessary, replace bushing.
5. When reinstalling side gauge wheels, align tab on hex adjustment [18] with notch in bushing. Replace bolt and tighten.
6. Adjust side gauge wheels. See "**Side Gauge Wheel Adjustments**" on page 69.

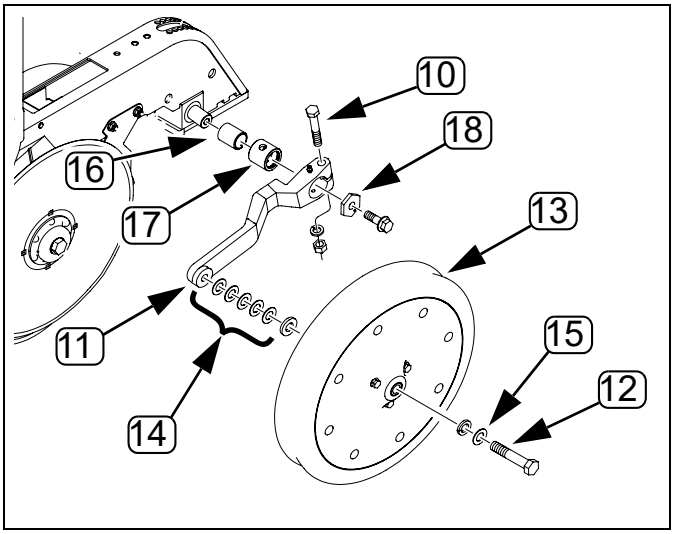


Figure 133 21894
Adjusting Gauge Wheel Spacing

⚠ CAUTION

Sharp Object Hazard:
Be careful when working in this area.
Opener disc edges are sharp.

Fertilizer System Maintenance

With proper attention to maintenance, end of day clean-out, end of season clean-out and winterization, you can substantially increase the life and reliability of your fertilizer system. Protect the pump, clean the tanks, strainers, lines and nozzles, and you can avoid costly and time-consuming repairs at the next season.

Fertilizers are usually highly corrosive to metals other than stainless steel. Suspension fertilizers can clog system components in storage.

1. Flush entire system with clean water.
2. Remove end caps from booms and flush booms out with water. Drain and replace end caps.
3. Remove strainer and drain it out. Drain all lines and tanks completely to prevent freezing damage.
4. Flush pump per pump supplier manual. Fill pump with RV antifreeze and cap off.
5. Wash all spilled fertilizer off the planter.

Liquid Fertilizer Strainer

Refer to Figure 134

The fertilizer system uses an in-line strainer to keep damaging particulates out of the pump. The strainer becomes clogged over time, reducing pump rate. Plan to clean the strainer several times per season. Don't wait for application rates to fall below target. Higher quality liquid fertilizers may require less frequent cleaning.

Disassemble and clean the strainer prior to storage to prevent caking.

In Season Filter Cleaning

1. Shut off the ball valve at the filter, to minimize product spill.
2. Unscrew and remove the bottom canister of the filter.
3. Wash the filter cartridge with water, or replace with new cartridge if necessary.
4. Reinstall the cartridge, canister, and turn on the ball valve.

End of Season Filter Cleaning

1. Load 10 to 15 gallons (40 to 60 liters) in each tank.
2. Pump most of it through the system. If doing this by hand-turning the ground drive wheel, first install the largest drop-line orifice size, and set the pump adjuster to maximum, to increase flow.
3. With valves open, remove the canister. Clean strainer and canister.

WARNING

Possible Chemical Hazard:

Wear proper protective equipment as required by chemical manufacturer. Avoid prolonged breathing of chemical fumes. Wear respirator as required by chemical manufacturer. Some chemicals will cause serious burns, lung damage, and death. Avoid contact with skin or eyes. Seek medical assistance immediately if accident occurs. Know what to do in case of an accident.

NOTICE

Equipment Damage Risk:

Do not leave fertilizer or fertilizer residue in pump. Do not allow air to enter pump. Even for short periods of storage, the entrance of air into the pump causes RAPID and SEVERE CORROSION.

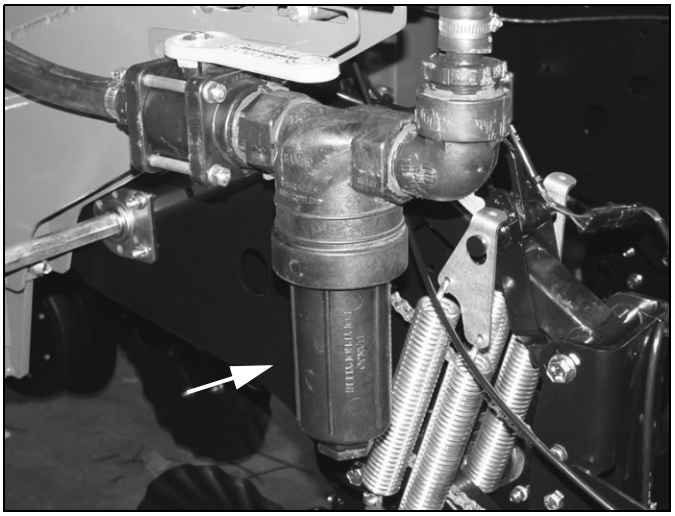


Figure 134 21965
In-line Filter

4. Drain tanks and lines. Remove boom end-caps to drain wings.
5. Re-install strainer and canister.
6. Add 2 pints (1 liter) of RV antifreeze to each tank. Pump until tank is just empty (which leaves some fluid in strainer).
7. Open supply line above pump inlet. Introduce RV antifreeze, and operate pump until pump is filled.

Seed Flap Replacement

(YP1225A s/n B1010E- and YP1625A s/n B1002F-)

Refer to Figure 135

To replace a seed flap ① use a needle nose pliers or similar tool and squeeze the tabs ② together. Pull plastic seed flap ① down out of metal bracket ③.

If replacing with 817-349C:
Push new seed flap ① up through metal bracket ③ until tabs ② on seed flap snap in place.

If replacing with 816-302C:
See seed flap replacement instructions below.

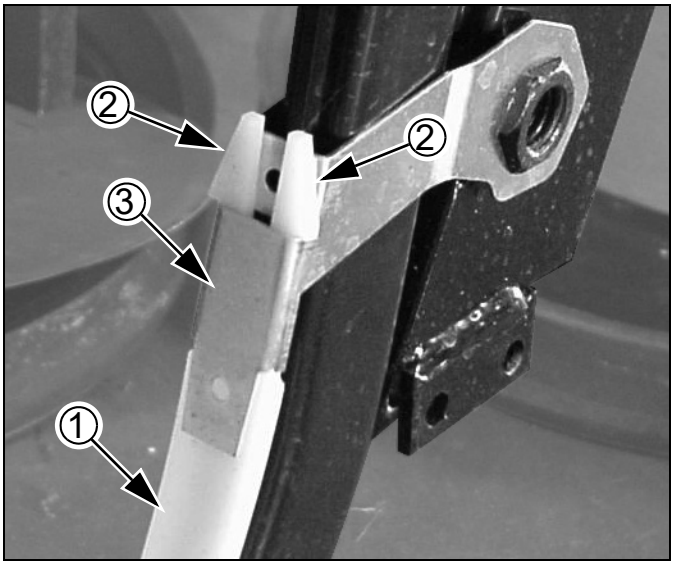


Figure 135 18398
817-349C Seed Tube Flap

Seed Flap Replacement

(YP1225A s/n B1011E+ and YP1625A s/n B1003F+)

Refer to Figure 136

To replace an 816-302C seed flap ① use a needle nose pliers or similar tool to grasp “T” top of flap. Pull upward to pull flap up out of metal bracket ②.

Push new seed flap ① down through metal bracket ② until flap snaps into place with “T” top resting on top of bracket.

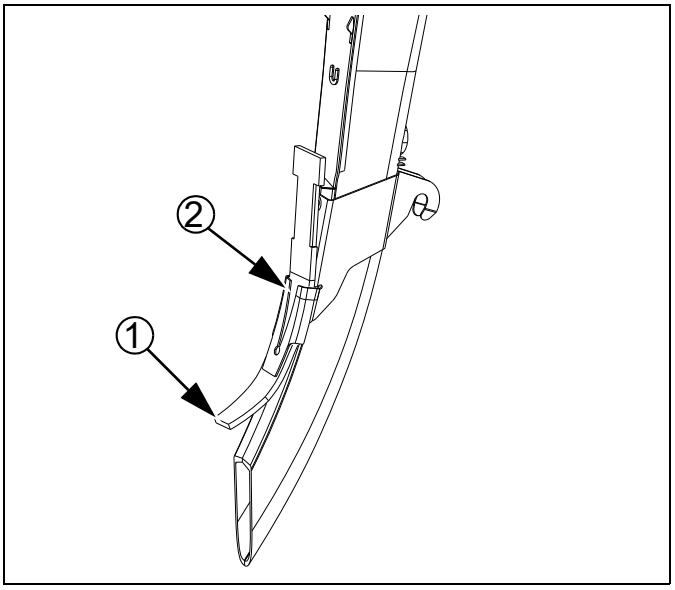
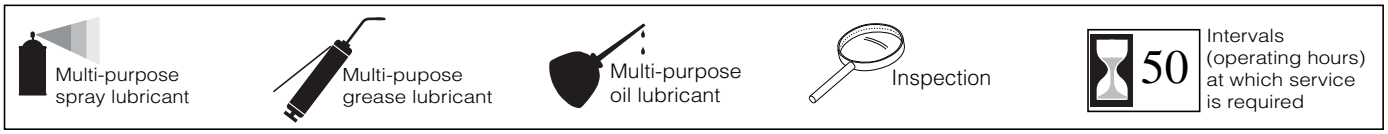
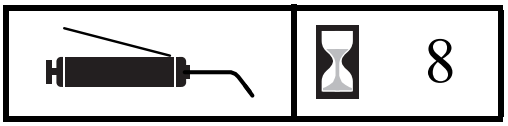


Figure 136 31047
816-302C Seed Tube Flap

Lubrication

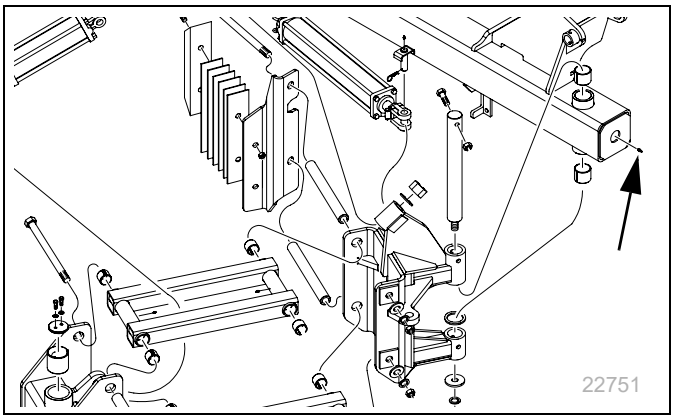


Caster Arm Pivot

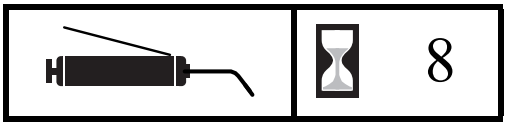


1 zerks each wing end;
2 total

Type of Lubrication: Grease
Quantity: Until grease emerges

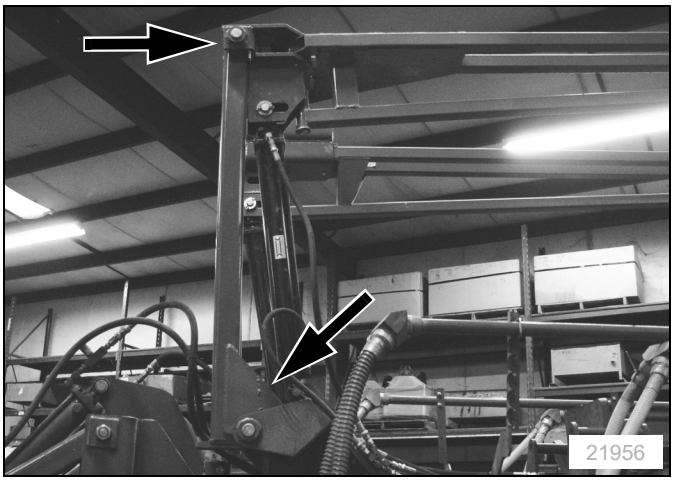


Marker Hinges

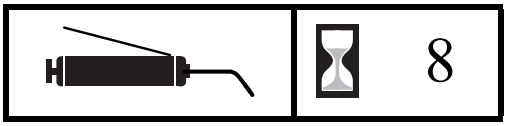


2 zerks per marker;
4 total

Type of Lubrication: Grease
Quantity: Until grease emerges

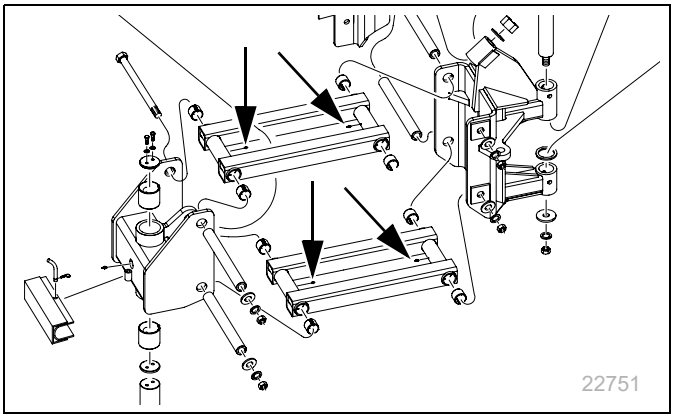


Parallel Pivot Arms

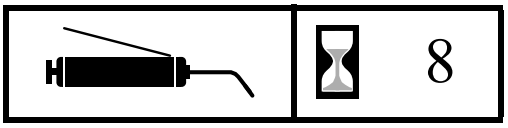


4 zerks each arm set;
8 total

Type of Lubrication: Grease
Quantity: Until grease emerges

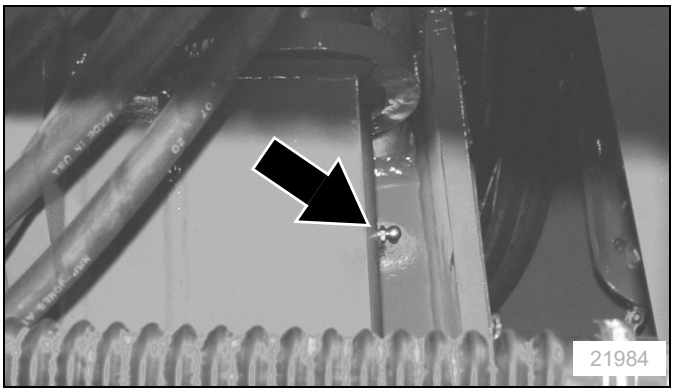


Tool Bar Pivot

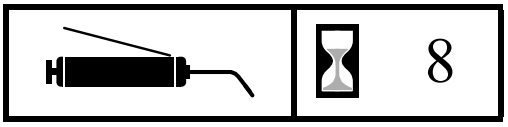


Vertical and horizontal tool bar pivots.

Type of Lubrication: Grease
Quantity: Until grease emerges

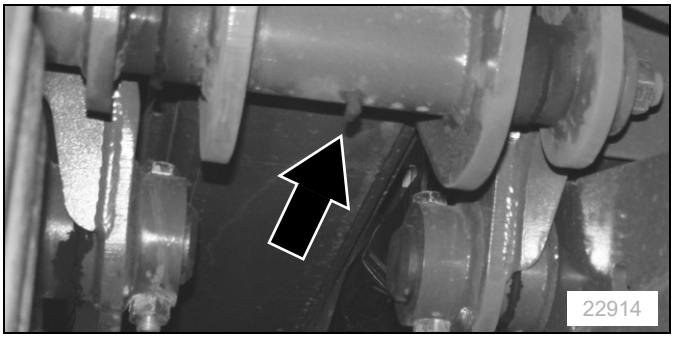


Tool Bar Pivot

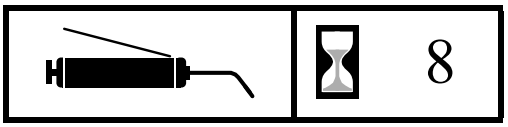


Vertical and horizontal tool bar pivots.

Type of Lubrication: Grease
Quantity: Until grease emerges

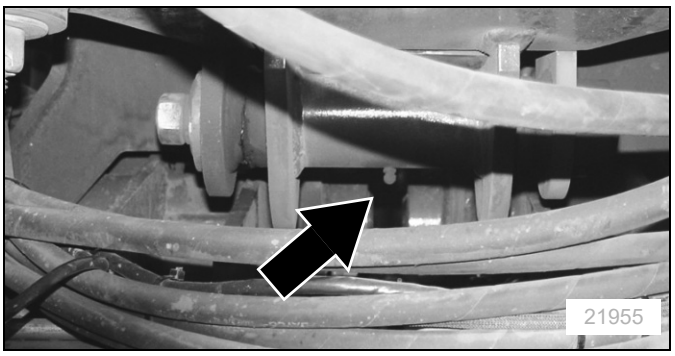


Tongue Lift Cylinder Anchor Pin

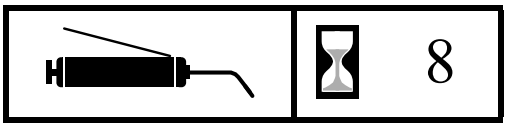


At rear of tongue

Type of Lubrication: Grease
Quantity: Until grease emerges

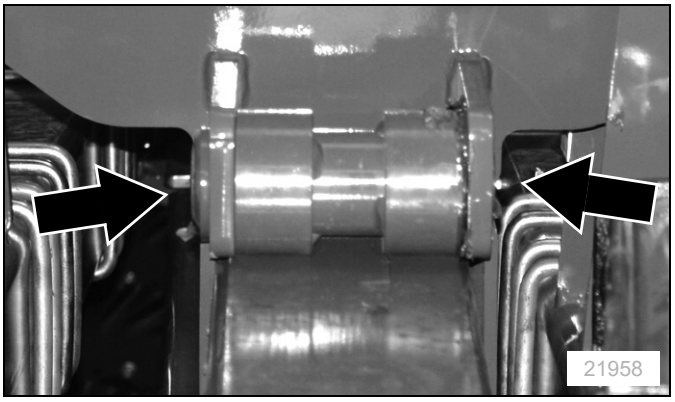


Tongue Slide Roller

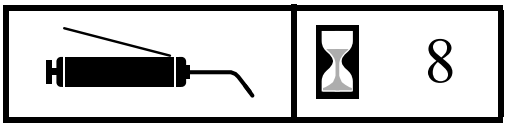


1 zerk

Type of Lubrication: Grease
Quantity: Until grease emerges

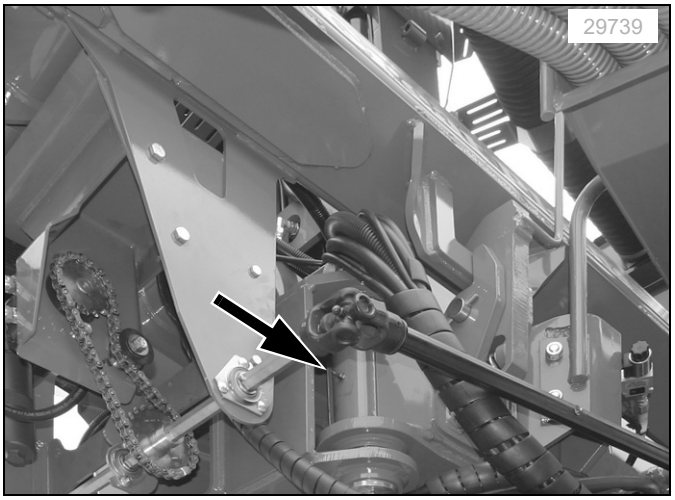


Wing Pivot, Vertical

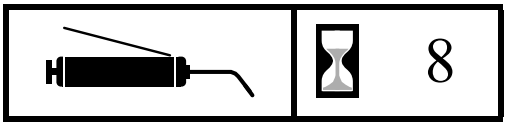


1 zerk each wing, at planter center;
2 total

Type of Lubrication: Grease
Quantity: Until grease emerges

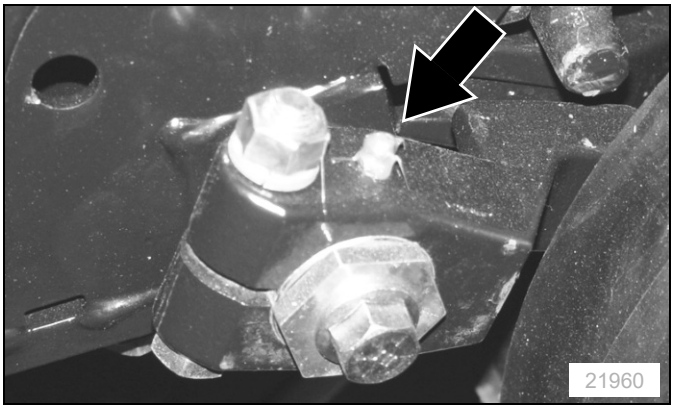


25 Series Side Wheel Bushing



2 zerks per row unit;
one each side of each row-unit

Type of Lubrication: Grease
Quantity: Until grease emerges

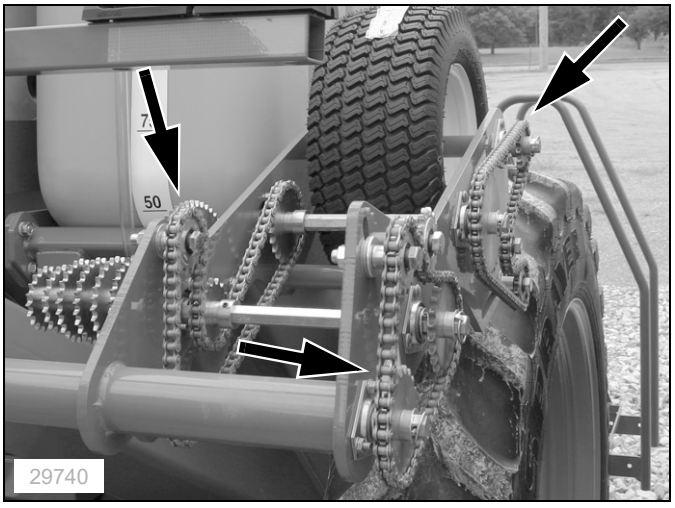


Drive Chains, Contact Drive

(not present on hydraulic drive planters)
3 chains at each contact wheel;
6 total

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.



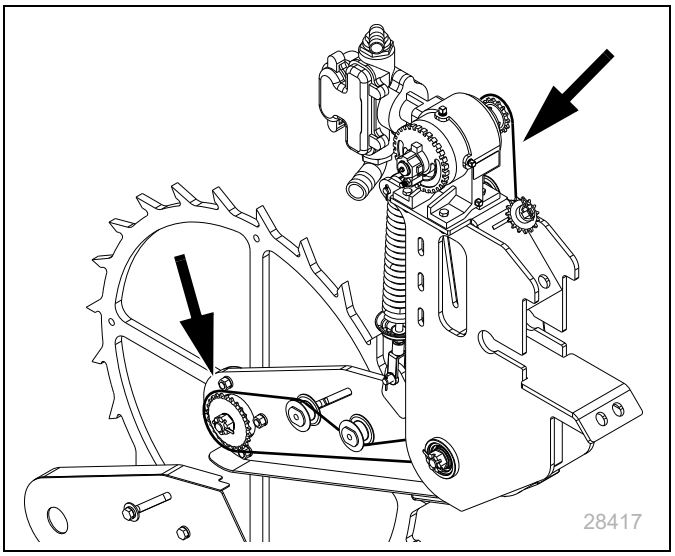
Drive Chains, Fertilizer Pump (Option)

As Required

(not present on hydraulic drive planters)
2 chains at each ground drive pump assembly;
2 total (typically)

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.



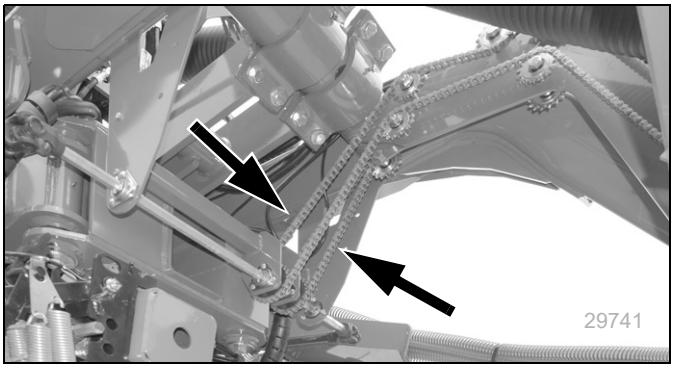
Drive Chains, Ground Drive

As Required

(not present on hydraulic drive planters)
2 chains to split center shaft;
2 total

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.



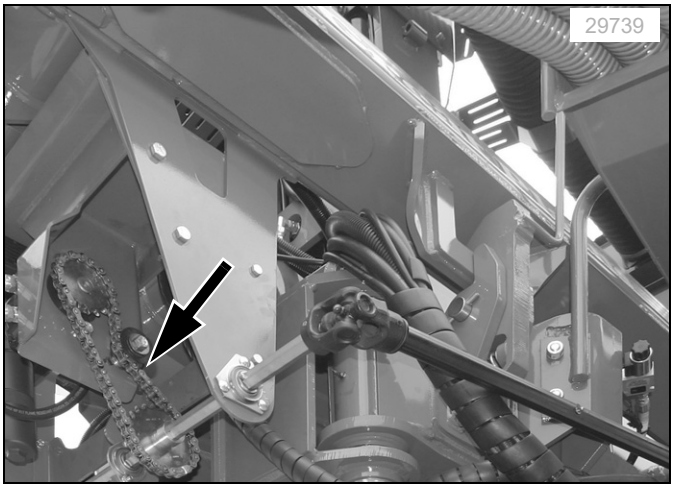
Drive Chain, Hydraulic Drive (Option)

As Required

1 chain, at planter center;
1 total

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

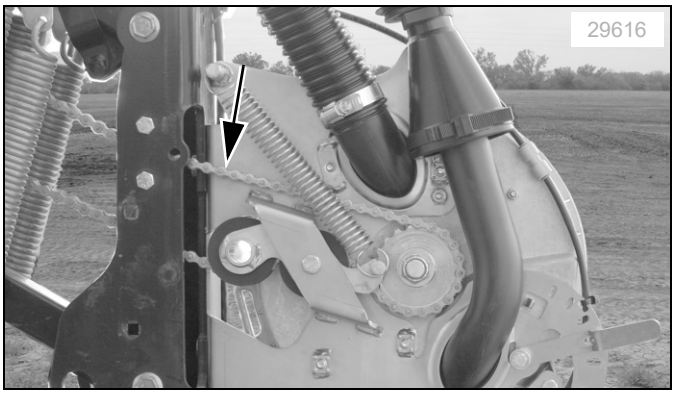


Drive Chains, Seed Meter

1 chain each meter

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

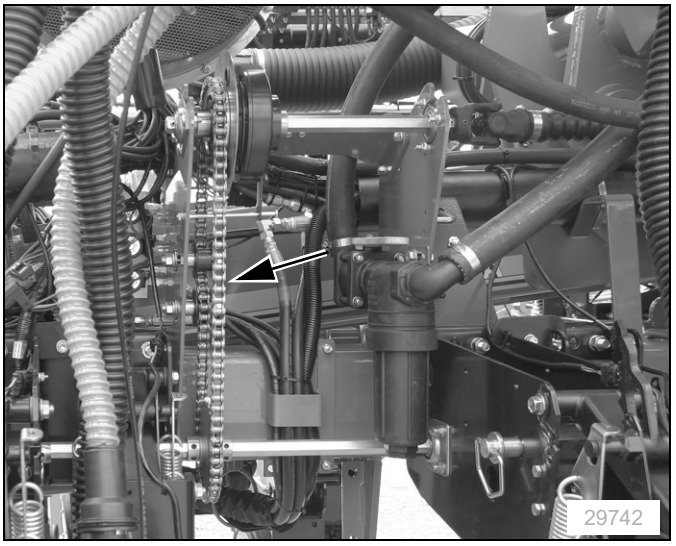


Drive Chains, Wing

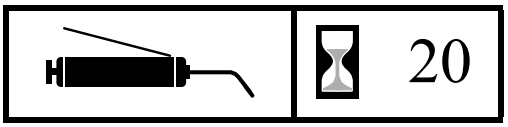
1 chain each meter

Type of Lubrication: Chain Lube
Quantity = Coat thoroughly

📖 Lubricate chains any time there is a chance of moisture, and when being stored at the end of the planting season.

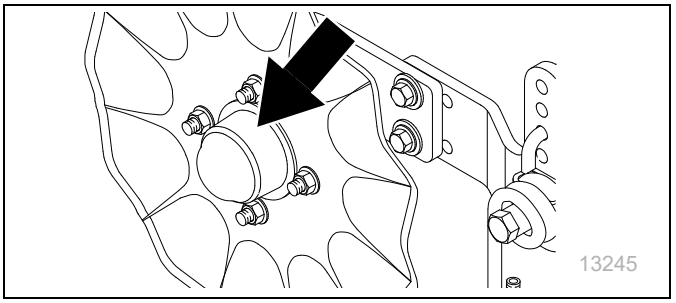


Frame-Mounted Coulter Hub (Option)

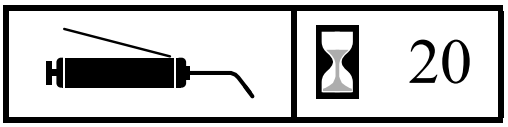


Type of Lubrication: Grease
Quantity = Until grease emerges

📖 Unit-mount coulter bearings are sealed, and require no lubrication or re-pack.

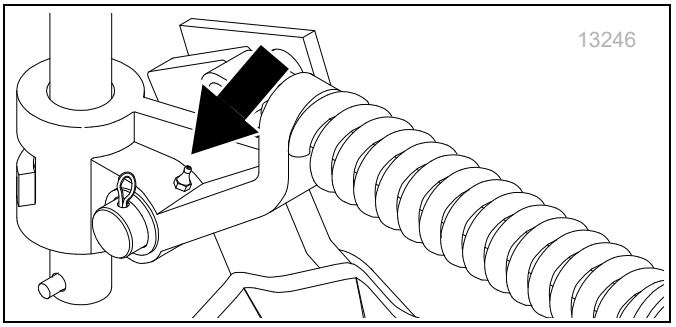


Frame-Mounted Coulter Pivot (Option)

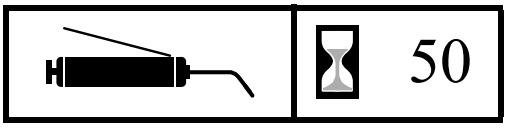


1 zerk each swivel mount casting

Type of Lubrication: Grease
Quantity: Until grease emerges

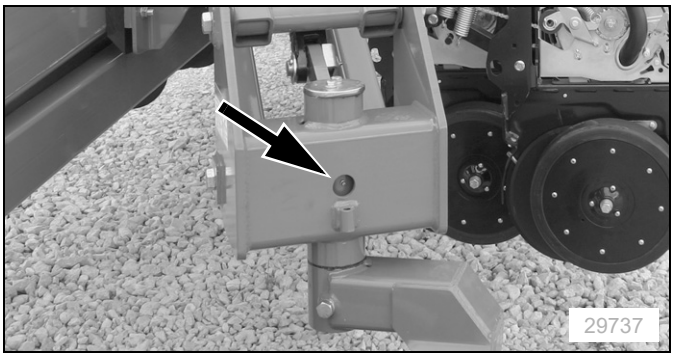


Caster Wheel Pivot

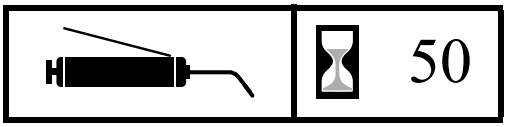


1 zerk each wheel;
2 total
One at pivot on wing and one in end of wing tube

Type of Lubrication: Grease
Quantity: Until grease emerges

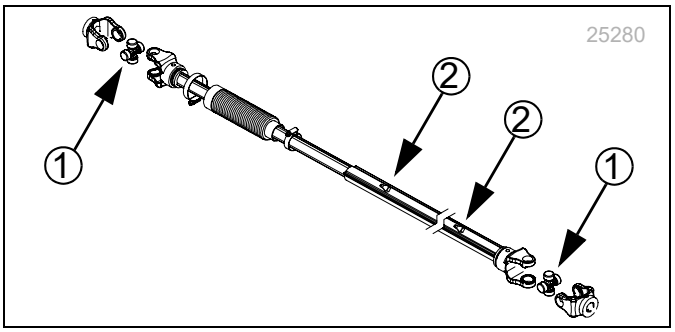


Wing Transfer Drive Shafts

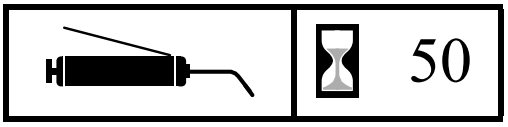


4 zerks each side; 8 total
① two each outer shaft sleeve
② one each of 2 universal joints
(newer and upgraded models)

Type of lubrication: Grease
Quantity: Until grease emerges (joints)
Quantity: 6 pumps (shafts)

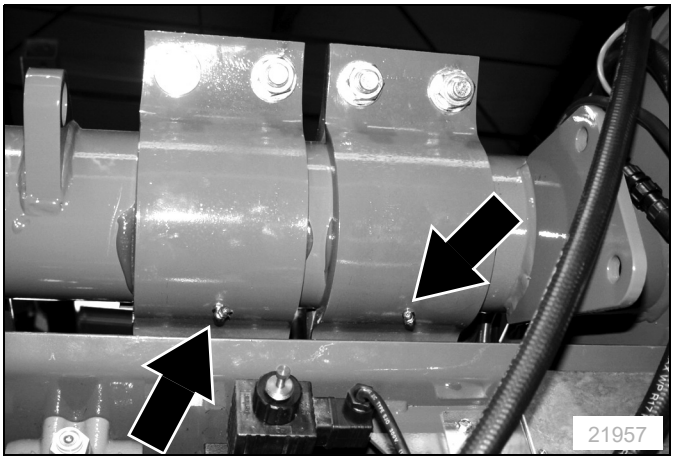


Rockshaft Pivot Pins

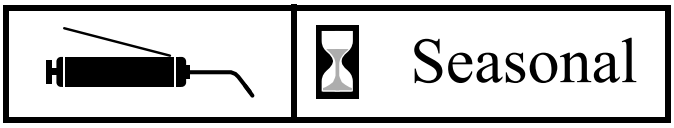


Two zerks on top, two on bottom;
four total

Type of Lubrication: Grease
Quantity: Until grease emerges

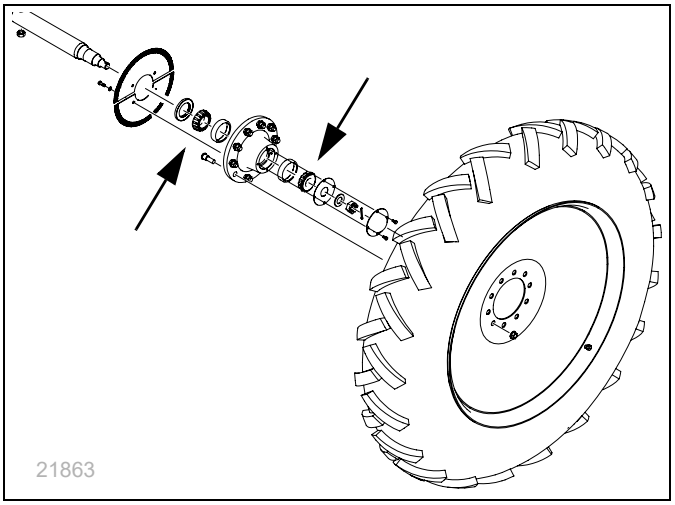


Main Transport Wheel Bearings

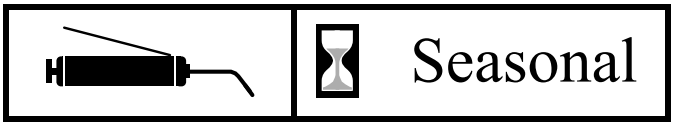


2 bearings each side;
4 total

Type of Lubrication: Grease
Quantity: Re-pack

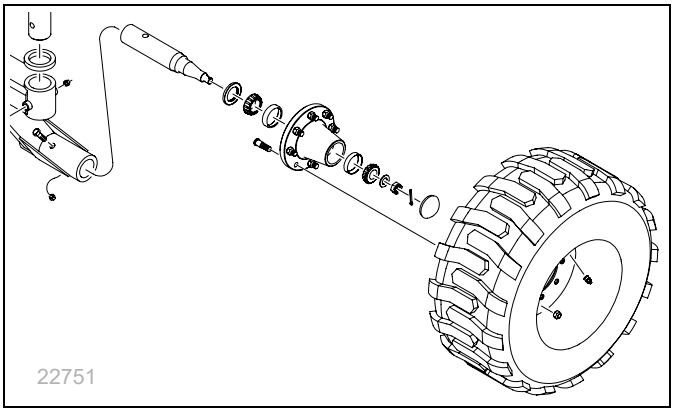


Gauge Wheel Bearings

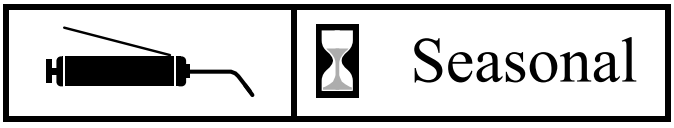


2 bearings each side;
4 total

Type of Lubrication: Grease
Quantity: Re-pack

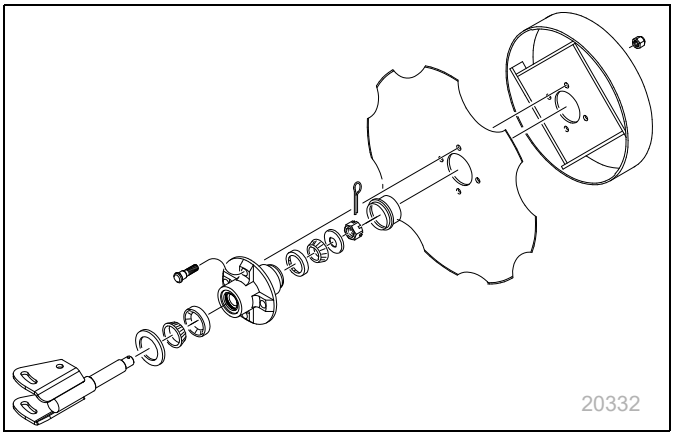


Marker Disk Hubs

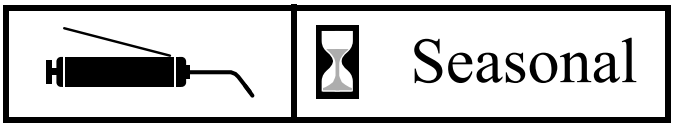


4 bearings; 2 each marker

Type of lubrication: Grease
Quantity = Repack

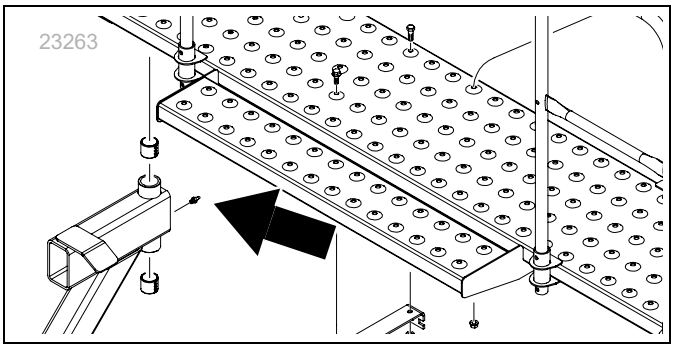


Walkboard Pivot

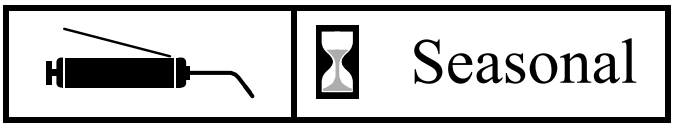


1 zerk

Type of lubrication: Grease
Quantity: Until grease emerges



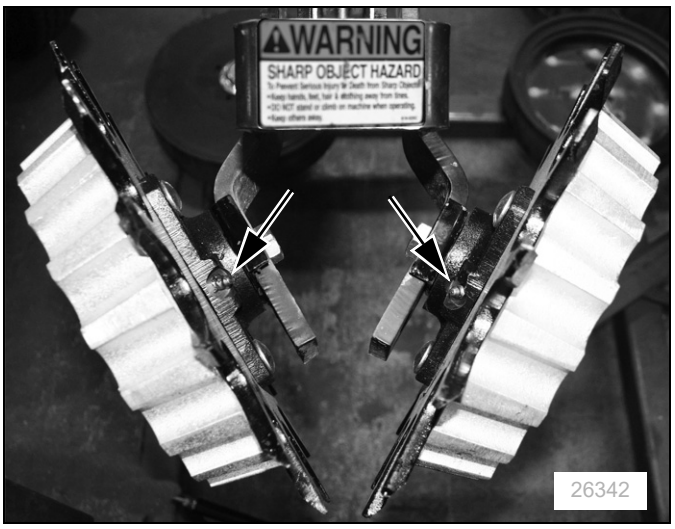
Row Cleaner Bearings (Option)



4 zerks each side;
8 total

Type of lubrication: Grease
Quantity: Until grease emerges

To avoid damaging the seal, do not add grease at high pressure.



Seed Lubricants

To maximize performance of Great Plains metering systems, it is imperative to use “Ezee Glide Plus” or Bayer Seed Fluency Agent.

Ezee Glide Plus Talc+Graphite Mix

821-069C bucket, 5 gallon (19 liter)

Ezee Glide Plus Lubricant
“Ezee Glide Plus”is suitable for all seeds, especially treated or inoculated seed, except where talc and graphite mixes are prohibited. *Thorough mixing of seed and added lubricant is required.*

Recommended usage:

For clean seeds other than milo, cotton, and sunflowers sprinkle one cup of Ezee Glide Plus Talc per 4 bushels or units (170 ml per 100 liters) of seed.

For milo, cotton, and sunflowers double the application to one cup (or more) per 2 bushels or units (335 ml per 100 liters) of seed.

For canola or mustard, 1 cup (240 ml) per 30 pound (13.6 kg) bag is a minimum starting value. Mix the seed lubricant early during the seed loading. Use more lubricant in extremely dry conditions.

Adjust this rate as necessary so all seeds become coated while avoiding an accumulation of lubricant in the bottom of the hopper.

For seed with excessive treatment, or for humid planting environments, increase the rate as needed for smooth meter operation.

⚠ CAUTION

Irritation and Chronic Exposure Hazard:
Wear gloves. DO NOT use hands or any part of your body to mix seed lubricant. Wear a respirator when transferring and mixing. Avoid breathing lubricant dust. Not an acute hazard. May cause mechanical eye or skin irritation in high concentrations. As with all mineral spills, minimize dusting during clean-up. Prolonged inhalation may cause lung injury. Product can become slippery when wet.

29248


36369

Bayer Seed Fluency Agent

821-074C Fluency Powder, case quantity

821-075C Fluency Powder, single 4.4 pound bucket

This agent is required by regulation for certain crops in certain regions (such as corn and soybean in Canada). It is an alternative to Ezee Glide Plus in other locales, for large seeds. It is not recommended for smaller seeds such as canola and milo.

Refer to the booklet affixed to the bucket for recommended usage. Do not exceed those recommendations, as excess amounts adversely affect accurate metering.

⚠ CAUTION

Dust and Explosion Hazard:
Avoid exposure to dust when mixing this powder into seed. Avoid creating dust in any confined space with ignition sources present, as specific concentrations can be explosive. Consult the instruction booklet and SDS[a] for further cautions.

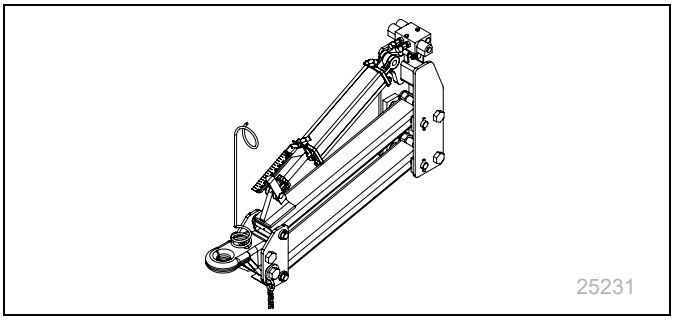
a. SDS: Safety Data Sheet.

Options

Hydraulic Tongue

A 3-point hitch is standard on the YP1225 and YP1625, but a hydraulic tongue may be substituted.

Option Packages	Part Number
YP1225/1625 Hydraulic Tongue; Field-Installed	401-430A



PTO Pump Kits

For tractors lacking a sufficient number of remotes with adequate continuous oil flow capability, kits are available to operate the fan(s) optionally the hydraulic seed drive motor, via mechanical Power Take-Off (PTO).

A 1000 rpm PTO is required with either:

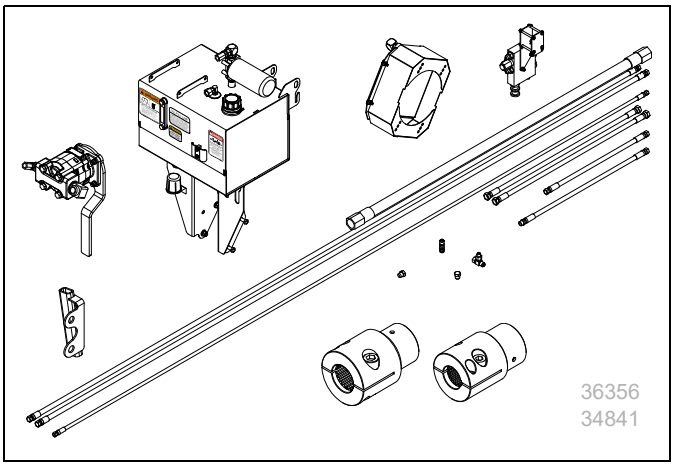
$1^{7}/_{8}$ in. (44.5 mm) 20-spline shaft, or

$1^{3}/_{8}$ in. (35 mm) 21-spline shaft.

Order one kit and one coupler.

Kits and Couplers	Part Number
GROUND DRIVE PTO KIT For model {multiple}	401-937A
HYDRAULIC DRIVE PTO KIT For model {multiple} F	401-935A
1 3/4-20 PTO COUPLER	826-777C
1 3/8-21 PTO COUPLER	826-778C

Operation and installation of the PTO kits is described in manual 411-015M, included with each kit.



Swath Command™

Swath Command™ provides automatic section control. The three standard manually-operated section clutches are replaced by individual row clutches. These clutches are connected in pairs to the seed monitor CANbus, providing 12 sections under computer control.

Sections are automatically disabled when overrunning a previously planted area, or when entering non-planting area as defined by a pre-loaded prescription.

Swath Command™ is presently available factory- or field-installed.

Planter Model	Kit
YP1625A-1236	402-393A
YP1625A-1630	402-380A
YP1625A-1970	402-380A
YP1625-2420	402-384A
YP1625-24TR36	402-379A
YP1625A-3115	402-383A
YP1625A-32TR	402-381A
YP1225A-1230	402-395A
YP1225A-16TR36	402-398A
YP1225A-1820	402-399A
YP1225A-2315	402-397A
YP1225A-24TR	402-396A

The system includes:

- factory: console upgrade to DICKEY-john® AI120 field kit: supplemental DICKEY-john® A5 console;
- complete air system (pump to rows); and,
- all harness components and row clutches.

The system does not include, but also requires:

- a geolocation data source, such as DGPS, and, if not inherently high precision (one foot or less),
- coordinate augmentation data, such as EGNOS, MSAS, OmniSTAR®, RTK, VBS, WASS or XP.

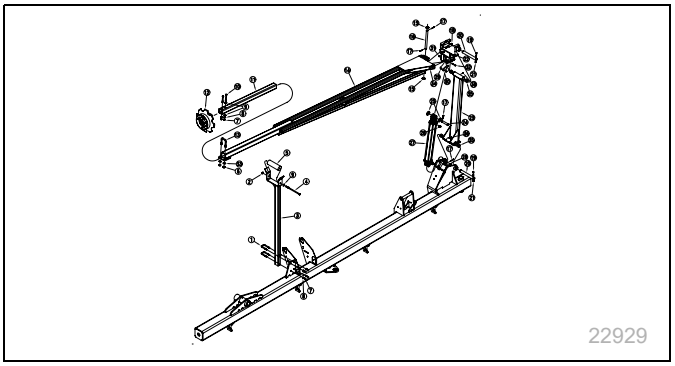
Great Plains also offers Trimble® AgGPS® receivers and RTK solutions. See Options in the Swath Command™ Operator manual (403-857M) for ordering information.

Markers

Markers are a standard factory-installed feature on the Planter, but may be optionally deleted, for example, if all planting is done via GPS navigation.

Markers are not trivial to install as a field upgrade. If any possible future planting might require markers, do not delete them from the initial Planter order.

For operations, see:
"**Marker Operation**" on page 47, and
"**Marker Adjustments**" on page 59.



Fertilizer System

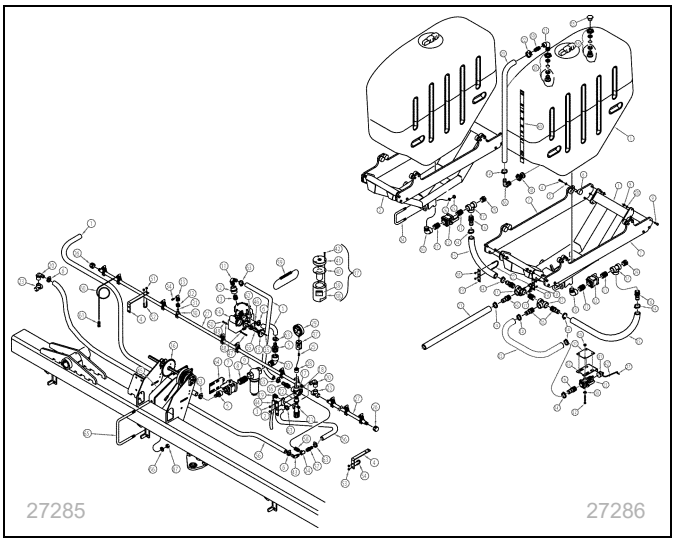
The Planter supports an optional fertilizer system.This system is required if the optional Keeton® seed firmers or Vantage I applicators are to be used for fertilizing.

To meet the needs of users who already have tractor or cart-mounted systems, the YP1225/1625 system is sold as four independent subsystems:

- Manifold (low or high rate)
- Tank system for seed cart
- Ground drive and pump

Great Plains recommends ordering the manifold and tank subsystems at time of initial planter purchase, as they are not trivial to field-install.

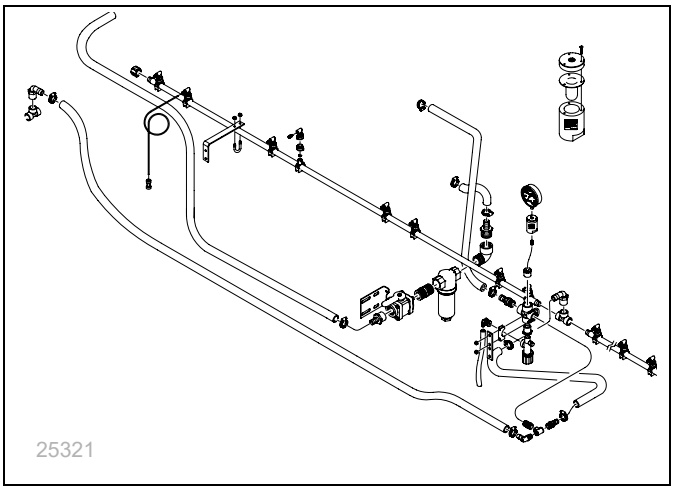
For operations, see: "**Fertilizer Tanks (Option)**" on page 38, and the Seed Rate manual.



Fertilizer Manifolds

Manifold kits include the relief valve, shut-off valve, strainer, manifold, orifice/check valves and unterminated row-unit drop-lines. They do not include a pump or tanks.

Option Packages	Part Number
YP1225 Starter Fertilizer Manifold Kit; Factory-Installed	407-132A
YP1225 Hi-Rate Fertilizer Manifold Kit; Factory-Installed	407-136A
YP1625 Starter Fertilizer Manifold Kit; Factory-Installed	407-133A
YP1625 Hi-Rate Fertilizer Manifold Kit; Factory-Installed	407-137A



Fertilizer Orifice Plates

The manifold systems include size 28, 34 and 48 plates. To order alternate plates, use the following part numbers. Order one per row unit.

Orifice Size	Part Number	Port Diameter	Port Area
20	832-052C	0.020 in	0.20 mm²
28*	832-056C	0.028 in	0.40 mm²
34*	832-053C	0.034 in	0.59 mm²
48*	832-054C	0.048 in	1.17 mm²
59	832-057C	0.059 in	1.76 mm²
80	832-055C	0.080 in	3.24 mm²
98	832-059C	0.098 in	4.87 mm²

* Sizes standard in many fertilizer bundles. Check your accessories before ordering.

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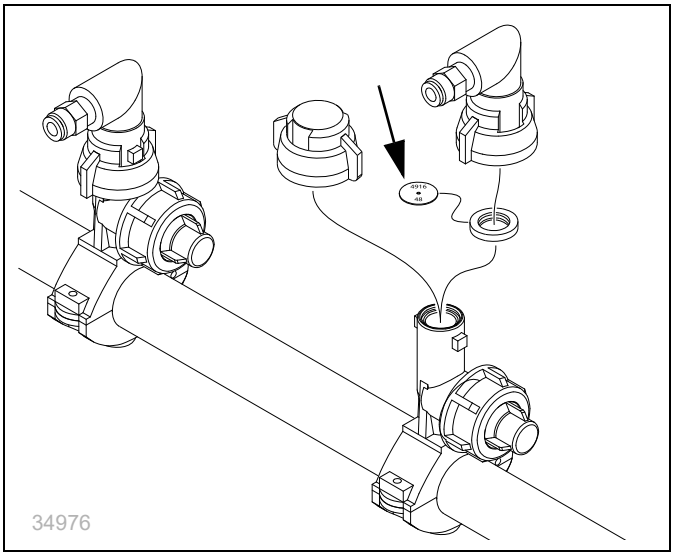


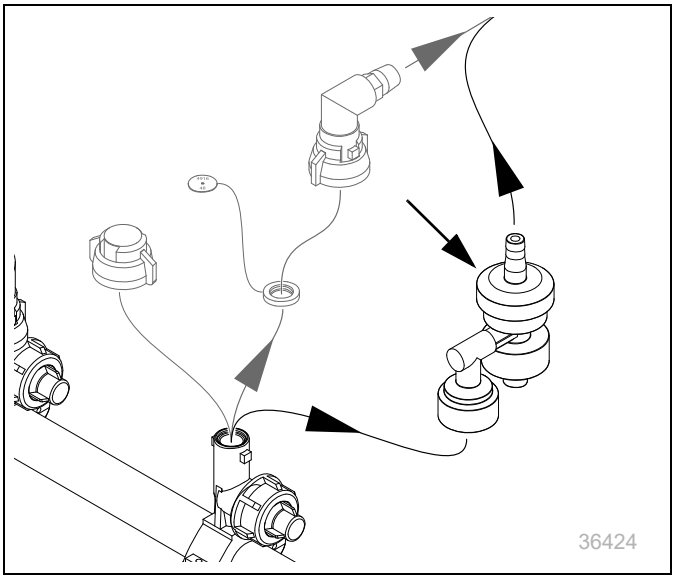
VeriFlow Nozzles

To eliminate the need to change orifice plates, you can replace the standard Great Plains nozzles with SprayTarget VeriFlow nozzles. These contain a spring-loaded regulator that provides consistent back-pressure over a wide range of rates and pressures.

Great Plains offers two models of VeriFlow nozzles:

Description	Part Number
NOZZLE HI-VERIFLOW1 (0.25 to 2.8 gpm at 15 to 60 psi)	829-143C
NOZZLE VERIFLOW1 (0.15 to 1.5 gpm at 15 to 60 psi)	829-144C

Order one nozzle per active boom clamp.

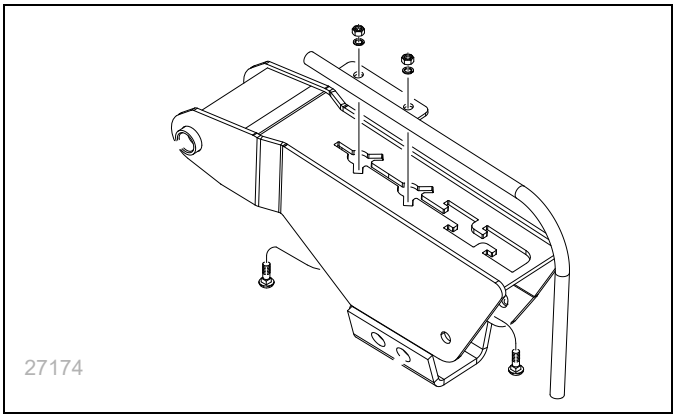


High-Rate Dribblers

📖 For use only with 25 Series openers.

Dribblers apply liquid fertilizer slightly to the side of the closed furrow behind the press wheel. Dribblers are available in left and right hand offsets, for use on twin rows. Order one dribbler per row.

Option Packages	Part Number
Fertilizer Dribbler Assembly, RH	204-131A
Fertilizer Dribbler Assembly, LH	204-132A

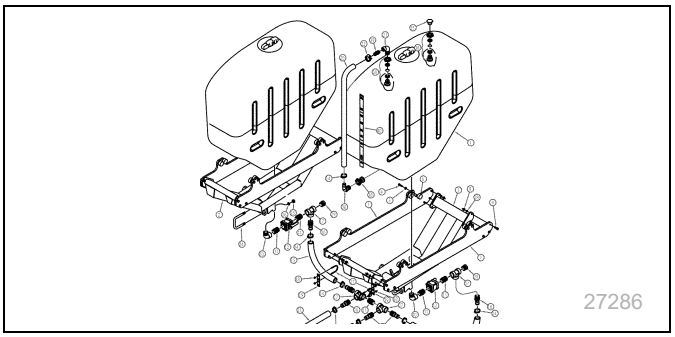


Liquid Fertilizer Tank

Tank and cart plumbing subsystems:

Option Packages	Part Number
YP1225/1625 Tank Kit	407-214L

For operations, see:
"**Fertilizer Tanks (Option)**" on page 38.

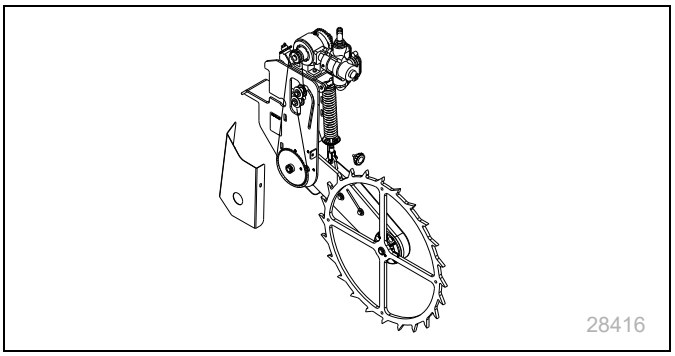


Ground Drive Fertilizer Pump

Planters ordered without a fertilizer pump system, or which have an older shaft-driven pump may be upgraded to ground drive JohnBlue piston pump:

Option Packages	Part Number
YP JB GROUND DRIVE PISTON PUMP	407-213A

For operations, see the Seed Rate manual.

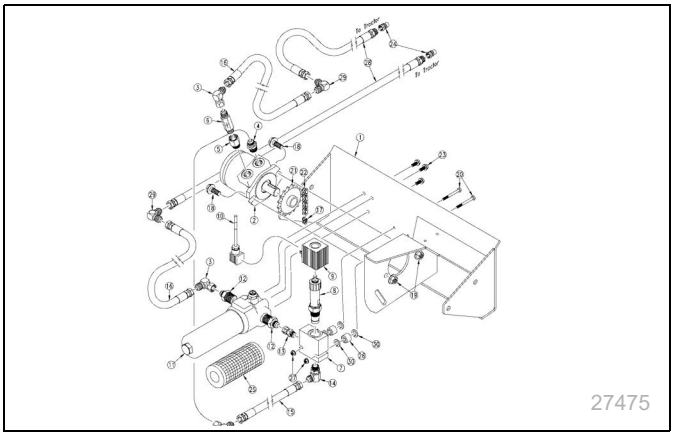


Hydraulic Drive

Upon initial order, a choice must be made between a ground-drive system (where elevated contact wheels on the seed cart to drive the meter system), or a Hydraulic Drive system that uses a hydraulic motor.

For new planter purchases, consult your Great Plains dealer for order codes.

For operations, see the DICKEY-john® Planter Drill Control operator manual.



82 Bu. or 150 Bu. Seed Hopper

A hopper may be purchased with the Planter or added later.

📖 The 150 bu. hopper is incompatible with the liquid fertilizer tank system, as it occupies the space used for the tanks.

Option Packages	Part Number
82 bu. Bulk Hopper (shown)	403-143K
150 Seed Hopper ASM	403-347K

The hoppers have no other prerequisites on the planter, but you will need a means of top-loading seed when the hopper is mounted on the seed box. Consider ordering the Auxiliary Hydraulic Kit to power an auger.

The 82 bu. hopper is usually, and the 150 bu. hopper is almost always, too heavy too be safely fork-lifted onto the planter if already pre-loaded with seed.

For operations, see:
“**Loading Materials**” on page 32.

Seed Lubricant

Description	Order Number
Ezee Glide Plus Talc + Graphite Mix (5 gallon / 18.9 liter container)	821-069C
Fluency Powder, case quantity	821-074C
Fluency Powder, single 4.4 pound bucket	821-075C

For use, see “**Seed Lubricants**” on page 115.

Auxiliary Hydraulic Kit

When the planter is not in motion, these kits enable the marker hydraulic circuit to be used to drive off-planter equipment, such as a seed auger.

Option Packages	Part Number
YP1225 Auxiliary Hydraulic Kit	401-435A
YP1625 Auxiliary Hydraulic Kit	407-441A

For operation, see “**Using Auxiliary Hydraulic Circuit**” on page 35.

SmartBox® Mounting Kit

These kits support the mounting of AMVAC SmartBox® containers and meters above row units. SmartBox® is a delivery system for pelletized seed/row treatments.

Planter Model	Part Number
YP1225-1230	403-196A
YP1225-16TR	-
YP1225-1820	403-197A
YP1225-2315	403-196A
YP1225-24TR	403-198A
YP1625-1630	403-199A
YP1625-2420	403-200A
YP1625-24TR	-
YP1625-3115	403-201A
YP1625-32TR	403-201A
YP2425-2430	403-218A
YP2425-3620	403-219A
YP2425-4715	403-218A
YP2425-48TR	403-220A

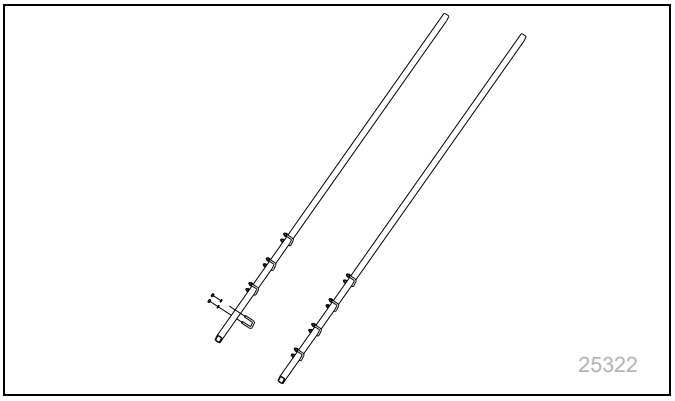
Row Options, Frame-Mounted

📖 No combination of unit mounted and frame mounted attachments may be mixed.

Under-frame Attachment Kit

Frame-mounted options require this kit, which is not standard on YP planters.

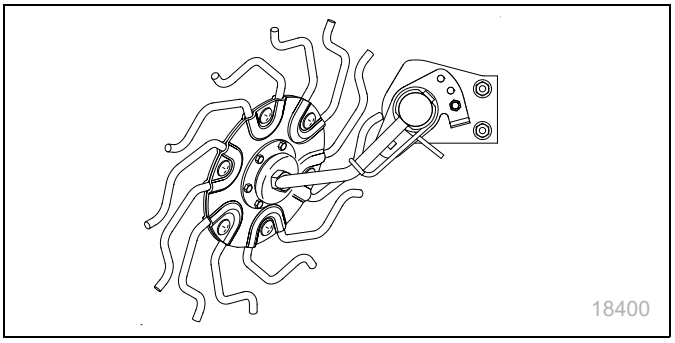
Under-frame Kits	Part Number
YP1225	204-515L
YP1625	204-496L



Terra-Tines

Stand-Alone Terra Tines

These row cleaners are available as frame-mounted, either stand-alone (attached to under-frame attachment kits), or attached to frame-mounted coulters.



Stand-Alone Packages	Part Number
YP1225-24TR (30 in., double)	207-132A
YP1225-16TR (36 in., double)	207-204A
YP1225-1230 (30 in., single)	207-138A
YP1225-1820 (20 in., single)	207-136A
YP1225-2315 (15 in. on 30 in. rows)	207-134A
YP1625-32TR (30 in., double)	207-131A
YP1625-24TR (36 in., double)	207-132A
YP1625-1630 (30 in., single)	207-137A
YP1625-2420 (20 in., single)	207-135A
YP1625-3115 (15 in., single)	207-133A

Coulter-Mounted Terra Tines

Coulter-Mounted Packages	Part Number
YP1225-24TR	-
YP1225-16TR	-
YP1225-1230 (30 in.)	207-592A
YP1225-1820 (20 in.)	207-584A
YP1225-2315 (15 in.)	207-576A
YP1625-32TR (30 in.)	-
YP1625-24TR (36 in.)	-
YP1625-1630 (30 in.)	207-591A
YP1625-2420 (20 in.)	207-583A
YP1625-3115 (15 in.)	207-575A

For operations, See “**Unit-Mount Cleaner Adjustments**” on page 66

Frame-Mounted (Zone) Coulters

Vantage I Coulters

Frame-Mounted Coulter Only

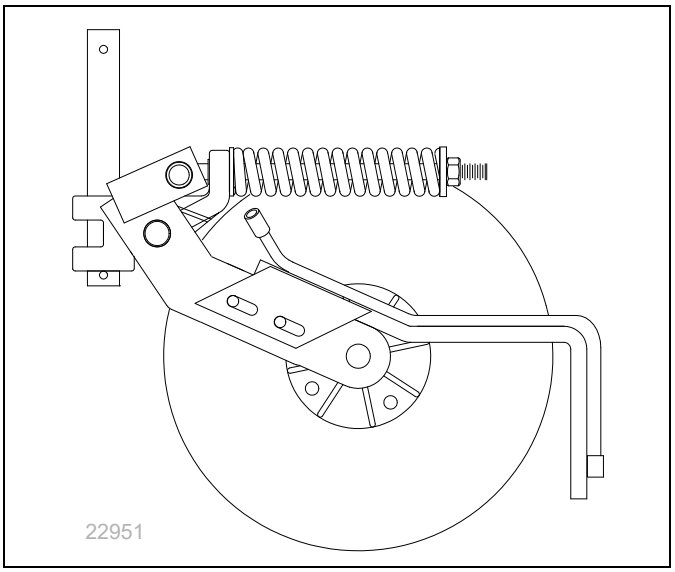
YP1225 15in Blade Packages	Part No.
YP1225-1230 (every row, fluted)	204-586A
YP1225-1230 (every row, turbo)	204-588A
YP1225-1820 (every row, fluted)	204-578A
YP1225-1820 (every row, turbo)	204-580A
YP1225-2315 (every row, fluted)	204-566A
YP1225-2315 (every row, turbo)	204-568A
YP1225-2315 (30 in. rows, fluted)	204-570A
YP1225-2315 (30 in. rows, turbo)	204-572A

YP1625 15in Blade Packages	Part No.
YP1625-1630 (every row, fluted)	204-585A
YP1625-1630 (30 in. rows, turbo)	204-587A
YP1625-2420 (every row, fluted)	204-577A
YP1625-2420 (30 in. rows, turbo)	204-579A
YP1625-3115 (every row, fluted)	204-565A
YP1625-3115 (30 in. rows, turbo)	204-567A

Frame-Mounted Vantage I Coulter

YP1225 17in Blade Packages	Part No.
YP1225-24TR (between rows)	204-628A
YP1225-16TR (between rows)	204-092A
YP1225-1230 (every row)	204-590A
YP1225-1820 (every row)	204-582A
YP1225-2315 (30 in. rows)	204-574A

YP1625 17in Blade Packages	Part No.
YP1625-32TR (between rows)	204-625A
YP1625-24TR (between rows)	204-628A
YP1625-1630 (every row)	204-589A
YP1625-2420 (every row)	204-581A
YP1625-3115 (30 in. rows)	204-573A



Row Options (Unit-Mount)

📖 No combination of unit mounted and frame mounted attachments may be mixed.

Unit-Mounted Row Cleaners

Optional Martin row cleaners are unit-mount as:

- UMRC “stand-alone”, via unit-mount assembly ①, or;
- UMC-RC via coulter disc mounting bracket ②, with or without a coulter disc).

These bundles include a manual.

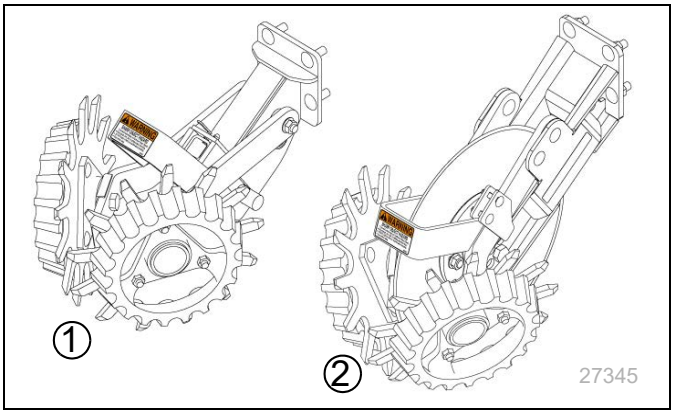
Single-Wheel, Coulter-Mount	Part Number
YP1225-24TR (30 in.)	207-108A
YP1225-16TR (36 in.)	207-125A
YP1625-32TR (30 in.)	207-107A
YP1625-24TR (36 in.)	207-108A

Double-Wheel, Coulter-Mount	Part Number
YP1225 (30 in.)	207-126A
YP1225 (20 in.)	207-120A
YP1225 (15 in.)	207-114A
YP1625 (30 in.)	207-113A
YP1625 (15in on 30 in. rows)	207-113A
YP1625 (20 in.)	207-119A

Single-Wheel, Stand-Alone	Part Number
YP1225-24TR (30 in.)	207-112A
YP1225-16TR (36 in.)	207-129A
YP1625-32TR (30 in.)	207-111A
YP1625-24TR (36 in.)	207-112A

Double-Wheel, Stand-Alone	Part Number
YP1225 (30 in.)	207-130A
YP1225 (20 in.)	207-124A
YP1225 (15 in.)	207-118A
YP1625 (30 in.)	207-129A
YP1625 (20 in.)	207-123A
YP1625 (15 in. on 30 in. rows)	207-117A

For operations, see:
See “**Unit-Mount Cleaner Adjustments**” on page 66.



📖 Single-Row planters support single- or double-wheel unit-mounted row cleaners.

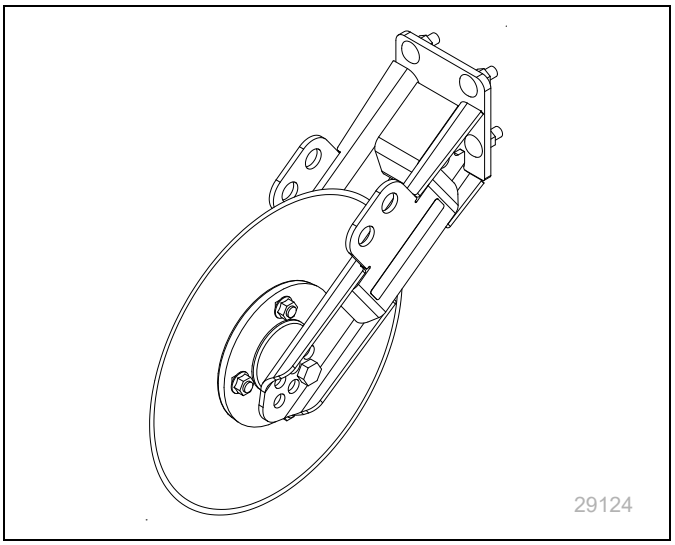
📖 Twin-Row planters support only single-wheel unit-mounted row cleaners, in alternating left/right cleaner hub orientations.

These kits do not include a manual.
Separately order one 204-085M-A if ordering kits.

Individual Row Cleaners	Part Number
UMRC Dual Wheel	207-213K
UMRC LH Single Wheel	207-215K
UMRC RH Single Wheel	207-216K
UMC-RC Dual Wheel	207-098S
UMC-RC LH Single Wheel	207-092S
UMC-RC RH Single Wheel	207-093S
RC Install/Use/Parts Manual	204-085M-A

Unit-Mounted Disc Coulters

Optional unit-mount disc coulters are available with 15 inch fluted blades, 15 inch turbo blades or 14 inch straight blades. If you need complete coulters, with unit mount and blade, the selection includes:



15 inch Fluted Packages	Part Number
YP1225-24TR (30 in.)	204-528A
YP1225-16TR (36 in.)	204-551A
YP1225-1230 (30 in.)	204-552A
YP1225-1820 (20 in.)	204-546A
YP1225-2315 (15 in., every row)	204-534A
YP1225-2315 (15 in. on 30 in. rows)	204-540A
YP1625-32TR (30 in.)	204-527A
YP1625-24TR (36 in.)	204-545A
YP1625-1630 (30 in.)	204-551A
YP1625-2420 (20 in.)	204-545A
YP1625-3115 (15 in., every row)	204-533A
YP1625-3115 (15 in., on 30 in. rows)	204-539A

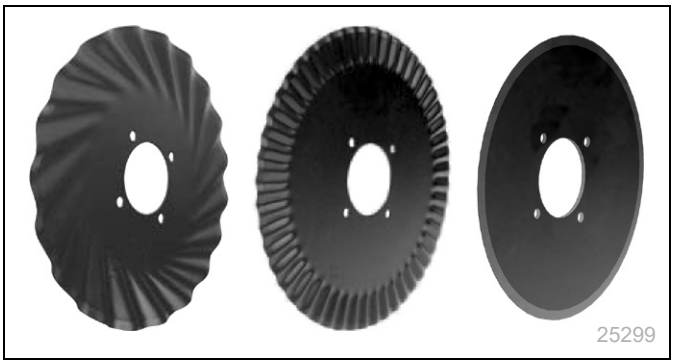
15 inch Turbo Packages	Part Number
YP1225-24TR (30 in.)	204-530A
YP1225-16TR (36 in.)	204-553A
YP1225-1230 (30 in.)	204-554A
YP1225-1820 (20 in.)	204-548A
YP1225-2315 (15 in., every row)	204-536A
YP1225-2315 (15 in. on 30 in. rows)	204-542A
YP1625-32TR (30 in.)	204-529A
YP1625-24TR (36 in.)	204-547A
YP1625-1630 (30 in.)	204-553A
YP1625-2420 (20 in.)	204-547A
YP1625-3115 (15 in., every row)	204-535A
YP1625-3115 (15 in., 30 in. rows)	204-541A

14 inch Straight Packages	Part Number
YP1225-24TR (30 in.)	204-532A
YP1225-16TR (36 in.)	204-555A
YP1225-1230 (30 in.)	204-556A
YP1225-1820 (20 in.)	204-550A
YP1225-2315 (15 in. on 30 in. rows)	204-544A
YP1625-32TR (30 in.)	204-531A
YP1625-24TR (36 in.)	204-549A
YP1625-1630 (30 in.)	204-555A
YP1625-2420 (20 in.)	204-549A
YP1625-3115 (15 in., 30 in. rows)	204-543A

Coulter Blades

Replacement and alternate coulter blades include (quantity is 1 per row unit):

15in Turbo Packages	Part Number
Turbo, 15 in. (20 flutes)	820-327C
Fluted, 15 in. (50 flutes)	820-331C
Straight, 14 in.	820-259C

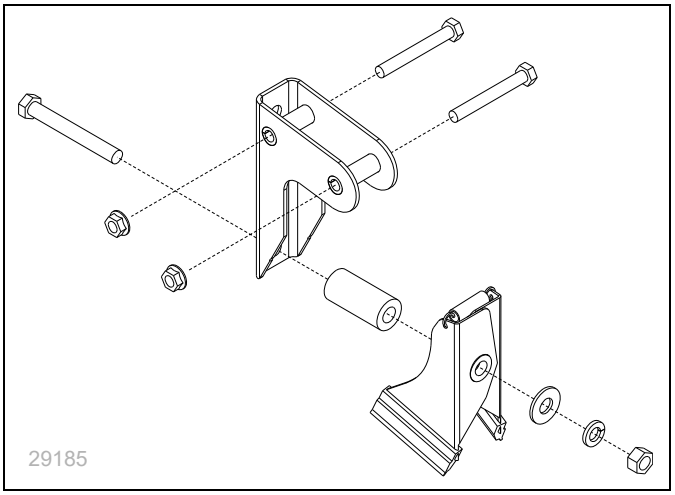


For operations, see:
"**Unit-Mounted Coulter Adjustments**" on page 67.

Inside Disc Scrapers

When planting in moist or sticky soils, this scraper is useful in preventing build-up that might otherwise impair opener disc performance.

Description	Part Number
25 Series Inside Scraper	122-278S



This scraper cannot be used with Seed-Lok® seed firmers installed. It is compatible with seed flaps and optional Keeton® seed firmers.

See page 159 for scraper installation. The spring-loaded carbide scraper requires no adjustment.

Gauge Wheel Scrapers

When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise result in shallow planting.

Order one part per wheel (2 per opener).

Wheel Scrapers	Part Number
$2^{3}/_{8}$ in. Gauge wheel scraper	404-194D
3 in. Gauge wheel scraper	404-195D
4 in. Gauge wheel scraper	404-196D

The scrapers mount on the bottom rear of the depth wheel arm, using the existing bolt and lock washer. The slot in the scraper is long enough to clear the lower zerk, and allow adjustment as wheel and scraper wear.

For operations, see:
"**Adjusting Gauge Wheel Scrapers**" on page 70.

Indexing Timing Tool

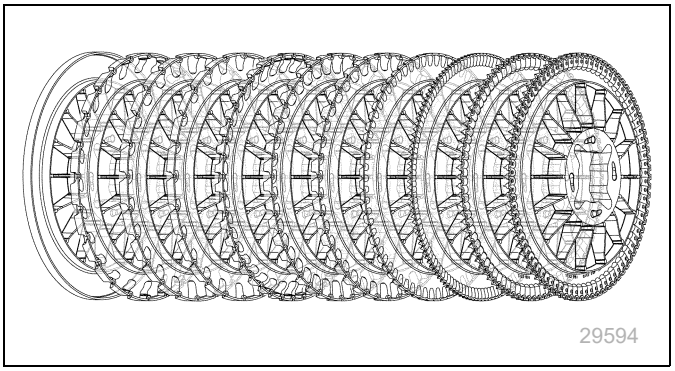
The timing tool comes standard on new twin row planters. It is used to shift the chain position by one tooth per tool rotation. For further information and directions on how to use the timing tool see the Seed Rate manual 401-625B. For easy access the timing tool can be ordered with hardware for mounting it under the walkboard.

Timing Tool Assembly 403-557H	Part Number
Timing Tool Holder	403-556H
Pin Lynch 3/16 x 1 9/16 Long	805-240C
Timing Tool, 19 Tooth	812-391C

Seed Meter Disks

Air-Pro® Meters accept a variety of seed disks, each optimized for specific seeds, plus a special blank disk for row shut-off. Disks are simple to change. Choices include:

Meter Disks	Part Number
Blank, 0 Cell	817-841C
Canola, 150	837-148C
Canola, 250 Cell	817-991C
Corn, 24 Cell (Large, Flat)	817-836C
Corn, 24 Cell (Large, Round)	817-794C
Corn, 24 Cell (Medium)	837-126C
Corn, 24 Cell (Small, Round or Flat)	817-795C
Corn, 40 Cell (Large, Flat)	817-838C
Corn, 40 Cell (Large, Round	817-796C
Corn, 40 Cell (Medium)	837-127C
Corn, 40 Cell (Small, Round or Flat)	817-797C
Cotton, 60 Cell	817-857C
Cotton, Hill Drop, 12 Cell	837-186C
Edible Bean, 60 Cell (Medium)	837-065C
Edible Bean, 56 Cell (Large)	817-967C
Industrial Hemp, 5 Cell	837-364C
Industrial Hemp, 30 Cell	837-386C
Milo, Pelletized Sugar Beet, 30 Cell	837-057C
Milo, Pelletized Sugar Beet, 65 Cell	817-849C
Milo, Pelletized Sugar Beet, 130 Cell	817-800C
Soybeans, 84 Cell	817-798C
Soybeans, 168 Cell	403-551D
Sunflower, 24 Cell (Large), Popcorn	817-851C
Sunflower, 60 Cell (Small)	837-234C
Sunflower, 60 Cell (Medium)	837-235C
Volumetric No. 1, 84 Cell	817-867C

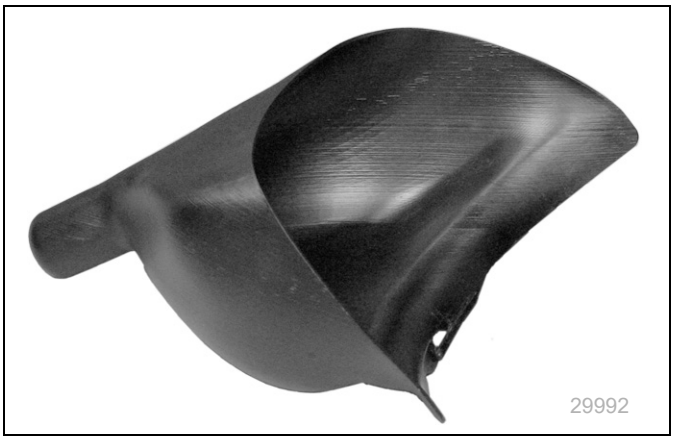


Clean-Out Container

One container is provided with the planter. Order the following part for additional or replacement containers.

Description	Order Number
AIR METER CLEAN OUT FUNNEL	817-811C

See “**Funnel Conversion**” on page 94.
See “**Meter Clean-Out**” on page 94.



Seed Tube Brush

One brush is provided with the planter. Order the following part for additional or replacement brushes.

Description	Order Number
SEED TUBE CLEANER BRUSH	891-259C

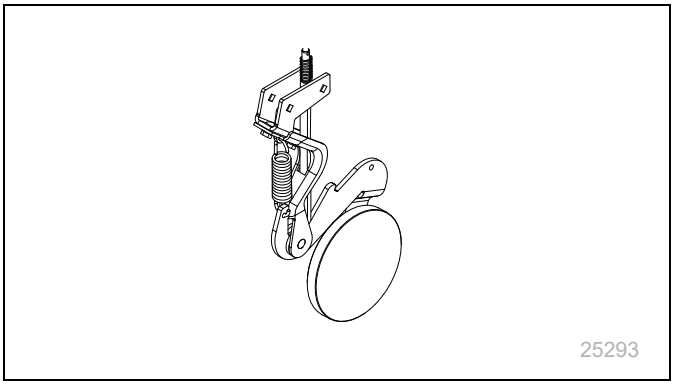
See “**Seed Tube Clean-Out**” on page 95.

Seed-Lok® Seed Firmer

The base Planter includes no seed firmers. A choice of firmers is an option in the product bundles, or may be field-installed as kits. Only one type of seed firmer may be installed at the same time.

Meters	Part Number
25 Series Seed-Lok® kit (per opener)	404-093K

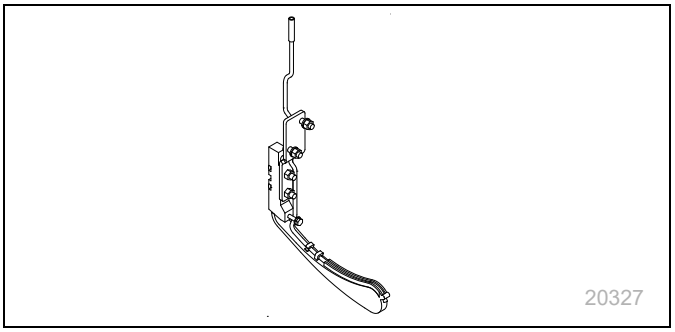
For operations, see:
“**Seed Firmer Adjustments**” on page 77.



Keeton® Seed Firmer

The base planter includes no seed firmers. A choice of firmers is an option in the product bundles, or may be field-installed as kits. Only one type of seed firmer may be installed at the same time.

Meters	Part Number
Keeton® seed firmer (per opener)	890-796C
Keeton® seed firmer (per opener)	890-840C



The Keeton® seed firmer also supports low-rate fertilizer delivery. For this use, the optional fertilizer system (page 118) must also be installed.

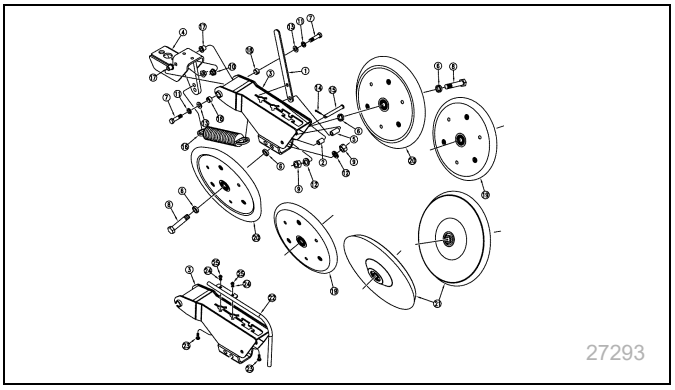
For operations, see:
"**Seed Firmer Adjustments**" on page 77.

Row Unit Press Wheels

The base Yield Pro planter includes a choice of press wheels. Additional wheels are available, and all may be field-installed.

This manual does not list kit part numbers as the available wheels are often region-specific. Consult your Great Plains dealer.

For operations, see:
"**Press Wheel Adjustments**" on page 79.



Appendix A - Reference Information

Specifications and Capacities

YP1225 Models

YP1225A Model	-1230	-16TR36	-1820	-2315	-24TR
Row Count	12	16 (8 twin)	18	23	24 (12 twin)
Row Spacing	30 in.	36 in.	20 in.	15 in.	30 in.
Working Width	30 ft.				
Span (width between end rows)	330 in.	260 in.	340 in.	330 in.	338 in.
Swath (Channel Width)	360 in.	288 in.	360 in.	345 in.	360 in.
Seed Capacity	Optional 82 or 150 bu hoppers, or PROBOX® 50 unit bulk seed container				
Transport Width	13 ft. 6 in.				
Working Length	26 ft. 2 in.				
Transport Length	36 ft. 2 in.				
Working Height	11 ft. 3 in.				
Transport Height	12 ft. 2 in.				
Transport Clearance	22 in.				
Minimum Tractor Requirement	140 hp	165 hp	175 hp	200 hp	205 hp
Hitch	3-Point, Hydraulic Tongue Optional				
Hydraulic Circuits Required	Closed-Center, 3 Remotes (4 w/Hydraulic Drive), 2250 psi, 25 gal/min (fan circuit)				
Weight* (empty, base configuration)	15540 lb	16410 lb	16850 lb	17940 lb	18160 lb
Weight* (full, max. configuration)	28500 lb	29610 lb	30170 lb	31550 lb	31830 lb
Transport Tire Size	Standard: 14.9R46 8 Star Radial R-1 (380/90R46) Optional: 18.4R42 3 Star R1 (480/80R42)				
Wing Gauge Wheel Tire Size	33x15.5x16.5 12 Ply Skid Steer NHS (395/55B16.5)				
Contact Drive Tire Size	20x8.00-10 Turf NHS				
Opener Down Pressure	320 to 535 lbs				
Opener Travel (Up - Down)	10 in.				
Opener Depth Range	0 to 4 in.				

* See page 31 for additional weight data.

YP1625 North America Models

YP1625A Model	-1236	-1630	-2420	-24TR36	-3115	-32TR
Row Count	12	16	24	24 (12 twin)	31	32 (16 twin)
Row Spacing	36 in.	30 in.	20 in.	36 in.	15 in.	30 in.
Working Width	40 ft.					
Span (width between end rows)	396 in.	450 in.	460 in.	404 in.	450 in.	458 in.
Swath (Channel Width)	432 in.	480 in.	480 in.	432 in.	465 in.	480 in.
Seed Capacity	Optional 82 or 150 bu hoppers, or PROBOX® 50 unit bulk seed container					
Transport Width	13 ft. 6 in.					
Working Length	31 ft. 2 in.					
Transport Length	41 ft. 2 in.					
Working Height	11 ft. 3 in.					
Transport Height	12 ft. 2 in.					
Transport Clearance	22 in.					
Minimum Tractor Requirement	165 hp	190 hp	230 hp	230 hp	270 hp	275 hp
Hitch	3-Point, Hydraulic Tongue Optional					
Hydraulic Circuits Required	Closed-Center, 3 Remotes (4 w/Hydraulic Drive), 2250 psi, 25 gal/min (fan circuit)					
Weight* (empty, base configuration)	15800 lb	16670 lb	18420 lb	18420 lb	19940 lb	20160 lb
Weight* (full, max. configuration)	28770 lb	29880 lb	32100 lb	32100 lb	34040 lb	34320 lb
Transport Tire Size	Standard: 14.9R46 8 Star Radial R-1 (380/90R46) Optional: 18.4R42 3 Star R1 (480/80R42)					
Wing Gauge Wheel Tire Size	33x15.5x16.5 12 Ply Skid Steer NHS (395/55B16.5)					
Contact Drive Tire Size	20x8.00-10 Turf NHS					
Opener Down Pressure	320 to 535 lbs					
Opener Travel (Up - Down)	10 in.					
Opener Depth Range	0 to 4 in.					

* See page 31 for additional weight data.

YP1625 Export Model

Model	YP1625A-1670
Row Count	16
Row Spacing	70 cm
Working Width	12.2 m
Span (width between end rows)	1050 cm
Swath (Channel Width)	1120 cm
Seed Capacity	Optional 2890 or 5290 liter hoppers, or PROBOX® 50 unit bulk container
Transport Width	4.1 m
Working Length	9.5 m
Transport Length	12.5 m
Working Height	3.4 m
Transport Height	3.7 m
Transport Clearance	56 cm
Minimum Tractor Requirement	290 kW
Hitch	3-Point, Hydraulic Tongue Optional
Hydraulic Circuits Required	Closed-Center, 3 Remotes (4 w/Hydraulic Drive), 155 bar, 95 liters/min (fan circuit)
Weight* (empty, base configuration)	7570 kg
Weight* (full, max. configuration)	13560 kg
Transport Tire Size	Standard: 380/90R46 (14.9R46 8 Star Radial R-1) Optional: 480/80R42 (18.4R42 3 Star R1)
Wing Gauge Wheel Tire Size	395/55B16.5 (33x15.5x16.5 12 Ply Skid Steer NHS)
Contact Drive Tire Size	20x8.00-10 Turf NHS
Opener Down Pressure	145 to 245 kg
Opener Travel (Up - Down)	25 cm
Opener Depth Range	0 to 10 cm

* See page 31 for additional weight data.

Tire Inflation Chart

Tire Size	Pressure
380/90R46 Transport Load Index 156A8/B	49 psi (340 kPa)
14.9R46 8 Star Radial R-1 (380/90R46)	60 psi (415 kPa)
18.4R42 3 Star R1 (480/80R42)	30 psi (205 kPa)
33x15.5x16.5 12 Ply Skid Steer NHS (395/55B16.5)	60 psi (415 kPa)
20x8.00-10 Turf NHS	16 psi (110 kPa)

Tire Warranty Information

All tires are warranted by the original manufacturer of the tire. Tire warranty information is found in the brochures included with your Operator's and Parts Manuals or online at the manufacturer's web sites listed below. For assistance or information, contact your nearest Authorized Farm Tire Retailer.

Manufacturer	Web Site
Titan	www.titan-intl.com
Goodyear	www.goodyear.com
Firestone	www.firestoneag.com
BKT	www.bkt-tire.com/en
Gleason Wheel	www.gleasonwheel.com

Hydraulic Diagrams

Optional **Hydraulic Drive** diagram is on page 144.

Lift Hydraulics

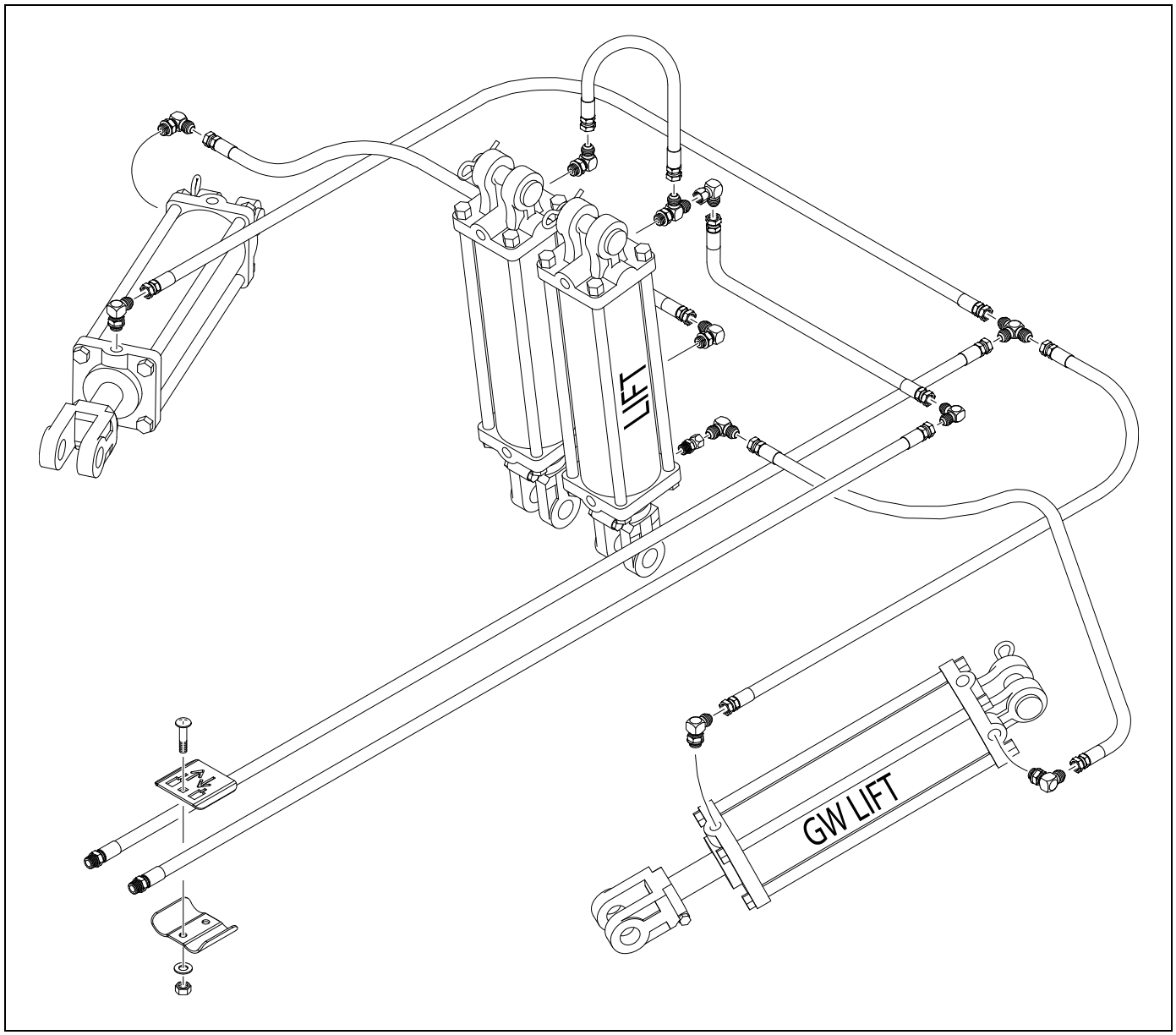


Figure 137
Lift Hydraulics

22753

Fan Hydraulics (s/n YP1225A B1123E-) (s/n YP1625 B1224F-)

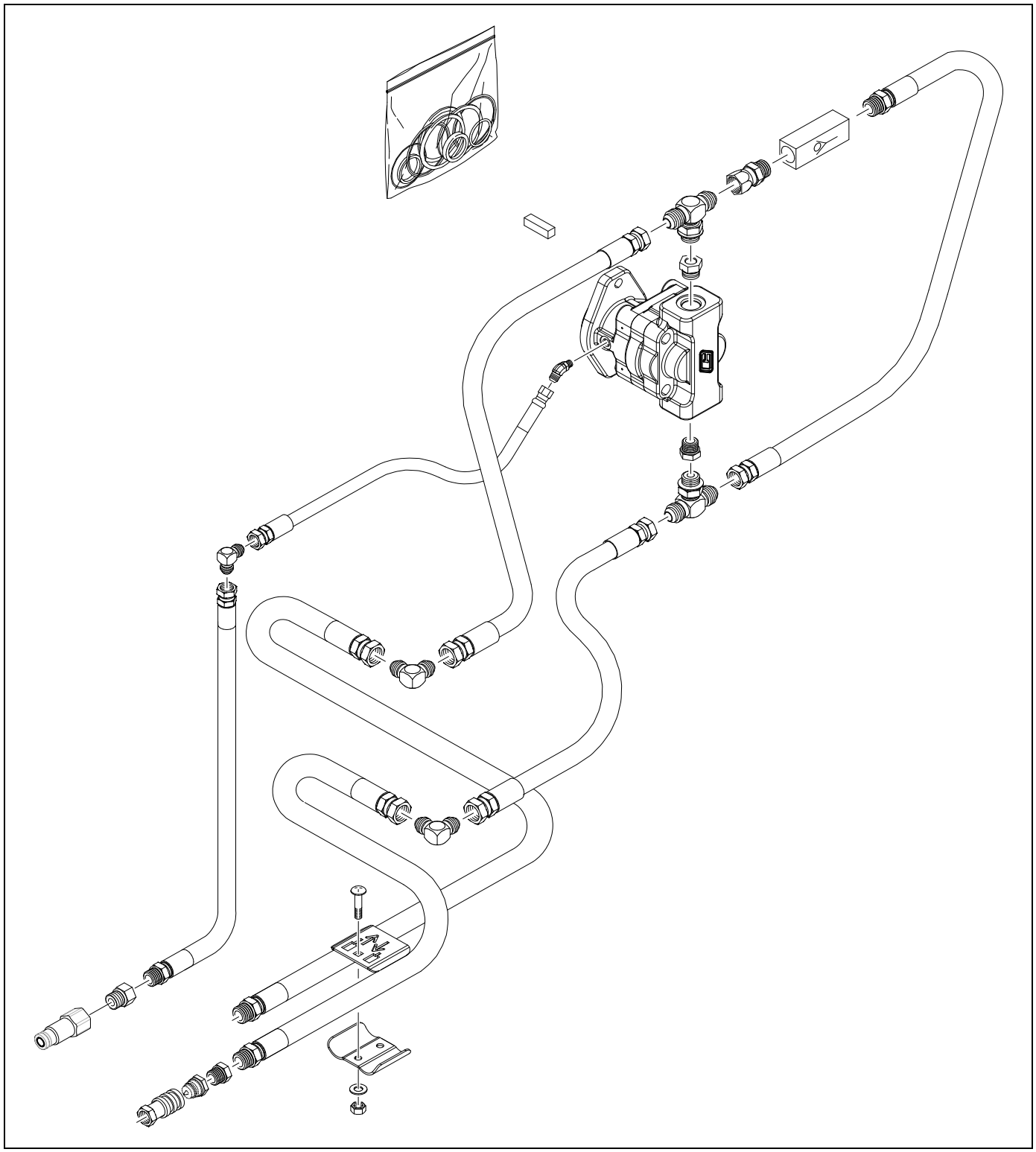


Figure 138
Fan Hydraulics

29631

Fan Hydraulics (s/n YP1225A B1124E+) (s/n YP1625 B1225F+)

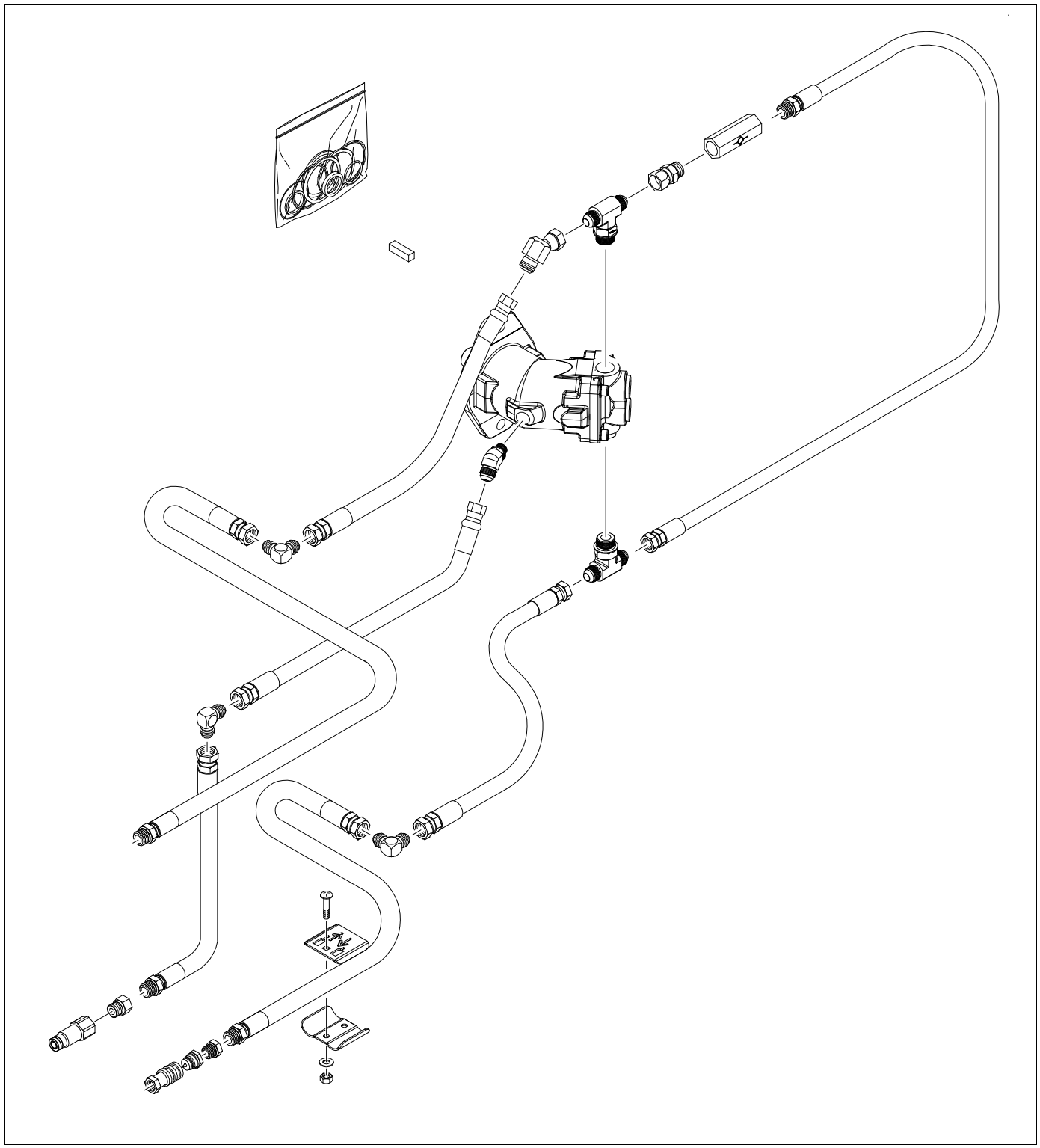


Figure 139
Fan Hydraulics

38040

YP1225A s/n A1153K- Fold and Marker (w/o Aux)

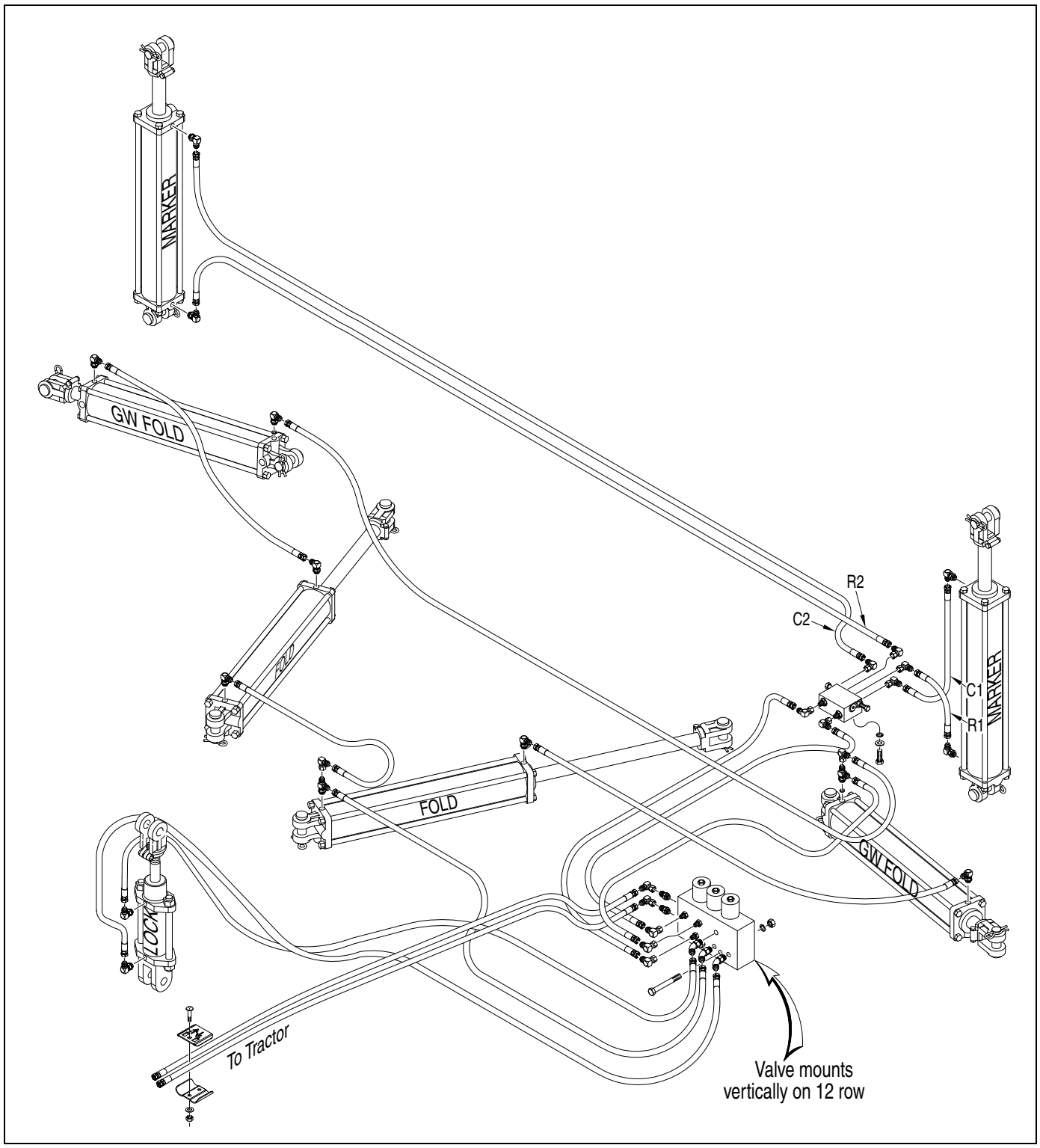


Figure 140
YP1225A s/n A1153K- Fold and Marker Hydraulics (without Aux.)

YP1225A s/n A1154K+ Fold and Marker (w/o Aux)

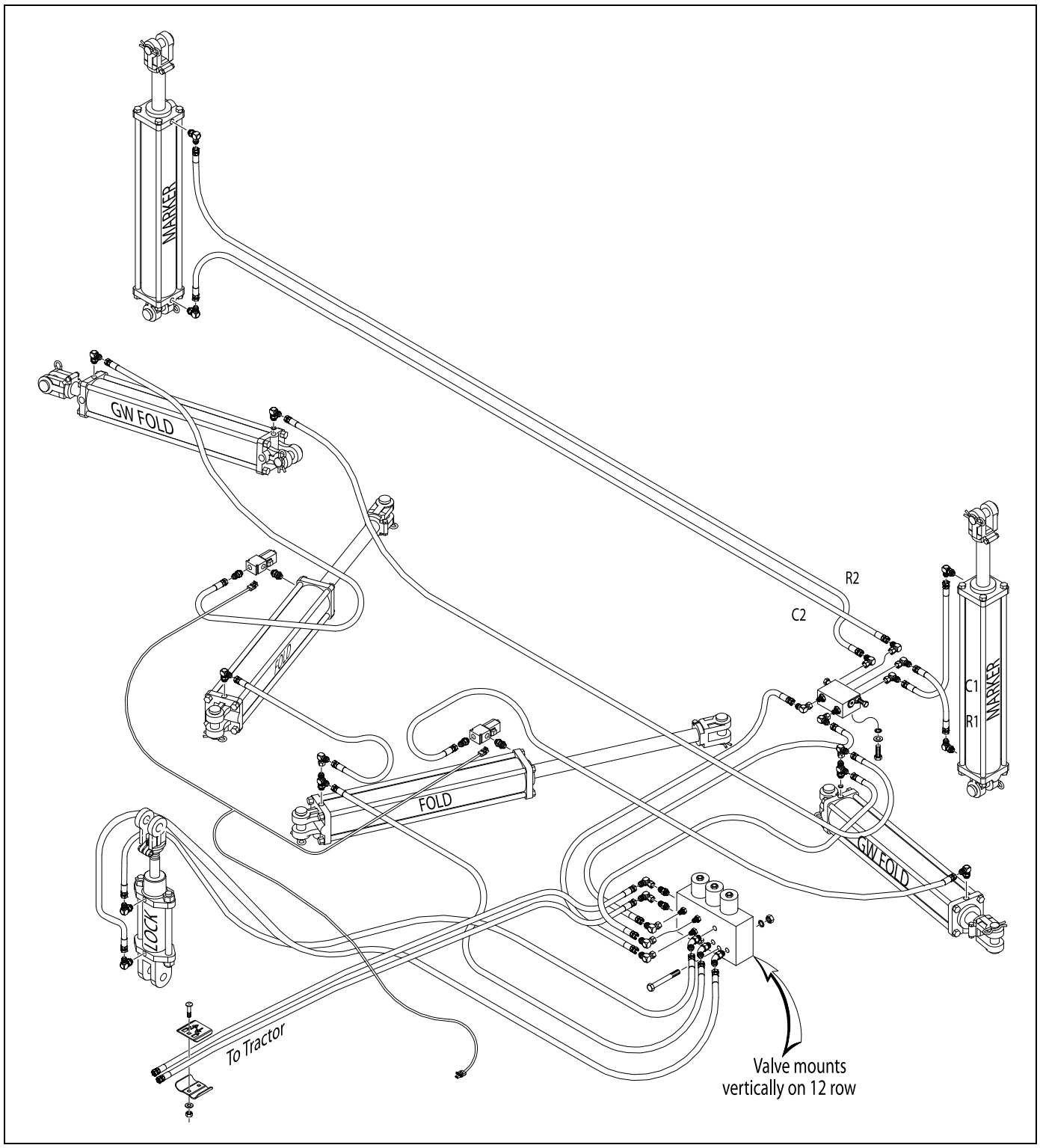
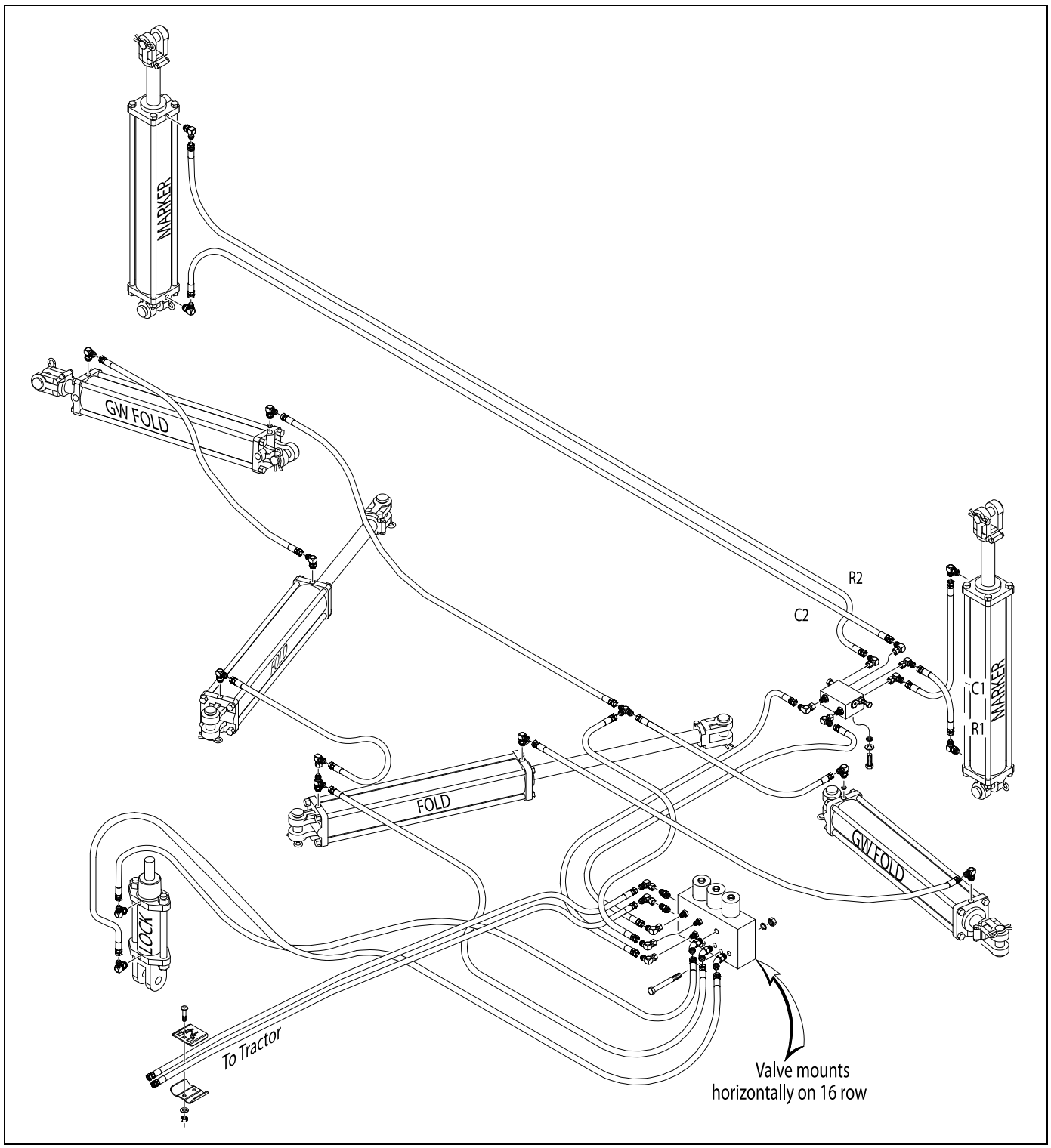


Figure 141
YP1225A s/n A1154K+ Fold and Marker Hydraulics (without Aux.)

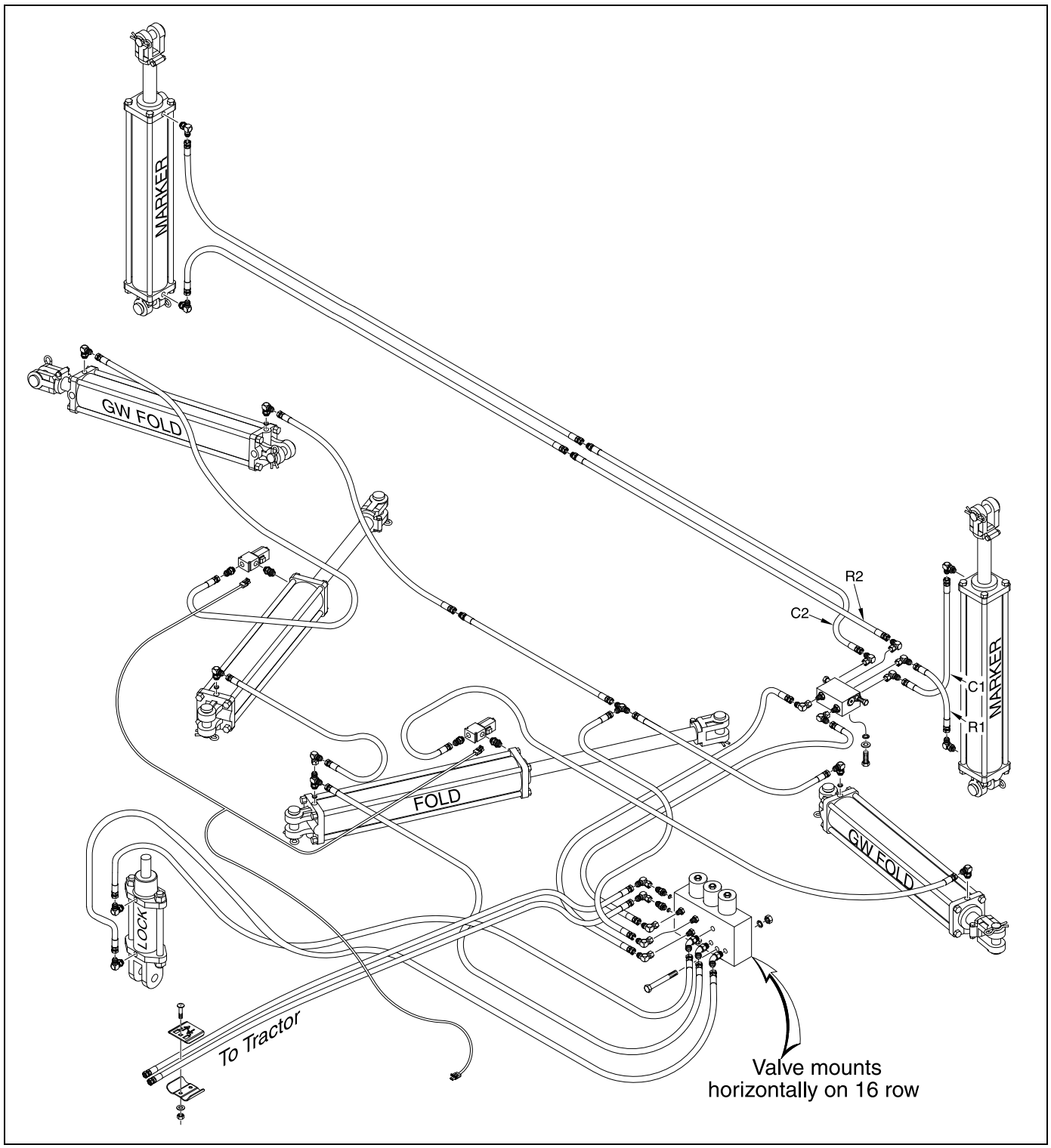
YP1625A s/n A1171B- Fold and Marker (w/o Aux)



22752

Figure 142
YP1625A s/n A1171B- Fold and Marker Hydraulics (without Aux.)

YP1625A s/n A1172B+ Fold and Marker (w/o Aux)



29747

Figure 143
YP1625A s/n A1172B+ Fold and Marker Hydraulics (without Aux.)

Auxiliary Hydraulics (Option)

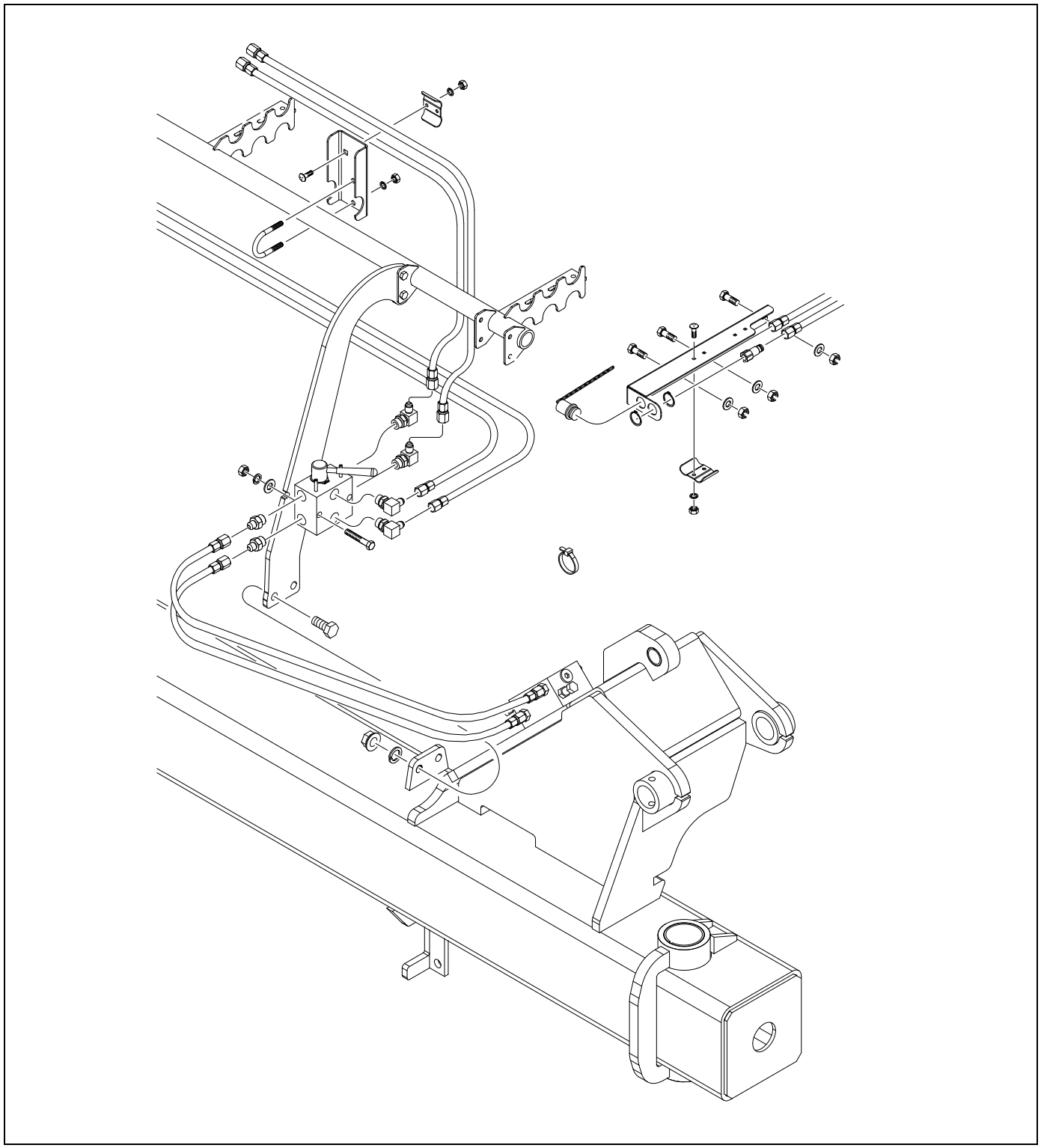


Figure 144
Auxiliary Hydraulics

25316

Hydraulic Tongue (Option)

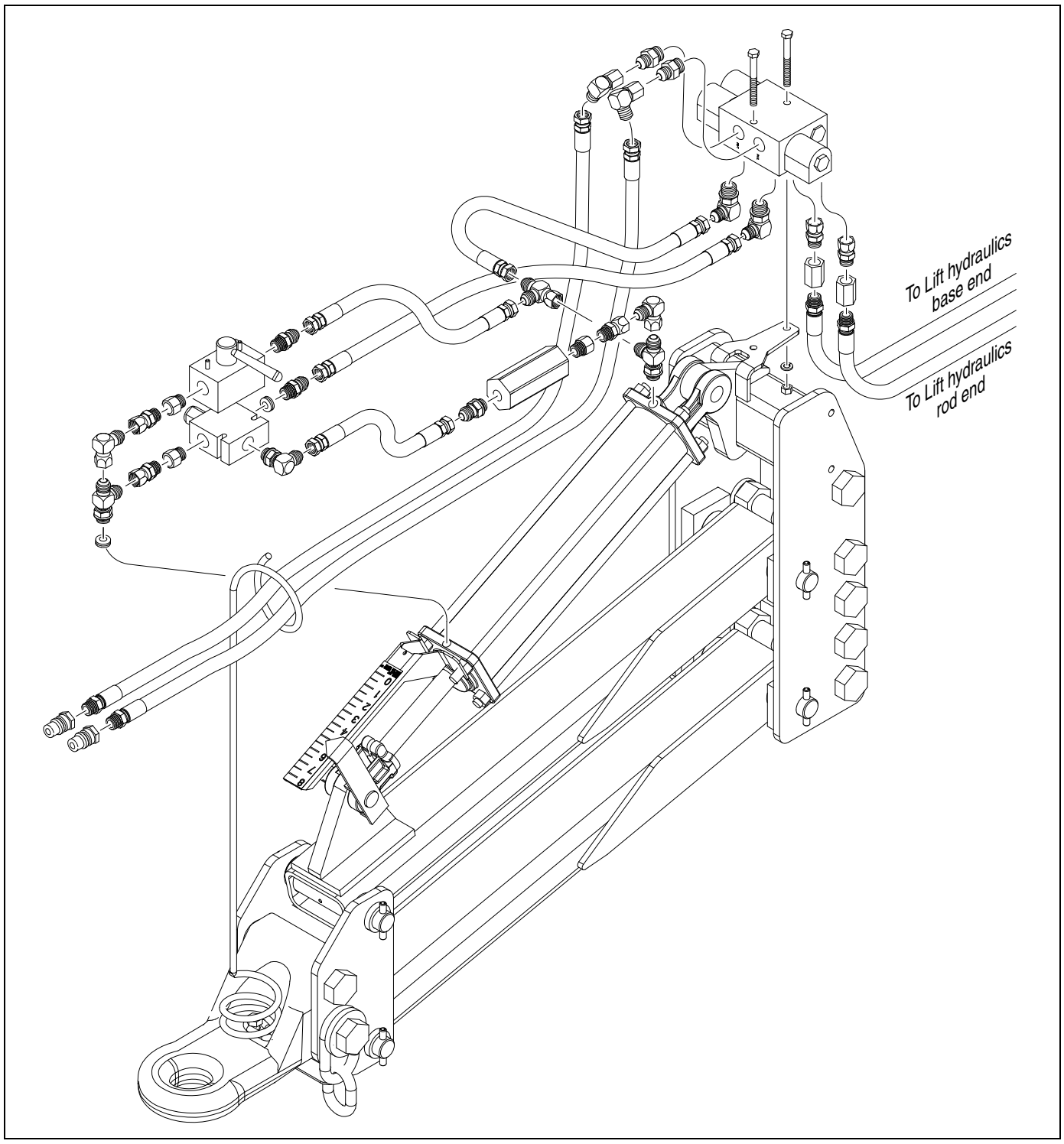


Figure 145
Hydraulic Tongue

25490

Hydraulic Drive

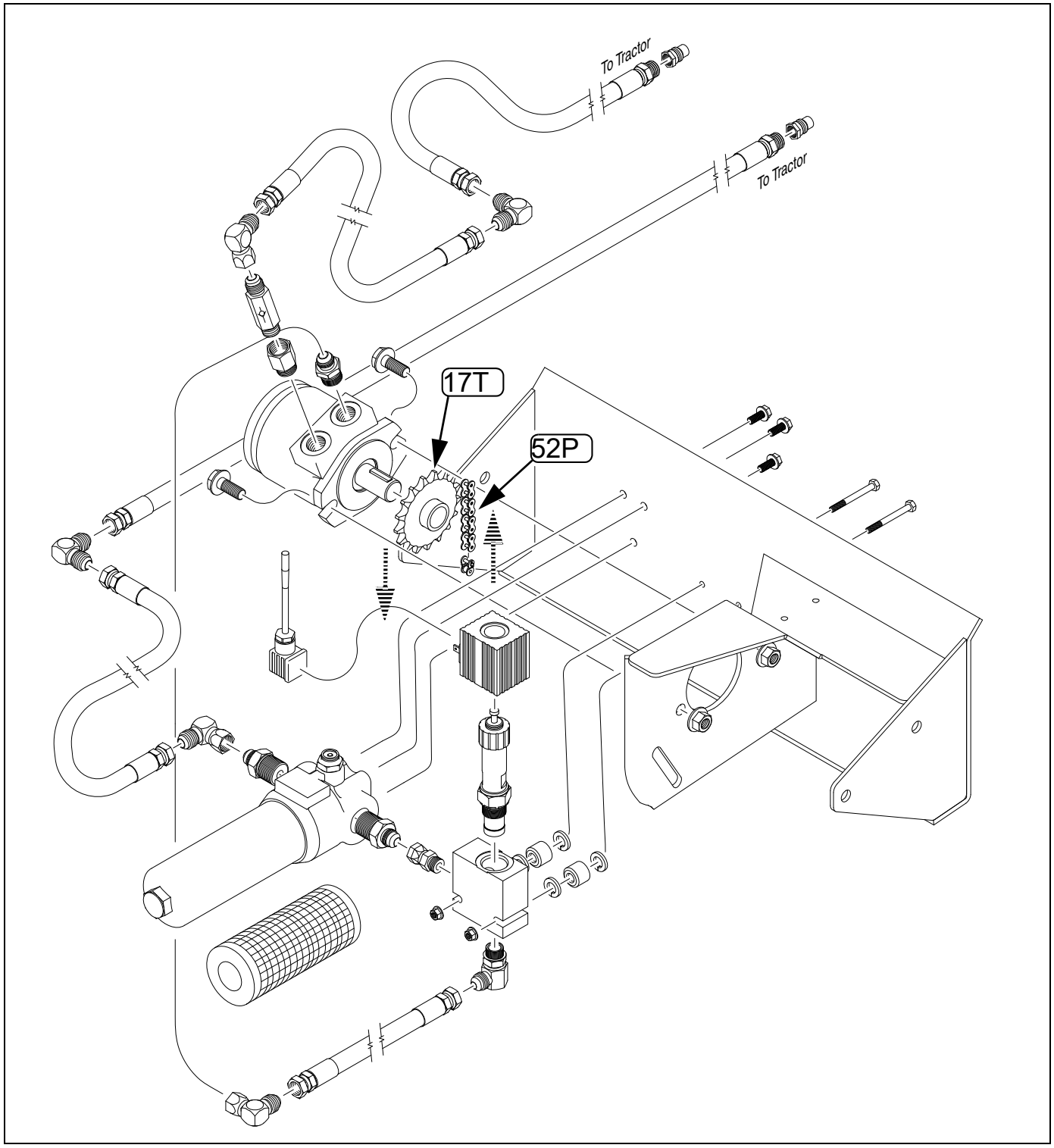


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Figure 146
Hydraulic Drive Hoses and Chain

Chain Routing

Contact Drive Chains

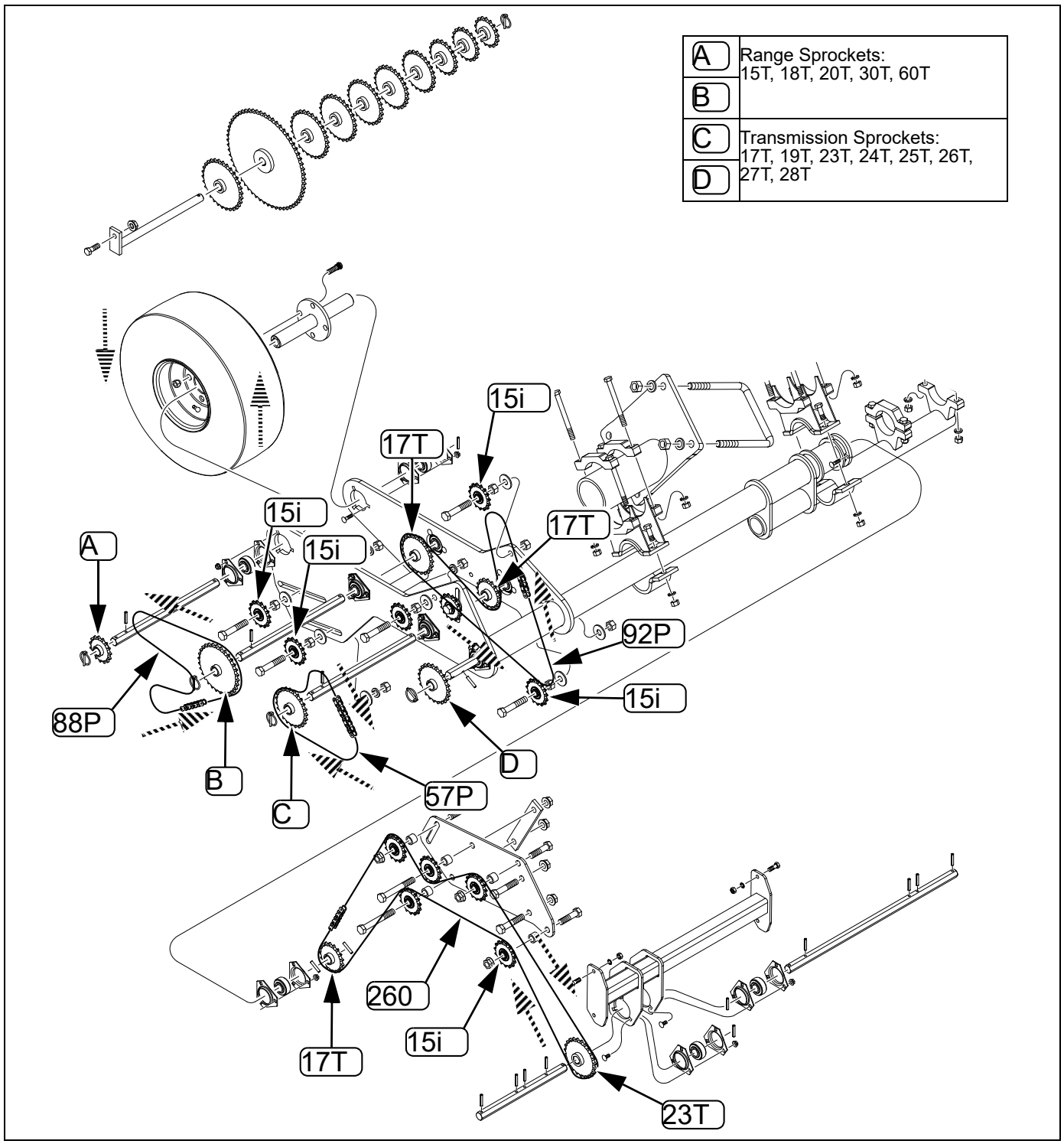
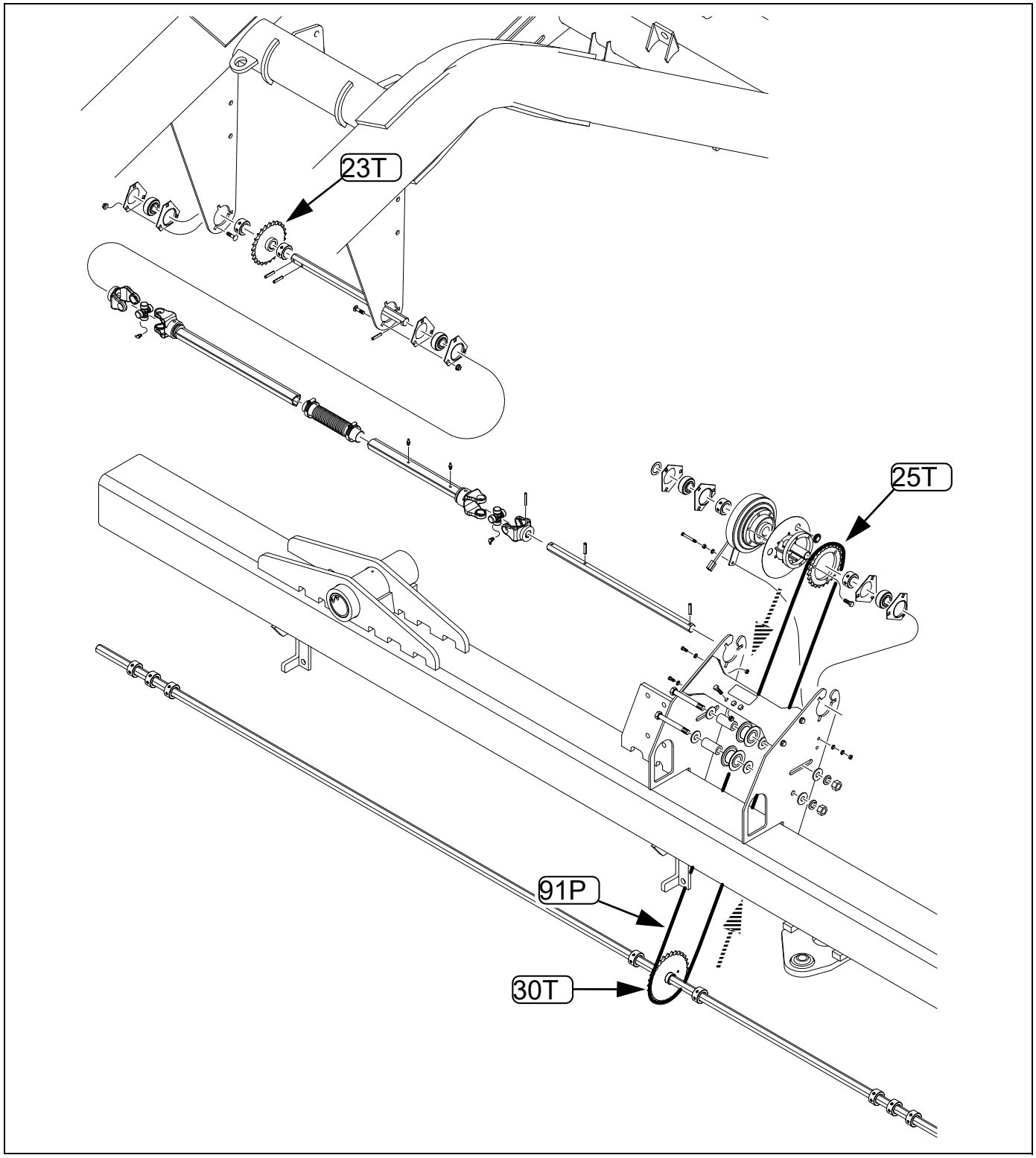


Figure 147
Contact Drive Chain Routing

28314

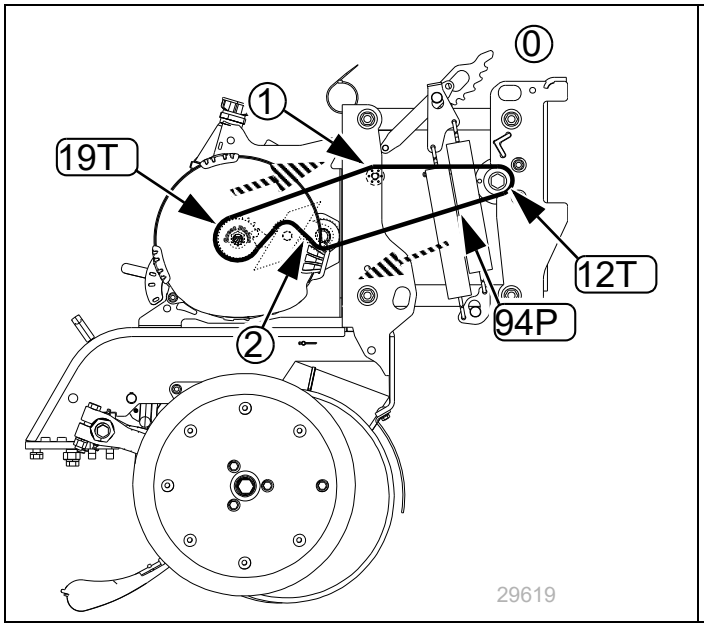
Wing Drive Chains



29593

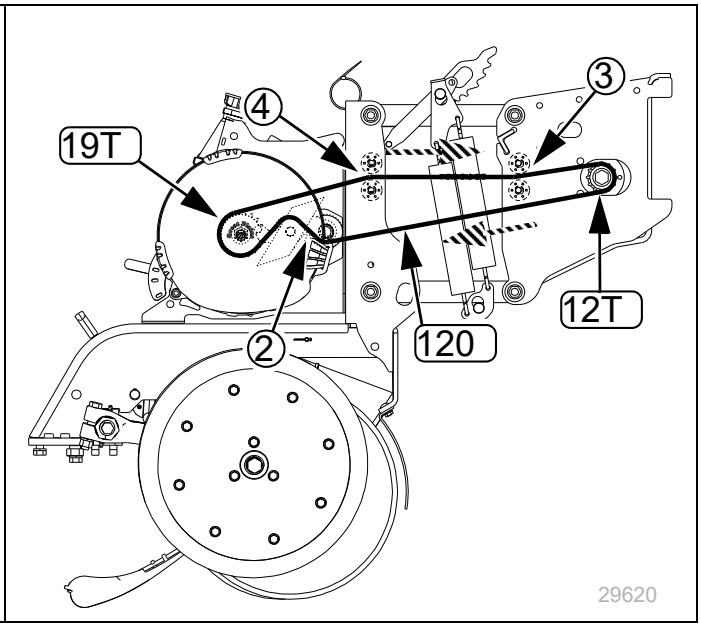
Figure 148
Wing Drive Chain Routing

25AP Final Meter Drive



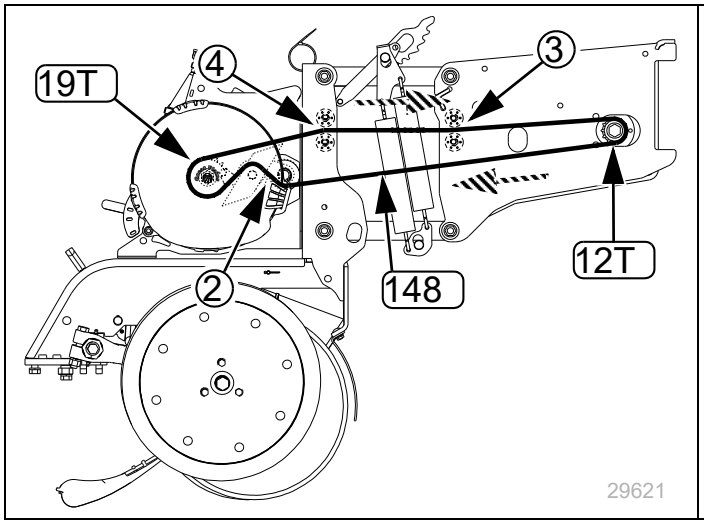
25P: Meter Drive (Front type)

📖 ⓪ No idlers on mount.
① top chain passes over single idler on shank
② be sure to reconnect idler spring



25P: Meter Drive (Mid type)

📖 ② be sure to reconnect idler spring
③ top chain passes between 2 idlers at mount
④ top chain passes between 2 idlers at shank



25P: Meter Drive (Rear type)

📖 ② be sure to reconnect idler spring
③ top chain passes between 2 idlers at mount
④ top chain passes between 2 idlers at shank

Torque Values Chart

Bolt Size	Bolt Head Identification					
	 Grade 2		 Grade 5		 Grade 8	
in-tpi[a]	N-m[b]	ft-lb[d]	N-m	ft-lb	N-m	ft-lb
1/4-20	7.4	5.6	11	8	16	12
1/4-28	8.5	6	13	10	18	14
5/16-18	15	11	24	17	33	25
5/16-24	17	13	26	19	37	27
3/8-16	27	20	42	31	59	44
3/8-24	31	22	47	35	67	49
7/16-14	43	32	67	49	95	70
7/16-20	49	36	75	55	105	78
1/2-13	66	49	105	76	145	105
1/2-20	75	55	115	85	165	120
9/16-12	95	70	150	110	210	155
9/16-18	105	79	165	120	235	170
5/8-11	130	97	205	150	285	210
5/8-18	150	110	230	170	325	240
3/4-10	235	170	360	265	510	375
3/4-16	260	190	405	295	570	420
7/8-9	225	165	585	430	820	605
7/8-14	250	185	640	475	905	670
1-8	340	250	875	645	1230	910
1-12	370	275	955	705	1350	995
1 1/8-7	480	355	1080	795	1750	1290
1 1/8-12	540	395	1210	890	1960	1440
1 1/4-7	680	500	1520	1120	2460	1820
1 1/4-12	750	555	1680	1240	2730	2010
1 3/8-6	890	655	1990	1470	3230	2380
1 3/8-12	1010	745	2270	1670	3680	2710
1 1/2-6	1180	870	2640	1950	4290	3160
1 1/2-12	1330	980	2970	2190	4820	3560

Bolt Size	Bolt Head Identification					
	 Class 5.8		 Class 8.8		 Class 10.9	
mm x pitch[c]	N-m	ft-lb	N-m	ft-lb	N-m	ft-lb
M 5 X 0.8	4	3	6	5	9	7
M 6 X 1	7	5	11	8	15	11
M 8 X 1.25	17	12	26	19	36	27
M 8 X 1	18	13	28	21	39	29
M10 X 1.5	33	24	52	39	72	53
M10 X 0.75	39	29	61	45	85	62
M12 X 1.75	58	42	91	67	125	93
M12 X 1.5	60	44	95	70	130	97
M12 X 1	90	66	105	77	145	105
M14 X 2	92	68	145	105	200	150
M14 X 1.5	99	73	155	115	215	160
M16 X 2	145	105	225	165	315	230
M16 X 1.5	155	115	240	180	335	245
M18 X 2.5	195	145	310	230	405	300
M18 X 1.5	220	165	350	260	485	355
M20 X 2.5	280	205	440	325	610	450
M20 X 1.5	310	230	650	480	900	665
M24 X 3	480	355	760	560	1050	780
M24 X 2	525	390	830	610	1150	845
M30 X 3.5	960	705	1510	1120	2100	1550
M30 X 2	1060	785	1680	1240	2320	1710
M36 X 3.5	1730	1270	2650	1950	3660	2700
M36 X 2	1880	1380	2960	2190	4100	3220

a. in-tpi = nominal thread diameter in inches-threads per inch

b. N· m = newton-meters

c. mm x pitch = nominal thread diameter in mm x thread pitch

d. ft-lb = foot pounds

Torque tolerance + 0%, -15% of torquingvalues. Unless otherwise specified use torquevalues listed above. 25199

Appendix B - Pre-Delivery

Pre-Delivery Safety

Have all workers review "**Important Safety Information**" starting on page 1.

CAUTION

Perform no assembly while the planter is on the trailer.

Tools Required

- planter Parts manual (401-625P)
- two or more workers
- tractor or tug with a planter-compatible hitch
- an overhead lifter (forklift or crane) capable of raising a marker arm $12^{3}/_{8}$ ft. (3.8 m). The arm may be over 12 ft. (3.7 m) long and weigh up to 300 pounds (135 kg)
- small jack
- ladder
- basic hand tools

📖 An orientation rose shows isometric Up, Wing, Back, Down, Center and Front in some illustrations.

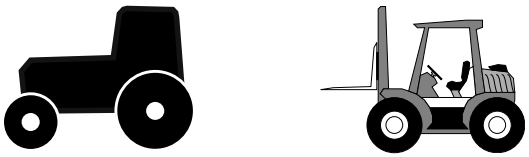
Unload Truck

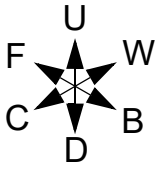
Refer to Figure 149

Due to the overhanging main transport wheels ①, an
end dock or
pit dock
is recommended for unload. If a suitable dock is not available, contact the factory for hoist instructions.

1. With the trailer at the dock, remove all uncrated components shipped on the trailer deck ③.
2. Any crated components ④ may be removed at any time.
3. Hitch the planter to a tractor or tug to prevent movement after tie-down release.

   If the planter has the optional hydraulic tongue ⑤ (not shown), see "**Local Float on Hydraulic Tongue**" on page 19.
4. Release all tie downs.
5. Carefully tow the planter off the deck. Move it to a flat, level location with sufficient room to allow later unfolding.





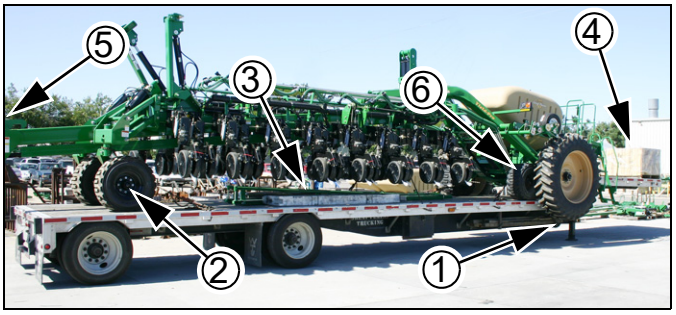


Figure 149 34382
Planter on Trailer

NOTICE

Equipment Damage Risk:
If the trailer bed will be fully depressed into a pit dock, release tie downs, except at wing casters ②, before the transport wheels contact the dock sides. If the planter is left fully tied down, it could sustain damage, or lift the trailer from the tractor upon transport wheel contact.

Remove Shipping Wheels

🕮 All of the remaining steps may be performed with the planter folded.

Refer to Figure 150

Do not remove the shipping wheels ⑥ until the planter is supported by its own main transport wheels ①.

6. Support the weight of each shipping wheel, at the axle ⑦. A tire jack suffices.
7. Remove the upper bolts ⑧ of the shipping wheel arm weldments.
8. Lower support (jack), swinging the arm down until each shipping tire rests on the ground.
9. Prepare for the arms to fall away from the seed cart frame. Use extra workers or provide support lines for the arms. Remove the lower shipping bolts ⑧.
10. Return the shipping wheels and fastener sets to the truck driver, or hold for later return to Great Plains.

🕮 Before releasing truck, inspect trailer deck for all needed planter components. Parts not found on the deck may be in a crate or a hopper.

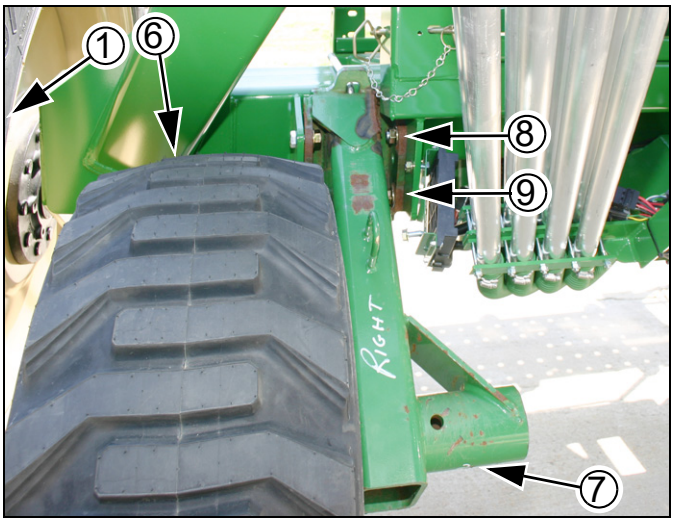


Figure 150 34383
RH Shipping Wheel

Marker Assembly

Install Marker Transport Rests

Refer to Figure 151 (C: to Center; W: to Wing)

For each wing:

11. Select one:
    ⑬ 113-014H MARKER TRANSPORT REST WELDMENT
    select two:
    ㊷ 806-168C U-BOLT 1/2-13 X 2 1/32 X 4 1/2
    and select four sets:
    ㊲ 804-015C WASHER LOCK SPRING 1/2 PLT
    ㉛ 803-020C NUT HEX 1/2-13 PLT
12. Locate the drive shaft bracket with the marker support mount plate ③.
13. Orient the marker rest ⑬ with the roller end up, and the gusset ② to planter rear. Secure to mount plate with U-bolts ㊷, lock washers ㊲ and nuts ㉛.

🕮 The remaining steps describe marker installation with the planter in the as-shipped configuration, which requires some high work. It is also possible to unfold the planter, nearly fully unfold the incomplete arms, and install the final sections at a more convenient height. However, this requires fully functioning monitor (switch box) and hydraulic connections, which may not be practical unless the customer's tractor is available.

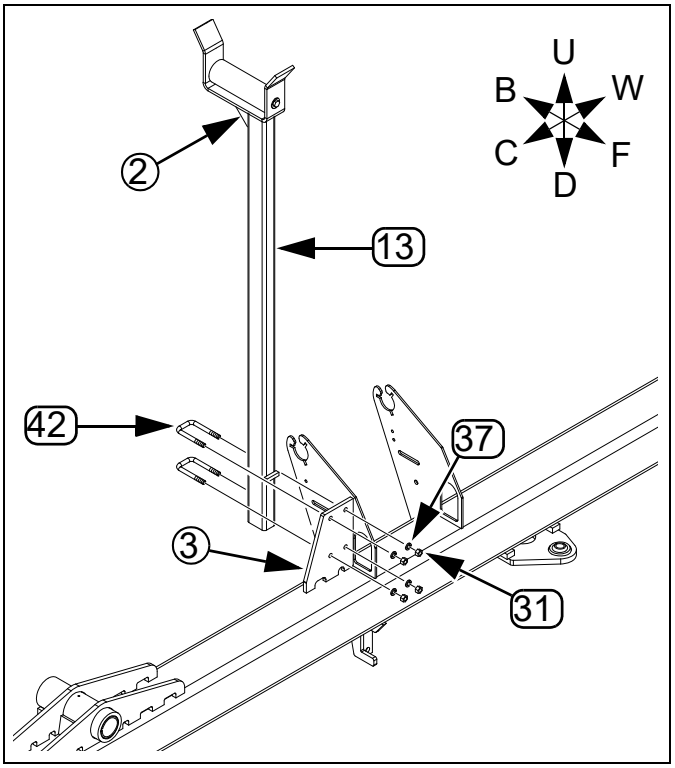


Figure 151 34384
LH Marker Transport Rest

Install Second Marker Sections

Refer to Figure 152 (C: to Center; W: to Wing)

For each wing:

14. Select one of:
    - ⑪ 113-010H PLANTER MARKER 2ND SECTION LH
    - ⑪ 113-031H 12 ROW MARKER 2ND SECTION LH
    - ⑪ 113-481H YP1625 36TR MARKER 2ND SEC LH

    or (not shown):
    - ⑫ 113-013H PLANTER MARKER 2ND SECTION RH
    - ⑫ 113-032H 12 ROW MARKER 2ND SECTION RH
    - ⑫ 113-480H YP1625 36TR MARKER 2ND SEC RH

    Identify the whether the arm is LH or RH, depending on the wing involved.

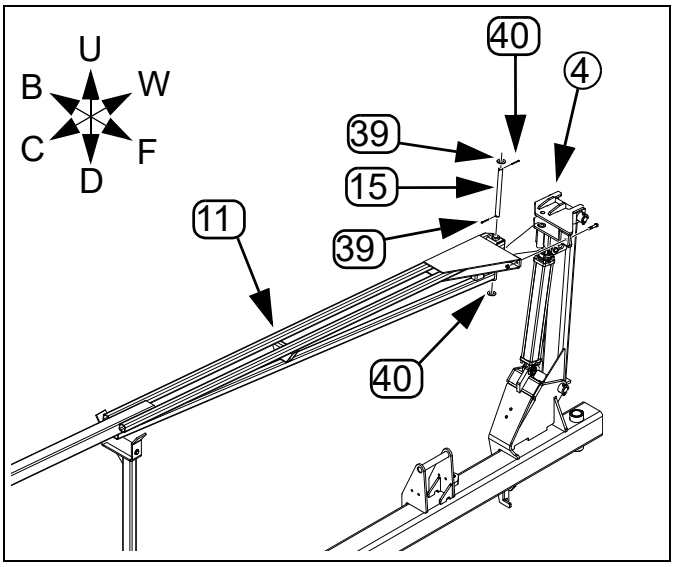


Figure 152 34385
LH Marker Arm 2nd Section

Install Marker Hinge Pins

15. Select one each:
    - ⑮ 113-798D MARKER SHEAR PIVOT PIN

    and two sets:
    - ㊴ 804-029C WASHER FLAT 1 SAE
    - ㊵ 805-058C PIN COTTER 3/16 X 2

    Drive one cotter pin ㊵ through an end hole (the top hole) of the shear pivot pin ⑮. Add a washer ㊴ under the cotter.

⚠ WARNING

Heavy Overhead Object Hazard:

Use adequate lifting means. Use multiple attachment points. Use extra personnel to control the load. The arm section may weight up to 300 pounds (135 kg), and does not balance at the center of its considerable length. if it falls, or you lose control of the load, workers could suffer serious or fatal injuries.

16. Orient the arm (⑪ or ⑫) with the shear pin hole to the rear (flat plate at the hinge end up, angled edge of plate forward, and the center tube below).

    Hoist the arm, resting the single-tube end in the transport rest, and aligning the shear pivot tube with the shear pivot holes in the hinge ④.

    Insert a shear pin ⑮. Secure with second washer ㊴ and cotter ㊵.

Install Marker Shear Bolts

Refer to Figure 153

17. Select one each:
    - ㉕ 802-130C HHCS 1/2-13X2 1/2 GR5
    - ㉚ 803-019C NUT LOCK 1/2-13 PLT

    Insert the shear bolt ㉕ from the wing end of the hinge ④. Secure with lock nut ㉚.

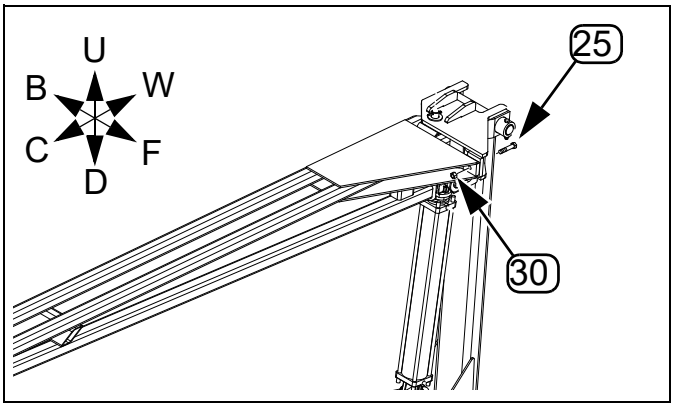


Figure 153 24408
LH Marker Shear Bolt

Install Marker Extension Tube

Check Disk Orientation

Refer to Figure 154 (C: to Center; W: to Wing)

18. Select one:
    ⑭ 113-794D MARKER EXTENSION TUBE

    These tube assemblies ⑭ are identical for LH and RH use. The disk and spindle ⑤ are pre-assembled.

    Prior to installing the marker extension tube, inspect the disk assembly. The bolts securing the spindle weldment to the tube are to be vertical after installation, and the spindle ⑤ is to be to the front.

    This is merely the factory default orientation. The operator may change it as needed.

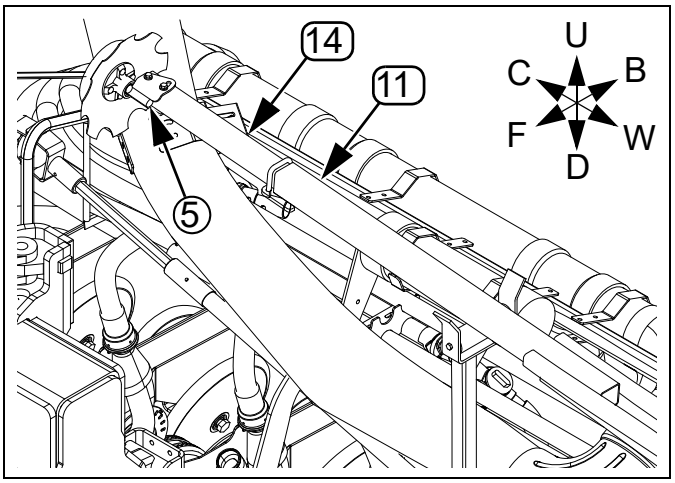


Figure 154 34386
LH Marker Spindle Orientation

Insert and Secure Tube

For each wing:

Refer to Figure 155 (C: to Center; W: to Wing)

19. Select one:
    ㊶ 806-110C U-BOLT 5/8-11 X 3 1/32 X 4 1/2
    and two sets:
    ㊳ 804-022C WASHER LOCK SPRING 5/8 PLT
    ㉜ 803-021C NUT HEX 5/8-11 PLT

    Minding the spindle orientation, insert the marker extension tube ⑭ into the marker arm second section ⑪ to a depth of about[a] 18 in. (45 cm). Secure the extension with the U-bolt ㊶, lock washers ㊳ and nuts ㉜.

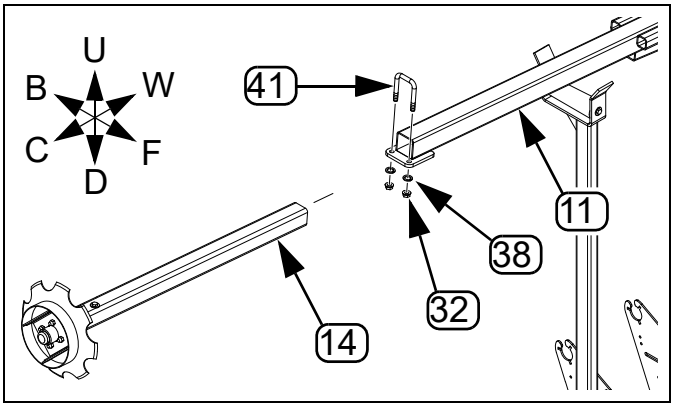


Figure 155 24408
LH Marker Extension Tube

a. Exact extension value depends on row spacing, row utilization and desired disk angle. Setting this requires full monitor and hydraulic connections, then unfolding the planter and markers in field conditions. See "**Marker Setup**" on page 158.

Press Wheel Installation

Refer to Figure 156

Press wheel assemblies ⑥ may be removed to meet shipment clearance requirements. The removed assemblies are found either in a crate, or a seed hopper.

Refer to Figure 157

There may be two types of press wheel assemblies:

- Long mount ⑲ assemblies, which are used on the front (short) row of a twin pair. These mounts have a series of notches ⑦ on the side.
- Mid mount ⑳ assemblies, which are used on the long (rear) row of a twin pair. These mounts have smooth sides.

Refer to Figure 156

For each row with press wheels dismounted:

20. Remove from the rear most two bolt holes of the shank ㉑ and save one each:
    ㉒ 405-032D 1X12 PW ADJUSTER
    ㉔ 802-091C HHCS 1/2-13X1 1/2 GR5
    ㉗ 802-258C HHCS 1/2-13X1 GR5
    and two:
    ㊲ 804-015C WASHER LOCK SPRING 1/2 PLT

    📖 Do not disturb, loosen or remove the forward two bolts.
21. Align the $^{3}/_{8}$ in. holes in the press wheel assembly with the $^{3}/_{8}$-13 tapped holes in the row unit.

    Add a lock washer ㊲ to the $^{3}/_{8}$-13 x 1 in. hex head bolt ㉗. Loosely screw into the rear $^{3}/_{8}$ in. hole.
22. Add a lock washer ㊲ and the eccentric adjuster ㉒ to the $^{3}/_{8}$-13 x $1^{3}/_{8}$ in. hex head bolt ㉔. Loosely screw into the forward $^{3}/_{8}$ in. hole
23. Rotate the adjuster ㉒ to visually align the press wheel assembly with the row unit, and tighten the adjuster and bolts. See “**Press Wheel Centering**” on page 79.

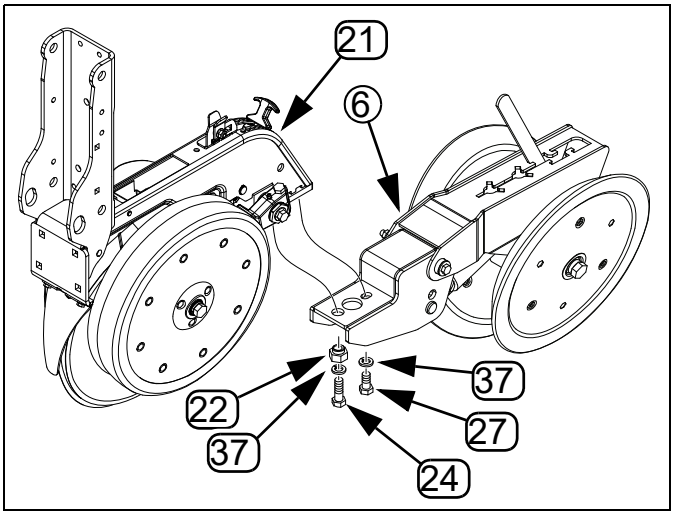


Figure 156 25383
Press Wheel Installation

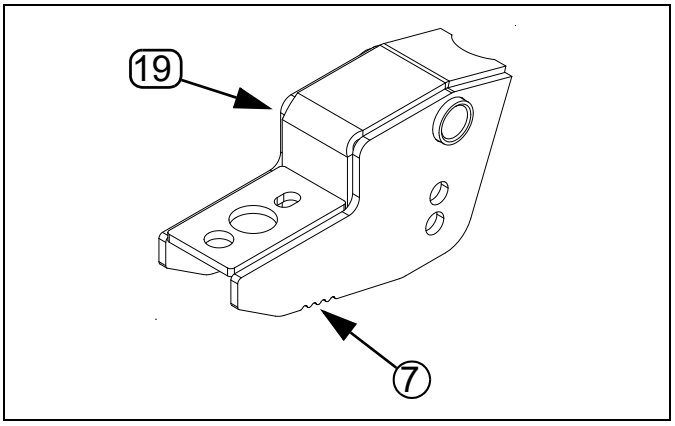


Figure 157 32191
Long Press Wheel Mount ⑲

Appendix C - Initial Setup

Hydraulic Charge and Bleed

Connect the planter to a suitable hydraulic source and check the condition of the hydraulic systems:
"**Unfolding The Planter**" on page 23,
"**Raising/Lowering Planter**" on page 27,
"**Folding the Planter**" on page 28,
"**Fan Circuit Operation**" on page 45,
"**Marker Operation**" on page 47, and if hydraulic drive is installed, run a "FILL DISK" sequence to check motor.

See "**Bleeding Hydraulics**" on page 100 if any circuits do not operate smoothly.

Console Installation

The planter's standard seed monitor system includes a virtual terminal and switch panel that must be mounted in the tractor cab. As supplied by DICKEY-john®, the kit includes a flat bracket for the modules, and ball swivel for mounting the bracket in the tractor.

The ball swivel includes four 10-32 screws. You or your dealer must provide the mounting holes for the screws. Your dealer may have alternate suction cup or clamping brackets available if you prefer to avoid drilling holes.

Refer to the DICKEY-john® manual for harness connections. Route wiring harnesses with enough slack to allow for tractor movement, especially on articulating tractors.

Monitor Setup

Refer to the DICKEY-john® IntelliAg® Operator manual for general system information. Data specific to your planter model is provided in a separate Quick Start Guide. Configure the system with this information prior to first use. The Quick Start guides, however, are not specific to individual model row spacings. Use the following data:

YP1225A Row Spacing Setup Data

Model	Active Rows	Channel Width
YP1225A-1230	12	360 in
YP1225A-16TR36	16	288 in
as -0836	8	288 in
YP1225A-1820	18	360 in
YP1225A-2315	23	345 in
as -1230	12	360 in
YP1225A-24TR	24	360 in
as -1230	12	360 in

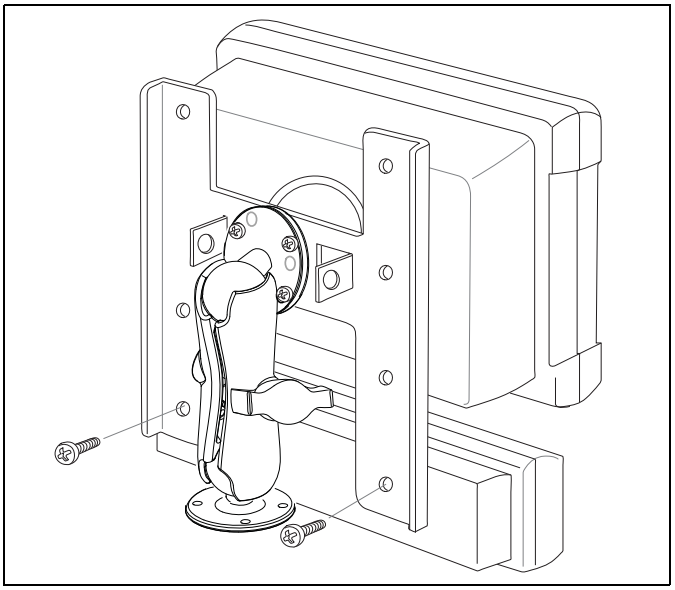


Figure 158 26303
Terminal and Switch Panel

NOTICE

Mount the modules so that they are easy to monitor during planting, but do not interfere with safe operation of the tractor in the field or on public roads.

YP1625A Row Spacing Setup Data

Model	Active Rows	Channel Width
YP1625A-1236	12	432 in
YP1625A-1630	16	480 in
YP1625A-2420	24	480 in
YP1625A-24TR36	24	432 in
as -1236	12	432 in
YP1625A-3115	31	465 in
as -1630	16	480 in
YP1625A-32TR	32	480 in
as -1630	16	480 in

Model	Active Rows	Channel Width
YP1625A-1670	16	1120 cm

Level Planter

All frame sections must be level to maintain even planting depth. Before using the planter in the field, make sure the planter is level side-to-side.

Periodic frame-leveling adjustments should not be necessary, but if there are problems with uneven depth, check planter levelness and follow these procedures.

Before making any adjustments be sure the lift cylinders are re-phased and operating properly.

Complete the steps under "**Bleeding Hydraulics**" on page 100, before proceeding.

📖 Level frame in planting conditions or the planter may not produce desired results.

Refer to Figure 159

1. Unfold the planter fully and set down. Put in field position by lowering and pulling forward.

2. When setting hitch, lower lift cylinders completely. Set the 3-point hitch or hydraulic tongue so that the top of the tongue tube ① is:
   46 in. (116.8 cm) above ground for YP1225A, or
   42 in. (106.7 cm) above ground for YP1625A.
   This is the starting point for adjustments.

Refer to Figure 160

3. If planting $1^{3}/_{8}$ in. (3.8 cm) deep, adjust the hitch until frame measures approximately 26 in. (66 cm) from ground to frame at the pivots. When planting at other depths, frame height will vary.

NOTICE

Mis-adjustment Risk:
Planter must be fully lowered to field position and hitch height set before making side-to-side adjustments.

📖 Parallel arms should be parallel with ground, or up to 1 in. (2.5 cm) lower in back. Adjusting a 3-point hitch to level parallel arms may cause frame to sit higher or lower than 26 in.

4. Check parallel arms behind the pivots to ensure that parallel arms are parallel with ground or up to 1 inch lower in back. If needed, raise or lower the 3-point to adjust parallel arms.

5. Once parallel arms are parallel with ground or up to 1 inch lower in back and 3-point is set, measure distance from ground to frame at the pivots.

Refer to Figure 161

6. Measure wings at gauge wheel. If not level with center of frame, adjust eye bolt accordingly.

📖 Eye-bolt adjustments are easier if the planter is first lowered to the ground to remove some of the force on the cylinder.

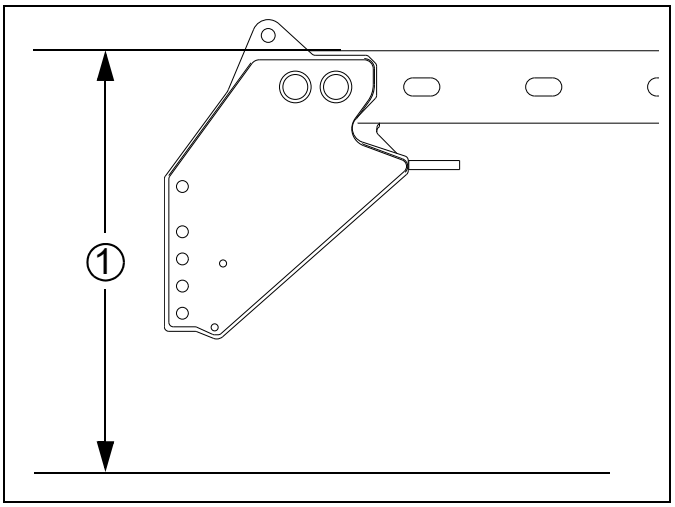


Figure 159 25316
Base Height

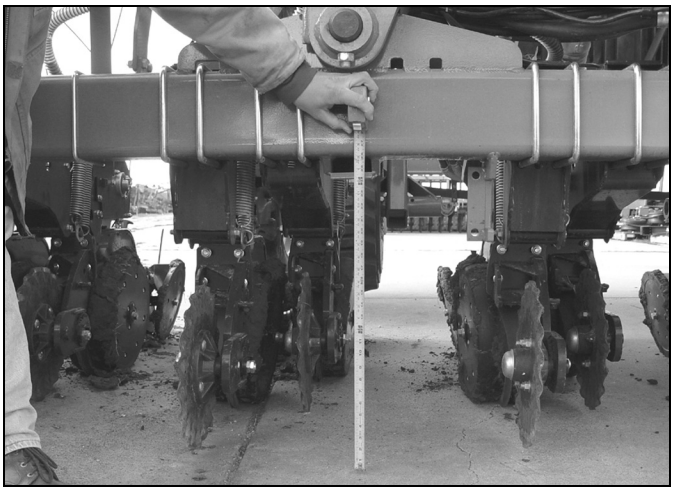


Figure 160 23087
Frame Leveling

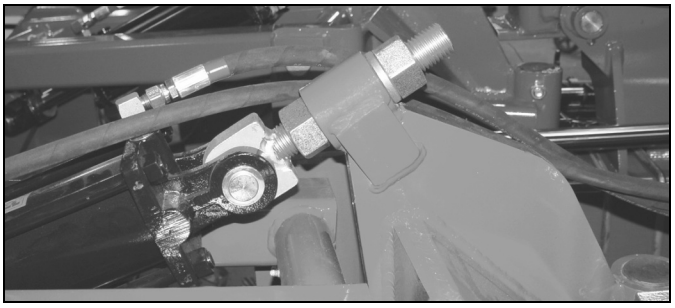


Figure 161 21930
Eye Bolt Adjustment

Wing Alignment

To check and adjust wing alignment:

1. Unfold planter, see "**Important Safety Information**" on page 1, and place a block ahead of each wing gauge wheel. Pull planter forward against blocks to rock frames back.

Refer to Figure 162

2. Check for proper alignment by running a string line across back of planter toward outer ends of wings. For proper alignment, outside ends of wings (dimension A) should be 0-to-$^{1}/_{4}$ in. (0 to 6 mm) ahead of inside ends (dimension B).
3. To adjust wing alignment, shorten or lengthen eye bolts to change the length of the wing pull bar. Adjust eye bolts ① in or out until dimension A is 0 to $^{1}/_{4}$ in. (0 to 6 mm) greater than dimension B.
4. Be sure both wings are adjusted equally or the planter will tend to pull sideways behind the tractor.

📖 Angle of wings is exaggerated for ease of clarification.

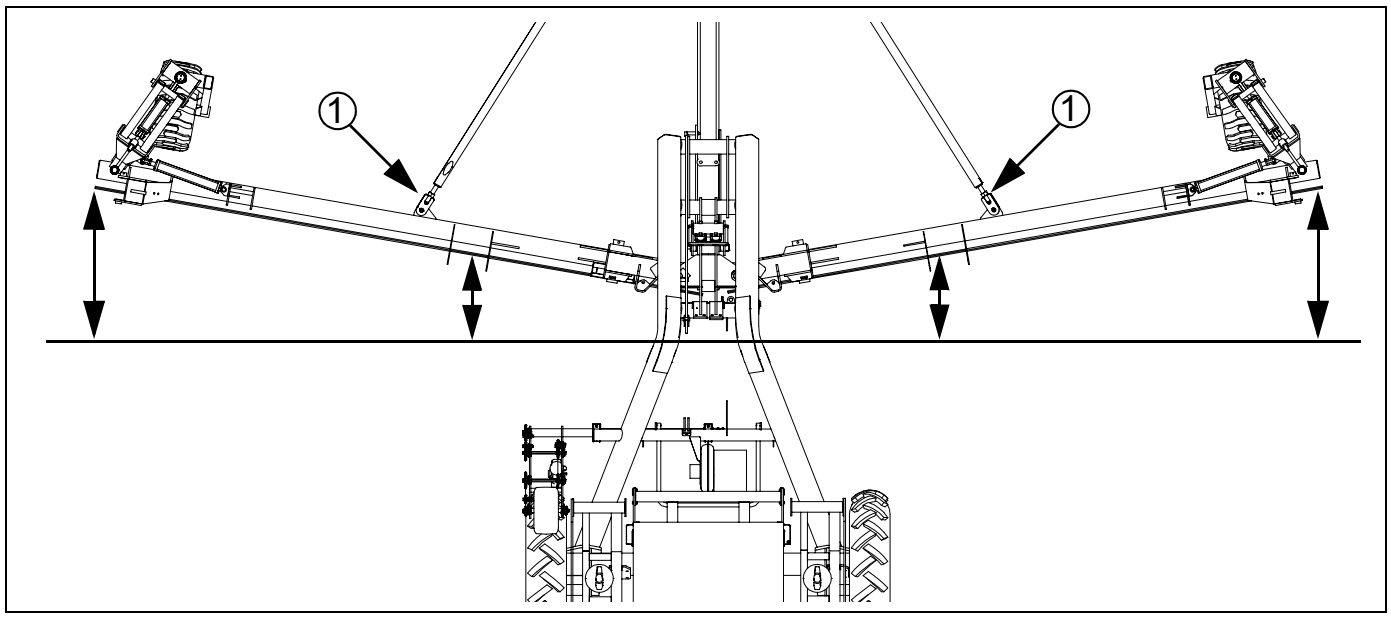


Figure 162
Box Alignment

21931

Speed Calibration

At the first opportunity to operate the planter in the field (with or without planting), the speed sensor component of the seed monitor needs to be calibrated. The seed monitor manual describes the procedure.

📖 Cross-check the monitor speed reading with the tractor speedometer. Investigate if they do not match.

Speed Sensor Operation

Refer to Figure 163

The monitor uses a pickup wheel for measuring planter ground speed. The sensor should be set at a distance of $^{1}/_{16}$ to $^{1}/_{8}$ inch (1.6 to 3.2 mm) from the pickup wheel.

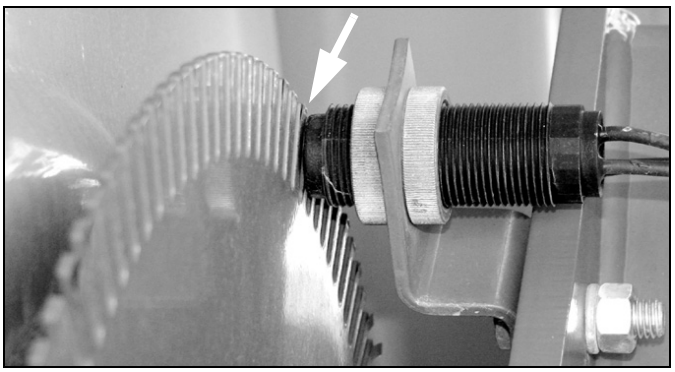


Figure 163
Pickup Wheel

25318

Initial Marker Extensions for Common Configurations

	Model: YP1225A-								YP1625A
	-1230	-16TR36	-16TR36	-1820	-2315	-2315	-24TR	-24TR	-1670
Rows	Standard	Standard	as -0836	Standard	Standard	as -1230	Standard	as -1230	Standard
Row Spacing	30.0 in	36.0 in	36.0 in	20.0 in	15.0 in	30.0 in	30.0 in	30.0 in	27.6 in
	76.2 cm	91.4 cm	91.4 cm	50.8 cm	38.1 cm	76.2 cm	76.2 cm	76.2 cm	70 cm
Span	330.0 in	260.0 in	260.0 in	340.0 in	330.0 in	330.0 in	338.0 in	338.0 in	413.4 in
	838 cm	660 cm	660 cm	864 cm	838 cm	838 cm	859 cm	859 cm	1050 cm
Swath	360.0 in	288.0 in	288.0 in	360.0 in	345.0 in	360.0 in	360.0 in	360.0 in	440.9 in
	914 cm	732 cm	732 cm	914 cm	876 cm	914 cm	914 cm	914 cm	1120 cm
Marker Extension		Opposing Passes							
Left	195.0 in	158.0 in	166.0 in	190.0 in	180.0 in	195.0 in	191.0 in	199.0 in	234.3 in
	495 cm	401 cm	422 cm	483 cm	457 cm	495 cm	485 cm	505 cm	595 cm
Right	195.0 in	158.0 in	150.0 in	190.0 in	180.0 in	195.0 in	191.0 in	183.0 in	234.3 in
	495 cm	401 cm	381 cm	483 cm	457 cm	495 cm	485 cm	465 cm	595 cm

	Model: YP1625A-								
	-1236	-1630	-2420	-3115	-3115	-32TR	-32TR	-24TR36	-24TR36
Rows	Standard	Standard	Standard	Standard	as -1630	Standard	as 1630	Standard	as 1236
Row Spacing	36.0 in	30.0 in	20.0 in	15.0 in	30.0 in	30.0 in	30.0 in	36.0 in	36.0 in
	91.4 cm	76.2 cm	50.8 cm	38.1 cm	76.2 cm	76.2 cm	76.2 cm	91.4 cm	91.4 cm
Span	396.0 in	450.0 in	460.0 in	450.0 in	450.0 in	458.0 in	458.0 in	404.0 in	404.0 in
	1006 cm	1143 cm	1168 cm	1026 cm	1026 cm	1143 cm	1143 cm	1163 cm	1163 cm
Swath	432.0 in	480.0 in	480.0 in	465.0 in	480.0 in	480.0 in	480.0 in	432.0 in	432.0 in
	1097 cm	1219 cm	1219 cm	1097 cm	1097 cm	1181 cm	1219 cm	1219 cm	1219 cm
Marker Extension		Opposing Passes							
Left	234.0 in	255.0 in	250.0 in	240.0 in	255.0 in	251.0 in	259.0 in	230.0 in	238.0 in
	594 cm	648 cm	635 cm	584 cm	605 cm	610 cm	648 cm	638 cm	658 cm
Right	234.0 in	255.0 in	250.0 in	240.0 in	255.0 in	251.0 in	243.0 in	230.0 in	222.0 in
	594 cm	648 cm	635 cm	584 cm	564 cm	610 cm	648 cm	638 cm	617 cm

Marker Setup

Although markers are factory- or dealer-installed, they are not precisely adjusted for your planter configuration.

Prior to first use, set the following:

- marker speed (page 59), and;
- marker extension (below).

You may also want to set/check:

- marker disk angle (page 59).

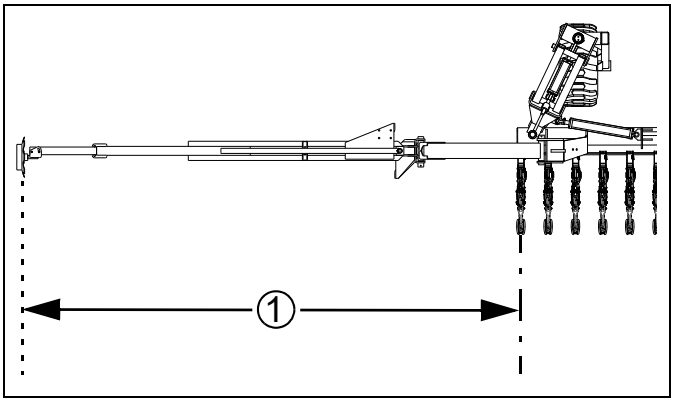


Figure 164 27451
Marker Extension

Marker Extension

Refer to Figure 164

Marker Extension is the distance from the mark in the ground to the centerline (or furrow) of the end row unit (whether that row is in use or not).

The tables on page 157 provide suggested initial values for various standard and altered configurations. When operating with rows locked up, measure to the outside row whether in use or not. Extension values may be different for left and right side, and may be different for opposing passes (each pass in the opposite direction) and concentric passes (each pass in the same direction). The table only includes data for opposing passes.

Refer to Figure 165

To adjust marker extension:

1. Loosen nuts ④ on U-bolts ③.
2. Move marker disc tube ⑤ in or out to get the proper adjustment.
3. To measure for marker width adjustment:
4. Lower planter in the field and drive forward a few feet.
5. Measure from the centerline/furrow of the outside active row to the mark in the ground made by marker disc.

When correctly adjusted, there is a gap of one row space between passes, as measure between center-lines of outside active rows for single-row, or between center-lines outside active twin row pairs.

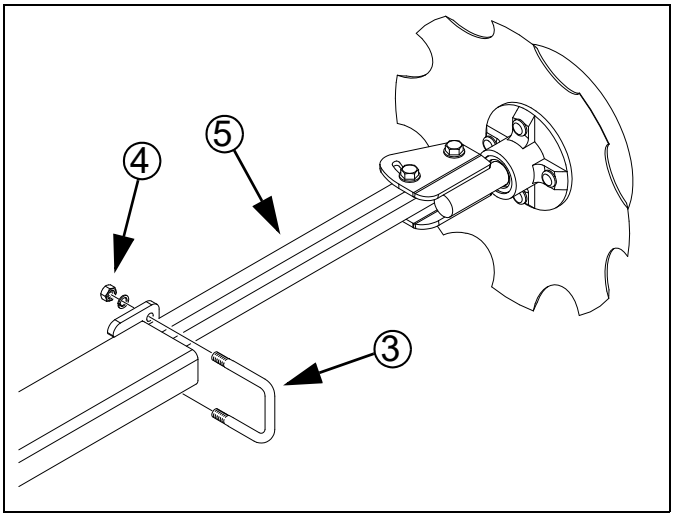


Figure 165 18878
Adjusting Marker Extension

Appendix D - Option Installation

122-278S Scraper Installation

Optional carbide disc scrapers are not factory installed. Start with row 1 (left-most row unit).

- 🕮 If a Keeton® seed firmer is also installed, see the Parts Manual for assembly details.
- 🕮 This scraper is not compatible with Seed-Lok®.

Refer to Figure 166 and Figure 167

1. Remove one or both opener disc blades to gain safe access to the mount ①. Note the position of bushings and spacers for correct re-assembly (page 68).
2. Select one each:
   [23] 802-024C HHCS 3/8-16X3 GR5
   [17] 129BXT824 BRACKET FOR 890-929C FIRMER
   [16] 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
   Insert the bolt [23], from the rear, through the lowest hole of the bracket [17]. Place the tube [16] over the bolt.
3. Select one scraper set:
   [44] 890-928C 25 SER AIR DESIGN IN SCRAPER
   Place the shoulder washer ② on bolt [23] with the larger diameter to the rear (toward bolt head). Place the left scraper blade ③ on the washer, followed by the right scraper blade ④.
4. Select one each:
   [35] 804-011C WASHER FLAT 3/8 USS PLT
   [36] 804-013C WASHER LOCK SPRING 3/8 PLT
   [29] 803-014C NUT HEX 3/8-16 PLT
   Place the flat washer [35] on the bolt [23], followed by the lock washer [36] and nut [29]. Tighten bolt and nut to 3/8-16 GR5 torque spec. Make sure blades pivot freely.
5. Select the scraper spring ⑤. Connect the spring between the blades, using the small top holes.
6. Select two sets:
   [26] 802-172C HHCS 5/16-18X2 1/2 GR5
   [33] 803-043C NUT HEX WHIZ 5/16-18 PLT
   Insert the scraper assembly ⑥ between the middle four lower square holes ⑦ of the opener frame. Secure with bolts [26] and whiz nuts [33].
7. Re-mount the removed disc blade.

Callout, Part & Description cross-references are drawn from a Reference Page.

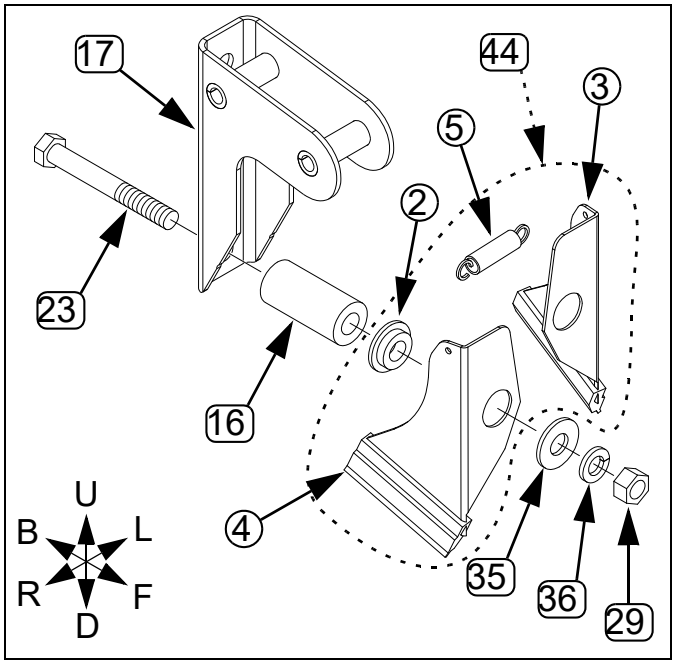


Figure 166 29227
Scraper Pre-Assembly

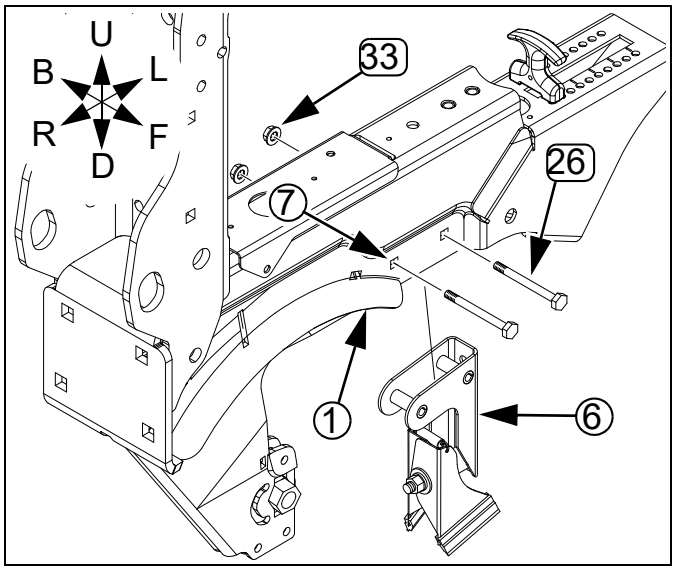


Figure 167 29228
Scraper Installation

Appendix R - Row-Pro™

Preparation and Setup

Row-Pro™ Setup (Option)

The factory default setting for down-force is likely to differ from that required by your next field conditions.

Before modifying the monitor setting for down-force, determine what actual down force is ideal for the initial use of the planter. One method of determining an initial setting involves operating in the field (without seeding).

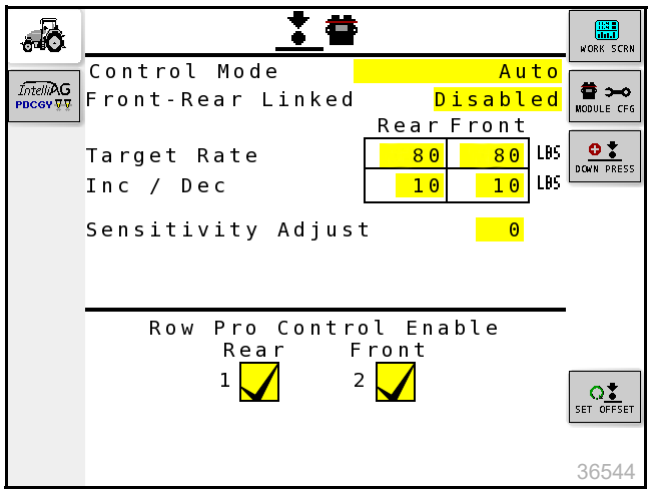
1. Set planting depth at T-handles (page 68).
2. Review unit-mount coulter depth relative to opener disc. Adjust as needed (page 67).
3. Start with the row unit down pressure springs in the lowest, or second-lowest notch (page 64).

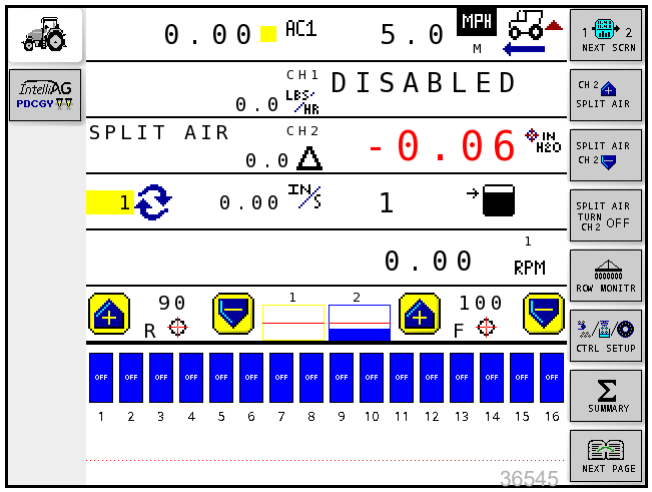
📖 Adjustment to the spring pressure may need to be made if the depth is reset or the closing wheel down pressure is adjusted.

4. Operate[a] in the field for a short distance.
5. Evaluate the seed trench (page 65).
6. Adjust the springs until depth and closure are ideal. If the ideal setting seems to be in between two notch values, use the higher setting. Rows in wheel tracks may be higher still.
7. Engage the Row-Pro™ system. Set the initial target weight at 80 pounds.
8. Operate in the field. Evaluate furrow and closing. Adjust Row-Pro™ force setting for optimal results.
9. When verifying the final setting, and when planting, watch for Unable to Control alarms, which may indicate that the cams are a notch or more too high or too low.

📖 If the IntelliAg® alarm indicates a value too high, reduce spring pressure. If the IntelliAg® alarm indicates a value too low, increase spring pressure.

The actual target rate is going to be different depending on the field conditions, soil type and other factors. The best way to gauge where you want the setting is to operate the system for a short time then go behind the planter and check the furrow.





a. Optionally operate the Row-Pro™ system in Monitor Only mode, and note the forces reported.

Operating Instructions

Refer to Figure 168

Row-Pro™ is a factory installed option for implements with 25-series openers that are equipped with DICKEY-john® IntelliAg®. It helps the spring down force system to maintain a user-determined, ideal weight for the side depth gauge wheels. Once the springs are set, Row-Pro™ pneumatically increases/decreases pressure on the openers.

- 🕮 The row units are already getting their down pressure from the springs on the parallel arms. Row-Pro only acts to vary that pressure as needed to maintain consistency in different soil conditions.

There is one cylinder ① for each row located between the parallel arms. Based on loading on the side depth wheels, Row-Pro™ adjusts air pressure in the air cylinders.

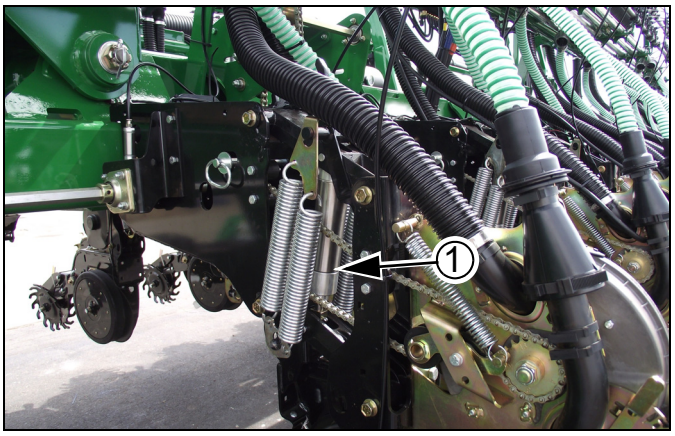
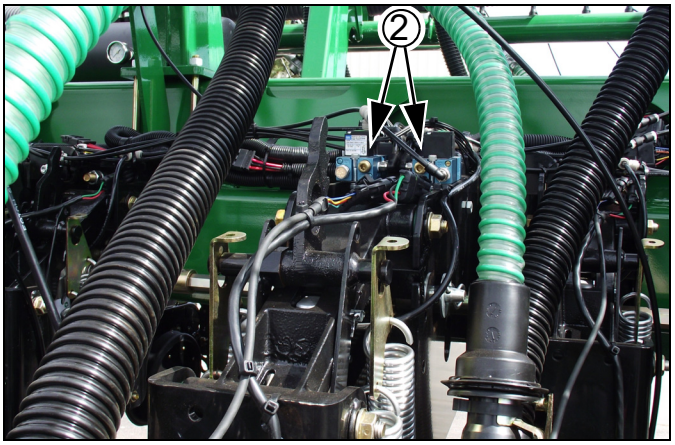


Figure 168 32085
Row-Pro™ Cylinder

Refer to Figure 169

There is one valve set per opener section, located in the center of the section. It allows each section to be controlled independently.

- 🕮 For twin row there are two valve sets ② per section: one for the front openers and one for the rear openers.



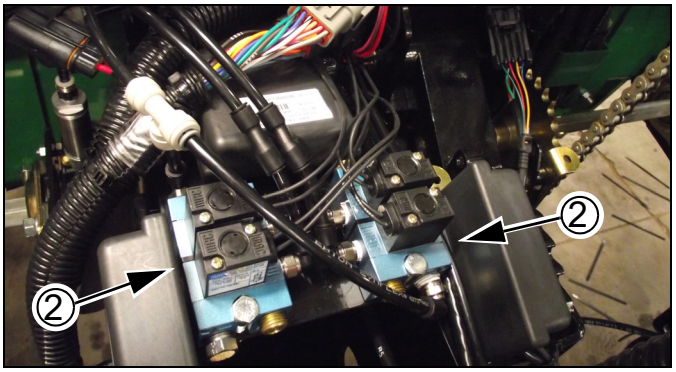


Figure 169 32084 32088
Row-Pro™ Valve Sets

Row-Pro™ Components

Refer to Figure 170 and Figure 171

The main systems of Row-Pro™ consist of:

1. **An air compressor system:** one 12VDC air compressor (11) with air tank (12), two extension cables (13), and one fuse assembly (14).
2. **A load sensing system:** DPLCM (Down Pressure Load Cell Module) (15) and the load cells (16).
3. **An adjusting system:** valves (17) and air cylinders (18).

Load Cell, DPLCM and Valves

The DPLCM (15) and valves (17) are mounted together on a plate and are connected to the DICKEY-john® Row-Pro™ wiring harness (19).

Two leads on the Row-Pro™ harness each connect to a load cell (16) which is located in the opener body (see fig.162). Four leads connect to the valve sets. There is one pair (one air intake, one exhaust) for each valve.

- For single row planters:
  There is one load cell and one valve set per each opener section located at mid section.
- For twin row planters:
  There are two load cells and two valve sets per each opener section located on the long and short center row unit of the section.

The Row-Pro™ harness connects to the planter's CANbus at connector ends (20).

The load cell provides feedback so the system can maintain the target pressures.

The DPLCM uses the readings from the load cell to regulate the air valves in order to increase or decrease pressure in the air cylinders.

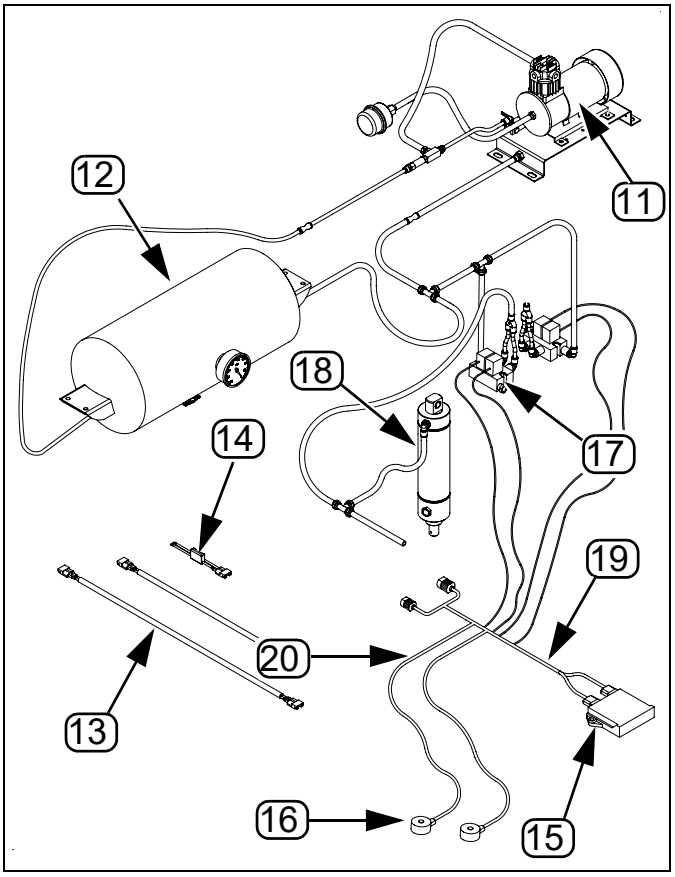


Figure 170 31878
Row-Pro™ Components

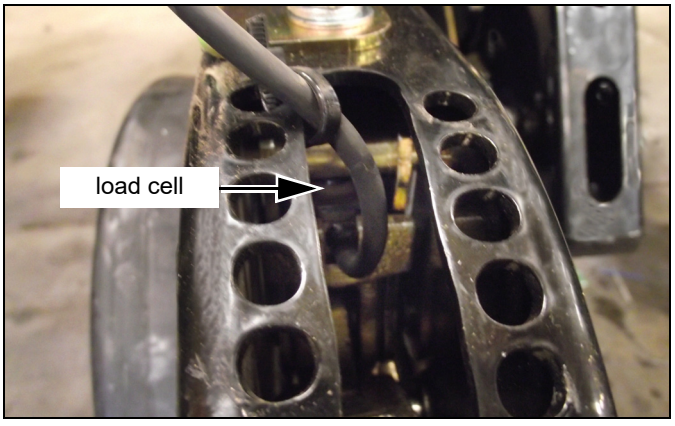


Figure 171 32089
Load Cell Location (Opener)

Row-Pro™ Air Compressor System

Row-Pro™ Air Compressor

Refer to Figure 172

The 12VDC compressor ① requires both an electrical connection and a mounting location. It should be mounted in a location on the tractor or planter where most convenient. Mount where cool clean air can get to it. The battery connection is equipped with one large 60 amp spade fuse (automotive type).

🕮 If your tractor has an on-board engine driven compressor capable of 150 psi, it can be used instead of the one supplied with the planter. Hook the on-board compressor to the air tank with lines provided.

The air filter should be placed in the tractor cab where it can pull clean air from the cab.The remote air filter line should be as short as possible.

The air compressor pressurizes the air tank reservoir.

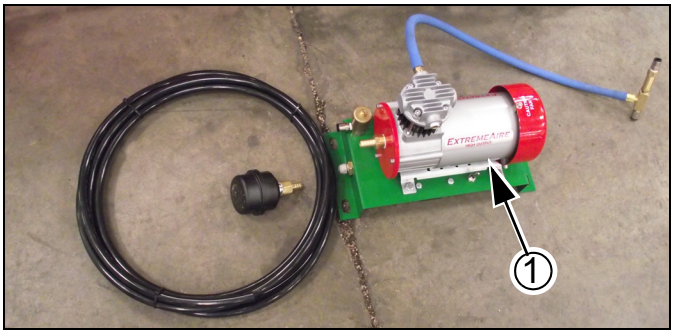


Figure 172 32087
Row-Pro™ Compressor

Row-Pro™ Air Tank

Refer to Figure 173

An air tank is provided and mounted on the wing. Open the air tank petcock ② once daily to drain water accumulation.

The air tank is used in conjunction with the air valves to maintain a set pressure value for the air cylinders.

Air valves are used to increase or decrease the amount of air provided to the air cylinders.

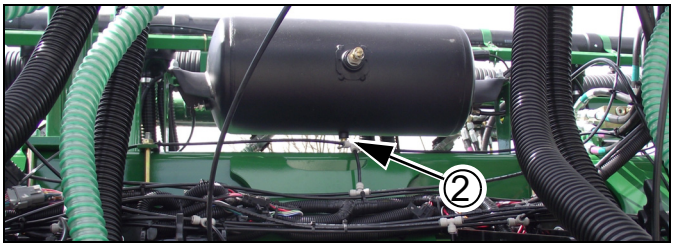


Figure 173 32086
Row-Pro™ Air Tank

Row-Pro™ Air Tank Lines

Refer to Figure 174

The air tank has two lines. A $^{3}/_{8}$ inch line ③ attaches the compressor to the air tank ④. A $^{1}/_{4}$ inch line ⑤ splits at a T-junction ⑥ and goes to the valves ⓔ while the remaining end ⑧ attaches to the compressor plate where it activates the pressure switches.

🕮 If an on-board compressor is used, plug/bypass the pressure switch branch.

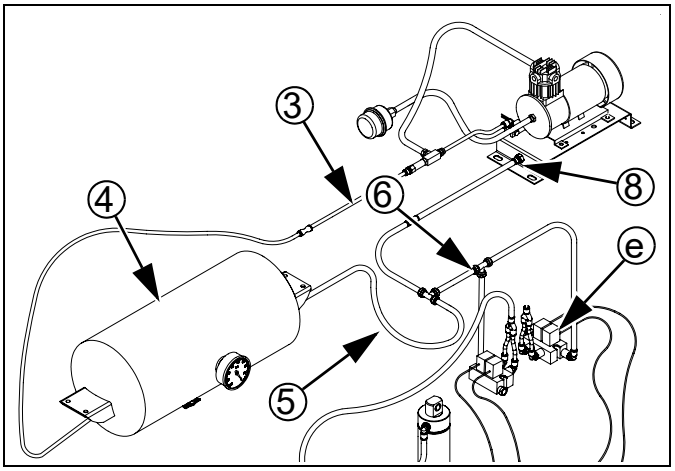


Figure 174 32090
Air Tank Lines

Row-Pro™ Air Pressure Gauge

Refer to Figure 175

Row-Pro™ is designed to run at 150 psi. When the psi drops to 135 the compressor engages and builds back up to 150 psi. Duty cycle varies based on air usage.

Check for Air Leaks

Before going to the field check for air leaks.

1. Turn the compressor on to pressure up the primary system until it automatically shuts off. If the system loses pressure, check for leaks.
2. Use the Leak Test mode to cycle through the sections and check for leaks.

Figure 175 32098
Air Pressure Gauge

Row-Pro™ Adjustments

Refer to Figure 176

Load Cell Reading

These readings are displayed and adjusted from the IntelliAg® seed monitor console.

Control Mode: **Auto** is the normal running mode. **Manual** is used to control the valves only when the operator touches the increase or decrease icon on the work screen.

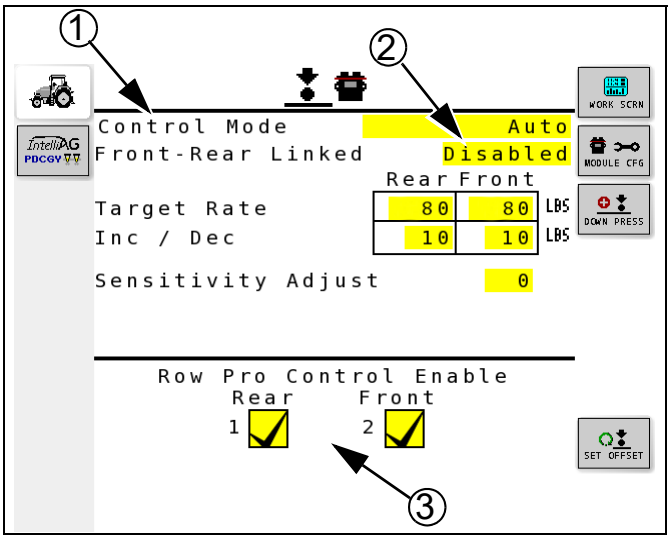


Figure 176
IntelliAg® Screen

36544

Monitor Only: This screen disables control, but still reports sensor feedback. From there, press the **Down Pressure Diagnostic** key and then press the **Float Mode ON** button to release all of the air from the system. Next, press the **Float Mode OFF** button. Stay on the **Diagnostic** screen and make a planting pass. Note the pressure displayed on the **Diagnostic** screen and then evaluate the seed trench. If the seed trench results are acceptable, use the displayed pressure as your target rate.

Front-Rear Linked: "**Enabled**" links the front and rear row units so that the same amount of pressure increase/decrease set at the screen is applied to front/rear row units. When "**Disabled**" ② - front/rear row units are not linked. Two sets of buttons appear on the screen that allow for adjustments of front and rear rates independently.

Target Rate: This is the desired down pressure on the side depth wheels. The target rate to be entered is the set rate (pounds) of the down force to determine how much pressure is applied. The system monitors and adjusts pressure to meet the defined rate set at this screen.

📖 Pressure displayed on screen and target pressure both refer to the amount of weight carried by the side depth gauge wheels, and not overall row unit down pressure.

Inc/Dec: Sets the amount that the Target Rate is changed with each key press during planting operations.

Sensitivity Adjust: Determines how responsive the Controller is to input from the DPLCM. The range is from -10 to +10. Zero (0) is the average setting. Going below 0 decreases the reaction time. Going above 0 increases the reaction time.

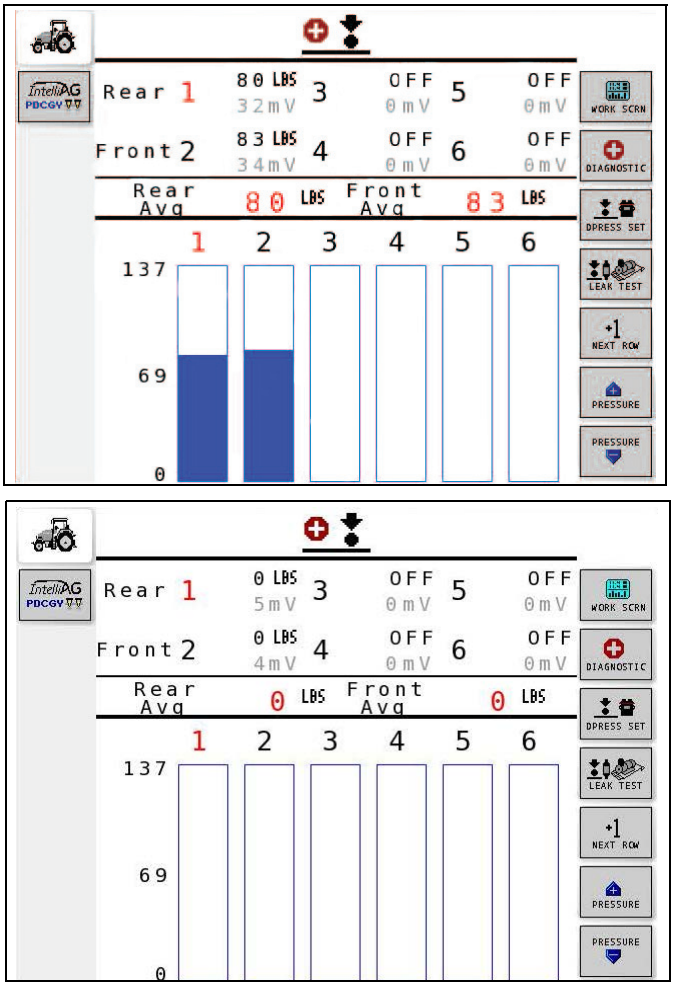


Figure 177
Float Mode ON/OFF Screens

36600
36601

Disable Down Pressure Modules: Modules interfacing with feedback sensors can be independently disabled so that down pressure to rear and/or front row units are not monitored or controlled. Modules that have been disabled are ignored by the system and will not report down pressure data or react to soil conditions.

(The IntelliAg® screen shows both row modules enabled ③. An unchecked box indicates disabled.)

If a section fails, that individual section can be turned on and off to locate the problem.

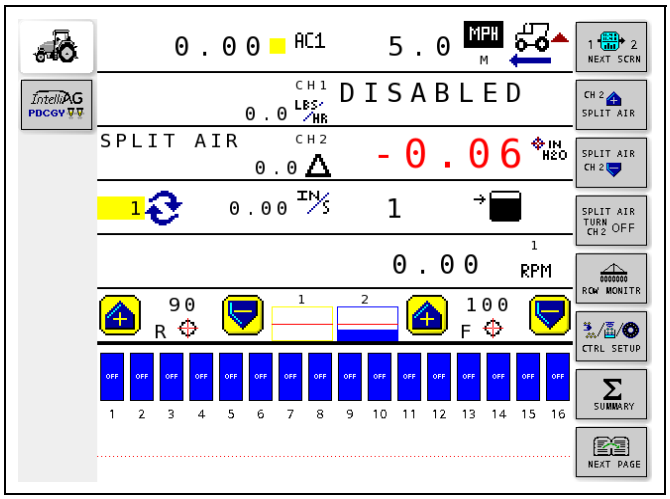


Figure 178
IntelliAg® Screen

36545

Refer to Figure 179

Reset Offset Value: Resetting Offset Values clears previous down pressure readings and resets values to zero.

1. At Main WORK SCRN press NEXT PAGE button.
2. Press MODULE CFG button.
3. At Module Configuration screen, press DPRESS SET.
4. At the Down Pressure Setting screen press OK to clear values.

IMPORTANT: The implement must be lifted and the implement lift switch in the up state before the OK button appears and values can be cleared.

- 🕮 Make sure side depth wheels are all in the lowered position so there is no tension on the load cell. Values other than OFF or 1-6 mV may indicate stuck side depth wheels. If the reading is 0 mV, there may be a problem with load cell grounding. See "**Row-Pro™ Troubleshooting**", page 178.
- 🕮 ***Initial Setup:*** Zero out the load cell reading.

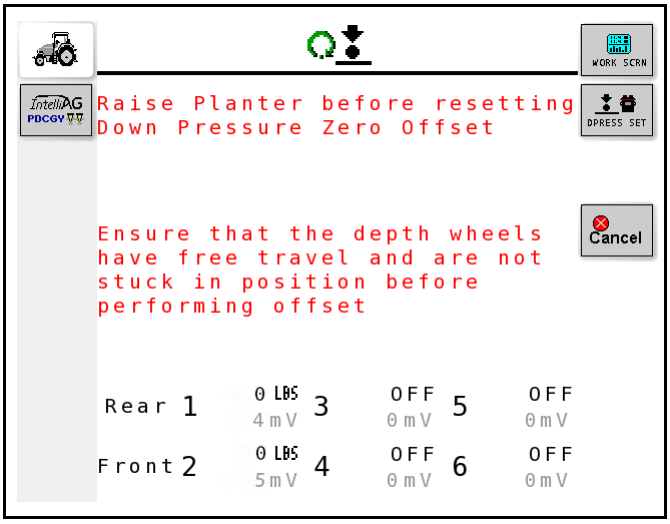


Figure 179
IntelliAg® Screen

36551

Row-Pro™ Troubleshooting

Problem	Cause	Solution
Compressor won't turn on	Switch turned "off".	Turn switch "on".
	Poor electrical connection.	Clean connections and reassemble.
	Fuse blown.	Replace fuse (60A).
Compressor won't turn off (runs continuously)	Section opener valves are installed in reverse.	Install opener valves correctly.
	Stuck pressure switch(es).	Replace pressure switch(es).
Compressor cycles more than normal	Water build-up in air tank.	Drain tank to keep reserve volume at proper size.
Erratic down pressure reading	Poor electrical connection to load cell.	Clean connection and reassemble.
	Load cell malfunction.	Replace load cell.
Persistent "high" alarm	Row unit spring tension too high.	Lower spring tension.
	Air leak preventing cylinders from holding pressure.	Fix leak.
Persistent "low" alarm	Row unit spring tension too low.	Raise spring tension.
	Air leak preventing cylinders from holding pressure.	Fix leak.
System won't hold air pressure	Pinched/torn hose.	Replace hose.
	Hose not pushed into quick connect fitting far enough.	Push hose in until fully seated.
Voltage reads "0" on monitor, or is unaffected by load on load cell	Signal wire grounded to frame.	Inspect for pinched or broken wiring harness between the load cell and DPLCM. Replace damaged wiring.

Row-Pro™ Maintenance

Check the tractor cab air filter as per manufacturer recommendation.

Yield-Pro® Planter Warranty

Great Plains (a division of Great Plains Manufacturing, Inc.) warrants to the original purchaser that this Great Plains unit will be free from defects in material and workmanship for a period of one year from the first use date when used as intended and under normal service and conditions for personal use; ninety days for custom/commercial or rental use.

A Second year limited warranty covers units utilizing Yield-Pro (YP) planter frames with 25 series row units and singulating type meters. The second year limited warranty covers parts only (personal usage only excluding labor and wear items) on the following: hitch main frame, gauge wheels, and markers, air box/manifold, Y-splitter tubes, and fan and housing, row unit weldments, unit mounted attachments, and frame mounted attachments.

This Warranty is limited to the replacement of any defective part by Great Plains and the installation by the dealer of any such replacement part. Great Plains reserves the right to inspect any equipment or part which are claimed to have been defective in material or workmanship.

The following items and/or conditions are **not covered under warranty**: failures resulting from abuse or misuse of the equipment, failures occurring as a result of accidental damage or acts of God, failures resulting from alterations or modifications, failures caused by lack of normal maintenance as outlined in the operator's manual, repairs made by non-authorized personnel, items replaced or repaired due to normal wear (such as wear items and ground engaging components), repeat repair due to improper diagnosis or repair by the dealer, temporary repairs, service calls and/or mileage to and from customer location, overtime premium, or unit hauling expenses. The warranty may be voided if the unit is towed at speeds in excess of 20 miles per hour (32 kilometers per hour), or is used in soils with rocks, stumps, or other obstructions.

Great Plains reserves the right to make changes in materials or design of the product at any time without notice. The warranty shall not be interpreted to render Great Plains liable for damages of any kind, direct or consequential or contingent to property. Furthermore, Great Plains shall not be liable for damages resulting from any cause beyond its control. This warranty does not extend to crop loss, losses caused by planting or harvest delays or any expense or loss of labor, supplies, rental machinery, or for any other reason.

No other warranty of any kind whatsoever express or implied, is made with respect to this sale; and all implied warranties of merchantability and fitness for a particular purpose which exceed the obligations set forth in this written warranty are hereby disclaimed and excluded from this sale.

This warranty is not valid unless the unit is registered with Great Plains within 10 days from the date of the original purchase.

38112

Index

Table of Contents

Table of Contents

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