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 show similar 3-point models and their options.
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.

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Dealer Contact Information

Name: ________________________________
Street: ________________________________
City/State: ________________________________
Telephone: ________________________________
Email: ________________________________
Dealer’s Customer No.: ________________________________

⚠️ WARNING: Cancer and Reproductive Harm - www.P65Warnings.ca.gov
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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 6, thoroughly.
▲ Read all instructions noted on the decals.
▲ Keep decals clean. Replace damaged, faded and illegible decals.
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.

Avoid High Pressure Fluids

Escaping fluid under pressure can penetrate the skin, causing serious injury. This product requires a Power-Beyond port, which is always under pressure when the tractor is running.

▲ Avoid the hazard by relieving pressure at other remotes, and shutting down tractor before connecting, disconnecting or inspecting 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.
Use A Safety Chain

▲ 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 specified anchor location. Allow only enough slack in chain for turns.
▲ Replace chain if any links or end fittings are broken, stretched or damaged.
▲ Do not use safety chain for towing.

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).
• Maximum speed in turns 13 mph (22 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. Never travel at a speed which does not allow adequate control of steering and stopping. Reduce speed if towed load is not equipped with brakes.
▲ 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 product 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 product while the tractor is moving.
Handle Chemicals Properly
Agricultural chemicals can be dangerous. Improper use can seriously injure persons, animals, plants, soil and property.

▲ Read and follow chemical supplier 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.
▲ 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.
▲ Wash hands and face before eating after working with chemicals. Shower as soon as application is completed for the day.
▲ Apply only with acceptable wind conditions. Wind speed must be below 5 mph. Make sure wind drift of chemicals will not affect any surrounding land, people or animals.
▲ Never wash out a hopper within 100 feet (30 m) of any freshwater source or in a car wash.

Shutdown and Storage
▲ Lower product, put tractor in park, turn off engine, and remove the key.
▲ Secure product using blocks and supports provided.
▲ Detach and store product in an area where children normally do not play.
Tire Safety

Tire changing can be dangerous. Employ 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 product, 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 product to cool completely.
- Disconnect battery ground cable (-) before servicing or adjusting electrical systems or before welding on product.
- 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 product 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 product functions.
- Operate machinery from the driver’s seat only.
- Do not leave product unattended with tractor engine running.
- Do not stand between the tractor and product 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 product. 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 tube supporting meter pressurization manifold; 1 total

Red Reflectors

838-266C

On the back of end seed hoppers (rear seed hoppers on twin-row products); 2 or 4 total
On the back of end seed hoppers (rear seed hoppers on twin-row products):
2 or 4 total

On the back of the inner marker arm (option), above daytime reflector:
2 total

Amber Reflectors
838-265C

On the front face of the front tool bar, each end, on the outside of the end hopper supports, (option) on the front side of the Fertilizer or accessory sub-frame;
2 or 6 total
Daytime Reflectors

838-267C

On the back of two center seed hoppers (rear seed hoppers on twin-row products)
2 or 4 total

On the back of two center seed hoppers (rear seed hoppers on twin-row products):
2 or 4 total

On the back of the inner marker arm (option), below red reflector:
2 total
Danger: Possible Chemical Hazard
818-323C

On the underside of each hopper lid;
4 to 16 total
On the front of each tank cradle:
1 or 2 total

Warning: Tank Hazards
61848

On front or end of each tank;
1 or 2 total

This decal is provided by the tank manufacturer. This decal does not need to be replaced if damaged or illegible.

Warning: Speed
818-337C

On top of tongue near hitch;
1 total
Warning: High Pressure Fluid Hazard
818-339C

On top of tongue near hitch;
1 total

Warning: Sharp Object (Option)
818-525C

Front face of each row cleaner frame;
4 to 12 total

Warning: Markers (Option)
818-682C

On front face of inner marker arm;
2 total

Warning: Moving Parts Hazard (Option)
838-363

On left outside face of Dry Fertilizer transmission;
1 total
Caution: Read Operator’s Manual
818-587C

On top of tongue near hitch; 1 total

Caution: Tire Pressure and Bolt Torque
844-193C

On valve stem side of each wheel; 2 or 4 total

Caution: Tire Pressure and Bolt Torque
838-595C

On valve stem side of each wheel; 2 or 4 total
Great Plains welcomes you to its growing family of new product owners. The YP425A, YP625A and YP825A (YP425A, YP625A, and YP825A) 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 from the machine.

Models Covered

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<tr>
<td>YP425A-0438</td>
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<tr>
<td>YP425A-0440</td>
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The YP425A3P, YP625A3P and YP825A3P models have a separate Operator manual (401-652M).

Manual Family QRC

The QR Code (Quick Response) to the left will take you to this machine’s family of manuals. Use your smart phone or tablet to scan the QR Code with an appropriate App to begin viewing.

Dealer QRC

The QR Code (Quick Reference) to the left will take you to available dealers for Great Plains products. Refer to the Parts Manual QR Locater for detailed instructions.
Using This Manual
This manual will familiarize 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 to remain safe, avoid serious damage to equipment and ensure 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 machine’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 right end of the rear face of the main tool bar.

Record your YP425A, YP625A, and YP825A Product model and serial number here for quick reference:

Model Number: __________________________
Serial Number: __________________________
Further Assistance

Great Plains Manufacturing, Inc. and your Great Plains dealer want you to be satisfied with your new product. 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 YP425A, YP625A, and YP825A Product for use, and covers tasks that need to be done seasonally, or when the tractor/product configuration changes.

Before using the product in the field, you must hitch it to a suitable tractor, inspect systems and level the product. Before using the product for the first time, and periodically thereafter, certain adjustments and calibrations are required.

Initial Setup

See “Appendix B - Pre-Delivery” on page 159 for pre-delivery items (normally completed by dealer), and first-time/infrequent setup tasks, including:

- Install seed monitor console in tractor (page 167).
- Set marker extension (Option, page 168).
- Install any Options not factory- or dealer-installed.

Post-Delivery/Seasonal Setup

On initial delivery, use with a new tractor, and seasonally, check and as necessary, complete these items before continuing to the routine setup items:

- Bleed hydraulic system (page 108).
- De-grease exposed cylinder rods if so protected at last storage.

Pre-Planting Setup

Complete this checklist before routine setup:

- Read and understand “Important Safety Information” on page 1.
- Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.
- Check that all zerks are in place and lubricated. See “Lubrication” on page 114.
- Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “Safety Decals” on page 6.
- Inflate tires to pressure recommended and tighten wheel bolts as specified. See “Tire Inflation Chart” on page 141.

Spill hazard/Tank damage risk:
Periodically check the tension of the straps for the fertilizer tank. Strap tension will change as outside air temperature changes. Adjust tension as necessary to prevent personal injury or damage to the fertilizer tank.
Hitching Tractor to Product

⚠️ DANGER ⚠️

Crushing Hazard:
Do not stand or place any body part between product and moving tractor. You may be severely injured or killed by being crushed between the tractor and product. Stop tractor engine and set parking brake before attaching cables and hoses.

To prevent soil compaction on rows, set tractor wheels between rows. For hillsides and steep slopes, set tractor wheels as wide as possible for maximum stability.

Refer to Figure 3
1. Use jack ① to raise and lower product tongue.

Refer to Figure 3
2. After hitching tractor to product, store jack on storage tube ② on top of product tongue.
3. Secure product safety chain to an anchor on the tractor capable of pulling the unit.

Electrical Hookup

Refer to Figure 5
Your product is equipped with systems that require separate electrical connections. For future reference, note any optional connectors on this checklist.
- ① Lighting connector (standard)
- ② Monitor connector (standard)
- __________________________
- __________________________

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 product movement.
Hydraulic Hose Hookup

**WARNING**

*High Pressure Fluid Hazard:*
Shut down tractor before making hydraulic connections. Only trained personnel should work with system hydraulics.

Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

Use paper or cardboard, NOT BODY PARTS, to check for leaks. Wear protective gloves and safety glasses or goggles when working with hydraulic systems.

**Refer to Figure 6**

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**

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Green</td>
<td>Marker</td>
<td>548-003S</td>
</tr>
<tr>
<td>Blue</td>
<td>Lift</td>
<td>548-935A</td>
</tr>
</tbody>
</table>

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 feeds 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 6](31733)

Color Coded Hose Handles
Older Style Hoses with Color Ties

Refer to Figure 7 and Figure 8 on page 19

Hydraulic hoses are color coded to help you hookup hoses to your tractor outlets. Hoses that go to the same remote valve are marked with the same color tie.

<table>
<thead>
<tr>
<th>Color</th>
<th>Hydraulic Function</th>
</tr>
</thead>
<tbody>
<tr>
<td>White</td>
<td>Fan</td>
</tr>
<tr>
<td>Orange</td>
<td>Marker</td>
</tr>
<tr>
<td>Blue</td>
<td>Lift</td>
</tr>
</tbody>
</table>

Refer to Figure 7

To distinguish hoses on the same hydraulic circuit, refer to hose label.

- The fan motor case drain line is a separate hose with no label plate. This hose is always connected first and disconnected last.
- The hose under an extended-cylinder symbol feeds a cylinder base end or motor return line.
- The hose under a retracted-cylinder symbol feeds a cylinder rod end, or motor pressure line.

Secure hoses and cables so that they have sufficient slack for hitch movements, but cannot get caught between moving parts of product. Failure to safely route and secure hoses and cables could result in damage requiring component repair/replacement, and lost field time.

Make connections in a specific order, described on the next page.

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”.

Figure 7
Older Style Hoses with Label
Protect Motor Seals
Applies to planters with serial numbers:
(YP425A s/n B1008N-) (YP625A s/n B1043Q-) (YP825A s/n B1014S-)

1. Connect the fan case drain line \(\textcircled{1}\) first, before making any other connections. Connect this line to a low pressure drain port.

Case drain hose has the smaller \(\frac{1}{4}\) in. I.D. hose and small, flat-face, low-seep connector.

2. Connect the fan return \(\textcircled{2}\) line second.

Fan pressure return hose has a large (1.06 inch/2.7 cm diameter) quick coupler.

3. Connect the fan motor pressure hose \(\textcircled{3}\) third. If the tractor has a priority remote, use it for the fan connection.

4. Make lift and marker (option) connections.

**NOTICE**

**Machine Damage Risk:**
*DO NOT connect the fan case drain line to a power-beyond-port. 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.*

Applies to planters with serial numbers:
(YP425A s/n B1009N+) (YP625A s/n B1044Q+) (YP825A s/n B1015S+)

For complete instructions see "Fan Circuit Operation (SN+)" on page 45.

1. Connect the motor return line \(\textcircled{3}\) to remote circuit return (Extend port) or to sump.

2. Connect the motor inlet line \(\textcircled{4}\) to a tractor remote capable of 20 liters per minute. If a priority remote is available, use it for the fan.
Leveling Product

Refer to Figure 10
During initial setup and periodically throughout the season, check that the product runs level. When planting, the top of the main frame should be parallel to the ground.

To level the product, the distance from bottom of the mainframe tube to the ground, must be:
- 26 inches (66 cm)
with the product lowered into planting position.

With the openers in the ground, this tool bar height normally requires a hitch height of:
- 14 1/2 inches (36.8 cm)
measured from the bottom of the tongue to the ground.

Refer to Figure 11 (showing one of two hitch bolts)
To obtain the correct height, remove the two hitch bolts, and reposition the product hitch on the tongue.

NOTICE

Sudden Hitch Slump or Failure Risks:
Always have two bolts through two holes on both hitch and tongue. Never rely on a single bolt.

The hitch can be inverted in the tongue for extreme height changes.

Wheel Adjustment for Leveling

Refer to Figure 12
If the target tool bar height cannot be achieved with the frame level, an adjustment can be made by relocating the wheel axles in the arms. This lowers the product by about 2 inches (5.1 cm).

Block up the frame to remove weight from tires. Remove bolts, located in lower holes, securing transport ground tire assembly to unit. Move wheel assembly and secure assembly to upper hole using previously removed bolt.
Ridge and Bed Planting

Refer to Figure 13

To prepare the product for ridge planting, lower the gauge wheels by inverting the cylinder mounting blocks. This adjustment raises the product by about 2.5 inches (6.4 cm).

Refer to Figure 13

Standard planting is shown at . Ridge planting is shown at .

1. Block up the frame to remove weight from tires.
2. At each of the four lift cylinders, remove the four 5/8 inch cap screws attaching the mounting blocks to the frame.
3. Invert mounting blocks and reinstall cap screws. Torque to specification.
4. Make the same adjustment at all four wheels.

Monitor Setup

Refer to Figure 41

The standard DICKEY-john® PM300 system monitors the following elements of a YP425A, YP625A, and YP825A product:

• Seeds at each row unit seed tube.
• Ground speed.

See “Seed Monitor Console Installation” on page 167.

Refer to the DICKEY-john® PM300/PM332/PM400 Operator’s Manual for monitor operations.

After installation, and prior to first field use, the monitor must be setup with the row spacing and speed sensor constant, as well as your preferences for information display. Row count is auto-assigned, but any other factory defaults are not likely to be correct for your product.

Row spacing data may be found in the Appendix.

For speed setup, Great Plains recommends using the 400-foot calibration described in the DICKEY-john® manual, rather than using a theoretical “# of pulses”. Perform the calibration run in representative field conditions, as soil conditions, surface looseness and other tillage practices can cause variations in the effective rolling radius of the ground drive wheel.

Prior to each planting session, set any desired limits for speed and population for the current crop.
Marker Setup (Option)
Prior to first use, check and adjust:
- "Marker Speed Adjustment" on page 168.
  Prior to first use, and whenever changing row spacings, set or reset:
- "Marker Extension" on page 168.
  Prior to each planting session, check and adjust:
- "Marker Disk Adjustment" on page 59.

Lock Up Fertilizer Drive
YP425A serial number B1015N+
YP625A serial number B1062Q+
YP825A serial number B1033S+

**WARNING**

*Loss of Control and Crushing Hazards:*
Lift or lower wheel by using ground blocks and planter hydraulics. Use blocks that are stable front to back and side to side to avoid the possibility of the wheel turning. Keep feet out from under wheel. 90 pounds (41 kg) force is required to lift wheel. If blocks are removed before pinning, or after unpinning, the arm snaps down rapidly. 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.

**Refer to Figure 15**
For YP425/625/825A planters:
5. Remove clevis pin from storage hole
6. To compress spring and allow the ground drive wheel to raise up, place blocks under the ground wheel.
7. Lower the planter.
8. Align matching plate holes and insert pin. Secure with cotter pin.
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

Perform the following steps before transporting the product to the field.

- Carefully read “Important Safety Information” on page 1.
- Fertilizer Option: Review the application instructions and Material Safety Data Sheet (MSDS) for the fertilizer(s).
- Install seed disks appropriate for crop. See “Air-Pro® Meter Disk Installation” on page 82.
- Lubricate product as indicated under “Lubrication” on page 114.
- Check all tires for proper inflation. See “Tire Inflation Chart” on page 141.
- Check all bolts, pins, and fasteners. Torque as shown in “Torque Values Chart” on page 141.
- Check product for worn or damaged parts. Repair or replace parts before going to the field.
- Check hydraulic hoses, fittings, and cylinders for leaks. Repair or replace before going to the field.

**WARNING**

High Pressure Fluid Hazard:
Relieve pressure and shut down tractor before connecting, disconnecting or checking hydraulic lines. 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. Escaping fluid under pressure can have sufficient pressure to penetrate the skin causing serious injury. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

**CAUTION**

Spill hazard/Tank damage risk:
Periodically check the tension of the straps for the fertilizer tank. Strap tension will change as outside air temperature changes. Adjust tension as necessary to prevent personal injury or damage to the fertilizer tank.
Raising/Lowering Product

Refer to Figure 16

Product raising and lowering relies on two or four lift cylinders ①. To raise or lower the product, move the lever for the Lift circuit.

**CAUTION**

Gradual Crushing Hazard:
Do not rely on hydraulic pressure alone to keep the product raised. Use transport/lift locks (page 25) when working around a raised product. The bypass orifices in the re-phasing system cause it to slowly lower.

Re-Phasing Lift System

In typical use during a single planting operation, it is normal for the lift cylinders to get out of phase, resulting in uneven raising and lowering of the product.

Every 8 to 10 passes, re-phase the cylinders with this procedure:
1. Raise the product completely, and hold the hydraulic lever or switch for several seconds after the product reaches full raised position, or until all cylinders are fully extended.
2. When all cylinders are fully extended, momentarily reverse (Retract) the control to lower the product 1/2 inch (12 mm).

Lift Cylinder Locks (SN+)

Applies to planters with serial numbers:
(YP425A s/n B1009N+)
(YP625A s/n B1044Q+) (YP825A s/n B1015S+)

Use transport locks to hold the product at raised for transport, adjustments, maintenance and storage.

Refer to Figure 18

Transport locks are present on all wheel modules.
To install cylinder stops:
1. Raise product to transport position (page 24).
2. Pivot cylinder stops ② into engagement with lift cylinder rods. The stop channels snap into position.
3. Lower product onto stops.

Raise product, and hold at raised, before releasing transport locks.

Machine Damage Risks:
Always fold markers (page 51) before raising or lowering.
Disengage transport locks (page 25) before lowering.
Always raise the product for any reverse/backing.
Except on pavement, begin forward motion before lowering, as rows move backward slightly as arms swing up.
Lift Cylinder Locks (SN-)
Applies to planters with serial numbers:
(YP425A s/n B1008N-)
(YP625A s/n B1043Q-) (YP825A s/n B1014S-)
Use transport locks to hold the product at raised for transport, adjustments, maintenance and storage.

Refer to Figure 18
Transport locks are present on all wheel modules.
To install cylinder stops:
1. Raise product to transport position (page 24).
2. Remove cylinder lock cotter pins (1) and lock pins (2).
3. Pivot cylinder stops (3) into upright position on lift cylinder rods.
4. Reinstall locking pins and secure with cotter pins.
5. Lower product onto stop.
Raise product, and hold at raised, before releasing transport locks.
Transport

**DANGER**

*Loss of Control Hazard:*
Never tow an implement that weighs more than 150% of the tractor. Ensure that the towing vehicle is adequate for the task. Using an inadequate tow vehicle is extremely unsafe, and can result in loss of control, serious injury and death.

The product can weigh over 16,000 pounds (7300 kg), depending on configuration and seed load. The tractor MUST be rated for the load and must weigh at least 67% of the load. If the tractor is not rated for at least 16,000 lbs, calculate or obtain a scale weight of the product. See chart below for typical configuration weights.

Do not tow if product exceeds the load rating of the vehicle.

**CAUTION**

*Braking and Loss of Control Hazard:*
Do not exceed 20 mph (32 km/h) when transporting the planter.

Do not exceed 13 mph (22 km/h) in turns.

**NOTICE**

*Reduction of Control Risk:*
Seed and fertilizer may be loaded prior to travel, but increase stopping distance, increase the need for caution in turns and braking, and increase tire wear.

### Typical product Product Weights

<table>
<thead>
<tr>
<th>Approximate Weights of Representative Configurations</th>
<th>YP425A-0430</th>
<th>YP425A-08TR</th>
<th>YP625A-0630</th>
<th>YP625A-12TR</th>
<th>YP825A-0830</th>
<th>YP825A-16TR</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Base Planter</strong></td>
<td>2400 lb</td>
<td>3200 lb</td>
<td>3600 lb</td>
<td>4500 lb</td>
<td>4800 lb</td>
<td>6500 lb</td>
</tr>
<tr>
<td><strong>Typical¹ Empty</strong></td>
<td>2500 lb</td>
<td>3400 lb</td>
<td>3700 lb</td>
<td>4800 lb</td>
<td>5000 lb</td>
<td>7000 lb</td>
</tr>
<tr>
<td><strong>Typical¹ Full</strong></td>
<td>2800 lb</td>
<td>4100 lb</td>
<td>4200 lb</td>
<td>5800 lb</td>
<td>5700 lb</td>
<td>8200 lb</td>
</tr>
<tr>
<td><strong>Fertilizer² Empty</strong></td>
<td>3100 lb</td>
<td>4000 lb</td>
<td>4700 lb</td>
<td>5800 lb</td>
<td>6000 lb</td>
<td>8000 lb</td>
</tr>
<tr>
<td><strong>Fertilizer² Full</strong></td>
<td>5500 lb</td>
<td>6400 lb</td>
<td>8300 lb</td>
<td>9400 lb</td>
<td>10800 lb</td>
<td>12800 lb</td>
</tr>
<tr>
<td><strong>Maximum³ Empty</strong></td>
<td>4200 lb</td>
<td>5700 lb</td>
<td>6100 lb</td>
<td>8000 lb</td>
<td>7700 lb</td>
<td>10800 lb</td>
</tr>
<tr>
<td><strong>Maximum³ Full</strong></td>
<td>6900 lb</td>
<td>8700 lb</td>
<td>10100 lb</td>
<td>12600 lb</td>
<td>13100 lb</td>
<td>16900 lb</td>
</tr>
</tbody>
</table>

¹ Typical: UM Coulters. No Markers, Fertilizer or RC.
² Fertilizer: UMC, Fertilizer System, No markers or RC
³ Maximum: Zone Coulters, UMC+RC, Markers, Fertilizer

Note: Weight of a specific planter can vary by hundreds of pounds, depending on installed options and material loaded.
Transport Steps
Transport only with markers stowed (page 51).

1. Check that product is securely hitched to a sufficient tractor (page 16).
2. Always use a locking-style hitch pin sized to match holes in hitch and draw-bar (minimum 1-inch-diameter, heat-treated pin).
3. Attach safety chain to tractor with enough slack to permit turning (page 16).
4. Verify correct operation of lights.
5. Fold markers if unfolded (Option, page 51).
7. Install cylinder locks (page 25).
8. Unload hoppers and tank(s) before transporting if at all possible. The product can be transported with a full material load, but the added weight increases stopping distance and decreases maneuverability.

**NOTICE**

**Increased Hazards and Wear Risks:**
Seed may be loaded prior to travel, but increases stopping distance, increases the need for caution in turns and braking, and increases tire wear.

9. If any seed is in hoppers or delivery hoses, close seed inlet shutters at meters (page 83).
10. Check that tires are properly inflated (page 141).
11. Plan the route. Avoid steep hills.
12. Always have lights on for highway operation.
13. Do not exceed 32 km/h (20 mph). Comply with all national, regional and local laws when traveling on public roads.
14. Remember that the product may be wider than the tractor. Allow safe clearance.
15. Transport slowly over uneven or rough terrain.

**WARNING**

EXCESSIVE SPEED HAZARD
To prevent severe injury or death. Do Not Exceed 32 km/h (20 mph) maximum transport speed. Use of vehicle control, proper machine damage can result.

**CAUTION**

Spill hazard/Tank damage risk:
Periodically check the tension of the straps for the fertilizer tank. Strap tension will change as outside air temperature changes. Adjust tension as necessary to prevent personal injury or damage to the fertilizer tank.
Loading Seed

Machine s/n
YP425A with 3.0 bu Hopper s/n B1047N+
YP425A with 1.6 bu Hopper s/n B1053N+
YP625A with 3.0 bu Hopper s/n B1190Q+
YP625A with 1.6 bu Hopper s/n B1202Q+
YP825A with 3.0 bu Hopper s/n B1291S+
YP825A with 1.6 bu Hopper s/n B1296S+

Refer to Figure 13
There are two different sizes of hoppers (3.0 bu 1 and 1.6 bu 2) used in the serial number range listed above. The instructions for loading both hoppers are the same.

NOTICE
The 3.0 bu hopper cannot be used for twin row applications or for 15 in (8.1 cm) single row spacing applications.

The 1.6 bu hopper can be used for all applications covered in this manual.

Refer to Figure 20.
1. Hopper lids 1: are held in place by a latch 2 and a hinge 3.
2. Release the latch and allow the gas spring 4 to raise the hopper lid. Leave the lid all the way open to prepare the hopper for loading.
Refer to Figure 21

3. Install correct seed disks (page 82).
4. Check that each hopper is correctly seated and secured:
   ① front and rear mounting bolts secured
   ② hopper discharge opening aligned with
   ③ seed tube
5. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See "Material Clean-Out" on page 101.

**CAUTION**

Possible Agricultural Chemical Hazards:
Read and follow all supplier cautions for safe handling of treated seed.

**CAUTION**

Irritant and Chronic Exposure Hazards:
Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 120.

Refer to Figure 22

6. Pre-mix seed and lubricant.

   For clean seeds other than milo, cotton, and sunflowers sprinkle 1/4 cup of Ezee Glide Plus per bushel or unit (60 ml per 35 liters) of seed.

   For milo, cotton, and sunflowers double the application to 1/2 cup (or more) per bu.or unit (120 ml per 35 liters) of seed.

**NOTICE**

Population Risk: The seed must be properly lubricated, starting with the first seed through the meter. If unable to pre-mix prior to loading, pre-mix at least one gallon (4 liters) per hopper, and load this seed first. Fill the hoppers to half full with fresh seed. Add half the lubricant and stir with a tool. Complete filling the hoppers and sprinkle the remaining lubricant on top.

7. Add seed and lubricant to hoppers.
Machine s/n:
YP425A s/n B1013N thru B1052N
YP625A s/n B1058Q thru B1201Q
YP825A s/n B1017S thru B1295S

Refer to Figure 23

The capacity of this hopper is 1.6 bu.

Within the serial number range listed above, there are two different designs of hopper lids. Make sure you follow the correct instructions for the hopper lids used on your machine.

Late Production Hopper Lids

1. Late production hopper lids are held in place by a mounting plate and a draw handle.
   1. Unlatch the draw handle and lift lid off.
   2. Prepare the hopper for loading by setting the lid aside.

! The seed hoppers themselves are designed to be removed, but are not removed for routine operations.

Early Production Hopper Lids

Refer to Figure 24

1. Early production hopper lids: are held in place by two spring clips, one at each end. There is a molded handle at the rear end of the hopper lid (although the lid is reversible).
   2. Grasp the handle and snap lid off.

Refer to Figure 25

3. Prepare the hopper for loading by storing the lid lengthwise on the side lip of the hopper, using the hooked ends of each spring clip inside the lid.

! The seed hoppers themselves are designed to be removed, but are not removed for routine operations.
Hopper

Refer to Figure 26

1. Install correct seed disks (page 82).
2. Check that each hopper is correctly seated and secured:
   ① front and rear mounting bolts secured
   ② hopper discharge opening aligned with
   ③ seed tube
3. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See “Material Clean-Out” on page 101.

**CAUTION**

Possible Agricultural Chemical Hazards:
Read and follow all supplier cautions for safe handling of treated seed.

**CAUTION**

Irritant and Chronic Exposure Hazards:
Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 120.

Refer to Figure 26

4. Pre-mix seed and lubricant.
   
   For clean seeds other than milo, cotton, and sunflowers sprinkle 1/4 cup of Ezee Glide Plus per bushel or unit (60 ml per 35 liters) of seed.
   
   For milo, cotton, and sunflowers double the application to 1/2 cup (or more) per bu.or unit (120 ml per 35 liters) of seed.

**NOTICE**

Population Risk: The seed must be properly lubricated, starting with the first seed through the meter. If unable to pre-mix prior to loading, pre-mix at least one gallon (4 liters) per hopper, and load this seed first. Fill the hoppers to half full with fresh seed. Add half the lubricant and stir with a tool. Complete filling the hoppers and sprinkle the remaining lubricant on top.

5. Add seed and lubricant to hoppers.
   
   If the lid has a draw handle, position front end of lid over front end lip of hopper. Snap lid firmly in place. Latch the draw handle.
   
   If the lid does not have a draw handle, center the lid on the opening and push down. Make sure spring clips are all engaged.
Machine s/n:
YP425A s/n B1012N-
YP625A s/n B1057Q-
YP825A s/n B1016S-

Refer to Figure 28 and Figure 29

The capacity of this hopper is 1.2 bu. Hopper lids (1) have distinct ends:

- the hinge end (2) (with two lugs (3)) mates with the front end of the hopper.
- the latch end (with a single lug) mates with the rear end of the hopper.

1. Pull the rear of the lid edge to the rear.
2. Swing the lid up at rear.
3. Disengage the lid at the front lugs.
4. Prepare the hopper for loading by storing the lid on the front lip of the hopper, using the hook-plate feature inside the lid. Refer to Figure 30

The seed hoppers themselves are designed to be removed, but are not removed for routine operations.

5. Install correct seed disks (page 82).
6. Close all seed inlet shutters (page 83).
7. Check that each hopper is correctly seated and secured:
   - pivot hooks engage at front,
   - latch engaged at rear,
   - seed hose secured to
   - discharge weldment with
   - clamp.
8. The hopper slide gate (5) may be left open (by pulling back), and doing so slightly increases seed capacity.

If slide gate is open for seed loading, seed inlet shutters must be closed unless the product is already at the field. Transporting with both gates and shutters open can plug meters.
9. Inspect the hopper for leftover seed and debris. Clean out anything other than the seed to be planted. See "Material Clean-Out" on page 101.

![Figure 30](36909.png)

**CAUTION**

Possible Agricultural Chemical Hazards:
Read and follow all supplier cautions for safe handling of treated seed.

**CAUTION**

Irritant and Chronic Exposure Hazards:
Do not mix lubricants into seed with hands or any part of body. Wear protective equipment. Use tools. See page 120.

10. Pre-mix seed and lubricant.

   For clean seeds other than milo, cotton, and sunflowers sprinkle 1/4 cup of Ezee Glide Plus per bushel or unit (60 ml per 35 liters) of seed.

   For milo, cotton, and sunflowers double the application to 1/2 cup (or more) per bu. or unit (120 ml per 35 liters) of seed.

**NOTICE**

Population Risk: The seed must be properly lubricated, starting with the first seed through the meter. If unable to pre-mix prior to loading, pre-mix at least one gallon (4 liters) per hopper, and load this seed first. Fill the hoppers to half full with fresh seed. Add half the lubricant and stir with a tool. Complete filling the hoppers and sprinkle the remaining lubricant on top.

11. Add seed and lubricant to hoppers.

12. Close lids. With lid tilted up at a slight angle, hook the two front hinge lugs under the front hopper lip. Swing down, keeping fingers clear of lug, and latch the single rear lid lug on rear hopper lip.

**NOTICE**

Equipment Loss Risk: Check that lids are closed properly or the lid may come off in transport.

![Figure 31](34710.png)
Loading Liquid Fertilizer (S/N+)

If fertilizer will not be applied, disengage the chain on the pump drive.

System Inspection
1. Wear protective equipment suitable for the material presently in or previously dispensed from the tank(s).
2. Remove the lid on each tank and inspect for:
   - residual fertilizer incompatible with next use
   - contaminants
   - debris that might clog filters
   - trapped animals lost tools, etc.
3. If it is necessary to flush a tank, or remove debris too large to flush, see "Tank Clean-Out" on page 103.
4. Re-secure each lid.
5. At first use each season, and after extended use, check the strainer mounted under the pump. Perform any cleaning before loading fertilizer.
6. The standard screen size is 80 (Blue). Some orifice selections (step 9) require changing the strainer.

Tank Loading
Refer to Figure 32, and Figure 139 on page 144 or Figure 140 on page 145

Review the information below before commencing steps.

• Load chemicals immediately prior to use. Material loaded too early may sediment or stratify, resulting in uneven application or system plugging.
• Load on level ground. Fill is uneven across a slope on a dual-tank system. Unless valves are set to prevent it, material can flow from one tank to another.
• The tank is designed to be loaded using the 2in CAM quick-fill inlet ( ), located at the left front of the implement. If for any reason you cannot use that inlet, you can also load material via a ladder and tank top hatch. The lid is threaded and unscrews.
• Determine how to monitor tank fill level. If the day is bright, or loading at night with a bright light available, it is possible to see the fluid level through the semi-translucent tank walls. Otherwise, it is necessary to have an observer monitor through the tank hatch.
• Be familiar with the location of plumbing valves. Common task require setting as many as five product valves (four with YP425A). See page 144 or page 145.
7. Consult the Seed and Fertilizer Rate manual (ManualB #) for rate setting details.
8. Set the Fertilizer drive sprockets and piston pump rate adjuster per the Rate charts.
9. Install the recommended size orifice plate at each active drop line (Seed Rate manual).

Agricultural Chemical Hazard: Avoid contact with skin or eyes. 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. Seek medical assistance immediately if accident occurs. Know what to do in case of accident.

Equipment Damage Risk: Do not run the pump when dry. Remove the final pump drive chain if not applying fertilizer. Air rapidly corrodes the pump. When not pumping, fill the pump with clean water or RV antifreeze.

Equipment Damage and Plugging Risks: Use only materials compatible with polyethylene and polypropylene. Use only pre-mixed liquid fertilizer. The system is not designed for dry fertilizer mixes. Granular fertilizer may damage the pump and plug orifices.

Equipment Damage Risk: Do not leave fertilizer standing. Load late. Pump it all. Clean out the system. Fertilizer is usually extremely caustic, and can damage the piston pump if left standing. Also protect the pump from air. See “Liquid Fertilizer Clean-Out” on page 103.

Is it not possible to use the product pump to load material, as it only pumps when the product is in motion and is only plumbed to pump to the boom. If the fertilizer source has no pump, it needs to be elevated above the tank for gravity fill.
Loading Liquid Fertilizer (S/N-)

If fertilizer will not be applied, remove the transmission chain at the left end of the product.

System Inspection

1. Wear protective equipment suitable for the material presently in or previously dispensed from the tank(s).
2. Remove the lid on each tank and inspect for:
   - residual fertilizer incompatible with next use
   - contaminants
   - debris that might clog filters
   - trapped animals lost tools, etc.
3. If it is necessary to flush a tank, or remove debris too large to flush, see "Tank Clean-Out" on page 103.
4. Re-secure each lid.
5. At first use each season, and after extended use, check the strainer mounted under the pump. Perform any cleaning before loading fertilizer.
6. The standard screen size is 80 (Blue). Some orifice selections (step 9) require changing the strainer.

Tank Loading

Refer to Figure 32, and Figure 139 on page 144 or Figure 140 on page 145

Review the information below before commencing steps.

- Load chemicals immediately prior to use. Material loaded too early may sediment or stratify, resulting in uneven application or system plugging.
- Load on level ground. Fill is uneven across a slope on a dual-tank system. Unless valves are set to prevent it, material can flow from one tank to another.
- The tank is designed to be loaded using the 2in CAM quick-fill inlet ( ), located at the left front of the implement. If for any reason you cannot use that inlet, you can also load material via a ladder and tank top hatch. The lid is threaded and unscrews.
- Determine how to monitor tank fill level. If the day is bright, or loading at night with a bright light available, it is possible to see the fluid level through the semi-translucent tank walls. Otherwise, it is necessary to have an observer monitor through the tank hatch.
- Be familiar with the location of plumbing valves. Common task require setting as many as five product valves (four with YP425A). See page 144 or page 145.
7. Consult the Seed and Fertilizer Rate manual (ManualB #) for rate setting details.
8. Set the Fertilizer drive sprockets and piston pump rate adjuster per the Rate charts.
9. Install the recommended size orifice plate at each active drop line (Seed Rate manual).

**Quick-Fill Fertilizer Loading**

If loading via tank top hatch, see "Hatch Fertilizer Loading" (right column).

Refer to Figure 139 on page 144 or Figure 140 on page 145

10. Set the quick-fill shutoff valve  to closed (10a):
    a. Handle to front: Closed: no flow at inlet
    b. Handle to product left: Fill: inlet open

11. Set selector valve  to Quick-Fill (11a):
    a. Handle arrow to product left/front: tank-to-quick-fill path open
    b. Handle arrow to front/product right: valve closed: no flow at valve
    c. Handle arrow to product left/rear: tank-to-pump path open

12. Set each tank discharge valve  to Operate (12a):
    a. Handle arrow left: Operate (tank fill or pump)
    b. Handle perpendicular to piping: valve closed: no flow to or from tank
    c. Handle arrow product right: clean-out: tank open to drain

13. Connect fertilizer supply to Quick-Fill inlet .

14. Open supply valve (if any) and check for leaks.

15. Alert observer to monitor tank fill level.

Although the lid is commonly removed to monitor fill level, it is not necessary to remove it for filling. The lid is vented, preventing back-pressure at normal fill and application rates.

16. Start source pump (if any).

17. Open Quick-Fill inlet valve .

On dual-tank systems, particularly on unlevel ground, one tank may fill faster than the other. Reduce inlet rate to allow them to balance. If one reaches full before the other, set the full tank’s discharge valve to Closed to prevent overflow.

18. When tank(s) reach desired fill level, stop source pump (if any), close source valve (if any) and close inlet shut-off .

19. Disconnect supply line at Quick-Fill.

20. Close any tank lid removed.

21. If loading fertilizer prior to transport, set each tank discharge valve  to closed (12b). This keeps any sedimentation out of the lines.

22. Set the selector valve  to Pump (11c).

Fertilizer loading is complete.

See “Liquid Fertilizer Operation (Option)” on page 41. For pump adjustments, see the Seed and Fertilizer Rate manual (ManualB #). For drop line orifice selection and installation, see Seed Rate manual.
**Hatch Fertilizer Loading**

If loading materials via Quick-Fill, see “Quick-Fill Fertilizer Loading” instructions (left column).

Refer to Figure 139 on page 144 or Figure 140 on page 145

23. Set the quick-fill shutoff valve (2) to closed (23a):
   a. Handle to front: Closed: no flow at inlet
   b. Handle to product left: Fill: inlet open

24. Set selector valve (3) to Quick-Fill (11a):
   a. Handle arrow to product left/front: tank-to-quick-fill path open
   b. Handle arrow to front/product right: valve closed: no flow at valve
   c. Handle arrow to product left/rear: tank-to-pump path open

25. For field loading, set each tank discharge valve (4) to Operate (25a):
   a. Handle pointer left: Operate (tank fill or pump)
   b. Handle perpendicular to piping: valve closed: no flow to or from tank
   c. Handle arrow product right: clean-out: tank open to drain

   For pre-transport loading, set each tank discharge valve (4) to closed (25b). This keeps any sedimentation out of the lines.

**Loading Dry Fertilizer**

![Figure 34](28132)

**WARNING**

Agricultural Chemical Hazard:
Read and follow all supplier instructions regarding safe handling and approved application of chemicals. Agricultural chemicals can be extremely hazardous.

Review and follow the general guidelines for safe handling, application, disposal and cleanup of chemicals on page 2 and page 4 of this manual.

Refer to Figure 34

1. Position the implement name facing into the wind, so that you are facing downwind while loading fertilizer.
2. Check that the fertilizer hopper mounts (1) are re-secured from any previous hopper clean-out. See “Dry Fertilizer Clean-Out” on page 104.
3. Release rubber latches (2) at hopper front. Swing lid back until internal bungees hold it open.
4. Inspect the hopper for leftover prior materials and debris. Clean out as necessary.

**Refer to Figure 35**

5. Make auger adjustment for High or Low rate. See "Dry Fertilizer Rate" in the Seed and Fertilizer Rate Manual (401-651B).
   - For low fertilizer rates, set augers as shown at ③.
   - For high fertilizer rates, set augers as shown at ④.

**NOTICE**

*Loss of Time Risk:*
*Before adding fertilizer make sure that augers are rotating correctly and are positioned for your desired rate range setting.*

6. Fill hoppers with fertilizer.
7. Close lids and secure both latches on each lid.

---

**Loading Dry Fertilizer (Twin Row)**

Loading liquid fertilizer is found on page 34.

If fertilizer will not be applied, uncouple the fertilizer meter shaft at the left end of the left hopper. Pin the coupler clear of the shaft joint.

Loading fertilizer prior to transport is not recommended. Although the meters are not turning during transport, it is possible for some material to spill through the meters, particularly on rough roads.

**Suitable Materials**

Use only dry granular fertilizer. Granules must flow freely, and must have a maximum diameter smaller than 7 mm (to avoid bridging clogs in the applicator tube outlets).
Agricultural Chemical Hazard:
Wear protective equipment suitable for the material to be used, and the material previously dispensed from the hoppers. Avoid contact with skin or eyes. Avoid breathing dust.

System Inspection
Verify that both rear cradle pins are installed on all hoppers. See Figure 118 on page 104.

Refer to Figure 36
Remove the lid on each hopper and inspect for:
- residual fertilizer incompatible with next use
- contaminants
- debris that might clog the meter inlets
- trapped animals lost tools, etc.
If it is necessary to clean a hopper, see “Dry Fertilizer Clean-Out” on page 104.

Hopper Lid Operation
Refer to Figure 37 and Figure 39
To unlock the hopper lid, lift the rubber latches out of the metal keepers.

The keeper hardware tends to snag under the hopper lip. Pull the lid edge forward and lift.

Refer to Figure 38
To open the lid, lift the front edge up and slide the lid back into a vertical position behind the hopper. The lid is held by retaining straps.

Refer to Figure 37, 38 and 39
When closing the lid make sure that:
- the rear catch plates are under the hopper rear lip,
- the keeper hardware is under the front lip, and
- the ball of each rubber latch is seated in the keeper (if only the handle “T” is seated, the lid is not secure.)
Dry Fertilizer Operation

Great Plains recommends checking with your local agronomist prior to setting the rate, as soil conditions vary.

The fertilizer meters are driven from the same ground drive that powers the seed metering system. When the product is lowered and in motion, the meters operate, and fertilizer is applied based on the rate controlled by the selection of fertilizer transmission sprockets.

See the Seed and Fertilizer Rate manual (ManualB #) for rate charts and detailed information on rate setting.

The outlets of the fertilizer meters are normally connected to fertilizer drop tubes at the dry fertilizer coulters. See page 66 for adjustment of drop tube height and angle.

Refer to Figure 40

If fertilizer will not be applied, disengage the drive coupler at the left end of the left fertilizer hopper:

1. Remove the pin 1 from the coupler 2.
2. Slide the coupler left, completely off the driven shaft 3, and clear of both the shaft gap and the pin hole in the driving shaft 4.
3. Re-insert the pin in the driving shaft (not through the coupler). Secure pin to shaft with wire bail.

To restore fertilizer drive operation, first rotate the driven shaft to align its pin hole with the hole in the coupler. Slide the coupler right. Re-insert pin through both coupler and driven shaft. Secure pin with wire bail.

**NOTICE**

Material Loss / Machine Damage Risks:
Pin coupler clear of shaft gap. It may be possible to insert the pin through both the coupler 2 and the driving shaft 4. Do not do this. This may leave the coupler and driven shaft in contact. Field motion could cause the meters to operate. The coupler and driven shaft 4 could also be damaged.
Liquid Fertilizer Operation (Option)

For planters with serial numbers (YP425A s/n B1008N-) (YP625A s/n B1043Q-) (YP825A s/n B1014S-) the pump is driven from the same ground drive that operates the seed metering system.

For planters with serial numbers (YP425A s/n B1009N+) (YP625A s/n B1044Q+) (YP825A s/n B1015S+) the pump is driven by ground wheel drive.

When the product is lowered and in motion, the pump operates, and fertilizer is applied based on fertilizer transmission sprockets and pump adjuster setting.

Great Plains recommends checking with your local agronomist, as soil conditions vary. Conditions in your area may need less or more fertilizer than represented in the charts. For in-furrow applications, do not exceed 12 gallons per acre in any case.

The liquid fertilizer system is designed to operate (ideally) between 15 and 40 psi. Several system elements affect system pressure, and need initial setup, periodic maintenance, and adjustment when changing seed rates.

These steps presume that fertilizer has been loaded (and other setup items completed) per “Loading Liquid Fertilizer (S/N+)” on page 34 and page 37 (and per the Seed and Fertilizer Rate manual ManualB #).

Refer to Figure 139 on page 144 or Figure 140 on page 145

1. Confirm Quick-Fill inlet valve \( \text{\textcircled{2}} \) Closed: handle to product left.
2. Set selector valve \( \text{\textcircled{3}} \) to Pump: handle to product rear.
3. Set tank discharge valves \( \text{\textcircled{4}} \) to Operate: handles toward plumbing to selector valve.
4. If relief valve \( \text{\textcircled{5}} \) has not been previously adjusted, perform initial setting per page 64.

Prime the fertilizer system before filling meter disks (to avoid wasting seed, as it usually takes more than one meter revolution to fill the boom).

5. Shut off the fan.
6. On suitable ground, lower the product.
7. Pull forward until the fertilizer gauge \( \text{\textcircled{10}} \) registers some back-pressure from the boom.
8. Open row slide gates and meter shutters.
9. Monitor the fertilizer gauge. Make relief valve adjustments per page 64.
10. Mind the fertilizer tank levels while planting, both to:
    a. confirm expected consumption rate, and;
    b. avoid running the pump dry.
11. If residual fertilizer is not recovered at end of planting, apply it to the last field planted. Turn fan off to prevent metering seed or remove a meter drive system chain. Optionally lock up rows to reduce row unit wear (page 83).
12. Clean out fertilizer system per page 103.
Monitor Operation

Refer to Figure 41

The standard DICKEY-john® PM300 system monitors the following elements of a YP425A, YP625A, and YP825A product:

- Seeds at each row unit seed tube:
  
  Medium and larger seeds are individually counted with high accuracy. Small seed sensing may be limited to seed stoppage ("blockage") detection.

- Ground speed:
  
  The standard magnetic pickup\(^a\) at the ground drive allows the monitor to calculate and report population. Once setup for the product and your display preferences, and configured for the current crop rates/limits, the monitor is typically used in the "OPERATE" mode. Refer to the DICKEY-john® PM300/PM332/PM400 Operator’s Manual for monitor operation details.

Both the DICKEY-john® manual and this manual contain trouble-shooting information for apparent monitor problems. Check both manuals, as the focus and content is not identical.

\(^{a}\) An optional radar speed sensor is available, as are Y-cables to accept input from an existing radar on the tractor. The magnetic pickup may be preferred, as both speed and seed flow fall to zero at lift. With radar, the monitor cannot tell that seeding should have stopped. You may experience more nuisance alarms with radar.
Air System Operation

Figure 42
Product Air System for Air-Pro® Seed Metering

<table>
<thead>
<tr>
<th>Meter Pressurization System Elements (→ shows air direction)</th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>1 Hydraulic Fan</td>
<td>7 Seed Hose</td>
<td>13 Seed Tube Sensor (Figure 43)</td>
</tr>
<tr>
<td>2 Butterfly Valve</td>
<td>8 Air-Pro® Seed Meter</td>
<td>14 Sensor Port (Figure 43)</td>
</tr>
<tr>
<td>3 Meter Pressurization Air</td>
<td>9 Seed Inlet Shutter</td>
<td>15 Pressure Sensor Lines</td>
</tr>
<tr>
<td>4 Row Pressurizing Tube</td>
<td>10 Seed Pool (Figure 43)</td>
<td>16 Pressure Sensor Chamber</td>
</tr>
<tr>
<td>5 Seed Hopper</td>
<td>11 Disk Seed Pocket (Cell)</td>
<td>17 Magnehelic® Pressure Gauge</td>
</tr>
<tr>
<td>6 Slide Gate</td>
<td>12 Seed Hose (Figure 43)</td>
<td></td>
</tr>
</tbody>
</table>
Air and Seeding System Overview

Refer to Figure 42, on page 43, and Figure 43.

The hydraulic fan \(^1\) supplies air exclusively for meter operation. Fan rpm is operator-adjusted (page 47), normally via the tractor circuit’s hydraulic flow control.

A manually-adjusted butterfly valve \(^2\) is provided at the fan outlet. See page 47 for valve adjustment.

The manifold system \(^3\) delivers fan air across the product. It includes passive internal design features to balance pressure across the product.

Separate pressurization tubes \(^4\) route manifold air to each row unit.

Seed is delivered from the seed box \(^5\) by gravity through the sliding seed tubes \(^7\), to the inlet of the Air-Pro\(^®\) seed meter \(^8\).

A manually adjusted inlet shutter \(^9\) controls the size of the seed pool \(^10\) at the base of the meter. The shutter also minimizes air loss back up the seed inlet tube, and is also used during row shut off. See page 80 for shutter adjustments.

At the meter, pressurization air exits the meter through the seed pockets \(^11\) of the disk, and holds seed in the pockets until released above the seed tube \(^12\).

In the seed tube, the seed sensor \(^13\) detects passage of seeds. Medium size and large seeds are counted individually. With smaller seeds, most are detected, allowing the monitor to detect stoppages.

Several rows have a pressure sensor port \(^14\) for the meter pressurization system. A line \(^15\) from each of these rows is connected to a chamber \(^16\) to average the pressures.

The averaged pressure is reported by a Magnehelic\(^®\) gauge \(^17\) visible to the tractor operator. See page 60 for use of the gauge in making fan adjustments.

A sensor \(^13\) in each seed tube reports seed passage to the seed monitor. Larger seeds are counted individually. For smaller seeds, the system acts as a blockage monitor.

- Use of the special blank disk (page 84), and closing the seed inlet shutter (page 80), are particularly important when a sensor row is shut off.
- On any row, running a normal disk with no seed, or with an open empty inlet, unbalances the air system. Doing either at a sensor row causes the gauge to mis-report as well.
- Do not operate in the ground with the fan shut off, or with insufficient manifold pressure. The meters will completely fill with seed. Meter clean-out may be required to resume normal operation.
Fan Circuit Operation (SN+)

Applies to planters with serial numbers:
(YP425A s/n B1009N+)
(YP625A s/n B1044Q+) (YP825A s/n B1015S+)

See also “Fan and Adjustment” on page 60.

Refer to Figure 44

Operating flow

Shut-off flow (fan coasting to stop)

Two hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction, and at recommended speeds. See “Hydraulic Hose Hookup” on page 17.

1. Connect the motor return line to remote circuit return (Extend port) or to sump.

   The product includes a pressure-relief QD coupler for the return line. This prevents motor damage in the event that the return line is not connected, or is connected incorrectly; however, an oil spill results if the return line is not correctly connected.

2. Connect the motor inlet line to a tractor remote capable of 20 liters per minute. If a priority remote is available, use it for the fan.

3. The fan hydraulic circuit includes a check valve, which provides a relief path for oil at motor shutoff. If the fan is connected in reverse, flow through this valve results in low fan rpm, providing strong indication reversed connection.

   Correct fan direction is shown at . 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 butterfly valve (and not the seed monitor).

Fan speed can change as oil heats to operating temperature. Re-check meter pressurization more often during early operations.

You may stop the fan by setting the circuit to Neutral or Float. The check valve slows the blades to a stop by locally recirculating the oil.

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 prevents the fan from reaching high rpm. A reversed fan may send some air to the meters, but is incapable of providing reliable air flow for planting.
Fan Circuit Operation (SN-)
Applies to planters with serial numbers:
(YP425A s/n B1008N-)  
(YP625A s/n B1043Q-)  
(YP825A s/n B1014S-)
See also “Fan and Adjustment” on page 60.

Refer to Figure 46
Three hydraulic hoses serve the fan, and must be properly connected for the fan to operate in the correct direction, at recommended speeds, and without damage. See “Hydraulic Hose Hookup” on page 17.

1. Always connect the case drain line 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 second, to sump.

   The product 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 to a tractor remote capable of 4.5 gallons/minute. If a priority remote is available, use it for the fan.

4. The fan hydraulic circuit includes a check valve, which provides a relief path for oil at motor shutoff. If the fan is connected in reverse, flow through this valve results in low fan rpm provides strong indication reversed connection.

   Correct fan direction is shown at ①. 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 butterfly valve (and not the seed monitor).

   You may stop the fan by setting the circuit to neutral or float. The check valve slows the blades to a stop by locally recirculating the oil.

   Fan speed can change as oil heats to operating temperature. Re-check meter pressurization more often during early operations.

5. 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 prevents the fan from reaching high rpm. A reversed fan may send some air to the meters, but is incapable of providing reliable air flow for planting.
Fan General Operating Information

Adjust the fan to provide the meter pressurization recommended for the seed disk, seed, and seed density. See the tables and charts for recommended values in the Seed Rate Manual.

Normal gauge readings are in the 0.8 in. to 4.0 in. water pressure range, and vary considerably with crop.

Refer to Figure 47

Use tractor remote hydraulic valve flow control to set fan speed and butterfly valve adjustment to make fine adjustments to meter pressurization. Precise technique depends on tractor capabilities:

- The objective is to obtain recommended meter pressurization, and maintain it during end-of-pass marker fold, lift and turn.
- For any setup adjustment, operate the tractor engine at typical field rpms, and not at idle.
- Preset the butterfly valve. Use any setting that you previously developed for the crop/disk/range (see Note at right), otherwise:

  If the tractor has fine control of remote flow rates, and consistent flow at varying tractor engine rpm, initially set the butterfly valve to 30° or less.

  If the tractor has only coarse control of flow, initially set the butterfly valve to 45°.

  Set the fan circuit flow to bring the gauge reading to near the recommended value.

  Fine tune the meter pressurization with the butterfly valve.

  If the tractor has marginal flow available, or the list circuit has priority, you may need to experiment with combinations of fan flow and butterfly valve settings.

Always start the fan with a low flow setting.

Gradually bring fan up to the recommended initial meter pressurization.

At excessive rpm, too much air flow can cause:

- oil heating
- slow lift times

If desired pressure cannot be reached, or require unusually high oil flow at low butterfly valve settings, chances are the fan is running backwards. Reverse the inlet/return lines at the hitch.

**NOTICE**

**Low Population Risk at Turns:**

The fan requires up to 4.5 gpm. This figure does 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 meter pressurization and tune operations to keep it at planting levels in turns.
Air-Pro® Meter Operation

Refer to Figure 48

The meter disk is driven, top forward, by a chain drive (not shown) always connected to the section drive shaft. At non-planting rows, use a blank disk (page 84).

Seed is air-delivered to the inlet above the air release screen (1). Seed customarily fills to the top of the screen, blocking further air flow from the seed delivery system, until the seed level falls below the screen.

Seed enters the meter at the seed inlet shutter (2) (if open), and forms a seed pool (3) at the base of the meter. Seed pool size is controlled by the shutter handle (4) setting (which is the only user adjustment at the meter). Initial shutter settings are given in the seed rate charts.

Meter pressurization air enters the meter at (5), and exits the meter primarily at the seed pockets in the seed disk. The pressure differential holds seed in the disk pockets (6) rising from the seed pool. Excess seed at a pocket is picked off by the tickler brushes (7).

The strip and drop brushes block meter pressurization air. Seeds passing the drop brush (8) are free to fall into the seed tube, and are detected by the seed sensor (9).

Meter Operation

1. Install disks for your crop/population range per the Seed and Fertilizer Rate manual and the instructions beginning on page 82 of this manual.

2. Open the shutter at planting rows to the recommended initial setting (from the Seed Rate charts). At unused rows, install a blank disk (page 84) and close shutter.

3. Set sprocket indexing if staggering a twin-row crop (see Seed and Fertilizer Rate manual for details).

4. Operate fan to achieve suggested manifold pressure (Seed and Fertilizer Rate manual, and page 60).

5. Open slide gates to fill meters.

6. With all rows primed, rotate meters one turn to fill pockets to edge of drop brush. Rotate the drive shaft (top forward) with a 7/8 inch (23 mm) wrench, or raise and rotate ground drive wheel (top forward).

7. Leave fan running (to keep seed in top pockets). Re-install rain covers. Commence planting. Meter operation is automatic from this point on.

See also:
“Seed Pool Troubleshooting” on page 90,
“Meter Clean-Out” on page 102, and
“Meter Brush Maintenance” on page 105.
Marker Operation (Option) SN+

THIS PAGE APPLIES ONLY TO MODELS:
YP425A s/n B1009N+  
YP625A s/n B1044Q+  
YP825A s/n B1015S+

Before Operating Markers

• Make sure cylinders are properly bled. See "Marker Maintenance (Option)" on page 110.
• This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see “Marker Extension” on page 168.
• Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See “Marker Speed Adjustment” on page 168.

Marker Unfold (one side)
1. Move tractor hydraulic control (lever or switch) for the marker circuit (typically to Extend). Hold until marker is completely unfolded. Do not leave tractor control in detent.
2. If the marker side operating is not the desired side, let it unfold part way, and move the tractor’s circuit control to Retract. When the marker is folded, move the circuit control to Extend to activate the other side.

Row Marker Operation
To alternate which side is marked:
1. Move the tractor’s circuit control to Retract. Hold until marker is folded.
2. Move the tractor’s circuit control to Extend. Hold until the new side’s marker is fully unfolded.
3. Return tractor control to neutral/off.

Marker Controls
The marker controls are in circuit with the lift controls. The markers raise and lower with the planter.

When the planter is lowered:
• One side marker will unfold.
• Hold the hydraulic control until marker is fully extended.

When the planter is raised:
• The marker will fold up.
• Hold the hydraulic control until the marker is fully folded.

The next time the planter is lowered the opposite side marker will unfold.
Marker Operation (Option) SN-

THIS PAGE APPLIES ONLY TO MODELS:
(YP425A s/n B1008N-)
(YP625A s/n B1043Q-) (YP825A s/n B1014S-)

Before Operating Markers

- Make sure cylinders are properly bled. See "Marker Maintenance (Option)" on page 110.
- This section presumes correct marker extension for your pass spacing. If this has not been set, or needs to be changed, see "Marker Extension" on page 168.
- Markers are equipped with an automatic sequence valve that controls which side activates, as well as marker deployment speed. Marker folding speed is adjusted via set screws on the sequence valve body. Excessive folding speed may damage markers. Set speed prior to first field operations. See "Marker Speed Adjustment" on page 168.

Marker Unfold (one side)

1. Move tractor hydraulic control (lever or switch) for the marker circuit (typically to Extend). Hold until marker is completely unfolded. Do not leave tractor control in detent.

2. If the marker side operating is not the desired side, let it unfold part way, and move the tractor’s circuit control to Retract. When the marker is folded, move the circuit control to Extend to activate the other side.

Both Sides Unfolded

With both markers in the upright/tilted positions:

1. Unfold either side, and when completely deployed:
2. Move lever/switch to Retract momentarily, and return to Extend to deploy other side.

Row Marker Operation

To alternate which side is marked:

1. Move the tractor’s circuit control to Retract. Hold until marker is folded.

2. Move the tractor’s circuit control to Extend. Hold until the new side’s marker is fully unfolded.

3. Return tractor control to neutral/off.

Folding The Markers

If your product has markers, fold them before performing a lift operation.

1. Move the tractor’s circuit control to Retract. Hold until marker is folded.

2. Tilt markers down for transport or storage.

Overhead, Crushing and Sharp Object Hazards:

Do not allow anyone to stand near or beyond the end of the wings during marker operations. There is risk of serious injury or death for anyone in the path of a marker. Marker arms are heavy, are under tremendous hydraulic power, and may move suddenly if the hydraulic system is damaged or needs bleeding. Marker discs may be sharp.
Field Set-Up Checklists

Use the following tables to develop a final checklist for your tractor/product configuration. Additional or fewer steps may be necessary depending on tractor features, product options and planting accessories.

<table>
<thead>
<tr>
<th>Mechanical Checklist (Hitching)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Product hitched</td>
<td>16</td>
</tr>
<tr>
<td>□ Safety chain secured to tractor</td>
<td>16</td>
</tr>
<tr>
<td>□ Parking jack stowed</td>
<td>16</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Electrical Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Verify electrical hookups solid</td>
<td>16</td>
</tr>
<tr>
<td>□ Check seed monitor terminal and observe any diagnostic messages</td>
<td>a</td>
</tr>
<tr>
<td>□ Option: Verify that, when product is lowered, optional radar speed sensor is pointed at ground, at an angle approximately 35° below horizontal.</td>
<td>b</td>
</tr>
</tbody>
</table>

  a. Refer to monitor manual.
  b. Refer to sensor documentation.

<table>
<thead>
<tr>
<th>Hydraulic System Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Check tractor hydraulic reservoir full</td>
<td>-</td>
</tr>
<tr>
<td>□ Fan case drain (if applicable)</td>
<td>19</td>
</tr>
<tr>
<td>□ Fan return</td>
<td></td>
</tr>
<tr>
<td>□ Fan motor pressure side (retract)</td>
<td></td>
</tr>
<tr>
<td>□ Inspect connections for leaks</td>
<td>-</td>
</tr>
<tr>
<td>□ Perform a raise and lower operation</td>
<td>24</td>
</tr>
<tr>
<td>□ Check fan speed and airflow direction</td>
<td>a</td>
</tr>
</tbody>
</table>

  a. Operate fan briefly. Observe rotor blades spinning toward exit port as fan slows to a stop.

<table>
<thead>
<tr>
<th>Mechanical Checklist (post-Hitching)</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Raise product.</td>
<td>24</td>
</tr>
<tr>
<td>□ Disengage transport locks</td>
<td></td>
</tr>
<tr>
<td>□ Front-to-rear level</td>
<td>20</td>
</tr>
<tr>
<td>□ Marker extension set</td>
<td>168</td>
</tr>
<tr>
<td>□ Marker disc angle set</td>
<td>59</td>
</tr>
<tr>
<td>□ Markers folded (unless already at start of first planting row)</td>
<td>51</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Air System Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Fan butterfly valve set</td>
<td>47</td>
</tr>
<tr>
<td>□ Seed loaded. Lids closed.</td>
<td>30</td>
</tr>
<tr>
<td>□ Meter shutters open to chart value</td>
<td>80</td>
</tr>
<tr>
<td>□ No air leaks (except from seed hoppers)</td>
<td></td>
</tr>
<tr>
<td>□ Hoses and tubing - no sags, no pinches</td>
<td></td>
</tr>
<tr>
<td>□ Check both manifold and sensor lines</td>
<td></td>
</tr>
<tr>
<td>□ Hoses fully connected to meters</td>
<td></td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Product Meter Drive Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Check chain lubrication and slack</td>
<td>111</td>
</tr>
<tr>
<td>□ Calibrate speed sensor pulses with product lowered.</td>
<td>a</td>
</tr>
<tr>
<td>□ Seeding: Set/check Range and Transmission against rate chart</td>
<td>b</td>
</tr>
</tbody>
</table>

  a. Refer to seed monitor manual.
  b. Refer to Seed and Fertilizer Rate manual.

<table>
<thead>
<tr>
<th>Row Units Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Preset depth handles alike.</td>
<td>77</td>
</tr>
<tr>
<td>□ Preset down force springs alike, except in tracks.</td>
<td>71</td>
</tr>
<tr>
<td>□ Option: Set all unit-mounted coulters to 1/4in shallower than opener blades.</td>
<td>75</td>
</tr>
<tr>
<td>□ Check coulter alignment to row</td>
<td>76</td>
</tr>
<tr>
<td>□ Check closing wheel alignment</td>
<td>87</td>
</tr>
<tr>
<td>□ Set press wheels alike, except in tracks.</td>
<td>87</td>
</tr>
<tr>
<td>□ Check action and contact of side depth wheels</td>
<td>78</td>
</tr>
<tr>
<td>□ Check wheel scraper gaps (if installed)</td>
<td>79</td>
</tr>
<tr>
<td>□ Slide gates open</td>
<td>32</td>
</tr>
<tr>
<td>Liquid Fertilizer (Option) Checklist</td>
<td>Page</td>
</tr>
<tr>
<td>-------------------------------------</td>
<td>------</td>
</tr>
<tr>
<td>□ Check for correct orifice plates</td>
<td>a</td>
</tr>
<tr>
<td>□ Check relief valve setting</td>
<td>64</td>
</tr>
<tr>
<td>□ Fill system with 100 gallons of water, and check for leaks</td>
<td>-</td>
</tr>
<tr>
<td>□ Check all row unit lines connected, free of kinks, and discharge tube/nozzles clear</td>
<td>-</td>
</tr>
<tr>
<td>□ Set valves for operation</td>
<td>41</td>
</tr>
</tbody>
</table>

  a. Check Seed and Fertilizer Rate manual.

<table>
<thead>
<tr>
<th>Dry Fertilizer Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Uncouple drive shaft if no fertilizer is being applied, otherwise…</td>
<td>65</td>
</tr>
<tr>
<td>□ Install correct DRIVING and DRIVEN sprockets for desired fertilizer rate</td>
<td>a</td>
</tr>
<tr>
<td>□ Check and adjust applicator tubes</td>
<td>66</td>
</tr>
<tr>
<td>□ Load fertilizer at field</td>
<td>37</td>
</tr>
</tbody>
</table>

  a. Check Seed and Fertilizer Rate manual.

<table>
<thead>
<tr>
<th>Meters Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>□ Corn?</td>
<td>a</td>
</tr>
<tr>
<td>□ Check timing of meters for twin-row</td>
<td>a</td>
</tr>
<tr>
<td>□ Check chain tension. Re-connect any loose idler tensioning springs.</td>
<td>-</td>
</tr>
<tr>
<td>□ Correct disks for seed</td>
<td>a</td>
</tr>
<tr>
<td>□ Start fan. Operate at field manifold pressure.</td>
<td>46</td>
</tr>
<tr>
<td>□ Rotate meter drive shafts one turn disks with seed.</td>
<td>48</td>
</tr>
</tbody>
</table>

  a. Refer to Seed and Fertilizer Rate manual.
Field Operation
Perform all steps in "Pre-Start Checklist" on page 23 and "Field Set-Up Checklists" on page 51.

⚠️ CAUTION ⚠️
Spill hazard/Tank damage risk:
Periodically check the tension of the straps for the fertilizer tank. Strap tension will change as outside air temperature changes. Adjust tension as necessary to prevent personal injury or damage to the fertilizer tank.

<table>
<thead>
<tr>
<th>First Pass Operation Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Prime fertilizer system.</td>
<td>41</td>
</tr>
<tr>
<td>2. Slide gates open. Shutters set.</td>
<td>48</td>
</tr>
<tr>
<td>3. Raise product and line up at start of first planting row.</td>
<td>24</td>
</tr>
<tr>
<td>4. Prime meters with seed. Leave fan running.</td>
<td>48</td>
</tr>
<tr>
<td>5. Unfold marker on next-row side.</td>
<td>49</td>
</tr>
<tr>
<td>6. Pull forward, lower product, and begin planting for a short distance.</td>
<td>24</td>
</tr>
<tr>
<td>7. Stop. Assess:</td>
<td></td>
</tr>
<tr>
<td>• planting depth</td>
<td></td>
</tr>
<tr>
<td>• seed spacing</td>
<td></td>
</tr>
<tr>
<td>• press wheel operation</td>
<td></td>
</tr>
<tr>
<td>• fertilizer application (if in use)</td>
<td></td>
</tr>
<tr>
<td>8. Make necessary adjustments</td>
<td>55</td>
</tr>
<tr>
<td>9. Resume planting.</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Suspending Planting Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Stop tractor</td>
<td>-</td>
</tr>
<tr>
<td>2. Fan hydraulic circuit to Float or Neutral</td>
<td>46</td>
</tr>
<tr>
<td>3. Hydraulic drive circuit to Float or Neutral</td>
<td>-</td>
</tr>
<tr>
<td>4. Fold Marker</td>
<td>49</td>
</tr>
<tr>
<td>5. Raise product</td>
<td>24</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Ending Planting Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Suspend operations as above, then</td>
<td></td>
</tr>
<tr>
<td>2. Install transport locks</td>
<td>25</td>
</tr>
<tr>
<td>3. Lights ON</td>
<td>-</td>
</tr>
<tr>
<td>4. Transport</td>
<td>26</td>
</tr>
</tbody>
</table>

<table>
<thead>
<tr>
<th>Sharp Field Turns a Checklist</th>
<th>Page</th>
</tr>
</thead>
<tbody>
<tr>
<td>1. Fold marker</td>
<td>49</td>
</tr>
<tr>
<td>2. Raise product when fold is complete</td>
<td>24</td>
</tr>
<tr>
<td>3. Make turn</td>
<td></td>
</tr>
<tr>
<td>4. Lower product</td>
<td>24</td>
</tr>
<tr>
<td>5. Unfold marker on next-row side.</td>
<td>49</td>
</tr>
<tr>
<td>6. Resume planting.</td>
<td></td>
</tr>
</tbody>
</table>

a. Monitor manifold pressure during end-of-pass operations and turns. Adjust operations as needed to maintain meter pressurization.

Consult seed monitor for alarms during planting. Check that reported rates are consistent with your plan.

When reloading seed and fertilizer, check consumption against anticipated use to that point.
Short-Term Parking

1. Fold markers (page 51).
2. Choose a location with level firm ground. Do not unhitch on a steep slope.
3. Fully raise product.
5. Lower product onto locks.
6. (Option) Close discharge valves at fertilizer tank(s).
7. Set hydraulic circuits to neutral.
8. Disconnect hydraulic lines. Secure them so that they do not touch the ground.
9. Disconnect electrical cables, capping where provisioned.
10. Move jack from storage position to side of tongue.
11. Slightly raise tongue with jack.
12. Unhitch. Restart tractor and pull away from product.

Long-Term Storage

1. If a fertilizer boom system is installed, see “Liquid Fertilizer Clean-Out” on page 103.
2. Complete Parking steps (page 54). Park the product indoors if possible. Great Plains recommends parking/storing in the raised position with transport locks in place.
3. See “Material Clean-Out” on page 101. Clear all seed from seed container, air box, seed delivery system and meters.
4. Close slide gates and latch hopper lids.
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.

**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.

6. Tie or tape a small plastic bag over ends of all seed delivery tubes to prevent insects from entering or nesting.
7. 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 102, for more information.
8. Clean product of mud, dirt, excess oil and grease.
9. Lubricate all points listed in Maintenance.
10. Apply grease to exposed cylinder rods to prevent rust.
11. Inspect product for worn or damaged parts. Make repairs and service during off season.
12. Use spray paint to cover scratches, chips, and worn areas on the product to protect the metal.
13. Cover product with a tarp if stored outside.
To get full performance from your YP425A, YP625A, and YP825A product, you need an understanding of all component operations, and many provide adjustments for optimal field results. Some of these have been covered earlier in this manual.

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

<table>
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<th>Adjustment</th>
<th>Page</th>
<th>The Adjustment Affects</th>
</tr>
</thead>
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<td>21</td>
<td>Planting depth consistency</td>
</tr>
<tr>
<td>Frame level</td>
<td>20</td>
<td>Planting consistency</td>
</tr>
<tr>
<td>Air System</td>
<td>43</td>
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<tr>
<td>Fan Speed</td>
<td>47</td>
<td>Optimal seed distribution</td>
</tr>
<tr>
<td>Meter Pressurization (values from SRM⁹)</td>
<td>60</td>
<td>Consistent seed flow and disk singulation</td>
</tr>
<tr>
<td>Planting Rate</td>
<td>SRM⁹</td>
<td>Refer to Seed and Fertilizer Rate manual</td>
</tr>
<tr>
<td>Marker Adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Marker Extension</td>
<td>168</td>
<td>Intended swath spacing</td>
</tr>
<tr>
<td>Marker Speed Adjustment</td>
<td>168</td>
<td>Reliable marker operation</td>
</tr>
<tr>
<td>Fertilizer Adjustments</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Rate (Option)</td>
<td>62</td>
<td>Application rate</td>
</tr>
<tr>
<td>Fertilizer Orifices (Option)</td>
<td>63</td>
<td>Consistent application rate across product</td>
</tr>
<tr>
<td>Fertilizer Relief Valve (Option)</td>
<td>64</td>
<td>System protection; minimizing material waste</td>
</tr>
<tr>
<td>Frame-Mounted Row Accessories (Options)</td>
<td></td>
<td></td>
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<tr>
<td>Terra-Tine™ Row Cleaners (Option)</td>
<td>67</td>
<td>Row preparation</td>
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<td>Frame-Mounted Coulters (Option)</td>
<td>68</td>
<td>Row pre-furrow depth and trash cutting</td>
</tr>
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<td>Vantage I Fertilizer Delivery (Option)</td>
<td>68</td>
<td>Fertilizer placement</td>
</tr>
<tr>
<td>25AP Row Unit Adjustments</td>
<td></td>
<td></td>
</tr>
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<td>Opener Depth</td>
<td>77</td>
<td>Planting depth</td>
</tr>
<tr>
<td>Row Unit Down Pressure</td>
<td>71</td>
<td>Planting depth uniformity</td>
</tr>
<tr>
<td>Row Unit Lock-Up</td>
<td>85</td>
<td>Single/twin-row operation</td>
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<tr>
<td>Row Cleaner Adjustments (Option)</td>
<td>74</td>
<td>Row preparation</td>
</tr>
<tr>
<td>Coulters Adjustments (Option)</td>
<td>75</td>
<td>Seed depth uniformity</td>
</tr>
<tr>
<td>Opener Disk Adjustments</td>
<td>77</td>
<td>Seed depth, seed-to-soil contact</td>
</tr>
<tr>
<td>Side Depth Wheels</td>
<td>77</td>
<td>Seed depth, prevents plugging</td>
</tr>
<tr>
<td>Adjusting Gauge Wheel Scrapers</td>
<td>79</td>
<td>Consistent seed furrow depth</td>
</tr>
<tr>
<td>Seed Meter Setup and Adjustment</td>
<td>80</td>
<td>Consistent seed population</td>
</tr>
<tr>
<td>Seed Firmer Adjustments (Option)</td>
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<td>Seed-soil contact</td>
</tr>
<tr>
<td>Press Wheel Adjustment</td>
<td>87</td>
<td>Effective soil coverage</td>
</tr>
<tr>
<td>Monitor Adjustments</td>
<td>PM⁰</td>
<td>Refer to Seed Monitor manual</td>
</tr>
</tbody>
</table>

a. SRM: Seed and Fertilizer Rate manual (ManualB #)
b. PM: DICKEY-john® Planter Monitor operator manuals
Setting Material Rates

Full details on rate setting sprocket selection and installation are found in the Seed Rate Manual (pub. number ManualB #). This is a summary. Setting the seeding rate requires the following steps:

1. monitor setup
2. seed disk selection,
3. drive speed Range sprockets,
4. Transmission sprockets,
5. inlet shutters
6. meter pressurization,
7. checking seeding rate.

All rate adjustments are performed at the left end of the product. There are no adjustments at the ground drive assembly. Changes in seed rate do not affect fertilizer rate.

Planting Rate Details

1. Rate: Monitor configuration:
The seed monitor must be set up with the
- correct row count,
- correct row spacing,
- speed calibration and;
- expected population limits, in order to have accurately rate reports and useful alarms.
See the Seed and Fertilizer Rate manual (ManualB #) and the DICKEY-john® Planter Monitor operator (PM) manual.
If you only plant with the factory configuration of the product, you never need to update row count and spacing. If any rows are unused, adjust the monitor setup.
Speed calibration must be done prior to first use, and re-calibration is recommended periodically, particularly if soil conditions change.

2. Rate: Disk Selection:
The Seed and Fertilizer Rate manual (ManualB #) has a table of recommended disks. Disks are specific to crops. Some crops have multiple disks available, to cover both seed varieties, and different populations within disk rpm limits. Disks have a high and low rpm limit, which also corresponds to a high and low field speed limit. The charts account for these limits.
See “Air-Pro® Meter Disk Installation” on page 82.
If any rows are unused, install special blank disks. See “Row Unit Shut-Off” on page 83.
3. Rate: Range Sprockets

Range sprockets provide coarse control of seed rate.

Refer to Figure 51 and Figure 52

All Seed Rate charts specify a DRIVING and DRIVEN sprocket combination for the Range. Crops with more than one range are noted as “LOW RANGE” or “HIGH RANGE” at the top of the chart.

To change Range:

a. Rotate the idler plate against the spring 3 to disengage the idler.
   Remove the chain.

b. Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft.

c. Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.

d. Remount chain. Re-engage spring idler.

4. Rate: Transmission Sprockets

Transmission sprockets provide fine control of seed rate. Each chart row provides a rate adjustment of 2 to 3%.

Refer to Figure 52

Each Seed Rate chart row has a unique pairing of DRIVING and DRIVEN Transmission sprocket.

To change Transmission:

a. Rotate the idler plate against the spring 4 to disengage the idler.
   Remove the chain.

a. For planters: (YP425A s/n B1008N-) (YP625A s/n B1043Q-) (YP825A s/n B1014S-)
   Loosen the bolt securing the idler plate 4. Disengage the idler.
   Remove the chain.

b. Remove pins from shaft ends at DRIVING and DRIVEN sprockets, as well as at storage shaft.

c. Exchange sprockets so that new DRIVING and DRIVEN sprocket tooth counts (stamped on sprocket face) match chart. Re-pin all shafts.

d. Remount chain. Re-engage spring idler.
5. Rate: Seed Inlet Shutter

A consistent seed results from having a consistent number of seeds (usually one) in each pocket of the seed disk, avoiding “skips” (fewer seeds per pocket) and “doubles” (excess seed per pocket).

Refer to Figure 53

One of the factors that affects seed pickup at the disk is having an optimal seed pool (page 81). The depth of the seed pool is controlled by the seed inlet shutter.

Each Seed Rate chart specifies a suggested initial shutter setting. See “Seed Inlet Shutter Adjustment” on page 80 for setting details, and further adjustment.

At unused rows, set the shutter to zero/closed to prevent loss of meter pressurization air. Install a blank disk. See “Row Unit Shut-Off” on page 83.

6. Rate: Meter Pressurization

Refer to Figure 54 (which depicts a typical reading for some densities of corn)

A major factor that affects seed pickup at the disk is optimal meter pressurization. Fan air holds the seed in the disk pockets until they pass the drop brush (page 48).

The Seed and Fertilizer Rate manual has a section with suggested initial manifold pressures, which may be a single value, or a graph based on seed density.

Manifold pressure is set by a combination of tractor circuit lever and fan butterfly valve (page 47). See “Air System Operation” on page 43.

7. Rate: Checking

Although the seed monitor reports a computed population based on seeds sensed, only an actual furrow check provides certainty about the actual seeding rate. See the Seed and Fertilizer Rate manual.
Marker Adjustments (Option)

See also:

- "Initial Marker Setup (Option)" on page 168 for marker speed and marker extension
- "Marker Operation (Option) SN+" on page 49; and,
- "Marker Maintenance (Option)" on page 110 for marker shear bolt and marker hydraulic bleeding

Marker Disk Adjustment

**CAUTION**

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

**Refer to Figure 55**

Applies to planters with serial numbers:
(YP425A s/n B1008N-)
(YP625A s/n B1043Q-) (YP825A s/n B1014S-)

1. To change angle of cut, and the width of the mark, loosen 1/2inch bolts 2 holding the disk assembly.

   For a wider mark ⑨, increase the angle of the marker with respect to the tube ①. For a narrower mark ⑧, reduce the angle.

   Do not set a marker angle wider than needed to make a useful mark. Excess angle increases wear on all marker components.

2. Tighten bolts ②.

   Direction of travel ① tends to drive the disk angle to Wide. If bolts are not tight enough, or loosen over time, disk slips into the Wide mark configuration.

**Refer to Figure 56**

Applies to planters with serial numbers:
(YP425A s/n B1009N+) (YP625A s/n B1044Q+)
(YP825A s/n B1015S+)

Current markers are equipped with an additional marker disk adjust mount ③ which gives the marker added capability of up/down direction of movement where previously it only performed side to side movement. Additionally, the markers are able to make a wider mark in the field.
Fan and Adjustment

1. These steps presume that correct seed disks are installed (per Seed Rate Manual), and the seed inlet shutters are set for the seed (page 80).

2. With fan off, check meter pressurization reported by the Magnehelic® gauge. Re-zero as needed.

3. Determine the recommended meter pressurization based on your own notes or the published value in the Seed Rate Manual.

4. Put tractor in Park and set brakes. Set tractor engine speed to typical field rpm. Lift product.

5. Start the fan. Gradually increase fan speed using the tractor's hydraulic flow control for the circuit. Using hydraulic flow and/or the butterfly valve, adjust meter pressurization to the developed or suggested value from step 3.

6. Rotate ground drive wheel to fill meters. Meters are filled when seed begins emerging below two or more openers. 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.

7. Re-check meter pressurization. With meters and disks filled, air loss through empty disk pockets is reduced, and meter pressurization can change.

8. Begin planting. Troubleshoot any obvious problems or optional seed monitor alarms.

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

   If the reported seed monitor 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 92.

   If the population is only slightly low, the problem can be skips (periodic empty disk pockets). If slightly high, the problem can be doubles (period pockets with double seed). An adjustment to the meter pressurization may correct either condition (see step 12).

   a. Magnehelic® is a registered trademark of Dwyer Instruments, Inc.
10. Resume planting.

A small varying population deviation between rows is normal. 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 92.

11. Continue to monitor meter pressurization.
When oil reaches operating temperature, fan speed can change. Expect to make periodic adjustments to fan circuit or butterfly valve to maintain ideal meter pressurization.

12. 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.

13. 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.

**Fine-Tuning Meter Pressurization**

After several passes, and you are comfortable with the product’s operation, you can optimize meter pressurization. Use this method during longer passes, so there are fewer distractions (and see sidebar regarding Milo).

14. Observe the current overall average population reported by the monitor.
15. Adjust the fan speed down, in small steps, waiting 5-10 seconds between adjustments, until skips occur (actual population begins falling below target). Note the pressure at which skips begin.
16. Restore pressure to the initial value at step 14.
17. Adjust the fan speed up, by periodic small increments, until doubles occur (actual population begins rising above target). Note the pressure at which doubles begin.
18. Adjust meter pressurization to a value halfway between the limits established at step 15 and step 17. This is the ideal value for your crop, disk and population, providing equal margin against skips and doubles. Record this value for future use.

**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.**

**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.**

**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 product motion but leave engine at field rpm and fan running.
D. Inspect the seed disks closely. Look for empty seed cells (skips) and cells with multiple seeds (doubles).
E. Repeat step B-to-step D until limits are established. Record limits. Re-install rain covers. Plant with median settings.
Liquid Fertilizer Adjustments (Option)

This section is a summary. For detailed instructions, as well as fertilizer rate and orifice sizing charts, see the Seed and Fertilizer Rate manual (ManualB #).

⚠️ DANGER ⚠️

Agricultural Chemical Hazards:
Avoid contact with skin or eyes. 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. Seek medical assistance immediately if accident occurs. Know what to do in case of accident.

Great Plains recommends checking with your local agronomist as soil conditions vary. Soil conditions in your area may need less or more fertilizer than represented in these charts. For in-furrow application, do not exceed 12 gallons per acre in any case.

Rate is positively set by the drive system and pump. Adjustments to orifice plates must also be made to provide back-pressure keeping the boom within a specific pressure range to assure consistent delivery.

Ideal manifold pressure is between 15 and 40 psi.

A check valve at each nozzle prevents flow below approximately 8 psi, preventing boom drainage during turns and non-planting moves. Operating at pressure too low may cause some nozzles to close, resulting in uneven flow row-to-row.

A relief valve at the boom inlet protects the system from over-pressure. Above approximately 65 psi, material is diverted to a dump line.
There are three adjustments for the liquid fertilizer system components:

1. **Fertilizer Rate:**

   A fertilizer transmission sprocket pairing (Figure 59) selects one of two rate Ranges.

   An adjuster at the pump (Figure 61) provides fine control of flow rate. Although the pump shares the ground drive with seed metering, fertilizer rate is unaffected by seed rate or ground speed.

   See the Seed and Fertilizer Rate manual for charts and detailed setting instructions.

---

2. **Row orifice setup:**

   Orifice plate sizes are chosen to assure consistent pressure at all nozzles, with the 15-40 psi range. See the Seed and Fertilizer Rate manual for sizing and installation.

   Unused rows may be shut off by exchanging the nozzle for a cap. Plates at the active line usually need to be changed at shut-off or turn-on. See the Seed and Fertilizer Rate manual for details.

---

**Notice**

**Material Loss or Misapplication Risks:**

Orifice size must be appropriate for rate selected. Drop line orifice plates **do not affect rate.** If orifice size is too small, over-pressure in system may result in material loss at relief valve. An orifice size too large may result in uneven application across all rows.

When shutting off rows, review orifice sizing.
Refer to Figure 63

3. Relief valve ③ setting:
   See the Seed and Fertilizer Rate manual for details on setting this valve.

Once set for a given fertilizer density, the valve only requires seasonal review.

During operations, monitor the gauge ④ and the dump line ⑤. Watch for the following conditions:

- A reading below 15 psi usually indicates a need for a smaller orifice size.
- A reading in the ideal 15-40 psi range, but with material appearing at the dump line ⑤, indicates a need to increase the operating pressure of the valve ③.
- A reading at or near 65 psi, with material appearing at the dump line ⑤, usually indicates a need to increase orifice size (or plugged orifices).
- A reading above 65 psi indicates a need to reduce the operating pressure of the valve ③.
Dry Fertilizer Adjustments (Option)

Refer to Figure 64

**NOTICE**

**Application Rate Risk:**
Make field checks to assure you are applying fertilizer at the desired rate. Fertilizer application rates can vary from the weights in the charts.

Use the following instructions to check the exact number of kilograms your fertilizer attachment delivers on a 70 cm row spacing.

1. Adjust for your fertilizer density (see Seed Rate Manual 401-651B).
2. Consult the Fertilizer Rate charts (see Seed Rate Manual 401-651B).
3. Install the Driving ① and Driven ② sprockets called out in the chart.
4. Remove a hose from one of the fertilizer hoppers and attach a container under the opening.
5. Engage the fertilizer attachment and drive forward for 14.29 m (49 feet).
6. Weigh the amount of fertilizer caught in the container and multiply that amount by 100. The result will be the kilograms of fertilizer delivered per hectare when planting in 70 cm rows.

Refer to Figure 65

**NOTICE**

**Material and Time Loss Risk:**
Before applying fertilizer make sure that augers are rotating correctly and are positioned for your desired rate setting.

For low fertilizer rates, set augers as shown at ③.

For high fertilizer rates, set augers as shown at ④.
Dry Fertilizer Applicator Adjustments
(Option)

There are two inter-related adjustment for applicators:

1. release height
2. release angle

Make coulter adjustments before making applicator adjustments.

Applicator Release Height

The primary adjustment for release height is the lower four (of six) holes at the rear end of the applicator arm. Re-position the applicator mounting bolt to any of the lower four hole. Before tightening the nut, make sure the torsion spring leg is also in an arm hole.

NOTICE

Machine Damage Risk:
Do not position the applicator mounting bolt in either of the top two holes. This would leave the torsion spring leg unsecured. The applicator angle could vary. The applicator might strike the coulter disk.

A secondary adjustment for release height is to loosen the clamping bolts, and slide the applicator arm up or down the coulter arm.

NOTICE

Machine Damage Risk:
Be sure to leave at least 13 mm clearance between the applicator torsion spring and the coulter disk. If the clearance is too small, the spring could strike the coulter disk when it snaps forward after striking field obstructions.

Applicator Release Angle

Loosen the clamping bolts, and rotate the applicator arm at the coulter arm.

Changing applicator angle also changes applicator release height.
Row Implement Adjustments

To get full performance from your product, 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 67

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

Excess Wear Risk:

Check that the Terra-Tine™ Row Cleaner tines DO NOT touch the coulter blade or any other attachments. At least 1/2 inch (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 68

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.
Frame-Mounted Coulters

Refer to Figure 69

At the shaft ①, adjust the coulter depth for a running depth ② of 4 to 4\(\frac{1}{2}\) inch (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.

Vantage I Applicator

Refer to Figure 70

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

These coulters are available for application of dry fertilizer (with a large delivery tube), or liquid fertilizer (with a small tube). The position on the tool bar may be adjusted for in-row or zone application.

The dry coulter is compatible with the standard fertilizer hopper system. The liquid system requires a customer-provisioned tank, pump and manifold system.

Refer to Figure 71

At the shank ①, adjust the coulter depth for the desired fertilizer depth.

Do not adjust the spring ② tensions. They are factory pre-set.

The recommended gap ③ between the delivery tube exit port and the disk blade is 1.6-3.2 mm (1/16-1/8 inch).
25AP Series Row Unit Adjustments

Refer to Figure 72 (which depicts a row unit populated with most optional accessories supported for use with the YP4-6-825A)

From front to back, a Great Plains 25 Series Air-Pro® row unit can include the following capabilities (some optional):

1. Lock-Up Pin Storage Hole (Hole Standard)  
   See “Row Unit Shut-Off” on page 83.

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 71.

3. Meter Pressurization Air Inlet (Standard)  
   Pressure-regulated air enters the meter here and holds seed in the disk pockets. See “Fan and Adjustment” on page 60.

4. Seed Delivery Hose Inlet (Standard)  
   When the hopper slide gate (not shown) is open, gravity carries the seed into the meter at the shutter ©. 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 82.

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 80.

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 Adjustment” on page 78.

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 Adjustment” on page 87.

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 83.

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 74.

11. Unit-Mount Coulters (Option)  
    Coulters cut remaining trash and begin opening the seed furrow. Working depth is set by row depth and a mounting hole selection. See “UMC Coulters Adjustments” on page 75.

12. Opener Discs (Standard)  
    Row-unit double disc openers create the seedbed furrow. They have adjustments for angle and spacing. See “Row-Unit Opener Disk Adjustments” on page 77.

13. Seed Tube with Sensor (Standard)  
    Requires no adjustment.

14. Scrapers (Optional, not shown)  
    Inside scrapers require no adjustment. For gauge wheel scrapers, see “Adjusting Gauge Wheel Scrapers” on page 79.

15. 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 Firmers Adjustments” on page 86.

16. Press Wheel Type (Choice)  
    A variety of single and dual press wheel assemblies are available, some region-specific. Consult your Great Plains dealer.

NOTICE

Equipment Damage Risk:  
Do not back up with row units in the ground. To do so will cause row unit plugging and may result in severe damage.
Row Unit Down Pressure

*Refer to Figure 73*

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 product for a short distance on typical ground (with or without seeding), and stop. Leave the product 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.

*Refer to Figure 74*

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.

Adjusting Down-Force

*Refer to Figure 75*

Row unit springs provide the primary down pressure necessary for row unit disks to open a seed trench. The weight of the row units themselves contributes about 130 pounds (59 kg) of the total force.

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, and provide the primary down force on row cleaners (optional), seed firmers (optional) and press wheels.
Refer to Figure 77

An adjuster cam ② sets 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 30in rows.

Applies to Dual-Spring Model Row Units:
(YP425 s/n B1008N-) (YP625 s/n B1043Q-) (YP825 s/n B1014S-)

<table>
<thead>
<tr>
<th>Cam Notch</th>
<th>Pounds</th>
<th>Kilograms</th>
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</thead>
<tbody>
<tr>
<td>zero (out of notch)</td>
<td>Lock-Up &amp; Maintenance</td>
<td></td>
</tr>
<tr>
<td>one</td>
<td>305</td>
<td>140</td>
</tr>
<tr>
<td>two</td>
<td>330</td>
<td>150</td>
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<tr>
<td>three</td>
<td>365</td>
<td>165</td>
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<td>195</td>
</tr>
<tr>
<td>five</td>
<td>485</td>
<td>220</td>
</tr>
<tr>
<td>six</td>
<td>545</td>
<td>250</td>
</tr>
<tr>
<td>tip</td>
<td>Do Not Use</td>
<td></td>
</tr>
</tbody>
</table>

Values are down force with hoppers empty

Applies to Single-Spring Model Row Units:
(YP425 s/n B1009N+) (YP625 s/n B1044Q+) (YP825 s/n 1015S+)

<table>
<thead>
<tr>
<th>Cam Notch</th>
<th>Pounds</th>
<th>Kilograms</th>
</tr>
</thead>
<tbody>
<tr>
<td>zero (out of notch)</td>
<td>Lock-Up &amp; Maintenance</td>
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<tr>
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<td>115</td>
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<td>two</td>
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<td>375</td>
<td>170</td>
</tr>
<tr>
<td>tip</td>
<td>Do Not Use</td>
<td></td>
</tr>
</tbody>
</table>

Values are down force with hoppers empty
Use only enough down pressure to cut the seed trench and maintain proper soil firming over seed. With a full seed load, the force on each row is up to 120 pounds higher at start of planting.

Excessive row unit spring force will lead to premature wear on row unit components and uneven seed depth. If all rows are set to cam 6, some lighter product configurations could be lifted out of ground contact.

Refer to Figure 76 (shown at cam setting 2), Figure 77 and Figure 78

To adjust down pressure, use a 1 1/8 inch (29 mm) open end wrench or the tool stored at the left end of the product.

1. Raise the product. Although this adjustment can be made with the product lowered, the springs will be in tension, and will require more effort. The extra force required may also damage tools.

2. Install lift cylinder locks.

3. Put tractor in Park and shut it off.

4. Position wrench on the fixed nut near or slightly forward of vertical.

5. Pull upper spring link back.

6. Move the adjustment cam to the new setting on the spring adjust bar.

\* \* Do not set all rows higher than notch four. Using high settings across all rows causes uneven planting. Individual rows may be set higher if running in tire tracks.
Unit-Mount Cleaner Adjustments

Refer to Figure 79 and Figure 80

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 disk 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 ① on the mount adjusts the depth. In UMC-RC (coulter) mount, a sliding down-stop block ⑤ 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 product 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 ⑤ 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 \( \frac{3}{4} \) inches (19 mm).
6. Check the new height measurement.

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

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

Coulters are not factory-installed. Check alignment and depth prior to first use.

**UMC Coulter Depth Adjustment**

The ideal operating depth for coulters is \(\frac{1}{4}\) inch (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 81 and Figure 82

Raise product 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 the adjustment. Be careful around the front end of row units. Row cleaner tines and coulter blades may be sharp.

To adjust coulter depth:

1. Determine the present opener and coulter depths.
2. Note which bracket hole the coulter is presently using.
3. Determine which new hole will position the coulter closer to the \(\frac{1}{4}\)-inch-above depth. See the table below.
4. Remove the \(\frac{5}{8}\)-11 x 4 in. bolt, lock washer and nut (\(\mathcal{C}\) in Figure 81).
5. Move the blade to the new position. Insert the bolt, and tighten on the lock washer and nut.

<table>
<thead>
<tr>
<th>Hole Number</th>
<th>Depth of (new) coulter blade relative to (new) opener blades</th>
</tr>
</thead>
<tbody>
<tr>
<td>2</td>
<td>1 inch (25 mm) above</td>
</tr>
<tr>
<td>3</td>
<td>(\frac{5}{8}) inch (16 mm) above</td>
</tr>
<tr>
<td>5</td>
<td>(\frac{1}{4}) inch (6 mm) above</td>
</tr>
<tr>
<td>1</td>
<td>0</td>
</tr>
<tr>
<td>4</td>
<td>(\frac{3}{8}) inch (9.5 mm) below</td>
</tr>
<tr>
<td>6</td>
<td>(\frac{3}{4}) inch (19 mm) below</td>
</tr>
</tbody>
</table>

6. Re-adjust row cleaners, if installed.

If a worn coulter cannot be adjusted to satisfactory operating depth, replace coulter.
Coulter Row Alignment

Refer to Figure 83

For unit-mounted coulters, the ideal alignment is for the blade to open a furrow directly ahead of the opener discs.

As a check on coarse alignment, sight along the coulter blade center-line ①, the gap between the opener blades ②, and the center-line between the press wheels ③. If they are clearly out of alignment, either the coulter or the press wheels (or both) may be in need of adjustment.

The exacting test of correct alignment is field results. Operate the product on some test ground (no seed required), and verify that the opener blades are in the groove opened by the coulter, and that the press wheels are centered over the furrow. See “Press Wheel Adjustment” on page 87 for press wheel alignment.

Refer to Figure 84

To adjust coulter alignment, loosen the four bolts ④ that attach its bracket to the row unit. The holes on the row unit are slotted, side-to-side, and allow the coulter bracket sideways and rotational adjustment.

Keep the coulter blade vertical while adjusting.

If the blade cannot be brought into alignment, check that the blade spindle itself is using the same hole location on each side of the bracket.
Row-Unit Opener Disk Adjustments
25 Series openers have three adjustments:
1. planting/seed depth
2. opener disc to disc clearance
3. gauge wheel/opener disk clearance (page 78)

Setting Planting Depth
Refer to Figure 85
The “T” handle ① sets planting depth by limiting the how high the side depth gauge wheels ride relative to the opener disks. The position of the seed tube itself is fixed relative to the disks, 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.

Opener Disc Contact Region
Refer to Figure 86 and Figure 87
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 ④. If you insert two pieces of paper between the blades, they should slide to within zero (touching) to 1.5 inches (3.8 cm) of each other. If zero, 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.

Adjusting Disc Contact
1. Raise the product and install lift cylinder locks.
2. Remove the side gauge wheels ⑤ on the row unit in need of adjustment.
3. Remove the bolt ⑥ retaining the opener disc ⑦ on one side. Carefully remove the disc. Do not lose the hub components and spacer washers ⑧, ⑨.
4. To reduce the spacing between the discs (the normal case), move one spacer washer from the inside ⑧ to the outside ⑨ of the disc.
5. Re-assemble and check disk contact.
Side Gauge Wheel Adjustment

Refer to Figure 88 and Figure 89

Disc-to-wheel angle and clearance ideally has the wheel just touching the disk when the wheel is raised to planting depth (is up against the stop set by the “T” handle. The goal is to have both disks and wheels turn freely, but keep soil and trash from getting between them.

These two adjustments interact with each other. Changing one requires at least checking the other.

In addition to changing the disk angle due to changing depth or new field conditions, these two settings may need attention over time as the disk and wheels wear from normal use. This adjustment will also need to be made if any opener components are replaced.

For 2 inch (5.1 cm) planting depth, adjust side gauge wheel angle so wheels contact row unit disks at the bottom of wheel. Check with row units in soil so wheels are held up.

At the same time, keep side gauge wheels close to opener disks so openers do not plug with soil or trash.

Wheels should be out far enough so disks and wheels turn freely.

Refer to Figure 91 on page 79

To adjust side gauge wheels:

1. Raise the product and install lift cylinder locks.
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 disk. Tighten hex-head bolt ① to clamp arm around bushing and shank.

Refer to Figure 90

5. Check wheel-to-disk contact at 2 inch (5.2 cm) planting depth. Lift wheel 2 in., check contact and release. When let go, wheel should fall freely.

If wheel does not contact disk at bottom to area where blade leaves contact with soil, move hex adjuster until wheel is angled for proper contact with disk.
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 according to grade:
- 1/2 inch Grade 5 bolt on 25 series, 75 foot-pounds (102 N·m).
- 1/2 inch Grade 8 bolt on 25 series, 110 foot-pounds (149 N·m).

Use “Torque Values Chart” on page 141 for reference.

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 (149 N·m).

Adjusting Gauge Wheel Scrapers
Refer to Figure 92

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 ⑧ until scraper touches tire.
3. Slide scraper ⑥ away from wheel ⑧ leaving a 1/8 inch (3 mm) gap at ⑦.
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 ⑦ is constant.
6. Tighten nut ⑤.
Seed Meter Setup and Adjustment

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 93

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.

Seed Inlet Shutter Adjustment

Refer to Figure 94 (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.
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 95

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 96 and Figure 97

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-to-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.

An empty meter causes seed monitor “Row Failure” alarm, with a report of the row number. 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 up in the seed flow, and may be bridging where the seed hose joins the meter inlet (also check the slide gate). Close the shutter completely for about 15 seconds. This prevents meter pressurization air from opposing seed delivery. Gently tap on the seed inlet. 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.

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 80).

**Refer to Figure 98 (depicting an empty meter)**

4. Inspect meter (see page 105 for details).

5. Make sure clamp ① is aligned with seat ②.

**Refer to Figure 99**

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.

**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. With the product raised, rotate the ground drive wheel, or rotate the meter drive shaft, top forward, with a 7/8 inch open-end wrench.

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. Re-install rain cover (page 80).
Removing a Seed Disk

Refer to Figure 101

1. Remove rain cover. If seed is present, close shutter ④ to prevent more seed from entering meter. Attach funnel (page 102) or place a tarp under the row to collect seed.
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 or to control flow to tarp. Open shutter to release remaining seed up to wing tube.
4. Clean seed from all brushes. Clean disk seat (② in Figure 98 page 82), so that new disks can seat fully. Inspect brushes for excess wear and damage. See “Meter Brush Maintenance” on page 105.
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 107.
6. Re-install the rain cover (page 80).

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 (page 84).
2. Fully close seed inlet shutter (page 84).
3. Replace seed disk with blank disk (page 84).
4. Lock up row unit to reduce wear (optional, page 84).
5. Reset marker extension (Option, page 168).
6. Reset monitor active row pattern and row spacing to avoid nuisance alarms (see Monitor manual).
7. Shut off fertilizer drop lines (Option, see Seed and Fertilizer Rate manual ManualB # for details).

Meter drive is not disabled on 25AP row units during shut-off.
1. Identify Rows to Shut Off
On twin-row products, openers are installed with short and long opener mounts. If locking up unused rows of a twin-row product, shut off the rear (long mount) rows.
On single-row products with mid-length mounts, any rows may be locked up.
If not locking up rows, any rows may be shut off.

2. Close Seed Shutter
Refer to Figure 102 on page 83
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.

3. Install Blank Disk
Refer to Figure 103
Clean out meter. See “Meter Clean-Out” on page 102. Remove seed disk and install blank disk. See “Air-Pro® Meter Disk Installation” on page 82.
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 seed disks and minimize wear on brushes.
Blank disks are engineered to simulate a seed disk with seed in all pockets. Blanks are particularly important on the rows with sensor lines to the pressure chamber.

4. Lock-Up Row
Alternate twin-row units (the rear units) can be pinned in the up position to accommodate single-row spacing.
Refer to Figure 104
The lock-up pins ① 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.
Lock-up pins are provided for every other row of twin-row configurations. If you lose a pin, the replacement part number is 805-033C

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.

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.
1. Raise the product. Although this adjustment can be made with the product 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 73.

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
   b. use a jack under the shank extension

**CAUTION**

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

**Refer to Figure 105**

5. Remove the pin from the storage hole and insert and secure it in the lock-up hole.

6. Lower row unit until lock-up pin rests on lower parallel arm.

**Sprocket Indexing (Stagger)**

If you are planting:
- twin-row crops,
- at seed interval spacings above 6½ inches (16.5 cm),
you can synchronize each pair of adjacent meters in a twin row so that you achieve the maximum seed-to-seed spacing between the units of the pair.

Refer to the Seed and Fertilizer Rate manual (ManualB #) for instructions and charts.
Seed Firmer Adjustments

Series 25 row units include a standard seed flap, and accept one of two optional seed firmers (which may be included in your selected opener bundle).

**CAUTION**

Row unit disk blades may be sharp. Use caution when making adjustments in this area. To adjust the Keeton® Seed Firmer, lower the product until the disks 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 “V”.

**Refer to Figure 106**

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.

**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 107**

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 (3) of the handle at the arm end. Remove the tool.

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.
Press Wheel Adjustment

The press wheels close the furrow which gently presses the soil over the seed to ensure good seed-to-soil contact for even emergence.

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

There are three adjustments available on the press wheel assembly:

**Refer to Figure 108**

1. Down pressure (shown at maximum)
2. Wheel stagger (shown staggered)
3. Centering (see Figure 110 on page 88)

**Press Wheel Down Pressure**

Handle ① sets down pressure, which may need adjustment for different soil types and field conditions.

- Relax the handle forward (in the direction of travel) for decreased down pressure.
- Pull the handle ① back for increased down pressure.

Higher press wheel down pressures reduce the down force on the main row unit shank components, such as the openers. High press wheel settings may require an increase in overall row unit down force. See page 71.

**Press Wheel Stagger**

The factory stagger setting has been found optimal for residue flow. If your conditions appear to require even press wheels, you might try one row before re-configuring the entire product. To change the stagger:

**Refer to Figure 109**

1. Raise the product and install the transport locks. See “Lift Cylinder Locks (SN-)” on page 25.
2. Remove the bolt ④, nut ⑤ and lock-washer ⑥ for the left press wheel ⑧.
3. Move the spacer ⑦ and wheel ⑧ to the forward of the two mounting holes at ②.
4. Re-install the bolt, lock washer and nut. Tighten.
Press Wheel Centering

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

Refer to Figure 110

1. Determine how far, and in which direction, the press wheel assembly needs to move to center the wheels.
3. Loosen the 1/2 inch hex-head bolts and .
   Do not loosen the square-head bolts forward of the hex-head bolts.
4. Turn the hex head cam under the forward hex head jam bolt , and move the required amount.
5. Tighten both hex head bolts and .

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.
# Troubleshooting

## Planting Rate Problems

When starting up with a new product, 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 optional seed monitor.

Also during start up it is common to encounter alarms and readouts on the optional seed monitor that don’t seem to make sense. It is critical to troubleshoot these alarms not only to make sure the product drive is set properly to hit the target population, but also to fix incorrect entries in the monitor setup 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 product is actually doing in the soil. Always dig or observe seed on the ground when checking populations.

### 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”.

<table>
<thead>
<tr>
<th>Step</th>
<th>Question</th>
<th>No:</th>
<th>Yes:</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.</td>
<td>Is the spacing on the ground correct?</td>
<td>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.</td>
<td>Go to step 2.</td>
</tr>
<tr>
<td>2.</td>
<td>Is the population reported by the optional seed monitor ( \frac{1}{2} ) the actual or is the reported population too high by a factor of 2?</td>
<td>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 optional seed monitor 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 product.</td>
<td>Go to step 3.</td>
</tr>
<tr>
<td>3.</td>
<td>Is the population reported by the optional seed monitor close to the target population?</td>
<td>Check seed rate charts against transmission sprockets selected. See “Population Too Low” or “Population Too High” in the troubleshooting charts.</td>
<td>If slightly under, see “Population Too Low” if slightly over, see “Population Too High”.</td>
</tr>
</tbody>
</table>
### Seed Pool Troubleshooting

![Rear Cross-Section of Air-Pro® Meter in Normal and Row-Failed Conditions](image)

#### Normal: Filled

Inlet is filled to seed box. Seed move slowly down as singulated by meter.

**Actions:**
- No action required.
- Continue Planting.

#### Bridging: Inlet Shutter

A bridge at the shutter is blocking flow.

**Causes may include:**
- oversize seed
- shutter setting too low
- oversize matter in seed
- excessive or sticky seed treatment

**Actions:**
1. If shutter was at suggested opening, increase one notch.
2. Check seed pool for foreign matter.
3. Resume planting.

#### Bridging: Seed Hose

Oversize matter in seed has caused a bridge at the top of the inlet.

**Causes may include:**
- oversize seed
- oversize matter in seed
- excessive or sticky seed treatment

**Actions:**
1. Close shutter.
2. Tap on hose/tube junction.
3. Check seed pool for foreign matter.
4. Resume planting.

#### Empty Hopper

No seed arriving from box.

**Causes may include:**
- seed run-out
- slide gate closed

If hopper is empty, air back-flow is also occurring, which can reduce meter pressurization at other rows.

**Actions:**
1. If row is active, add seed or check slide gate.
2. If row is inactive, close shutter.
3. Resume planting.
Magnehelic® Gauge Troubleshooting

If the Magnehelic® gauge does not read zero with the fan off, inspect the gauge, and re-zero as needed.

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Non-zero with fan off</td>
<td>Zero drift</td>
<td>Re-zero per instructions below</td>
</tr>
<tr>
<td>Gauge reading lower than</td>
<td>Relief port plug</td>
<td>Replace plug</td>
</tr>
<tr>
<td>sensor</td>
<td>missing/damaged</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Breather line</td>
<td>Clear breather line</td>
</tr>
<tr>
<td></td>
<td>blocked or kinked</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Leak in sensing line</td>
<td>Check line to chamber</td>
</tr>
<tr>
<td></td>
<td>Gauge damaged</td>
<td>Check for loose cover, damaged O-ring</td>
</tr>
</tbody>
</table>

Check for chamber and breather line problems before re-zero. Re-zero cannot accurately compensate for leaks and blockages.

Re-zero the Magnehelic® gauge on level ground with the fan off, and if possible, under no-wind conditions. Turn the set screw ① on the meter face until it reads zero from the tractor driver’s viewing position.

Port ID for Troubleshooting:
② Over-pressure relief port (with plug in place)
③ Low-pressure port (breather/atmospheric pressure)
④ High-pressure port (from manifold chamber)
Alternate high/low ports are plugged.

Winter testing/maintenance advisory:
Gauge readings may be inaccurate or sluggish below 20°F
### Population Troubleshooting Charts

#### Population Too Low

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
</table>
| Overall Low Population | Incorrect seed rate | Using [*Seed Rate Manual*](#), check:  
- seed disk selection,  
- Range/Transmission sprocket setup, and  
- tire size and inflation. |
| Empty pockets on disk (skips) due to insufficient air pressure. | | Methodically increase the meter pressurization. See "Fan and Adjustment" on page 60. |
| 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. |
| Air pressure too low, as confirmed by gauge. | | Increase fan speed or reduce butterfly valve setting. |
| Air pressure too low, but gauge reading is within range or reading high. | |  
- Inspect the $\frac{3}{4}$ inch sample lines from the row units up to the sensor chamber for leaks (page 91).  
- Make sure all non-planting rows have blank disks and shutters are closed (page 84).  
- Re-zero the gauge with the fan off (page 91).  
- Check gauge vent line for kinks, pinches or plugging (page 91). |
| Excess field speed | | Plant within speed ranges recommended in [*Seed Rate Manual*](#). |
| Incorrect speed sensor constant. | | Perform speed calibration per seed monitor manual. |
| Incorrect magnetic speed sensor gap. | | Check and adjust (page 107). |
| (Option) Incorrect radar speed sensor angle. | | With product lowered, check radar speed sensor angle per DICKEY-john® recommendations. |
| Pass gaps too large | | Check marker extension (page 168). For GPS, check product size programmed. |
| Actual field size is different | | Population may be correct, and calculations are not. |
| Seed monitor reporting excess area | | Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns. |
### Population Too Low

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Population, Single Row</strong></td>
<td>Shutter opening too narrow - starving meter of seed (low seed pool)</td>
<td>Adjust shutter to higher setting.</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to bridging at shutter</td>
<td>Re-adjust for shutter bridging (page 81). If seed is treated, increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to blockage above inlet</td>
<td>Clear blockage (page 81).</td>
</tr>
<tr>
<td></td>
<td>Meter starvation due to bridging above inlet, caused by high levels of seed treatment</td>
<td>Clear bridge (page 81). Increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Incorrect seed disk on one row</td>
<td>Install correct seed disk.</td>
</tr>
<tr>
<td></td>
<td>Chain skipping at row unit.</td>
<td>Check chain, idler and sprocket condition.</td>
</tr>
<tr>
<td></td>
<td>Skips due to low meter pressurization at one or several rows</td>
<td>Check shutter setting. Check for excess wear on seed drop brush. Check for loose or leaking pressure hose.</td>
</tr>
<tr>
<td></td>
<td>Skips due to skipping chain</td>
<td>Check for worn chain, worn idlers, low chain slack (page 111) and failed meter bearing.</td>
</tr>
<tr>
<td></td>
<td>Skips due to debris in disk pockets</td>
<td>Remove rain covers. Inspect and clean out disks.</td>
</tr>
<tr>
<td></td>
<td>Row has blank disk installed</td>
<td>Replace with seeding disk.</td>
</tr>
<tr>
<td></td>
<td>Seed sensor obscured</td>
<td>Clean out seed tube (see page 102).</td>
</tr>
<tr>
<td></td>
<td>Seed tube plugged</td>
<td>Raise product, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td><strong>Low or Erratic Seed Flow</strong></td>
<td>Seed meter plugged, due to operation with fan shut off, or manifold pressure too low.</td>
<td>Close shutters. Clean-out meters. Set fan for correct manifold pressure. Resume planting.</td>
</tr>
</tbody>
</table>

### Population Too High

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Overall High Population</strong></td>
<td>Incorrect seed rate</td>
<td>Check seed rate charts</td>
</tr>
<tr>
<td></td>
<td>Two seeds per pocket on the disk (doubles), due to excess meter pressurization</td>
<td>Methodically decrease the meter pressurization. See &quot;Fan and Adjustment&quot; on page 60.</td>
</tr>
<tr>
<td></td>
<td>Two seeds per pocket on the disk (doubles), due to pockets too large for the seed</td>
<td>Select a disk with smaller pockets.</td>
</tr>
<tr>
<td></td>
<td>The meter pressurization is too high, as confirmed by gauge</td>
<td>Reduce fan speed or increase butterfly valve setting.</td>
</tr>
<tr>
<td></td>
<td>Air meter pressure too high due to pressure sensor not zeroed properly.</td>
<td>Re-zero the gauge with the fan off.</td>
</tr>
</tbody>
</table>
| | Air pressure too high, but gauge is within range or reading low. | Check:  
  - Inspect the \( \frac{1}{4} \) inch sample lines from the row units up to the sensor chamber for leaks (page 91).  
  - Make sure all non-planting rows have blank disks (page 84).  
  - Check that rubber pressure relief plug is seated in gauge (page 91). |
| | 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 product configuration and monitor setup. |
| | Incorrect cell count | Replace seed disks with correct disks, or reset rate for current disks (if within range). |
| | Incorrect speed sensor constant. | Perform speed calibration per seed monitor manual. |
## Population Too High

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>(Option) Incorrect radar speed sensor angle.</td>
<td>With product lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
</tr>
<tr>
<td></td>
<td>Doubles due to incorrect disk for crop or seed size</td>
<td>Use recommended disk for crop and seed size.</td>
</tr>
<tr>
<td></td>
<td>Sticky seeds: excess seed treatment</td>
<td>Increase seed lubricant.</td>
</tr>
<tr>
<td></td>
<td>Incorrect speed sensor constant</td>
<td>Perform speed calibration per DICKEY-john® monitor manual.</td>
</tr>
<tr>
<td></td>
<td>Overlapping passes</td>
<td>Check marker extension (page 168). For GPS, check product size programmed.</td>
</tr>
<tr>
<td></td>
<td>Actual field size is different</td>
<td>Population may be correct, and calculations are not.</td>
</tr>
<tr>
<td></td>
<td>Seed monitor under-reporting area</td>
<td>Readings can vary with conditions (wheel slippage, and effective rolling radius in soft soils) and planting patterns.</td>
</tr>
<tr>
<td>High Population, Single Row</td>
<td>Excess meter pressurization causing doubles</td>
<td>Check shutter.</td>
</tr>
<tr>
<td></td>
<td>Worn seed-drop brush and/or strip brushes allowing excess seed to pass</td>
<td>Replace worn brushes.</td>
</tr>
<tr>
<td></td>
<td>Worn meter bearing causing seed disk wobble and doubles</td>
<td>Replace meter bearing.</td>
</tr>
<tr>
<td></td>
<td>Incorrect seed disk with higher cell count.</td>
<td>Install correct disk.</td>
</tr>
</tbody>
</table>

### Population Related

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Overall Population Alarms</td>
<td>False alarms or actual rate errors due to monitor setup with incorrect [active] row count or spacing</td>
<td>When troubleshooting population issues, always first rule out seed monitor setup. Review product configuration and monitor setup.</td>
</tr>
<tr>
<td></td>
<td>Incorrect cell count</td>
<td>Replace seed disks with correct disks, or reset rate for current disks (if within range).</td>
</tr>
<tr>
<td></td>
<td>Improper gap on magnetic speed sensor.</td>
<td>Check speed sensor on product for a gap to toothed wheel of: ( \frac{1}{32} \text{ inch} ) (0.020-0.040 inch, 0.5-1.0 mm). Improper gap can cause erratic speed signal causing monitor to falsely report improper planting rate.</td>
</tr>
<tr>
<td></td>
<td>Incorrect speed sensor constant</td>
<td>Perform speed calibration per monitor manual.</td>
</tr>
<tr>
<td></td>
<td>(Option) Incorrect radar speed sensor angle.</td>
<td>With product lowered, check radar speed sensor angle per DICKEY-john® recommendations.</td>
</tr>
<tr>
<td></td>
<td>Seed run-out. Due to unequal outlets per box division, and if planting across slopes, some rows will run out before others.</td>
<td>Re-distribute seed to favor rows that have run out, and plan to re-fill shortly.</td>
</tr>
<tr>
<td>Mismatch Between Reported and Furrow Population</td>
<td>Small seeds (example milo) are not reliably sensed in the seed tube</td>
<td>Run with rain covers in place to minimize ambient light intrusion. Use the population scaling factor in the seed monitor system to compensate for missed seeds. Remember to set this back to 100% for large seeds.</td>
</tr>
<tr>
<td></td>
<td>Seed tube sensor is not counting all seeds</td>
<td>Clean the seed tube of graphite and dust buildup with long narrow seed tube brush. Replace sensors that malfunction.</td>
</tr>
<tr>
<td>Excessive Seed Cracking</td>
<td>Incorrect seed pocket size</td>
<td>Use correct disk for seed.</td>
</tr>
<tr>
<td></td>
<td>Damaged, old or dried-out seed</td>
<td>Use new seed.</td>
</tr>
<tr>
<td></td>
<td>Unclean seed</td>
<td>Use clean seed.</td>
</tr>
</tbody>
</table>
## Population Related

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Skips and Bare Spots After Turns</td>
<td>Fan was turned off at turns</td>
<td>Leave fan running; meter pressurization must be maintained during turns, or seed will fall out of disk pockets.</td>
</tr>
</tbody>
</table>
|                                              | Insufficient hydraulic flow to keep fan running at speed required to maintain meter pressurization | Check tractor capability against requirements (page 132). If sufficient:  
• Fold markers before engaging lift.  
• Use a less aggressive lift rate.  
• Monitor meter pressurization during end-of-pass operations. |
| Seed too shallow or scattered on ground from a single row | Bottom of seed tube damaged.                   | Replace seed tube. Avoid setting product 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.      |

## General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Population Alarms</td>
<td>See “Population Troubleshooting Charts” on page 92.</td>
<td></td>
</tr>
<tr>
<td>Excess Seed Remaining</td>
<td>See “Population Troubleshooting Charts” on page 92.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field size different.</td>
<td>After ruling out population problems, re-check geography.</td>
</tr>
<tr>
<td></td>
<td>Excessive gaps between product passes.</td>
<td>Adjust marker, page 168.</td>
</tr>
<tr>
<td>Seed Consumption Too High</td>
<td>See “Population Troubleshooting Charts” on page 92.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Field size different.</td>
<td>After ruling out population problems, re-check geography.</td>
</tr>
<tr>
<td></td>
<td>Irregular shaped field.</td>
<td></td>
</tr>
<tr>
<td>Rows Not Planted</td>
<td>If not detected by optional seed monitor, check for plugged row-unit seed tube</td>
<td>Lift product, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td>Uneven seed spacing</td>
<td>See “Population Troubleshooting Charts” on page 92.</td>
<td></td>
</tr>
<tr>
<td></td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Unclean seed.</td>
<td>Use clean seed.</td>
</tr>
<tr>
<td></td>
<td>Damaged seed tube.</td>
<td>Inspect; repair or replace.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® plugging.</td>
<td>Lock up Seed-Lok®, page 86.</td>
</tr>
<tr>
<td></td>
<td>Row-unit discs not turning.</td>
<td>See “Row-unit discs not turning freely” in this Troubleshooting chart.</td>
</tr>
<tr>
<td></td>
<td>Worn/rusted sprockets and/or chain idler or bearings.</td>
<td>Check and replace any worn/rusted sprockets or chain idlers.</td>
</tr>
<tr>
<td></td>
<td>Partially plugged row-unit seed tube.</td>
<td>Lift up product, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td></td>
<td>Lack of proper seed lubrication on seed.</td>
<td>See “Seed Lubricant” on page 123.</td>
</tr>
</tbody>
</table>
### General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Uneven seed depth</td>
<td>Excessive field speed.</td>
<td>Reduce field speed.</td>
</tr>
<tr>
<td></td>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
</tr>
<tr>
<td></td>
<td>Incorrect coulter depth setting.</td>
<td>See coulter manual or set unit mounted coulter.</td>
</tr>
<tr>
<td></td>
<td>Excessive or improper row unit down pressure spring setting.</td>
<td>See “Row Unit Down Pressure” on page 71.</td>
</tr>
<tr>
<td></td>
<td>Damaged seed tubes.</td>
<td>Check seed tubes for damage.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® building up with dirt.</td>
<td>Lock up Seed-Lok®, page 87.</td>
</tr>
<tr>
<td></td>
<td>Row-unit not penetrating low spots.</td>
<td>Adjust row-unit, see instructions beginning on page 71.</td>
</tr>
<tr>
<td></td>
<td>Rough planting conditions.</td>
<td>Rework the field.</td>
</tr>
<tr>
<td></td>
<td>Seed firmer not in place and set to correct tension.</td>
<td>See “Seed Firmer Adjustments” on page 86.</td>
</tr>
<tr>
<td>Press wheel or row-units plugging</td>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
</tr>
<tr>
<td></td>
<td>Too much pressure on row-units.</td>
<td>Reduce down pressure on row-units.</td>
</tr>
<tr>
<td></td>
<td>Coulters set too deep, bring up excess dirt and moisture.</td>
<td>Check coulter adjustment.</td>
</tr>
<tr>
<td></td>
<td>Product not set to run level from front to rear.</td>
<td>Check tool bar height page 20</td>
</tr>
<tr>
<td></td>
<td>Backed up with product in the ground.</td>
<td>Clean out and check for damage.</td>
</tr>
<tr>
<td></td>
<td>Failed disc bearings.</td>
<td>Replace disc bearings.</td>
</tr>
<tr>
<td></td>
<td>Disc blades worn.</td>
<td>Replace disc blades.</td>
</tr>
<tr>
<td></td>
<td>Scraper worn or damaged. Side depth wheels not set correctly.</td>
<td>Adjust side depth wheels page.</td>
</tr>
<tr>
<td>Row-unit discs not turning freely</td>
<td>Row-unit plugged with dirt.</td>
<td>Clean row-unit.</td>
</tr>
<tr>
<td></td>
<td>Planting conditions too wet.</td>
<td>Wait until drier weather.</td>
</tr>
<tr>
<td></td>
<td>Incorrect side depth wheel adjustment</td>
<td>See “Side Gauge Wheel Adjustment” on page 78.</td>
</tr>
<tr>
<td></td>
<td>Seed-Lok® is plugging row-unit.</td>
<td>Lock up Seed-Lok®, page 87.</td>
</tr>
<tr>
<td></td>
<td>Failed disc bearings.</td>
<td>Replace disc bearings.</td>
</tr>
<tr>
<td></td>
<td>Bent or twisted row-unit frame.</td>
<td>Replace row-unit frame.</td>
</tr>
<tr>
<td></td>
<td>Partially plugged row-unit seed tube.</td>
<td>Lift up product, expose bottom of seed tube and clean out.</td>
</tr>
<tr>
<td>Press wheels not compacting the soil as desired.</td>
<td>Incorrect spring handle setting</td>
<td>See “Press Wheel Adjustment” on page 87.</td>
</tr>
<tr>
<td></td>
<td>Insufficient row unit down-force</td>
<td>See “Row Unit Down Pressure” on page 71.</td>
</tr>
<tr>
<td></td>
<td>Use of incorrectly shaped tire for your conditions.</td>
<td>Wedge shaped wheels work best on narrow spacings and in wet conditions. Round edge wheels work best in wider row spacings and drier conditions.</td>
</tr>
<tr>
<td></td>
<td>Not level front to rear.</td>
<td>Check tongue height and top link adjustment.</td>
</tr>
<tr>
<td></td>
<td>Wheel stagger needs adjustment for conditions</td>
<td>See “Press Wheel Adjustment” on page 87.</td>
</tr>
<tr>
<td></td>
<td>Too wet or cloddy</td>
<td>Wait until drier weather or rework ground.</td>
</tr>
</tbody>
</table>
## General Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td>Hydraulic marker functioning improperly, or not at all</td>
<td>Marker/Fold switch set to Fold.</td>
<td>CFM Switch must be set to “Marker”. Set tractor remote circuit to Neutral or Float before operating switch.</td>
</tr>
<tr>
<td></td>
<td>Marker/Aux valve set to Aux</td>
<td>On a product 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.</td>
</tr>
<tr>
<td></td>
<td>Air or oil leaks in hose fittings or connections.</td>
<td>Check all hose fittings and connections for air or oil leaks.</td>
</tr>
<tr>
<td></td>
<td>Low tractor hydraulic oil level.</td>
<td>Check tractor hydraulic oil level.</td>
</tr>
<tr>
<td></td>
<td>Loose or missing bolts or fasteners.</td>
<td>Check all bolts and fasteners.</td>
</tr>
<tr>
<td></td>
<td>Needle valve(s) plugged.</td>
<td>Open needle valves, cycle markers slowly and reset needle valves, refer to page 168.</td>
</tr>
<tr>
<td>Marker disk does not mark</td>
<td>Disk angle too straight for soil conditions</td>
<td>Reverse marker disk to pull or throw dirt.</td>
</tr>
<tr>
<td>Speed Reading Doesn’t Match Tractor</td>
<td>Monitor speed reading, using optional radar, will only match tractor with product lowered. (Speed reading with magnetic pickup falls to zero when lifted.)</td>
<td>If speeds don’t agree during planting (with product lowered), re-calibrate radar speed sensor with product lowered.</td>
</tr>
</tbody>
</table>

## Liquid Fertilizer Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>Discharge and/or main selector valve closed</td>
<td>Check that discharge valves are open to selector valve, and selector valve is open to pump. See “Liquid Fertilizer Operation (Option)” on page 41</td>
</tr>
<tr>
<td></td>
<td>Chain missing at one or more drive stages</td>
<td>Check all five chains from ground drive to pump. See “Chain Routing” on page 151.</td>
</tr>
<tr>
<td></td>
<td>Tank plugged</td>
<td>Dilute or clean out any material clogging discharge port. See “Liquid Fertilizer Clean-Out” on page 103.</td>
</tr>
<tr>
<td></td>
<td>Strainer plugged</td>
<td>Close all valves. Inspect strainer (See Seed and Fertilizer Rate manual (ManualB #)). Clean screen as needed. Switch to a larger screen size if materials clog strainer rapidly (and large size orifices are in use).</td>
</tr>
<tr>
<td></td>
<td>Pump setting at or near zero</td>
<td>Recommended pump adjuster settings are in the range 2 to 10. See Seed and Fertilizer Rate manual (ManualB #).</td>
</tr>
<tr>
<td></td>
<td>Material run-out</td>
<td>Check tank level.</td>
</tr>
<tr>
<td></td>
<td>Material merely low - loss of prime</td>
<td>Add material. When tank level is below pump inlet level, any air allowed in the line can cause the pump to lose prime.</td>
</tr>
<tr>
<td></td>
<td>Air in pump due to slope (two-tank system)</td>
<td>Add material, meter from one tank at a time, or close empty tank. When planting across a slope, material can flow from one tank to the other. If an empty tank is open to the pump, the pump will cavitate and not meter fertilizer.</td>
</tr>
<tr>
<td>Low Rate</td>
<td>Fertilizer transmission in Low Range when High Range was intended.</td>
<td>Swap sprockets at transmission. See Seed and Fertilizer Rate manual (ManualB #).</td>
</tr>
</tbody>
</table>
## Liquid Fertilizer Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Pressure, at Desired Rate</strong></td>
<td>Orifice size too large</td>
<td>Choose alternate orifice plate size based on charts in Seed and Fertilizer Rate manual (Manual B #).</td>
</tr>
<tr>
<td></td>
<td>Orifices correct plate call size, but their holes are enlarged from extended use</td>
<td>Obtain new plates in the desired size. Discard worn plates.</td>
</tr>
<tr>
<td></td>
<td>Rate may actually be low</td>
<td>Check fertilizer transmission Driving/Driven sprockets.</td>
</tr>
<tr>
<td><strong>Uneven Flow, at Desired Rate</strong></td>
<td>One or more orifice plates plugged</td>
<td>Clean and re-installed orifice plates. Check that materials are not too viscous or granular for the orifice size.</td>
</tr>
<tr>
<td></td>
<td>Plate sizes vary between rows</td>
<td>Check that all nozzles have the same size plates (with the possible exception of outside rows serving zone coulters).</td>
</tr>
<tr>
<td><strong>Pressure Unstable</strong></td>
<td>Strainer clogged</td>
<td>Close all valves. Inspect strainer (See Seed and Fertilizer Rate manual (Manual B #)). Clean screen as needed. Switch to a larger screen size if materials clog strainer rapidly (and large size orifices are in use).</td>
</tr>
<tr>
<td><strong>Dumping at Normal Pressure</strong></td>
<td>Relief valve setting too low</td>
<td>Review relief valve setting per Seed and Fertilizer Rate manual (Manual B #).</td>
</tr>
<tr>
<td><strong>High Pressure, at Desired Rate</strong></td>
<td>Orifice size too small</td>
<td>Review orifice sizing. If at recommended size, try the next large size. Charts are based on typical density/viscosity materials.</td>
</tr>
<tr>
<td></td>
<td>Plugged nozzles</td>
<td>Inspect low-flow rows, or several nozzles. Clean plates. Consider smaller strainer screen size and/or large orifice plate size. Sedimentation, coagulation, particulates, foreign matter can also cause unusually high pressure.</td>
</tr>
<tr>
<td></td>
<td>Orifice plates inverted</td>
<td>Orient plates with legends facing outlet. Orifice port holes are not symmetrical, and at smaller sizes this can cause slightly higher back-pressure with denser materials.</td>
</tr>
<tr>
<td><strong>Very High Flow</strong></td>
<td>Fertilizer transmission in High Range when Low Range was intended.</td>
<td>Swap sprockets at transmission. See Seed and Fertilizer Rate manual (Manual B #).</td>
</tr>
<tr>
<td><strong>Pump Oil Consumption</strong></td>
<td>Pump seals or O-ring</td>
<td>Refer to Trouble Chart in CDS-JohnBlue LM-1250/LM-1255 Parts and Instruction manual, part number 12-M-15.</td>
</tr>
<tr>
<td><strong>Noisy Pump</strong></td>
<td>Crankcases components worn</td>
<td>Refer to Trouble Chart in CDS-JohnBlue LM-1250/LM-1255 Parts and Instruction manual, part number 12-M-15.</td>
</tr>
</tbody>
</table>

## Dry Fertilizer Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>No Fertilizer Flow, All Rows</strong></td>
<td>Hopper empty</td>
<td>Check / refill hopper.</td>
</tr>
<tr>
<td></td>
<td>Chain missing at one or more drive stages</td>
<td>Check all five chains from ground drive to hoppers. See &quot;Dry Fertilizer Chains&quot; on page 157.</td>
</tr>
<tr>
<td><strong>No Fertilizer Flow, Some Rows</strong></td>
<td>Hopper plugged</td>
<td>Clean out any material clogging discharge port. See &quot;Dry Fertilizer Clean-Out&quot; on page 104.</td>
</tr>
<tr>
<td></td>
<td>Shaft disconnected</td>
<td>Check couplers along final drive shaft.</td>
</tr>
<tr>
<td><strong>No Fertilizer Flow, One Row</strong></td>
<td>Applicator tube plugged with soil</td>
<td>Disconnect hose at top of applicator tube. Remove blockage from below. Raise release height (page 66).</td>
</tr>
<tr>
<td></td>
<td>Applicator tube plugged with fertilizer.</td>
<td>Disconnect hose at top of applicator tube. Remove blockage from below. Use finer grained fertilizer, or dry out the fertilizer if coagulation is the problem.</td>
</tr>
</tbody>
</table>
### Dry Fertilizer Troubleshooting

<table>
<thead>
<tr>
<th>Problem</th>
<th>Cause</th>
<th>Solution</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Low Flow</strong></td>
<td>Incorrect Transmission sprockets</td>
<td>Re-check Seed and Fertilizer Rate manual (ManualB #). Exchange DRIVING and DRIVEN sprockets as needed.</td>
</tr>
<tr>
<td></td>
<td>Field speed too high for Transmission sprockets selected</td>
<td>Apply at a lower speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is lower at high speeds.</td>
</tr>
<tr>
<td></td>
<td>Ground drive wheel slipping</td>
<td>Check lowered tool bar height (page 20). Operate at a lower field speed. Field conditions may be too wet for reliable meter drive.</td>
</tr>
<tr>
<td></td>
<td>Meter flutes worn</td>
<td>Inspect meter flutes (page 37). Replace as needed.</td>
</tr>
<tr>
<td><strong>High Flow</strong></td>
<td>Incorrect Transmission sprockets</td>
<td>Re-check Seed and Fertilizer Rate manual (ManualB #). Exchange DRIVING and DRIVEN sprockets as needed.</td>
</tr>
<tr>
<td></td>
<td>Field speed too low for Transmission sprockets selected</td>
<td>Apply at a higher speed, or use a new sprocket pair for the actual rate and speed. Metering (kg per revolution) is higher at low speeds.</td>
</tr>
<tr>
<td><strong>Fertilizer on Surface</strong></td>
<td>Release height too high</td>
<td>Lower release height (page 66).</td>
</tr>
<tr>
<td></td>
<td>Coulter depth too shallow</td>
<td>Increase coulter depth (page 68).</td>
</tr>
</tbody>
</table>
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 when working on implement. You may be severely injured or killed by being crushed under a falling implement.

**WARNING**

*High Pressure Fluid Hazard:*
Check all hydraulic lines and fittings before applying pressure. 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. Escaping fluid under pressure can have sufficient pressure to penetrate the skin. If an accident occurs, seek immediate medical assistance from a physician familiar with this type of injury.

1. After using your product 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 product tires.
4. Keep disk scrapers properly adjusted.
5. Clean product 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 114.
7. Replace any worn, damaged, or illegible safety labels by obtaining new labels from your Great Plains dealer.

**CAUTION**

*Spill hazard/Tank damage risk:*
Periodically check the tension of the straps for the fertilizer tank. Strap tension will change as outside air temperature changes. Adjust tension as necessary to prevent personal injury or damage to the fertilizer tank.
Material Clean-Out

When planting is completed, it is commonly the case that some seed remains, and fertilizer, if the fertilizer system is present and was used.

The seed clean-out topic begins on this page. Fertilizer clean-out begins on page 103.

Seed Clean-Out

There may be seed in the hoppers, hose lines, and meters.

Refer to Figure 113

The product includes an 817-811C container 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:
- a length of 13/8 inch I.D. hose
- a worm drive clamp with a working diameter of approximately 13/8 to 21/4 inch
- a hacksaw with fine-toothed blade

Trim the sump from the funnel. Slide the hose fully onto the funnel tip. Secure with clamp (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.

Seed Clean-Out (Container)

1. Scoop or vacuum as much seed as possible from the top of the hoppers.
2. Perform a meter clean-out per page 102.

Seed Clean-Out (Funnel)

1. Close slide gate at hopper (slide gate only exists on models with serial number B1016S and earlier).
2. Attach funnel as for meter clean-out (page 102), with hose routed to bucket or other larger container.
3. Use slide gate to control seed flow until meter, inlet, and hopper are empty (slide gate only on models B1016S-).

Possible Dust and Chemical Residue and Fume Hazards:

Wear a respirator, and any other protective equipment specified by the seed supplier, seed treatment supplier and/or fertilizer supplier. Expect chemical residue, dust and fumes during clean-out.

Figure 113

Convert Container to Funnel

---

a. The funnel does not fit rows that are to the left of gauge wheels on twin-row products. Use vacuum or tarp on those rows.
b. The funnel wall is thin ABS. Scissor-type pipe-cutting tools may fracture it. Rotary-type pipe cutting tools may slip off.
Meter Clean-Out

Refer to Figure 115

The 817-811C seed collection accessory (funnel ①) may be attached to the housing of the seed meter, freeing your hands for other tasks during clean-out.

- The funnel does not fit rows to the left of gauge wheels on twin-row products. Use vacuum or tarp collection on those rows.
- It may be necessary to raise a twin-row product to obtain clearance for the funnel. Use transport locks (page 25) if the product is raised.

1. Close the seed inlet shutter on the meter (page 80). This minimizes the seed volume at disk removal.
2. Remove the rain cover (page 80). 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 (page 83).
6. Slowly open the seed shutter (page 80) to empty the seed up to the slide gate.
7. If seed remains in the hopper, use the slide gate to control the volume of flow.

Refer to Figure 114

8. Clean seed from all brushes (shop vac recommended).
10. Rotate funnel clockwise, remove and empty.
11. For imminent operations:
    - Install next seed wheel or blank disk (page 84) for operations. Set inlet shutter for next seed (page 80).
12. For storage:
    - Close seed inlet shutter. Leave disk out.
    - Close Y-tube (if any).
13. Re-install rain cover (page 80).

At end-of-season clean-out, inspect a few seed meter air release screens. If they require cleaning, consider cleaning all rows.

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). If the seed meter is empty, remove the seed disc and insert the brush into the seed tube ③ from above. With the planter raised, you can also insert the brush from below, whether the meter is empty or not.
Liquid Fertilizer Clean-Out

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.

Flush entire system with clean water. Do this at the field last treated, or other location compliant with chemical supplier clean-up instructions.

14. Remove end caps from booms and flush booms out with water. Drain and replace end caps.
15. Remove strainer and drain it out. Drain all lines and tanks completely to prevent freezing damage.
17. Cap or plug inlet line to tractor.
18. Flush pump per pump supplier manual. Fill pump with RV antifreeze and cap off.
19. Wash all spilled fertilizer off the product.

Tank Clean-Out

Refer to Figure 139 on page 144 or Figure 140 on page 145

1. If the pump has already been filled with RV antifreeze for storage, set the main selector valve to Off or Quick-Fill to prevent draining pump.

Refer to Figure 116

2. Move the product to a location suitable for draining material last applied from the tank, or where the drainage can be collected. A site with access to rinse water is ideal.
3. Open the tank lids. Observe the quantity of material present. Check for build-up, sedimentation and foreign matter, particularly any objects large enough to clog the drain.
4. On a two tank system, clean one tank at a time.
5. Slowly operate the tank discharge line valve handle to open the tank to the drain elbow ("FLOW" legend toward drain elbow).
6. Power-wash the inside of the tank from above.
7. When the tank is clean and drained, set the discharge valve to Off or Fill/Pump.
8. Close the tank lid.

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.
Dry Fertilizer Clean-Out

**CAUTION**

**Possible Agricultural Chemical Hazard:**
Wear all protective equipment specified for use with the most recent types of dry fertilizer used in the hoppers. Clean-out operations are likely to result in airborne dust, which could be contaminated with hazardous chemicals.

For small amounts of residual fertilizer:
1. Raise the product.
2. If any seed remains in the seed hoppers, clean them out first, or disconnect the seed meter Range or Transmission chain.
3. Place a tarp, or multiple collection containers, under the applicator tubes.
4. Operate the ground drive wheel (top forward) until the hoppers are empty.
5. For extended storage, use a hose and clean water to wash out the hoppers, meters, hoses and applicator tubes.

For large amounts of remaining fertilizer, or any amount that is not flowing properly through the meters, use this alternate procedure:
1. Raise the product.
2. Place a tarp, or large collection containers, under the front of the product.

**NOTICE**

**Equipment Damage Risks:**
Fully uncouple and empty one, and only one hopper at a time. Attempting to empty multiple hoppers with shafts still coupled is likely to result in machine damage. If two or more hoppers are uncoupled at the same time, the interconnecting drive shaft is completely free and may fall.

**Refer to Figure 117**
3. At each end of the hopper, remove the pin ① at the shaft coupler ②. Slide coupler onto adjacent shaft.

**Refer to Figure 118**
4. At the rear of each hopper, remove two cotter ③ and two cradle pins ④.

**Refer to Figure 119**
5. Open the hopper lid (see page 37).
6. With one person at each end of the hopper, carefully tilt it forward to empty it.
7. Operate the hopper drive shaft to clear the meter.
8. Tilt the hopper upright. Secure at rear with pins.

**Heavy Material Flow Hazard:**
Use two or more people for hopper tilt clean-out. Do not stand directly in front of the hopper being unloaded. Wear protective equipment, including dust masks or other respiratory support. Full hoppers are heavy, may tip rapidly, and may be hard to control. They may empty suddenly.
### 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 120**

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.
Meter Brush Replacement
Consult the Parts manual (ManualP #) for current replacement part numbers.

Refer to Figure 121
Tufted Brush Replacement
1. Remove and save both 10-24 hex head cap screws and Nylock nuts (not shown).
2. Remove the tufted brush assembly, 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 retaining the brush holder.
1. Insert the flat blade of a large screwdriver into the slots of the brush holder snaps. Turn each snap clockwise to release brush holder.
2. Prepare to catch drop brush (which will fall lose). Slide brush holder left and up to free front edge from under washer. Remove brush holder.
3. Remove used strip brushes from the holder by sliding them downward out of the grooves.

Refer to Figure 122
4. Insert replacement strip brushes into grooves at holder bottom so that notched ends are at the bottom.

Refer to Figure 121
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 and lower rear. The bottom end of the short brush must fit snugly in the lower front housing groove. If any significant force is required 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 back into engagement.
Seed Disk Maintenance

Refer to Figure 123

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 re-inspect.

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 in. (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 82) 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.

Cleaning and Storing Seed Disks

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.

Speed Sensor Gap

Refer to Figure 124

1. Raise product (page 24). Rotate ground drive wheel until a disk tooth is directly at sensor center-line.

2. Check that wheel teeth are on sensor center-line side-to-side. As needed, loosen collars on either side of disk and adjust.

3. Check that center-line of sensor is pointed at center-line of transfer shaft. As needed, loosen mounting bolts ⑥ and adjust.

4. Check gap ⑦ between top of sensor and toothed wheel for a dimension of: 1/16 inch (1.6 mm)

To adjust, loosen jam nut ⑧. Adjust base nut ⑨ to set gap. Re-tighten jam nut.

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.
Hydraulic 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, and never let them fall to the ground.

**WARNING**

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

Bleed only at JIC and NPT fittings. Never try to bleed a QD (Quick Disconnect) fitting. Avoid bleeding at ORB fittings. The O-ring is likely to be torn if any pressure remains in the circuit.

**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.

**NOTICE**

**Over-Torque and Leak Risks:**
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.

**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.

If it is necessary to further bleed lift system, see "Lift Cylinder Bleeding" on page 109.

**Bleeding Marker Hydraulics**

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

As the marker cylinders are encased within the main tool bar, it is not practical to bleed them at cylinder fittings. Remove air from the system by slowly cycling fold and unfold several times.

### JIC Torque Chart

<table>
<thead>
<tr>
<th>Size</th>
<th>Foot-Pounds</th>
<th>N-m</th>
</tr>
</thead>
<tbody>
<tr>
<td>7/16&quot;-20</td>
<td>11-12</td>
<td>15-16</td>
</tr>
<tr>
<td>1/2&quot;-20</td>
<td>15-16</td>
<td>20-22</td>
</tr>
<tr>
<td>5/16&quot;-18</td>
<td>18-20</td>
<td>24-28</td>
</tr>
<tr>
<td>3/4&quot;-16</td>
<td>38-42</td>
<td>52-58</td>
</tr>
<tr>
<td>7/8&quot;-14</td>
<td>57-62</td>
<td>77-85</td>
</tr>
<tr>
<td>11/16&quot;-12</td>
<td>79-87</td>
<td>108-119</td>
</tr>
</tbody>
</table>
Re-Phasing Lift System

In typical use during a single planting operation, it is normal for the lift cylinders to get out of phase, resulting in uneven raising and lowering of the product.

Every 8- to 10 passes, re-phase the cylinders with this procedure:

Raise the product completely, and hold the hydraulic lever or switch in Retract for several seconds after the product reaches full elevation, or until all cylinders are fully retracted.

When all cylinders are fully retracted, momentarily reverse (Extend) the control to lower the product 12mm (1/2 in.).

Lift Cylinder Bleeding

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.

Refer to Figure 125

If it is necessary to further bleed lift system, follow these steps.

1. Consult lift circuit hydraulic diagram on page 146 (repeated at right in smaller scale)
2. Check that tractor hydraulic reservoir is full. Set hydraulics for low flow rate.
3. Lower product.
4. Loosen the JIC fittings ① at the rod ends (bottom) of the three left lift cylinders. Leave the right undisturbed.
5. Extend the lift circuit until fluid appears at each the loosened fittings. As fluid appears, set control lever to neutral and secure each fitting.
6. Retract the circuit. Set control lever to neutral.
7. Extend the lift circuit until both cylinders are fully extended.
8. Loosen the JIC fitting ② at the base (top) ends of the three right lift cylinders. Leave the left undisturbed.
9. Retract the circuit until fluid appears at each loosened fitting. As it appears, set control lever to neutral and secure each fitting.
10. Set circuit control to neutral and secure fitting.
11. Unless it is suspected that a large amount of air is in the line between the cylinders, rely on the normal re-phasing operation to purge it. Otherwise...
12. Loosen the JIC fitting at the base (top) end of the left cylinder ③.
13. Retract lift circuit until fluid appears.
14. Set circuit to neutral and secure fitting.
15. Extend and retract circuit several times.
Drive-Line Shear Pin

Refer to Figure 126

The spirol pin ① that connects main transfer shaft collar ② to the transmission shears if an excessive load is put on the shaft.

Infrequent or improper lubrication causes binding of moving parts within the product. This binding can cause the spirol pin to shear, preventing more serious damage to other product parts.

**NOTICE**

Machine Damage / Nuisance Shear Risks:
Do not use arbitrary spirol pins. Replace sheared pins with cotter pins of the same size. Strong pins may fail to shear, causing more serious damage elsewhere. Weaker pins are prone to nuisance shears. Refer to current Parts Manual for correct spirol pin replacement part number.

Marker Maintenance (Option)

See also:
"Initial Marker Setup (Option)" on page 168,  
"Marker Operation (Option) SN+" on page 49, and  
"Marker Disk Adjustment" on page 59

Marker Shear Bolt Replacement

Refer to Figure 127

If a marker gets caught or hits an obstruction, it is designed to fail a shear bolt ① at the fold, pivot on a second bolt (not visible in Figure), and swing back.

The shear bolt is a hex head cap screw, $\frac{5}{16}$-18 x 1 1/2 in Grade 5, Great Plains part number 802-012C, plus a $\frac{5}{16}$-18 lock nut, Great Plains part number 803-011C.

⚠️ If an exact replacement is not immediately available, temporarily substitute an M8x1.25 Class 8.8 bolt and nut.

Install a replacement shear bolt on the vertical face on the side opposite from the pivot bolt. Do not use a higher grade bolt, or marker hang-ups may result in machine damage. Do not use a lower grade bolt, or you may experience nuisance shears.

Marker Grease Seal Cap

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.
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 151.

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 inches or 91 cm):
   \( \frac{1}{4} \) inch per foot
   Vertical short chains:
   \( \frac{1}{4} \) inch/foot (2.1 cm/m)
   Horizontal short chains:
   \( \frac{1}{2} \) inch/foot (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.

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).

Meter Drive Chain

Refer to Figure 131 (which depicts product raised)

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

When performing seasonal checks, lower product 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 158).
Spreaders and Scrapers

Applies to all row unit Series.

Refer to Figure 132

1. Remove side gauge wheels from arms to access row-unit disks and scrapers.

2. With the unit raised, check blade spreader ① for wear. Replace spreader if it is 1/2 inch (13 mm) wide or narrower. To replace, remove disk blades ③, drive out roll pins ②, and install new spreader.

3. When reinstalling disk blades, put two shims ④ between bearing and shank on each blade. Tighten bolts.

4. Check amount of contact between blades, and adjust number of shims as needed. Store extra shims on outside of blade. See "Opener Disc Contact Region" on page 77.

5. Check that outside disk scrapers ⑤ are formed to disk blades to help remove any mud. Bend/twist scrapers to fit blades as needed. Every 200 acres of operation, check outside scrapers for adjustment and wear. Replace outside scrapers as necessary.

You may need fewer washers under worn disks.

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.
Row-Unit Side Wheels

Refer to 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. Side wheels are preset at the factory. Due to normal wear it may become necessary to make adjustments so the wheel remains close to the disk. To prevent plugging, loosen clamp bolt ① and slide arm inward to take up gap between side wheel and disk blade. If more adjustment is needed, go to step 3.

3. Remove bolt ② and wheel ③. Remove shims ④ from the inside of wheel ⑤ and place them on the outside of wheel. 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 ⑥ from unit. Remove bushing ⑦ from sleeve ⑧ and check for wear. If necessary, replace bushing.

5. When reinstalling side gauge wheels, align tab on hex adjustment ⑨ with notch in bushing. Replace bolt and tighten.

6. Adjust side gauge wheels. Refer to see “Side Gauge Wheel Adjustment” on page 78.

Seed Flap Replacement

Refer to Figure 134

To replace a 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.
Lubrication

Opener Side Wheel Bushing

On both sides of each row-unit (2 per row)
Type of Lubrication: Grease
Quantity: Until grease emerges

Gauge Wheel Module Forward Pivot

4 modules per product, one zerk per pivot; 4 total
Type of Lubrication: Grease
Quantity: Until grease emerges

Fertilizer Pump Bearings (Option)

two zerks per pivot; 2 total
Type of Lubrication: Grease
Quantity: Until grease emerges
Refer to JohnBlue manual for pump maintenance.
**Fertilizer Pump Crankshaft (Option)**

2 inspection/fill ports
Type of Lubrication: SAE 90 EP Gear Oil
Quantity: 8 fluid ounce capacity
Refer to JohnBlue manual for pump maintenance.

**Markers (Option)**

4 zerks per marker,
two markers;
8 total
Type of Lubrication: Grease
Quantity: Until grease emerges

**Vantage I Coulter Hubs (Option)**

1 zerk per coulter,
4 to 16 total
Type of Lubrication: Grease
Quantity: Until grease emerges
Chain: Contact Drive

1 chain
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.

Chains: Liquid Fertilizer Drive (Option)

2 chains
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.

Chains: Dry Fertilizer Drive (Option)

3 chains
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.
Chains: Meter Drive

As Required

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.

Chain: Range Drive

As Required

1 chain
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.

Chain: Transmission Drive

As Required

1 chain
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.
Vantage I Coulter Pivot (Option)

Grease Bank:
1 zerk per coulter,
4 to 16 total
Type of Lubrication: Grease
Quantity: Until grease emerges

Ground Drive Wheel Hub

1 zerk at each bearing casting;
4 total
Type of Lubrication: Grease
Quantity: Until grease resistance felt
Re-pack seasonally.

Row Cleaner Bearings (Option)

1 zerk each wheel, 1 or 2 wheels per row
Type of lubrication: Grease
Quantity = Until resistance is felt
To avoid damaging the seal, do not add grease at high pressure.
Gauge Wheel Hubs

1 zerk each spindle; 4 total
Type of Lubrication: Grease
Quantity: Until resistance is felt

Markers: Disk Hub

4 bearings; 2 races each marker
Type of Lubrication: Grease
Quantity: Re-pack

Vantage II: Pivot and Hub

1 pivot zerk, 1 hub zerk; 2 total per coulter
Type of Lubrication: Grease
Quantity: Pump until resistance felt

**NOTICE**

Seal Damage Risk:
Do not apply excess pumping pressure. Do not pump until grease emerges.
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.

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.

---

a. SDS: Safety Data Sheet, formerly Material Safety Data Sheet (MSDS).
Liquid Fertilizer System

A liquid fertilizer system includes a support frame, one or two tanks, drive system (powered by existing ground drive), strainer, CDS-JohnBlue piston pump, relief valve/pressure gauge, boom, nozzles, orifice plate sizes 28/34/48, and drop lines to rows.

The system is factory installed, but ordered as a separate line item.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP425A LIQUID FERTILIZER KIT</td>
<td>407-267A</td>
</tr>
<tr>
<td>YP625A LIQUID FERTILIZER KIT</td>
<td>407-268A</td>
</tr>
<tr>
<td>YP825A LIQUID FERTILIZER KIT</td>
<td>407-269A</td>
</tr>
</tbody>
</table>

See “Liquid Fertilizer Operation (Option)” on page 41.

Dry Fertilizer System

The dry fertilizer system includes a support frame, drive system, hoses to connect to coulters and two hoppers (YP425A), three hoppers (YP625A), or four hoppers (YP825A).

The system is factory installed if ordered with machine, but is ordered as a separate line item.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP425 DRY FERT KIT SINGLE</td>
<td>407-457A</td>
</tr>
<tr>
<td>YP625 DRY FERT KIT SINGLE</td>
<td>407-459A</td>
</tr>
<tr>
<td>YP825 DRY FERT KIT SINGLE</td>
<td>407-460A</td>
</tr>
<tr>
<td>YP425 DRY FERT KIT WIDE SNGL</td>
<td>407-430A</td>
</tr>
<tr>
<td>YP625 DRY FERT KIT WIDE SNGL</td>
<td>407-431A</td>
</tr>
<tr>
<td>YP825 DRY FERT KIT WIDE SNGL</td>
<td>407-447A</td>
</tr>
</tbody>
</table>
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.

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

*Sizes standard in many fertilizer bundles.

Check your accessories before ordering.

High-Rate Dribblers
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.

<table>
<thead>
<tr>
<th>Option Packages</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fertilizer Dribbler Assembly, RH</td>
<td>204-131A</td>
</tr>
<tr>
<td>Fertilizer Dribbler Assembly, LH</td>
<td>204-132A</td>
</tr>
</tbody>
</table>

Dual Sequenced Markers
A marker system includes hydraulic cylinder, marker arm and mount for left and right side, plus an automatic sequence valve that controls which side activates, and at what speed. The marker system requires one tractor remote.

The system is factory installed, but ordered as a separate line item.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4-30 PT PLTR FLAT FOLD MKR</td>
<td>113-837A</td>
</tr>
<tr>
<td>6-30 PT PLTR FLAT FOLD MKR</td>
<td>113-838A</td>
</tr>
<tr>
<td>8-30 PT PLTR FLAT FOLD MKR</td>
<td>113-839A</td>
</tr>
</tbody>
</table>

See "Marker Operation (Option) SN+" on page 49.
Hitches
One hitch is selected upon initial order of an YP425A, YP625A, and YP825A drill, and includes all the fasteners. Additional hitches may be ordered for conversion in the field, and include extra hitch mounting bolts and nuts.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Option</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>① Clevis</td>
<td>(60)</td>
<td>401-825A</td>
</tr>
<tr>
<td>② Single Strap</td>
<td>(61)</td>
<td>401-826A</td>
</tr>
</tbody>
</table>

Seed Lubricant

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Ezee Glide Plus Talc + Graphite Mix (5 gallon /19 liter container)</td>
<td>821-069C</td>
</tr>
<tr>
<td>Fluency Powder, case quantity</td>
<td>821-074C</td>
</tr>
<tr>
<td>Fluency Powder, single 4.4 pound bucket</td>
<td>821-075C</td>
</tr>
</tbody>
</table>

See “Loading Seed” on page 28.
See “Seed Lubricants” on page 120.

Clean-Out Container

One container is provided with the product. Order the following part for additional or replacement containers.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>AIR METER CLEAN OUT FUNNEL</td>
<td>817-811C</td>
</tr>
</tbody>
</table>

See “Funnel Conversion” on page 101.
See “Meter Clean-Out” on page 102.

Seed Tube Brush

One brush is provided with the product. Order the following part for additional or replacement brushes.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SEED TUBE CLEANER BRUSH</td>
<td>891-259C</td>
</tr>
</tbody>
</table>

See “Seed Tube Clean-Out” on page 102.
Frame-Mounted Row Accessories
Frame-mounted accessories require the presence of either a fertilizer system or a frame attachment tube.

Frame Attachment Tube
This kit is required for frame-mounted accessories on a product that does not have fertilizer. Do not order it for a product that does have fertilizer.

The kit is factory-installed if ordered with the product.

<table>
<thead>
<tr>
<th>Description</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP425 FRAME MT ATTACH TB ASSY</td>
<td>407-284A</td>
</tr>
<tr>
<td>YP625 FRAME MT ATTACH TB ASSY</td>
<td>407-285A</td>
</tr>
<tr>
<td>YP825 FRAME MT ATTACH TB ASSY</td>
<td>407-286A</td>
</tr>
</tbody>
</table>

Frame-Mounted Row Cleaners

Terra-Tine™
These row cleaners are available as frame-mounted, either attached to frame-mounted Vantage-I coulters or stand-alone. Fertilizer or frame attachment kit required.

Order one per row:

<table>
<thead>
<tr>
<th>Terra-Tine</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Vantage-I Mounted</td>
<td>407-052A</td>
</tr>
<tr>
<td>Stand-Alone</td>
<td>407-051A</td>
</tr>
</tbody>
</table>

For operations, see “Terra-Tine™ Adjustment” on page 67.
Frame-Mounted Coulters

Frame-mounted coulters are generally incompatible with unit-mounted coulters, unless the frame-mounted coulters are used as “zone” coulters, offset from rows.

Vantage I Coulters

Vantage I is a disk coulter with liquid fertilizer applicator. Mounting is adjustable for zone or in-row application.

Fertilizer or frame attachment kit required for mounting. Fertilizer system (or customer-provisioned system) required for use of applicator.

Order one per row or zone. Alternate LH and RH for twin-row.

<table>
<thead>
<tr>
<th>Vantage I</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Right Hand w/Turbo Coulters</td>
<td>407-262A</td>
</tr>
<tr>
<td>Left Hand w/Turbo Coulters</td>
<td>407-263A</td>
</tr>
<tr>
<td>Right Hand w/Fluted Coulters</td>
<td>407-270A</td>
</tr>
<tr>
<td>Left Hand w/Fluted Coulters</td>
<td>407-271A</td>
</tr>
</tbody>
</table>

17in Coulters Blades

<table>
<thead>
<tr>
<th>Vantage I</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Fluted Blade (3/4 inch wave)</td>
<td>820-082C</td>
</tr>
<tr>
<td>Fluted Blade (5/8 inch wave)</td>
<td>820-116C</td>
</tr>
<tr>
<td>Turbo Blade (5/8 inch wave)</td>
<td>820-156C</td>
</tr>
</tbody>
</table>

Vantage II Coulters

Vantage II is a frame-mounted coulter with straight 18 inch blade, side-mounted depth gauge wheel and trailing applicator tube (with a liquid fertilizer insert). Mounting may be adjusted for zone or in-row application.

Fertilizer or frame attachment kit required for mounting. Fertilizer system (or customer-provisioned system) required for use of applicator.

Order one per row or zone. These coulters are suitable only for “zone” use in twin-row.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>VANTAGE II LH (LIQUID)</td>
<td>407-265A</td>
</tr>
<tr>
<td>VANTAGE II RH (LIQUID)</td>
<td>407-264A</td>
</tr>
</tbody>
</table>

18in Coulters Blades

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>SINGLE BEVEL 18 COULTER BLADE</td>
<td>820-093C</td>
</tr>
</tbody>
</table>

Use only straight (flat) coulter blades with Vantage II.
Row-Mounted Accessories

Lock-Up Pins

If rows are shut off, you can reduce unnecessary wear on the unused row units by locking them up. Twin-row products include, as standard, one lock-pin per rear row. For replacement pins, or for other product models, order one per row unit locked-up.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>PIN HITCH 1 X 6 W/HAIRPIN</td>
<td>805-033C</td>
</tr>
</tbody>
</table>

See “Row Unit Shut-Off” on page 83.

Rigid Row Cleaners

Optional Martin row cleaners are unit-mounted, either:

- “stand-alone”, using a unit-mount assembly (1), or;
- added to a UMC coulter disk mounting bracket (2, with or without a disk).

Twin-Row products and narrow row spacings support only single-wheel unit-mounted row cleaners, in alternating left/right cleaner hub orientations.

Coulter-mounted (requires coulter):

<table>
<thead>
<tr>
<th>Coulter-Mount RC Kits</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, 2 left, 2 right (4 row)</td>
<td>207-223A</td>
</tr>
<tr>
<td>Single, 4 left, 4 right (8 row, 4 twin)</td>
<td>207-205A</td>
</tr>
<tr>
<td>Single, 3 left, 3 right (6 row)</td>
<td>207-227A</td>
</tr>
<tr>
<td>Single, 6 left, 6 right (12 row, 6 twin)</td>
<td>207-228A</td>
</tr>
<tr>
<td>Single, 8 left, 8 right (16 row, 8 twin)</td>
<td>207-212A</td>
</tr>
<tr>
<td>Double, 4 row</td>
<td>207-225A</td>
</tr>
<tr>
<td>Double, 6 row</td>
<td>207-231A</td>
</tr>
<tr>
<td>Double, 8 row</td>
<td>207-233A</td>
</tr>
</tbody>
</table>

Stand-alone (includes mount):

<table>
<thead>
<tr>
<th>Stand-Alone RC Kits</th>
<th>Order Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Single, 2 left, 2 right (4 row)</td>
<td>207-222A</td>
</tr>
<tr>
<td>Single, 4 left, 4 right (8 row, 4 twin)</td>
<td>207-224A</td>
</tr>
<tr>
<td>Single, 3 left, 3 right (6 row)</td>
<td>207-229A</td>
</tr>
<tr>
<td>Single, 6 left, 6 right (12 row, 6 twin)</td>
<td>207-230A</td>
</tr>
<tr>
<td>Double, 4 row</td>
<td>207-226A</td>
</tr>
<tr>
<td>Double, 6 row</td>
<td>207-232A</td>
</tr>
<tr>
<td>Double, 8 row</td>
<td>207-234A</td>
</tr>
</tbody>
</table>

207-21xK and 207-09xS kits do not include a manual.

<table>
<thead>
<tr>
<th>Individual Row Cleaners</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>UMRC Dual Wheel</td>
<td>207-213K</td>
</tr>
<tr>
<td>UMRC LH Single Wheel</td>
<td>207-215K</td>
</tr>
<tr>
<td>UMRC RH Single Wheel</td>
<td>207-216K</td>
</tr>
<tr>
<td>UMC-RC Dual Wheel</td>
<td>207-098S</td>
</tr>
<tr>
<td>UMC-RC LH Single Wheel</td>
<td>207-092S</td>
</tr>
<tr>
<td>UMC-RC RH Single Wheel</td>
<td>207-093S</td>
</tr>
<tr>
<td>RC Install/Use/Parts Manual</td>
<td>204-085M-A</td>
</tr>
</tbody>
</table>

For operations, see: “Unit-Mount Cleaner Adjustments” on page 74.
**Unit-Mounted Disk Coulters**

Optional unit-mount disk coulters are available with 15 inch fluted or 15 in. turbo blades. For complete coulters w/unit mount and blade the selection includes:

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>4 mounts, 15 inch fluted (4 row)</td>
<td>204-171A</td>
</tr>
<tr>
<td>4 mounts, 15 inch turbo (4 row)</td>
<td>204-173A</td>
</tr>
<tr>
<td>6 mounts, 15 inch fluted (6 row)</td>
<td>204-175A</td>
</tr>
<tr>
<td>6 mounts, 15 inch turbo (6 row)</td>
<td>204-176A</td>
</tr>
<tr>
<td>8 mounts, 15 inch fluted (8 row, 4 twin)</td>
<td>204-172A</td>
</tr>
<tr>
<td>8 mounts, 15 inch turbo (8 row, 4 twin)</td>
<td>204-174A</td>
</tr>
<tr>
<td>12 mounts, 15 inch fluted (6 twin)</td>
<td>204-552A</td>
</tr>
<tr>
<td>12 mounts, 15 inch turbo (8 twin)</td>
<td>204-553A</td>
</tr>
<tr>
<td>16 mounts, 15 inch fluted (8 twin)</td>
<td>204-561A</td>
</tr>
<tr>
<td>16 mounts, 15 inch turbo (8 twin)</td>
<td>204-554A</td>
</tr>
</tbody>
</table>

**Coulter Blades**

Replacement/alternate blades include (one per row):

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>15in Turbo Packages</td>
<td></td>
</tr>
<tr>
<td>Fluted, 15 inch (50 flutes)</td>
<td>820-331C</td>
</tr>
<tr>
<td>Turbo, 15 inch (20 flutes)</td>
<td>820-327C</td>
</tr>
<tr>
<td>Straight, 14 inch</td>
<td>820-259C</td>
</tr>
</tbody>
</table>

See “UMC Coulter Adjustments” on page 75.

**Inside Disk Scrapers**

When planting in moist or sticky soils, these scrapers are useful in preventing build-up that might otherwise impair opener disc performance.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Inside Scraper</td>
<td>122-278S</td>
</tr>
</tbody>
</table>

This scraper cannot be used with Seed-Lok® seed firmers installed. It is compatible with seed flaps and optional Keeton® seed firmers.

See page 172 for scraper installation. The spring-loaded carbide scraper requires no adjustment.
Seed Meter Disks

Air-Pro® Meters accept a variety of seed disks, plus a special blank disk (817-841C) for row shut-off. Choices include:

<table>
<thead>
<tr>
<th>Meter Disks</th>
<th>Part No.</th>
</tr>
</thead>
<tbody>
<tr>
<td>Canola, 150 Cell</td>
<td>837-148C</td>
</tr>
<tr>
<td>Canola, 250 Cell</td>
<td>817-991C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Large, Flat)</td>
<td>817-836C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Large, Round)</td>
<td>817-794C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Medium)</td>
<td>837-126C</td>
</tr>
<tr>
<td>Corn, 24 Cell (Small, Round or Flat)</td>
<td>817-795C</td>
</tr>
<tr>
<td>Corn, 40 Cell (Large, Flat)</td>
<td>817-838C</td>
</tr>
<tr>
<td>Corn, 40 Cell (Large, Round)</td>
<td>817-796C</td>
</tr>
<tr>
<td>Corn, 40 Cell (Medium)</td>
<td>837-127C</td>
</tr>
<tr>
<td>Corn, 40 Cell (Small, Round or Flat)</td>
<td>817-797C</td>
</tr>
<tr>
<td>Cotton, 60 Cell</td>
<td>817-857C</td>
</tr>
<tr>
<td>Cotton, Hill Drop, 12 Cell</td>
<td>837-186C</td>
</tr>
<tr>
<td>Industrial Hemp, 5 Cell</td>
<td>837-364C</td>
</tr>
<tr>
<td>Milo, Pelletized Sugar Beet, 30 Cell</td>
<td>837-057C</td>
</tr>
<tr>
<td>Milo, 65 Cell</td>
<td>817-849C</td>
</tr>
<tr>
<td>Milo, 130 Cell</td>
<td>817-800C</td>
</tr>
<tr>
<td>Soybeans, 84 Cell</td>
<td>817-798C</td>
</tr>
<tr>
<td>Soybeans, 168 Cell</td>
<td>403-551D</td>
</tr>
<tr>
<td>Sunflower, 60 Cell (Small)</td>
<td>837-234C</td>
</tr>
<tr>
<td>Sunflower, 60 Cell (Medium)</td>
<td>837-235C</td>
</tr>
<tr>
<td>Sunflower, 24 Cell (Large)</td>
<td>817-851C</td>
</tr>
<tr>
<td>Volumetric No. 1, 84 Cell</td>
<td>817-867C</td>
</tr>
</tbody>
</table>

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).

<table>
<thead>
<tr>
<th>Wheel Scrapers</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>2½ inch (6.4 cm) scraper</td>
<td>404-194D</td>
</tr>
<tr>
<td>3 inch (7.6 cm) scraper</td>
<td>404-195D</td>
</tr>
<tr>
<td>4 inch (10.2 cm) scraper</td>
<td>404-196D</td>
</tr>
</tbody>
</table>

The scrapers mount on the bottom rear of the depth wheel arm, using existing hardware. 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 79.
Seed Firmers

The base YP425A, YP625A, and YP825A product requires a choice of row unit bundles which include one of three firmers: seed flap, Keeton® or Seed-Lok®. Only one type of seed firmer may be installed at the same time. Order one per row.

Seed-Lok® Seed Firmer

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>25 Series Seed-Lok® kit (per opener)</td>
<td>404-093K</td>
</tr>
</tbody>
</table>

For operations, see: “Seed Firmer Adjustments” on page 86.

Keeton® Seed Firmer

The Keeton® seed firmer supports low-rate fertilizer delivery. For this use, an optional liquid fertilizer system (page 122) must also be installed.

<table>
<thead>
<tr>
<th>Description</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>Keeton® Seed Firmer (per opener)</td>
<td>890-840C</td>
</tr>
</tbody>
</table>

For operations, see: “Seed Firmer Adjustments” on page 86.

Row Unit Press Wheels

The base Yield Pro product 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 Adjustment” on page 87.
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 3/4 in. (44.5 mm) 20-spline shaft, or 1 3/8 in. (35 mm) 21-spline shaft.

Order one kit and one coupler.

Operation and installation of the PTO kits is described in manual 401-885M, included with each kit.

Coupler Kits

<table>
<thead>
<tr>
<th>Couplers</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>1 3/4 - 20 PTO Coupler</td>
<td>826-778C</td>
</tr>
<tr>
<td>1 3/8 - 21 PTO Coupler</td>
<td>401-846A</td>
</tr>
</tbody>
</table>

Refer to Figure 135 to distinguish between the liquid and dry fertilizer options.

Before installing any kit, inspect the implement name configuration and serial number plate (for precise model number).

YP425A Compatible Kits

<table>
<thead>
<tr>
<th>YP425A Implement Names</th>
<th>PTO Pump Kit</th>
<th>540 rpm</th>
<th>1000 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP425A (PT) Dry Fertilizer s/n B1005M+</td>
<td>401-847A</td>
<td>411-165A</td>
<td></td>
</tr>
<tr>
<td>YP425A (PT) Liquid Fertilizer</td>
<td>401-848A</td>
<td>411-166A</td>
<td></td>
</tr>
<tr>
<td>YP425A (PT) without Fertilizer</td>
<td>401-846A</td>
<td>411-164A</td>
<td></td>
</tr>
</tbody>
</table>

YP625A Compatible Kits

<table>
<thead>
<tr>
<th>YP625A Implement Names</th>
<th>PTO Pump Kit</th>
<th>540 rpm</th>
<th>1000 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP625A (PT) Dry Fertilizer</td>
<td>401-847A</td>
<td>411-165A</td>
<td></td>
</tr>
<tr>
<td>YP625A (PT) Liquid Fertilizer</td>
<td>401-849A</td>
<td>411-167A</td>
<td></td>
</tr>
<tr>
<td>YP625A (PT) without Fertilizer</td>
<td>401-846A</td>
<td>411-164A</td>
<td></td>
</tr>
</tbody>
</table>

YP825A Compatible Kits

<table>
<thead>
<tr>
<th>YP825A Implement Names</th>
<th>PTO Pump Kit</th>
<th>540 rpm</th>
<th>1000 rpm</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP825A (PT) Dry Fertilizer</td>
<td>401-847A</td>
<td>411-165A</td>
<td></td>
</tr>
<tr>
<td>YP825A (PT) Liquid Fertilizer</td>
<td>401-849A</td>
<td>411-167A</td>
<td></td>
</tr>
<tr>
<td>YP825A (PT) without Fertilizer</td>
<td>401-846A</td>
<td>411-164A</td>
<td></td>
</tr>
</tbody>
</table>
Fan Motor Compatibility

The YP425/625/825A Single-Section PTO Pumps kits require a 2-port fan hydraulic motor (having no case drain). Older implement names, having 3-port fan hydraulic motors (with a case drain) cannot install a PTO kit unless the fan is updated.

Check the implement name serial number, or inspect the fan. Implement Names manufactured with 3-port fans are:

<table>
<thead>
<tr>
<th>Implement Name Model</th>
<th>Serial Number or Lower</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP425A</td>
<td>B1008N</td>
</tr>
<tr>
<td>YP625A</td>
<td>B1043Q</td>
</tr>
<tr>
<td>YP825A</td>
<td>B1014S</td>
</tr>
</tbody>
</table>

If the implement name has a 3-port/case-drain fan motor, order one fan update kit:

<table>
<thead>
<tr>
<th>Kit</th>
<th>Part Number</th>
</tr>
</thead>
<tbody>
<tr>
<td>YP 4, 6, and 8 FAN UPDATE</td>
<td>401-956A</td>
</tr>
</tbody>
</table>

Instructions for installing this kit are merged with the instructions for the Single-Section PTO Pumps kits.
# Specifications and Capacities

## YP425A Single-Row Data

<table>
<thead>
<tr>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
<th></th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Count</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
<td>4</td>
</tr>
<tr>
<td>Row Spacing</td>
<td>70 cm</td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td>Width, no Markers</td>
<td>306.1 cm</td>
<td>10 ft. 0.5 in</td>
<td>15 ft. 0.5 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width, with Markers</td>
<td>342.9 cm</td>
<td>11 ft. 3 in</td>
<td>16 ft. 3 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Span (between end rows)</td>
<td>210.0 cm</td>
<td>90 in</td>
<td>108 in</td>
<td>114 in</td>
<td>120 in</td>
</tr>
<tr>
<td>Swath (Channel Width)</td>
<td>280.0 cm</td>
<td>120 in</td>
<td>144 in</td>
<td>152 in</td>
<td>160 in</td>
</tr>
<tr>
<td>Seed Monitor</td>
<td>Seed Monitor, monitoring*: Functions monitored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (3.0 bu Hopper)</td>
<td>424 liters</td>
<td></td>
<td>12.0 bu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.6 bu Hopper)</td>
<td>225.5 liters</td>
<td></td>
<td>6.4 bu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.2 bu Hopper)</td>
<td>169.1 liters</td>
<td></td>
<td>4.8 bu</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Liquid</td>
<td>757.1 liters</td>
<td></td>
<td>200 gal. (1 x 200)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Dry</td>
<td>509.7 liters</td>
<td></td>
<td>18 cu-ft (2 x 9)</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, no Fertilizer</td>
<td>408.5 cm</td>
<td></td>
<td>13 ft 6 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, with Fertilizer</td>
<td>488.3 cm</td>
<td></td>
<td>16 ft 0 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Height</td>
<td>147.3 cm</td>
<td></td>
<td>4 ft 10 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Height</td>
<td>198.1 cm</td>
<td></td>
<td>6 ft 6 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Clearance</td>
<td>35.56 cm</td>
<td></td>
<td>14 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. Tractor HP Req.¹</td>
<td>55 - 65 kW</td>
<td></td>
<td>75 - 85 hp</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch</td>
<td>Pull-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Circuits Req.</td>
<td>2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (empty, base)²</td>
<td>1133.0 kg</td>
<td></td>
<td>2500 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (maximum, full)³</td>
<td>2676.2 kg</td>
<td></td>
<td>6900 lb</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Tire Size</td>
<td>8R19.5 LT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Down Pressure</td>
<td>140 to 250 kg</td>
<td></td>
<td>305 to 545 lbs</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Travel (Up - Down)</td>
<td></td>
<td></td>
<td>25.4 cm</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Depth Range</td>
<td>0 to 8.9 cm</td>
<td>0 to 3.5 in</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Power requirements vary significantly with conditions and practices.
2. No fertilizer, markers, coulters, row cleaners or materials loaded.
3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
YP425A Twin-Row Data

<table>
<thead>
<tr>
<th>Model</th>
<th>YP425A -08TR70</th>
<th>YP425A -08TR36</th>
<th>YP425A -08TR38</th>
<th>YP425A -08TR40</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Count</strong></td>
<td>8 (4 twin)</td>
<td>8 (4 twin)</td>
<td>8 (4 twin)</td>
<td>8 (4 twin)</td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td><strong>Width, no Markers</strong></td>
<td>10 ft 0.5 in</td>
<td>30 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td><strong>Width, with Markers</strong></td>
<td>11 ft 3 in</td>
<td>36 in</td>
<td>40 in</td>
<td>40 in</td>
</tr>
<tr>
<td><strong>Span (between end rows)</strong></td>
<td>90 in</td>
<td>108 in</td>
<td>114 in</td>
<td>120 in</td>
</tr>
<tr>
<td><strong>Swath (Channel Width)</strong></td>
<td>120 in</td>
<td>144 in</td>
<td>152 in</td>
<td>160 in</td>
</tr>
<tr>
<td><strong>Seed Monitor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seed Capacity (3.0 bu Hopper)</strong></td>
<td>24.0 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seed Capacity (1.6 bu Hopper)</strong></td>
<td>12.8 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Seed Capacity (1.2 bu Hopper)</strong></td>
<td>9.6 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fertilizer Capacity, Liquid</strong></td>
<td>200 gal. (1 x 200)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Fertilizer Capacity, Dry</strong></td>
<td>18 cu-ft (2 x 9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Length, no Fertilizer</strong></td>
<td>13 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Length, with Fertilizer</strong></td>
<td>16 ft 0 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Working Height</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Height</strong></td>
<td>6 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Clearance</strong></td>
<td>14 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Min Tractor HP Req.¹</strong></td>
<td></td>
<td>110 - 120 hp</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hitch</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic Circuits Req.</strong></td>
<td>2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight (empty, base)²</strong></td>
<td>3400 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Weight (maximum, full)³</strong></td>
<td>8700 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Transport Tire Size</strong></td>
<td>8R19.5 LT</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opener Down Pressure</strong></td>
<td>305 to 545 lbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opener Travel (Up - Down)</strong></td>
<td>10 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opener Depth Range</strong></td>
<td>0 to 3.5 in</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

1. Power requirements vary significantly with conditions and practices.
2. No fertilizer, markers, coulters, row cleaners or materials loaded.
3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
### YP625A Single-Row Data

<table>
<thead>
<tr>
<th>Model</th>
<th>YP625A -0670</th>
<th>YP625A -0630</th>
<th>YP625A -0636</th>
<th>YP625A -0638</th>
<th>YP625A -0640</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Count</strong></td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
<td>6</td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>70.0 cm</td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td><strong>Width, no Markers</strong></td>
<td>458.5 cm</td>
<td>15 ft 0.5 in</td>
<td>20 ft 0.5 in</td>
<td>21 ft 3 in</td>
<td>20 ft 0.5 in</td>
</tr>
<tr>
<td><strong>Width, with Markers</strong></td>
<td>495.3 cm</td>
<td>16 ft 3 in</td>
<td>21 ft 3 in</td>
<td>21 ft 3 in</td>
<td>21 ft 3 in</td>
</tr>
<tr>
<td><strong>Span (between end rows)</strong></td>
<td>350.0 cm</td>
<td>150 in</td>
<td>180 in</td>
<td>190 in</td>
<td>200 in</td>
</tr>
<tr>
<td><strong>Swath (Channel Width)</strong></td>
<td>420.0 cm</td>
<td>180 in</td>
<td>216 in</td>
<td>228 in</td>
<td>240 in</td>
</tr>
</tbody>
</table>

#### Seed Monitor
- **Seed Monitor, monitoring**: Functions monitored
  - **Seed Capacity (3.0 bu Hopper)**: 634 liters = 18 bu
  - **Seed Capacity (1.6 bu Hopper)**: 338.3 liters = 9.6 bu
  - **Seed Capacity (1.2 bu Hopper)**: 253.7 liters = 7.2 bu

- **Fertilizer Capacity, Liquid**: 1135.6 liters = 300 gal. (2 x 150)
- **Fertilizer Capacity, Dry**: 764.6 liters = 27 cu-ft (3 x 9)

#### Additional Data
- **Length, no Fertilizer**: 408.5 cm = 13 ft 6 in
- **Length, with Fertilizer**: 488.3 cm = 16 ft 0 in
- **Working Height**: 147.3 cm = 4 ft 10 in
- **Transport Height**: 198.1 cm = 6 ft 6 in
- **Transport Clearance**: 35.6 cm = 14 in
- **Min Tractor HP Req.¹**: 70 - 75 kW = 95 - 110 hp

#### Hitch
- Pull-Type

#### Hydraulic Circuits Req.
- 2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min

#### Weight (empty, base)²
- 1678.3 kg = 3700 lb

#### Weight (maximum, full)³
- 4581.3 kg = 10 100 lb

#### Transport Tire Size
- 8R19.5 LT

#### Opener Down Pressure
- 140 to 250 kg = 305 to 545 lbs

#### Opener Travel (Up - Down)
- 25.4 cm = 10 in

#### Opener Depth Range
- 0 to 8.9 cm = 0 to 3.5 in

---

¹ Power requirements vary significantly with conditions and practices.

² No fertilizer, markers, coulters, row cleaners or materials loaded.

³ Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
## YP625A Twin-Row Data

<table>
<thead>
<tr>
<th>Model</th>
<th>YP625A -12TR70</th>
<th>YP625A -12TR30</th>
<th>YP625A -12TR36</th>
<th>YP625A -12TR38</th>
<th>YP625A -12TR40</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Count</td>
<td>12 (6 twin)</td>
<td>12 (6 twin)</td>
<td>12 (6 twin)</td>
<td>12 (6 twin)</td>
<td>12 (6 twin)</td>
</tr>
<tr>
<td>Row Spacing</td>
<td>70 cm</td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td>Width, no Markers</td>
<td>458.47 cm</td>
<td>15 ft. 0.5 in</td>
<td>20 ft. 0.5 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Width, with Markers</td>
<td>495.10 cm</td>
<td>16 ft. 3 in</td>
<td>21 ft. 3 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td>Span (between end rows)</td>
<td>358.90 cm</td>
<td>150 in</td>
<td>180 in</td>
<td>190 in</td>
<td>200 in</td>
</tr>
<tr>
<td>Swath (Channel Width)</td>
<td>407.60 cm</td>
<td>180 in</td>
<td>216 in</td>
<td>228 in</td>
<td>240 in</td>
</tr>
<tr>
<td>Seed Monitor</td>
<td>Seed Monitor, monitoring*: Functions monitored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (3.0 bu Hopper)</td>
<td>1268 liters</td>
<td>36 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.6 bu Hopper)</td>
<td>677 liters</td>
<td>19.2 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.2 bu Hopper)</td>
<td>507 liters</td>
<td>14.4 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Liquid</td>
<td>1136 liters</td>
<td>300 gal. (2 x 150)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Dry</td>
<td>764.9 liters</td>
<td>27 cu-ft (3 x 9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, no Fertilizer</td>
<td>527.9 cm</td>
<td>13 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, with Fertilizer</td>
<td>610.8 cm</td>
<td>16 ft 0 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Height</td>
<td>124.0 cm</td>
<td>4 ft 10 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Height</td>
<td>198.1</td>
<td>6 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Clearance</td>
<td>17.8 cm</td>
<td>14 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min. Tractor HP Req.¹</td>
<td>110 - 120 kW</td>
<td>145 - 160 hp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch</td>
<td>Pull-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Circuits Req.</td>
<td>2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min (1724 kPa, 53 l/min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (empty, base)²</td>
<td>2926.6 kg</td>
<td>4800 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (maximum, full)³</td>
<td>6464.6 kg</td>
<td>12 600 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Tire Size</td>
<td>8R19.5 LT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Down Pressure</td>
<td>140 to 250 kg</td>
<td>305 to 545 lbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Travel (Up - Down)</td>
<td>25.4 cm</td>
<td>10 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Depth Range</td>
<td>0 to 8.9 cm</td>
<td>0 to 3.5 in</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Power requirements vary significantly with conditions and practices.

² No fertilizer, markers, coulters, row cleaners or materials loaded.

³ Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
### YP825A Single-Row Data

<table>
<thead>
<tr>
<th>Model</th>
<th>YP825A -0870</th>
<th>YP825A -0830</th>
<th>YP825A -0836</th>
<th>YP825A -0838</th>
<th>YP825A -0840</th>
</tr>
</thead>
<tbody>
<tr>
<td>Row Count</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
<td>8</td>
</tr>
<tr>
<td>Row Spacing</td>
<td>70 cm</td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td>Width, no Markers</td>
<td>610.8 cm</td>
<td>20 ft 0.5 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td>Width, with Markers</td>
<td>647.7 cm</td>
<td>21 ft 3 in</td>
<td>27 ft 1 in</td>
<td>280 in</td>
<td></td>
</tr>
<tr>
<td>Span (between end rows)</td>
<td>490.0 cm</td>
<td>210 in</td>
<td>252 in</td>
<td>266 in</td>
<td></td>
</tr>
<tr>
<td>Swath (Channel Width)</td>
<td>500.0 cm</td>
<td>240 in</td>
<td>288 in</td>
<td>304 in</td>
<td></td>
</tr>
<tr>
<td><strong>Seed Monitor</strong></td>
<td>Seed Monitor, monitoring*: Functions monitored</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (3.0 bu Hopper)</td>
<td>856 liters</td>
<td>24 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.6 bu Hopper)</td>
<td>451.1 liters</td>
<td>12.8 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Seed Capacity (1.2 bu Hopper)</td>
<td>338.3 liters</td>
<td>9.6 bu</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Liquid</td>
<td>1514.2 liters</td>
<td>400 gal. (2 x 200)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Fertilizer Capacity, Dry</td>
<td>1019.4 liters</td>
<td>36 cu-ft (4 x 9)</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, no Fertilizer</td>
<td>408.5 cm</td>
<td>13 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Length, with Fertilizer</td>
<td>488.3 cm</td>
<td>16 ft 0 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Working Height</td>
<td>147.32 cm</td>
<td>4 ft 10 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Height</td>
<td>198.12 cm</td>
<td>6 ft 6 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Clearance</td>
<td>35.56 cm</td>
<td>14 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Min Tractor HP Req.¹</td>
<td>80 - 90 kW</td>
<td>115 - 130 hp</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hitch</td>
<td>Pull-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Hydraulic Circuits Req.</td>
<td>2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min (1724 kPa, 53 l/min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (empty, base)²</td>
<td>2268.0 kg</td>
<td>5000</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Weight (maximum, full)³</td>
<td>5942.1 kg</td>
<td>13 100 lb</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Transport Tire Size</td>
<td>8R19.5 LT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Down Pressure</td>
<td>140 to 250 kg</td>
<td>305 to 545 lbs</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Travel (Up - Down)</td>
<td>25.4 cm</td>
<td>10 in</td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>Opener Depth Range</td>
<td>0 to 8.9 cm</td>
<td>0 to 3.5 in</td>
<td></td>
<td></td>
<td></td>
</tr>
</tbody>
</table>

¹ Power requirements vary significantly with conditions and practices.
² No fertilizer, markers, coulters, row cleaners or materials loaded.
³ Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
### YP825A Twin-Row Data

<table>
<thead>
<tr>
<th></th>
<th>YP825A-16TR70</th>
<th>YP825A-16TR30</th>
<th>YP825A-16TR36</th>
<th>YP825A-16TR38</th>
<th>YP825A-16TR40</th>
</tr>
</thead>
<tbody>
<tr>
<td><strong>Row Count</strong></td>
<td>16 (8 twin)</td>
<td>16 (8 twin)</td>
<td>16 (8 twin)</td>
<td>16 (8 twin)</td>
<td>16 (8 twin)</td>
</tr>
<tr>
<td><strong>Row Spacing</strong></td>
<td>70 cm</td>
<td>30 in</td>
<td>36 in</td>
<td>38 in</td>
<td>40 in</td>
</tr>
<tr>
<td><strong>Width, no Markers</strong></td>
<td>542.09 cm</td>
<td>20 ft. 0.5 in</td>
<td>25 ft. 10.5 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Width, with Markers</strong></td>
<td>647.50 cm</td>
<td>21 ft. 3 in</td>
<td>27 ft. 1 in</td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Span (between end rows)</strong></td>
<td>511.30 cm</td>
<td>210 in</td>
<td>252 in</td>
<td>266 in</td>
<td>280 in</td>
</tr>
<tr>
<td><strong>Swath (Channel Width)</strong></td>
<td>560 cm</td>
<td>240 in</td>
<td>288 in</td>
<td>304 in</td>
<td>320 in</td>
</tr>
<tr>
<td><strong>Seed Monitor</strong></td>
<td></td>
<td></td>
<td></td>
<td></td>
<td>Seed Monitor, monitoring*: Functions monitored</td>
</tr>
<tr>
<td><strong>Seed Capacity (3.0 bu Hopper)</strong></td>
<td>1692 liters</td>
<td></td>
<td></td>
<td></td>
<td>48 bu</td>
</tr>
<tr>
<td><strong>Seed Capacity (1.6 bu Hopper)</strong></td>
<td>902 liters</td>
<td></td>
<td></td>
<td></td>
<td>25.6 bu</td>
</tr>
<tr>
<td><strong>Seed Capacity (1.2 bu Hopper)</strong></td>
<td>677 liters</td>
<td></td>
<td></td>
<td></td>
<td>19.2 bu</td>
</tr>
<tr>
<td><strong>Fertilizer Capacity, Liquid</strong></td>
<td>1514 liters</td>
<td></td>
<td></td>
<td></td>
<td>400 gal. (2 x 200 gal)</td>
</tr>
<tr>
<td><strong>Fertilizer Capacity, Dry</strong></td>
<td>1019.4 liters</td>
<td></td>
<td></td>
<td></td>
<td>36 cu-ft (4 x 9)</td>
</tr>
<tr>
<td><strong>Length, no Fertilizer</strong></td>
<td>527.9 cm</td>
<td></td>
<td></td>
<td></td>
<td>13 ft 6 in</td>
</tr>
<tr>
<td><strong>Length, with Fertilizer</strong></td>
<td>610.8 cm</td>
<td></td>
<td></td>
<td></td>
<td>16 ft 0 in</td>
</tr>
<tr>
<td><strong>Working Height</strong></td>
<td>124.0 cm</td>
<td></td>
<td></td>
<td></td>
<td>4 ft 10 in</td>
</tr>
<tr>
<td><strong>Transport Height</strong></td>
<td>198.1</td>
<td></td>
<td></td>
<td></td>
<td>6 ft 6 in</td>
</tr>
<tr>
<td><strong>Transport Clearance</strong></td>
<td>17.8 cm</td>
<td></td>
<td></td>
<td></td>
<td>14</td>
</tr>
<tr>
<td><strong>Min. Tractor HP Req.</strong></td>
<td>135 - 150 kW</td>
<td></td>
<td></td>
<td></td>
<td>180 - 200 hp</td>
</tr>
<tr>
<td><strong>Hitch</strong></td>
<td>Pull-Type</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Hydraulic Circuits Req.</strong></td>
<td>2 or 3 Remotes, Closed-Center, 2250 psi, 14 gal/min (1724 kPa, 53 l/min)</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td>**Weight (empty, base)**2</td>
<td>3924.5 kg</td>
<td></td>
<td></td>
<td></td>
<td>7000 lb</td>
</tr>
<tr>
<td>**Weight (maximum, full)**3</td>
<td>8415.0 kg</td>
<td></td>
<td></td>
<td></td>
<td>16 900 lb</td>
</tr>
<tr>
<td><strong>Transport Tire Size</strong></td>
<td>8R19.5 LT</td>
<td></td>
<td></td>
<td></td>
<td></td>
</tr>
<tr>
<td><strong>Opener Down Pressure</strong></td>
<td>140 to 250 kg</td>
<td></td>
<td></td>
<td></td>
<td>305 to 545 lbs</td>
</tr>
<tr>
<td><strong>Opener Travel (Up - Down)</strong></td>
<td>25.4 cm</td>
<td></td>
<td></td>
<td></td>
<td>10 in</td>
</tr>
<tr>
<td><strong>Opener Depth Range</strong></td>
<td>0 to 8.9 cm</td>
<td></td>
<td></td>
<td></td>
<td>0 to 3.5 in</td>
</tr>
</tbody>
</table>

1. Power requirements vary significantly with conditions and practices.

2. No fertilizer, markers, coulters, row cleaners or materials loaded.

3. Weight can vary by thousands of pounds depending on options installed. See Transport topic.

* Planter functions not monitored include: fan rpm, hopper level, implement lift, manifold pressures
Dimensions 4 Row

- 98.38 in.
- 134.31 in.
- 120.50 w/out markers
- 192.62 in. w/ fertilizer
- 160 in. w/out fertilizer
- 94.75 in. transport
- 72.75 in. field
- 56.12 in.
Dimensions 6 Row

- 194.25 in.
- 180.50 w/out markers
- 77.0 in. field
- 99.13 in. transport
- 56.12 in.
Dimensions 8 Row

- 254.25 in. w/markers
- 240.50 w/out markers
- 56.12 in.
- 79.38 in. field
- 101.5 in. transport
- 192.25 in (twin-row 70 cm only, 527.9 cm w/fertilizer)
- 160.83 in (twin-row 70 cm only, 527.9 cm w/out fertilizer)
## Torque Values Chart

<table>
<thead>
<tr>
<th>Bolt Size</th>
<th>Bolt Head Identification</th>
<th>Grade 2</th>
<th>Grade 5</th>
<th>Grade 8</th>
</tr>
</thead>
<tbody>
<tr>
<td>in-tpia a</td>
<td>N-m b</td>
<td>ft-lb c</td>
<td>N-m</td>
<td>ft-lb</td>
</tr>
<tr>
<td>1/4-20</td>
<td>7.4</td>
<td>5.6</td>
<td>11</td>
<td>8</td>
</tr>
<tr>
<td>1/4-24</td>
<td>8.5</td>
<td>6.6</td>
<td>13</td>
<td>10</td>
</tr>
<tr>
<td>9/16-18</td>
<td>15</td>
<td>11</td>
<td>24</td>
<td>17</td>
</tr>
<tr>
<td>5/16-24</td>
<td>17</td>
<td>13</td>
<td>26</td>
<td>19</td>
</tr>
<tr>
<td>3/8-16</td>
<td>27</td>
<td>20</td>
<td>42</td>
<td>31</td>
</tr>
<tr>
<td>3/8-24</td>
<td>31</td>
<td>22</td>
<td>47</td>
<td>35</td>
</tr>
<tr>
<td>3/16-14</td>
<td>43</td>
<td>32</td>
<td>67</td>
<td>49</td>
</tr>
<tr>
<td>3/16-20</td>
<td>49</td>
<td>36</td>
<td>75</td>
<td>55</td>
</tr>
<tr>
<td>1/2-13</td>
<td>66</td>
<td>49</td>
<td>105</td>
<td>76</td>
</tr>
<tr>
<td>1/2-20</td>
<td>75</td>
<td>55</td>
<td>115</td>
<td>85</td>
</tr>
<tr>
<td>5/16-12</td>
<td>95</td>
<td>70</td>
<td>150</td>
<td>110</td>
</tr>
<tr>
<td>9/16-18</td>
<td>105</td>
<td>79</td>
<td>165</td>
<td>120</td>
</tr>
<tr>
<td>5/8-11</td>
<td>130</td>
<td>97</td>
<td>205</td>
<td>150</td>
</tr>
<tr>
<td>5/8-18</td>
<td>150</td>
<td>110</td>
<td>230</td>
<td>170</td>
</tr>
<tr>
<td>3/4-10</td>
<td>235</td>
<td>170</td>
<td>360</td>
<td>265</td>
</tr>
<tr>
<td>3/4-16</td>
<td>260</td>
<td>190</td>
<td>405</td>
<td>295</td>
</tr>
<tr>
<td>3/8-9</td>
<td>225</td>
<td>165</td>
<td>585</td>
<td>430</td>
</tr>
<tr>
<td>5/8-14</td>
<td>250</td>
<td>185</td>
<td>640</td>
<td>475</td>
</tr>
<tr>
<td>1-8</td>
<td>340</td>
<td>250</td>
<td>875</td>
<td>645</td>
</tr>
<tr>
<td>1-12</td>
<td>370</td>
<td>275</td>
<td>955</td>
<td>705</td>
</tr>
<tr>
<td>9/16-7</td>
<td>480</td>
<td>355</td>
<td>1080</td>
<td>795</td>
</tr>
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<td>5/8-12</td>
<td>540</td>
<td>395</td>
<td>1210</td>
<td>890</td>
</tr>
<tr>
<td>1 1/4-7</td>
<td>680</td>
<td>500</td>
<td>1520</td>
<td>1120</td>
</tr>
<tr>
<td>1 1/4-12</td>
<td>750</td>
<td>555</td>
<td>1680</td>
<td>1240</td>
</tr>
<tr>
<td>1 1/8-6</td>
<td>890</td>
<td>655</td>
<td>1990</td>
<td>1470</td>
</tr>
<tr>
<td>1 1/8-12</td>
<td>1010</td>
<td>745</td>
<td>2270</td>
<td>1670</td>
</tr>
<tr>
<td>1 1/8-6</td>
<td>1180</td>
<td>870</td>
<td>2640</td>
<td>1950</td>
</tr>
<tr>
<td>1 1/8-12</td>
<td>1330</td>
<td>980</td>
<td>2970</td>
<td>2190</td>
</tr>
</tbody>
</table>

Torque tolerance + 0%, -15% of torquing values. Unless otherwise specified use torque values listed above.

---

### Tire Inflation Chart

<table>
<thead>
<tr>
<th>Wheel</th>
<th>Tire Size</th>
<th>Inflation</th>
</tr>
</thead>
<tbody>
<tr>
<td>814-834C</td>
<td>8R19.5 LT</td>
<td>110 psi (760 kPa)</td>
</tr>
<tr>
<td>814-266C</td>
<td>24X7.7-10</td>
<td>90 psi (621 kPa)</td>
</tr>
</tbody>
</table>

### 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:
- Firestone: www.firestoneag.com
- Goodyear: www.goodyearag.com
- Titan: www.titan-intl.com
- BKT: www.bkt-tires.com/em
- Gleason: www.gleasonwheel.com

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2020-08-12
Plumbing Diagrams
YP425A Fertilizer Plumbing (YP425A S/N B1008N-)

Figure 137
Fertilizer Plumbing - Single Tank System
YP625A and YP825A Fertilizer Plumbing (YP625A S/N B1043Q) (YP825A S/N B1014S)

(YP625A shown - 625 & 825 systems differ only in tank capacity and drop line count)

Figure 138
Fertilizer Plumbing - Dual Tank System
YP425A Fertilizer Plumbing (YP425A S/N B1009N+)

Figure 139
Fertilizer Plumbing - Single Tank System
YP625A and YP825A Fertilizer Plumbing (YP625A S/N B1044Q+) (YP825A S/N B1015S+)

(YP625A shown - 625 & 825 systems differ only in tank capacity and drop line count)

![Fertilizer Plumbing - Dual Tank System Diagram](image-url)

Figure 140
Fertilizer Plumbing - Dual Tank System
Hydraulic Diagrams
Lift Hydraulics
Fan Hydraulics (YP425A S/N B1008N-) (YP625A S/N B1043Q-) (YP825A S/N B1014S-)
Fan Hydraulics (YP425A S/N B1009N+) (YP625A S/N B1044Q+) (YP825A S/N B1015S+)
Marker Hydraulics (Option) (YP425A S/N B1008N-) (YP625A S/N B1043Q-) (YP825A S/N B1014S-)
Marker Hydraulics (Option) (YP425A S/N B1009N+) (YP625A S/N B1044Q+) (YP825A S/N B1015S+)
Chain Routing
See also “Chain Maintenance” on page 111.

Legend:

- **34T**: Sprocket or idler Tooth count
- **56P**: Chain Pitch count
- **U, B, F, D, L**: Direction of chain in motion

Ground Drive Arm Chain
Transfer Shaft and Range Chains

Range Sprocket:
18T, 19T, 20T, 2@25T, 30T, 36T
Transmission Chain (YP425A S/N B1008N-) (YP625A S/N B1043Q-) (YP825A S/N B1014S-)

Range Sprocket:
- 15T, 20T, 25T, 2@30T, 36T

Transmission Sprockets:
- 17T, 19T, 2@23T, 24T, 25T, 26T, 27T, 28T
Transmission Chain (YP425A S/N B1009N+) (YP625A S/N B1044Q+) (YP825A S/N B1015S+)

Range Sprocket:
- 18T, 19T, 20T, 2@25T, 30T, 36T

Transmission Sprockets:
- 17T, 19T, 2@23T, 24T, 25T, 26T, 27T, 28T
Liquid Fertilizer Drive Chains (YP425A S/N B1008N-) (YP625A S/N B1043Q-) (YP825A S/N B1014S-)

![Diagram of Liquid Fertilizer Drive Chains]

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Liquid Fertilizer Drive Chains (YP425A S/N B1009N+) (YP625A S/N B1044Q+) (YP825A S/N B1015S+)
Dry Fertilizer Chains

Fertilizer Transmission Sprockets:
15T, 17T, 19T, 21T, 23T, 24T, 32T, 41T, 44T
25AP Final Meter Drive

Legend:

- **Sprocket or idler Tooth count**
- **Chain Pitch count**
- **Direction of chain in motion**

<p>| | |</p>
<table>
<thead>
<tr>
<th></th>
<th></th>
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</thead>
<tbody>
<tr>
<td>34T</td>
<td>56P</td>
</tr>
</tbody>
</table>

- 25P: Meter Drive (Front type)
  - 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
Appendix B - Pre-Delivery

This Appendix covers setup tasks performed by the dealer prior to delivery. These items need to be completed prior to any items in Appendix C (some of which may also be performed by the Great Plains dealer).

a. Partially deploy ground drive (this page).
b. Attach tongue to frame (page 160).
c. Install press wheel assemblies (page 162).
d. Engage ground drive spring (page 162).
e. Mount Fertilizer boom (option, page 163).
f. Close-out (page 165)

The product mainframe includes shipping stands which are returned to Great Plains after the tongue is attached.

Mount Ground Drive Wheel

The ground drive wheel is shipped loose. It must be bolted to the hub.

**CAUTION**

*Sharp Object Hazard:*
Use a hoist or two people. Wear gloves. The wheel is heavy and the tines are sharp.

Refer to Figure 141

1. Select one:
   - 407-473D GROUND DRIVE WHEEL
   and three sets:
   - 802-331C RHSNB 1/2-13X1 3/4 GR5
   - 804-015C WASHER LOCK SPRING 1/2 PLT
   - 803-020C NUT HEX 1/2-13 PLT

2. At the ground drive hub, orient the wheel so that at the top, the vertical face of the top tooth is to the rear, and the longer angled face is to the front.

3. Secure the wheel to the hub with bolts, lock washers and nuts.

![Figure 141](image-url)

Install Ground Drive Wheel
Attach Tongue to Frame

A hoist or blocks are recommended for supporting the tongue during bolt hole alignment.

Tongue to Main Tool Bar

If the product has Fertilizer, or the accessory sub-frame for frame-mounted row options, use the instructions at “Tongue to Fertilizer/Accessory Sub-frame” on page 161.

In the mainframe-only configuration, the ground drive is secured to the tool bar with U-bolts. These are removed and replaced with straight bolts that secure the tongue to the ground drive and tool bar.

Refer to Figure 142

1. Carefully remove four (4) sets of U-Bolts 1. The U-bolts and nuts are not re-used.

Refer to Figure 143

2. Select one new:
   ① 401-665L TONGUE ASSEMBLY YP4, 6 & 8
3. Remove and save four(4) sets:
   ② 802-068C HHCS 3/4-10X4 GR5
4. Align the mounting holes of the tongue ① and mainframe ②. Insert bolts ② from top and secure with lock washers ⑤ and nuts ③.
5. Skip to step 1 on page 161.
Tongue to Fertilizer/Accessory Sub-frame

If the product does not have Fertilizer or forward sub-frame option, start above at “Tongue to Main Tool Bar” on page 160.

Refer to Figure 144

1. Select one of new: 
   401-665L TONGUE ASSEMBLY YP4, 6 & 8
2. Remove and save eight (8) sets of: 
   803-181C NUT HEX FLANGE LOCK 3/4-10 PLT
   and four (4): 
   806-102C U-BOLT 3/4-10 CORNER 7 SQ
3. Center the tongue on the sub-frame. Insert U-bolts from above and secure with lock nuts.

Route Hoses

Leave the parking jack on tongue during hose routing, to assure leaving adequate clearance around the stob. 

1. Loosen or remove the hose clamps.
2. Identify the lift cylinder hoses. Route them around the jack stob and under the bottom clamps.
3. Identify the marker hoses (if markers are installed). Route them under the next higher clamp layer.
4. Identify the fan hoses. Route the pressure side and return line hoses under the next layer of clamp.
5. Route the fan case drain line hose under the next layer of clamp, or along the top to the hose bundles.
6. Tighten the fasteners that secure the clamps. Do not use chart torque for the thread size. Use just enough torque to keep hoses from moving, and keep fasteners from coming lose.

Route Cables

7. Route the lighting and monitor cables along the hose bundles.
8. Secure the entire bundle aft of the jack (location) with a large tie wrap.
9. Secure the remaining length with small tie wraps.
10. Move the parking jack to the operating position. Elevate tongue to level product.

Raise Product

11. Hoist or jack up tongue high enough to permit attachment of the parking jack at the front side stob.
12. Connect the lift hydraulics to a hydraulic source (page 17).
13. Lift the product and install transport locks (page 24). Remove the shipping stands. They are returned to Great Plains.
Install Press Wheel Assemblies

To meet highway clearance requirements, press wheel arms and wheels may not be factory-installed.

Refer to Figure 146

1. Remove and save the $\frac{1}{2}-13\times1\text{in}$ hex head bolt and washer ② at the back of an incomplete row unit ③.

**NOTICE**

*There are four bolts at this location. Remove only the hex head bolts. Do not loosen or remove the square head bolts forward.*

2. Remove and save the $\frac{1}{2}-13\times1\frac{1}{2}\text{in}$ hex head bolt, washer, and eccentric adjuster nut.

3. Align the $\frac{1}{2}$ inch holes in the press wheel assembly with the $\frac{1}{2}-13$ tapped holes in the row unit, loosely assemble with the $\frac{1}{2}-13\times1\text{in}$ hex head bolt and washer ②.

4. Loosely screw in the $\frac{1}{2}-13\times1\frac{1}{2}\text{in}$ hex head bolt, washer, and eccentric adjuster nut. Rotate the adjuster to visually align the press wheel assembly with the row unit, and tight the adjust and both bolts.

Engage Ground Drive Spring

Refer to Figure 141 on page 159

1. If the ground drive arm is still tied up for shipping, carefully lower it to the ground per the instructions on page 159. Observe all precautions from page 159.

Refer to Figure 147

2. Select one new:

   ⑦ 121-763S OPENER SPRING ROD ASSY. SHRT.
   Check that the overall length ⑧, from clevis to trunnion, center-line to center-line, with pin holes aligned, is:
   ⑧ $17\frac{1}{4}$ inches $\pm \frac{1}{16}$ inch (43.7 to 44.0 cm)

3. Remove and save all pins at clevis and trunnion ends of spring rod assembly.

4. Secure the clevis end of the spring assembly to the arm lug ⑨, using one each:

   ⑩ 805-127C PIN CLEVIS 1/2 X 1 3/4 and
   ⑩ 805-064C PIN COTTER 7/64 X 1 LONG

5. Secure the trunnion end of the spring assembly to the upper trunnion ②, using one each:

   ⑩ 805-235C PIN CLEVIS 1/2 X 5 PLATED and
   ⑩ 805-064C PIN COTTER 7/64 X 1 LONG
Mount Fertilizer Boom (Option)

If there are any frame-mounted accessories that are not already installed, mount them before attaching the boom.

Position Boom

*Refer to Figure 148*

For model YP425A, skip to step 3.

Step 2 requires a liquid pipe thread compound suitable for polypropylene.

1. Select one pair of:
   - 407-134D MANIFOLD 40 FT TWIN ROW
   - 407-140D MANIFOLD 30 FOOT TWIN ROW
   A tee fitting is factory-assembled on one section.

2. Apply pipe thread sealant and join the sections. Orient all nozzles to the same side of the pipe.

3. Lay boom on top of frame tube, centered, nozzles facing up:
   - YP425A: end elbow to product left
   - YP625A: center elbow to front
   - YP825A: center elbow to rear

4. Select two (YP425A) or four (YP625/825A):
   - 806-150C U-BOLT 3/8-16 X 7 1/32 X 6 GR5
   Do not select all the U-bolts in this size. There is one more used at step 12.

5. Referencing Figure 148, place a U-bolt at each mount point. Slide the U-bolts forward (under boom) from in front of the front tool bar.

*Figure 148*  
Boom Positioning
Assemble Mounts

Refer to Figure 149

6. Select two (YP425A) or four (YP625/825A): 63 407-389D WET BOOM U-BOLT PLATE and four or eight: 68 803-068C NUT HEX FLANGE 3/8-16 PLT

7. With the 3-hole end up, place each plate 63 on the threads of a U-bolt 70. Secure with flange nuts 68.

8. Select two (YP425A) or four (YP625/825A): 62 407-137D FERTILIZER BOOM MOUNT and four or eight sets of: 68 802-159C HHCS 5/16-18X1 GR5 55 804-009C WASHER LOCK SPRING 5/16 PLT 67 803-008C NUT HEX 5/16-18 PLT

9. With the short break up, attach each mount 62 to each plate 63. Secure with bolt 70, lock washer 68 and nut 67.

Mount Boom

10. Select two (YP425A) or four (YP625/825A): 74 806-152C U-BOLT 1/4-20 X 1.125 X 2 RND and four or eight: 69 803-088C NUT HEX LOCK 1/4-20 FLG

11. Secure the boom 61 over each mount 62 with a U-bolt 74 and lock nut 69.

NOTICE

Equipment Damage Risk:
Do not over-tighten. Tighten lock nuts only enough to prevent manifold tube from rotating. If you tighten to normal 1/4-20 torque spec, the tube is likely to be crushed.

Install Relief Valve/Gauge Assembly

Refer to Figure 150


13. Position the U-Bolt by product model:
YP425A: right of left-most manifold U-bolt.
YP625A: left of center tube
YP825A: left of center tube

14. Select one:
72 829-104C GAUGE 100 PSI 4IN STAINLESS which is factory pre-assembled to a gauge protector, cross-fittings, relief valve, dump line and mount.

15. Select two: 68 803-068C NUT HEX FLANGE 3/8-16 PLT

16. Position the gauge assembly 72 on the U-bolt 70, gauge on top, facing forward. Secure with flanged lock nuts 68.
Connect Manifold to Pump

This page applies only to planters:
(YP425 s/n B1008N-)
(YP625 s/n B1043Q-) (YP825A s/n B1014S-)

Refer to Figure 151

17. Select one:

990-081R HOSE 3/4 ID 200PSI EPDM
and two:

800-123C CLAMP WRM DRV #16 SS (.68-1.5)

18. Slip a clamp on each end of the hose. Secure one end to the elbow at the manifold, and the other to the 3/4 inch hose barb adapter on the left side of the valve cross fitting.

Refer to Figure 151 and Figure 152

19. Select one:

990-082R HOSE 1 ID 200PSI EPDM
and two:

800-123C CLAMP WRM DRV #16 SS (.68-1.5)

20. Route the hose as follows:

YP425A: directly from valve to pump
YP625A: along center tube and behind left tank
YP825A: along center tube and behind left tank

21. Slip a clamp on each end of the hose. Secure one end to the 1in hose barb adapter on the right side of the valve cross fitting. Secure the other end to the elbow at the top of the pump.

If the customer has specified row connection points, boom outlet orifice plates, nozzle caps and drop lines may be installed at this time. See page 173.

Pre-Delivery Closeout

22. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.

23. Check that all zerks are in place and lubricated. See “Lubrication” on page 114.

24. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “Safety Decals” on page 6.

25. Inflated tires to pressure recommended and tighten wheel bolts as specified. See “Tire Inflation Chart” on page 141.

26. For immediate delivery, move all uninstall items (such as the manuals, orifice plates and clean-out container) from crates to the hoppers at the left side of the product. Otherwise, place them in a well-marked container and store securely.
Connect Manifold to Pump

This page applies only to planters:
(YP425 s/n B1009N+)
(YP625 s/n B1044Q+) (YP825A s/n B1015S+)

Refer to Figure 151

27. Select one:
990-081R HOSE 3/4 ID 200PSI EPDM
and two:
800-123C CLAMP WRM DRV #16 SS (.68-1.5)

28. Slip a clamp on each end of the hose. Secure one end to the elbow at the manifold, and the other to the 3/4in hose barb adapter on the left side of the valve cross fitting.

Refer to Figure 151 and Figure 152

29. Select one:
990-082R HOSE 1 ID 200PSI EPDM
and two:
800-123C CLAMP WRM DRV #16 SS (.68-1.5)

30. Route the hose as follows:
YP425A: directly from valve to pump
YP625A: along center tube and behind left tank
YP825A: along center tube and behind left tank

31. Slip a clamp on each end of the hose. Secure one end to the 1in hose barb adapter on the right side of the valve cross fitting. Secure the other end to the elbow at the top of the pump.

If the customer has specified row connection points, boom outlet orifice plates, nozzle caps and drop lines may be installed at this time. See page 173.

Pre-Delivery Closeout

32. Check that all working parts are moving freely, bolts are tight, and cotter pins are spread.

33. Check that all zerks are in place and lubricated. See “Lubrication” on page 114.

34. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “Safety Decals” on page 6.

35. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “Tire Inflation Chart” on page 141.

36. For immediate delivery, move all uninstalled items (such as the manuals, orifice plates and clean-out container) from crates to the hoppers at the left side of the product. Otherwise, place them in a well-marked container and store securely.
Appendix C - Initial Setup

This Appendix covers setup tasks performed only once, or at infrequent intervals. Routine setup tasks are covered in “Preparation and Setup” on page 15. Perform Appendix B tasks first. Some of these items may already have been done by your Great Plains dealer:

a. Seed monitor console installation (below)
b. Frame-mounted row options (see manual supplied with accessory)
c. Marker setup (Option, page 168)
d. High rate dribblers (Option, page 171)
e. Scrapers (Option, page 172)
f. Fertilizer drop lines (Option, page 173)

Post-Delivery Checklist

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 114.
4. Check that all safety decals and reflectors are correctly located and legible. Replace if damaged. See “Safety Decals” on page 6.
5. Inflate tires to pressure recommended and tighten wheel bolts as specified. See “Tire Inflation Chart” on page 141.

Seed Monitor Console Installation

Refer to Figure 155

The product’s standard PM300 seed monitor system includes a console ① that needs to be mounted in the cab of the tractor to be used with the product.

![Figure 155: PM300 Tractor Components](28138)

**CAUTION**

Transport and Field Safety Risk:
Mount the module so it is easy to monitor during planting, but does not interfere with safe operation of the tractor in the field or on public roads.

The monitor includes cables for power ②, speed sensor ③ and sensor harness ④. Installation instructions are found in the included DICKEY-john® manual.

Power color code is:
+ positive: red
- negative: black

The included bracket ⑤ requires customer-supplied fasteners.
Initial Marker Setup (Option)
Marker Speed Adjustment

⚠️ CAUTION

Overhead Sharp Object and Crushing Hazards:
Never allow anyone near the product 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 discs may be sharp.

Refer to Figure 156 and Figure 157

Adjust folding speed for dual markers with hex adjustment screws on the sequence valve body. The valve sequence body is top center of main tool bar. Loosen jam nuts before making adjustments.

There is one adjustment screw for raising speed (1) and one for lowering speed (2). You can identify adjustment screws by markings stamped in valve body.

Turn adjustment screws clockwise (S: slower) to decrease folding speed and counterclockwise (F: faster) to increase folding speed.

With tractor idling at a normal operating speed, adjust marker folding to a safe speed. Excessive folding speed could damage markers and void the warranty.

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

Marker Extension

Marker extension needs to be adjusted once for the initial YP425A, YP625A, and YP825A product setup, and later only if changing row spacing (including row shut-off for single-row operation on a twin-capable product).

1. Move the product to a location where both markers may be safely unfolded.
2. Lower the product. Pull forward and lower rows into ground.

⚠️ Due to the relatively steep arm angles of short markers, extension measurements are likely to be incorrect if the main tool bar is not at normal operating height (26 inches).
3. Tilt up and unfold one marker.
Find the suggested initial marker Extension in the table on this page.

When using altered twin-row spacings, marker extensions are different for left and right.

Refer to Figure 158 and Figure 159

4. Measure out the Extension distance from each outside end row unit (whether in use or not). Do not measure to center of row pair.
5. Mark the ground at this point.
6. To adjust marker width, loosen nuts on U-bolts. Move marker disk tube in or out to get the proper adjustment. Tighten nuts.
7. Repeat steps 3 through 6 for the other side.
8. With the product still lowered, drive forward a few feet for each side.
9. Check mark locations. Adjust to obtain table value.
## Marker Extension Table

<table>
<thead>
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<th>Planter Model</th>
<th>Spacing Used</th>
<th>Marker Extension Left</th>
<th>Right</th>
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</thead>
<tbody>
<tr>
<td>YP425A/3P</td>
<td>70cm Single</td>
<td>175.0 cm</td>
<td></td>
</tr>
<tr>
<td>YP425A/3P</td>
<td>30in Single</td>
<td>75.0 in (190.5 cm)</td>
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<tr>
<td>YP425A/3P</td>
<td>Twin 30in</td>
<td>70.8 in (179.9 cm)</td>
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<tr>
<td>YP425A/3P</td>
<td>90.0 in</td>
<td></td>
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<tr>
<td>YP425A/3P</td>
<td>Twin 36in</td>
<td>85.8 in (218.0 cm)</td>
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<td>YP425A/3P</td>
<td>30in Single</td>
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<td>Twin 40in</td>
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<th>Planter Model</th>
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<th>Right</th>
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<td>175.8 in (446.6 cm)</td>
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<tr>
<td>YP625A/3P</td>
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Right (front) rows in use; left (rear) rows locked up. No centerline compensation.
**H.R. Dribbler Installation (Option)**

These tubes are intended for near-row surface application of liquid fertilizer, after the press wheels have closed the furrow.

*Refer to Figure 160*

Dribbler weldments are offered in left-hand 92 and right-hand 93 variants. Generally, a twin row product uses LH on the left row of a twin pair, and RH on the right. A single-row product can use all LH or all RH.

The applicator tube (92 or 93) is designed to accept 1/4 inch O.D. delivery tubing with no need for a coupler.

**Pre-Assemble all Dribblers**

1. Select one:
   - 92 204-133H LH Dribbler Tube or
   - 93 204-134H RH Dribbler Tube
   
   and two sets:
   - 94 802-092C RHSNB 5/16-18X3/4 GR5
   - 95 804-009C WASHER LOCK SPRING 5/16 PLT
   - 97 803-008C NUT HEX 5/16-18 PLT

**Install Dribblers**

2. Insert the bolts 93 from the bottom of the weldment. Add lock washers 99 above the weldment. Spin on nuts 97 just a few turns.

3. If the press wheel tension handle (not shown) is relaxed forward, pull it backward and park it in the top side slot 91.

4. Position a dribbler assembly near the center-line of its press wheel weldment. Allow the bolt heads to drop into the large holes of the slot. Pull the assembly so that the tube is to the outside of the row.

5. Raise the dribbler, and rotate the bolts so that the square necks engage the rectangular slots. Tighten the nuts to torque spec.

6. See “Liquid Fertilizer Drop Lines (Option)” on page 173.
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 161 and Figure 162

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 77).

2. Select one each:
   ⑤ 802-024C HHCS 3/8-16X3 GR5
   ④ 129BXT824 BRACKET FOR 890-929C FIRMER
   ③ 122-177D 10HD25 INSIDE SCRAPER MNT TUBE
   Insert the bolt ⑤, from the rear, through the lowest hole of the bracket ④. Place the tube ③ over the bolt.

3. Select one scraper set:
   ⑨ 890-928C 25 SER. AIR DESIGN IN SCRAPER
   Place the shoulder washer ② on bolt ⑤ 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:
   ⑧ 804-011C WASHER FLAT 3/8 USS PLT
   ⑥ 804-013C WASHER LOCK SPRING 3/8 PLT
   ⑦ 803-014C NUT HEX 3/8-16 PLT
   Place the flat washer ② on the bolt ⑤, followed by the lock washer ⑥ and nut ⑦. Tighten bolt and nut to 3/4-16 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:
   ⑧ 802-172C HHCS 5/16-18X2 1/2 GR5
   ⑧ 803-043C 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 ⑧ and whiz nuts ⑧.

7. Re-mount the removed disc blade.

Callout, Part & Description cross-references are drawn from a Reference Page.
Liquid Fertilizer Drop Lines (Option)

Booms are identical for single-row and twin-row products. For single-row use, and if planting single-row on a twin-row product, half of the nozzles are shut off.

Drop lines are not factory-installed, and may not be dealer-installed, because there can be multiple possible applicator connection points, including:

- frame-mounted coulter applicator
- 25AP Series nut bar applicator
- seed firmer applicator
- press wheel dribbler

Install Caps on Taps

Refer to Figure 163

1. Determine which manifold taps are to be active, and which shut off.
2. For each active row, select one:
   - 832-051C NOZZLE CAP QUICK X 90X1/4 FNPT
   - Align the nozzle with the manifold tube. Press down and rotate 90°.

   Nozzles may face forward or back, at user preference.

   Orifice plates may be installed prior to capping, if the size is known.
3. For each shut-off row, select one:
   - 832-042C NOZZLE SHUT OFF CAP W/ GASKET
   - Press cap down and rotate 90°.

Install Drop Lines to Rows

Drop line tubing is supplied on one or more uncut coils:

- 990-109R TUBE NYLON 1/4OD X 062WL
- Lengths are cut for each active nozzle.

4. Route tubing and cut. Routing goals are:

   - Allow slack at the nozzle for nozzle removal and orifice plate changes.
   - Route to avoid product moving parts which could cause tubing damage.
   - Route for continuous down slope - avoid low spots in tubing.
   - Allow slack along the route to anticipate coulter or row unit vertical range of motion.
   - Secure the tubing with tie-wraps only where product operations can’t cause tubing movement.

5. At the nozzle end, if the tubing adapters are not already installed, select one:
   - 800-367C AD PUSH 1/4TUBEX1/4MNPT
   - Apply liquid pipe thread sealant. Thread the adapter into the nozzle.

   Insert the drop line tube into the adapter.

   At the application end, select one:
   - 830-383C CP 1/4 PUSH LOK POLY
   - Confirm that the coupler is required for, and compatible with, the style of applicator. Push the coupler onto the applicator tube. Push the drop line tube into the coupler.

   When the coupler is not used, typically with 1/2 inch O.D. steel applicator tubes, push the drop line tubing entirely through the applicator tube, leaving 1/2 inch to 3/4 inch of tubing length exposed. Tie wrap the tubing near the top of the applicator tube.
Great Plains (a division of Great Plains Manufacturing, Inc.) warrants to the original purchaser that this Great Plains machine will be free from defects in material and workmanship for a period of one year (Parts & Labor) from the first use date when used as intended for personal use; ninety days for custom/commercial or rental use.

Second year limited warranty covers Parts ONLY (personal usage only, excluding labor and wear items). This warranty is limited to the replacement of any defective part by Great Plains. 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 the abuse or misuse of the equipment, failures occurring as a result of accidental damage or Force Majeure, 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 including, but not limited to, disc blades, chisel points, tires, bushings, and scrapers), repeat repair due to improper diagnosis or improper repair by the dealer, temporary repairs, service call 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 failures occurring from 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 expressed 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 registered by a certified Great Plains dealer.

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